Pine Lake Preserve

Land Management Plan

2nd Edition

12750 East Terry Street
Bonita Springs, Florida 34135

Prepared by the Land Stewardship Section
Lee County Department of Parks and Recreation

Approved by the Lee County Board of County Commissioners: X/X/2015

Acknowledgements

We would like to thank the following for their assistance in the development of this document: The Conservation 20/20 Land Acquisition and Stewardship Advisory Committee, Cathy Olson, and other Lee County staff for carefully reviewing the Pine Lake Preserve Land Management Plan. Also, we thank the Bird Patrol members who have helped and continue to help with our wildlife list for this Preserve.

Lee Waller
Laura Jewell

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List of Exhibits

List of Acronyms

C20/20	Conservation 20/20
CLASAC	Conservation Lands Acquisition and Stewardship Advisory Committee
CREW	Corkscrew Regional Ecosystem Watershed
DHR	Department of State Division of Historical Resources
DRGR	Density Reduction Groundwater Recharge
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
IRC	Institute for Regional Conservation
LCDCD	Lee County Department of Community Development
LCDNR	Lee County Division of Natural Resources
LCPR	Lee County Parks and Recreation
LSOM	Land Stewardship Operations Manual
LMP	Land Management Plan
LiDAR	Light Detecting and Ranging
PLP	Pine Lake Preserve
SFWMD	South Florida Water Management District
STRAP	Section-Township-Range-Area-Block.Lot (Parcel)
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

Vision Statement

It is the vision of the Lee County Parks and Recreation Department and the Conservation 20/20 Program to conserve, protect, and restore Pine Lake Preserve to a productive, functional, and viable ecosystem. The primary stewardship objective for Pine Lake Preserve will be to improve the Preserve's ecosystems with exotic plant removal and the restoration of the site's hydrologic conditions. Implementation of stewardship activities will protect the site's plant communities and enhance habitat and foraging opportunities for wildlife while advancing the property's ability to recharge the groundwater aquifer.

I. EXECUTIVE SUMMARY

Pine Lake Preserve is located in southern Lee County within 31, Township 47 South, Range 25 East, within the boundary of the City of Bonita Springs. The Preserve consists of Section-Township-Range-Area-Block.Lot# 31-47-26-B2-00609.0010, 31-47-26-B2-00001.4050, 31-47-26-B2-00001.4000 and 31-47-26-B2-00001.4030. The preserve is accessed from Kent Road just south of its intersection with East Terry Street.

Nomination 119, which consists of 130 acres, was purchased on November 22, 2000 for $1,950,000 and Nomination 301-3, which consists of 43 acres, was purchased on August 29, 2012 for $416,273.The Conservation 20/20 Program was established in 1996 after Lee County voters approved a referendum that increased property taxes by up to 0.5 mil for the purpose of purchasing and protecting environmentally sensitive lands.

This Conservation 20/20 Preserve totals approximately 174 acres. The Preserve's northern boundary is adjacent to East Terry Street and a portion of its eastern boundary is Bonita Grande Drive. A portion of the southern boundary consists of the Kehl Canal and privately owned land while the western boundary is adjacent to The Nature Place, which is an environmental education center that is owned by the City of Bonita Springs, a parcel of private property, and a planned community.

Natural elevations at Pine Lake Preserve range from 0 to 20.1 feet above sea level. The site has a general slope from north and east toward the south and west and includes two borrow ponds.

There are eight different soil types found at the Preserve. The soils within the Preserve have all been identified as having severe physical limitations; either wetness or being too sandy. Felda Fine Sand Depressional and Pompano Fine Sand Depressional the highest percentage cover on Pine Lake Preserve.

Pine Lake Preserve is within the Imperial River West subbasin of the South Florida Water Management District's Lower West Coast Region and the Imperial River Watershed for Lee County Division of Natural Resources.

Hydrological alterations have been made on and directly adjacent to Pine Lake Preserve that affect the natural sheet flow across the lands. The existing Kehl Canal along with other ditches, berms, swales, and borrow ponds all influence the water flow on the site by either interrupting sheet flow or holding water for extended periods in some areas, while excessively draining other areas.

This Preserve contains a combination of wetland and upland communities that serve as important habitat for a variety of birds, mammals, reptiles and

amphibians. The Preserve consists of ten natural or altered plant communities described by the Florida Natural Areas Inventory. While disturbed strand swamp and mesic flatwoods are the most common plant communities; approximately 14% of the plant communities are altered landcover types which are typically created by previous land clearing activities, invasive exotic plant infestations resulting in monocultures and/or man-made ditches, or roads. Another 49% of the Preserve has been categorized as disturbed communities, primarily due to an abundance of invasive exotic species, lack of fire or hydrologic changes. Nearly 62% of this property is classified as wetlands.

The Preserve remained relatively unchanged until the early 1960s when the installation of the Kehl Canal began along PLP's eastern and southern boundaries and East Terry Street along the northern boundary. As time went on, more jeep trails popped up and the two borrow ponds appeared on the site in the 1970s. In the early and mid 2000s the development to the west of the Preserve and then the YMCA were built.

The Preserve is available to the public for hiking, birding, nature study, and photography like all Conservation 20/20 properties. Fishing is also a designated use within the two borrow ponds.

The goal of this land stewardship plan is to identify Preserve resources, develop strategies to protect the resources and implement restoration activities to restore PLP to a productive, functional and viable ecosystem while ensuring that the Preserve will be managed in accordance with Lee County Parks and Recreation's Land Stewardship Operations Manual.

Restoration and management activities at PLP will focus on controlling invasive exotic plant species, protecting listed species, reducing pine density, hydrologic restoration, and enhancing wildlife habitat. A Management Action Plan outlines restoration and stewardship goals. This plan outlines these goals and strategies, identifies how the goals will be accomplished, and provides a timetable for completion. Any future additions to the Preserve will be managed similarly to this land stewardship plan. This plan will be revised in ten years (2025).

II. INTRODUCTION

Nominations 119 and 301-3, now known collectively as Pine Lake Preserve (PLP), were acquired through the C20/20 Program for a total cost of $2.3 million for 174 acres. This equates to approximately $13,599 per acre. Nomination 119, 130 acres, was purchased on November 22, 2000 for $1,950,000 and Nomination 301-3, 43 acres, closed on August 29, 2012 for $416,273. The Preserve is located in southern Lee County within 31, Township 47 South, Range 25 East, within the boundary of the City of Bonita Springs. The Preserve consists of STRAP # 31-47-26-B2-00609.0010, 31-47-26-B2-00001.4050, 31-47-

26-B2-00001.4000 and 31-47-26-B2-00001.4030. The preserve is accessed from Kent Road just south of its intersection with East Terry Street.

PLP contains a combination of wetland and upland communities that serve as important habitat for a variety of birds, mammals, reptiles and amphibians. The Preserve consists of ten natural or altered plant communities described by the Florida Natural Areas Inventory. Strand swamp and mesic flatwoods are the most common plant communities. Approximately, 62% of HCP is classified as wetlands.

PLP contains diverse wetland communities that serve as important habitat for a variety of wildlife. Several listed species utilize the Preserve, including the Big Cypress fox squirrel (*Sciurus niger avicennia*), eastern diamondback rattlesnake (*Crotalus adamanteus),* and state and federally endangered wood storks (*Mycteria americana*). The wildlife and overall ecosystem will benefit from enhancement of plant communities through invasive exotic plant removal/control, pine tree thinning and restoration of an essential fire interval with prescribed fire management.

The purpose of this management plan is to define conservation goals for PLP that will address the above concerns. It will serve as a guide for Lee County's Conservation 20/20 staff to use best management practices to ensure proper management and protection of the Preserve. It also serves as a reference guide because of the extensive field studies and research of scientific literature and historic records conducted by C20/20 staff that help to explain the Preserve's ecosystem functions, its natural history and its influences from human use.

III. LOCATION AND SITE DESCRIPTION

PLP is located in southern Lee County on the northeast corner of Section 31, Township 47 South, Range 25 East in the City of Bonita Springs. There are currently 3 physical addresses associated with the Preserve, 12750 E. Terry Street, 27301 Kent Road and 27451 Kent Road. The Preserve consists of Section-Township-Range-Area-Block.Lot (STRAP) # 31-47-26-B2-00609.0010, 31-47-26-B2-00001.4050, 31-47-26-B2-00001.4000 and 31-47-26-B2-00001.4030. PLP is accessed off of Kent Road across from the southern end of the YMCA property.

East Terry Street borders the Preserve to the north, Bonita Grande Drive on the east, the Kehl Canal on the south and Kent Road to the west. With the exception of the west boundary, the land immediately surrounding PLP is undeveloped at this time. Across Kent Road there are several residences and the YMCA. Immediately adjacent to the Preserve is a private residence and the Bonita Nature Place, a nature center run by the City of Bonita Springs

The Preserve is approximately 174 acres in size. It contains ten plant communities, a mosaic of both human-altered and natural plant communities; dominant communities are strand swamp and mesic flatwoods. Approximately 49% of the plant communities are designated as “disturbed,” due to past invasive exotic plant infestations and/or changes in the natural hydrologic patterns. Figure 1 shows PLP’s location in Lee County while Figure 2 identifies the boundaries of PLP in a 2015 aerial photograph.

Figure 1: Location Map

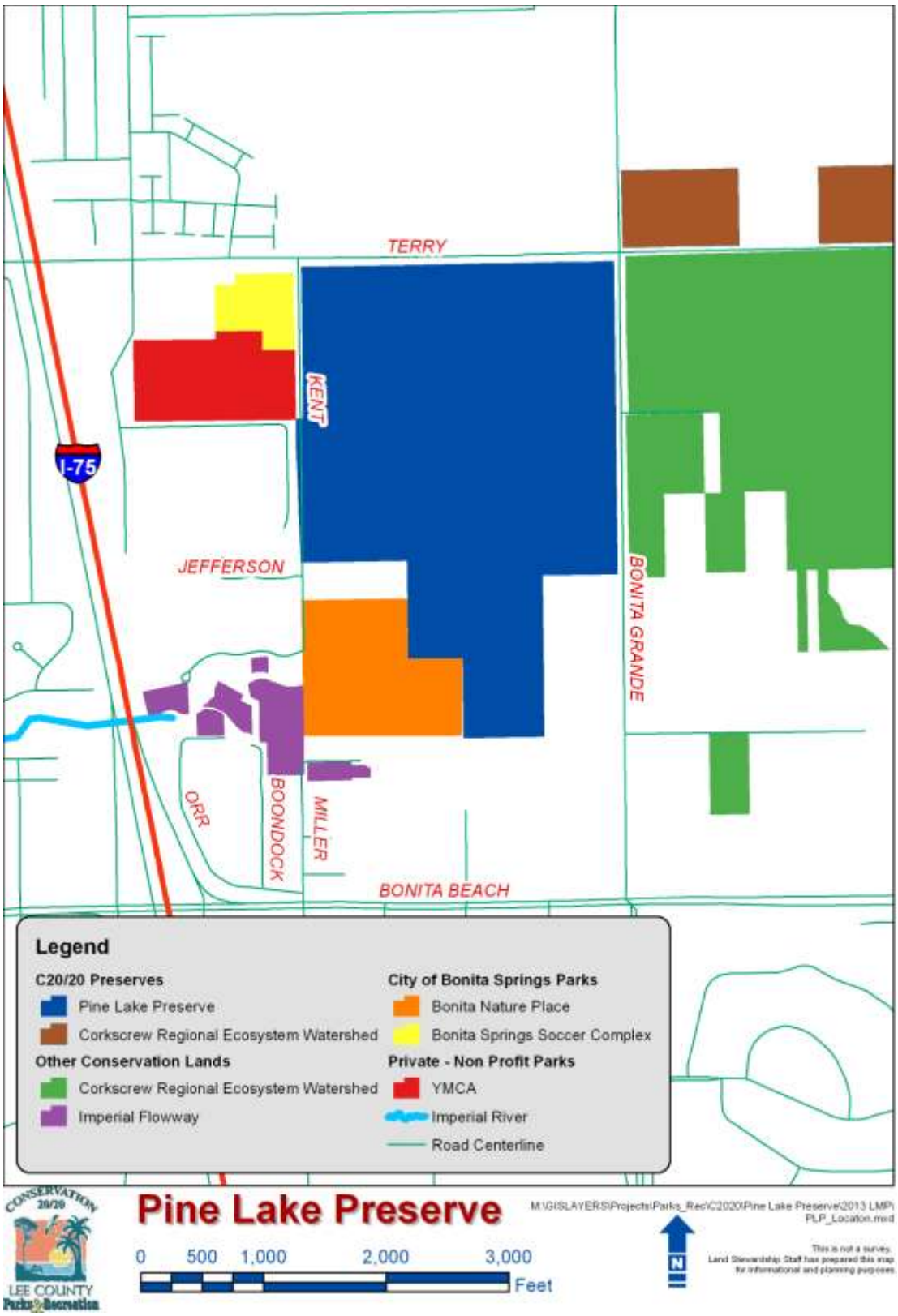


Figure 2: 2015 Aerial

IV. NATURAL RESOURCES DESCRIPTION

A. Physical Resources

i. Climate

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

ii. Geology

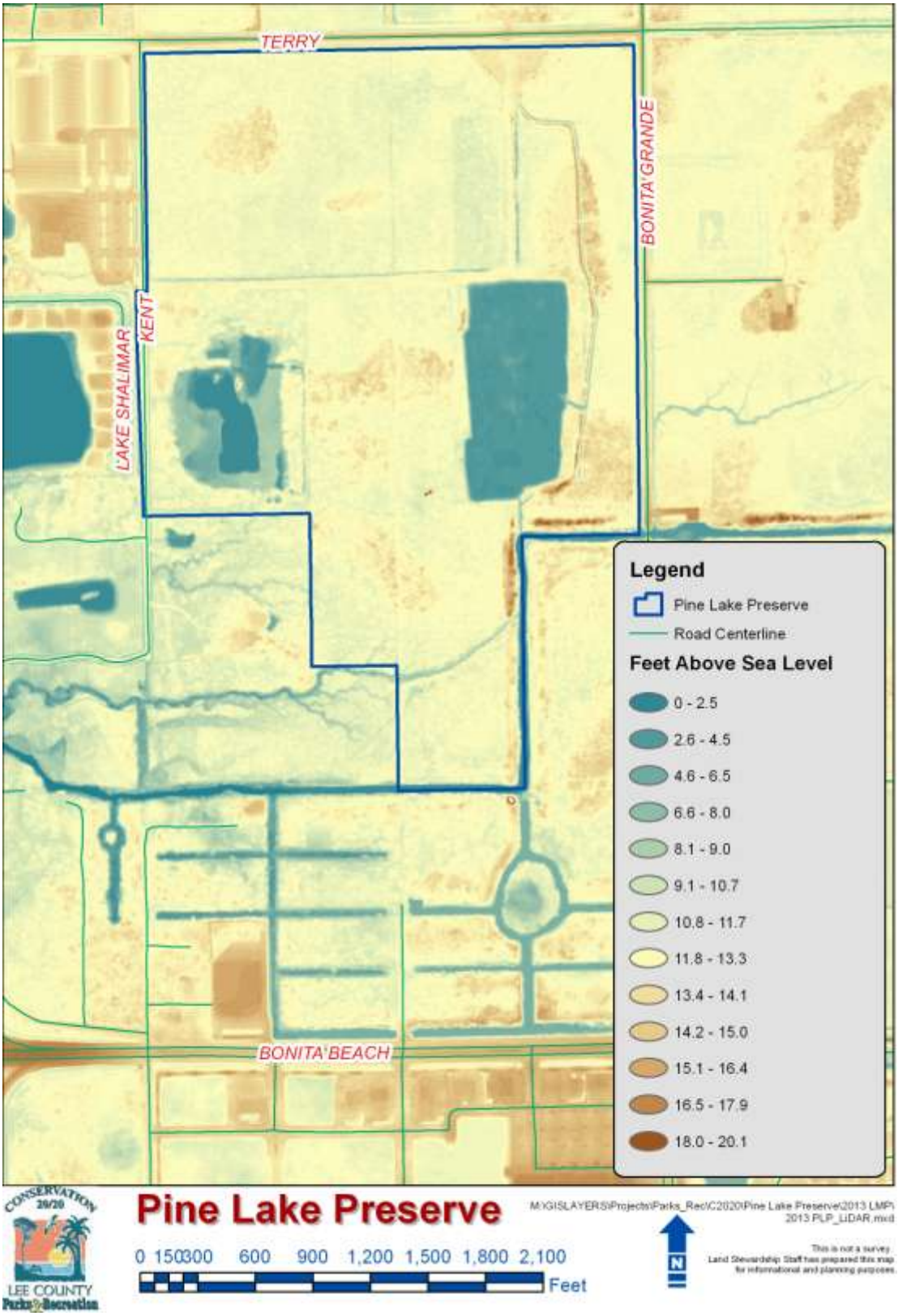
Specific information on the geologic features such as physiographic regions, formations and maps can be found in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

iii. Topography

Natural elevations at PLP range from 0 to 20.1 feet above sea level. The majority of the Preserve is between nine and sixteen feet with man-made features (borrow ponds, ditches, berms) and the drainage into the Imperial River comprising the lower and higher extremes in elevations.

The following topographic map (Figure 3) uses light detecting and ranging (LiDAR) data, which is an optical remote sensing technology that measures properties of scattered light to find range and/or other information of a distant target. The flight to collect this data occurred in 2007 and represents the published 5 foot digital elevation model.

Figure 3: LiDAR Map

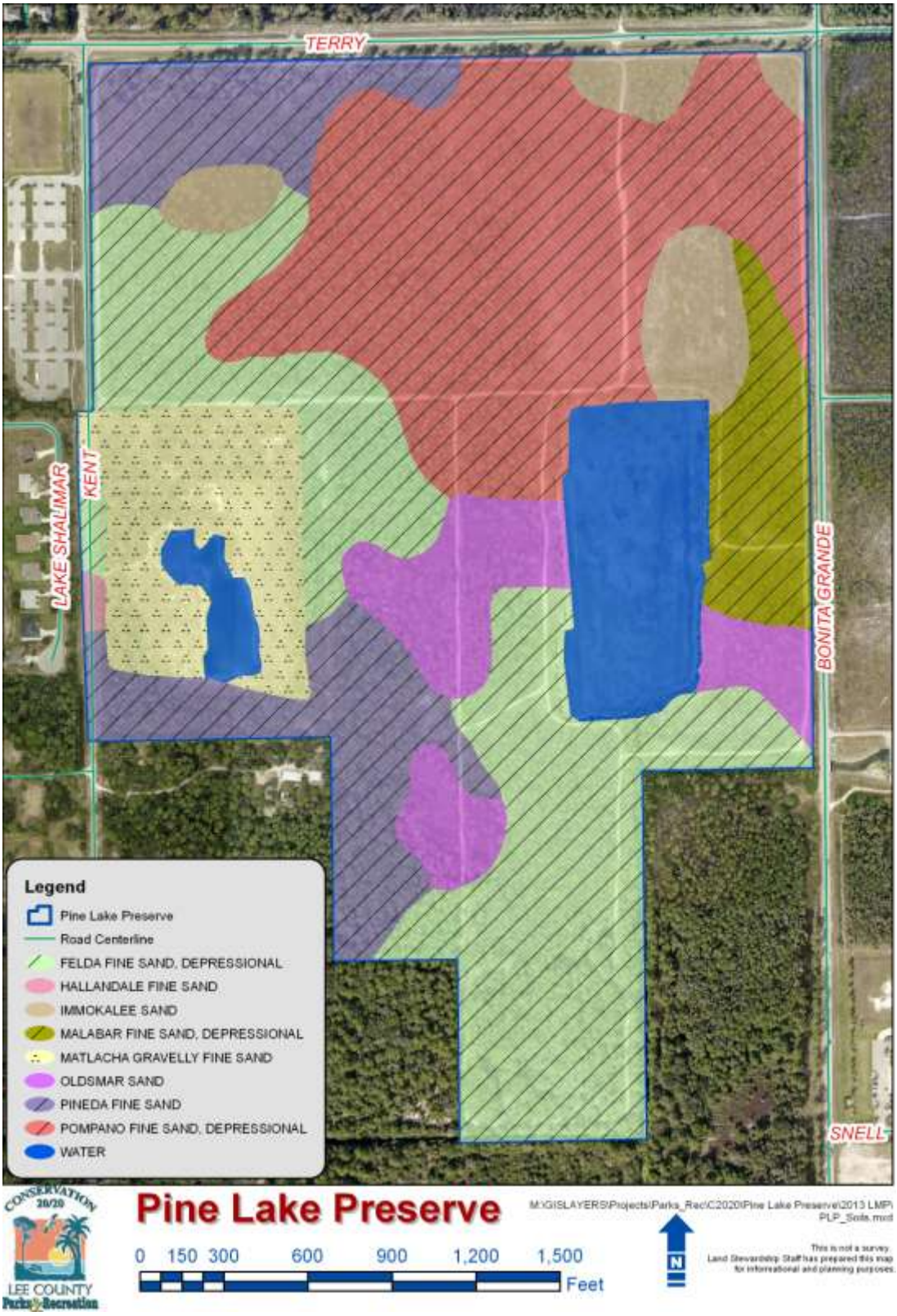


iv. Soils

PLP contains a total of nine different soils with Felda Fine Sand Depressional and Pompano Fine Sand Depressional making up the largest percentages of the property (Appendix A and Figure 4). Soils play an important role in dictating the location and types of recreation that the Preserve can host.

Refer to the LSOM's Land Stewardship Plan Development and Supplemental Information section for additional information on soil types and limitation.

Figure 4: Soils Map



v. Hydrologic Components and Watershed

PLP is within the Imperial River West subbasin of the South Florida Water Management District's (SFWMD) Lower West Coast Region (Figure 5) and the Imperial River Watershed (IRW) for Lee County Division of Natural Resources (LCDNR) (Figure 6). Portions of IRW that are east of I-75 and north of Bonita Beach Road are mostly agricultural land and wetlands, which play an important role in storm water run-off and ground water recharge. The Preserve borders land that is part of the Corkscrew Regional Ecosystem Watershed (CREW) Trust. The goal of the Trust is to acquire and protect wetlands in the Imperial River Basin and Flint Pen Strand that connect to Corkscrew Swamp Sanctuary. Pine Lake Preserve plays an important role in protecting these native ecosystems, connecting other existing conservation land and increasing ground water recharge in the IRW.

Hydrologic changes at Pine Lake Preserve include road building, agricultural ditching and the borrow pits. In the early 1960s, Kehl Canal, which is the southern border of the Preserve, was created to drain land to the east of the Preserve for the failed Suncoast Acres residential community. This canal blocks the original channel of the Imperial River that once flowed through the southern arm of the property. In the mid 1990s a weir was installed east of Bonita Grande Drive on the Kehl Canal for water control to raise the water table, increase wetland hydroperiods and reduce the draining of wetlands to the east. In October 2004, a cut in the berm of the Kehl Canal was made where the original Imperial riverbed once flowed and another cut was made on the western boundary through an elevated roadbed. These berm cuts were made to restore flow through the original channel of the Imperial River. Water occasionally flows through the historic riverbed during heavy rain events, but the Kehl Canal is 4-5 feet lower than the historic channel, so the majority of the time the level of the Kehl Canal is not high enough to allow water to flow through.

Multiple ditches have been dug across the property. Construction of East Terry Street in 1981 also severely altered the flow of water on the property. Water flow from north to south across the road has been greatly slowed. Insufficient culverts were placed under the road to allow adequate water flow during the wet season. Insufficient water flow is evident in the presence of upland species in areas that were once considered wetlands and have hydric soils.

The two borrow pits located on the property were constructed in 1980-81. Material from the pits was used in the construction of Interstate-75 or sold for off-site uses. They have now become feeding grounds for many wading birds in the dry season, and provide habitat for turtles, alligators and other aquatic species. See Figure 7 for locations of the ditches, canals and borrow pits.

Figure 7 also shows wellfield protection zones which staff will need to be aware of when planning exotic plant treatments or contracted work. Further information

on wellfield protection zones can be found in the Other Legal Constraints section of this Land Management Plan (LMP).

In 1974 the United States Fish and Wildlife Service (USFWS) directed its Office of Biological Services to conduct an inventory of the nation's wetlands. Wetlands were identified on aerial photography by vegetation, visible water features and geography, and subsequently classified in general accordance with the Classification of Wetlands and Deep Water Habitats of the United States (Cowardin et al. 1979). More information about the different classifications can be found there, or in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

Figure 5: SFWMD Subbasin Map

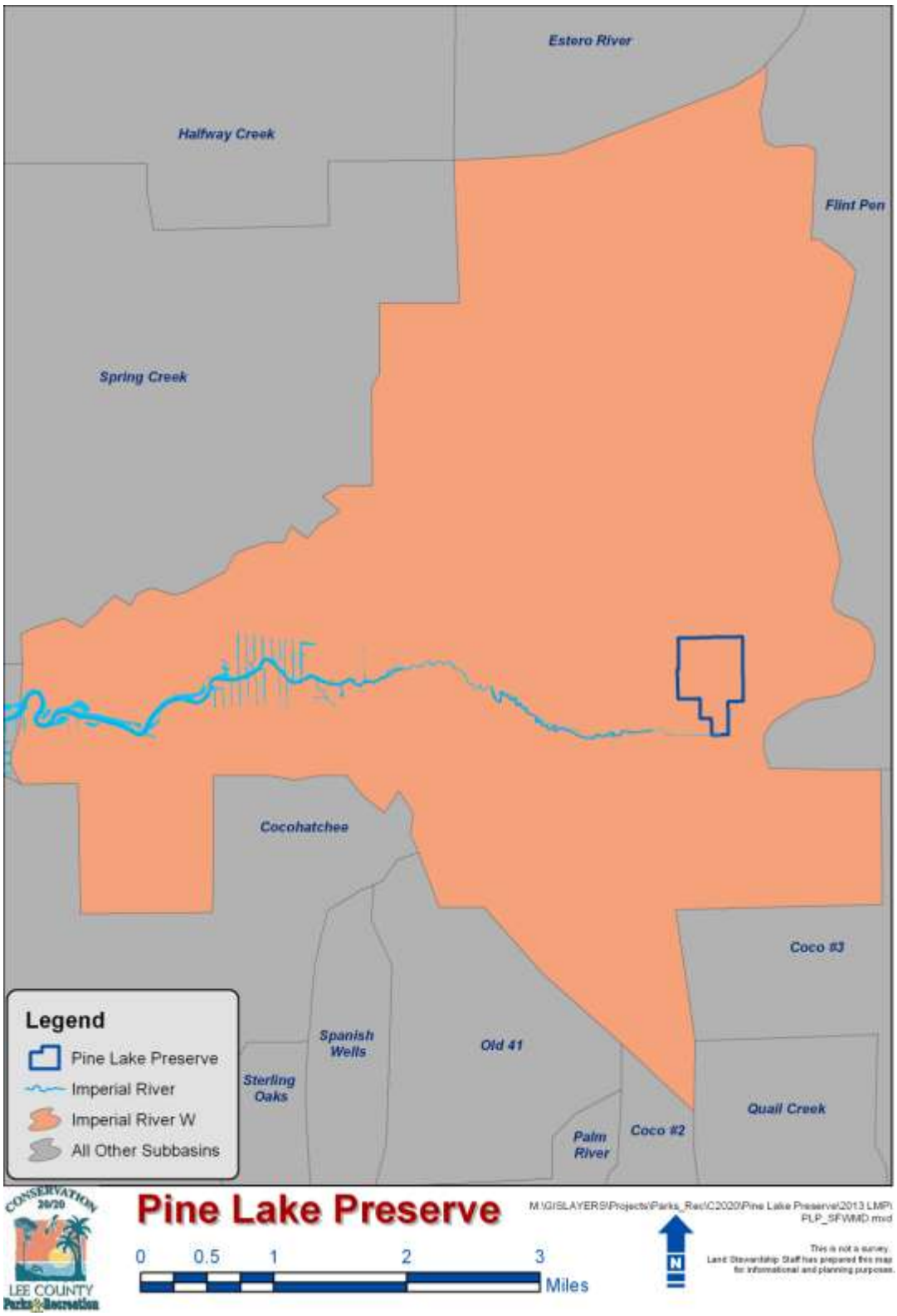


Figure 6: LCDNR Watershed Map

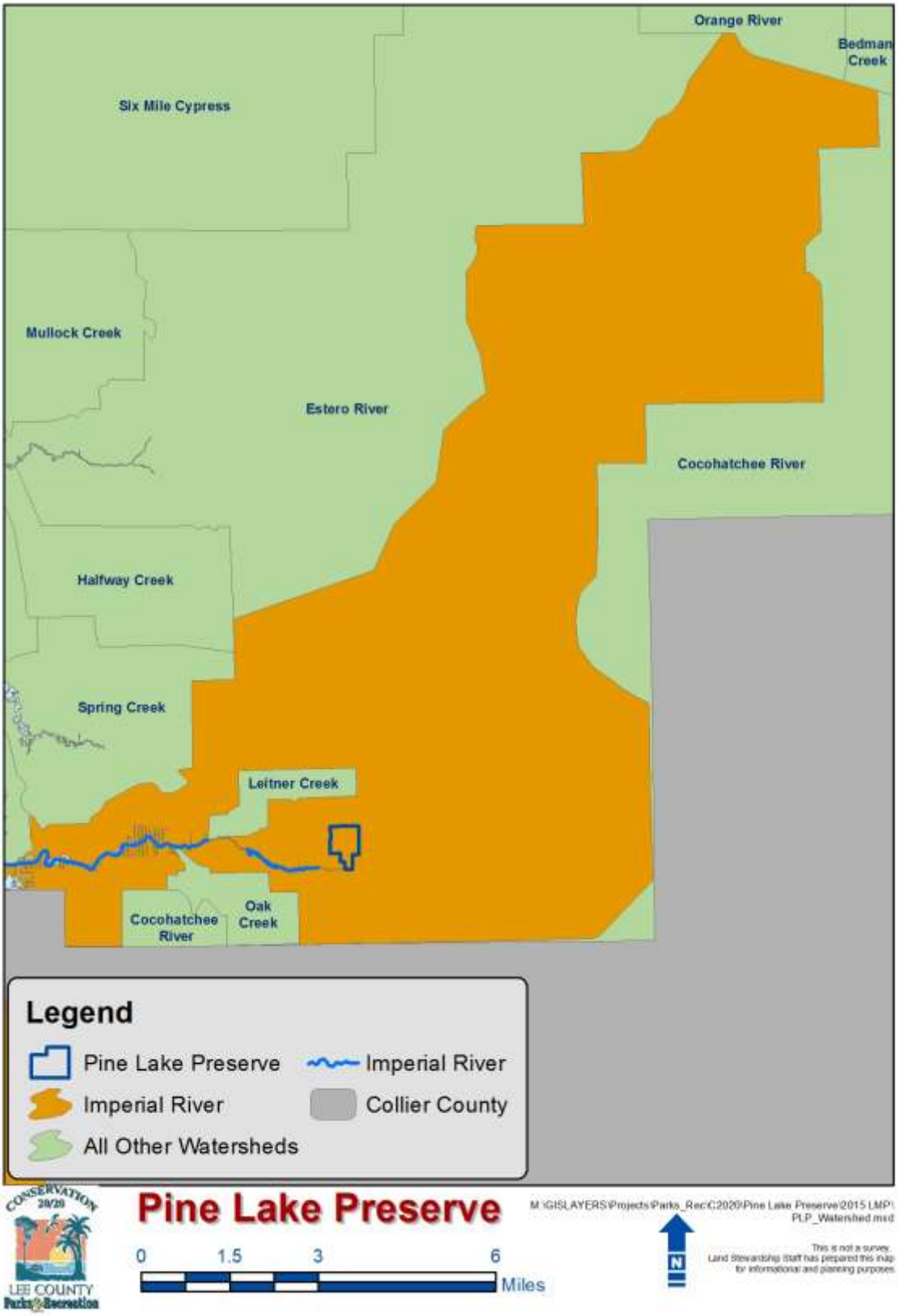
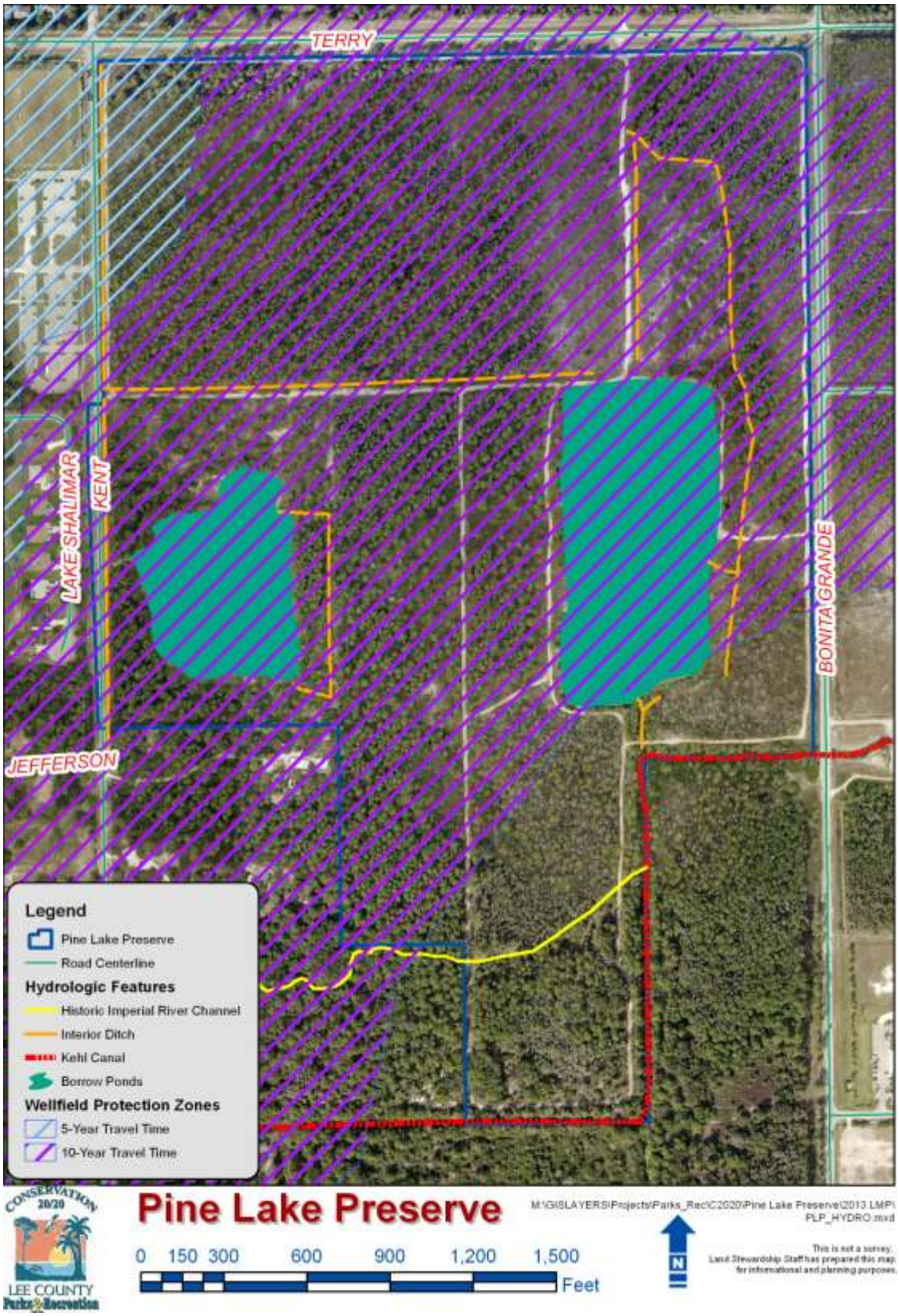


Figure 7: Hydrologic Features Map



B. Biological Resources

i. Ecosystem Function

This Preserve contains a diversity of plant communities that provide habitat for numerous plant and animal species. Although the Preserve is relatively small in size, when combined with adjacent public conservation lands (Figure 1) it helps provide contiguous habitat for a wide variety of wildlife. Additionally, PLP contained various wetland ecosystems that were part of the extensive floodplain of the Imperial River. This connection has been drastically altered by the Kehl Canal, East Terry Street and Bonita Grande Road and no longer provides a notable connection between the CREW lands to the east and the headwaters of the Imperial River.

Hammocks are currently found throughout Florida, but their composition varies with the transition from a warm temperate forest flora in the north to a tropical flora in the south. South Florida hammocks tend to be similar and are dominated by evergreen overstory species such as live oak (*Quercus virginiana*), cabbage palm (*Sabal palmetto*), swamp bay (*Persea palustrus*), and understory species such as saw palmetto (*Serenoa repens*) and *Ilex* species (Myers and Ewel 1990). In extreme south Florida, there is a distinct transition to hammocks that contain primarily tropical species of trees, as well as the largest number of epiphytic ferns, bromeliads, and orchids in the continental United States (Myers and Ewel 1990). Many bromeliads collect water between their leaves, serving as a habitat for small animals and a water source in drier months. During the late spring and summer months, the rain begins to fall and the soils of the hammocks become saturated and standing water sits on the site, slowly percolating down to the aquifer, or forming sheetflow and moving across the watershed. In the fall when the rains end, the water recedes but the soils often remain saturated less than a foot below the surface. One of the most common shrubs found in the hammocks at PLP is coco plum (*Chrysobalanus icaco).*

Pine flatwoods provide essential cover and forage material for a variety of birds, small mammals, reptiles and amphibians and some large mammals including gopher tortoise (*Gopherus polyphemus*), eastern indigo snake (Drymarchon couperi), and Big Cypress fox squirrels. Birds find shelter in the palmetto understory, nest in the tall pines and forage in the grasses. Oak toads (*Bufo quercicus*) will dig burrows in the sandy soil and hunt for spiders and insects. There are a number of rare wildlife species that primarily occur in the flatwoods, as well as numerous rare plants, including some endemic species. During the wet season, these communities provide dry refuge for non-aquatic animals. During a severe flood, the flatwoods serve as a water storage area to help protect adjacent land from flooding (Tiner 1998). Hydric pine flatwoods function seasonally as both a wetland and upland. This hydrologic transformation allows for an abundant diversity of flora, which in turn, supports a wide range of wildlife (USFWS 1999).

Fire is an important part of pine flatwoods. Florida has more thunderstorm days per year than anywhere else in the country and, in turn, one of the highest frequencies of lightning strikes of any region in the United States. Fire shapes ecosystem processes in the flatwoods including creation of soil conditions suitable for germination of seeds of some species, turnover of litter, humus and nutrients, reduction of competition from hardwoods and increasing the hardiness of some species (Myers and Ewel 1990). Mechanical thinning and rollerchopping of pine flatwoods is beneficial, especially in areas that have suffered fire suppression or have had hydrologic alterations to surrounding lands which in turn creates conditions favoring growth of pines over hardwood species. Without regular fire or mechanical work, pine flatwoods can become dense stands of palmetto and have tall weak pines which block sunlight from reaching the ground, further decreasing the biodiversity and coverage of native grasses and wildflowers that gopher tortoises, quail and many other species depend upon.

Forested freshwater wetlands include cypress swamps and strands as well as hydric hammock communities. These areas provide excellent cover and foraging for woodpeckers, warblers and other migratory song birds. Animals depend on the health and long-term viability of the cypress communities for nesting, breeding and feeding. These forested wetlands are highly productive ecosystems, which are directly related to the hydrologic conditions within them. Healthy cypress communities capable of sustainable reproduction occur in depressions with a hydroperiod of approximately 250-290 days and maximum water levels of one to two feet (Duever et al. 1986). The lower hydroperiod and water level ranges produce smaller cypress and the upper ranges produce larger ones. These forested systems play a vital role by storing rain water and improving water quality by filtering nutrients and pollutants.

ii. Natural Plant Communities

PLP consists of 10 natural or altered plant communities; the majority of which consists of disturbed strand swamp and flatwoods. Approximately 14% of the plant communities are designated by Florida Natural Areas Inventory (FNAI) as altered landcover types which are typically created by previous land clearing activities, invasive exotic plant infestations resulting in monocultures, and/or man-made ditches, roads, impoundment/artificial ponds or cow wells. Approximately 49% of PLP has been categorized as disturbed communities, primarily due to an abundance of invasive exotic species, lack of fire or hydrologic alterations. Nearly 62% of the site falls into a wetland category. Figure 8 shows the location of the plant communities found at PLP. The plant communities are defined using the Guide to the Natural Communities of Florida (2010) prepared by FNAI.

Acreages and percent of cover for each community are listed below. Descriptions of the plant communities and characteristic animals found within

each community, as well as management suggestions can be found in the LSOM. The percent cover is slightly under 100% due to rounding off values. A complete list of plant species identified during site inspections to PLP can be found in Appendix B. This list will be updated on a seasonal basis to identify plants in their inflorescence phase.

Strand Swamp (Disturbed) – 55.8 acres, 32% coverage of PLP

Due to the hydrologic changes at PLP, this community has an encroachment of slash pine. Although strand swamps often have slash pine trees, the majority of the canopy in this community at PLP is greater than 50% slash pine. This community has a diverse understory of saw palmetto, cabbage palm (*Sabal palmetto*), myrsine (*Myrsine quianensis*) and swamp fern.

Mesic Flatwoods (Disturbed) – 29.78 acres, 17% coverage of PLP

The mesic flatwoods designated as "disturbed" due to the invasive exotic plants, including Brazilian pepper, melaleuca and earleaf acacia as well as the extremely thick pine overstory. All of the disturbed mesic flatwoods are located on the more recently acquired Parcel 301.

Mesic Flatwoods – 29.8 acres, 17% coverage of PLP

The remaining mesic flatwoods, located on Parcel 119 are at a maintenance level for invasive exotic plants and have now all been incorporated into a regular burn regime.

Hydric Hammock – 17.5 acres, 10% coverage of PLP

The hydric hammock community is found in the southern portion of the Preserve along the old Imperial River channel. This community is characterized as well developed hardwood and cabbage palm forest with a variable understory of palms and ferns. Understory plants are typically laurel oak (*Quercus laurifolia*), swamp bay, wax myrtle, saw palmetto, dahoon holly and myrsine. Like the mesic flatwoods, the portion of PLP that was more recently acquired has more invasive exotic plants, although not enough to be considered "disturbed".

Wet Flatwoods – 12.8 acres, 7% coverage of PLP

The wet flatwoods at PLP were previously covered by melaleuca. Mature melaleuca were removed in the winter of 2005-2006. The primary vegetation in this community includes grasses and sedges, but pine seedlings have been growing and will become the primary canopy tree in the future.

Prairie Mesic Hammock – 5 acres, 3% coverage of PLP

This community, located at the southern end of the Preserve has numerous live oaks and cabbage palms with an understory of saw palmetto and wax myrtle.

Altered Landcover Types:

Impoundment/Artificial Pond – 17.3 acres, 10% coverage of PLP

The borrow pits were constructed in 1980-81. Material from the pits were used in the construction of Interstate-75 or sold for off-site uses. They have now become feeding grounds for many wading birds in the dry season and provides habitat for turtles and alligators.

Clearing – 4.5 acres, 3% coverage of PLP

The borrow pit on the western side of the Preserve has a fairly large area that is excavated from the natural grade and contains a numerous melaleuca trees. It does hold some water during the wet season, but does not fit the category of a borrow pit.

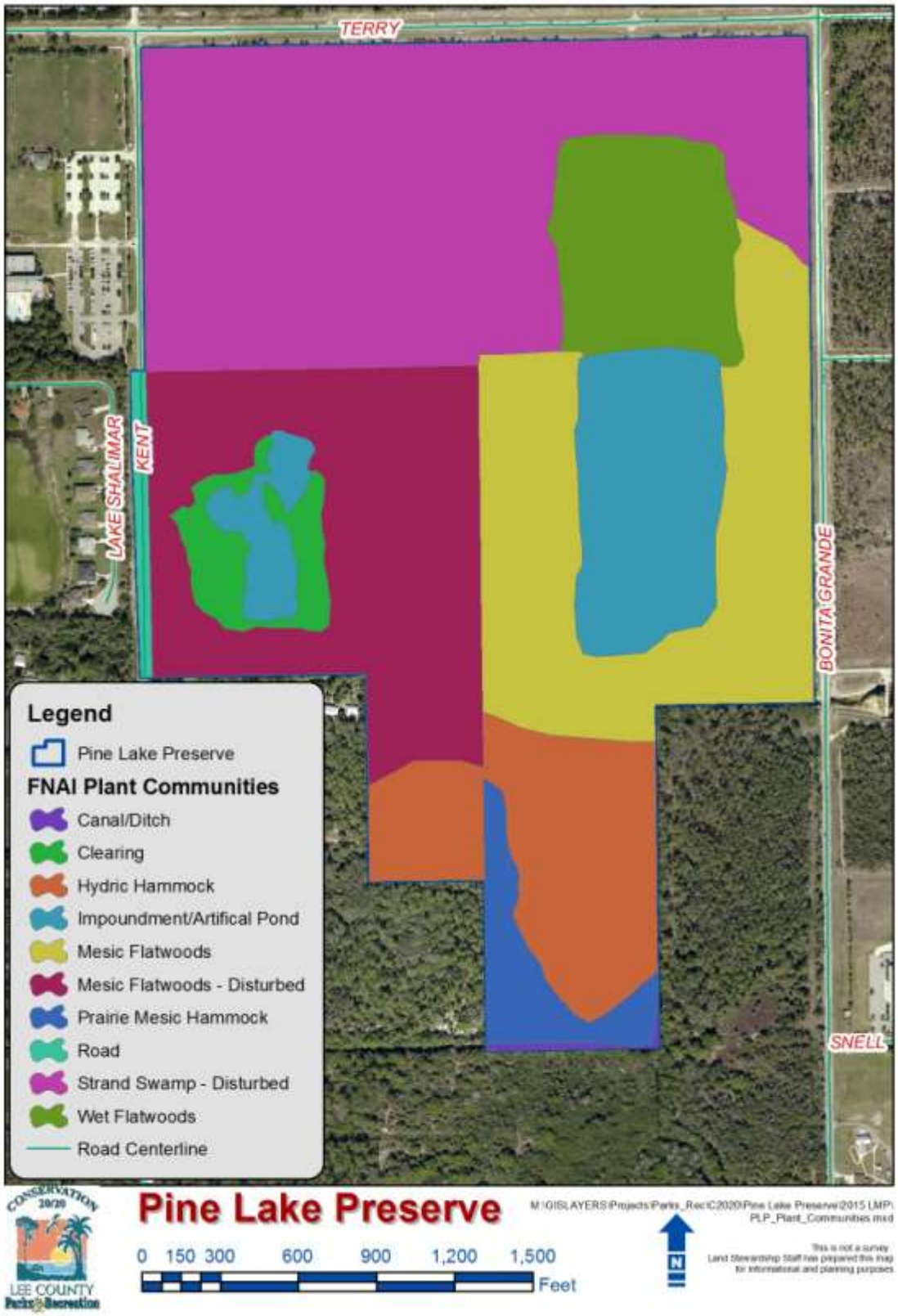
Road – 1.5 acres, 1% coverage of PLP

The western boundary of Parcel 301 includes Kent Road. Property owners to the south have an easement allowing them access. This easement is discussed further in the Other Legal Constraints section.

Canal/Ditch – 0.3 acres, <1% coverage of PLP

Although there are several small ditches scattered throughout the Preserve, the only one categorized as a canal/ditch is the portion of the Kehl Canal that runs on the southeastern boundary.

Figure 8: Natural Plant Communities Map



iii. Fauna

PLP provides a variety of habitats for wildlife including those that are state and federally listed. Nine exotic wildlife species have been documented at the Preserve. Appendix C has the complete list of wildlife documented on the Preserve at the time of writing this LMP as recorded through staff field work and site inspections as well as the volunteers in Bird Patrol and those posting their sitings on ebird.com.

Stewardship goals will focus on maintaining healthy, functioning ecosystem processes to provide optimal habitat for native wildlife (including listed species). Restoration of the disturbed areas and control of invasive exotic plants and animals will be critical components in providing the best possible habitat for native wildlife.

Additional general information about fauna on all C20/20 preserves can be found in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

iv. Designated Species

There are a variety of designated animal and plant species found at PLP. Although all native plant and animal species found on the Preserve have some protection due to the preservation of this property, certain species need additional attention. For management purposes, all plants and animals listed by the USFWS, Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (FDACS), the Institute for Regional Conservation (IRC) and FNAI will be given special consideration when considering recreation and hydrological projects. If additional listed species are documented on the Preserve, they will be added to the lists in Appendices B or C.

The following are brief summaries of designated wildlife species and reasons for their decline. Unless stated otherwise, the reasons for the species' decline and the management recommendations, if available, were obtained from Hipes et al. (2001).

Eastern Diamondback Rattlesnake

Although not an officially listed species, the eastern diamondback rattlesnake (*Crotalus adamanteus*) is commonly thought to be in decline throughout its range. Scientists believe that it requires 10,000 acres or more to sustain long-term viable populations. Additional threats to this species include indiscriminate killing because of fear, as well as for trade and being hit by cars.

Gopher Tortoise

Gopher tortoises are in decline throughout their range due to loss and degradation of habitat. As a species dependant on dry, upland communities much of their habitat has been lost to urban and residential development, agriculture, citrus groves, mining, and pine plantations. Additional threats include a highly contagious respiratory disease and human consumption.

Exotic plant removal, pine tree thinning, brush reduction, and prescribed burning will benefit this species. Before restoration activities that utilize heavy equipment take place in areas with high burrow concentrations, staff will provide operator burrow maps, or will mark off burrows. Staff will determine if burrows will be flagged and equipment operators will be advised to stay away from the burrows based on type of work being planned and time of year. High intensity chopping should be planned for winter months when gophers will be less active outside of the burrow.

American Alligator

American alligators have recovered dramatically since the 1960s. There are now some populations large enough to support limited harvests. Pollution and destruction of wetlands are currently the main threat to this species. Protecting wetlands from ditching, filling and pollution are the management recommendations for this species.

Hairy Woodpecker

The hairy woodpecker (*Picoides villosus*) is a "resident from central Alaska to Newfoundland, southward to Florida and Central America, but can also be found in the Bahamas." They are "found in mature woods, small woodlots, wooded parks, and residential areas with large trees." Hairy woodpeckers build their nest in cavities of trees or a dead branches and do not put additional materials in the cavity. They are considered "common and widespread, but may be declining in some areas. The hairy woodpecker is attracted to the heavy blows a pileated woodpecker makes when it is excavating a tree. The hairy forages in close association with the larger woodpecker, pecking in the deep excavations and taking insects that the pileated missed" (CLOb, 2003).

Peregrine Falcon

The peregrine falcon (*Falco peregrines*) is a migratory, seasonal resident of Florida. Originally listed due to drastic population declines caused by organophosphates such as DDT, peregrine populations recovered enough to be de-listed from the Federal endangered species list in 1999 and from the Florida state list in 2009. Peregrines feed on birds, especially shorebirds and waterfowl during their migration and over-wintering. Pollution and decreased availability of food for wading birds and waterfowl can impact peregrine populations. Alteration

of wetlands for development or agricultural purposes can also decrease prey availability.

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus)* numbers have steadily increased in Florida after a low of 120 active nests in 1973, primarily caused by impacts from DDT and related pesticides. Still, loss of habitat and human disturbance due to development is a primary concern for this species. Secondary poisoning of bald eagles from the consumption of lead shot in waterfowl contributed to the 1991 ban on lead shot for waterfowl hunting in the United States.

Cooper's Hawk

During the summer Cooper's hawks (*Accipeter cooperii)* breed across southern Canada southward to southern United States and into central Mexico. In the winter, they range throughout the United States and Mexico. They breed in deciduous, mixed, and coniferous forests, although documentation of breeding in south Florida is scant, and are becoming more common in suburban and urban areas.

"Declines of the Cooper's hawk in the late 1940s and 1950s were blamed on DDT and pesticide contamination. Populations started increasing in the late 1960s, but it is still listed as threatened or of special concern in a number of states. The Cooper's hawk appears to be adapting to breeding in urban areas, which may help increase populations" (CLOa, 2003).

Swallow-tailed Kite

Swallow-tailed kites (*Elanoides forficatus*) migrate to southwest Florida from South America in late February/early March for their nesting season that lasts through late July/early September. In the early 1900s, swallow-tailed kites were confirmed as nesting in 21 states; today they are only found in seven southeastern states including Florida. Loss of nesting sites through development and conversion to agriculture are the major threats to this species.

Wood Stork

Wood storks (*Mycteria americana)* are very sensitive to water levels in freshwater wetlands, as they require high concentrations of fish in fairly shallow water for foraging. Unnaturally high water levels during nesting seasons and extended droughts are both threats that wood storks face.

Herons, Egrets and Ibises

The little blue heron's (*Egretta caerulea*) and tricolored heron's (*Egretta tricolor)* decline are due to loss of freshwater wetlands and alteration of their natural hydroperiod. There is also some indication that pesticides and heavy metal contamination may affect this heron. In Florida, the destruction and alteration of more than half of the wetlands, due to the phenomenal increase in population has caused a substantial decline in ardeids. Wetlands have been filled and or impacted by housing developments, agriculture, human activity (i.e. sports, recreation) and the infrastructure that supports these activities" (Rodgers et al. 1996).

Like these herons, the great egret (*Ardea alba*) and snowy egret (*Egretta* thula) have been declining throughout their ranges since the 1950s. Scientists believe that the main reason for this decline is the loss and alteration of wetlands where they forage. Similar to the herons and egrets listed above, the white ibis (*Eudocimus albus*) and glossy ibis (*Plegadis falcinellus)* are declining throughout their range due to the reduction and degradation of wetlands and human disturbances to their rookeries.

Fox Squirrels

The Big Cypress fox squirrel is in decline throughout its range primarily due to loss and degradation of habitat. Although the number of this subspecies of fox squirrel in Florida is unknown, "based on the amount of known habitat loss, fox squirrel populations have undoubtedly declined at least 85% from pre-settlement levels" (Humphrey 1992). Collisions with vehicles are another common cause of decline for this species.

Regular burn regimes of 2-5 years during the growing season (April-July) are critical to maintain their habitat with an open canopy with minimal understory. Fires must be allowed to burn into cypress or other wetland communities to create and maintain broad, diverse transition zones for the Big Cypress fox squirrel.

Plant Species

In addition to designated wildlife, these Preserves may provide habitat for plant species listed by the IRC or FDACS. The following are brief summaries of the FDACS designated plant species explaining reasons for their decline and typical communities where they are located.

Florida Butterfly Orchid

Although locally abundant (Brown 2002), the Florida butterfly orchid (*Encyclia tampensis*) is designated as Commercially Exploited by the FDACS. A plant that is designated as "Commercially Exploited" is considered to be threatened by commercial use.

In the unlikely event that plants will be damaged during restoration activities, a permit will be obtained from FDACS to remove them before work commences. Plants growing on invasive exotic vegetation, to be destroyed, will be relocated on the site if economically feasible.

Cardinal Airplants

Cardinal airplants (*Tillandsia fasciculata var. densispica*), are found in hammocks, cypress swamps and pinelands. Threats to these plants include illegal collecting, habitat destruction and the Mexican bromeliad weevil (Save 2004). Now listed as Endangered, they were once considered common before the arrival of the weevil in Florida in the late 1980s.

IRC, which is not a regulatory agency, also maintains a listing of threatened plant species. IRC's designation is either obtained from their book Rare Plants of South Florida: Their History, Conservation and Restoration, (Gann 2002) or internet website (www.regionalconservation.org). Scientists working for this Institute have conducted a tremendous amount of field work and research documenting plants occurring in conservation areas throughout Florida's 10 southernmost counties. This initial floristic inventory allowed the IRC to rank plant species in order to indicate how rare/common these plants are in protected areas. Rare plants are defined as being either very rare and local throughout their range in south Florida (21-100 occurrences, or less than 10,000 individuals), or found locally in a restricted range. IRC only ranks those taxa as rare when there are fewer than 100,000 individuals. Imperiled plants are those that are imperiled in south Florida because of rarity (6-20 occurrences, or less than 3,000 individuals) or because of vulnerability to extinction. This can be due to some natural or human factors. IRC only ranks taxa as imperiled if there are fewer than 10,000 individuals. Critically Imperiled plants are defined as being either extremely rare (5 or fewer occurrences, or fewer than 1,000 individuals), or extremely vulnerable to extinction from natural or human factors. IRC only ranks those taxa as critically imperiled with 10,000 or fewer individuals.

In their book, (Gann 2002), the authors provide an entire chapter of recommendations to help restore south Florida's rare plant diversity. Several of these recommendations, particularly those that protect plants on the Preserves and relate to stewardship practices, will be followed. More information on the specific techniques used will be discussed in the Management Action Plan. The following list highlights IRC recommendations that will be incorporated into the management of PLP Preserve:

- Prohibit recreational activities such as off-road vehicle use to avoid impacts to rare plant populations.
- Prevent illegal poaching of rare plants.
- Prosecute poachers to the fullest extent of the law.
- Implement an ongoing exotic pest plant control program.
- Educate exotic plant control crews about the rare plants to ensure they avoid non-target damage.
- Control wild hogs, which can completely destroy the above ground vegetation and disturb all the soil in an area where they are feeding.
- Initiate prescribed fire regimes in communities that are fire adapted since fire as a management tool is extremely critical for the protection of many rare plants.
- Divide the site so the entire area is not burned during the same year will also help protect these communities.
- Ensure that management activities do not negatively impact rare plant populations.

v. Biological Diversity

General information on biological diversity and measures used to help promote biological diversity can be found in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

The integrity and diversity of these Preserves must be protected when and wherever possible. Land Stewardship staff will perform the following actions in this regard:

- Control of invasive, exotic vegetation followed by annual maintenance to provide more suitable habitat for native aquatic and terrestrial species.
- Control invasive exotic animal populations to reduce their impacts on the herbaceous plants, native animals and soils.
- Hydrologic restoration to restore a more natural water flow across the property and improve water quality as it leaves for the headwaters of the Imperial River.
- Maintain boundary signs to eliminate illegal access to the Preserve and protect fragile ecosystems. Continue to monitor the site for illegal off-road vehicle (ORV) use and install fencing if necessary.
- Install and maintain "no berry picking" signs to inform palmetto pickers it is illegal to harvest them on the preserves.

- Implement a prescribed fire program to closely mimic the natural fire regimes for different plant communities to increase plant diversity and ensure the canopies remain open.

- Where necessary, install perimeter fire breaks to protect resources on the Preserve and surrounding neighbors in the event of wildfires.

- Remove any debris and prevent future dumping on-site.

- Conduct on-going species surveys utilizing volunteers and staff to catalog and monitor the diversity that is present..

- Reduce canopy cover in appropriate habitats to promote herbaceous plant diversity.

- Use adaptive management if monitoring of restoration techniques indicates a change may be necessary.

- Offer public access that allows citizens to enjoy the preserve while protecting sensitive plant communities and wildlife needs.

- Enhance hydrologic conditions to return to historic hydroperiods. Improve hydrologic flow and create littoral shelves on numerous borrow ponds.

- Prevent and prosecute proaching and removal activities (e.g. palmetto berries, illegal hunting, pine cone and orchid collection).

C. Cultural Resources

i. Archaeological Features

Figure 9 shows the portion of PLP that falls into Sensitivity Level 2. No shell middens have been observed on the Preserve, although there were mounds identified close to the Preserve and associated with the Imperial River (Van Meter, 2005). Staff also reviewed survey documents from the Florida Department of State Division of Historical Resources (DHR) pertaining to the Bonita Springs area and did not find any specific references to the land which makes up PLP. General information on archeological features in Lee County can be found in the LSOM.

Figure 9: Archaeological Map

ii. Land Use History

There is no documentation of historical uses of Pine Lake Preserve until late in the 20th century. General land use patterns for inland areas of southwest Florida are likely to apply to the Preserve and surrounding areas. Native Americans lived in southwest Florida for at least 2,000 years before the Europeans. The Calusa Tribe would likely have used the Imperial River, which has a tributary in the southern portion of PLP.

Starting in the mid 1800s both the Seminole Tribe and European settlers lived a subsistence existence in the region. Army crews were sent into southern Florida on exploratory missions. When they first arrived at the Imperial River, they named it "Snake River" to reflect the wildlife they encountered. They set up a permanent supply camp on the south bank of the river (Briggs, 1976).

In the 1870s, Hamilton Diston, an entrepreneur from Philadelphia, Pennsylvania purchased 6 million acres of land in this area for 25 cents per acre. This may have included the Preserve, along with what is now Bonita Springs. He surveyed the land and began to dig canals to drain the wetlands. A town built up around the Army camp was named Survey after the work being conducted in the area and the Snake River was renamed Survey River. Survey was described as being like the "Wild West" and the citizens "Ate what didn't eat them" (Koltinsky, 2003). Although the town was a little over 2 miles to the west of Pine Lake Preserve, it is possible that the citizens of Survey hunted and fished at PLP.

In 1912 investors purchased Survey and 5,000 acres surrounding it. They platted the land, added more roads and canals and renamed the town Bonita Springs and the river became the Imperial River. There is some disagreement as to why these names were chosen, but it probably had to do with picking names that would attract new residents.

By the 1920s there were at least 3 sawmills in Bonita Springs, one located on Bonita Beach Road that was operated from dawn to dusk. The Preserve could have been logged for the first time in the 1920s to provide lumber for the rapidly growing town. The area between Bonita Beach Road and Immokalee Road (east of the Preserve) was heavily logged in the 1950s (Cox, 2005). Although there is no obvious evidence of logging in the earliest historic aerials the Preserve could have been logged before the first ones were taken in 1944. This aerial (Figure 10) shows a small dirt road that crossed over the southern half of the Preserve.

Development in the area began in 1960 when the Kehl Canal was constructed. This canal was part of a series of canals and roads created for Suncoast Acres, a failed residential development located in the southern portion of the Flint Pen Strand and approximately 3 miles east of the Preserve (Figure 11).

By 1968 large dirt roads were constructed along the north and east boundaries of PLP. The land on both sides of the Imperial River branch was cleared. There is evidence of stump holes and logging trails throughout the preserve in the1968 aerial (Figure 12). Between 1966 and 1972, the dirt roads narrowed due to vegetation regrowth and the tree canopy appears to be much more dense. The 1972 aerial (Figure 13) shows the clearing of vegetation before excavation of the western pond and the which shows up as completed along with the beginnings of the eastern pond shortly thereafter in the 1979 aerial (Figure 14). Soil from this pit may have been used in the construction of I-75, which was completed in this area in 1981, or it may have been sold for other off-site purposes. The paving of other dirt roads surrounding the Preserve occurred in 1981 (E. Terry Street), 1983 (Bonita Grande Road) and 2004 (Kent Road).

By 1985 (Figure 15), ponds have been installed on the properties to the north and west of the preserve in preparation for residential developments which appear on the 2005 aerial (Figure 15) along with the clearing of vegetation where the YMCA facility will be built. The cleared areas around the banks of the eastern pond are a thick melaleuca monoculture which is probably a result of the clearing and hydrologic changes. Another result of the hydrologic changes to the area is the invasion of slash pine trees into the floodplain swamp community. Tree cores from this site completed around 2005 show that the south Florida slash pine here are now approximately 45 years old. In the early 1990s, the Preserve was fenced and leased for cattle.

Since the Conservation 20/20 program purchased the land in 2000 and created Pine Lake Preserve, staff has been busy improving and restoring the property. The cattle lease was removed and the exotic plant treatment projects began. Mature melaleuca was logged off the site followed by regular herbicide treatments by hand crews on all types of exotic plant species across the site. Staff has worked with three different entities (both public and private) on a possible partnership to do a hydrologic restoration on the site.

As of July of 2015, Conservation 20/20 staff is pursuing a partnership with the City of Bonita Springs that involves a hydrologic restoration and water quality project. A Memorandum Of Understanding (MOU) is being drafted for BoCC consideration. Conservation 20/20 will be fiscally responsible for the design and permitting while the City staff will be financially responsible for construction, maintenance, and exotic control within the project area. The goal of the project is to allow water to flow onto the site from the north allowing it to more naturally sheet flow across the preserve as it did historically. There is also the possibility to siphon off water from the Kehl Canal and put into one or both of the onsite ponds to create a filter marsh before releasing the water back into the upper reaches of the Imperial River. City staff is currently seeking grant funding for the construction costs. Lee County will claim the TMDL credits for acquisition of the property and the proportionate share of project costs for design and permitting while the City of Bonita Springs will be able to claim the construction costs for

water flows while improve the onsite plant communities and water quality both onsite and downstream.

Figure 10: 1944 Aerial

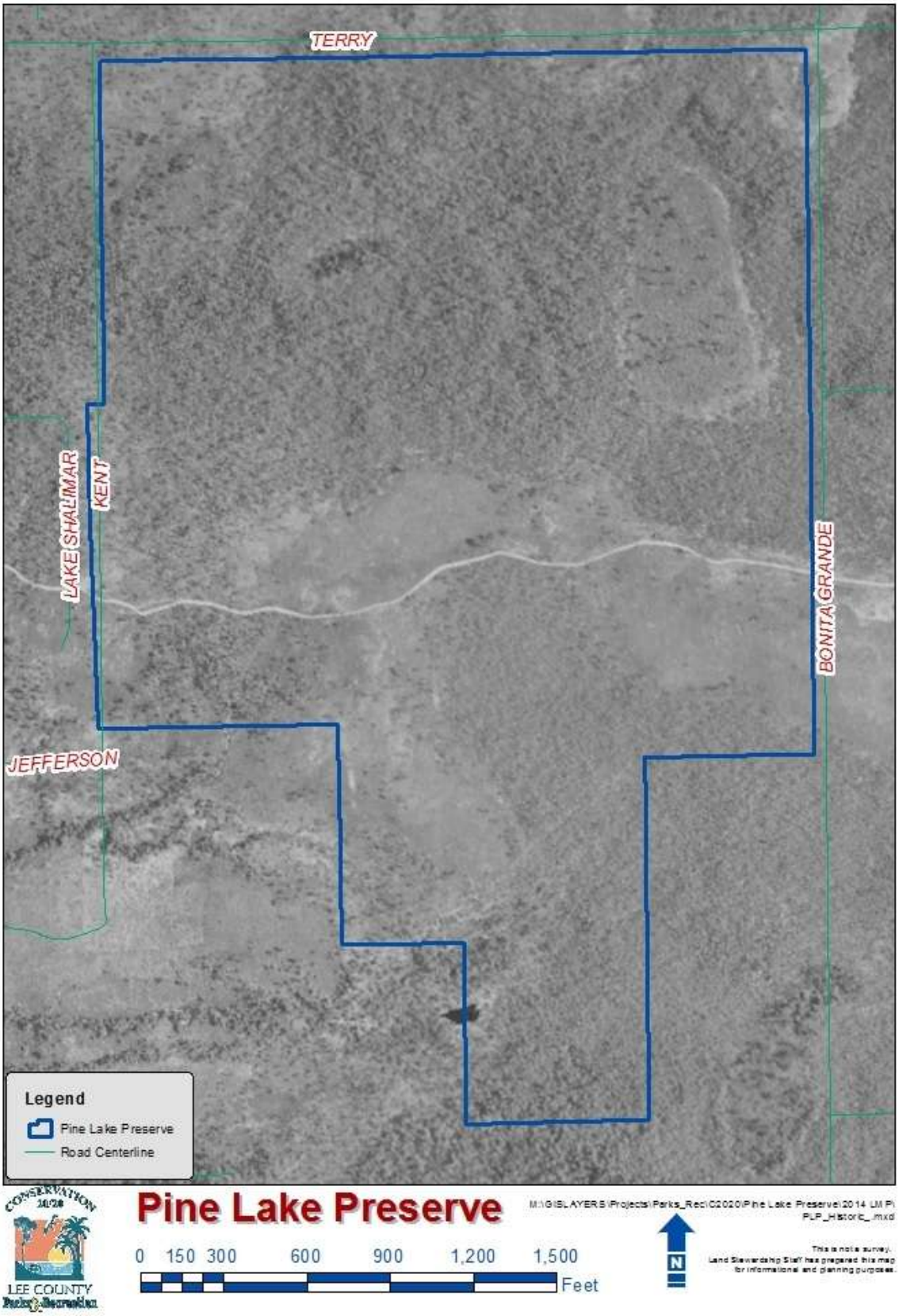


Figure 11: 1962 Aerial

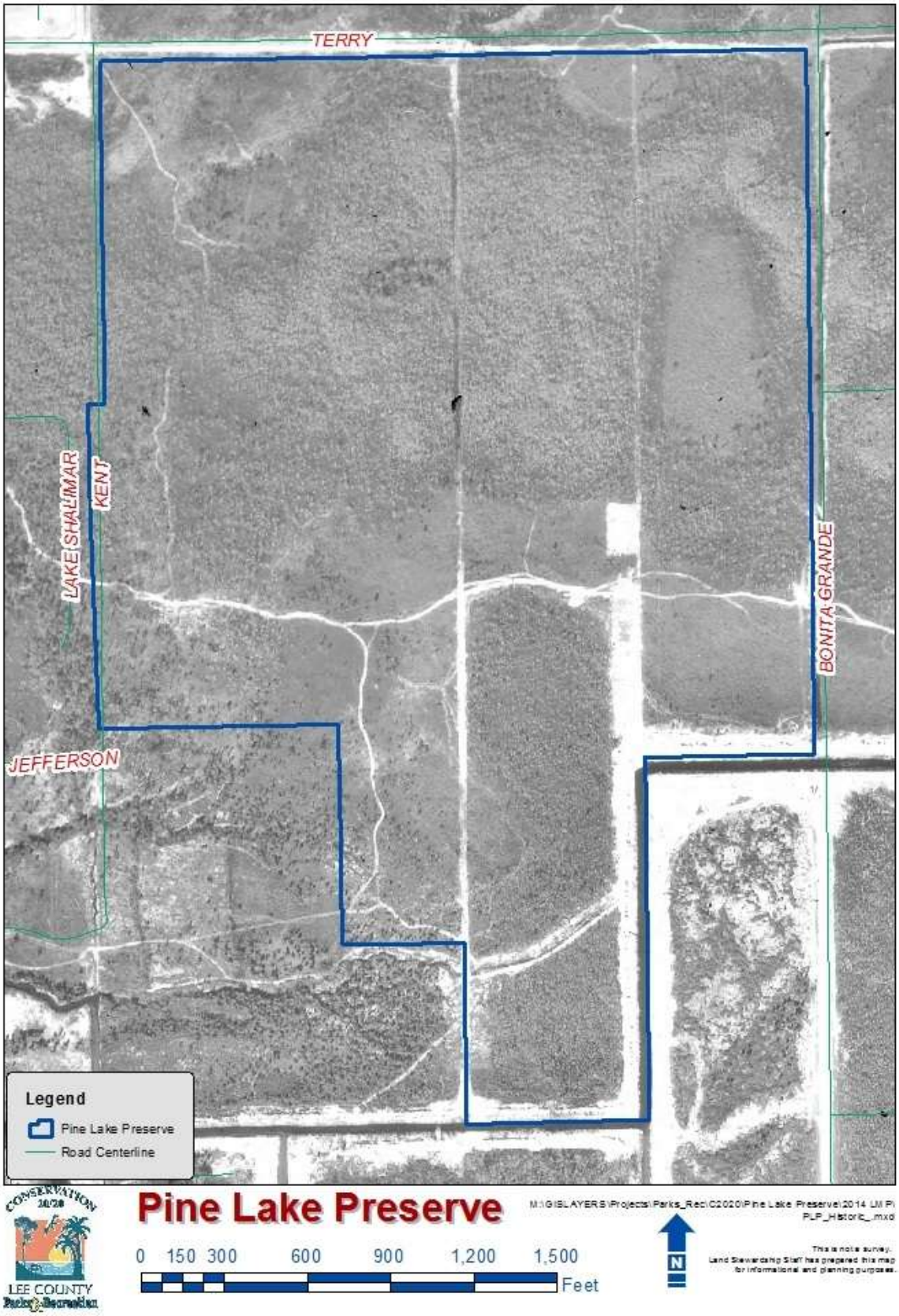


Figure 12: 1968 Aerial

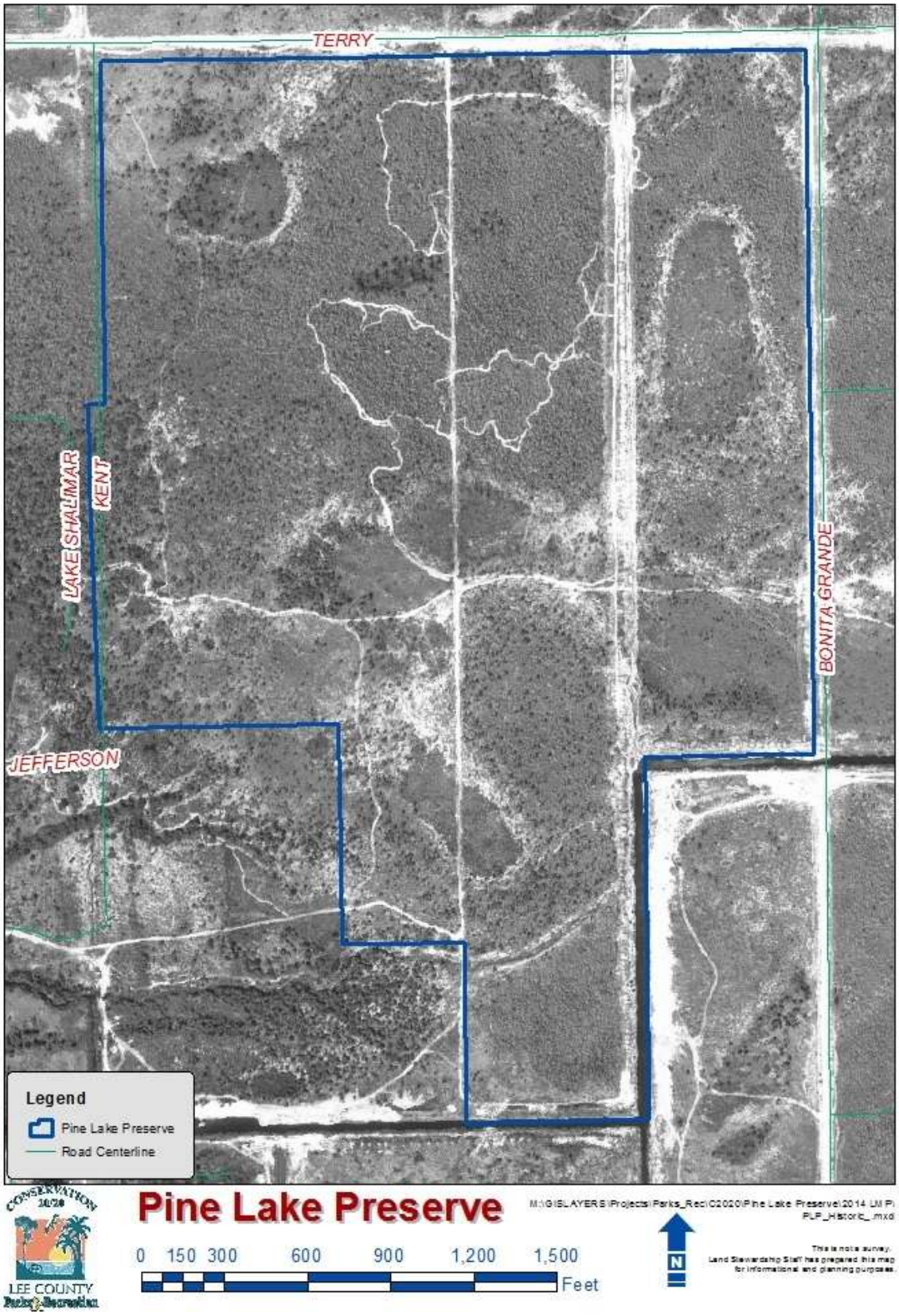


Figure 13: 1972 Aerial

Figure 14: 1979 Aerial

Figure 15: 1985 Aerial

Figure 16: 2005 Aerial

Figure 17: 2006 Aerial

iii. Public Interest

PLP was purchased for the preservation of environmentally sensitive lands, its high probability for listed species, and for the Preserve's groundwater recharging capability.

Staff has installed a public access walk-through near the main entrance off Kent Road. It receives moderate use as people visit the borrow pond, go hiking, and check out the birds throughout the site.

In 2013, 2014, and 2015, the neighboring YMCA has put on an adventure race that they call the "Gruesome Twosome" as a fundraiser. In it, teams of two run approximately 3 miles with numerous wet and muddy obstacles along the way. YMCA and C20/20 staff have worked in cooperation to have a portion of the Gruesome Twosome course run through several firelines on Pine Lake Preserve. This unique event allows an introduction of the Preserve and conservation lands in general to a user group that otherwise might not be aware of the preserves and their many benefits. About 80 participants per year participate in this event and are provided with Conservation 20/20 brochures in their event goodie bags.

Information concerning this and all C20/20 preserves can be found on the web site along with copies of their associated stewardship plans when available (www.conservation2020.org). Staff may mail newsletters when activities are scheduled to take place that the Preserve neighbors may be interested in.

V. FACTORS INFLUENCING MANAGEMENT

A. Natural Trends and Disturbances

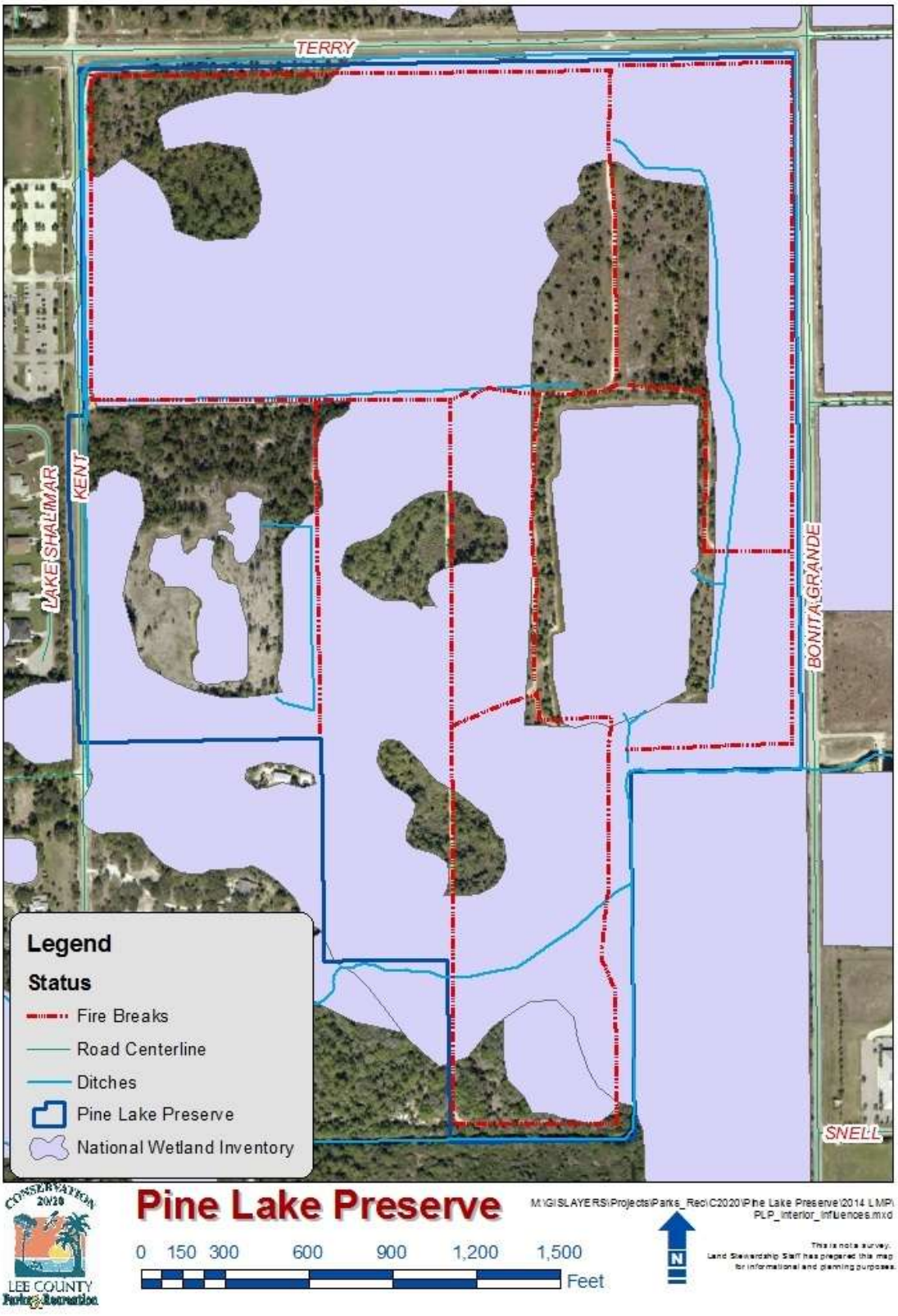
Natural trends and disturbances can include hurricanes, flooding, wildfires, occasional freezes, and the pattern of wet and dry seasons. Implementation of the Management Action Plan will take all of these factors and their influence on projects at PLP into consideration. General information on natural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

B. Internal Influences

Several anthropogenic activities have impacted PLP. Shallow ditches and associated berms have been installed running both east/west and north/south. These ditches and berms are shown on Figure 18 and can also be seen on the LiDAR map (Figure 3). LiDAR shows the elevation of the ground through vegetation. These maps also clearly show the two borrow ponds on site as well

as the natural wetlands in and around the Preserve. These ponds and the Kehl Canal have altered water flow across the site and collected water and in turn have played a role in drying out the surrounding land. They have also lead to the drying up of the historic eastern-most reaches of the Imperial River which is today is a dry bed almost all year long. A majority of this property is listed by the United States Fish and Wildlife Service as being a wetland shown on the map as the National Wetlands Inventory layer. Disked fire lines and trails also cut through and around the entire property.

Figure 18: Internal Influences



C. External Influences

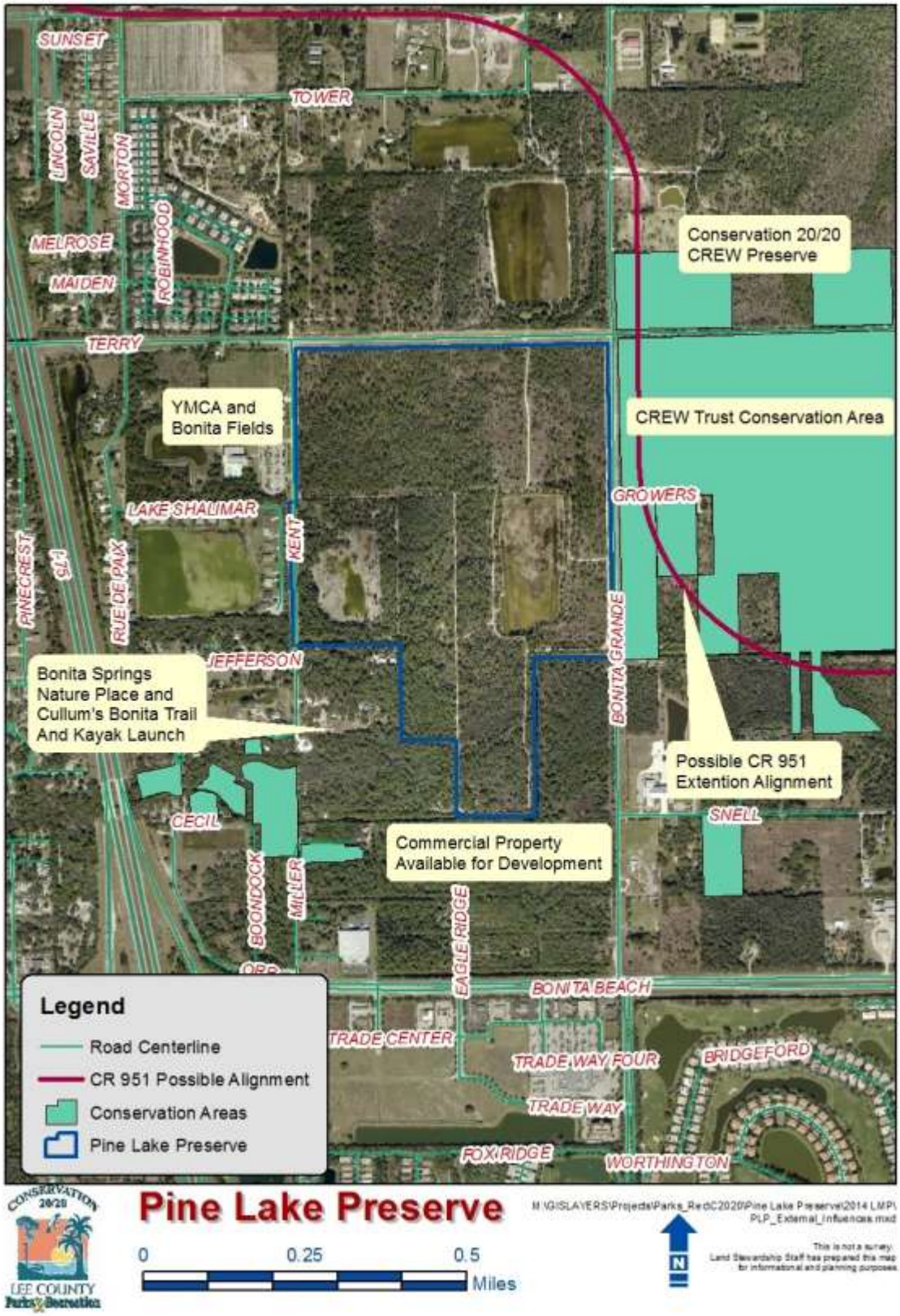
Residential development is occurring in the area to the west of the Preserve. The YMCA has been constructed immediately to the west of the Preserve and with the recent improvement of Kent Road, further development is likely. The mobile home park that was on the northeast corner of the Preserve has been removed and the property it was on is now vacant. The parcel on the southern boundary is a commercial property that could be developed at any time. Conservation Lands staff will attempt to work with any future development to ensure any impacts to the Preserve as a result of development either have a negligible or positive effect on PLP. The majority of the land to the east of the Preserve is included in the CREW lands. The CREW is a joint project between the South Florida Water Management District, which owns and manages the land, and the Florida Fish and Wildlife Conservation Commission, which monitors wildlife, hunting, and provides law enforcement, on the 60,000 acres of conservation lands that make up the watershed.

In 2004, a Bonita Springs Fire Station was constructed near the southeast corner of the property on the east side of Bonita Grande Dr. The fire district made two berm cuts on the historic river channel on PLP as part of the floodplain compensation for their new station. The fire district used the property to the north, owned by SFWMD, for flood protection and wetland mitigation for the construction of the new fire station.

One of several of the possible alignments of the proposed C.R. 951 extension runs along the eastern boundary of the Preserve along Bonita Grande Drive (Figure 19). Without funding this project is decades into the future but staff will work on with Lee and Collier DOT to ensure the least amount of impact to the Preserve.

Just south of PLP on Kent Road (27601 Kent Road) is the City of Bonita Springs nature center called the Bonita Nature Place. It was opened to the public in 2010 and offers hiking trails, a bat house, bee house, a butterfly garden, and hosts gopher tortoises. Since the Bonita Nature Place shares PLP's western boundary there will be many opportunities to link trail systems and give visitors to both properties an even better experience. Just south of the Bonita Nature Place is another City of Bonita Springs property along the banks of the Imperial River called the Cullum's Bonita Trail and Kayak Launch. This site, which opened in the spring of 2014, offers a parking area and a trail system allowing visitors to hike along the Imperial River on improved trails or put in their canoe or kayak and paddle the upper reaches of the Imperial River.

Figure 19: External Influences



D. Legal Obligations and Constraints

i. Permitting

Some land stewardship activities at Pine Lake Preserve require obtaining permits from appropriate agencies. Prescribed fire is used as a management tool and will require permits from the DOF. Pine thinning and mature melaleuca removal harvest require a vegetative permit from the City of Bonita Springs and the proposed hydrologic improvements will require permits from the United States Army Corps of Engineers (USACE), and SFWMD.

ii. Other Legal Constraints

The main management constraints for this Preserve will be conducting land stewardship activities with the brief dry season and the coordination of management activities and recreational use.

Pine Lake Preserve is very wet most of the year. January though April are typically the driest months. Management activities will normally need to be conducted in these months. During periods of high water, access to the Preserve should be limited to the Kent Road gate in the western arm of the Preserve. There is an elevated farm road that is typically accessible in high water.

Now that the exotic plants have been removed from or controlled within the Preserve, prescribed fire is now an important management tool. The urban area to the west of the Preserve, including the YMCA, is a challenge for burning. Smoke management needs to take into account the development on Bonita Beach Road, the daycare, and fire station on Bonita Grande Blvd., as well as Interstate 75.

There is one easement shown on the easement map (Figure 20) on site number 301 of PLP. This is an access easement granted to “Northern Property Owners Schedule I” from a previous owner, John and MaryAnne Mauriel who owned the property between 1992 and 2004. Because Kent Road is inside the Preserve’s property boundary, the easement allows property owners to use Kent Road to access their properties.

Although not necessarily a constraint, PLP is located within the City of Bonita Springs. Other city ordinances, codes, permits, and/or plans may pertain to this property besides the usual restrictions staff is used to adhering to; therefore, contacting city staff to ask questions concerning restoration activities will be needed before beginning work.

Figure 20: Easements Map

iii. Relationship to Other Plans

The Lee Plan, Lee County's comprehensive plan, is written to depict Lee County as it will appear in the year 2020. Several themes have been identified as having "great importance as Lee County approaches the planning horizon" (LCDCD 2010). These themes are:

- The growth patterns of the county will continue to be dictated by the Future Land Use map.
- The continued protection of the county's natural resource base.
- The diversification of the county's traditional economic base.
- The expansion of cultural, educational and recreational opportunities.
- A significant expansion in the county's physical and social infrastructure.

The entire Lee Plan can be found on the Internet at: www.leegov.com/gov/dept/dcd/Planning/Documents/LeePlan/Leeplan.pdf. The sections of the Lee Plan which may pertain to Conservation 20/20 Preserves have been identified in the LSOM.

The City of Bonita Springs also has a comprehensive plan which can be found on the Internet at: http://www.cityofbonitasprings.org/category/city-documents/comp-land-use-plan/

E. Management Constraints

The principle stewardship constraints for PLP include conducting land management activities with the brief dry season and the coordination of management activities and recreational use. Although C20/20 has funding allocated each year by the Lee County Board of County Commissioners (BoCC), efforts to obtain additional funding through grants and/or monies budgeted for mitigation of public infrastructure projects will be pursued to supplement the operations budget to meet the restoration goals in a timely manner.

Pine Lake Preserve is very wet most of the year. January through April are typically the driest months. Management activities will normally need to be conducted in these months. During periods of high water, access to the Preserve should be limited to the Kent Road gate in the western arm of the Preserve. There is an elevated farm road that is typically accessible in high water.

Urbanization pressures increasingly affect stewardship activities and boundary security. Fire management is a vital tool used to keep fuel loads down, to ensure biological diversity, and to maintain functional habitat value for wildlife. Smoke

biological diversity, and to maintain functional habitat value for wildlife. Smoke management is one of the greatest factors in planning prescribed fires. Prescribed fire parameters become more restrictive with expanding residential and commercial development, increased traffic on nearby roadways and surrounding airports.

When restoration activities and prescribed burns are in progress, signs will be installed along at the main entrance gate to warn the public that the Preserve is temporarily closed.

F. Public Access and Resource-Based Recreation

Historically, there has been little recreational activity at Pine Lake Preserve. The Nature Place and the YMCA are interested in being involved with any public use plans at the Preserve. They have agreed to allow Preserve visitors to use their parking area so no new parking facilities will be needed at the Preserve. The City of Bonita Springs staff involved with the Nature Place have expressed an interested in having their trail system interconnect with our fire line trails.

Rather than creating a separate walking trail system which would need to be closed during the rainy season, hikers are encouraged to follow the existing fire breaks.

Pine Lake Preserve is a limited use preserve which has two walk through access points, fire breaks that can be used for hiking, and two ponds that are available for fishing. The first walk through access point is across Kent Road from the YMCA while the second provides access through the neighboring Bonita Springs Nature Place property and trail system.

Due to the small size, flooding patterns, and soil types of the Preserve, there will be no equestrian or bicycle use. Equestrian use is already allowed in the hundreds of acres of the CREW properties which are located across Bonita Grande Blvd. from the Preserve. Biking is also an allowable use at portions of the CREW properties.

Since 2013, the neighboring YMCA has put on an adventure race called the Gruesome Twosome in which some of the PLP fire breaks were used as part of the 5K running course. The YMCA volunteers set up typically two basic obstacles on the Preserve's fire breaks, such as a crawl under flagging tape and a hay-bail jump, with many more various obstacles on the YMCA grounds. The event is a fundraiser for the YMCA however, it also educates a new user group about the benefits of conservation programs and properties.

Recreational opportunities will be reexamined during the next revision of this plan (2025).

G. Acquisition

Pine Lake Preserve was purchased in two separate nominations through the C20/20 Land Acquisition Program. Nomination number 119 was purchased in November of 2000 for $1,950,000 after being nominated to the program in the summer of 1999 and nomination number 301-3 was purchased in August of 2012. Nomination 119 includes 130.7 acres and nomination 301-3 includes 43.5 acres for a total of 174.2 acres.

The future land use (Figure 23) for the Preserve is Density Reduction Groundwater Resource (DRGR). The DRGR was created to limit development in areas of Southwest Florida that are key to allowing the natural recharging of groundwater. The Preserve is zoned (Figure 24) for agriculture, "Ag-2". There are a total of four STRAP numbers (Figure 21) for the property; 31-47-26-06-00009.0010, 31-47-26-B2-00001.4050, 31-47-26-B2-00001.4030, and 31-47-26-B2-00001.4000.

There have been a number of additional nominations, 15, 179, 277, 292, 305, and 307 (Figure 22), which are not adjacent to the Preserve, but are within a mile of its boundaries. These were all withdrawn or rejected primarily due to price negotiation failures. Nomination 15 was 20-acres and was evaluated in 1997. The Conservation Land Acquisition and Stewardship Advisory Council (CLASAC) and County Staff decided not to pursue this property for acquisition because of its small size and isolation. Nomination 179 is a 5-acre parcel that the Bonita Springs Fire Control & Rescue District (BSFCD) proposed to swap with 5 acres of the existing Pine Lake Preserve. After much consideration, an arrangement was not pursued. Nominations 120 and 209 were brought up and withdrawn in 2003 after negotiations on the price failed. The owner sold the properties one year later but both of these nominations were re-nominated in 2012 as number 301-3 which was acquired.

Additional parcels to the east have been nominated and some purchased and added to the Corkscrew Regional Ecosystem Watershed preserve. These parcels, which are scattered around the 60,000 acre conservation land managed and referred to as the CREW Land and Water Trust, which is a private, non-profit conservation organization that works in partnership with SFWMD and FWC. Parcels of the CREW preserve acquired by the C20/20 program include nomination numbers 428, 419-2, 465, and 469 and nominations withdrawn that could have fallen into the CREW preserve include numbers 327, 502, 446 and 513.

Figure 21: STRAP Map

Figure 22: Acquisitions and Nominations Map

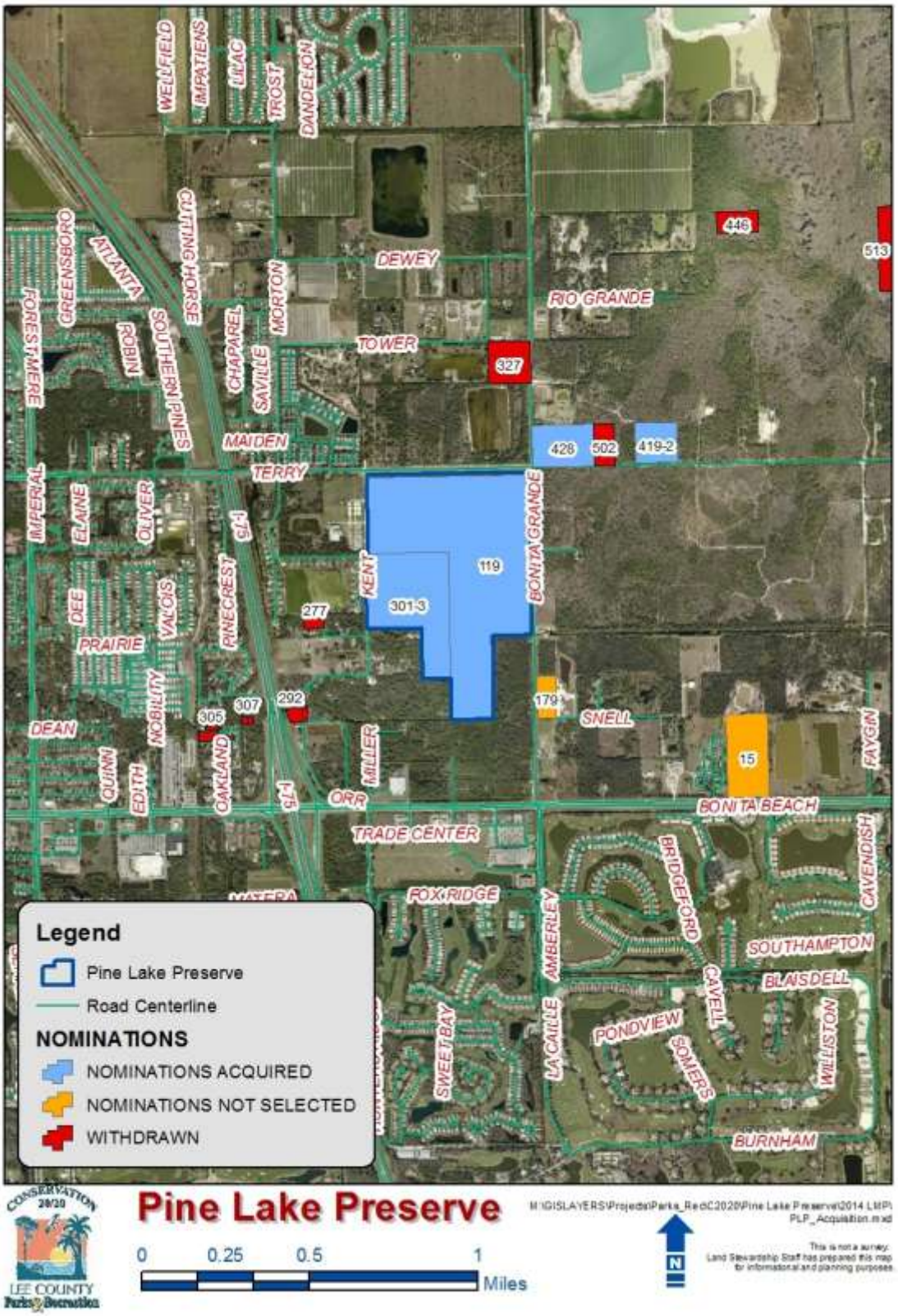


Figure 23: Future Land Use Map

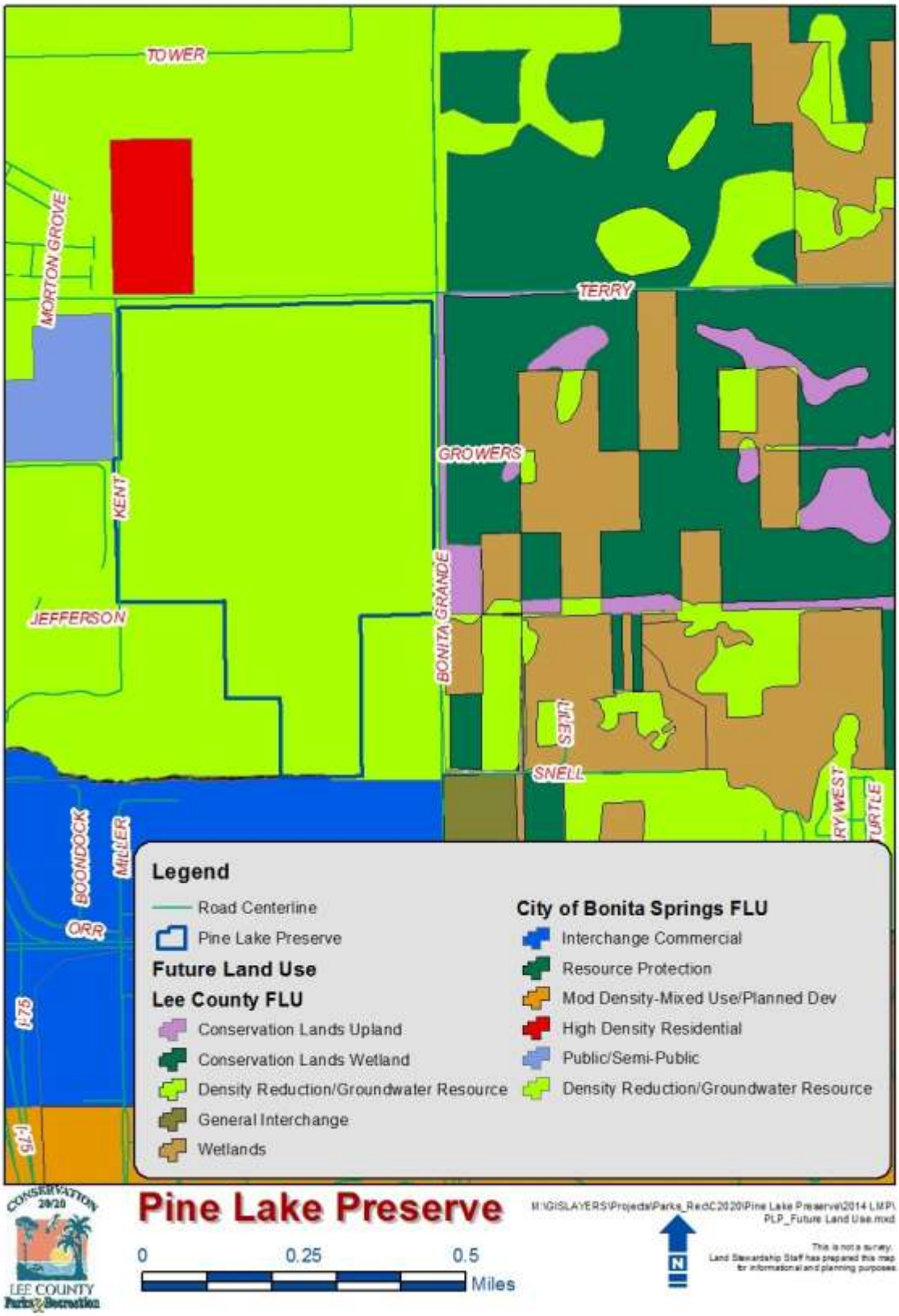
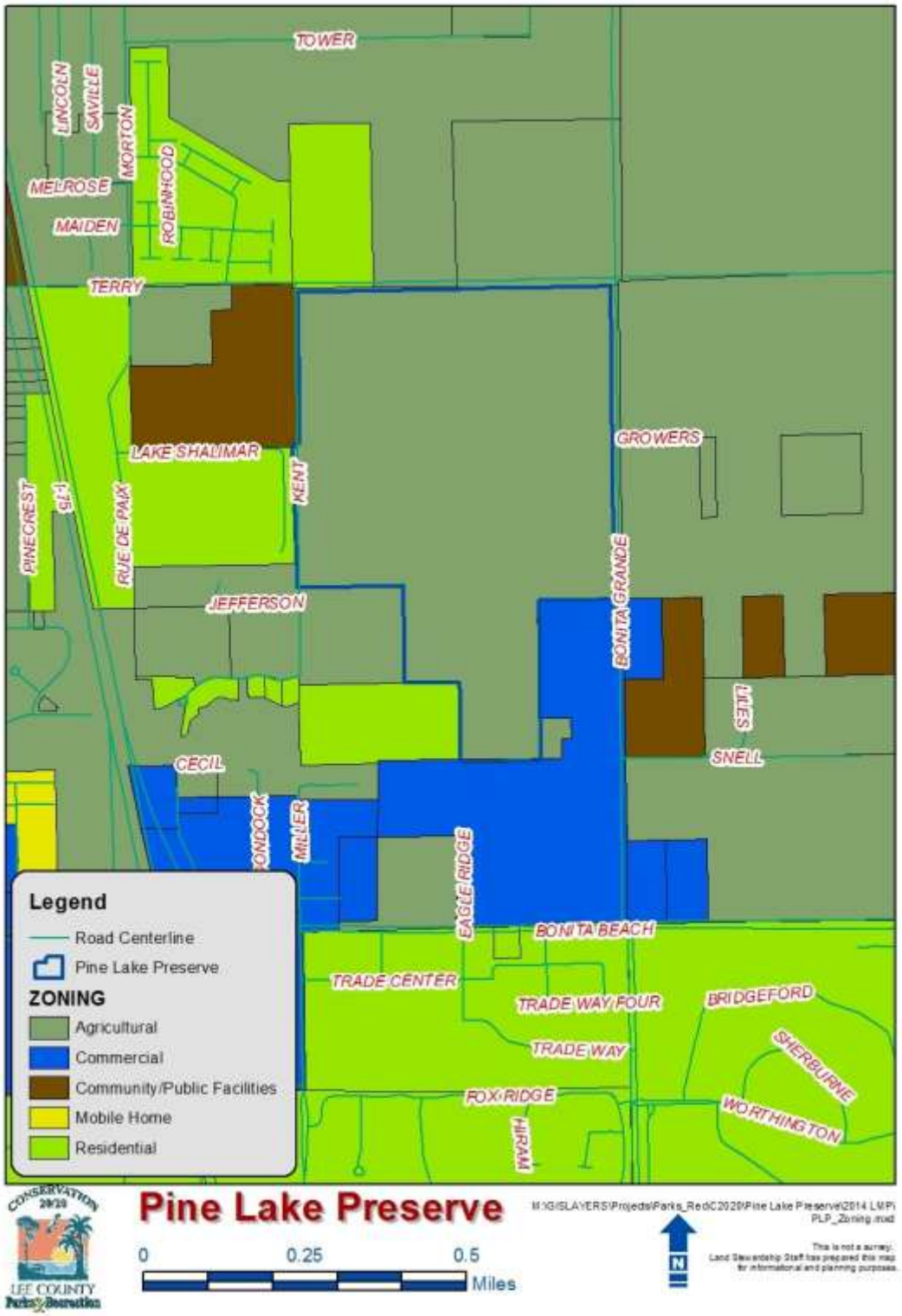


Figure 24: Zoning Map



VI. MANAGEMENT ACTION PLAN

A. Management Unit Descriptions

PLP has been divided into 3 management units utilizing existing roads and firebreaks (Figure 25).

Management Unit 1 – 52 acres
This Unit is located in the western arm of the Preserve. The boundary to the north is East Terry Street, the west Kent Road, the east an access road and the south an improved farm road. The majority of this Unit is a floodplain swamp community dominated by slash pines and cabbage palms. The northwest corner has a small area of scrubby flatwoods. Exotic coverage is less than 5% throughout the Unit.

Management Unit 2 – 91 acres
Management Unit 2 is located in the center of PLP with a portion reaching up to the northeastern Preserve boundary. This management unit includes both of the Preserve's borrow ponds. The Unit is primarily mesic flatwoods with less than 5% exotic coverage. Management activities here will focus on exotic control, hydrologic restoration, and prescribed fire.

Management Unit 3 – 31 acres
This Unit comprises the entire southern arm of the Preserve. It includes the historic Imperial River channel and its floodplain. It is bordered on the east and south sides by the Kehl Canal and to the west by SFWMD and City of Bonita Springs property. The northern boundary is fire break. The majority of the Unit is a hydric hammock community with a small amount of prairie hammock at the southern edge. Exotic levels are below 5%. Management activities in this Unit will focus on exotic removal/control and restoring flow to the historic river channel.

Figure 25: Management Units Map

B. Goals and Strategies

The primary management objectives for PLP are natural community improvements, removal and continued treatment of invasive exotic plants and prescribed burning. Although funding is currently not available to conduct all of these stewardship activities, tasks at PLP will be prioritized in order of importance and ease of accomplishment and include the following tasks. Grants and/or monies budgeted to mitigate public infrastructure projects will be used to supplement the operations budget to meet our goals in a timely manner.

Natural Resource Management

- ✓ Exotic plant control/maintenance
- ✓ Prescribed fire management
- ✓ Pine thinning
- ✓ Monitor and protect listed species
- ✓ Exotic and feral animal removal
- ✓ Hydrologic Restoration

Overall Protection

- ✓ Install/maintain fire breaks
- ✓ Boundary fence installation and interior fence removal
- ✓ Boundary sign maintenance
- ✓ Change Zoning and Future Land Use categories
- ✓ Prevent dumping

Volunteers

- ✓ Assist volunteer group(s)

The following is a description of how each of these goals will be carried out, the success criteria used to measure accomplishment of each goal and a projected timetable outlining which units each activity will take place in and when.

Natural Resource Management

Exotic plant control and maintenance

The most current Florida Exotic Pest Plant Council's (FLEPPC) List of Invasive Species will be consulted in determining the invasive exotic plants to be controlled in each management unit. The goal is to remove/control these exotic species, followed with treatments of resprouts and new seedlings as needed. This goal will bring the entire Preserve to a maintenance level, defined as less than 5% invasive exotic plant coverage.

Prior to each invasive exotic plant control project at PLP performed by contractors, a Prescription Form (located in the LSOM) will be filled out by the

contractor(s), reviewed & approved by the C20/20 staff. Final project information will be entered into the GIS database.

- Uplands with light to moderate infestations:

  In areas where invasive plants are sporadic and below 50% of the vegetation cover, hand removal will be utilized for control, while heavy equipment may be used in more densely infested areas. Specific methodology will depend on stem size, plant type and season, but generally the stem will be cut near the ground and the stump will be sprayed with appropriate herbicide, or a foliar application will be applied to the entire plant. Hand pulling will be utilized when possible with appropriate species in order to minimize herbicide use. Basal bark treatment may be used at some locations. Areas that receive heavy equipment work will receive follow-up treatment that will include an application of an appropriate herbicide mixture to the foliage of any resprouts or seedlings. Cut stems may be piled to facilitate future potential burning, chipping or removal from site. No replanting will be needed due to significant presence of native vegetation and the native seed bank. No debris will be piled in such a way as to block established flowways.

Prescribed fire management

A prescribed fire program has been implemented that closely mimics the natural fire regimes for the different plant communities to increase plant diversity and ensure tree canopies remain open. Within the Preserve's fire dependent communities, prescribed burns are performed after the creation of appropriate fire lines/breaks. Prescribed fire may be utilized for exotic plant control of seedling/sapling in areas previously treated. As of the summer of 2015, staff has conducted 4 separate prescribed burns and continues to keep an appropriate burn rotation.

The timing of prescribed burning will be influenced by plant communities and their needed fire regimes as well as seasonal rain, staff and equipment availability, listed species requirements and wind patterns. The C20/20 Burn Team Coordinator has coordinated with the Florida Forestry Service (FFS) and finalized the C20/20-wide Fire Management Plan that applies to all Preserves. C20/20 staff will inform adjacent neighbors of imminent burn plans.

Pine and palm thinning

Some areas of PLP will benefit from mechanical removal of melaleuca and select slash pines (Figure 26). The lack of fire and hydrologic changes that the site is undergoing have allowed an unnaturally high density of pines to occur in areas of the Preserve which can be mechanically thinned and maintained with prescribed

Figure 26: Vegetation Thinning Map

D. Management Work to Date

The primary focus of the projects that have been completed at PLP is exotic plant control. When this site was purchased it had a considerable number of exotic plant species including a significant monoculture of melaleuca that was targeted and removed mechanically between 2006 and 2007. After the initial treatments were completed on the two parcels, regular maintenance treatments of all FLEEPC listed category I and II invasive exotic plants were completed by both contractors and staff. In addition to exotic control, other projects taken on included trash collection, posting boundary signs, installing fire breaks, re-introduction of prescribed fire, and visitor signage.

VIII. FINANCIAL CONSIDERATIONS

The Conservation 20/20 Program is funded by the county's general fund in accordance with ordinance 06-26 (as amended). This annual allocation funds restoration, maintenance of the preserves and C20/20 staff costs. Funds not used in the annual allocation rolls over to the following year for maintenance and restoration.

Other possible funding for exotic plant treatment and restoration projects may be requested through grants from agencies such as SFWMD, FDEP, FWC, and USFWS or include additional mitigation opportunities. Projected costs and funding sources are listed in Appendix E.

X. APPENDICES

Appendix A: Plant Species List

Appendix B: Wildlife Species List

Appendix C: PLP Soils Chart

Appendix D: Survey with Legal Description

Appendix E: Expended and Projected Costs and Funding Sources

Appendix F: Access Easement

Appendix A: Plant Species List

Appendix A: Plant List for Pine Lake Preserve

Common and Scientific names for this list were obtained from Wunderlin and Hansen, 2003

Scientific Name	Common Name	Native/Exotic	FDACS	FNAI	IRC	EPPC
Family: Blechnaceae (midsorus fern)						
Blechnum serrulatum	swamp fern	native				
Family: Dennstaedtiaceae (cuplet fern)						
Pteridium aquilinum var.?	bracken fern	native				
Family: Dryopteridaceae (wood fern)						
Nephrolepis cordifolia	tuberous sword fern	native				
Family: Polypodiaceae (polypody)						
Phlebodium aureum	golden polypody	native				
Family: Pteridaceae (brake fern)						
Pteris vittata	Chinese ladder brake	exotic				II
Family: Cupressaceae (cedar)						
Taxodium ascendens	pond cypress	native				
Taxodium distichum	bald cypress	native				
Family: Pinacea (Pine)						
Pinus elliottii	slash pine	native				
Family: Alismataceae (water plantain)						
Sagittaria graminea	grassy arrowhead	native				
Family: Arecaceae (palm)						
Sabal palmetto	cabbage palm	native				
Serenoa repens	saw palmetto	native				
Family: Bromeliaceae (pineapple)						
Tillandsia fasciculata	cardinal airplant	native	E			
Tillandsia recurvata	ballmoss	native				
Tillandsia usneoides	Spanish moss	native				
Family: Commelinaceae (spiderwort)						
Commelina erecta	whitemouth dayflower	native				
Tradescantia zebrina	wandering-jew	exotic				
Family: Cyperaceae (sedge)						
Cyperus ligularis	swamp flatsedge	native				
Cyperus surinamensis	tropical flatsedge	native				
Fimbristylis autumnalis	slender fimbry	native			R	
Fimbristylis cymosa	hurricanegrass	native				
Rhynchospora globularis	globe beaksedge	native			I	
Scelaria ciliata var. ciliata	fringed nutrush	native			R	
Family: Haemodoraceae (bloodwort)						
Lachnanthes caroliana	Carolina redroot	native				
Family: Hypoxidaceae (yellow stargrass)						
Hypoxis juncea	fringed yellow stargrass	native				
Family: Orchidaceae (orchid)						
Encyclia tampensis	butterfly orchid	native	CE			
Family: Poaceae (grass)						
Andropogon glomeratus var. *glaucopsis*	purple bluestem	native				
Andropogon glomeratus var.*pumilus*	bushy blubeard					
Andropogon virginicus var. *glaucus*	chalky bluestem	native				
Aristida purpurascens	arrowfeather threeawn	native				
Aristida spiciformis	bottlebrush threeawn	native				
Aristida stricta	wiregrass	native				
Cenchrus echinatus	southern sandbur	native				
Cenchrus spinifex	coastal sandbur	native				
Dactyloctenium aegyptium	durban crowfootgrass	exotic				
Eragrostis elliottii	Elliiott's lovegrass	native				

Appendix A: Plant List for Pine Lake Preserve

Common and Scientific names for this list were obtained from Wunderlin and Hansen, 2003

Scientific Name	Common Name	Native/Exotic	FDACS	FNAI	IRC	EPPC
Eustachys glauca	saltmarsh fingeergrass	native				
Eustachys petraea	pinewoods fingergrass	native				
Hymenachne amplexicaulis	trompetilla	exotic				I
Panicum hemitomon	maidencane	native				
Panicum maximum	guineagrass	exotic				
Panicum repens	torpedograss	exotic				I
Rhynchelytrum	rose natalgrass	exotic				I
Setaria parviflora	yellow bristlegrass	native				
Sporobolus indicus	smutgrass	exotic				
Family: Pontederiaceae (pickerelweed)						
Heteranthera limosa	blue mudplantain	exotic				
Family: Smilaceae (smilax)						
Smilax auriculata	earleaf greenbrier	native				
Smilax bona-nox	saw greenbrier	native			R	
Smilax laurifolia	laurel greenbrier	native				
Family: Xyridaceae (yelloweyed grass)						
Xyris spp.	yellow-eyed grass	native				
Family: Amaranthaceae (amaranth)						
Gomphrena serrata	globe amaranth	exotic				
Iresine diffusa	Juba's bush	native				
Family: Anacardiaceae (cashew)						
Rhus copallinum	winged sumac	native				
Schinus terebinthifolius	Brazilian pepper	exotic				I
Toxicodendron radicans	eastern poison ivy	native				
Family: Annonaceae (custard-apple)						
Annona glabra	pond apple	native				
Family: Apocynaceae (dogbane)						
Catharanthus roseus	Madagascar periwinkle	exotic				
Family: Aquifoliaceae (holly)						
Ilex cassine var. *cassine*	dahoon	native				
Ilex glabra	gallberry	native				
Family: Araliaceae (ginseng)						
Centella asiatica	spadeleaf	native				
Family: Asteraceae (aster)						
Ambrosia artemisiifolia	common ragweed	native				
Baccharis halimifolia	groundsel tree	native				
Bidens alba	beggerticks	native				
Coreopsis leavenworthii	leavenworth's tickseed	native				
Emilia fosbergii	Florida tasselflower	exotic				
Eupatorium capillifolium	dogfennel	native				
Mikania scandens	climbing hempvine	native				
Pectis prostrata	spreading cinchweed	native				
Pluchea rosea	rosy camphorweed	native				
Pterocaulon pycnostachyum	blackroot	native				
Solidago fistulosa	pinebarren goldenrod	native			R	
Family: Boraginaceae (borage)						
Heliotropium polyphyllum	pineland heliotrope	native				
Family: Cactaceae (cactus)						
Opuntia spp.	prickly-pear cactus	native				
Family: Casuarinaceae (sheoak)						
Casuarina equisetifolia	Australian-pine	exotic				I

Appendix A: Plant List for Pine Lake Preserve

Common and Scientific names for this list were obtained from Wunderlin and Hansen, 2003

Scientific Name	Common Name	Native/Exotic	FDACS	FNAI	IRC	EPPC
Family: Chrysobalanaceae (coco plum)						
Chrysobalanus icaco	coco plum	native				
Licania michauxii	gopher apple	native				
Family: Clusiaceae (mangosteen)						
Hypericum tetrapetalum	fourpetal St. John's-wort	native				
Family: Combretaceae (combretum)						
Terminalia muelleri	Australian almond	exotic				II
Family: Convolvulaceae (morning-glory)						
Ipomoea sagittata	saltmarsh morning-glory	native				
Merremia dissecta	noyau vine	exotic				
Family: Cucurbitaceae (gourd)						
Momordica charantia	balsam pear	exotic				
Family: Ericaceae (heath)						
Bejaria racemosa	tarflower	native			R	
Lyonia lucida	fetterbush	native				
Vaccinium myrsinites	shiny blueberry	native				
Family: Euphorbiaceae (spurge)						
Croton glandulosus var. glandulosus	vente conmigo	native				
Poinsettia cyathophora	paintedleaf	native				
Family: Fabaceae (pea)						
Abrus precatorius	rosary pea	exotic				I
Acacia auriculiformis	earleaf acacia	exotic				I
Albizia lebbeck	woman's tongue	exotic				I
Centrosema virginianum	spurred butterfly pea	native				
Chamaecrista fasciculata	partridge pea	native				
Chamaecrista nictitans	sensitive pea	native			CI	
Crotalaria pallida	smooth rattlebox	exotic				II
Desmodium incanum	zarzabacoa comun	exotic				
Desmodium triflorum	threeflower ticktrefoil	exotic				
Leucaena leucocephala	lead tree	exotic				II
Senna alata	candlestick plant	exotic				
Senna obtusifolia	coffeeweed	exotic				
Vigna luteola	hairypod cowpea	native				
Family: Fagaceae (beech)						
Quercus virginiana	live oak	native				
Quercus laurifolia	laurel oak	native				
Family: Juglandaceae (walnut)						
Carya aquatica	water hickory	native			I	
Family: Lamiaceae (mint)						
Piloblephis rigida	pennyroyal	native			R	
Family: Lauraceae (laurel)						
Persea palustris	swamp bay	native				
Family: Malvaceae (mallow)						
Melochia corchorifolia	chocolateweed	exotic				
Melochia spicata	bretonica peluda	native				
Sida cordifolia	llima	exotic				
Sida rhombifolia	Cuban jute	native				
Urena lobata	Caesarweed	exotic				II
Family: Moraceae (mulberry)						
Ficus aurea	strangler fig	native				
Family: Myricaceae (bayberry)						

Appendix A: Plant List for Pine Lake Preserve

Common and Scientific names for this list were obtained from Wunderlin and Hansen, 2003

Scientific Name	Common Name	Native/Exotic	FDACS	FNAI	IRC	EPPC
Myrica cerifera	wax myrtle	native				
Family: Myrsinaceae (myrsine)						
Rapanea punctata	myrsine	native				
Family: Myrtaceae (myrtle)						
Melaleuca quinquenervia	punktree	exotic				I
Rhodomyrtus tomentosa	downy rose myrtle	exotic				I
Syzygium cumini	Java plum	exotic				I
Family: Olacaceae (olax)						
Ximenia americana	hog plum	native				
Family: Onagraceae (eveningprimrose)						
Ludwigia decurrens	wingleaf primrosewillow	native				
Ludwigia maritima	seaside primrosewillow	native			R	
Family: Oxalidaceae (woodsorrel)						
Oxalis corniculata	common yellow woodsorrel	native				
Family: Passifloraceae (passionflower)						
Passiflora suberosa	corkystem passionflower	native				
Family: Phytolaccaceae (pokeweed)						
Phytolacca americana	American pokeweed	native				
Family: Plantagainaceae (plantain)						
Linaria canadensis	Canadian toadflax	native				
Family: Polygalaceae (milkwort)						
Polygala grandiflora	showy milkwort	native				
Family: Portulacaceae (purslane)						
Portulaca pilosa	pink purslane	native				
Family: Rubiaceae (madder)						
Cephalanthus occidentalis	common buttonbush	native				
Chiococca alba	snowberry	native				
Richardia grandiflora	largeflower Mexican clover	exotic				
Spermacoce assurgens	woodland false buttonweed	native				
Spermacoce verticillata	whitehead broom	exotic				
Family: Salicaceae (willow)						
Salix caroliniana	Carolina willow	native				
Family: Sapotaceae (sapodilla)						
Sideroxylon celastrinum	saffron plum	native				
Sideroxylon reclinatum	Florida bully	native			R	
Family: Solanaceae (nightshade)						
Physalis angustifolia	coastal groundcherry	native			I	
Family: Tetrachondraceae (tetrachondra)						
Polypremum procumbens	rustweed	native				
Family: Verbenaceae (vervain)						
Callicarpa americana	American beautyberry	native				
Lantana camara	lantana	exotic				I
Phyla nodiflora	turkey tangle fogfruit	native				
Family: Vitaceae (grape)						
Ampelopsis arborea	peppervine	native				
Parthenocissus quinquefolia	Virginia creeper	native				
Vitis rotundifolia	muscadine	native				
Vitis shuttleworthii	calloose grape	native				

Key

Florida EPPC Status

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

FDACS (Florida Department of Agriculture and Consumer Services)

E = Endangered
T = Threatened
CE = Commercially Exploited

IRC (Institute for Regional Conservation)

CI = Critically Imperiled
I = Imperiled
R = Rare

FNAI (Florida Natural Areas Inventory)

G= Global Status
T= Threatened
CE= Commercially Exploited

1= Critically imperiled because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerbility to extinction due to some natural or man-made factor.
2= Imperiled because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerbility to extinction due to some natural or man-made factor.
3= Either very rare and local throughout its range (21-200 occurences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
4= Apparently secure
5= Demonstrably secure

Appendix B: Wildlife Species List

Appendix B: Wildlife Species List for Pine Lake Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
MAMMALS				
Family: Didelphidae (opossums)				
Didelphis virginiana	Virginia opossum			
Family: Dasypodidae (armadillos)				
Dasypus novemcinctus	nine-banded armadillo *			
Family: Sciuridae (squirrels and their allies)				
Sciurus carolinensis	eastern gray squirrel			
Sciurus niger avicennia	Big Cypress fox squirrel	T		G5T2/S2
Family: Felidae (cats)				
Lynx rufus	bobcat			
Family: Canidae (wolves and foxes)				
Urocyon cinereoargenteus	common gray fox			
Family: Procyonidae (raccoons)				
Procyon lotor	raccoon			
Family: Mustelidae (weasels, otters and relatives)				
Lutra canadensis	northern river otter			
BIRDS				
Family: Anatidae (swans, geese and ducks)				
Subfamily: Anatinae				
Cairina moschata	muscovy duck *			
Aix sponsa	wood duck			
Anas fulvigula	mottled duck			
Family: Odontophoridae (new world quails)				
Colinus virginianus	northern bobwhite			
Family: Podicipedidae (grebes)				
Podilymbus podiceps	pied-billed grebe			
Family: Ciconiidae (storks)				
Mycteria americana	wood stork	E	E	G4/S2
Family: Phalacrocoracidae (cormorants)				
Phalacrocorax auritus	double-crested cormorant			
Family: Anhingidae (anhingas)				
Anhinga anhinga	anhinga			
Family: Ardeidae (herons, egrets, bitterns)				
Ardea herodius	great blue heron			
Ardea alba	great egret			G5/S4
Egretta thula	snowy egret	SSC		G5/S3
Egretta caerulea	little blue heron	SSC		G5/S4
Egretta tricolor	tricolored heron	SSC		G5/S4
Bubulcus ibis	cattle egret			
Butorides virescens	green heron			
Family: Threskiornithidae (ibises and spoonbills)				
Subfamily: Threshiornithinae				
Eudocimus albus	white ibis	SSC		G5/S4
Plegadis falcinellus	glossy ibis			G5/S3
Family: Cathartidae (new world vultures)				
Coragyps atratus	black vulture			
Cathartes aura	turkey vulture			
Family: Pandionidae (ospreys)				
Pandion haliaetus	osprey			G5/S3S4
Family: Accipitridae (hawks, kites, accipiters, harriers, eagles)				
Elanoides forficatus	swallow-tailed kite			G5/S2
Circus cyaneus	northern harrier			
Accipiter striatus	sharp-shinned hawk			
Accipiter cooperii	Cooper's hawk			G5/S3
Hailaeetus leucocephalus	bald eagle	T		G5/S3

Appendix B: Wildlife Species List for Pine Lake Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Buteo lineatus	red-shouldered hawk			
Buteo jamaicensis	red-tailed hawk			
Family: Rallidae (coots and gallinules)				
Gallinula chloropus	common moorhen			
Family: Gruidae (cranes)				
Subfamily: Gruinae				
Grus canadensis tabida	sandhill crane			
Family: Recurvirostridae (avocets and stilts)				
Himantopus mexicanus	black-necked stilt			
Family: Charadriidae (plovers)				
Subfamily: Charadriinae				
Charadrius semipalmatus	semipalmated plover			
Charadrius vociferus	killdeer			
Family: Scolopacidae (sandpipers and phalaropes)				
Subfamily: Scolopacinae				
Tringa solitaria	solitary sandpiper			
Tringa melanoleuca	greater yellowlegs			
Tringa flavipes	lesser yellowlegs			
Calidris alpina	dunlin			
Calidris minutilla	least sandpiper			
Calidris mauri	western sandpiper			
Limnodromus griseus	short-billed dowitcher			
Gallinago delicata	Wilson's snipe			
Scolopax minor	American woodcock			
Family: Columbidae (pigeons and doves)				
Zenaida macroura	mourning dove			
Columbina passerina	common ground-dove			
Family: Cuculidae (cuckoos and their allies)				
Subfamily: Cuculinae				
Coccyzus americanus	yellow-billed cuckoo			
Family: Strigidae (true owls)				
Bubo virginianus	great horned owl			
Strix varia	barred owl			
Family: Apodidae (swifts)				
Subfamily: Chaeturinae				
Chaetura pelagica	chimney swift			
Family: Alcedinidae (kingfishers)				
Ceryle alcyon	belted kingfisher			
Family: Picidae (woodpeckers)				
Subfamily: Picinae				
Melanerpes erythrocephalus	red-headed woodpecker			
Melanerpes carolinus	red-bellied woodpecker			
Sphyrapicus varius	yellow-bellied sapsucker			
Picoides pubescens	downy woodpecker			
Picoides villosus	hairy woodpecker			G5/S3
Colaptes auratus	northern flicker			
Dryocopus pileatus	pileated woodpecker			
Family: Falconidae (falcons)				
Subfamily: Falconinae (falcons)				
Falco sparverius	American kestrel			
Falco peregrinus	peregrine falcon	E		G4/S2
Family: Tyrannidae (tyrant flycatchers)				
Subfamily: Fluvicolinae				
Sayornis phoebe	eastern phoebe			
Myiarchus crinicensis	great-crested flycatcher			

Appendix B: Wildlife Species List for Pine Lake Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Empidonax minimus	least flycatcher			
Family: Laniidae (shrikes)				
Lanius ludovicianus	loggerhead shrike			
Family: Vireonidae (vireos)				
Vireo griseus	white-eyed vireo			
Vireo solitarius	blue-headed vireo			
Vireo olivaceus	red-eyed vireo			
Family: Corvidae (crows, jays, etc.)				
Cyanocitta cristata	blue jay			
Corvus brachyrhyncos	American crow			
Corvus ossifragus	fish crow			
Family: Hirundinidae (swallows)				
Subfamily: Hirundinidae				
Progne subis	purple martin			
Tachycineta bicolor	tree swallow			
Family: Paridae (chickadees and titmice)				
Poecile carolinensis	Carolina chickadee			
Baeolophus bicolor	tufted titmouse			
Family: Troglodytidae (wrens)				
Troglodytes aedon	house wren			
Cistothorus palustris	marsh wren			
Thryothorus ludovicianus	Carolina wren			
Family: Polioptilidae				
Polioptila caerulea	blue-gray gnatcatcher			
Family: Regulidae (kinglets)				
Regulus calendula	ruby-crowned kinglet			
Family: Turdidae (thrushes)				
Sialia sialis	eastern bluebird			
Catharus ustulatus	Swainson's thrush			
Catharus guttatus	hermit thrush			
Turdus migratorius	American robin			
Family: Mimidae (mockingbirds and thrashers)				
Dumetella carolinensis	gray catbird			
Toxostoma rufum	brown thrasher			
Mimus polyglottos	northern mockingbird			
Family: Sturnidae (starlings)				
Sturnus vulgaris	European starling *			
Family: Bombycillidae (waxwings)				
Bombycilla cedrorum	cedar waxwing			
Family: Parulidae (wood-warblers)				
Seiurus aurocapillus	ovenbird			
Mniotilta varia	black-and-white warbler			
Protonotaria citrea	prothonotary warbler			
Geothlypis tristis	common yellowthroat			
Wilsonia citrina	hooded warbler			
Setophaga ruticilla	American redstart			
Parula americana	northern parula			
Dendroica castanea	bay-breasted warbler			
Dendroica petechia	yellow warbler			
Dendroica palmarum	palm warbler			
Dendroica pinus	pine warbler			
Dendroica coronata	yellow-rumped warbler			
Dendroica dominica	yellow-throated warbler			
Dendroica discolor	prairie warbler			
Dendroica tigrina	Cape May warbler			

Appendix B: Wildlife Species List for Pine Lake Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Wilsonia canadensis	Canada warbler			
Family: Cardinalidae (cardinals, some grosbeaks, new world buntings, etc.)				
Cardinalis cardinalis	northern cardinal			
Pheucticus ludovicianus	rose-breasted grosbeak			
Family: Icteridae (blackbirds, orioles, etc.)				
Agelaius phoeniceus	red-winged blackbird			
Quiscalus quiscula	common grackle			
Quiscalus major	boat-tailed grackle			
Icterus spurius	orchard oriole			
REPTILES				
Family: Alligatoridae (alligator and caiman)				
Alligator mississippiensis	American alligator	SSC		G5/S4
Family: Emydidae (box and water turtles)				
Pseudemys floridana peninsularis	peninsula cooter			
Pseudemys nelsoni	Florida redbelly turtle			
Family: Testudinidae (gopher tortoises)				
Gopherus polyphemus	gopher tortoise	T		G3/S3
Family: Polychridae (anoles)				
Anolis carolinensis	green anole			
Anolis sagrei	brown anole *			
Family: Colubridae (harmless egg-laying snakes)				
Coluber constrictor priapus	southern black racer			
Pantherophis guttatus	eastern corn snake			
Family: Crotalidae (pitvipers)				
Crotalus adamanteus	eastern diamondback rattlesnake			G4/S3
AMPHIBIANS				
Family: Bufonidae (toads)				
Anaxyrus quercicus	oak toad			
Anaxyrus terrestris	southern toad			
Family: Hylidae (treefrogs and their allies)				
Hyla squirella	squirrel treefrog			
Osteopilus septentrionalis	Cuban treefrog *			
Family: Microhylidae (narrowmouth toads)				
Gastrophryne carolinensis	eastern narrowmouth toad			
FISHES				
Family: Clupeidae (herrings and shads)				
Dorosoma petenense	threadfin shad			
Family: Cyprinidae (minnows)				
Ctenopharyngodon idella	grass carp *			
Notemigonus crysoleucas	golden shiner			
Notropis maculatus	taillight shiner			
Family: Ictaluridae (North American freshwater catfishes)				
Noturus gyrinus	tadpole madtom			
Family: Loricariidae (suckermouth armored catfishes)				
Hypostomus spp.	suckermouth catfish*			
Family: Fundulidae (topminnows and killifishes)				
Fundulus seminolis	Seminole killifish			
Fundulus chrysotus	golden topminnow			
Lucania goodei	bluefin killifish			
Family: Cyprinodontidae (pupfishes)				
Jordanella floridae	American flagfish			
Family: Poeciliidae (livebearers)				
Poecilia latipinna	sailfin molly			
Gambusia spp.	mosquitofish			
Heterandria formosa	least killifish, dwarf livebearer			

Appendix B: Wildlife Species List for Pine Lake Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Family: Centrarchidae (sunfishes and basses)				
Micropterus salmoides	largemouth bass			
Lepomis gulosus	warmouth			
Lepomis punctatus	spotted sunfish			
Lepomis macrochirus	bluegill			
Lepomis microlophus	redear sunfish			
Lepomis marginatus	dollar sunfish			
Family: Percidae (darters, perches, walleye and sauger)				
Etheostoma fusiforme	swamp darter			
Family: Cichlidae (cichlids)				
Cichlasoma urophthalmus	Mayan cichlid *			
Oreochromis aureus	blue tilapia *			
INSECTS				
Family: Papilionidae (swallowtails)				
Battus polydamus	polydamas swallowtail			
Family: Pieridae (whites and sulphurs)				
Subfamily: Coliadinae (sulphurs)				
Phoebis sennae	cloudless sulphur			
Family: Nymphalidae (brushfoots)				
Subfamily: Heliconiinae (longwings)				
Agraulis vanillae	gulf fritillary			
Dryas iulia	julia			
Heliconius charitonius	zebra			
Subfamily: Nymphalinae (brushfoots)				
Junonia coenia	common buckeye			
Anartia jatrophae	white peacock			
Subfamily: Danaidae (milkweed butterfiles)				
Danaus gilippus	queen			
Family: Sphingidae (sphinx moths, hawkmoths, hornworms)				
Xylophanes tersa	tersa sphinx moth			
ARACHNIDS				
Family: Araneidae (orb weavers)				
Argiope aurantia	black and yellow argiope			

KEY:

FWC = Florida Fish & Wildlife Conservation Commission
FWS = U.S. Fish & Wildlife Service
E - Endangered
T - Threatened
SSC - Species of Special Concern

FNAI = Florida Natural Areas Inventory
G - Global rarity of the species
S - State rarity of the species
T - Subspecies of special population
1 - Critically imperiled
2 - Imperiled
3 - Rare, restricted or otherwise vulnerable to extinction
4 - Apparently secure
5 - Demonstratebly secure

*** = Non-native**

Appendix C: PLP Soils Chart

Pine Lake Preserve Soils Chart

				Physical Attributes				*Biological Attributes*				
Soil Types	**Map Symbol**	**Total Acres**	**% of Preserve**	**Habitats (Range Site)**	**Wetland Class (1)**	**Hydrologic Group (2)**	**% Organic Matter**	**Potential as habitat for wildlife in-- Openland**	**Woodland**	**Wetland**	**Rangeland**	**Limitations for Recreational Paths & Trails**
Felda Fine Sand, Depressional	49	46.3	26.5%	freshwater marshes/ponds	P	B/D	1-4%	very poor	very poor	good	--	Severe: wetness, too sandy
Hallandale Fine Sand	6	0.4	0.2%	south Florida flatwoods		B/D	2-5%	poor	poor	fair	poor	Severe: wetness, too sandy
Immokalee Sand	28	9.2	5.3%	south Florida flatwoods		B/D	1-2%	poor	poor	poor	--	Severe: wetness, too sandy
Malabar Fine Sand, Depressional	44	8.4	4.8%	freshwater marshes/ponds	P	B/D*	1-2%	very poor	very poor	good	--	Severe: ponding, too sandy
Matlacha Gravelly Fine Sand	69	4.7	2.7%	manmade areas		C	not estimated	--	--	--	--	Severe: too sandy
Oldsmar Sand	33	13.1	7.5%	south Florida flatwoods		B/D	1-2%	fair	fair	poor	--	Severe: wetness, too sandy
Pineda Fine Sand	26	23.4	13.4%	slough	S	B/D	.5-6%	fair	poor	fair	--	Severe: wetness, too sandy
Pompano Fine Sand, Depressional	27	44.8	25.7%	freshwater marshes/ponds		B/D*	1-5%	very poor	poor	good	--	Severe: ponding, too sandy

Color Key:

Upland

Wetlands Sometimes Present (20-40%)

Wetlands Often Present (75-95%)

Wetlands Very Often Present (100%)

(1) S - Slough (sheet flow): A broad nearly level, poorly defined drainage way that is subject to sheet-flow during the rainy season.
P - Ponding: Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

(2) * Water table is above the surface of soil
B - Soils having a moderate infiltration rate (low to moderate runoff potential) when thoroughly wet.
C - Soils having a slow infiltration rate (moderate to high runoff potential) when thoroughly wet.
D - Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.

Appendix D: Survey with Legal Description

MAP OF BOUNDARY SURVEY

PARCELS 31-47-26-B2-00001.4050, 31-47-26-B2-00001.4000 AND 31-47-26-B2-00001.4030

LEGAL DESCRIPTION AS RECORDED IN INSTRUMENT No. 2010000235048, 6 PAGES

PARCEL ONE:

THE NORTH 250 FEET OF THE WEST 880 FEET OF THE SOUTHWEST 1/4 OF THE NE 1/4 OF SECTION 31, TOWNSHIP 47 SOUTH, RANGE 26 EAST, LEE COUNTY, FLORIDA.

PARCEL TWO:

THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 AND THE NORTH 1/2 OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4, LESS THE WEST 880 FEET IN SECTION 31, TOWNSHIP 47 SOUTH, RANGE 26 EAST, LEE COUNTY, FLORIDA.

PARCEL THREE:

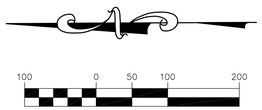
THE WEST 880 FEET OF THE SOUTHWEST 1/4 OF THE NE 1/4 OF SECTION 31, TOWNSHIP 47 SOUTH, RANGE 26 EAST, LESS THE SOUTH 132 FEET THEREOF, AND ALSO LESS THE NORTH 250 FEET OF SAID SECTION, ALL IN LEE COUNTY, FLORIDA.

GENERAL NOTES:

1) FLOOD ZONE "AE", ELEVATION 14 AND 15 AS PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 12021C 0678 F, DATED AUGUST 28, 2008 AND AS REVISED BY LETTER OF MAP REVISION CASE No.: 09-04-3113P WITH AN EFFECTIVE DATE OF JUNE 17, 2010.

2) BEARINGS SHOWN HEREON ARE BASED ON AN BEARING OF N89°59'38"E ON THE NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 31, TOWNSHIP 47 SOUTH, RANGE 26 EAST, LEE COUNTY, FLORIDA.

3) THERE IS TWO SETS OF SURVEY CONTROL FOR THIS SECTION WHICH ARE SHOWN HEREON, ONE SET OF SURVEY CONTROL IS FOR THE BREAKDOWN OF SECTION 31 USING THE INTERSECTION OF THE LINES BETWEEN THE QUARTER CORNERS AS THE CENTER OF SECTION AND THE SECOND SET OF SURVEY CONTROL IS FOR THE BREAKDOWN OF SECTION 31 USING THE QUARTER CORNERS AND A FOUND 4"x4" CONCRETE MONUMENT AS THE CENTER OF SECTION 31. THE FOUND 4"x4" CONCRETE MONUMENT AT THE CENTER OF SECTION 31 IS 17.72' NORTH OF A LINE BETWEEN THE EAST QUARTER CORNER AND THE WEST QUARTER CORNER AND 0.63' WEST OF A LINE BETWEEN THE SOUTH QUARTER CORNER AND THE NORTH QUARTER CORNER OF SECTION 31, TOWNSHIP 47 SOUTH, RANGE 26 EAST, LEE COUNTY, FLORIDA. THIS BOUNDARY SURVEY IS BASED ON THE QUARTER CORNERS AND THE FOUND 4"x4" CONCRETE MONUMENT AT THE CENTER OF SECTION 31 ALONG WITH OLD SURVEY CONTROL FOUND IN THE FIELD AND DEEDS TO SUBSTANTIATE THE LOCATION OF THE CENTER OF SECTION 31.



CERTIFICATION

I HEREBY CERTIFY TO:

Lee County, a political subdivision of the State of Florida; Title Services of Southwest Florida, Inc.; Chicago Title Insurance Company;

THAT A SURVEY OF THE HEREON DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF MEETS THE MINIMUM TECHNICAL STANDARDS AS PER CHAPTER 5J-17.051 AND 5J-17.052, FLORIDA ADMINISTRATIVE CODE.

_____P.S.M.,
DAVID C. HOLMAN, PROFESSIONAL SURVEYOR & MAPPER No. 6279

DATE: 04/05/2012

5J-17.051(3)(b)4 – NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

5J-17.051(3)(b)6 – ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.

DAVID C. HOLMAN, P.S.M., L.L.C.
8384 LAUREL LAKES BOULEVARD, NAPLES, FLORIDA 34119
PHONE: (239) 289-6210 FAX: (239) 352-0018
EMAIL: dchpsm6279@gmail.com

DATE OF SURVEY: 04/05/2012
FIELD BOOK: PAGE:
DRAWN: D.C.H. CHECKED: D.C.H.
JOB No.: 2012.019

ACAD DWG.: 2012.019
SHEET 1 OF 1

Appendix E: Expended and Projected Costs and Funding Source

Appendix E - Expended and Projected Costs and Funding Sources

EXPENDED $ 2000-2015

Resource Enhancement and Protection

Item	Funding Source	Costs
Exotic Plant Control	C20/20	$303,866
total		**$303,866**

Overall Protection

Item	Funding Source	Costs
Perimeter fence/line clearing	C20/20	in-house
Remove interior fence	C20/20 & volunteers	in-house
Tire and trash disposal	C20/20	in-house
Boundary signs (~ miles)	C20/20	in-house/$714
Management plan writing	C20/20	in-house
total		**$714**

Misc Charges

Item	Funding Source	Costs
Printing Costs	C20/20	$17
Maintenance Materials	C20/20	$98
County Charges (self insurance, data charges, workers compensation)	C20/20	$8,956
total		**$9,071**

TOTAL COST TO DATE	**$313,651**

PROJECTED $

Resource Enhancement and Protection

Item	Possible Funding Source	Costs	
Exotic plant control	C20/20	$14,200	per year
Hydrological restoration	C20/20, City of Bonita Springs	$900,000	
Prescribed fire regime	C20/20	in house	
Additional Fire break installation	C20/20	$15,411	
Fire break maintenance	C20/20 in-house	$688	per year

total **$930,299**

Overall Protection

Item	Possible Funding Source	Costs	
Fence repairs	C20/20	$100	per year
Additional fence installation	C20/20	$12,055	

total **$12,155**

Appendix F: Access Easement

INSTR # 5722627
Official Records BK 03853 PG 3457
RECORDED 02/25/2003 02:58:56 PM
CHARLIE GREEN, CLERK OF COURT
LEE COUNTY
RECORDING FEE 28.50
DEPUTY CLERK J Miller

LAN 06-08

Return to:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
Attn: Jacque Rippe
2301 McGregor Boulevard
Fort Myers, FL 33901

This instrument prepared by:
Holly Y. Walter, Esquire
South Florida Water Management District
3301 Gun Club Road, P. O. Box 24680
West Palm Beach, FL 33416-4680

Project: No-Rails Bridge
Folio No.: 31-47-26-B2-00001.4050, .4030

PERPETUAL ACCESS EASEMENT AGREEMENT

THIS PERPETUAL ACCESS EASEMENT AGREEMENT ("Easement") is made this 7th day of Sept, 2000, by John J. & Maryanne Mauriel, his successors and assigns (hereinafter referred to as the "Grantor"), in favor of Northern Property Owners Schedule I, whose mailing address is See Schedule I, his successors and assigns (hereinafter referred to as the "Grantee").

WITNESSETH:

For other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, Grantor hereby grants, bargains and conveys to the Grantee, a non-exclusive perpetual easement over, across, and upon that certain real property located in Lee County, Florida, legally described in Exhibit "A" attached hereto and made a part hereof (hereinafter referred to as the "Easement Parcel"), for the purpose of providing pedestrian and vehicular ingress and egress, to and from ~~Bonita Beach Road~~ Terry Street, on, over and across that certain access road located in the Easement Parcel to and from that certain real property owned by Grantee, legally described in Exhibit "B" attached hereto.

TO HAVE AND the same together with all and singular the appurtenances thereunto belonging or in anywise incident or appertaining to the use, benefit and behoove of the Grantee forever.

The easements and the rights herein granted, or any portion thereof, shall not be assigned by the Grantee without the prior written consent of Grantor, which consent shall not be unreasonably withheld.

The easements, rights and privileges set forth herein shall be for the benefit of Grantee, his personal representative, heirs and/or assigns, his family and invitees.

Nothing contained in this Easement shall be construed to grant to Grantee, his personal representative, heirs and/or assigns, his family, invitees, or the public access to or the right to use any lands owned by Grantor other than the Easement Parcel.

The interest in the Easement Parcel is conveyed "AS IS". Grantee shall not have the right to improve or alter the Easement Parcel without the prior written approval of Grantor. However, Grantee, at its sole cost and expense, shall immediately repair any damage to the Easement Parcel arising from or caused by Grantee, his family or invitees' use of the Easement Parcel.

Grantee hereby indemnifies and holds harmless Grantor from and against any and all claims, suits, judgments, losses, damages, and liability which may be incurred by Grantee, Grantee's family and/or invitees, including but not limited to reasonable attorney's fees and costs, which arise directly, indirectly or proximately as a result of the exercise by Grantee, his family or invitees of their rights under this Easement.

The Easement Parcel shall, at no time be obstructed by fences, gates, traffic signals, guard railing, road signs, landscaping or any other object which would impede the Grantee's ingress or egress over, across and upon said property, or in any manner interfere with the purpose of this easement.

All of the covenants, agreements, easements and rights herein contained shall extend to, benefit and be binding upon the parties hereto and their respective successors and assigns.

The easements granted herein shall run with the land and shall burden the Easement Parcel.

IN WITNESS WHEREOF, this Easement Agreement has been executed by Grantor and Grantee whose hands and seals are affixed hereto as of the date first above written.

Signed, sealed and delivered in the presence of:

WITNESS:

Signature: Dona Risdall
Printed Name: Dona Risdall

Signature: Wayne Nelson
Printed Name: Wayne Nelson

Signature:
Printed Name:

Signature: Patricia Sylvia
Printed Name: Patricia Sylvia

GRANTOR:

Signature:
John J. Mauriel

Signature: Maryanne Mauriel
Maryanne Mauriel

STATE OF Minnesota
COUNTY OF Hennepin

The foregoing instrument was acknowledged before me this 7th day of Sept, 2000 by John J. Mauriel, ~~who is personally known to me~~ or has produced _____ as identification and did not take an oath.

Mary Helen Nelson
Notary Public, State of Minnesota
Print Name: Mary Helen Nelson
My Commission Expires: 1-31-2005

MARY HELEN NELSON
NOTARY PUBLIC-MINNESOTA
MY COMMISSION EXPIRES 1-31-2005

STATE OF MASSACHUSETTS
COUNTY OF BARNSTABLE

The foregoing instrument was acknowledged before me this 15th day of Sept, 2000 by Maryanne Mauriel, who is personally known to me or has produced MN License as identification and did not take an oath.

_____
Notary Public, State of MA
Print Name: Alice M. Kirkpatrick
My Commission Expires: 5/28/04

Exhibit "A"

The west 46 feet of the North 250' of the West 880' of the Southwest ¼ of the Northeast ¼ & the West 880' of the Southwest ¼ of the Northeast ¼ less the South 132' thereof and less the North 250' of Section 31, Township 47 East, Range 26 East, Lee County, Florida.

John J. Mauriel, Jr.
Maryanne Mauriel

Exhibit "B"

The North 250' of the West 880' of the Southwest ¼ of the Northeast ¼ & the West 880' of the Southwest ¼ of the Northeast ¼ less the South 132' thereof and less the North 250' of Section 31, Township 47 East, Range 26 East, Lee County, Florida.

John J. Mauriel, Jr.
Maryanne Mauriel

SCHEDULE I
Northern Property Owners

1. South Florida Water Management District - Folio No. 31-47-26-B3-00001.5000
   C/o Department of Environmental Protection 3900 Commonwealth Blvd, Tallahassee FL 32399

2. Franklin W. & Barbara Barker, Jr. - Folio Nos. 31-47-26-B4-00007.001C, .0010
   1541 Logan Ct., Naples, Florida 34116

3. Lazy Bay Resorts, Inc. - Folio No. 31-47-26-B4-00007.001B
   28405 SW 170th Av., Homestead, Florida 33030

4. Julie M. Zimmerman - Folio Nos. 31-47-26-B4-00007.001A, .0570
   27671 Kent Road Bonita Springs, Florida 34135

5. Rolf Pfaff - Folio No. 31-47-26-B3-00001.4020
   27601 Kent Road Bonita Springs, Florida 34135

6. Edward C. Kent & Patricia D. Kent - Folio No. 31-47-26-B3-00001.4010
   27501 Kent Road Bonita Springs, Florida 34135

7. John J. Mauriel & Maryanne Mauriel - Folio Nos. 31-47-26-B2-00001.4050, .4030
   6566 France Avenue South Minneapolis, MN 55435

8. Lee County, a Political Subdivision of the State of Florida - Folio No. 31-47-26-B2-00609.0010
   P.O. Box 398 Fort Myers, Florida 33902

9. Alan W. & Carol A. Kent - Folio No.31-47-26-B1-00002.0020, .0110
   P.O. Box 538 Bonita Springs, Florida 34135

10. Frances H. Jorgensen - Folio No. 31-47-26-B1-00002.0090
    12411 Jefferson Lane Bonita Springs, Florida 34135

11. Gilbert D. & Sharon N. Harter - Folio No. 31-47-26-B1-00002.0120
    2716 Cumberland Avenue Waco, TX 76707

12. Robert B. McKee & Linda J. McKee - Folio Nos. 31-47-26-B1-00002.0100, .0060
    12391 Jefferson Lane Bonita Springs, Florida 34135

13. Dale Peterson & Susan Peterson - Folio Nos.31-47-26-B4-00007.0030, .003C, .003B, 31-47-26-B4-00300.0010, .0040, .0050, .0060, .0070, .0080, .0090, .0100, .0110, .0130
    42 Kedeka Road Sugar Grove, IL 60554

14. Lee County, a Political Subdivision of the State of Florida - Folio No. 31-47-26-B4-00007.0040
    P.O. Box 398 Fort Myers, Florida 33902

15. Patrick O'Sullivan, Professional Research Inc. - Folio No. 31-47-26-B4-00007.0050
    1676 Many Road North Fort Myers, Florida 33903-5569

16. Don and Kim Thompson - Folio No.31-47-26-B4-00007.003A
    27091 Imperial Street Bonita Springs, Florida 34135

17. Jeff Eggleston - Folio No. 31-47-26-B4-00007.0410
    27661 Kent Road Bonita Springs, Florida 34135

18. Charles E. Strader - Folio Nos. 31-47-26-B4-00007.0420, .0430
    27655 Kent Road Bonita Springs, Florida 34135