

# **Pine Island Ridge Conservation Management Plan**



**Broward County Parks and Recreation**

**May 2020**

**Update of 1999 Management Plan**



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## Conservation Management Plan For Pine Island Ridge

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:** Pine Island Ridge
2. **Lease Number:** 4005
3. **Acres:** 102.2
4. **Managing Agency:** Broward County Parks and Recreation Division
5. **Provide an executive summary/description of this property that includes a brief description of the resources, uses and proposed uses, outstanding features etc.**

This resource management plan is an update to the 1999 management plan. The Pine Island Ridge site was purchased in 1989 by the State of Florida with funds from the Conservation and Recreational Lands Fund. This state-owned property is leased to Broward County for management and maintenance responsibilities (Appendix A). Once acquired, a number of improvements were made, including fencing, trash removal, and non-native plant control. The primary goal of the acquisition was to preserve this significant archaeological site. The secondary goals are to restore the natural communities to appropriate native vegetation and to provide appropriate public access for appreciation of the natural and cultural resources. It is managed by staff at the adjacent Tree Tops County Regional Park in accordance with the applicable Resource Management Plan that was approved by the State on September 29, 1999.

Pine Island Ridge is located in the Town of Davie in western Broward County. The total area of the site is 102.2 acres. The habitation of the site dates to archaic times. Its historic location as an island rising from the Everglades, made it desirable and strategic for

habitation. The Tequesta Native American Tribe were thought to have been the first inhabitants as far back as 4000 years ago until the late 1700s. It later became the encampment of the Seminole Tribe and was used as ceremonial grounds. It was a stronghold of Sam Jones during the Seminole Wars. European settlers began occupation in the 1920s, developing it into a base of operations for the surrounding citrus groves. Today, it is primarily a narrow, upland hardwood hammock surrounded by single family homes.

Enhancing and maintaining the site's archaeological, ecological, and aesthetic integrity in an intensely urbanized environment is the greatest management challenge. Threats of vandalism to the archaeological resources is a priority management issue. Reduced natural water table elevations, disturbance of the upland areas, development encroachment, and invasion by exotic pest plants have all adversely impacted the ecological resources of the site.

In the decades following the acquisition of the state-owned land, Broward County purchased two additional parcels to complement the park property. In 2003, the most northern parcel (0.95 acres) was purchased utilizing Broward County's 2000 Safe Parks and Land Preservation Bond dollars. A second parcel (1.24 acres), located south of SW 23<sup>rd</sup> St and just south of the northern parcel, was added to Pine Island Ridge in 2015 in a land swap with Rolly Marine Service Company (Appendix B).

**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.**

See Appendix C

**b) The location and type of proposed improvements.**

Not Applicable

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

See Appendix D

**8. Please attach a legal description of the property.**

A legal description is included in Appendix B.

**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 resources, exotic and invasive plants, hydrologic features, infrastructure**

**including recreational facilities, and other significant land, cultural or historical features.**

Prior to drainage in the early part of the last century, the Pine Island Ridge, as part of the Pine Island Ridge Complex, was once a prominent upland island in the Everglades landscape. A narrow island ridge, the Pine Island Ridge Complex extended west to Long Key (now part of the Long Key Nature Center). At its highest point of 29 ft above sea level, Pine Island Ridge contains the highest natural elevation in Broward County. The Pine Island Complex became a significant topographic feature as the Everglades were being formed 5000 to 7000 years ago and were an ideal location for human habitation (Carr 1991).

The history of Pine Island is rich and ancient by South Florida standards. Because of its relatively high and dry elevation, humans have been using the island for habitation for thousands of years. Tequestas are thought to have been the first inhabitants of Pine Island as far back as 4000 years ago. Records indicate that the Tequestas inhabited Pine Island until the late 1700s (Carr 1986).

The Seminoles were the next to inhabit Pine Island and used it as a major campsite and refuge during the Second and Third Seminole Indian Wars. The complex was a Seminole settlement area, the location of many of the Seminole religious ceremonies, and was also used for raising crops. The Seminoles occupied the area on and off until the early 1900s. In 1911, under an executive order reserving land for the Seminoles, a one-quarter, quarter section (40 acres) was reserved at Pine Island (Carr 1986). This land was exchanged for additional land at the Dania, Big City Reservation in 1984.

In 1926, the Dade County Boy Scout Camp was established at Pine Island Ridge. Records indicate that E.N. Belcher, Senior, of Belcher Oil Company, purchased the Ridge at some time in the 1920s. Mr. Belcher built a small house in the 1930s and remodeled it in the mid-to late 1950s (Appendix E). The Belchers raised cattle and citrus with the latter to eventually cover some 620 acres. The Belcher's groves were among the largest citrus producers in West Broward. A pool was installed behind the house at one time and was also used later by the Boy Scout Camp. According to the Belcher family, the pool was removed when a Boy Scout was bitten by a rattlesnake. E.N. Belcher died in 1968 and the property was sold to Sea Ranch Properties in 1985. Sea Ranch properties filled in all canals and demolished all buildings except the Belcher house which was to be evaluated for preservation. Structures demolished included packing houses located near Pine Island Road, a secondary residence north of the Belcher house, and a migrant worker housing camp south of the Belcher house. After review and considerations for restoring or moving the house were abandoned, the house was demolished in August 1991. The parcel was fenced by the County with three-strand wire fencing in 1990 as required in the Tri-Party Agreement (Appendix F). Sea Ranch Properties developed residential communities known as Forest Ridge on the citrus groves which surround Pine Island Ridge.

Much of Pine Island Ridge is an upland hardwood forest dominated by live oak (*Quercus virginiana*), with occasional individuals or pockets of slash pine (*Pinus elliottii* var. *densa*)

interspersed throughout the site. Appendix G contains an inventory of plants along with the relative abundance of each plant recorded in the park and Appendix H lists wildlife recorded at the park. Pine Island Ridge was separated into three zones when surveying the plant inventory to more accurately estimate the abundance of each plant throughout the site. A map of the zones can be found in Appendix I.

Pine Island Ridge is open dawn to dusk 365 days per year. Amenities include a paved pedestrian trail originating in Tree Tops Park with 23 access points at various points along the residential communities as well as 0.5 miles of woodchip nature trail, 2.3 miles of paved walkways, and 2.0 miles of equestrian trails that link up to the Town of Davie trail system. Seven Interpretive signs and one kiosk are placed at various locations throughout the Ridge along the trails (Appendix C).

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

The geological origins of the soils of Pine Island Ridge are still speculative. It is thought to have been a beach dune around 10,000 years ago as Florida emerged from the sea. Sandy soils, deposited at a time when the ocean covered the region, were either accumulated by the wind or were caught on an underlying historic formation such as a coral reef. According to the Soil Conservation Service (2018), Pine Island Ridge consists primarily of the very well-drained Pomello fine sand (Po) (Appendix J).

The ridge is surrounded by varying types of organic muck. This muck was deposited when the area was part of the Everglades. These types of soils were formed from decaying plant material covered by water during a majority of the year.

The most dominant muck present around the ridge is Sanibel muck (Sa) which is associated with historic drainage-ways. Sanibel muck consists of a thin muck layer over sand and is found on the edges of the ridge. This profile is characteristic of seasonal water level inundations. Other notable muck soils around the ridge include Lauderhill (La), Okeelanta (Ok), and Plantation (Pm) which are eastern Everglades soils (Soil Conservation Service 1984). All are very poorly drained, nearly level soils.

**11. Is the property adjacent to an aquatic preserve or designated area of critical state concern?**

YES \_\_\_\_\_ NO  X

**If YES, please identify:**

**12. Was the property acquired by a conservation land acquisition program?**

YES  X  NO \_\_\_\_\_

**If YES, please identify.**

On May 15, 1987 the Broward County Commissioners and the Town of Davie submitted a joint application to the Conservation and Recreation Lands Trust (CARL) Fund under the Florida Department of Environmental Protection to provide matching funds for the purchase of the Pine Island Ridge. Together, the Town and County provided 14 acres toward the acquisition and the County contributed additional funds to make the grant match. The grant was approved with the State to reimburse the County \$3,566,349.31 transferring title to the State of Florida after the purchase. In March of 1988, 14 acres of the ridge were dedicated to the County to satisfy park impacts created by the development of Forest Ridge. At about the same time the County executed a lease purchase agreement to lease the property until purchasing it. The remaining ridge property was purchased in October 1989 for \$6,655,328.50. Title was given to the State of Florida. In July of 1995 a lease agreement was executed with Broward County for the management of the property for 50 years.

**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  X  NO  \_\_\_\_

**If YES, please identify:**

The title of the property is held by the Board of Trustees on the Internal Improvement Trust Fund of the State of Florida. Funding for the property was through the Conservation and Recreational Lands (CARL) program, Florida Recreation Development Assistance Program (FRDAP), Broward County Environmentally Sensitive Lands program, and land donations from both Broward County and the Town of Davie. It is managed by Broward County through a lease agreement (Lease #4005).

Section 253.034(4), Florida Statutes dictates that state-owned lands and their uses are administered by the Division of State Lands, Department of Environmental Protection. Broward County Parks and Recreation Division, as the managing agency for Pine Island Ridge site (Trustee Lease No. 4005, Broward County), is required to submit and coordinate site management plans through:

Bureau of Land Management Services  
Division of State Lands  
Department of Environmental Protection  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

Section 267.061, Florida Statutes and Chapter 872, Florida Statutes Chapter 267 is the primary historic preservation authority of the State with major responsibility given to the Division of Historical Resources in the Department of State. Chapter 872, F. S. protects human burials. Broward County Parks and Recreation Division, as the managing agency, is required to consult with the Division of Historical Resources before taking actions that may adversely affect archaeological or historic resources.

Florida Administrative Rule 18-4 establishes the responsibilities of the Land Management Advisory Council (LMAC) for the administration, management and protection of state-owned lands. Broward County Parks and Recreation Division, as the managing agency, must submit management plans for review and approval by this Committee.

There are several local agreements which contain constraints that will affect resource management decisions regarding the Pine Island Ridge site. They are as follows:

**The Town of Davie:** The site is located within the Town of Davie. One of the original four parcels of Pine Island Ridge was deeded to the Town of Davie for park impact fees for the development of the Forest Ridge Community. The parcel was donated as part of the CARL application to the State and is now considered State property.

**Forest Ridge Development:** A Tri-Party Agreement between the Town of Davie, Broward County, and Forest Ridge Development was executed as a condition of the sale of the property. This agreement restricts and prescribes certain activities on the site (Appendix F).

**Central Broward Drainage District:** Central Broward Drainage District maintains a canal on the southern edge of the site and owns an easement associated with that canal.

**14. Are there any reservations or encumbrances on the property?**

YES  X  NO  \_\_\_\_\_

**If YES, please identify:**

Central Broward Drainage District maintains a canal on the southern edge of the site and owns an easement associated with that canal.

**B. Natural and Cultural Resources**

**15. Are there any archeological or historical sites on this property?**

YES  X  NO  \_\_\_\_\_



**If YES,**

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

An in-depth investigation of the cultural resources of Pine Island Ridge, entitled Archaeological and Historic Survey of Pine Island, Broward County Florida (Carr 1986) was conducted in response to a proposal for development. This report serves as a reference for past research of the site.

Pine Island Ridge encompasses five archaeological sites researched and registered in the Florida Master Site File of the Florida Division of Historical Resources. Sites 8BD1114, Site 8BD1115, Site 8BD1116, Site 8BD1117, and Site 8BD1118 together total 5.04 acres.

In December 1995, Broward County entered into an agreement with the Archaeological and Historical Conservancy, Inc. (AHC) to supplement the original study, provide resource management recommendations, and serve as a consultant to assure the protection of the archaeological integrity of the site during the master planning process. The document entitled Archaeological and Historical Elements for the Management of Pine Island Ridge, Broward County, Florida (Carr 1996) was a product of this agreement.

**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.**

Any and all archaeological work performed on state-owned land requires a 1A-32 permit obtained from the Division of Historical Resources, Bureau of Archaeological Research.

Any proposed clearing or subsurface excavation, such as that involved in the process of exotic plant removal, planting, reforestation, and wetlands restoration, will be subject to review by the Division of Historic Resources and will be observed by an archeological monitor. Any proposed construction or improvements to the property will include consideration of the impacts to the archaeological resources. Projects that include construction of new structures, restrooms, utilities, irrigation systems, boardwalks, and trails will be properly reviewed, and in some situations, archaeological recovery, and/or monitoring may be required.

**16. Are there any buildings on the property that are fifty or more years old?**

YES  NO

**If YES, please identify:**

**A) Have these buildings been evaluated by a historian or historic architect to determine their historical and/or architectural significance. If YES, please identify both the building(s) and the evaluators(s):**

**B) Please state whether any such buildings are listed in the Florida Master Site File, National Register of Historic Places or a local register of historic places and identify such buildings.**

**17. Please identify natural resources on the property that are listed in the Florida Natural Areas Inventory.**

This site contains high ridge hammock, live oak and slash pine. This hammock is primarily described as xeric hammock.

**Xeric Hammock: (56.91 acres)**

Xeric Hammock is listed by FNAI as globally rare and imperiled in Florida. The xeric hammock at Pine Island Ridge is comprised of a closed canopy of South Florida slash pine, red bay (*Persea borbonia*), live oak, sabal palm (*Sabal palmetto*), saw palmetto (*Serenoa repens*), American beautyberry (*Callicarpa americana*), wild coffee (*Psychotria nervosa*), and Spanish moss (*Tillandsia usneoides*). Invasive plants such as bowstring hemp (*Dracaena hyacinthoides*), pothos (*Epipremnum pinnatum*), inchplant (*Tradescantia zebrina*) and others are also found throughout this plant community and impact the resources at varying levels. Protection and management efforts of this plant community will include removing non-native and inappropriate plant species and enhancing existing native xeric hammock vegetation.

Appendix K contains a map of the FNAI listed natural communities found on site. The remaining area of the property is classified as mowed area. This mowed area consists primarily of large slash pines and live oak. Gopher tortoises and their active burrows can be found both in the in the Xeric Hammock and the mowed area (Appendix M).

One hundred and seventy years ago, Pine Island was a sparsely vegetated island of slash pine and saw palmetto. At that time, one large oak hammock was noted along with several smaller ones by Major Kirby, who led part of the U.S. Army's attack on Pine Island in 1838 (Kirby 1838 in Carr 1986). The large live oaks, red bay, and slash pines are relics of the initial ridge vegetation. Because of unfavorable conditions caused by deep shade, competing vegetation, fire suppression, and regular mowing, slash pine will not regenerate naturally in most areas of the Ridge.

A list of the state listed species and FNAI listed species has been recorded on site (Appendix L). Plans to protect and preserve these natural resources have been implemented through a combination of strategies, including public education, signage, fencing, providing walking paths, and enforcement by park staff and City and County.

Information regarding natural resources or endangered species, is provided by Florida Natural Areas Inventory (FNAI):

Florida Natural Areas Inventory  
1018 Thomasville Road, Suite 200-C  
Tallahassee, Florida 32303  
(850) 224-8207

**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  X  NO  \_\_\_\_\_

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

Appendix L shows the plants and animals found on Pine Island Ridge site that are listed by various agencies including the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (FDACS), and the Florida Natural Areas Inventory (FNAI). Species listed by FNAI will be reported to them and updated periodically.

Federally listed species (USFWS) observed include grasshopper sparrow (*Ammodramus savannarum*). Gopher tortoises (*Gopherus polyphemus*) are currently a candidate species for federal listing. A remnant breeding population of gopher tortoises continue to use the sandy soils of the upland hardwood forest.

The grasshopper sparrow was noted in the first resource management plan completed in 1998. This migratory sparrow may have used the site as a foraging location during the winter. No evidence of nesting grasshopper sparrows has been recorded on site.

The gopher tortoise is listed due to habitat loss through habitat destruction, fragmentation, and degradation, particularly from urbanization and development. Land development for residential homes generally occurs in the same high, dry habitats that the tortoise prefers. Lack of appropriate land management (especially prescribed burning) has also contributed to population declines in areas where natural habitat remains. Additional threats include increased risk of road mortality due to fragmentation, particularly of females searching for suitable nest sites. Upper respiratory tract disease (URTD) also poses a potential threat to gopher tortoise populations as evidence suggests URTD may be partially responsible for declines in some populations (Enge et al. 2006). Gopher tortoises were legally harvested in the State of Florida until 1987. The most important ecological conditions associated with successful habitat occupancy are: (1) the presence of sandy, well drained soils for digging burrows, (2) early successional sere vegetation and open canopy and subcanopy to enhance vegetation growth, (3) availability of grasses and low growing herbaceous broadleaf plants for food and (4) sunny, bare sandy areas for nesting and thermoregulation. One of the greatest threats to the stability and survival of the local population is increased closure of subcanopy and groundcover vegetation and exotic encroachment.

Evidence of gopher tortoise activity has been documented (Appendix M) but the current status of the population is unknown. Potential habitat occurs on site but the amount and quality of utilized habitat and the health status of the population need to be determined. The understory should be kept open to provide appropriate habitat for their burrows. This includes treating invasive plants like inchplant and pothos which have blanketed understory areas throughout the site. Past gopher tortoise surveys were conducted and documented (Appendix M). In October of 2019, an inspection of the locations previously identified as active and designated “gopher tortoise habitat” was conducted and these still have active burrows. Additional active burrows were observed in 2019.

State listed animal species recorded for Pine Island Ridge include little blue heron (*Egretta caerulea*) and least tern (*Sterna antillarum*) both listed as threatened. These species may use the site for foraging and roosting. State-listed plants include the threatened satinleaf (*Chrysophyllum oliviforme*), giant sword fern (*Nephrolepis biserrata*), and Northern needleleaf (*Tillandsia balbisiana*), and the endangered cardinal airplant (*Tillandsia fasciculata*) and giant airplant (*Tillandsia utriculata*).

**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”.**

Water levels in surrounding canals and lakes are being maintained at an average of 1 meter (3 feet) above mean sea level. All open water bodies in Broward County are considered Class III waters with designated uses of recreation, propagation, and maintenance of healthy well-balanced population of fish and wildlife. No water bodies on this site are considered Outstanding Florida Waters.

There are two lakes on the western boundary of Pine island Ridge. An existing lake and marsh in Tree Tops Park may provide a water source for local wildlife in the southern portion of Pine Island Ridge.

**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?**

YES  NO

**If YES, please identify and provide locations of these resources on a map.**

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

YES  NO

**If YES, please describe.**

There have been 225 species observed in Pine Island Ridge including 57 butterflies, 18 reptiles, and 121 birds (Appendix H). Many of the species recorded on site in the 1980s and 1990s have been long extirpated from the site. Examples of this are white-tailed deer (*Odocoileus virginianus*) and wild turkey (*Meleagris gallopavo*). With the urbanization of the surrounding landscape, there is not enough habitat to support these species. Several songbirds, such as the painted bunting (*Passerina ciris*) and yellow-billed cuckoo (*Coccyzus americanus*), are likely still seasonal visitors to the site.

### **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 lease requires that Pine Island Ridge be used “only for the conservation and protection of natural and historical resources” and for resource-based activities and education compatible with this protection.

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

The goal for the management of Pine Island Ridge is to preserve (restore, enhance, and maintain) natural and cultural resources of this site, while providing opportunities for public enjoyment of the sites consistent with achieving preservation.

**Outcome 1: Ensure preservation of archaeological resources.**

- A. Maintain integrity of soil surface, using archeological monitors for any activities that may disturb the soil.
- B. Maintain integrity of vegetation.
- C. Secure from vandalism primarily through fencing.

**Outcome 2: Long-term existence and viability of functioning ecological associations and restoration of healthy vegetative structure.**

- A. Ongoing treatment and removal of exotic and invasive plant species in order to allow for recolonization of native species.
  - 1) Reduce coverage of invasive exotic species to less than 5% of total acreage.
  - 2) Inspect and retreat area once a year to prevent re-infestation and treat emergency flare ups of fast-growing species.

B. Monitor impact of management activities and public access on vegetative communities.

- 1) Describe changing vegetation communities in annual reports.
- 2) Preventing development through land preservation.

C. Restore and maintain oak hammock.

- 1) Remove invasive species from an area no larger than  $\frac{3}{4}$  of an acre.
- 2) Retreat the area within 6 months.
- 3) Assess if native plants are returning, continue to retreat every 6 months.
- 4) Assess if a planting plan is needed to boost native plant abundance.
- 5) Assess the canopy, analyzing whether it needs to be replaced, or will the native trees fill the openings over time.
- 6) Only when this area is in maintenance condition, move to the next area that needs treatment and repeat this process.

**Outcome 3: Long-term existence of listed species for which management is feasible.**

A. Guard against declines in populations of any listed species.

- 1) Record locations and distribution of listed plant species and gopher tortoises.
- 2) Survey listed species annually for changes in location, distribution, or percent coverage annually.
- 3) Maintain dead trees as perching snags for osprey and other birds of prey wherever possible.
- 4) Understory in gopher tortoise habitat will be kept open to provide appropriate habitat for their burrows.

B. Determine if the site is used by other listed species.

- 1) Document confirmed sightings of plants and animals on the site.

**Outcome 4: Provide viable habitat for non-listed wildlife species, thus enhancing species richness and abundance.**

A. Maintain habitat for all native species (raptorial birds, migratory birds, fossorial species), especially those species not able to thrive in the urban environment and are dependent on the site for existence.

- 1) Restore oak hammock by the removal of invasive species and planting native understory species as needed.
- 2) Monitor the density of the forest floor for potential vegetation management.
- 3) Monitor birds and butterflies annually.

B. Maintain site as a habitat free from unnatural predation and negative impacts from non-native species.

- 1) Record observations of feral and domestic animals such as feral cats and remove from site.

**Outcome 5: Integrate public use while providing ecological and cultural education opportunities such as access trails without impacting resources.**

- A. Provide linkage with Town of Davie's "Open Space Program Recreational Trail".
- B. Provide public access for ecological and cultural appreciation.

**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.**

Single  Multiple  use/s is/are:

Pine Island Ridge is managed as a multiple-use park. The overall management priority is protection, enhancement, and interpretation as an archaeological and ecological preserve. Secondly, the site is managed as a non-consumptive recreational, educational, and wildlife management area.

As stated in State Statute 253.034: "Multiple-use means the harmonious and coordinated management of timber, recreation, wildlife, forage, archaeological and historic sites, or water resources so that they are utilized in the combination that will best serve the people of the state, making the most judicious use of the land for some or all of these resources and giving consideration to the relative values of the various resources..." The archaeological significance of the property mandates consultation with the Florida Department of State, Division of Historical Resources. This agency must review and approve all plans for this site in accordance with Chapter 267 of the Florida Statutes.

(1) History of public use

During the time between the citrus operation and public ownership, the site was used by both equestrians and pedestrians. Existing grove roads were utilized for access.

On March 25, 1989, Davie voters approved a \$10-million bond issue to support the Town's Open Space Program including the acquisition of open space lands and the development of a recreational trail network. This network is designed to link all open space lands in Davie through a multi-use trail system which provides for bicyclists, pedestrians, and equestrians. The Pine Island Ridge is a key element in Davie's trail network.

In 1989, a Florida Recreation Development Assistance Program (FRDAP) grant was obtained through the Florida Department of Natural Resources to install an interpretive shelter, bridge improvements, a 2000 foot (600 m) bike path, a horse trail, and a 700 foot (215 m) woodchip foot trail. The paved bike and pedestrian trail constructed from Tree Tops Park onto Pine Island Ridge meets all American Disabilities Act (ADA)

requirements. The project cost was \$158,000, with \$106,000 supplied by the State. The shelter was removed in 2013 due to safety and liability concerns. The shelter had been constructed behind shrubs and trees that concealed it from view from the surrounding area. Vandalism and illicit activities were becoming increasingly common. The shelter is planned to be rebuilt in a more visible location (Appendix C) by 2022.

In March 1995, a 2,400 foot (730 m) equestrian trail was opened to the public. The equestrian trail linked Tree Tops park to the Town of Davie-owned Westridge property (Appendix C). Access points for the general public are through the north side of Tree Tops and on the western side to the Westridge property.

In 2005, additional improvements were completed including the extension of an existing paved, multi-purpose pathway, an interpretive kiosk, benches, a landscaped berm, and the installation of several slash pine saplings. The cost of these improvements was approximately \$83,000, funded through the 2000 Safe Parks and Land Preservation Bond funds.

Pine Island Ridge is part of the Great Florida Birding and Wildlife Trail, which is a collection of 510 sites throughout Florida selected for their excellent wildlife viewing opportunities. This 2000-mile, self-guided highway trail program's main goal is to encourage conservation of Florida's native habitats and species by promoting wildlife watching activities, conservation education, and economic opportunity.

(2) Current public use

Pine Island Ridge is adjacent to Tree Tops Park and is managed as an extension to this regional park. Public access is not restricted from the site and equestrians and pedestrians continue to use trails that pre-existed County management of the site.

Trails are located in less sensitive areas to minimize disturbances and negative impacts to valuable resources. Sensitive sites include historic gopher tortoise habitat (Appendix M) and archaeological resources.

**25. Were multiple uses considered but not adopted?**

YES  NO

**If YES, please describe why:**

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

No use of private land managers is needed for this leased property. Broward County Parks and Recreation oversees all management and restoration of these lands.



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

There is no potential currently identified for this property to generate significant revenue due to the sensitive nature and passive uses appropriate for the site.

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

During the time between the citrus operation and public ownership, the site was used by both equestrians and pedestrians. Existing grove roads were utilized for access. Current and projected uses of the property include biking, walking/jogging, nature observation, and education. Unauthorized uses of the property include dumping by neighbors, extra/unplanned horse trails, neighbors planting non-native plants on and mowing areas of the Pine Island Ridge, patrons setting-up party tents for family holiday festivities, patrons running their dogs without leashes, neighbors cutting fences to ride ATVs and golf carts through the site, and horses on the nature trails.

**29. Do the planned uses impact renewable and non-renewable resources on the property?**

YES \_\_\_\_\_ NO  X

**If YES, please describe what specific activities will be taken to protect or enhance and conserve those resources and to compensate/mitigate the damage that is caused by the impacting use.**

**30. Should any parcels of land within or adjacent to the property be purchased because they are essential to management of the property?**

YES  X  NO \_\_\_\_\_

There are parcels adjacent to Pine Island Ridge that if available, would enhance the property and expand portions of the ridge habitat that are protected. The 22-acre parcel owned by Pine Island Ridge Country Club on the north end of site and the 9-acre lake owned Central Broward Water Control District on the west side of Pine Island Ridge would both be suitable additions to the natural area.

**If YES, please attach a map of this area.**

See Appendix N.

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

YES \_\_\_\_\_ NO  X

**If YES, please attach a map of this area.**

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

In recognition of the sensitivity of the site, public utilization must remain limited to passive, non-consumptive recreation, environmental education, and scientific study. Pine Island Ridge is open dawn to dusk 365 days per year. Amenities include a paved pedestrian trail originating in Tree Tops Park with several trailheads at various points along the residential communities and several miles of woodchip nature trails and equestrian trails that link up to the Town of Davie trail system. Interpretive signage is placed at various locations throughout Pine Island Ridge along the trails.

**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.**

Not Applicable

**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.**

An ongoing issue is the non-native vegetation encroachment from both natural causes and from neighboring homeowners planting or dumping along the perimeter firebreaks. Pine Island Ridge contains 33 species that are categorized as Category I by the Florida Exotic Pest Plant Council (FLEPPC) of 2019. These species are all extremely disruptive to the maintenance of the structure and composition of natural vegetative types and need to be controlled as a very high priority. A total of 40 species are categorized as Category II. That is nearly half of all the Category II species on the FLEPPC list of 2019. These species are also disruptive to the vegetative structure and composition of the natural cover types, but are either more localized, or less numerous than those species in Category I. It is clear from the abundance, richness, and distribution of non-native and nuisance species at the Pine Island Ridge that an intensive program of non-native removal and control will be required in order to restore natural cover types on-site.

In 1996, Broward County contracted Environmental Management Services, Inc. to remove non-native plant species from the Pine Island Ridge site. The initial removal was completed in May at a cost of \$201,500. Follow-up herbicide treatment was completed at a cost of \$42,900 to insure maximum effectiveness. Since then, there has been limited effort to keep the site under maintenance. Parks staff conducted some maintenance in the early and mid 2000s but after the economic downturn began in 2008, park staff positions were reduced and staff maintenance in this area was generally limited to mowing. The Florida Fish and Wildlife Conservation Commission Invasive Plant Management Program funded air potato treatment of the Pine Island Ridge through the 2014 and 2015 funding cycles. This single

species effort and limited treatment by the Parks Maintenance Eradication Crew have not successfully addressed all of the non-native plant issues within this natural area. A new non-native maintenance plan will be needed to decide how to proceed in the future.

The old large pines on the ridge have been declining and dying over the years from the loss of natural vegetation at the base of the trees, increased mowing, lightning strikes, pine bark beetle, and the uniform old age of the trees. A total of 174 slash pines and live oaks of various sizes were planted in 2004 to mitigate for the loss of mature trees.

A significant issue at Pine island Ridge is the redbay ambrosia beetle (*Xyleborus glabratus*). This beetle has devastated the red bay populations at Pine Island Ridge and adjacent Tree Tops park. Managing this beetle is new to park staff and more research is needed to develop a management protocol for this issue. Broward County is working with an entomologist at the UF/IFAS North Florida Research and Education Center in Quincy to develop strategies to manage for the ambrosia beetle.

Another issue common in Broward County's natural areas is the weevil *Metamasius callizona* which affect the three species of bromeliad, giant airplant, cardinal airplant (*Tillandsia fasciculata*), and northern needleleaf (*T. balbisiana*) found on site. Along with the pine bark beetle, these species of plants should be monitored for infestation with these insects.

Enforcement of park rules on site and monitoring for undesirable activities such as ATV usage, dogs off leash, bonfires, dumping, and use after hours is an ongoing challenge. The multiple access points and linear character of this site make enforcement of this largely unstaffed natural area very difficult.

Another management issue is the three-strand wire fence that is required within the tri-party agreement (Appendix F). This fence is very easy to cut for illegal access and requires constant maintenance.

The tri-party agreement was created in 1988 and should be updated to address some of the issues mentioned above and address any issues or suggestions from the other parties.

The last significant issue is that realtors have allegedly used Pine Island Ridge as a selling point and falsely telling homeowners they will have access to the Ridge at any time for any purpose. Many neighbors of Pine Island Ridge have shared with staff that when they purchased their house, they were told by the realtor that they can use the Ridge for any activity they wish. This creates a serious conflict of expectations between park staff and the neighbors.

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

YES  NO

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

Park maintenance staff has mechanically and chemically treated the invasive plant species on the property. Additional measures need to be taken to control for invasive plants including obtaining grants and contracts. The park maintenance staff does not have the resources to significantly reduce the invasive plants at the park. Educating the public and neighbors of the necessity to remove invasive species and to not plant any landscaping material within the natural area is an integral component of control.

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

YES  X  NO    

**If YES, please describe.**

On December 4, 2019, the Urban Wilderness Advisory Board (UWAB) appointed by the Broward County Commission reviewed and approved this plan, with edits, for the final submission to the State.

**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.**

No arthropod control plan exists specifically for this site. The Mosquito Control Section within the Broward County Highway and Bridge Maintenance Division is responsible for mosquito population control in the County. The Section does not currently target natural areas for mosquito treatment. However, neighborhoods adjacent to natural areas receive the periodic preventive aerial spraying for mosquito larvae during daylight hours. The mosquito larvicide has an active ingredient of *Bacillus thuringiensis israelensis* (Bti, strain AM65-52), a biodegradable bacterial mosquito larvicide. Along with this, the Section works with Florida Department of Health and Code Enforcement partners in Broward's 31 municipalities to manage surrounding mosquito populations through the following:

- 1) Conducting door-to-door backpack spraying.
- 2) Draining standing water where possible.
- 3) Treating standing water with long-lasting larvicide.
- 4) Setting up mosquito traps.
- 5) Sampling adult mosquitos to gauge effectiveness of the above-mentioned treatments.

Broward County Mosquito Control Section also treats areas of the County based on requests received from residents.

**39. Management Goals – The following 8 goals may not all be applicable to your site. Write NOT APPLICABLE where appropriate. Also, please add as many goals, objectives, and measures as you wish.**

*Table 1. Management Goals*

Core Objectives	Measure	Timeframe 2 yrs = Short Term 10 yrs = Long Term	Expenses and Manpower Budget
<p><b>1</b></p> <p><b><u>Habitat restoration and improvement (Description):</u></b></p> <ul style="list-style-type: none"> <li>Continue hammock maintenance preservation and planting programs.</li> </ul>			
Prescribe burn <u>N/A</u> acres per year	<u>N/A</u> acres burned per year	Within 2 yrs ___ Within 10 yrs __	Expense \$ _____ Personnel \$ _____
Maintain <u>N/A</u> acres per year within target fire return interval.	<u>N/A</u> acres within fire return interval target	Within 2 yrs ___ Within 10 yrs __	Expense \$ _____ Personnel \$ _____
Conduct natural community improvements in hammock habitats on <u>10</u> acres	<u>10</u> acres	Within 2 yrs ___ Within 10 yrs <u>X</u>	Expense \$ <u>270,000</u> Personnel \$ _____
Conduct timber harvest for the purposes of habitat restoration on <u>N/A</u> acres	<u>N/A</u> acres harvested	Within 2 yrs ___ Within 10 yrs __	Expense \$ _____ Personnel \$ _____

2	<b>Public Access and recreational opportunities (Description):</b>		
	<ul style="list-style-type: none"> <li>Continue to provide public use while providing ecological and cultural education opportunities such as access, trails without impacting resources.</li> <li>Future improvements and renovations will be constructed to avoid and minimize impact on native plants and animals, including listed species.</li> </ul>		
	Maintain public access and recreational opportunities to allow for a carrying capacity of 100 visitors/day	<u>100</u> Visitor opportunities /day	Within 2 yrs <input checked="" type="checkbox"/> Within 10 yrs <input type="checkbox"/> Expense \$ _____ annually Personnel \$ <u>N/A</u>
	Develop additional public access and recreational opportunities to allow for a carrying capacity of <u>N/A</u> visitors/day	<u>N/A</u> Visitor opportunities /day	Within 2 yrs <input type="checkbox"/> Within 10 yrs <input type="checkbox"/> Expense \$ <u>N/A</u> Personnel \$ <u>N/A</u>
	Continue to provide and maintain: <u>8</u> educational signage throughout the park.	<u>8</u> educational signage	Within 2 yrs <input type="checkbox"/> Within 10 yrs <input checked="" type="checkbox"/> Expense \$ <u>3,000</u> Personnel \$ <u>N/A</u>
	Develop <u>1</u> new interpretive/education programs	<u>1</u> interpretive/education programs	Within 2 yrs <input checked="" type="checkbox"/> Within 10 yrs <input type="checkbox"/> Expense \$ _____ Personnel \$ <u>200</u>
3	<b>Hydrological preservation and restoration (Description):</b>		
	Conduct or obtain a site assessment/study to identify potential hydrology restoration needs <u>N/A</u>	Assessment Conducted? <u>N/A</u>	Within 2 yrs <input type="checkbox"/> Within 10 yrs <input type="checkbox"/> Expense \$ _____ Personnel \$ _____

	Restore natural hydrologic condition and functions to <u>N/A</u> acres on site	<u>      </u> acres for which hydrologic restoration is underway (planning, grant writing, earth moving, etc.)	Within 2 yrs <u>  </u> Within 10 yrs <u>  </u>	Expense \$ <u>                  </u> Personnel \$ <u>                  </u>
<b>4</b>	<b><u>Sustainable forest management (Description):</u></b>			
	<u>N/A</u>			
	Prepare & implement a silviculture management plan including reforestation, harvesting, prescribed burning, restoration, and timber stand improvement activities and goals. <u>N/A</u>	Silviculture management plan complete? Y <u>  </u> N <u>  </u>  <u>N/A</u> acres treated	Within 2 yrs <u>  </u> Within 10 yrs <u>  </u>	Expense \$ <u>                  </u> Personnel \$ <u>                  </u>
	Develop and implement a process for conducting stand descriptions and forest inventory including a GIS database containing forest stands, roads & other attributes (including but not limited to: threatened & endangered species, archeological resources, exotic species locations, historical areas) <u>N/A</u>	Complete GIS database and re-inventory all attributes every 3-5 years or as needed.	Within 2 yrs <u>  </u> Within 10 yrs <u>  </u>	Expense \$ <u>                  </u> Personnel \$ <u>                  </u>
		<u>N/A</u> acres of forest inventoried annually	Within 2 yrs <u>  </u> Within 10 yrs <u>  </u>	Expense \$ <u>                  </u> Personnel \$ <u>                  </u>
<b>5</b>	<b><u>Exotic and invasive species maintenance and control (Description):</u></b>			

Broward County and contractors have treated or hand bagged and removed Pothos ( <i>Epipremnum pinnatum</i> ), Carrotwood ( <i>Cupaniopsis anacardioides</i> ), Air potato vine ( <i>Dioscorea Bulbifera</i> ) Winged yam ( <i>Dioscorea alata</i> ), Cat's claw vine ( <i>Macfadyena unguis-cati</i> ), Shoebuttan ardisia ( <i>Ardisia elliptica</i> ), Surinam cherry ( <i>Eugenia uniflora</i> ), Bowstring hemp ( <i>Dracaena hyacinthoides</i> ), Oyster plant ( <i>Tradescantia spathacea</i> ), Arrowhead vine ( <i>Syngonium podophyllum</i> ), Brazilian jasmine ( <i>Jasminum sambac</i> ), Earleaf acacia ( <i>Acacia auriculiformis</i> ), Bishopwood ( <i>Bischofia javanica</i> ), Brazilian pepper ( <i>Schinus terebinthifolius</i> ).			
Annually treat <u>12</u> acres of EPPC Category I and Category II invasive exotic plant species.	<u>24</u> acres treated	Within 2 yrs <u>X</u> Within 10 yrs <u>  </u>	Expense \$ <u>50,000</u> Personnel \$ <u>          </u>
Implement control measures on <u>N/A</u> exotic and nuisance animal species	<u>N/A</u> nuisance and exotic species for which control measures are implemented	Within 2 yrs <u>  </u> Within 10 yrs <u>  </u>	Expense \$ <u>          </u> Personnel \$ <u>          </u>
<b>6 <u>Capital facilities and infrastructure</u></b>			
<b>Description-</b> Infrastructure for Pine Island Ridge that needs to be maintained include including public education signage, fencing, walking paths and enforcement by park staff and City and County.			
<b>Proposed improvements to Pine island Ridge:</b> Shelter			
To maintain <u>9</u> facilities (Interpretive signs and kiosk), <u>N/A</u> miles of roads, and <u>2</u> miles of trails existing on site, including bridges (as applicable)	<u>9</u> facilities, <u>N/A</u> miles roads, <u>2</u> miles trails maintained	Within 2 yrs <u>  </u> Within 10 yrs <u>X</u>	Expense \$ <u>          </u> Personnel \$ <u>3,000</u>
To construct <u>N/A</u> parking lot, <u>1</u> facilities, <u>N/A</u> miles of roads, and <u>N/A</u> miles of trails (as applicable)	<u>N/A</u> facilities, <u>      </u> miles roads, <u>      </u> miles trails constructed	Within 2 yrs <u>  </u> Within 10 yrs <u>_x_</u>	Expense \$ <u>60,000</u> Personnel \$ <u>          </u>



	To improve or repair <u>0</u> facilities. <u>0</u> miles of roads, and <u>0</u> miles of trails existing on site	<u>0</u> facilities, <u>0</u> miles roads, <u>0</u> miles trails improved or repaired	Within 2 yrs <u>   </u> Within 10 yrs <u>   </u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>
<b>7</b>	<b><u>Cultural and historical resources</u></b>			
	Ensure all known sites are recorded in the FL Division of Historical Resources Master Site file <u>completed</u>	<u>5</u> of recorded sites	Within 2 yrs <u>   </u> Within 10 yrs <u>X</u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>
	Monitor <u>5</u> recorded sites and send updates to DHR Master Site file as needed	<u>5</u> of sites monitored	Within 2 yrs <u>   </u> Within 10 yrs <u>   </u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>
	Bring <u>   </u> of <u>   </u> recorded sites/cultural resources into good condition <u>N/A</u>	<u>   </u> of sites in good condition	Within 2 yrs <u>   </u> Within 10 yrs <u>   </u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>
<b>8</b>	<b><u>Imperiled species habitat maintenance, enhancement, restoration, or population resto</u></b>			
	<b>Description-</b> Continued monitoring for endangered species on the site. No additional management activities are required.			
	Develop baseline imperiled species occurrence inventory list <u>Completed</u>	Baseline imperiled species occurrence inventory list complete Y <u>X</u> N <u>   </u>	Within 2 yrs <u>   </u> Within 10 yrs <u>   </u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>
	Develop monitoring protocols for <u>   </u> selected imperiled species <u>N/A</u>	<u>N/A</u> imperiled species for which monitoring protocols are developed	Within 2 yrs <u>   </u> Within 10 yrs <u>   </u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>
	Implement monitoring protocols for <u>   </u> imperiled species <u>N/A</u>	<u>N/A</u> species for which monitoring is ongoing	Within 2 yrs <u>   </u> Within 10 yrs <u>   </u>	Expense \$ <u>                    </u> Personnel \$ <u>                    </u>

<p>[If applicable, provide additional measurable objective(s) for new or ongoing species-specific management activities for each of the priority species such as population augmentation, translocations, nest box projects, etc.]</p>	<p>Examples: Project-specific quantity, <u>N/A</u> of nest boxes, # of individuals introduced or trans-located, etc.</p>	<p>Within 2 yrs _____  Within 10 yrs _____</p>	<p>Expense  \$ _____  Personnel  \$ _____</p>
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**40. Costs**

Table 2. Estimated Costs

Activity	Yearly Estimated		
	Priority Cost	Other Management Cost	Cost Effective
Resource Management	\$27,000 Annual Habitat restoration and improvement		
Administration	\$6,500		
Support			
Capital Improvements	\$300/yr 10 years = \$60,000		
Recreation Visitor Services	\$1,350		
Law Enforcement Activities	\$1,700		

**41. A finding regarding whether each planned use conforms to the appropriate policies and guidelines of the State Lands Management Plan is required. The Plan can be found at <http://www.dep.state.fl.us/lands/oes/slmp.pdf>, by writing to the State of Florida Department of Environmental Protection, Division of State Lands, Office of Environmental Services, 3900 Commonwealth Boulevard, Mail Station 140, Tallahassee, Florida 32399-3000, or by calling (850) 245-2784. Does this plan conform to the State Lands Management Plan?**

YES  X  NO  \_\_\_

**42. Please provide the following contact information below:**

Name:	Michel Therrien
Managing Agency:	Broward County Division of Parks and Recreation
Address:	950 NW 38th Street Oakland Park, FL 33309
Phone:	954-357-8149

Email Address:	mtherrien@broward.org
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Date Management Plan Prepared: \_\_\_\_\_

Please send this completed form to:

avis.lockett@dep.state.fl.us

Or to

Division of State Lands

D.E.P. M.S. 140

3900 Commonwealth Blvd.

Tallahassee Fl. 32399-3000

850-245-4562

## E. Works Cited

Broward County Parks and Recreation Division. 1999. Resource Management Plan for Pine Island Ridge Natural Area. Oakland, Park Florida.

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**Appendix A: *Pine Island Ridge Lease 4005***

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND  
OF THE STATE OF FLORIDA

LEASE AGREEMENT

PINE ISLAND RIDGE

Lease No. 4005

THIS LEASE AGREEMENT, made and entered into this 12<sup>TH</sup> day of July 1995, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA hereinafter referred to as "LESSOR," and BROWARD COUNTY, hereinafter referred to as "LESSEE."

LESSOR, for and in consideration of mutual covenants and agreements hereinafter contained, does hereby lease to said LESSEE, the lands described in paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Environmental Protection.
2. DESCRIPTION OF PREMISES: The property subject to this lease, is situated in the County of Broward, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".
3. TERM: The term of this lease shall be for a period of fifty years commencing on the date of execution of this Agreement by the second signatory party of the parties hereto ("the effective date") and ending at the end of the fiftieth (50) year from that effective date, unless sooner terminated pursuant to the provisions of this lease.
4. PURPOSE: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and for resource based public outdoor activities and education which are compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), Florida Statutes, along with other related uses

necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 8 of this lease.

LESSEE may make improvements upon the leased premises which are consistent with the use of the leased premises as environmentally sensitive lands (i.e., benches, trails and similar passive improvements) provided, however, that any improvements made to the leased premises shall require the consent of the Division of State Lands, Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. Such consent shall not be unreasonably withheld. Any such consent shall not affect the restriction that the leased premises may only be used as a passive park to protect environmentally sensitive lands. In the event the LESSEE should use the leased premises for purposes other than environmentally sensitive lands, then this lease shall be deemed expired and the leased premises shall be immediately surrendered to the LESSOR.

5. QUIET ENJOYMENT AND RIGHT OF USE: LESSEE shall have the right of ingress and egress to, from and upon the leased premises for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

6. UNAUTHORIZED USE: LESSEE shall, through its agents and employees, prevent the unauthorized use of the leased premises or any use thereof not in conformity with this lease.

7. ASSIGNMENT: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR, which consent shall not be unreasonably withheld. Any assignment made either in whole or in part without the prior written consent of LESSOR shall be void and without legal effect.

8. MANAGEMENT PLAN: LESSEE shall prepare and submit a Management Plan for the leased premises in accordance with Chapters 18-2 and 18-4, Florida Administrative Code, within 12 months of the effective date of this lease. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands. The leased premises shall not be developed or physically altered in any way other than what is necessary for



security and maintenance of the leased premises including, but not limited to, fencing, signage, debris removal and unsafe structures removal without the prior written approval of LESSOR until the Management Plan is approved. LESSEE shall provide LESSOR with an opportunity to participate in all phases of preparing and developing the Management Plan for the leased premises. The Management Plan shall be submitted to Lessor in draft form for review and comments within ten months of the effective date of this lease. LESSEE shall give LESSOR reasonable notice of the application for and receipt of any state, federal or local permits as well as any public hearings or meetings relating to the development or use of the leased premises. LESSEE shall not proceed with development of said leased premises including, but not limited to, funding, permit applications, design or building contracts until the Management Plan required herein has been submitted and approved. Any financial commitments made by LESSEE which are not in compliance with the terms of this lease shall be done at LESSEE'S own risk. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR at least every five (5) years. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

9. EASEMENTS: All easements including, but not limited to, utility easements are expressly prohibited without the prior written approval of LESSOR. Any easement not approved in writing by LESSOR shall be void and without legal effect.

10. SUBLEASES: This lease is for the purposes specified herein and subleases of any nature are prohibited without the prior written approval of LESSOR, which approval shall not be unreasonably withheld. Any sublease not approved in writing by LESSOR shall be void and without legal effect.

11. RIGHT OF INSPECTION: LESSOR or its duly authorized agents, representatives or employees shall have the right to reasonably inspect the leased premises and the works and operations of LESSEE in any matter pertaining to this lease.

12. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures and improvements shall be constructed in accordance with plans that are in accordance with the approved Management Plan or shall require the prior written approval of LESSOR as to purpose, location and design which approval shall not be unreasonably withheld. Further, no trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE before or upon termination of this lease.

13. INSURANCE REQUIREMENTS: During the term of this lease LESSEE shall procure and maintain policies of fire, extended risk, and liability insurance coverage. The extended risk and fire insurance coverage shall be in an amount equal to the full insurable replacement value of any improvements or fixtures located on the leased premises. The liability insurance coverage shall be in amounts not less than \$100,000.00 per occurrence and \$200,000.00 per accident for personal injury, death, and property damage on the leased premises. Such policies of insurance shall name LESSOR, the State of Florida and LESSEE as co-insureds. LESSEE shall submit written evidence of having procured all insurance policies required herein prior to the effective date of this lease and shall submit annually thereafter, written evidence of maintaining such insurance to the Bureau of Land Management Services, 3900 Commonwealth Boulevard, Tallahassee, Florida

32399. LESSEE shall purchase all policies of insurance from a financially-responsible insurer duly authorized to do business in the State of Florida. Any certificate of self-insurance shall be issued or approved by the Insurance Commissioner, State of Florida. The certificate of self-insurance shall provide for casualty and liability coverage. LESSEE shall immediately notify LESSOR and the insurer of any erection or removal of any building or other improvement on the leased premises and any changes affecting the value of any improvements and shall request the insurer to make adequate changes in the coverage to reflect the changes in value. LESSEE shall be financially responsible for any loss due to failure to obtain adequate insurance coverage, and the failure to maintain such policies or certificate in the amounts set forth shall constitute a breach of this lease.

14. LIABILITY: Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents thereof. Nothing herein shall be construed as an indemnity or a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims.

15. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay all taxes, assessments, liens or other similar liabilities that accrue to the leased premises or to the improvements thereon arising after this lease commences including any and all ad valorem taxes and drainage and special assessments or personal property taxes of every kind and all construction or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises subsequent to the effective date of this lease. In no event shall the LESSEE be held liable for such liabilities which arose prior to the effective date of this lease.

16. NO WAIVER OF BREACH: The failure of LESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease shall not be construed as a waiver of such covenants, terms or

conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by LESSOR.

17. TIME: Time is expressly declared to be of the essence of this lease.

18. NON DISCRIMINATION: LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

19. UTILITY FEES: LESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased premises and for having the utilities turned off when the leased premises are surrendered.

20. MINERAL RIGHTS: This lease does not cover petroleum or petroleum products or minerals and does not give the right to LESSEE to drill for or develop the same.

21. RIGHT OF AUDIT: LESSEE shall make available to LESSOR all financial and other records relating to this lease, and LESSOR shall have the right to audit such records at any reasonable time during the term of this lease. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to the provisions of Chapter 119, Florida Statutes.

22. CONDITION OF PREMISES: LESSOR assumes no liability or obligation to LESSEE with reference to the conditions of the leased premises. The leased premises herein are leased by LESSOR to LESSEE in an "as is" condition, with LESSOR assuming no responsibility for the care, repair, maintenance or improvement of the leased premises for the benefit of LESSEE.

23. COMPLIANCE WITH LAWS: LESSEE agrees that this lease is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

24. NOTICE: All notices given under this lease shall be in writing and shall be served by certified mail including, but not limited to, notice of any violation served pursuant to 253.04, Florida Statutes, to the last address of the party to whom notice is to be given, as designated by such party in writing. LESSOR and LESSEE hereby designate their address as follows:

LESSOR: Department of Environmental Protection  
Division of State Lands  
Bureau of Land Management Services  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399

LESSEE: Broward County  
County Administrator  
115 South Andrews Avenue  
Room 409  
Fort Lauderdale, Florida 33301

25. BREACH OF COVENANTS, TERMS, OR CONDITIONS: Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty (60) days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty (60) days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

26. DAMAGE TO THE PREMISES: (A) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (B) Lessee shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants or pollution, including, but not limited to, hazardous or toxic substances, chemicals or

other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant.

"Pollutants" and "pollution" shall mean those products or substances defined in Florida Statutes, Chapter 376 and Chapter 403 and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE's obligations set forth in this paragraph shall survive the termination or expiration of this lease. This paragraph shall not be construed as a limitation upon LESSEE's obligations regarding indemnification and payment of costs and fees as set forth in Paragraph 14 of this lease, nor upon any other obligations or responsibilities of LESSEE as set forth herein. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by

governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE's activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production, placement, treatment, release or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting period of the applicable agency. This paragraph shall not be deemed to apply to any conditions existing prior to the effective date of this lease.

27. SURRENDER OF PREMISES: Upon termination or expiration of this lease, LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, LESSEE shall give written notification to the Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399 at least six (6) months prior to the release of any or all of the leased premises. Notification shall include a legal description, this lease number, and an explanation of the release. The release shall only be valid if approved by LESSOR through the execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon termination or expiration of this lease, all permanent/capital improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any permanent/capital improvements upon termination of this lease shall be at LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises a representative of the Division of State Lands shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division.

28. BEST MANAGEMENT PRACTICES: LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed, or approved by LESSOR or other land managing agencies for the protection and enhancement of the leased premises.

29. PUBLIC LANDS ARTHROPOD CONTROL PLAN: LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

30. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the leased premises or against any interest of LESSOR therein.

31. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this lease shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

32. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Chapters 18-2 and 18-4, Florida Administrative Code, shall be reviewed by the Division of Historical Resources to insure that adequate



measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

33. SOVEREIGNTY SUBMERGED LANDS: This lease does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

34. FOUR ORIGINALS: This lease is executed in a total of 4 originals each of which shall be considered an original for all purposes.

35. ENTIRE UNDERSTANDING: This lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of the parties hereto with the same formality as this lease.

36. MAINTENANCE OF IMPROVEMENTS: LESSEE shall maintain the real property contained within the leased premises and the improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the leased premises free of trash or litter, meeting all building and safety codes for the location situated, maintaining the planned improvements as set forth in the approved Management Plan and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease, reasonable wear and tear excepted; provided, however, that any removal, closure, etc, of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, enhancement, or safety of the natural and historical resources within the leased premises and with the approved Management Plan.

37. GOVERNING LAW: This lease shall be governed by and interpreted according to the laws of the State of Florida.

38. SIGNS: LESSEE shall ensure that the area is identified as being publicly owned and operated as a public facility to protect environmentally sensitive lands in all signs, literature

and advertising. If federal grants or funds are used by LESSEE for any project on the leased premises LESSEE shall erect signs identifying the leased premises as a federally assisted project.

39. SECTION CAPTIONS: Articles, subsections and other captions contained in this lease are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease or any provisions thereof.

40. ADMINISTRATIVE FEE: LESSEE shall pay LESSOR an annual administrative fee of \$300.00. The initial annual administrative fee shall be payable within 30 days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from October 1 to September 30. Each annual payment thereafter shall be due and payable on October 1 of each subsequent year.

IN WITNESS WHEREOF, the parties have caused this lease to be executed on the day and year first above written.

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

David B. Stevenson

Witness

DAVID B. STEVENSON

Print/Type Witness Name

Karen Lee Garrison

Witness

Karen Lee Garrison

Print/Type Witness Name

BY: Daniel T. Crabb (SEAL)

CHIEF, BUREAU OF LAND MANAGEMENT SERVICES, DIVISION OF STATE LANDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 12<sup>th</sup> day of July 1995, by Daniel T. Crabb, as Chief, Bureau of Land Management Services, Division of State Lands, Department of Environmental Protection, acting as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

Patricia Toloday  
Notary Public, State of Florida

(SEAL)

PATRICIA TOLODAY  
Print/Type Notary Name

Commission Number:

My Commission Expires:


OFFICIAL NOTARY SEAL  
PATRICIA TOLODAY  
NOTARY PUBLIC STATE OF FLORIDA  
COMMISSION NO. CC1699  
MY COMMISSION EXP. APR. 18, 1996

Approved as to Form and Legality

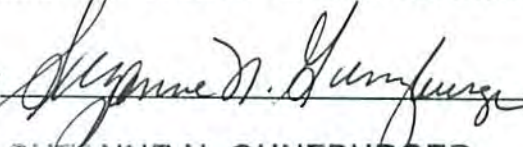
By: Suzanne Davis 7/6/95  
DEP Attorney

COUNTY

ATTEST:

  
\_\_\_\_\_  
County Administrator and  
Ex-Officio Clerk of  
the Board of County  
Commissioners of Broward  
County, Florida


BROWARD COUNTY, through its  
BOARD OF COUNTY COMMISSIONERS

By   
\_\_\_\_\_  
SUZANNE N. GUNZBURGER  
Print/Type Name

Its: Chair

(SEAL)

Approved as to form by  
Office of County Attorney  
Broward County, Florida  
JOHN J. COPELAN, JR., County  
Attorney, Governmental Center,  
Suite 423, 115 South Andrews  
Avenue, Fort Lauderdale, Florida  
33301  
Telephone: (305) 357-7600  
Telecopier: (305) 357-7641

By   
\_\_\_\_\_  
Patrice M. Eichen  
Assistant County Attorney

STATE OF FLORIDA  
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me this  
27<sup>th</sup> day of June 1995, by SUZANNE N. GUNZBURGER as  
Chair, Board of County  
Commissioners of Broward County, Florida, who is/are personally  
known to me or who has produced \_\_\_\_\_ as  
identification.

(SEAL)

  
\_\_\_\_\_  
Notary Public, State of Florida

\_\_\_\_\_  
Print/Type Notary Name

Commission Number: \_\_\_\_\_

My Commission Expires:



## EXHIBIT "A"

## LEGAL DESCRIPTION OF THE LEASED PREMISES

## PARCEL 1:

A portion of Section 20, Township 50 South, Range 41 East, Broward County, Florida, described as follows:

COMMENCING at the Southwest corner of said Section 20; thence along the West line of said Section 20, North 02° 09' 26" West, 882.89 feet; thence East 1802.72 feet to the POINT OF BEGINNING; thence South 80° 53' 02" East, 271.36 feet; thence North 80° 07' 02" East, 96.14 feet; thence North 70° 20' 55" East, 121.52 feet; thence South 40° 49' 39" East, 310.26 feet; thence South 63° 20' 59" East, 86.14 feet; thence South 82° 07' 28" East, 208.54 feet; thence North 81° 44' 58" East, 143.15 feet; thence North 46° 42' 28" East, 66.29 feet; thence North 62° 38' 59" East, 175.15 feet; thence South 89° 37' 46" East, 78.13 feet; thence North 76° 42' 54" East, 193.70 feet; thence North 65° 27' 19" East, 143.45 feet; thence North 49° 43' 32" East, 173.17 feet; thence North 37° 11' 45" East, 99.41 feet; thence North 55° 06' 31" East, 148.91 feet; thence North 18° 29' 09" West, 34.92 feet; thence North 52° 46' 56" East, 340.83 feet; thence North 39° 11' 53" East, 22.47 feet to a point hereinafter referred to as Point "A", said point lying on the arc of a non-tangent curve, concave to the Northeast (a radial line through said point bears North 56° 24' 44" East); thence Northwesterly along the arc of said curve, having a radius of 1150.00 feet, a delta of 19° 34' 36", an arc distance of 392.93 feet; thence South 54° 55' 59" West, 194.61 feet; thence South 55° 52' 26" West, 289.40 feet; thence South 62° 19' 23" West, 185.63 feet; thence South 48° 14' 07" West, 307.35 feet; thence South 84° 58' 22" West, 252.28 feet; thence South 78° 53' 36" West, 271.07 feet; thence North 51° 53' 22" West, 138.59 feet; thence North 70° 46' 56" West, 211.37 feet; thence North 76° 00' 34" West, 115.81 feet; thence North 06° 26' 57" East, 159.33 feet; thence North 24° 52' 32" West, 247.78 feet; thence North 36° 08' 36" West, 527.41 feet; thence North 45° 06' 01" West, 157.98 feet; thence North 34° 22' 40" West, 710.25 feet; thence South 70° 41' 41" West, 235.09 feet; thence South 14° 54' 09" East, 342.63 feet; thence South 84° 14' 35" East, 86.11 feet; thence South 01° 10' 56" West, 169.85 feet; thence South 14° 10' 34" West, 133.23 feet; thence South 32° 36' 11" East, 148.66 feet; thence North 89° 55' 52" East, 217.11 feet; thence South 28° 22' 52" East, 267.21 feet; thence South 29° 26' 03" East, 332.96 feet; thence South 06° 46' 20" West, 227.59 feet; thence South 87° 41' 18" West, 141.12 feet; thence North 76° 25' 44" West, 117.33 feet; thence North 87° 46' 40" West, 153.59 feet; thence North 00° 43' 20" West, 353.74 feet; thence North 50° 07' 56" West, 125.51 feet; thence North 03° 42' 55" West, 197.23 feet; thence North 36° 30' 04" West, 95.50 feet; thence North 20° 40' 09" West, 556.89 feet; thence North 31° 54' 54" West, 168.38 feet; thence North 15° 29' 25" West, 124.84 feet; thence North 66° 32' 07" East, 188.26 feet; thence North 38° 35' 09" West, 472.40 feet; thence North 03° 13' 36" East, 126.52 feet; thence North 26° 14' 51" East, 317.10 feet; thence North 34° 38' 46" East, 204.05 feet; thence North 01° 33' 04" East, 448.75 feet; thence North 19° 57' 02" West, 227.76 feet; thence North 08° 23' 50" West, 191.04 feet; thence North 04° 49' 20" West, 207.37 feet; thence North 36° 58' 18" West, 305.40 feet; thence North 55° 40' 04" West, 158.21 feet; thence South 88° 08' 50" West 124.84 feet; thence South 33° 27' 42" East, 194.89 feet; thence North 85° 42' 26" East, 78.00 feet; thence South 25° 33' 08" East, 377.67 feet; thence South 85° 30' 42" West, 230.48 feet; thence South 03° 54' 20" West, 203.62 feet; thence South 19° 33' 09" East, 139.73 feet; thence South 08° 59' 46" East, 166.54 feet; thence South 07° 59' 36" West, 205.96 feet; thence South 16° 12' 46" East, 107.39 feet; thence South 47° 01' 28" West, 107.34 feet; thence South 49° 35' 17" West, 183.80 feet; thence South 80° 27' 53" West, 63.41 feet; thence South 10° 50' 36" East, 175.40 feet; thence South 20° 55' 40" East, 76.71 feet; thence South 30° 17' 54" West, 173.51 feet; thence South 40°

10' 08" West, 110.09 feet; thence South 82° 18' 52" West, 39.43 feet; thence North 53° 59' 07" West, 196.96 feet; thence South 59° 34' 21" West, 123.56 feet; thence South 02° 09' 26" East, 196.73 feet; thence South 63° 05' 52" East, 111.92 feet; thence South 47° 22' 03" East, 247.10 feet; thence South 49° 11' 33" East, 165.12 feet; thence South 85° 47' 54" East, 142.16 feet; thence South 46° 26' 50" East, 355.85 feet; thence South 22° 40' 02" East, 236.13 feet; thence South 22° 30' 10" East, 188.07 feet; thence South 31° 12' 15" West, 111.37 feet; thence South 02° 40' 22" West, 107.83 feet; thence South 27° 04' 40" East, 139.19 feet; thence South 02° 30' 59" East, 274.15 feet; thence South 32° 15' 08" East, 196.63 feet; thence South 61° 11' 38" West, 156.61 feet; thence South 89° 55' 33" West, 393.58 feet; thence South 28° 46' 40" West, 165.88 feet; thence South 68° 59' 11" West, 108.13 feet; thence East 1505.98 feet; thence South 82.95 feet to the POINT OF BEGINNING. Less and except the 15 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the West 15 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida. Also less and except the 20 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the North 20 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida. Also less and except the 40 foot road right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida being 20 feet on each side of the North line of the Southwest quarter of Section 20, Township 50 South, Range 41 East, Broward County, Florida.

PARCEL 2:

A portion of Section 20, Township 50 South, Range 41 East, Broward County, Florida, described as follows:

Commencing at the Southwest corner of said Section 20; thence along the West line of said Section 20, North 02 degrees 09 minutes 26 seconds West, 560.61 feet to the Point of Beginning; thence continue along said West line, North 02 degrees 09 minutes 26 seconds West, 383.38 feet; thence South 89 degrees 41 minutes 34 seconds East, 238.71 feet; thence North 68 degrees 59 minutes 11 seconds East, 64.64 feet; thence East, 1,505.98 feet; thence South 82.95 feet; thence South 04 degrees 15 minutes 31 seconds East, 131.04 feet; thence South 36 degrees 41 minutes 05 seconds East, 153.80 feet; thence South 04 degrees 30 minutes 32 seconds East, 191.21 feet; thence South 00 degrees 02 minutes 11 seconds West, 389.60 feet to a point on the South line of said Section 20; thence along said South line South 88 degrees 32 minutes 28 seconds West, 185.31 feet; thence North 04 degrees 05 minutes 00 seconds East, 176.68 feet; thence North 03 degrees 23 minutes 15 seconds West, 180.34 feet; thence North 34 degrees 18 minutes 42 seconds West, 198.41 feet; thence North 13 degrees 35 minutes 17 seconds West, 171.97 feet; thence North 77 degrees 56 minutes 22 seconds West, 168.57 feet; thence South 71 degrees 35 minutes 02 seconds West, 166.92 feet; thence South 87 degrees 02 minutes 36 seconds West, 198.01 feet; thence North 62 degrees 14 minutes 46 seconds West, 135.65 feet; thence South 89 degrees 18 minutes 45 seconds West, 322.76 feet; thence South 68 degrees 31 minutes 02 seconds West, 151.19 feet; thence South 61 degrees 29 minutes 45 seconds West, 207.31 feet; thence South 80 degrees 29 minutes 55 seconds West, 288.76 feet to the Point of Beginning. Less and except the 15 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the West 15 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida. Also less and except the 20 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the South 20 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida.

Said lands situate lying and being in the Town of Davie, Broward County, Florida.

PARCEL 3:

A portion of Section 20, Township 50 South, Range 41 East, Broward County, Florida, described as follows:

Commencing at the Southwest corner of said Section 20; thence along the South line of Section 20, North 88 degrees 32 minutes 28 seconds East, 1556.99 feet to the Point of Beginning; thence North 10 degrees 41 minutes 22 seconds East, 163.7101 feet; thence North 81 degrees 26 minutes 06 seconds East, 127.7961 feet; thence South 04 degrees 05 minutes 00 seconds West, 176.6797 feet; thence South 88 degrees 32 minutes 28.2 seconds West, 144.2026 feet to the Point of Beginning.

Less and except the 20 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the South 20 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida.

The above lands lying in the Town of Davie, Broward County, Florida.

PARCEL 4:

A portion of Section 20, Township 50 South, Range 41 East, Broward County, Florida, described as follows:

Commencing at the Northwest corner of said Section 20; thence along the North line of said Section 20, North 88 degrees 08 minutes 50 seconds East, 397.96 feet to the Point of Beginning; thence North 88 degrees 08 minutes 49.8 seconds East, 230.47 feet; thence South 33 degrees 27 minutes 42.2 seconds East, 194.8949 feet; thence North 85 degrees 42 minutes 26.1 seconds East, 77.999 feet; thence South 08 degrees 07 minutes 21.0 seconds West, 152.1489 feet; thence South 84 degrees 58 minutes 33 seconds West, 289.65 feet; thence North 35 degrees 06 minutes 59 seconds West, 168.54 feet; thence North 02 degrees 37 minutes 45 seconds West, 187.625 feet to the Point of Beginning.

Less and except the 20 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the North 20 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida.

The above lands lying in the Town of Davie, Broward County, Florida.

LAST REVISED: 5-17-93

**Appendix B: *Property Deeds***



**County to State Deed, 1993**

93222738

**STATUTORY COUNTY DEED**

(Pursuant to F. S. 125.411)

THIS DEED, made this 21<sup>st</sup> day of May, 1993, by BROWARD COUNTY, FLORIDA, a political subdivision of the State of Florida, Grantor, and BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post office address is: c/o Florida Department of Natural Resources, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, Florida 32399, Grantee.

W I T N E S S E T H:

That the Grantor for and in consideration of the sum of TEN DOLLARS (\$10.00) to it in hand paid by the Grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the Grantee, its successors and assigns forever, the following described lands, lying and being in Broward County, Florida, to wit:

The property described on Exhibit "A" attached hereto and made part hereof; together with all of the Grantor's interest relating to timber rights, water rights, mineral and oil/gas rights; streams, canals, ditches and other water bodies; alleys, roads, streets and easements included within the above-described lands or providing access to the above-described lands.

NOTE: The Grantee, by acceptance of this deed, intends that all reservations in favor of the Grantee in prior deeds of record be merged in the fee simple take vested in Grantee and thereby extinguished by this conveyance.

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed in its name by its Board of County Commissioners acting by the Chair or Vice Chair of said Board, the day and year aforesaid.

(OFFICIAL SEAL)  
ATTEST



B. Jack Osterholt, County Administrator and Ex-Officio Clerk of the Board of County Commissioners

BROWARD COUNTY, FLORIDA  
By Its Board of County Commissioners

By   
Gerald F. Thompson, Chair

Governmental Center, Suite 421  
115 South Andrews Avenue  
Fort Lauderdale, Florida 33301

21<sup>st</sup> day of May, 1993.

NMP:dp  
5/18/93  
PINERIDG.DOC

APR 25 PM 3:04

BK20712PG0765

N/C  
SPS

58' 18" West, 305.40 feet; thence North 55° 40' 04" West, 158.21 feet; thence South 88° 08' 50" West 124.84 feet; thence South 33° 27' 42" East, 194.89 feet; thence North 85° 42' 26" East, 78.00 feet; thence South 25° 33' 08" East, 377.67 feet; thence South 85° 30' 42" West, 230.48 feet; thence South 03° 54' 20" West, 203.62 feet; thence South 19° 33' 09" East, 139.73 feet; thence South 08° 59' 46" East, 166.54 feet; thence South 07° 59' 36" West, 205.96 feet; thence South 16° 12' 46" East, 107.39 feet; thence South 47° 01' 28" West, 107.34 feet; thence South 49° 35' 17" West, 183.80 feet; thence South 80° 27' 53" West, 63.41 feet; thence South 10° 50' 36" East, 175.40 feet; thence South 20° 55' 40" East, 76.71 feet; thence South 30° 17' 54" West, 173.51 feet; thence South 40° 10' 08" West, 110.09 feet; thence South 82° 18' 53" West, 89.43 feet; thence North 53° 59' 07" West, 196.96 feet; thence South 59° 34' 21" West, 123.56 feet; thence South 02° 09' 26" East, 196.73 feet; thence South 63° 05' 52" East, 111.92 feet; thence South 47° 22' 03" East, 247.10 feet; thence South 49° 11' 33" East, 165.12 feet; thence South 85° 47' 54" East, 142.16 feet; thence South 46° 26' 50" East, 355.85 feet; thence South 22° 40' 02" East, 236.13 feet; thence South 22° 30' 10" East, 188.07 feet; thence South 31° 12' 15" West, 111.37 feet; thence South 02° 40' 22" West, 107.83 feet; thence South 27° 04' 40" East, 139.19 feet; thence South 02° 30' 59" East, 274.15 feet; thence South 32° 15' 08" East, 196.63 feet; thence South 61° 11' 38" West, 156.61 feet; thence South 89° 55' 33" West, 393.58 feet; thence South 28° 46' 40" West, 165.88 feet; thence South 68° 59' 11" West, 108.13 feet; thence East 1505.98 feet; thence South 82.95 feet to the POINT OF BEGINNING. Less and except the 15 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the West 15 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida. Also less and except the 20 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the North 20 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida. Also less and except the 40 foot road right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida being 20 feet on each side of the North line of the Southwest quarter of Section 20, Township 50 South, Range 41 East, Broward County, Florida.

PARCEL 2:

A portion of Section 20, Township 50 South, Range 41 East, Broward County, Florida, described as follows:

Commencing at the Southwest corner of said Section 20; thence along the West line of said Section 20, North 02 degrees 09 minutes 26 seconds West, 560.61 feet to the Point of Beginning; thence continue along said West line, North 02 degrees 09 minutes 26 seconds West, 383.38 feet; thence South 89 degrees 41 minutes 34 seconds East, 238.71 feet; thence North 68 degrees 59 minutes 11

DK20712PG0767

The above lands lying in the Town of Davie, Broward County, Florida.

**PARCEL 4:**

A portion of Section 20, Township 50 South, Range 41 East, Broward County, Florida, described as follows:

Commencing at the Northwest corner of said Section 20; thence along the North line of said Section 20, North 88 degrees 08 minutes 50 seconds East, 397.96 feet to the Point of Beginning; thence North 88 degrees 08 minutes 49.8 seconds East, 230.47 feet; thence South 33 degrees 27 minutes 42.2 seconds East, 194.8949 feet; thence North 85 degrees 42 minutes 26.1 seconds East, 77.999 feet; thence South 08 degrees 07 minutes 21.0 seconds West, 152.1489 feet; thence South 84 degrees 58 minutes 33 seconds West, 289.65 feet; thence North 35 degrees 06 minutes 59 seconds West, 168.54 feet; thence North 02 degrees 37 minutes 45 seconds West, 187.625 feet to the Point of Beginning.

Less and except the 20 foot road of right of way recorded in Plat Book 2, Page 26, Public Records of Dade County, Florida and recorded in Plat Book 5, Page 3, Public Records of Broward County, Florida being the North 20 feet of Section 20, Township 50 South, Range 41 East, Broward County, Florida.

The above lands lying in the Town of Davie, Broward County, Florida.

LAST REVISED: 5-17-93

RECORDED IN THE OFFICIAL RECORDS BOOK  
BROWARD COUNTY, FLORIDA  
COUNTY ADMINISTRATOR

BR20712PG0769

**County Addition Deed, 2003**

Return to: (enclose self-addressed stamped envelope)

Name: *Lexis M. Cline, PA*

Address: *1323 SE 8th Ave.  
Fort Lauderdale, FL 33316*

**This Instrument Prepared by:**

Barry E. Somerstein, Esq.  
Ruden, McClosky, Smith,  
Schuster & Russell, P.A.  
200 East Broward Boulevard  
Suite 1500  
Fort Lauderdale, Florida 33301

SPACE ABOVE THIS LINE FOR PROCESSING DATA

SPACE ABOVE THIS LINE FOR PROCESSING DATA

***This Warranty Deed*** Made and executed the 30<sup>th</sup> day of January, A.D., 2003 by NORTH AMERICAN COMPANY LLLP, a Florida limited liability limited partnership, and having its principal place of business at 312 S.E. 17<sup>th</sup> Street, Suite 300, Fort Lauderdale, Florida 33316, hereinafter called the grantor, to BROWARD COUNTY, a political subdivision of the State of Florida, whose post office address is c/o County Administration, 115 S. Andrews Avenue, Room 409, Fort Lauderdale, Florida 33301 hereinafter called the grantee:

(Wherever used herein the terms "grantor" and "grantee" include all the parties to this instrument and the heirs, legal representatives and assigns of individuals, and the successors and assigns of corporations)

***Witnesseth:*** That the grantor, for and in consideration of the sum of \$10.00 and other valuable considerations, receipt whereof is hereby acknowledged, by these presents does grant, bargain, sell alien, remise, release, convey and confirm unto the grantee, all that certain land situate in Broward County, Florida, viz:

See Exhibit "A" attached hereto and made a part hereof ("Property");

**Subject to the following:**

- (i) Zoning regulations and prohibitions imposed by governmental authority;
- (ii) Taxes and assessments for the year 2003 and subsequent years;
- (iii) Easements, covenants, conditions and restrictions appearing of record without reimposing same;

**Together** with all the tenements, hereditaments and appurtenances thereto belonging or in anywise appertaining.

**To Have and to Hold**, the same in fee simple forever.

**And** the grantor hereby covenants with said grantee that it is lawfully seized of said land in fee simple; that it has good right and lawful authority to sell and convey said land; that it hereby fully warrants the title to said land and will defend the same against the lawful claims of all persons whomsoever; and that said land is free of all encumbrances.

**IN WITNESS WHEREOF**, Grantor has hereunto set Grantor's hand and seal the day and year first above written.

Signed, sealed and delivered  
in the presence of

NORTH AMERICAN COMPANY LLLP, a  
Florida limited liability limited partnership

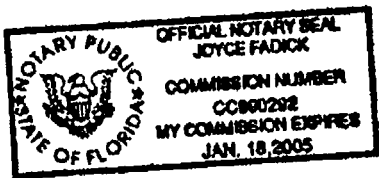
Joyce Fadick  
 Witness Signature  
Joyce Fadick  
 Print Name  
Nikol Karlovce  
 Witness Signature  
NIKOL Karlovce  
 Print Name

By: [Signature]  
 CHARLES L. PALMER  
 Managing General Partner

STATE OF FLORIDA        )  
  ) SS:  
COUNTY OF BROWARD    )

I HEREBY CERTIFY that on this day, before me, an officer duly authorized in the State aforesaid and in the County aforesaid to take acknowledgments, the foregoing instrument was acknowledged before me by CHARLES L. PALMER, Managing General Partner of NORTH AMERICAN COMPANY LLLP, a Florida limited liability limited partnership, freely and voluntarily under authority duly vested in him by said entity and that the seal affixed thereto is the true corporate seal of said corporation. He is personally known to me or who has produced \_\_\_\_\_ as identification.

WITNESS my hand and official seal in the County and State last aforesaid this 30<sup>th</sup> day of January, 2003.



Joyce Fadick  
Notary Public

Joyce Fadick  
Typed, printed or stamped name of Notary Public

My Commission Expires: 1-18-05



**EXHIBIT "A"**

**LEGAL DESCRIPTION OF PROPERTY**

Portions of JOHN M. BRYAN'S SUBDIVISION, in Section 17, Township 50 South, Range 41 East, Broward County, Florida, according to the Plat thereof, as recorded in Plat Book 5, Page 3, of the Public Records of Broward County, Florida, together *with* the vacated portion of Southwest 24th Street as described in Official Records Book 16130, Page 67 of said Public Records of Broward County, Florida, all being more particularly described as follows:

(Site 403A)

BEGINNING at the Southwest corner of Lot 33, OAK KNOLL II, according to the Plat thereof, as recorded in Plat Book 134, Page 7, of the Public Records of Broward County, Florida, said point being the beginning of a curve concave to the North and from which the radius point of said curve bears North 22°17'54" West, said point also being located on the North line of Parcel R-1, OAK KNOLL III, according to the Plat thereof as recorded in Plat Book 138, Page 36 of the Public Records of Broward County, Florida;

THENCE Westerly on said North line and on the arc of said curve having a radius of 150.00 feet, a central angle of 29°00'00", for an arc distance of 75.92 feet to point of a reverse curve with a curve concave to the South;

THENCE Westerly on said North line of Parcel R-1 and on the arc of said curve having a radius of 200.00 feet, a central angle of 25°14'24", for an arc distance of 88.10 feet, to the Southeast corner of Lot 10, of said OAK KNOLL III;

THENCE N01°51'10"W on the East line of said Lot 10, a distance 110.00 feet to the Northeast corner of said Lot 10;

THENCE S88°08'50"W on the North line of said Lot 10, a distance of 75.00 feet;

THENCE N86°23'07"W on said North line, a distance of 54.82 feet to the Northwest corner of said Lot 10;

THENCE N29°39'09"E, a distance of 88.33 feet;

THENCE N51°49'14"E, a distance of 180.21 feet to a point on the West line of Lot 30, of said OAK KNOLL II;

THENCE S01°42'48"E on said West line of Lot 30, a distance of 14.68 feet;

THENCE S22°17'54"E on the West line of said Lot 30 and the West line of Lots 31 through 33 of said OAK KNOLL II, a distance of 286.69 feet to the POINT OF BEGINNING;

**County Addition Deed, 2015**

This instrument was prepared by:  
Kevin S. Grossfeld, Esquire  
Arnstein & Lehr LLP  
200 South Biscayne Blvd., Suite 3600  
Miami, Florida 33131

Property Appraiser's Parcel  
I.D. No. 504117-00-0018

**WARRANTY DEED**

**THIS WARRANTY DEED**, made this 23 day of July, 2015, between Rolly Marine Service Company, a Florida corporation whose Post Office address is 2551 State Road 84, Fort Lauderdale, Florida 33312, hereinafter called "GRANTOR" and Broward County, a political subdivision of the State of Florida, whose Post Office address is Broward County Governmental Center, 115 South Andrews Avenue, Fort Lauderdale, Florida 33301, hereinafter called "GRANTEE" (Wherever used herein the terms "GRANTOR" and "GRANTEE" shall indicate both singular and plural, as the context requires).

**WITNESSETH:** That GRANTOR, for and in consideration of the sum of Ten Dollars (\$10.00) and other valuable considerations, receipt of which is hereby acknowledged, hereby grants, bargains, sells, conveys, and confirms unto GRANTEE, its successors and assigns forever, all that certain land situate in Broward County, Florida, described as follows, to-wit:

**SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF**

This conveyance is subject to:

1. Real Estate taxes for the year 2014, and subsequent years;
2. Restrictions, limitations, covenants, dedications and easements of records; but this provision shall not operate to reimpose same; and
3. Zoning laws and other governmental regulations.

**TOGETHER WITH** all the tenements, hereditaments, and appurtenances thereto belonging or in anywise appertaining.

**TO HAVE AND TO HOLD** the same in fee simple forever.

**AND GRANTOR** hereby covenants with GRANTEE that GRANTOR is lawfully seized of said property in fee simple that GRANTOR has good right and lawful authority to sell and convey said property, and GRANTOR hereby fully warrants the title to said property and will defend same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, GRANTOR has hereunto set his hand and seal the date first above written.

Signed, sealed, and delivered  
in the presence of

[Signature]  
WITNESS 1 SIGNATURE

SASHY SIMONPIETRE  
WITNESS 1 PRINT NAME

[Signature]  
WITNESS 2 SIGNATURE

Cecily J. Poulos  
WITNESS 2 PRINT NAME

Rolly Marine Service Company, a Florida  
corporation

By: [Signature]  
Print Name: Sheryl Lopez  
Title: Vice President

ACKNOWLEDGMENT

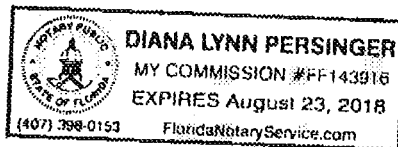
STATE OF FLORIDA  
COUNTY OF MIAMI DADE Broward

The foregoing instrument was acknowledged before me this 19<sup>th</sup> day of Dec, 2014, by Sheryl Lopez, as Vice President of Rolly Marine Service Company, a Florida corporation. He/she is personally known to me or has produced \_\_\_\_\_ as identification.

[Signature]  
SIGNATURE NOTARY

Diana Persinger  
PRINT NAME

NOTARY SEAL



REF: Approved BCC \_\_\_\_\_ Item No: \_\_\_\_\_  
Return to BC Real Property Section

EXHIBIT A

Parcel 1:

A portion of John M. Bryan's Subdivision in Section 17, Township 50 South, Range 41 East, Broward County, Florida, according to the Plat thereof, as recorded in Plat Book 5, Page 3, of the Public Records of Broward County, Florida; together with the vacated portion of Southwest 24th Street as described in Official Records Book 16130, Page 67, of the Public Records of Broward County, Florida, all being more particularly described as follows:

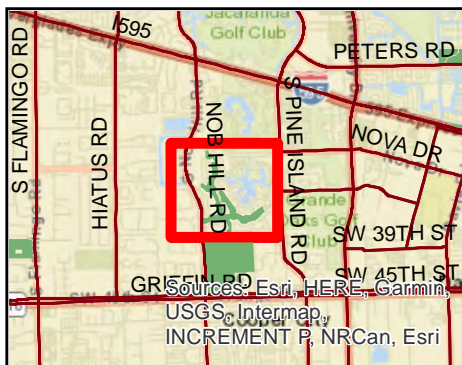
(Site 403B)

Beginning at the Northwest corner of Lot 34, Oak Knoll II, according to the Plat thereof, as recorded in Plat Book 134, Page 7, of the Public Records of Broward County, Florida; thence South  $22^{\circ} 17' 54''$  East on the Westerly line of said Lot 34 and Lot 35; a distance of 210.30 feet to the Northeast corner of said vacated Southwest 24th Street; thence South  $01^{\circ} 51' 10''$  East on the East line of said vacated Southwest 24th Street, a distance of 53.00 feet to the intersection with the South line of said Section 17, thence South  $88^{\circ} 08' 50''$  West on said South line of Section 17, a distance of 252.81 feet to the Southeast corner of Lot 1, OAK KNOLL III, according to the Plat thereof, as recorded in Plat Book 138, Page 36, of the Public Records of Broward County, Florida; thence North  $01^{\circ} 51' 10''$  West on the East line of said Lot 1, a distance of 229.92 feet to the Northeast corner of said Lot 1, said point also being located on the South line of Parcel R-1 of said Oak Knoll III, said point also being located on the arc of a curve concave to the South and from which the radius point of said curve bears South  $24^{\circ} 21' 57''$  East; thence Easterly on said South line of Parcel R-1 and on the arc of said curve having a radius of 150.00 feet, a central angle of  $31^{\circ} 03' 48''$  for an arc distance of 81.32 feet to a point of a reverse curve with a curve concave to the North; thence Easterly on said South line of Parcel R-1 and on the arc of said curve having a radius of 200.00 feet, a central angle of  $29^{\circ} 00' 00''$ , for an arc distance of 101.23 feet to the Point of Beginning.

Parcel 2:

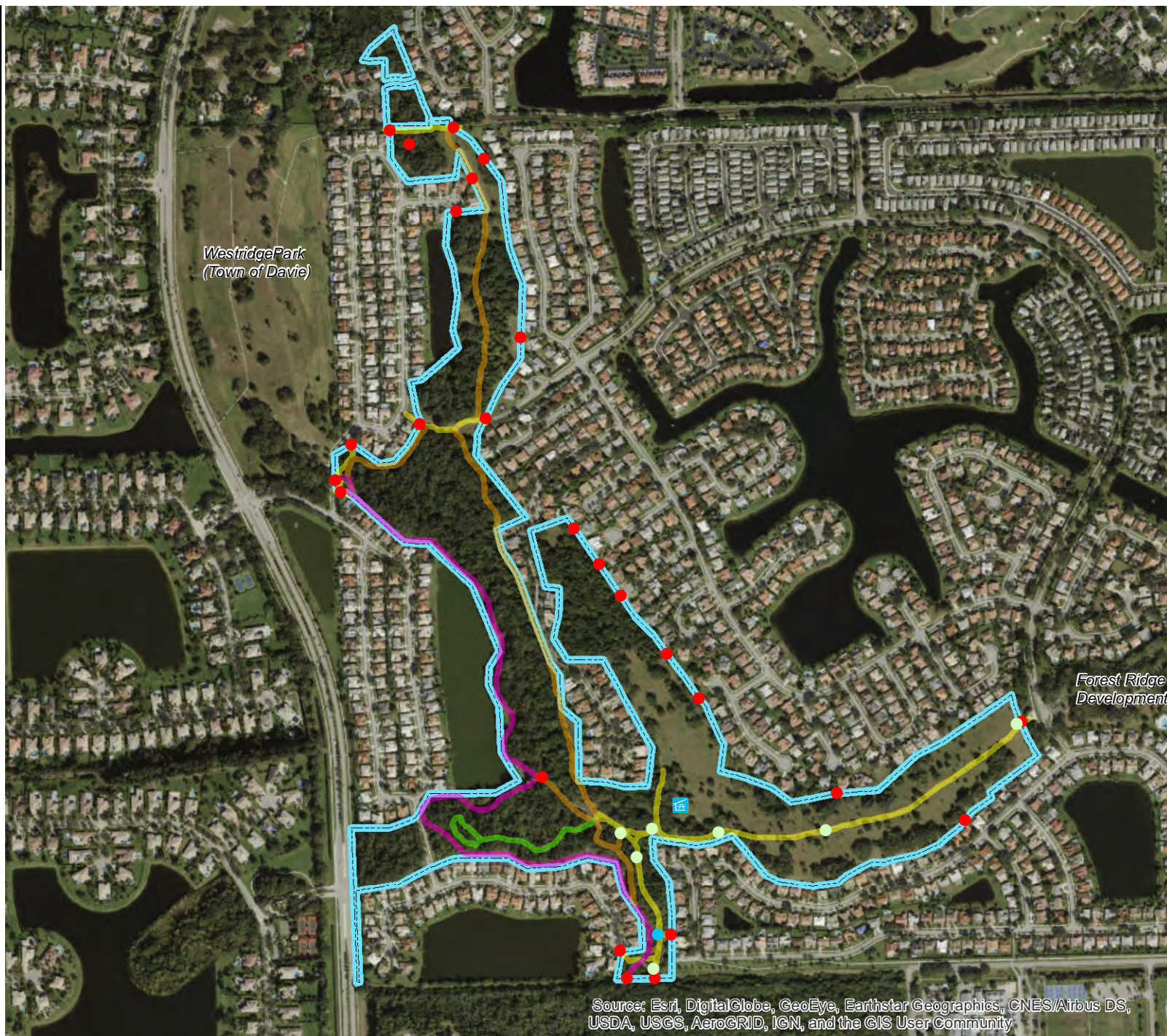
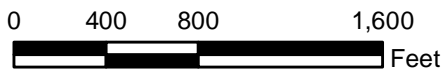
A non-exclusive easement for ingress and egress over Parcel R-1 of Oak Knoll II, according to the Plat thereof, as recorded in Plat Book 134, Page 7, and Parcel R-1 of Oak Knoll III, according to the Plat thereof, as recorded in Plat Book 138, Page 36, both of the Public Records of Broward County, Florida.

**Appendix C: *Pine Island Ridge Improvements***



**Pine Island Ridge  
Improvements**

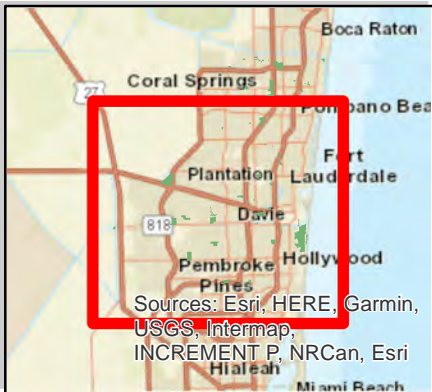
-  Park Boundary
-  Future Shelter
-  Horse Trail
-  Maintenance Trail
-  Paved Walkway
-  Trail
-  Access Points
-  Interpretive Signage
-  Kiosk



**Appendix D:** *Conservation Lands within 10 miles of Pine Island Ridge Park*

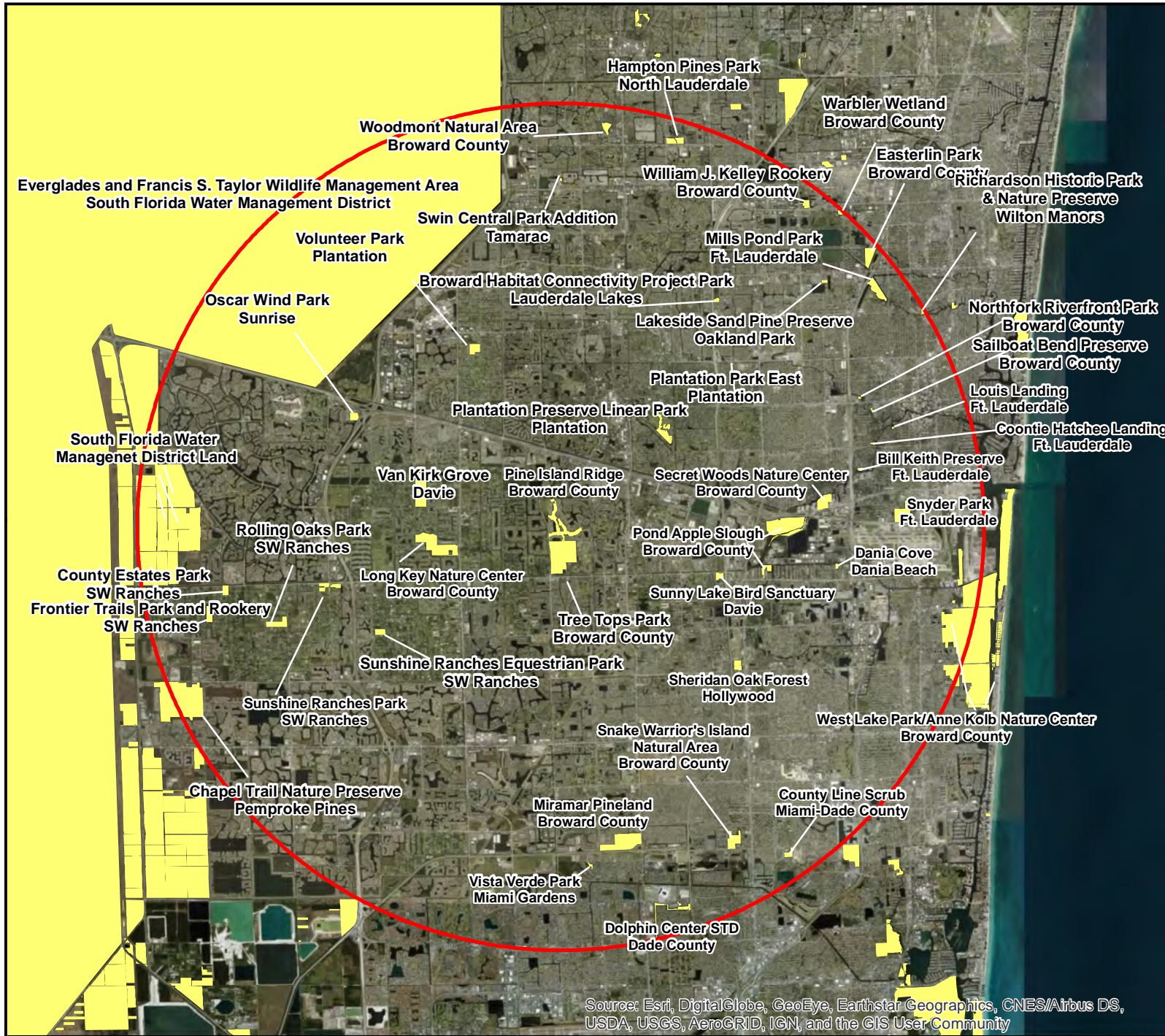
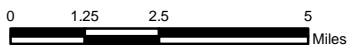


**Parks & Recreation  
Geographic Information System**



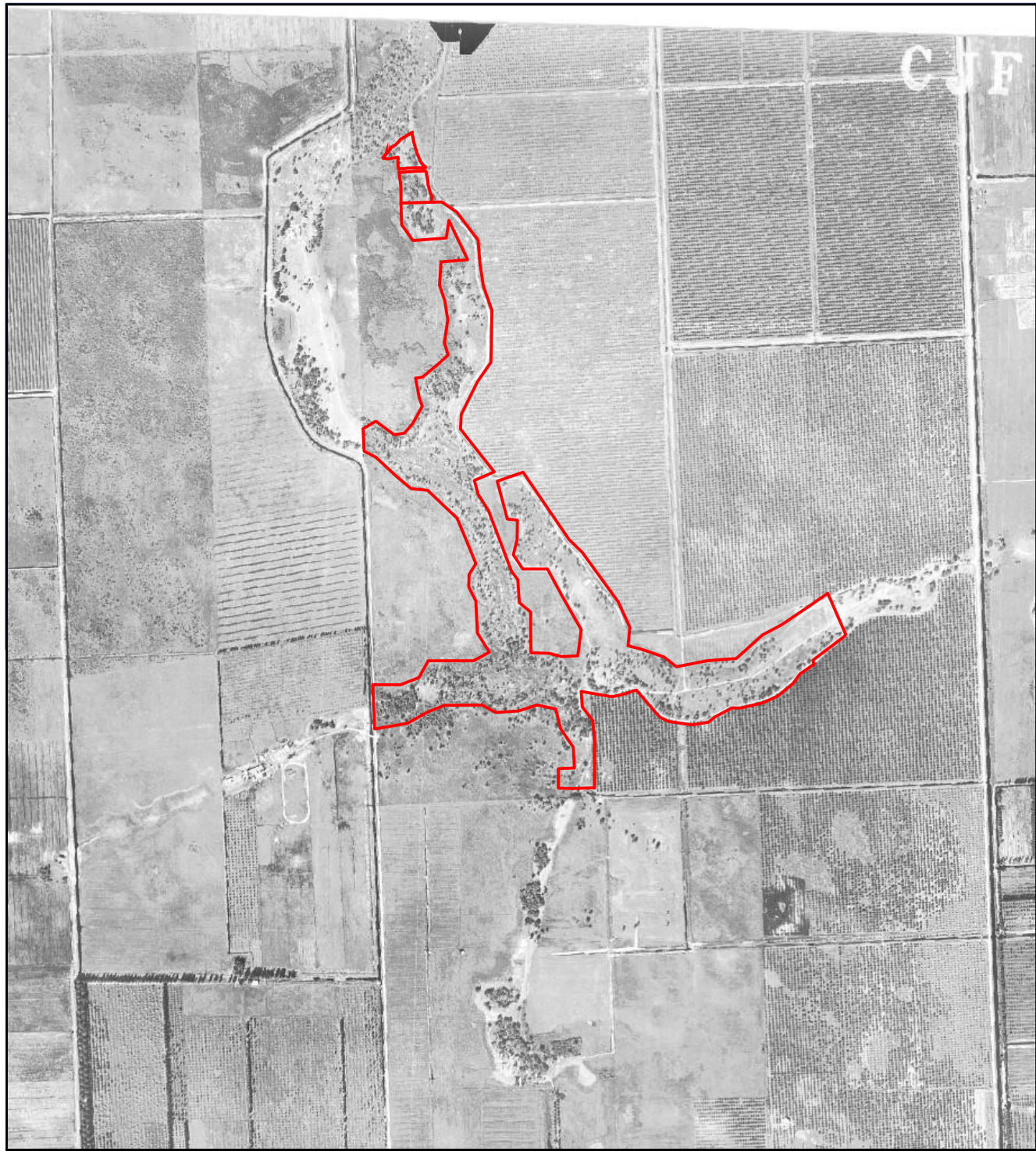
**Pine Island Ridge  
Conservation Areas  
within 10 Miles**

- 10mileRadius
- Conservation Lands



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Appendix E: *1948 Aerial Photograph***



Pine Island Ridge

*1948 Historic  
Aerial Photograph*

*1948 Panchromatic Aerial  
CJF-3D-35  
Courtesy Broward County Historical Commission*

0 Feet 1,000



**Appendix F: *Development Agreement***

Re Rec  
88175615

88131575

46. A.  
9.23.88

Re Rec  
'88 MAY 4 PM 3 38

'88 APR 5 PM 1 18

BK15405PG 901

BK15323PG 727

DEVELOPMENT AGREEMENT

Among

TOWN OF DAVIE

and

FOREST RIDGE COMMUNITY DEVELOPMENT, LTD.

and

BROWARD COUNTY

Approved BCC 9.23.88 et 46A  
Submitted By: Office of Planning  
RETURN TO DOCUMENT CONTROL

Re Rec  
M.C.  
88

→ RETURN TO FRONT RECORDING

DEVELOPMENT AGREEMENT

Among

TOWN OF DAVIE

and

FOREST RIDGE COMMUNITY DEVELOPMENT, LTD.

and

BROWARD COUNTY

This Agreement entered into this 9th day of March, 19 88, by and between the TOWN OF DAVIE, a municipal corporation organized and existing under the laws of the State of Florida, (hereinafter referred to as TOWN);

AND

FOREST RIDGE COMMUNITY DEVELOPMENT, LTD., a Florida limited partnership (hereinafter referred to as DEVELOPER), its successors and assigns;

AND

BROWARD COUNTY, a political subdivision of the State of Florida, (hereinafter referred to as COUNTY), as follows:

WHEREAS, DEVELOPER has a contract to purchase that certain real property hereinafter referred to as the "Pine Island Property" more particularly described in Exhibit "A" attached hereto; and

WHEREAS, the obligations undertaken herein are contingent on DEVELOPER obtaining title to the Property on or before April 29, 1988; and

WHEREAS, DEVELOPER has heretofore processed a land use plan change on the Pine Island Property, which land use plan change became effective by virtue of the Town Council action on February 5, 1987, evidenced by Municipal Ordinance No. 87-25, a copy of which is attached hereto as Exhibit "B"; and

WHEREAS, DEVELOPER made an application to TOWN to change the zoning on the Pine Island Property from Agricultural to a Planned Residential

BK15405PG 902

BK15323PG 728

District ("PRD"), which said zoning change became effective by action of the Town Council on June 30, 1987, evidenced by Municipal Ordinance No. 87-70, a copy of which is attached hereto as Exhibit "C"; and

WHEREAS, DEVELOPER has heretofore agreed with TOWN and with COUNTY with regard to certain environmentally sensitive and/or archaeologically sensitive and/or geologically sensitive land owned by DEVELOPER within the Pine Island Property, hereinafter referred to as the "Ridge"; and

WHEREAS, COUNTY desires to join in this Development Agreement for the specific purposes set forth herein below and for those purposes only; and

WHEREAS, TOWN, COUNTY, and DEVELOPER have determined which portions of the Ridge will be dedicated by DEVELOPER, and which portions can be developed under a selective development program, hereinafter more particularly set forth, and which portions of the Ridge the COUNTY, TOWN, and/or State would purchase from DEVELOPER; and

WHEREAS, an Environmental Impact Report ("EIR") has been compiled by COUNTY, a copy of which is attached hereto as Exhibit "D"; and

WHEREAS, the DEVELOPER, by the execution hereof and the implementation of those obligations hereunder, and under that certain Agreement entitled "Agreement for Road and Related Improvements," of even date herewith, and executing the lease with option to purchase that property designated hereinbelow as the Acquired Ridge Property and by the dedication of the entire right-of-way for Pine Island Road as the same abuts the DEVELOPER'S property prior to the requirement to dedicate the same under COUNTY ordinances, has satisfied its park impact fee obligations and its obligations for road impact fees and safe and adequate ingress and egress requirements (save and accept for entrance requirements for 24 Street and Nob Hill Road and the standard platting requirements commonly contained in the COUNTY'S Development Review Reports) necessary to enable it to develop the property as contemplated by the Town PRD Ordinance attached hereto as Exhibit "C" provided that DEVELOPER complies with all State, County, and Town development regulations and pays all impact fees (other than for roads and parks) due; and

WHEREAS, TOWN, COUNTY, and DEVELOPER agree that it is to the best interest of all concerned that the preservation, platting, site plan approval and development of the Pine Island Property and the Ridge be in accordance with the terms and conditions set forth and desire to memorialize the same; NOW, THEREFORE,

The parties agree as follows:

1. The recitations set forth hereinabove are true and correct and are incorporated herein.

BX15405PE-903

BX15323PG 729

2. The parties acknowledge that this Agreement is supported by adequate and sufficient consideration, the receipt of which is hereby acknowledged.
3. The "Effective Date" of this Agreement shall be the date that all of the following events occur:
  - (a) The DEVELOPER obtains title to that property described on Exhibit "A";
  - (b) The COUNTY receives a Title Opinion, based upon a title commitment from a title company reasonably acceptable to the COUNTY, addressed to COUNTY, indicating that the DEVELOPER'S title to the Dedicated Ridge Property is marketable subject only to those exceptions listed on Exhibit J;
  - (c) The COUNTY receives a Title Opinion addressed to COUNTY indicating that the DEVELOPER'S title to the Acquired Ridge Property is marketable subject only to those exceptions listed on Exhibit J;
  - (d) DEVELOPER delivers to COUNTY a Commitment for an Owner's Title Insurance Policy, in the amount of Six Million Three Hundred Thousand Dollars (\$6,300,000.00) for the Acquired Ridge property;
  - (e) The DEVELOPER provides the COUNTY with documentation executed by the mortgagee on the Acquired Ridge Property recognizing the COUNTY'S option to purchase said property and agreeing to release or satisfy the mortgagee on said property or a portion thereof upon payment of the sums due under the Contract for Lease Purchase attached hereto as Exhibit "I" whether or not DEVELOPER is in default under the mortgage. Said documentation shall provide for payment directly to mortgagee in case of default;
4. For the purposes of this Agreement, the Ridge will be referred to in three separate categories as follows:
  - (a) "Dedicated Ridge property": That property which will be dedicated to the TOWN and COUNTY in satisfaction of the requirement that DEVELOPER dedicate property for regional and local parks (described in Exhibit "E");
  - (b) "Acquired Ridge Property": That property which will be reserved for purchase by the TOWN, COUNTY, or State of Florida

BX15405PG 904

BX15323PG 730



for use as a park pursuant to the terms and conditions herein (described in Exhibit "F");

(c) "Ridge Entranceway": That property described in paragraph 6(a) hereinafter.

5. DEVELOPER agrees that within five business days of the "effective date" of this Development Agreement, it will tender to COUNTY a deed, in text, form, and content as set forth in Exhibit "E-1" attached hereto, for the Dedicated Ridge Property, a legal description of which is contained in Exhibit "E." The property in question shall be free and clear of all liens or encumbrances and limitations which prohibit use as a passive park. The deed shall be accompanied by a title opinion demonstrating free and clear title in DEVELOPER subject only to those permitted exceptions contained in Exhibit J, and satisfactions or releases of all mortgages. Said dedication shall satisfy the full obligation of DEVELOPER for local and regional park contributions as set forth in Town Ordinance No. 84-65 and County Ordinance No. 86-91, for the entire Pine Island Property so long as the development of same does not exceed 2,232 dwelling units. The dedicated Ridge Property and the Acquired Ridge Property shall be used solely as a passive park, except as specifically provided herein.

It is agreed that DEVELOPER may incrementally plat segments of the Pine Island Property and the Ridge Property provided said plats are in accordance with TOWN Ordinance 87-70 attached hereto as Exhibit "C," the EIR and all applicable codes and regulations.

6. Subject to all COUNTY and TOWN Codes and the EIR, the DEVELOPER may construct the following:

(a) Upon the approximate 6.9 acres of the easterly portion of the Ridge described in Exhibit "C" retained by the DEVELOPER, the DEVELOPER will be permitted to develop its entryway structure substantially in accordance with Exhibit "C.1," including walls, lights, utilities, a park featuring a statue, a gazebo, landscaping and signs. Tree trimming necessary for vehicular clearance or other bona fide purposes will be supervised by a certified tree surgeon. All required excavation will be monitored by Bob Carr, Archaeologist, or a qualified archaeologist, chosen by the DEVELOPER with the COUNTY'S consent. If Bob Carr is unable to act, DEVELOPER shall pay all archaeologist fees.

(b) The DEVELOPER will be allowed to construct Ridge crossings (some for utilities only and some for roads and utilities) all pursuant to the Crossing Plan described in Exhibit "H," which

BR15405PG 905

BR15323PG 731

said roads, roadbeds, drainage, sewer, water, telephone, cable television and other underground utilities will be within the areas shown on Exhibit "H." It is specifically agreed that the road crossing designated as "Temporary Sales Road" on Exhibit "H" shall be used for access to the approximately 27 acre parcel of land located in the southwest corner of Section 20. This crossing may not be constructed until the parcel of land has been platted and the construction of the parcel's internal roads has commenced. This temporary crossing of the Dedicated or Acquired Ridge Property shall have stop signs and pedestrian crossing signs on the east and west boundaries of the Dedicated or Acquired Ridge Property, located according to the applicable requirements for signage. The use of this crossing by heavy construction equipment is prohibited. The portion of this crossing located within the boundaries of the Dedicated or Acquired Ridge Property shall be completely removed, graded to the original elevation and sodded within either three (3) months after sales within the parcel of land have been completed or three (3) years after the crossing has been constructed, whichever occurs first.

7. Consistent with all COUNTY and TOWN Codes and the EIR, development on the Dedicated and Acquired Ridge Property shall be limited to road crossings and utility easements, as specified in paragraph 6(b), for the lease period referenced to in the Contract for Lease Purchase described in paragraph 9 herein.
8. With regard to the Dedicated and Acquired Ridge Property:
  - (a) The DEVELOPER shall be able to use the existing irrigation ditch for so long as the DEVELOPER maintains an active orange grove. Provided that upon the termination of the use of the active orange grove, the DEVELOPER shall fill in such drainage ditch in accordance with the existing contours. This right shall cease 10 years from the Effective Date.
  - (b) The COUNTY will use its best efforts to have all park trails, walkways, bike paths, and maintenance roads kept to the interior of the Ridge and buffered from the perimeter.
  - (c) The COUNTY agrees that the grass ground cover that exists as of the date hereof shall be maintained by the COUNTY as a mowed grass cover and shall be maintained by the same standard as mowed grass ground cover areas in other similar COUNTY parks.
  - (d) The DEVELOPER shall remove all man made structures within six (6) months of the Effective Date, including all buildings and

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BX15323PS 732

sheds, except for that single structure known as the Belcher home, which structure may be retained by the COUNTY and, if so retained, shall be maintained by the COUNTY in accordance with the same standards that the COUNTY has for other park structures.

- (e) In the event the COUNTY desires to place fences around the Acquired Ridge Property, said fences shall be no taller than five (5) feet, shall consist of clear, single strand horizontal wire, with distances of no less than twelve (12) inches between strands, with wooden fence posts no closer than ten (10) feet apart. In the event COUNTY installs such fences, the DEVELOPER may install gates consistent with the fence design, at DEVELOPER'S cost, at various points in said fences selected by DEVELOPER. No barbed wire may be used.
  - (f) The COUNTY agrees that the DEVELOPER may, after written notice and pursuant to reasonable requirements imposed by COUNTY (which requirements shall include but not be limited to COUNTY supervision), go upon the Acquired Ridge Property to remove exotic vegetation therefrom. Should DEVELOPER exercise its rights under this subsection it shall use its best efforts to remove any contiguous exotic vegetation as the COUNTY reasonably requests. This right shall survive any COUNTY acquisition but shall terminate five (5) years from the Effective Date.
  - (g) The DEVELOPER agrees with the COUNTY that the DEVELOPER shall, at its expense, remove the existing paved roads and utility poles on the Acquired Ridge Property by July 1, 1988.
  - (h) DEVELOPER shall remove all bee hives on the property within six (6) months of the Effective Date hereof.
  - (i) Upon the Effective Date, all tenants or persons in residence shall be removed from the Dedicated and Acquired Ridge Property by DEVELOPER at DEVELOPER'S expense.
9. DEVELOPER agrees to enter into a Contract for Lease Purchase with the COUNTY wherein and whereby the DEVELOPER shall lease, with an option to buy, to the COUNTY that property described in Exhibit "F" for use only as a passive park, upon the terms and conditions of the Contract for Lease Purchase contained in Exhibit "I." This provision and the Contract for Lease Purchase shall, during the term of the lease-option, operate to invalidate any transfer hereof except to the COUNTY. The DEVELOPER shall not encumber the Acquired Ridge Property in any manner during this period except for the permitted exceptions contained on Exhibit J.

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10. TOWN and COUNTY (subject to the DEVELOPER complying with Codes), through their respective review processes, i.e., the land use plan change process, the PRD Ordinance enacted and the Environmental Impact Report, have made the following findings which entitle the DEVELOPER to incrementally plat and construct 2,232 dwelling units and related improvements on the Pine Island Property subject to compliance with all Codes and the EIR:

(a) The TOWN has determined that by the execution hereof, satisfaction of the conditions contained in Section 3, and dedication of the Dedicated Ridge Property, the local park requirements have been satisfied for the development contemplated by the Town PRD Ordinance and attached as Exhibit "C."

(b) The COUNTY has determined that by the execution hereof, satisfaction of the conditions contained in Section 3, and dedication of the Dedicated Ridge Property pursuant to the terms of Section 5, all COUNTY park requirements have been satisfied for the development contemplated by the Town PRD Ordinance attached as Exhibit "C."

11. DEVELOPER acknowledges that it must comply with all COUNTY and TOWN Existing Codes and the EIR notwithstanding the execution of this Development Agreement.

12. This Contract shall be null and void and of no force and effect if the conditions for the effective date do not occur on or before April 29, 1988.

13. Any notices required to be given shall be in writing and sent by registered or certified mail, receipt requested, to the party being noticed at the following addresses or to such other address as may be directed in writing pursuant hereto:

TOWN:

Irving Rosenbaum, D.P.A.

Town of Davie

6591 S.W. 45 Street

Davie, FL 33114

BK1540576-908

BK15323PC 734

COUNTY:

County Administration  
Room 409, Governmental Center  
115 South Andrews Avenue  
Fort Lauderdale, FL 33301

DEVELOPER:

Charles L. Palmer  
Forest Ridge Community Development, Ltd.  
111 East Las Olas Boulevard  
Fort Lauderdale, FL 33301

14. This Agreement shall not be modified (and no purported modification hereof shall be effective) unless in writing and signed by all parties.
15. Upon satisfaction of the conditions set forth in Section 3, this Development Agreement may be recorded in the Public Records of Broward County, Florida, and, upon recordation, shall run with the land and be binding on the jurisdictions in which the land is situated and the DEVELOPER, its successors and assigns.
16. Only one original Agreement shall be executed, which original shall be recorded by COUNTY and returned to the custody of COUNTY.
17. For all purposes herein, the parties agree that time shall be of the essence in this Agreement, and the representations herein made are all material and of the essence of this Agreement.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the respective dates under each signature: the TOWN OF DAVIE by and through its Mayor duly authorized to execute same; BROWARD COUNTY through its Board of County Commissioners, signing by and through its Chair, authorized to execute same by Board action on the 23rd day of February, 1988; and FOREST RIDGE COMMUNITY DEVELOPMENT, LTD., through its General Partner, SEA RANCH-FOREST RIDGE, INC., signing by and through its President, duly authorized to execute same.

BK 15405 PG 909

BK 15323 PG 735

DEVELOPMENT AGREEMENT AMONG TOWN OF DAVIE, AND FOREST RIDGE  
COMMUNITY DEVELOPMENT, LTD., AND BROWARD COUNTY

TOWN

WITNESSES:

TOWN OF DAVIE

Harold S. Satchel

By W. H. [Signature]  
Mayor-Councilman

David A. [Signature]

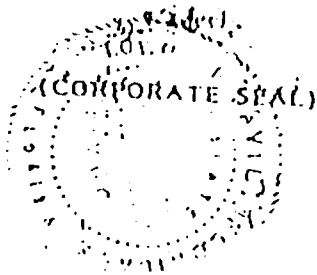
19<sup>th</sup> day of February, 1955.

ATTEST:

Patricia McDaniel  
Town Clerk

[Signature]  
Town Manager

19<sup>th</sup> day of February, 1955.



APPROVED AS TO FORM:

By [Signature]  
Town Attorney

BK 15405 PC 2910

BK 15323 PC 736

DEVELOPMENT AGREEMENT AMONG TOWN OF DAVIE, AND FOREST RIDGE COMMUNITY DEVELOPMENT, LTD., AND BROWARD COUNTY

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DEVELOPER

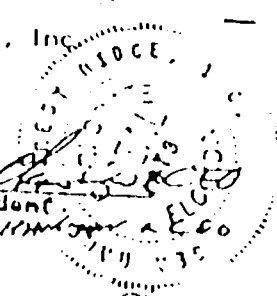
ATTEST:

FOREST RIDGE COMMUNITY DEVELOPMENT, LTD.

By: Sea Ranch Forest Ridge, Inc  
Its General Partner

Donald Kellaly  
Secretary

BY Walter C. Collins  
Walter C. Collins, President  
CHARLES L. PALMER, Chairman & CEO



(CORPORATE SEAL)

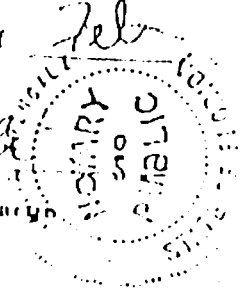
19 day of Feb. 1988

STATE OF FLORIDA )  
COUNTY OF Broward ) SS.

BEFORE ME personally appeared Walter C. Collins <sup>CHARLES L. PALMER</sup> and known to me to be the President of Sea Ranch Forest Ridge Inc., the General Partner of FOREST RIDGE COMMUNITY DEVELOPMENT, LTD., who executed the foregoing Instrument, and acknowledged to and before me that he executed said Instrument for the purposes therein expressed.

WITNESS my hand and official seal, this 19 day of Feb. A.D. 1988.

James M. ...  
Notary Public  
State of Florida at Large




My commission expires:

NOTARY PUBLIC STATE OF FLORIDA  
BY COMMISSION EXP. MAR. 1, 1990  
BONDED THRU GENERAL INS. CO.

BX15323PG 737

DEVELOPMENT AGREEMENT AMONG TOWN OF DAVIE, AND FOREST RIDGE  
COMMUNITY DEVELOPMENT, LTD., AND BROWARD COUNTY

  
*James Bruce*  
County Administrator and Ex-  
Officio Clerk of the Board of  
County Commissioners of  
Broward County, Florida

COUNTY

BROWARD COUNTY, through Its  
BOARD OF COUNTY COMMISSIONERS

By *[Signature]*  
SYLVIA FORTIER, Chair

*11<sup>th</sup>* day of *March*, 1988.

Approved as to form and legality by  
Office of General Counsel  
for Broward County, Florida  
SUSAN F. DELEGAL, General Counsel  
Governmental Center, Suite 423  
115 South Andrews Avenue  
Fort Lauderdale, Florida 33301  
Telephone: (105) 357 7600

*[Signature]*  
Andrew S. [unclear]  
Assistant General Counsel

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**Appendix G:** *Plant Species Observed at Pine Island Ridge*

## Appendix G: List of plant species observed or reported for the Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Abrus precatorius</i>	rosary pea	FABACEAE	x <sup>I</sup>	C	C	C	-
<i>Acacia auriculiformis</i>	earleaf acacia	FABACEAE	x <sup>I</sup>	U	-	U	FAC
<i>Achyranthes aspera</i> var. <i>pubescens</i>	devil's horsewhip	AMARANTHACEAE	e	-	-	-	-
<i>Acrostichum danaeifolium</i>	leather fern	PTERIDACEAE	n	R	-	-	OBL
<i>Ageratum conyzoides</i>	tropical whiteweed	ASTERACEAE	e	-	-	-	FACU
<i>Allamanda cathartica</i>	yellow allamanda	APOCYNACEAE	e	-	-	U	-
<i>Alpinia zerumbet</i>	shell ginger	ZINGIBERACEAE	e	-	-	-	-
<i>Alternanthera flavescens</i>	beach amaranth	AMARANTHACEAE	e	-	-	-	-
<i>Alternanthera philoxeroides</i> <sup>h</sup>	alligator weed	AMARANTHACEAE	x <sup>II</sup>	-	-	-	OBL
<i>Amaranthus spinosus</i>	spiny pigweed	AMARANTHACEAE	e	-	-	-	-
<i>Ambrosia artemisiifolia</i>	common ragweed	ASTERACEAE	n	U	U	-	-
<i>Amphicarpum muehlenbergianum</i>	blue maidencane	POACEAE	n	R	-	-	FACW
<i>Ananas comosus</i>	pineapple	BROMELIACEAE	e	-	R	R	-
<i>Andropogon glomeratus</i> var. <i>pumilus</i>	bushy bluestem	POACEAE	n	U	-	-	FACW
<i>Annona glabra</i>	pond apple	ANNONACEAE	n	-	U	-	OBL
<i>Antigonon leptopus</i>	coral vine	POLYGONACEAE	x <sup>II</sup>	-	-	-	-
<i>Arachis glabrata</i>	grassnut	FABACEAE	e	-	-	-	-
<i>Araucaria heterophylla</i>	Norfolk Island pine	ARAUCAURIAACEAE	e	R	-	-	-
<i>Ardisia elliptica</i>	shoebutton ardisia	MYRSINACEAE	x <sup>I</sup>	C	C	C	FAC
<i>Ardisia escallonioides</i>	marlberry	MYRSINACEAE	n	U	-	-	FAC
<i>Argemone mexicana</i>	Mexican poppy	PAPAVERACEAE	n	-	R	-	-
<i>Artocarpus heterophyllus</i>	jackfruit	MORACEAE	e	-	U	U	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Asclepias curassavica</i>	scarlet milkweed	APOCYNACEAE	e	-	U	U	-
<i>Asclepias tuberosa</i>	butterfly weed	APOCYNACEAE	n	-	-	-	-
<i>Asparagus aethiopicus</i>	Sprenger's asparagus fern	ASPARAGACEAE	x <sup>I</sup>	-	-	U	-
<i>Asystasia gangetica ssp. micrantha</i>	Ganges primrose	ACANTHACEAE	x <sup>II</sup>	C	C	C	FAC
<i>Baccharis glomeruliflora</i>	silverling	ASTERACEAE	n	-	U	-	FAC
<i>Baccharis halimifolia</i>	salt bush	ASTERACEAE	n	-	-	-	FAC
<i>Bacopa monnieri</i>	matted figwort	VERONICACEAE	n	-	-	-	OBL
<i>Barleria cristata</i>	Philippine violet	ACANTHACEAE	e	-	C	-	-
<i>Barleria repens</i>	coral creeper	ACANTHACEAE	e	-	-	U	FAC
<i>Bauhinia variegata</i>	orchid tree	FABACEAE	x <sup>I</sup>	-	-	-	-
<i>Bidens alba var. radiata</i>	burmarigold	ASTERACEAE	n	C	C	C	FACW
<i>Bischofia javanica</i>	bishopwood	EUPHORBIACEAE	x <sup>I</sup>	U	U	-	-
<i>Boehmeria cylindrica</i>	button hemp	URTICACEAE	n	U	U	-	OBL
<i>Boerhavia diffusa</i>	red spiderling	NYCTAGINACEAE	n	-	-	-	-
<i>Bursera simaruba</i>	gumbo limbo	BURSERACEAE	n	-	U	-	FAC
<i>Caesalpinia pulcherrima</i>	prode of Barbados	FABACEAE	e	U	U	-	-
<i>Callicarpa americana</i>	beauty berry	VERBENACEAE	n	C	C	C	-
<i>Callisia fragrans</i>	basket plant	COMMELINACEAE	x <sup>II</sup>	U	U	-	-
<i>Campyloneurum phyllitidis</i>	common strap fern	POLYPODIACEAE	n	-	R	-	-
<i>Carica papaya</i>	papaya	CARICACEAE	e	R	R	-	-
<i>Carissa macrocarpa</i>	natal plum	APOCYNACEAE	e	-	-	-	-
<i>Caryota mitis</i>	Burmese fishtail palm	ARECACEAE	e	R	-	R	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Cassytha filiformis</i>	love vine	LAURACEAE	n	-	U	-	-
<i>Casuarina equisetifolia</i>	Australian pine	CASUARINACEAE	x <sup>I</sup>	-	-	-	FAC
<i>Catharanthus roseus</i>	Madagascar periwinkle	APOCYNACEAE	e	U	U	-	-
<i>Celtis laevigata</i>	sugarberry	CELTIDACEAE	n	R	-	-	FACW
<i>Cenchrus purpureus</i>	Napiergrass	POACEAE	x <sup>I</sup>	-	-	U	FAC
<i>Cenchrus setaceus</i>	fountain grass	POACEAE	x <sup>II</sup>	-	-	-	-
<i>Cenchrus spinifex</i>	coastal sandspur	POACEAE	n	-	-	C	-
<i>Centella asiatica</i>	Coinwort	APIACEAE	n	U	U	-	FACW
<i>Cereus repandus</i>	Peruvian purple cactus	CACTACEAE	e	-	U	U	-
<i>Cestrum diurnum</i>	day-blooming jasmine	SOLANACEAE	x <sup>II</sup>	U	-	-	FAC
<i>Chamaedorea seifrizii</i>	bamboo palm	ARECACEAE	x <sup>II</sup>	-	U	-	-
<i>Chiococca alba</i>	snowberry	RUBIACEAE	n	-	-	-	FAC
<i>Chromolaena odorata</i>	Jack-in-the-bush	ASTERACEAE	n	C	C	C	FAC
<i>Chrysobalanus icaco</i>	cocoplum	CHRYSOBALANACEAE	n	C	C	-	FACW
<i>Chrysophyllum oliviforme</i> (Threatened)	satin leaf	SAPOTACEAE	n	-	U	-	-
<i>Cissus verticillata</i>	possum grape	VITACEAE	n	C	C	C	-
<i>Citrus aurantium</i>	sour orange	RUTACEAE	e	U	U	U	-
<i>Citrus limon</i> (jambhiri?)	rough lemon	RUTACEAE	e	-	-	-	-
<i>Citrus sinensis</i>	sweet orange	RUTACEAE	e	-	-	-	-
<i>Clerodendrum bungei</i>	glory bower	LAMIACEAE	e	-	-	-	-
<i>Clerodendrum quadriloculare</i>	shooting star	LAMIACEAE	e	L	-	-	-
<i>Clerodendrum speciosissimum</i>	Java glorybower	LAMIACEAE	e	-	-	-	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Clerodendrum thomsoniae</i>	bleeding heart vine	LAMIACEAE	e	-	-	-	-
<i>Coccoloba diversifolic</i> <sup>h</sup>	pigeon plum	POLYGONACEAE	n	-	-	-	-
<i>Coccoloba uvifera</i>	sea grape	POLYGONACEAE	n	R	R	R	-
<i>Cocos nucifera</i>	coconut palm	ARECACEAE	x <sup>ll</sup>	U	U	U	-
<i>Codiaeum variegatum</i>	croton	EUPHORBIACEAE	e	-	-	-	-
<i>Combretum indicum</i>	Rangoon creeper	COMBRETACEAE	e	-	-	-	-
<i>Commelina diffusa</i> var. <i>diffusa</i>	common day-flower	COMMELINACEAE	e	C	C	C	FACW
<i>Commelina erecta</i> <sup>h</sup>	white mouth dayflower	COMMELINACEAE	n	-	-	-	-
<i>Conyza canadensis</i> var. <i>pusilla</i>	dwarf horseweed	ASTERACEAE	n	U	-	-	-
<i>Cordyline fruticosa</i>	ti plant	AGAVACEAE	e	-	R	R	-
<i>Crassocephalum crepidioides</i>	redflower ragleaf	ASTERACEAE	x <sup>ll</sup>	-	-	-	-
<i>Crinum americanum</i>	string-lily	AMARYLLIDACEAE	n	-	R	-	OBL
<i>Crotalaria spectabilis</i>	showy crotalaria	FABACEAE	e	-	-	-	-
<i>Croton glandulosus</i>	Vente conmigo	EUPHORBIACEAE	n	-	-	-	-
<i>Cryptostegia madagascariensis</i>	rubber vine	APOCYNACEAE	x <sup>ll</sup>	-	-	-	-
<i>Cupaniopsis anacardioides</i>	carrotwood	SAPINDACEAE	x <sup>l</sup>	C	C	C	FAC
<i>Cyanthillium cinereum</i>	ironweed	ASTERACEAE	e	U	U	U	FACW
<i>Cymbopogon citratus</i>	Lemongrass	POACEAE	e	-	-	-	-
<i>Cynodon dactylon</i>	bermuda grass	POACEAE	e	-	-	-	-
<i>Cyperus croceus</i>	Baldwin's flatsedge	CYPERACEAE	n	C	U	C	FAC
<i>Cyperus distinctus</i>	marshland flatsedge	CYPERACEAE	n	R	-	-	OBL
<i>Cyperus ligularis</i>	swamp flatsedge	CYPERACEAE	n	-	-	U	FACW

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Cyperus polystachyos</i>	many-spike sedge	CYPERACEAE	n	-	R	-	FACW
<i>Cyperus rotundus</i>	nut grass	CYPERACEAE	e	-	-	-	FAC
<i>Cyperus surinamensis</i>	tropical flatsedge	CYPERACEAE	e	R	R	-	FACW
<i>Cyperus tetragonus</i>	four-angle flatsedge	CYPERACEAE	n	-	-	-	-
<i>Dactyloctenium aegyptium</i>	crowsfoot grass	POACEAE	x <sup>ll</sup>	C	C	C	-
<i>Delonix regia</i>	royal poinciana	FABACEAE	e	-	U	U	-
<i>Desmodium incanum</i>	beggar's ticks	FABACEAE	e	C	C	C	-
<i>Dichanthelium commutatum</i>	variable witchgrass	POACEAE	n	R	-	-	FAC
<i>Dichanthelium ovale</i>	egg-leaf witch grass	POACEAE	n	-	-	-	FAC
<i>Dichanthelium portoricense</i>	hemlock witchgrass	POACEAE	n	-	-	R	-
<i>Dichanthelium strigosum</i> var. <i>glabrescens</i>	panic grass	POACEAE	n	-	-	-	FAC
<i>Dichondra carolinensis</i>	pony-foot	CONVOLVULACEAE	n	-	U	-	FAC
<i>Dicliptera sexangularis</i>	six angle foldwing	ACANTHACEAE	n	U	-	-	-
<i>Digitaria ciliaris</i>	southern crabgrass	POACEAE	n	C	C	C	-
<i>Digitaria longiflora</i>	Indian crabgrass	POACEAE	e	U	U	U	-
<i>Dioscorea alata</i>	white yam	DIOSCOREACEAE	x <sup>l</sup>	-	-	-	-
<i>Dioscorea batatas</i>	Chinese yam	DIOSCOREACEAE	e	-	-	-	-
<i>Dioscorea bulbifera</i>	air potato	DIOSCOREACEAE	x <sup>l</sup>	C	-	C	-
<i>Diospyros virginiana</i>	persimmon	EBENACEAE	n	-	-	-	FAC
<i>Dolichandra unguis-cati</i>	cat's claw vine	BIGONIACEAE	x <sup>l</sup>	-	U	U	-
<i>Dracaena fragrans</i>	corn plant	AGAVACEAE	e	R	R	R	-
<i>Sansevieria hyacinthoides</i>	bowstring hemp	RUSCACEAE	x <sup>ll</sup>	C	C	C	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Drymaria cordata</i>	West Indies chickweed	CARYOPHYLLACEAE	n	C	C	C	F
<i>Dypsis lutescens</i>	areca palm	ARECACEAE	e	R	R	R	-
<i>Dysphania ambrosioides</i>	Mexican tea	AMARANTHACEAE	e	-	-	-	-
<i>Echinochloa crus-galli</i>	barnyard grass	POACEAE	e	-	-	-	FACW
<i>Echites umbellatus</i>	devil's potato	APOCYNACEAE	n	-	-	-	-
<i>Eclipta prostrata</i>	false daisy	ASTERACEAE	n	-	-	-	FACW
<i>Eleocharis cellulosa</i>	spike rush	CYPERACEAE	n	-	-	-	OBL
<i>Eleocharis interstincta</i>	jointed spikerush	CYPERACEAE	n	-	U	-	OBL
<i>Eleusine indica</i>	Indian goose grass	POACEAE	e	C	C	-	FAC
<i>Emilia fosbergii</i>	red tassel flower	ASTERACEAE	e	U	U	-	-
<i>Emilia sonchifolia</i>	pink tassel flower	ASTERACEAE	e	C	C	C	-
<i>Encyclia tampensis</i>	butterfly orchid	ORCHIDACEAE	n	-	-	-	-
<i>Epidendrum radicans</i>	star orchid	ORCHIDACEAE	e	-	-	-	-
<i>Epipremnum pinnatum</i>	golden pothos	ARACEAE	x <sup>ll</sup>	U	U	U	-
<i>Eragrostis ciliaris</i>	gophertail Lovegrass	POACEAE	e	-	-	-	FAC
<i>Erechtites hieraciifolius</i>	American burn	ASTERACEAE	n	-	-	-	FAC
<i>Erigeron belliioides</i>	bellorita	ASTERACEAE	e	R	-	-	-
<i>Erigeron quercifolius</i>	oakleaf fleabane	ASTERACEAE	n	U	-	-	FAC
<i>Eriobotrya japonica</i>	loquat	ROSACEAE	e	R	-	-	-
<i>Erythrina herbacea</i>	coral bean	FABACEAE	n	-	-	-	-
<i>Eugenia axillaris</i>	white stopper	MYRTACEAE	n	U	-	-	-
<i>Eugenia uniflora</i>	Surinam cherry	MYRTACEAE	x <sup>l</sup>	C	C	C	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Eupatorium capillifolium</i>	dog fennel	ASTERACEAE	n	U	U	-	FAC
<i>Eupatorium rotundifolium</i>	false horehound	ASTERACEAE	n	-	-	-	FAC
<i>Eupatorium serotinum</i>	late eupatorium	ASTERACEAE	n	-	R	-	-
<i>Euphorbia cyathophora</i>	paint leaf	EUPHORBIAEAE	n	U	-	U	-
<i>Euphorbia heterophylla</i>	wild poinsettia	EUPHORBIAEAE	n	-	-	-	-
<i>Euphorbia hirta</i>	pillpod sandmat	EUPHORBIAEAE	n	R	-	-	-
<i>Euphorbia hyssopifolia</i>	hyssop-leaf sandmat	EUPHORBIAEAE	n	-	-	-	-
<i>Eustachys petraea</i>	pinewoods finger grass	POACEAE	n	C	-	C	FAC
<i>Ficus altissima</i>	false banyan tree	MORACEAE	x <sup>ll</sup>	-	-	-	-
<i>Ficus aurea</i>	strangler fig	MORACEAE	n	C	C	C	FAC
<i>Ficus microcarpa</i>	Indian laurel fig	MORACEAE	x <sup>l</sup>	U	U	U	-
<i>Fimbristylis cymosa</i>	hurricane grass	CYPERACEAE	n	-	U	-	FAC
<i>Forestiera segregata</i>	Florida privet	OLEACEAE	n	R	-	-	FAC
<i>Fuirena breviseta</i>	umbrella grass	CYPERACEAE	n	-	R	-	OBL
<i>Funastrum clausum</i>	white twinevine	APOCYNACEAE	n	R	-	-	-
<i>Galium hispidulum</i>	coastal bedstraw	RUBIACEAE	n	-	-	-	-
<i>Galium tinctorium</i>	stiff marsh bedstraw	RUBIACEAE	n	-	R	-	FACW
<i>Galphimia gracilis</i>	slender goldenshower	MALPIGHIACEAE	e	-	-	-	-
<i>Geobalanus oblongifolius</i>	gopher apple	CHRYSOBALANACEAE	n	-	-	-	-
<i>Geranium carolinianum</i>	cranesbill	GERANIACEAE	n	-	-	-	-
<i>Gomphrena globosa</i>	globe amaranth	AMARANTHACEAE	e	R	-	-	-
<i>Gomphrena serrata</i> <sup>h</sup>	Arrasa contodo	AMARANTHACEAE	e	-	-	-	-



Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Guilandina bonduc</i>	gray nickerbean	FABACEAE	n	-	-	-	-
<i>Habenaria floribunda</i>	rein orchid	ORCHIDACEAE	n	-	-	-	FACW
<i>Hamelia patens var. patens</i>	firebush	RUBIACEAE	n	U	-	U	-
<i>Helianthemum nashii</i>	scrub sun rose	CISTACEAE	n	-	-	-	-
<i>Heterotheca subaxillaris</i>	camphorweed	ASTERACEAE	n	-	-	-	-
<i>Hydrocotyle umbellata</i>	marsh pennywort	ARALIACEAE	n	U	U	U	FACW
<i>Hylocereus undatus</i>	night-blooming cactus	CACTACEAE	e	-	U	-	-
<i>Hypericum tetrapetalum</i> <sup>h</sup>	four-petal hypericum	CLUSIACEAE	n	-	-	-	FAC
<i>Hyptis verticillata</i>	John Charles	LAMIACEAE	e	U	-	U	-
<i>Ilex cassine</i>	dahoon holly	AQUIFOLIACEAE	n	U	-	-	OBL
<i>Ilex vomitoria</i> <sup>h</sup>	yaupon holly	AQUIFOLIACEAE	n	-	-	-	FAC
<i>Ipomoea alba</i>	moon vine	CONVOLVULACEAE	n	U	U	U	-
<i>Ipomoea cordatotriloba</i>	small pink morning glory	CONVOLVULACEAE	n	-	-	-	-
<i>Iresine diffusa</i>	blood leaf	AMARANTHACEAE	n	U	U	U	-
<i>Jasminum fluminense</i>	Brazilian jasmine	OLEACEAE	x <sup>I</sup>	C	C	C	-
<i>Justicia spicigera</i>	Mohintli	ACANTHACEAE	e	R	-	-	-
<i>Kalanchoe pinnata</i>	life plant	CRASSULACEAE	x <sup>II</sup>	C	C	C	-
<i>Kigelia africana</i>	sausage tree	BIGNONIACEAE	e	-	R	-	-
<i>Koelreuteria elegans subsp. formosana</i>	golden raintree	SAPINDACEAE	x <sup>II</sup>	-	R	-	-
<i>Kyllinga brevifolia</i>	short-leaf flatsedge	CYPERACEAE	e	-	R	-	FACW
<i>Lantana strigocamara</i>	Lantana	VERBENACEAE	x <sup>I</sup>	-	U	-	-
<i>Lepidium virginicum</i>	pepper grass	BRASSICACEAE	n	C	C	C	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Liatris tenuifolia</i> <sup>h</sup>	short-leaf gayfeather	ASTERACEAE	n	-	-	-	-
<i>Ludwigia peruviana</i>	Peruvian Primrose willow	ONAGRACEAE	x <sup>l</sup>	U	U	-	OBL
<i>Ludwigia repens</i>	floating ludwigia	ONAGRACEAE	n	R	-	-	OBL
<i>Lyonia fruticosa</i> <sup>h</sup>	staggerbush	ERICACEAE	n	-	-	-	-
<i>Lysiloma latisiliquum</i>	false tamarind	FABACEAE	n	R	-	-	-
<i>Malvaviscus arboreus var. drummondii</i> <sup>h</sup>	Texas waxmallow	MALVACEAE	e	-	-	-	-
<i>Mangifera indica</i>	mango	ANACARDIACEAE	e	U	U	U	-
<i>Manilkara zapota</i>	sapodilla	SAPOTACEAE	x <sup>l</sup>	R	R	-	-
<i>Mecardonia procumbens</i>	baby jump-up	PLANTAGINACEAE	n	-	R	-	FACW
<i>Melia azedarach</i>	chinaberry	MELIACEAE	x <sup>ll</sup>	-	-	-	-
<i>Melinis minutiflora</i>	molasses grass	POACEAE	x <sup>ll</sup>	-	R	-	-
<i>Melinis repens</i>	natal grass	POACEAE	x <sup>l</sup>	-	-	-	-
<i>Melothria pendula</i>	creeping cucumber	CURCUBITACEAE	n	-	-	-	-
<i>Metastelma blodgettii</i> (Threatened)	milkweed vine	APOCYNACEAE	n	-	-	-	-
<i>Mikania cordifolia</i>	hempvine	ASTERACEAE	n	-	-	-	-
<i>Mikania scandens</i>	climbing hempvine	ASTERACEAE	n	U	U	-	-
<i>Millettia pinnata</i>	karum or pongam tree	FABACEAE	e	-	-	-	-
<i>Mimusops coriacea</i>	monkey apple	SAPOTACEAE	e	R	R	-	-
<i>Mimusops elengi</i>	Spanish cherry	SAPOTACEAE	e	R	R	R	-
<i>Mirabilis jalapa</i>	four o'clock	NYCTAGINACEAE	e	-	-	-	-
<i>Momordica charantia</i>	wild balsam apple	CUCURBITACEAE	x <sup>ll</sup>	C	C	C	-
<i>Monstera deliciosa</i>	Ceriman	ARACEAE	e	-	-	R	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Morus rubra</i>	red mulberry	MORACEAE	n	-	-	-	FAC
<i>Mucuna pruriens</i>	cow itch vine	FABACEAE	e	-	-	U	-
<i>Muhlenbergia capillaris</i> <sup>h</sup>	muhly grass	POACEAE	n	-	-	-	OBL
<i>Murraya paniculata</i>	orange jasmine	RUTACEAE	x <sup>ll</sup>	U	-	U	-
<i>Musa X paradisiaca</i>	banana	MUSACEAE	e	R	R	-	-
<i>Myrica cerifera</i>	wax myrtle	MYRICACEAE	n	-	-	-	FAC
<i>Myrsine cubana</i>	myrsine	MYRSINACEAE	n	U	-	-	FAC
<i>Neoregalia sp.</i>		BROMELIACEAE	e	-	R	-	-
<i>Nephrolepis biserrata</i> (Threatened)	giant sword fern	NEPHROLEPIDACEAE	n	-	U	-	FAC
<i>Nephrolepis brownii</i>	Asian sword fern	NEPHROLEPIDACEAE	x <sup>l</sup>	U	U	U	FAC
<i>Nephrolepis cordifolia</i>	tuber sword fern	NEPHROLEPIDACEAE	x <sup>l</sup>	U	-	U	FAC
<i>Nephrolepis exaltata</i>	sword fern	NEPHROLEPIDACEAE	n	-	U	-	FAC
<i>Nephrolepis falcata</i>	fishtail boston fern	NEPHROLEPIDACEAE	e	-	U	-	-
<i>Nephrolepis falcata</i> (unbranched form)		NEPHROLEPIDACEAE	e	U	-	U	-
<i>Nephrolepis x averyi</i>	Avery's sword fern	NEPHROLEPIDACEAE	n	-	R	-	FAC
<i>Neyraudia reynaudiana</i>	Burma reed	POACEAE	x <sup>l</sup>	-	-	-	FAC
<i>Oeceoclades maculata</i>	ground orchid	ORCHIDACEAE	e	C	C	C	-
<i>Oplismenus setarius</i>	basketgrass	POACEAE	n	C	C	C	-
<i>Opuntia ficus-indica</i>	tuna cactus	CACTACEAE	e	-	-	-	-
<i>Opuntia humifusa</i> (austrina)	prickly pear	CACTACEAE	n	-	-	-	-
<i>Orthosia scoparia</i>	leafless cynanchum	APOCYNACEAE	n	-	R	-	-
<i>Osmunda regalis var. spectabilis</i>	royal fern	OSMUNDACEAE	n	R	-	-	OBL

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Oxalis corniculata</i>	woodsorrel	OXALIDACEAE	n	-	-	R	-
<i>Oxalis debilis</i> var. <i>corymbosa</i>	pink wood sorrel	OXALIDACEAE	e	-	-	R	-
<i>Panicum dichotomiflorum</i>	fall panicum	POACEAE	n	-	-	R	FACW
<i>Panicum laxum</i>	lax panicgrass	POACEAE	e	U	U	-	-
<i>Panicum repens</i>	toredo grass	POACEAE	x <sup>I</sup>	-	U	-	FACW
<i>Parietaria praetermissa</i>	clustered pelitory	URTICACEAE	n	C	-	C	FAC
<i>Parthenocissus quinquefolia</i>	Virginia creeper	VITACEAE	n	C	C	C	-
<i>Paspalum conjugatum</i>	sour paspalum	POACEAE	n	-	R	-	FAC
<i>Paspalum setaceum</i>	Thin paspalum	POACEAE	n	C	C	C	FAC
<i>Paspalum vaginatum</i>	Seaside Paspalum	POACEAE	n	-	R	-	-
<i>Passiflora incarnata</i>	purple passion flower	PASSIFLORACEAE	n	U	C	U	-
<i>Passiflora suberosa</i>	corky-stem passion flower	PASSIFLORACEAE	n	C	C	C	-
<i>Passiflora x belotii</i>		PASSIFLORACEAE	e	-	-	-	-
<i>Persea americana</i>	avocado	LAURACEAE	e	-	U	-	-
<i>Persea borbonia</i>	red bay	LAURACEAE	n	C	C	C	-
<i>Petiveria alliacea</i>	Guinea-hen weed	PETIVERIACEAE	n	C	-	-	-
<i>Philodendron bipinnatifidum</i>	Philodendron (selloum)	ARACEAE	e	R	-	-	-
<i>Philodendron scandens</i>	Heart-leaf philodendron	ARACEAE	e	-	-	-	-
<i>Phlebodium aureum</i>	golden polypody	POLYPODIACEAE	n	-	C	C	-
<i>Phoenix reclinata</i>	Senegal date palm	ARECACEAE	x <sup>II</sup>	U	-	-	-
<i>Phyla nodiflora</i>	creeping Charlie	VERBENACEAE	n	C	C	-	FAC
<i>Phyllanthus abnormis</i>	Drummond's Leafflower	PHYLLANTHACEAE	n	-	-	-	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Phyllanthus tenellus</i>	Mascarene Island leaf flower	PHYLLANTHACEAE	e	U	-	-	-
<i>Physalis angulata</i>	cut leaf ground-cherry	SOLANACEAE	n	-	-	-	-
<i>Phytolacca americana</i>	pokeberry	PHYTOLACCACEAE	n	U	U	-	-
<i>Pilea microphylla</i>	artillery fern	URTICACEAE	n	U	U	U	FACW
<i>Pinus elliotii var. densa</i>	slash pine	PINACEAE	n	C	C	C	-
<i>Pisonia aculeata</i>	devil's claw	NYCTAGINACEAE	n	C	C	C	-
<i>Platyterium bifurcatum</i>	staghorn	POLYPODIACEAE	x <sup>II</sup>	U	U	-	-
<i>Pleopeltis michauxiana</i>	resurrection fern	POLYPODIACEAE	n	C	C	C	-
<i>Pluchea baccharis</i>	rosy camphorweed	ASTERACEAE	n	-	-	-	FACW
<i>Pluchea odorata</i>	sweetscent	ASTERACEAE	n	R	-	-	FACW
<i>Pontederia cordata</i>	pickerel weed	PONTEDERIACEAE	n	R	-	-	OBL
<i>Portulaca oleracea</i>	little hogweed	PORTULACEAE	n	-	-	-	-
<i>Portulaca pilosa</i>	pink purslane	PORTULACEAE	n	-	-	-	-
<i>Pouteria sapota</i>	mamey	SAPOTACEAE	e	-	R	-	-
<i>Pouzolzia zeylanica</i>	Pouzolz's bush	URTICACEAE	e	C	C	C	-
<i>Prunus caroliniana</i>	Carolina laurel cherry	ROSACEAE	n	-	-	-	-
<i>Psidium cattleianum</i>	strawberry guava	MYRTACEAE	x <sup>I</sup>	R	-	R	FAC
<i>Psidium guajava</i>	guava	MYRTACEAE	x <sup>I</sup>	-	-	-	-
<i>Psychotria nervosa</i>	wild coffee	RUBIACEAE	n	C	C	C	FAC
<i>Psychotria tenuifolia</i>	soft-leaf wild coffee	RUBIACEAE	n	-	-	-	FAC
<i>Pteridium aquilinum var. caudatum</i>	lacey bracken fern	DENNSTAEDTIACEAE	n	U	U	-	-
<i>Pteris vittata</i>	Chinese brake fern	PTERIDACEAE	x <sup>II</sup>	-	-	U	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Pterocaulon pycnostachyum</i> <sup>h</sup>	black root	ASTERACEAE	n	-	-	-	-
<i>Ptychosperma elegans</i>	solitaire palm	ARECACEAE	x <sup>ll</sup>	-	U	U	-
<i>Pyrostegia venusta</i> <sup>h</sup>	flame vine	BIGNONIACEAE	e	-	-	-	-
<i>Quercus chapmanii</i>	Chapman oak	FAGACEAE	n	-	-	-	-
<i>Quercus geminata</i>	sand live oak	FAGACEAE	n	-	-	R	-
<i>Quercus laurifolia</i>	laurel oak	FAGACEAE	n	C	C	-	FACW
<i>Quercus myrtifolia</i>	myrtle oak	FAGACEAE	n	-	-	-	-
<i>Quercus nigra</i>	water oak	FAGACEAE	n	-	-	-	FACW
<i>Quercus virginiana</i>	live oak	FAGACEAE	n	C	C	C	-
<i>Rhynchospora colorata</i>	white top	CYPERACEAE	n	-	U	-	FACW
<i>Rhynchospora microcarpa</i>	southern beakrush	CYPERACEAE	n	-	-	-	OBL
<i>Richardia brasiliensis</i>	tropical Mexican clover	RUBIACEAE	e	-	-	-	-
	large flower Mexican						-
<i>Richardia grandiflora</i>	clover	RUBIACEAE	x <sup>ll</sup>	C	C	C	-
<i>Ricinus communis</i>	castor bean	EUPHORBIACEAE	x <sup>ll</sup>	-	-	R	-
<i>Rivina humilis</i>	rouge plant	PETIVERIACEAE	n	C	C	C	-
<i>Rousselia humilis</i>	rouselia	URTICACEAE	e	C	U	-	-
<i>Roystonea regia</i> <sup>h</sup> (Endangered)	royal palm	AREACEAE	n	R	-	-	FACW
<i>Ruellia blechum</i>	green shrimp plant	ACANTHACEAE	x <sup>ll</sup>	C	C	C	-
<i>Ruellia simplex</i>	Britton's wild petunia	ACANTHACEAE	x <sup>l</sup>	-	U	-	FAC
<i>Sabal palmetto</i>	cabbage palm	ARECACEAE	n	C	C	C	FAC
<i>Sagittaria lancifolia</i>	Lanceleaf arrowhead	ALISMATACEAE	n	R	-	-	OBL
<i>Sagittaria latifolia</i>	duck potato	ALISMATACEAE	n	-	-	-	OBL

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Salix caroliniana</i>	coastal plain willow	SALICACEAE	n	-	U	-	OBL
<i>Salvia misella</i>	southern river sage	LAMIACEAE	n	U	U	U	-
<i>Salvinia minima</i>	water spangles	SALVINIACEAE	x <sup>l</sup>	-	-	-	-
<i>Sambucus nigra subsp. canadensis</i>	elderberry	ADOXACEAE	n	U	U	U	FAC
<i>Schefflera actinophylla</i>	umbrella tree	ARALIACEAE	x <sup>l</sup>	C	C	C	-
<i>Schefflera arboricola</i>	dwarf schefflera	ARALIACEAE	e	-	-	R	-
<i>Schinus terebinthifolia</i>	Brazilian Pepper	ANACARDIACEAE	x <sup>l</sup>	C	C	C	FAC
<i>Schoepfia schreberi</i>	gulf graytwig	SCHOEPFIACEAE	n	-	-	-	-
<i>Scleria triglomerata</i>	whip nutrush	CYPERACEAE	n	C	-	-	FACW
<i>Selenicereus pteranthus</i>	vine cactus	CACTACEAE	e	-	U	-	-
<i>Senna alata</i>	candlebush	FABACEAE	e	-	-	-	-
<i>Senna obtusifolia</i>	sicklepod	FABACEAE	e	-	-	-	-
<i>Senna occidentalis</i>	septicweed	FABACEAE	e	-	-	-	-
<i>Serenoa repens</i>	saw palmetto	ARECACEAE	n	C	C	C	-
<i>Setaria corrugata</i>	coastal foxtail	POACEAE	n	-	-	-	-
<i>Setaria parviflora</i>	knotroot bristle grass	POACEAE	n	-	U	-	FAC
<i>Sida cordifolia</i>	Llima	MALVACEAE	e	-	U	-	-
<i>Sida elliottii</i>	waxweed	MALVACEAE	n	-	-	-	-
<i>Sida rhombifolia</i>	teaweed	MALVACEAE	n	C	C	-	-
<i>Sida ulmifolia</i>	wax mallow	MALVACEAE	n	C	-	C	-
<i>Sideroxylon foetidissimum</i>	mastic	SAPOTACEAE	n	C	C	C	-
<i>Simarouba glauca</i>	paradise tree	SIMAROUBACEAE	n	-	U	-	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Smilax auriculata</i>	earleaf greenbrier	SMILACEAE	n	C	C	C	-
<i>Smilax bona-nox</i>	saw greenbrier	SMILACEAE	n	-	-	-	-
<i>Solanum americanum</i>	common nightshade	SOLANACEAE	n	U	-	-	-
<i>Solanum diphyllum</i>	twin-leafed nightshade	SOLANACEAE	x <sup>ll</sup>	C	C	C	-
<i>Solanum erianthum</i>	potato tree	SOLANACEAE	n	-	-	-	FACW
<i>Solanum melongena</i> <sup>h</sup>	cherry tomato	SOLANACEAE	e	-	-	-	-
<i>Solanum seaforthianum</i>	St. Vincents lilac	SOLANACEAE	e	-	-	-	-
<i>Solanum torvum</i>	turkeyberry	SOLANACEAE	x <sup>ll</sup>	-	-	-	-
<i>Sonchus asper</i>	spiny sow thistle	ASTERACEAE	e	R	-	-	-
<i>Spathodea campanulata</i>	African tulip tree	BIGNONIACEAE	e	-	U	U	-
	woodland false						-
<i>Spermacoce remota</i>	buttonweed	RUBIACEAE	n	U	U	-	-
<i>Spermacoce terminalis</i> (Threatened & Endemic)	Everglades Key false buttonweed	RUBIACEAE	x <sup>ll</sup>	-	-	-	-
<i>Spermacoce verticillata</i>	scrubby False Buttonweed	RUBIACEAE	x <sup>ll</sup>	C	C	C	-
<i>Sphagneticola trilobata</i>	creeping oxeye	ASTERACEAE	x <sup>ll</sup>	U	-	-	FAC
<i>Sporobolus indicus</i>	smutgrass	POACEAE	e	C	C	-	-
<i>Stenotaphrum secundatum</i>	st. augustinegrass	POACEAE	n	C	C	C	FAC
<i>Strelitzia nicolai</i>	bird of paradise	STRELITZIACEAE	e	-	R	-	-
<i>Stylisma villosa</i>	hairy dawnflower	CONVOLVULACEAE	n	R	-	-	-
<i>Swietenia mahagoni</i>	West Indies mahogany	MELIACEAE	c	-	-	U	-
<i>Syagrus romanzoffiana</i>	queen palm	ARECACEAE	x <sup>ll</sup>	U	U	U	-
<i>Symphotrichum bahamense</i>	bahaman aster	ASTERACEAE	n	-	R	-	OBL



Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Symphotrichum simmondsii</i>	Simmonds aster	ASTERACEAE	n	R	-	-	-
<i>Syngonium podophyllum</i>	arrowhead vine	ARACEAE	x <sup>I</sup>	U	U	U	-
<i>Syzygium cumini</i>	Jambolan plum	MYRTACEAE	x <sup>I</sup>	C	C	C	FAC
<i>Syzygium jambos</i>	rose apple	MYRTACEAE	x <sup>II</sup>	-	-	R	FAC
<i>Tabebuia heterophylla</i>	pink trumpet tree	BIGNONIACEAE	e	-	-	R	-
<i>Tabernaemontana divaricata</i>	crepe jasmine	APOCYNACEAE	e	-	-	-	-
<i>Talipariti tilaceum</i> var. <i>tilaceum</i>	mahoe	MALVACEAE	x <sup>II</sup>	-	-	-	FAC
<i>Taxodium ascendens</i>	pond cypress	CUPRESSACEAE	n	U	U	-	OBL
<i>Tecoma capensis</i>	cape vine	BIGNONIACEAE	e	-	-	-	-
<i>Telmatoblechnum serrulatum</i>	swamp fern	BLECHNACEAE	n	-	U	-	FACW
<i>Terminalia buceras</i>	black olive	COMBRETACEAE	e	-	-	-	FAC
<i>Terminalia muelleri</i>	Muller's Almond	COMBRETACEAE	x <sup>II</sup>	U	-	-	-
<i>Thelypteris dentata</i>	shield fern	THELYPTERIDACEAE	e	-	U	-	FACW
<i>Thelypteris interrupta</i>	Wildenow's maiden fern	THELYPTERIDACEAE	n	-	-	-	FACW
<i>Thelypteris kunthii</i>	soft-leaved maiden fern	THELYPTERIDACEAE	n	C	C	U	-
<i>Thunbergia grandiflora</i>	sky vine	ACANTHACEAE	e	-	U	U	-
<i>Tillandsia balbisiana</i> (Threatened)	reflexed wildpine	BROMELIACEAE	n	U	C	U	-
<i>Tillandsia fasciculata</i> var. <i>densispica</i> (Endangered)	common wild pine	BROMELIACEAE	n	U	C	U	-
<i>Tillandsia recurvata</i>	ball moss	BROMELIACEAE	n	C	C	C	-
<i>Tillandsia setacea</i>	southern needle leaf	BROMELIACEAE	n	U	U	-	-
<i>Tillandsia usneoides</i>	Spanish moss	BROMELIACEAE	n	U	U	U	-
<i>Tillandsia utriculata</i> (Endangered)	giant wild pine	BROMELIACEAE	n	-	-	U	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Toxicodendron radicans</i>	poison ivy	ANACARDIACEAE	n	C	C	C	FAC
<i>Tradescantia spathacea</i>	oyster plant	COMMELINACEAE	x <sup>ll</sup>	C	C	C	-
<i>Tradescantia zebrina</i>	wandering Jew	COMMELINACEAE	e	C	-	-	-
<i>Trema micrantha</i>	Florida trema	CANNABACEAE	n	C	-	-	FAC
<i>Tribulus cistoides</i>	puncture vine	ZYGOPHYLLACEAE	x <sup>ll</sup>	-	-	-	-
<i>Trichostema dichotomum</i> <sup>h</sup>	forked blue curls	LAMIACEAE	n	-	-	-	-
<i>Tridax procumbens</i>	coatbuttons	ASTERACEAE	e	U	U	U	-
<i>Tripsacum dactyloides</i> <sup>h</sup>	Fahkahatchee grass	POACEAE	n	-	-	-	FAC
<i>Triumfetta semitriloba</i>	burweed	MALVACEAE	e	C	C	C	-
<i>Typha domingensis</i>	southern cattail	TYPHACEAE	n	-	R	-	OBL
<i>Urena lobata</i>	Ceasar weed	MALVACEAE	x <sup>l</sup>	C	C	C	FAC
<i>Urochloa distachya</i>	tropical signalgrass	POACEAE	e	-	U	-	-
<i>Urochloa maxima</i>	Guinea grass	POACEAE	x <sup>ll</sup>	C	C	C	-
<i>Urochloa mutica</i>	paragrass	POACEAE	x <sup>l</sup>	U	U	-	FACW
<i>Urochloa piligera</i>	hairy signalgrass	POACEAE	e	-	-	-	-
<i>Vaccinium myrsinites</i>	shiny blueberry	ERICACEAE	n	-	-	-	-
<i>Verbesina virginica</i>	white crownbeard	ASTERACEAE	n	-	U	U	FAC
<i>Vicia acutifolia</i>	fourleaf vetch	FABACEAE	n	R	R	-	FACW
<i>Vigna luteola</i>	cow pea	FABACEAE	n	R	R	-	-
<i>Vitis aestivalis</i>	summer grape	VITACEAE	n	-	-	-	-
<i>Vitis rotundifolia</i>	Muscadine grape	VITACEAE	n	C	C	C	-
<i>Waltheria indica</i>	sleepy morning	STERCULIACEAE	n	U	U	-	-

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

Scientific Name	Common Name	Family	Exotic Treatment	Relative Abundance			Wetland Status
				Zone 1	Zone 2	Zone 3	
<i>Xanthosoma sagittifolium</i>	taro	ARACEAE	x <sup>II</sup>	R	R	-	FACW
<i>Youngia japonica</i>	Oriental false hawksbeard	ASTERACEAE	e	-	-	C	-
<i>Yucca elephantipes</i>	soft-tipped yucca	AGAVACEAE	e	R	-	R	-
<i>Zamia furfuracea</i>	cardboard palm	ZAMIACEAE	e	R	-	-	-
<i>Zamia integrifolia</i>	Florida coontie	ZAMIACEAE	n	-	-	R	-
<i>Zanthoxylum fagara</i>	wild lime	RUTACEAE	n	U	U	U	-
<i>Zeuxine strateumatica</i>	lawn orchid	ORCHIDACEAE	e	R	-	-	-

h = Historic

e = non-native

n = Native but nuisance species

x = invasive

I & II represent species listed as Category I or Category II of 2009 Florida Exotic Pest Plant Council list.

c = cultivated

**Notes:**

Relative Abundance Categories:

For Zones 1, 2 and 3 please see Appendix I

**Common:** large numbers of individuals of a species, throughout the habitat type;

**Uncommon:** moderate number of individuals of a species localized in a habitat type, or a few individuals of a species widespread throughout the habitat type;

**Rare:** only a few individuals of a species anywhere in the habitat type.

State Wetland Status: From regulations concerning the delineation of the landward extent wetlands and surface waters, 62-340.450 Vegetative Index.

Appendix G: Table B-1 (continued): List of plant species observed or reported for Pine Island Ridge.

OBL - Obligate plants

FACW - Facultative Wet plants

FAC - Facultative plants; for the purposes of this rule facultative plants are not indicators of either wetland or upland conditions

Nomenclature in this table is based on Wunderlin, R. P., and B. F. Hansen. 2003. *Atlas of Florida Vascular Plants*

(<http://www.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

**Appendix H: *Wildlife Species Observed at Pine Island Ridge***

**Appendix H.**  
**Wildlife species observed in all cover types at Pine Island Ridge.**

Species	Common Name
SNAILS	
<i>Marissa cornuaurietus</i>	Goldenhorn Marissa
<i>Pomacea bridgesi</i>	Spiketopped Applesnail
CRAYFISH	
<i>Procambarus aleni</i>	Crayfish
BUTTERFLIES	
<i>Battus polydamas</i>	Polydamas Swallowtail
<i>Papilio polyxenes</i>	Black Swallowtail
<i>Papilio cresphontes</i>	Giant Swallowtail
<i>Papilio palamedes</i>	Palamedes Swallowtail
<i>Papilio androgeus</i>	Androgeus Swallowtail
<i>Pontia protodice</i>	Checkered White
<i>Ascia monuste</i>	Great Southern White
<i>Phoebis sennae</i>	Cloudless Sulphur
<i>Phoebis philea</i>	Orange-barred Sulphur
<i>Eurema daira</i>	Barred Yellow
<i>Eurema nicippe</i>	Sleepy Orange
<i>Nathalis iole</i>	Dainty Sulphur
<i>Eumaeus atala</i>	Atala
<i>Satyrium favonius favonius</i>	Southern Hairstreak
<i>Parrhasius m-album</i>	White M Hairstreak
<i>Strymon melinus melinus</i>	Gray Hairstreak
<i>Strymon columella</i>	Mallow Scrub-hairstreak
<i>Electrostrymon angelia</i>	Fulvous Hairstreak
<i>Calycopis cecrops</i>	Red-banded Hairstreak
<i>Leptotes cassius</i>	Cassius Blue
<i>Calephelis virginiensis</i>	Little Metalmark
<i>Agraulis vanillae</i>	Gulf Fritillary
<i>Dryas iulia</i>	Julia Heliconian
<i>Heliconius charithonia</i>	Zebra Heliconian
<i>Phyciodes phaon</i>	Phaon Crescent
<i>Phyciodes tharos</i>	Pearl Crescent
<i>Vanessa virginiensis</i>	American Lady
<i>Vanessa atalanta</i>	Red Admiral
<i>Junonia coenia</i>	Common Buckeye
<i>Anartia jatrophae</i>	White Peacock
<i>Siproeta stelenes</i>	Malachite
<i>Limenitis archippus</i>	Viceroy

Species	Common Name
<b>BUTTERFLIES</b>	
<i>Marpesia petreus</i>	Ruddy Daggerwing
<i>Asterocampa clyton</i>	Tawny Emperor
<i>Hermeuptychia sosybius</i>	Carolina Satyr
<i>Danaus plexippus</i>	Monarch
<i>Danaus gilippus</i>	Queen
<i>Danaus eresimus</i>	Soldier
<i>Polygonus leo</i>	Hammock Skipper
<i>Urbanus proteus</i>	Long-tailed Skipper
<i>Urbanus dorantes dorantes</i>	Dorantes Longtail
<i>Erynnis horatius</i>	Horace's Duskywing
<i>Pyrgus oileus</i>	Tropical-checkered Skipper
<i>Nastra lherminier</i>	Swarthy Skipper
<i>Cymaenes tripunctus</i>	Three-spotted Skipper
<i>Lerema accius</i>	Clouded Skipper
<i>Ancyloxypha numitor</i>	Least Skipper
<i>Copaeodes minimus</i>	Southern Skipperling
<i>Hylephila phyleus</i>	Fiery Skipper
<i>Wallengrenia otho</i>	Southern Broken-dash
<i>Polites vibex</i>	Whirlabout
<i>Atalopedes campestris</i>	Sachem
<i>Anatrytone logan</i>	Delaware Skipper
<i>Asbolis capucinus</i>	Monk Skipper
<i>Lerodea eufala</i>	Eufala Skipper
<i>Oligoria maculata</i>	Twin-spot Skipper
<i>Panoquina ocola</i>	Ocola Skipper
<b>FISH</b>	
<i>Hypostomus spp.*</i>	Suckermouth catfish
<i>Gambusia affinis</i>	Mosquitofish
<i>Heterandia formosa</i>	Least killifish
<i>Poecilia latipinna</i>	Sailfin molly
<b>AMPHIBIANS</b>	
<i>Bufo marinus*</i>	Giant toad
<i>Hyla squirella</i>	Squirrel treefrog
<i>Osteopilus septentrionalis*</i>	Cuban treefrog
<i>Gastrophryne carolinensis</i>	Eastern narrowmouth toad
<i>Scaphiopus holbrookii</i>	Eastern spadefoot toad
<i>Rana grylio</i>	Pig frog
<i>Rana sphenoccephala</i>	Southern leopard frog

Species	Common Name
AMPHIBIANS	
<i>Amphiuma means</i>	Two-toed amphiuma
REPTILES	
<i>Pseudemys floridana peninsularis</i>	Peninsula Cooter
<i>Terrapene carolina bauri</i>	Florida Box Turtle
<i>Gopherus polyphemus</i>	Gopher Tortoise
<i>Trionyx ferox</i>	Florida Softshelled Turtle
<i>Anolis carolinensis</i>	Green Anole
<i>Anolis sagrei sagrei*</i>	Cuban Brown Anole
<i>Anolis distichus floridanus*</i>	Florida Bark Anole
<i>Iguana iguana*</i>	Green Iguana
<i>Eumeces inexpectatus</i>	Southeast Five-lined Skink
<i>Ophisaurus ventralis</i>	Eastern Glass Lizard
<i>Storeria dekayi victa</i>	Florida Brown Snake
<i>Thamnophis sauritus sackenii</i>	Peninsula Ribbon Snake
<i>Diadophis punctatus punctatis</i>	Southern Ringneck Snake
<i>Coluber constrictor</i>	Southern Black Racer
<i>Opheodrys aestivus aestivus</i>	Rough Green Snake
<i>Elaphe guttata guttata</i>	Corn Snake
<i>Elaphe obsoleta</i>	Yellow Rat Snake
<i>Lampropeltis getula</i>	Florida Kingsnake
BIRDS	
<i>Branta bernicla</i> <sup>h</sup>	Brant
<i>Anas fulvigula</i>	Mottled Duck
<i>Colinus virginianus</i> <sup>h</sup>	Northern Bobwhite
<i>Pavo cristatus*</i>	Indian Peafowl
<i>Meleagris gallopavo</i> <sup>h</sup>	Wild Turkey
<i>Columba livia*</i>	Rock Dove
<i>Columbina passerina</i>	Common Ground-Dove
<i>Zenaida asiatica*</i>	White-winged Dove
<i>Zenaida macroura</i>	Mourning Dove
<i>Crotophaga ani</i>	Smooth-billed Ani
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo
<i>Chordeiles minor</i>	Common Nighthawk
<i>Antrostomus carolinensis</i>	Chuck-will's-widow
<i>Antrostomus vociferus</i>	Eastern Whip-poor-will
<i>Archilochus colubris</i>	Ruby-throated Hummingbird
<i>Gallinula chloropus</i>	Common Moorhen
<i>Charadrius vociferus</i>	Killdeer



<i>Larus delawarensis</i>	Ring-billed Gull
<i>Sternula antillarum</i>	Least Tern
<i>Hydroprogne caspia</i>	Caspian Tern
<i>Phalacrocorax auritus</i>	Double-crested Cormorant
<i>Anhinga anhinga</i>	Anhinga
<i>Ardea herodias</i>	Great Blue Heron
<i>Egretta caerulea</i>	Little Blue Heron
<i>Bubulcus ibis</i>	Cattle Egret
<i>Butorides virescens</i>	Green Heron
<i>Coragyps atratus</i>	Black Vulture
<i>Cathartes aura</i>	Turkey Vulture
<i>Pandion haliaetus</i>	Osprey
<i>Circus hudsonius</i>	Northern Harrier
<i>Accipiter striatus</i>	Sharp-shinned Hawk
<i>Accipiter cooperii</i>	Cooper's Hawk
<i>Buteo lineatus</i>	Red-shouldered Hawk
<i>Buteo platypterus</i>	Broad-winged Hawk
<i>Buteo jamaicensis</i>	Red-tailed Hawk
<i>Tyto alba</i>	Barn Owl
<i>Megascops asio</i>	Eastern Screech-Owl
<i>Bubo virginianus</i>	Great Horned Owl
<i>Megaceryle alcyon</i>	Belted Kingfisher
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker
<i>Dryobates pubescens</i>	Downy Woodpecker
<i>Dryobates villosus</i>	Hairy Woodpecker
<i>Colaptes auratus</i>	Northern Flicker
<i>Dryocopus pileatus</i>	Pileated Woodpecker
<i>Falco sparverius</i>	American Kestrel
<i>Falco columbarius</i>	Merlin
<i>Myiopsitta monachus</i>	Monk Parakeet
<i>Myiarchus crinitus</i>	Great Crested Flycatcher
<i>Tyrannus verticalis</i>	Western Kingbird
<i>Tyrannus tyrannus</i>	Eastern Kingbird
<i>Tyrannus dominicensis</i>	Gray Kingbird
<i>Tyrannus forficatus</i>	Scissor-tailed Flycatcher
<i>Empidonax minimus</i>	Least Flycatcher
<i>Sayornis phoebe</i>	Eastern Phoebe
<i>Lanius ludovicianus</i>	Loggerhead Shrike
<i>Vireo griseus</i>	White-eyed Vireo
<i>Vireo flavifrons</i>	Yellow-throated Vireo

<i>Vireo solitarius</i>	Blue-headed Vireo
<i>Vireo olivaceus</i>	Red-eyed Vireo
<i>Cyanocitta cristata</i>	Blue Jay
<i>Corvus ossifragus</i>	Fish Crow
<i>Tachycineta bicolor</i>	Tree Swallow
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow
<i>Progne subis</i>	Purple Martin
<i>Hirundo rustica</i>	Barn Swallow
<i>Troglodytes aedon</i>	House Wren
<i>Thryothorus ludovicianus</i>	Carolina Wren
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher
<i>Regulus calendula</i>	Ruby-crowned Kinglet
<i>Catharus fuscescens</i>	Veery
<i>Catharus ustulatus</i>	Swainson's Thrush
<i>Catharus guttatus</i>	Hermit Thrush
<i>Turdus migratorius</i>	American Robin
<i>Dumetella carolinensis</i>	Gray Catbird
<i>Toxostoma rufum</i>	Brown Thrasher
<i>Mimus polyglottos</i>	Northern Mockingbird
<i>Sturnus vulgaris</i> *	European Starling
<i>Bombycilla cedrorum</i>	Cedar Waxwing
<i>Passer domesticus</i> *	House Sparrow
<i>Spinus tristis</i>	American Goldfinch
<i>Ammodramus savannarum</i> <sup>h</sup>	Grasshopper Sparrow
<i>Spizella pallida</i>	Clay-colored Sparrow
<i>Spizelloides arborea</i>	American Tree Sparrow
<i>Passerculus sandwichensis</i>	Savannah Sparrow
<i>Melospiza georgiana</i>	Swamp Sparrow
<i>Pipilo erythrophthalmus</i>	Eastern Towhee
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed Blackbird
<i>Sturnella magna</i>	Eastern Meadowlark
<i>Icterus pectoralis</i> *	Spot-breasted Oriole
<i>Icterus galbula</i>	Baltimore Oriole
<i>Agelaius phoeniceus</i>	Red-winged Blackbird
<i>Molothrus ater</i>	Brown-headed Cowbird
<i>Quiscalus quiscula</i>	Common Grackle
<i>Quiscalus major</i>	Boat-tailed Grackle
<i>Seiurus aurocapilla</i>	Ovenbird
<i>Helmitheros vermivorum</i>	Worm-eating Warbler
<i>Parkesia motacilla</i>	Louisiana Waterthrush
<i>Leiothlypis peregrina</i>	Tennessee Warbler
<i>Leiothlypis celata</i>	Orange-crowned Warbler

<i>Geothlypis trichas</i>	Common Yellowthroat
<i>Setophaga ruticilla</i>	American Redstart
<i>Setophaga tigrina</i>	Cape May Warbler
<i>Setophaga americana</i>	Northern Parula
<i>Setophaga magnolia</i>	Magnolia Warbler
<i>Setophaga fusca</i>	Blackburnian Warbler
<i>Setophaga petechia</i>	Yellow Warbler
<i>Setophaga striata</i>	Blackpoll Warbler
<i>Setophaga caerulescens</i>	Black-throated Blue Warbler
<i>Setophaga palmarum</i>	Palm Warbler
<i>Setophaga pinus</i>	Pine Warbler
<i>Setophaga coronata</i>	Yellow-rumped Warbler
<i>Setophaga dominica</i>	Yellow-throated Warbler
<i>Setophaga discolor</i>	Prairie Warbler
<i>Setophaga virens</i>	Black-throated Green Warbler
<i>Piranga rubra</i>	Summer Tanager
<i>Piranga ludoviciana</i>	Western Tanager
<i>Cardinalis cardinalis</i>	Northern Cardinal
<i>Passerina cyanea</i>	Indigo Bunting
<i>Passerina ciris</i>	Painted Bunting

#### MAMMALS

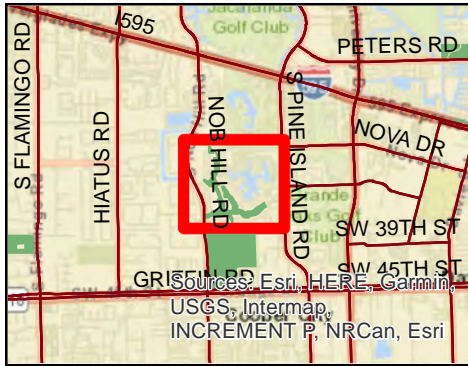
<i>Didelphis virginiana</i>	Virginia opossum
<i>Dasyus novemcinctus</i>	Nine banded armadillo
<i>Sylvilagus floridanus</i>	Eastern cottontail
<i>Sciurus carolinensis</i>	Eastern gray squirrel
<i>Peromyscus gossypinus</i>	Cotton mouse
<i>Sigmodon hispidus</i>	Hispid cotton rat
<i>Urocyon cinereoargenteus</i>	Gray fox
<i>Canis familiaris</i> *	Domestic dog
<i>Procyon lotor</i>	Raccoon
<i>Mephitis mephitis</i> <sup>h</sup>	Striped skunk
<i>Felis rufus</i>	Bobcat
<i>Felis catus</i> *	Domestic cat
<i>Odocoileus virginianus</i> <sup>h</sup>	White-tailed deer
<i>Equus equus</i> *	Horse

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\* Non-native species

<sup>h</sup> Historic

**Appendix I: *Zones Map***



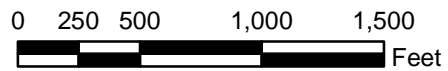
### Pine Island Ridge Plant Inventory Zones

 Park Boundary

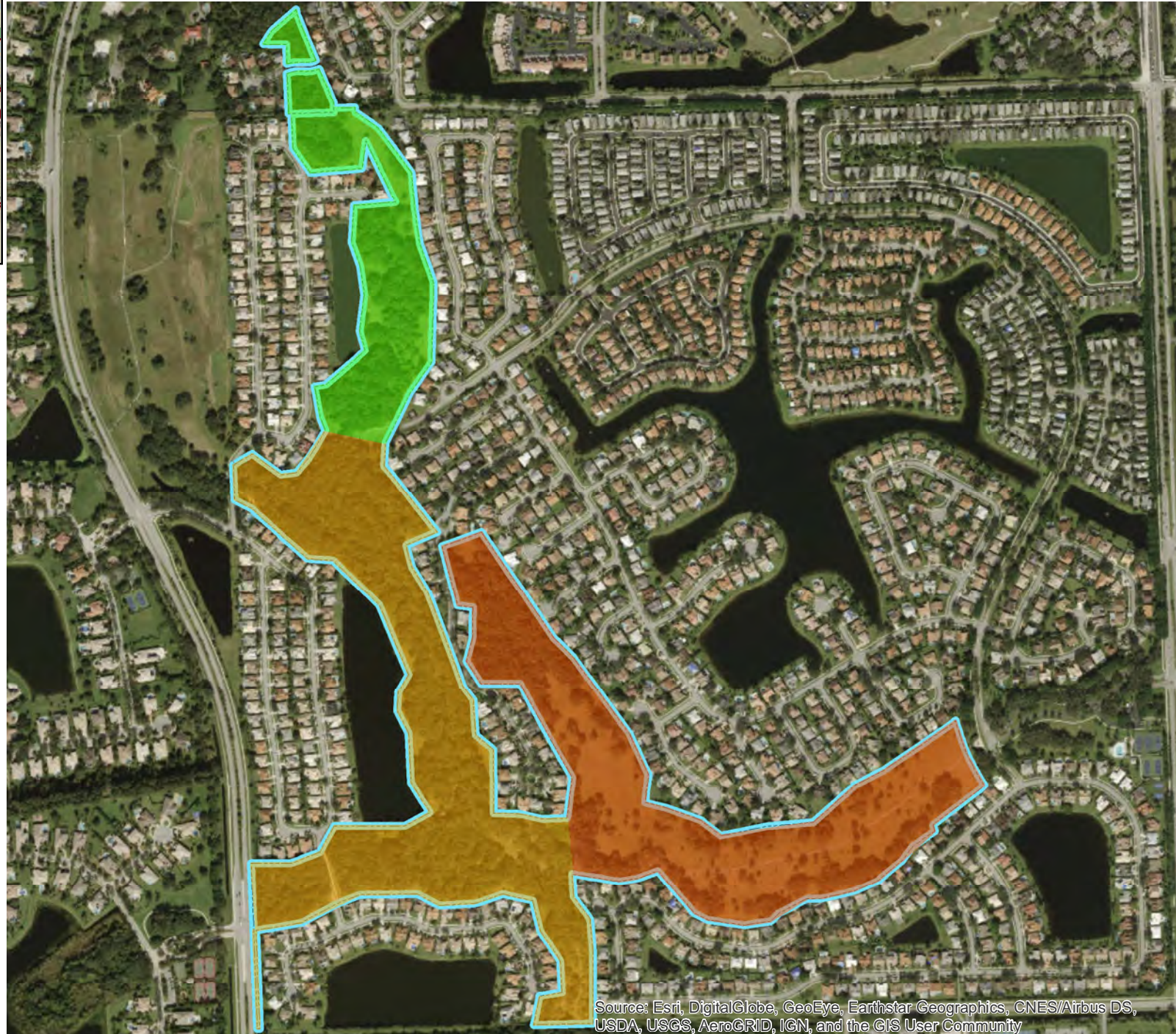
 Zone 1

 Zone 2

 Zone 3

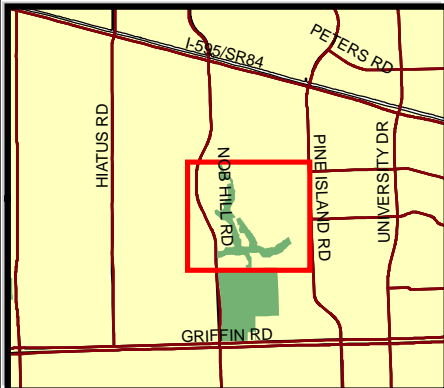


App\_I\_zones\_PIR mtherrien 3/29/2019



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Appendix J: *USDA Soil Map***



### Pine Island Ridge USDA Soil Map

Park Boundary

Immokalee fine sand

Lauderhill muck

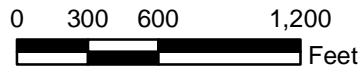
Okeelanta muck

Plantation muck

Pomello fine sand

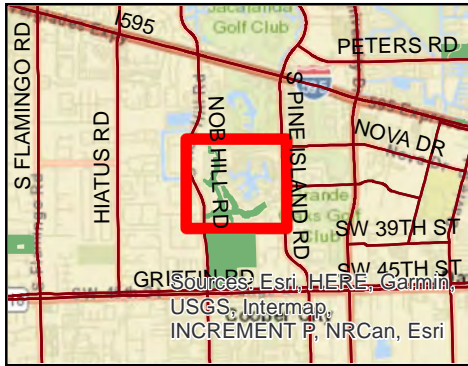
Sanibel muck

Dania muck


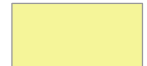



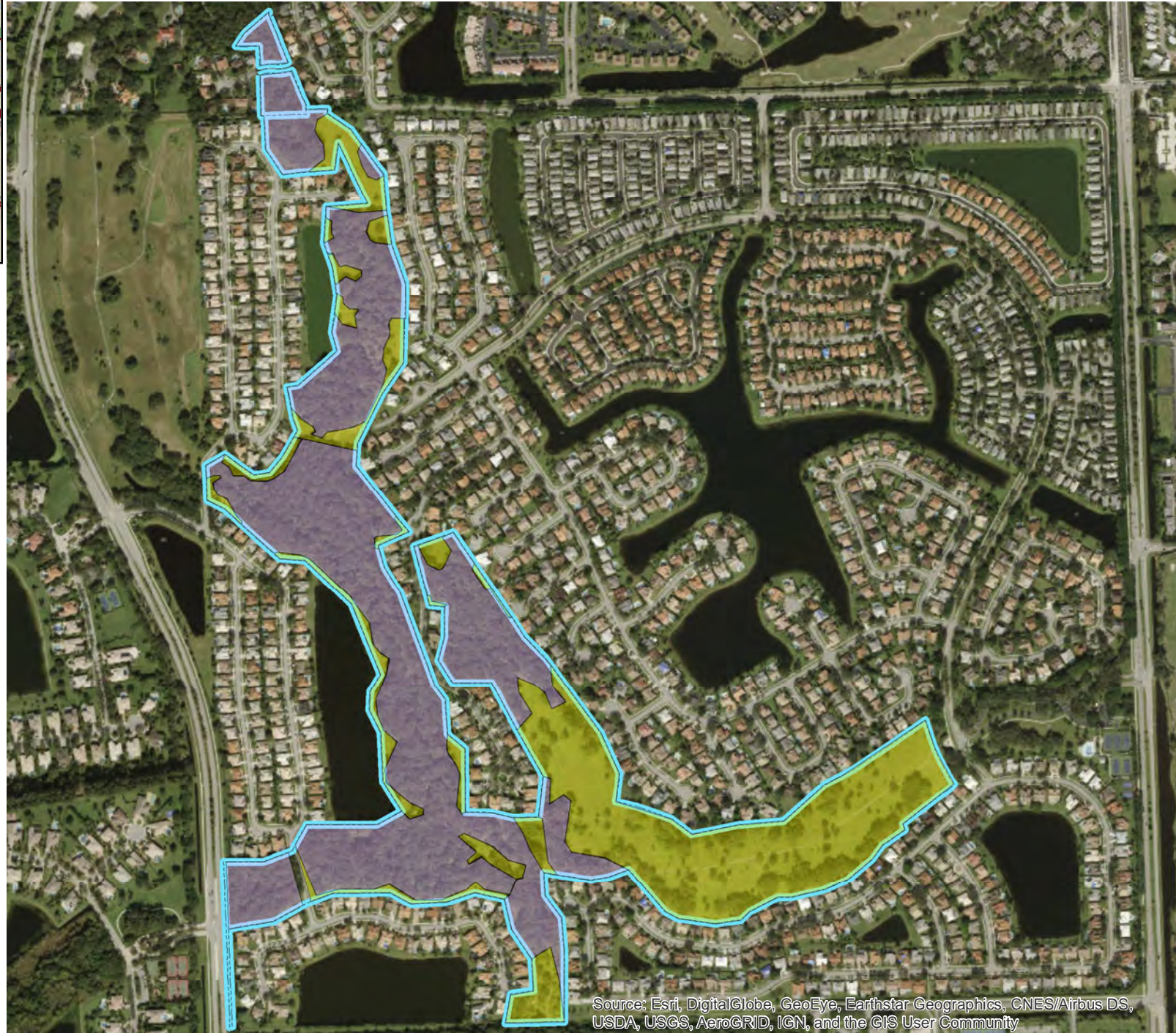
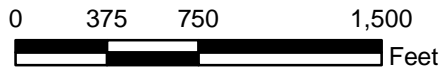
**Appendix K: *FNAI Land Cover Map***





**Pine Island Ridge  
Florida Natural Areas  
Inventory Land Cover**

-  Park Boundary
-  Mowed Area
-  Xeric Hammock



**Appendix L: *Listed Species Observed at Pine Island Ridge***

Appendix L. Listed species observed at the Pine Island Ridge.

Organism	Scientific Name	Common Name	Habitat	FWC	FDACS	USFWS	FNAI
Butterflies	<i>Eumaeus atala</i>	Atala	Upland hardwood forest	-		-	G4S2
Birds	<i>Ammodramus savannarum floridanus</i>	Grasshopper sparrow	Disturbed/mowed basin marsh	E		E	G5T1S 1
	<i>Egretta caerulea</i>	Little blue heron	Urban/canal Basin marsh	T		-	G5S4
	<i>Eudocimus albus</i>	White ibis	Urban/canal Basin marsh	-		-	G5S4
	<i>Falco columbarius</i>	Merlin	Open space	-		-	G5S2
	<i>Haliaeetus leucocephalus</i>	Bald eagle	Aquatic/Open space	-		-	G5S3
	<i>Helmitheros vermivorum</i>	Worm-eating warbler	Upland hardwood forest	-		-	G5S1
	<i>Pandion haliaetus</i>	Osprey	Urban/canal Basin marsh	-		-	G5S3S 4
	<i>Seiurus motacilla</i>	Louisiana waterthrush	Upland hardwood forest	-		-	G5S2
	<i>Setophaga ruticilla</i>	American redstart	Upland hardwood forest	-		-	G5S2
	<i>Sterna antillarum</i>	Least tern	aquatic	T		-	G4S3
Reptiles	<i>Gopherus polyphemus</i> <sup>3, 4</sup>	Gopher tortoise	Upland hardwood forest	T		-	G3S3
Plants	<i>Chrysophyllum oliviforme</i>	Satinleaf	Upland hardwood forest		T	-	-
	<i>Nephrolepis biserrata</i>	Giant sword fern	Upland hardwood forest		T	-	-
	<i>Tillandsia balbisiana</i>	Northern needleleaf	Upland hardwood forest		T	-	-
	<i>Tillandsia fasciculata</i>	Cardinal airplant	Upland hardwood forest		E	-	-
	<i>Tillandsia utriculata</i>	Giant airplant	Upland hardwood forest		E	-	-

1. Listed for Monroe County
2. Listed for N. Florida-migratory
3. Historical observation or landscape specimen
4. Observed by Mark McMahon, biologist

**Key:**

FWC = Florida Fish and Wildlife Conservation Commission

FDACS = Florida Department of Agriculture and Consumer Services

USFWS = United States Fish and Wildlife Service

FNAI = Florida Natural Areas Inventory (2019)

E = Endangered

T = Threatened

T(S/A) = Treated as threatened species due to similarity in appearance

C = Commercially Exploited

R = Rare

FNAI codes: G = Global rank

S = State rank

t = Subspecies rank

1 = Critically Imperiled

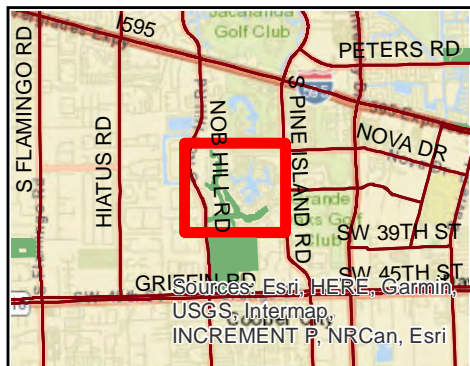
2 = Imperiled

3 = Rare





4 = Apparently Secure

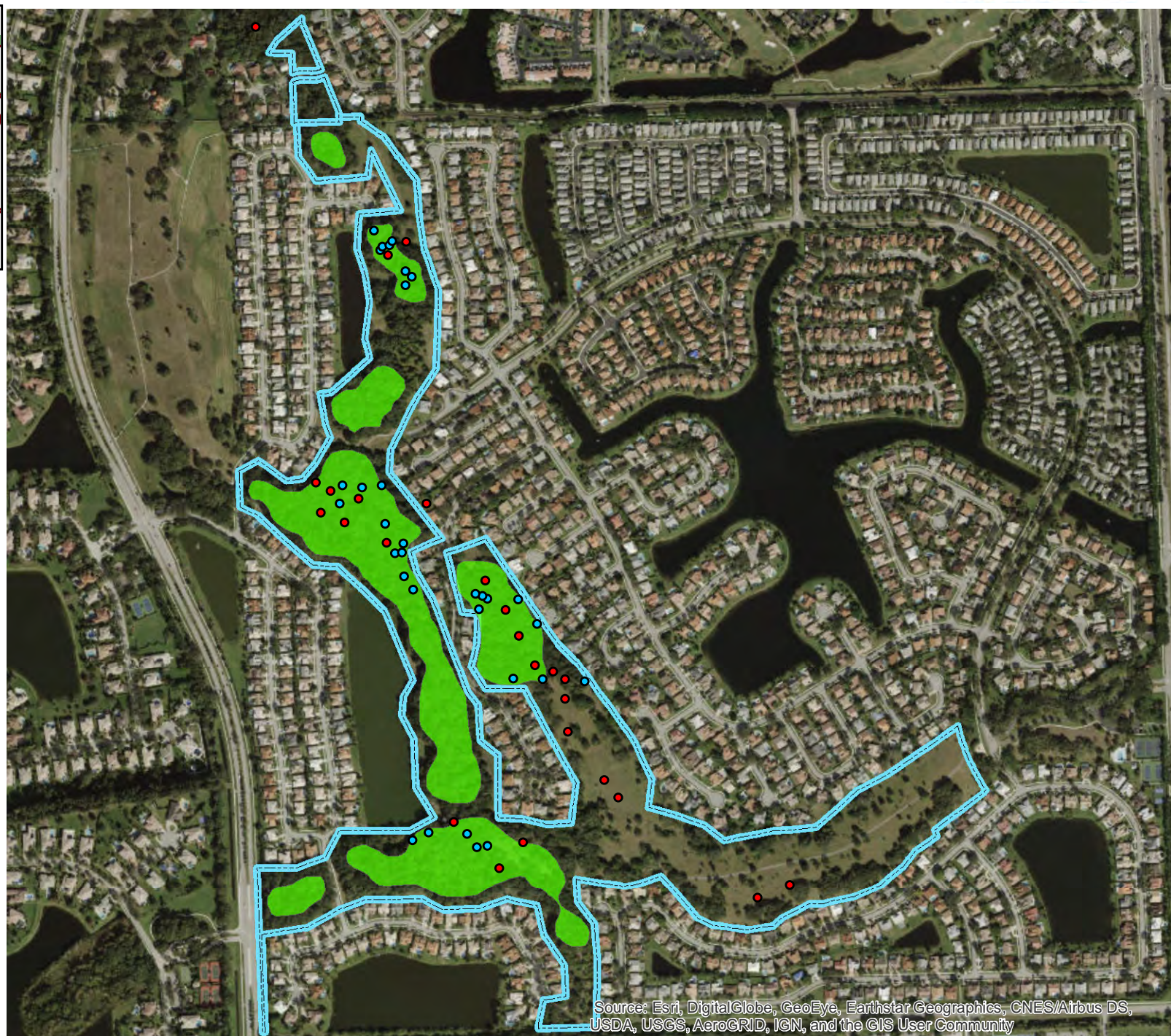
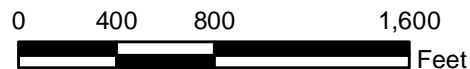
5 = Demonstrably Secure

**Appendix M: *Areas of Sensitivity Map***

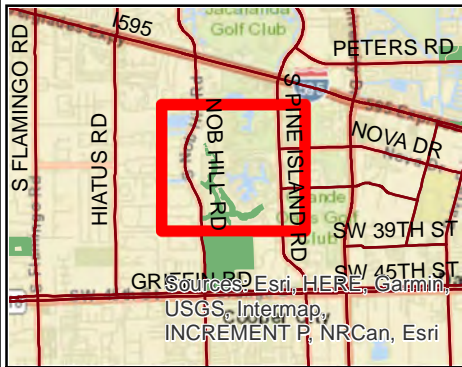


**Pine Island Ridge  
Areas Of Sensitivity**



-  Park Boundary
-  Gopher Tortoise Habitat
-  Gopher Tortoise survey 2005 (active and inactive burrows)
-  Gopher Tortoise observations 2019 (active and inactive burrows)



**Appendix N: *Purchase***



### Properties Adjacent To Pine Island Ridge

-  Park Boundary
-  Purchase If Available

