

SCRUB OAK PRESERVE

GENERAL MANAGEMENT PLAN

Prepared by:

County of Volusia
Division of Environmental Management

November, 2012

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| Introduction | 1 |
| Ownership, Acquisition History and Funding | 1 |
| Regional Overview and Significance | 4 |
| Overview of Existing Conditions | 6 |
| Easements, Leases and Concessions | |
| Significant Improvements /Alterations | |
| Encroachment(s) | |
| Future Land Use Designation(s) and Zoning Classification(s) | |
| Topography and Surface Hydrology | |
| Soils | |
| Natural Communities | |
| Listed and Other Significant Species | |
| Exotic and Invasive Species | |
| Cultural / Historical Resources | |
| Past Management Summary | 17 |
| Future Management Strategies | 18 |
| Resource Management | |
| Public Access and Use | |
| Miscellaneous | |
| Sources | 21 |

LIST OF FIGURES

| <u>Number</u> | | <u>Page</u> |
|----------------------|---|--------------------|
| 1 | Location | 2 |
| 2 | Aerial Photograph | 3 |
| 3 | Adjacent Public Conservation Lands | 5 |
| 4 | Encroachments and Significant Existing Improvements/Alterations | 8 |
| 5 | Topography | 10 |
| 6 | Soils | 11 |
| 7 | Natural Communities | 14 |
| 8 | Conceptual Public Use | 20 |

LIST OF TABLES

| <u>Number</u> | | <u>Page</u> |
|----------------------|----------------------------------|--------------------|
| 1 | Future Land Use and Zoning | 7 |
| 2 | Soils | 9 |
| 3 | Natural Communities | 12 |

INTRODUCTION

The Preserve, consisting of approximately 140 acres, is situated at the intersection of Fatio Road with McGregor Road, southwest of DeLand and adjacent to both Blue Spring State Park and the County's Lake Beresford Park (Figure 1).

The rare and imperiled natural community of scrub dominates the Preserve. Smaller areas of sandhill and sandhill upland lake, both of which are imperiled communities, are also present. These and the other natural communities provide valuable habitat for protected species such as the Florida scrub-jay (*Aphelocoma coerulescens*) and Florida black bear (*Ursus americanus floridanus*).

This document provides general guidelines for stewardship activities that are intended to protect, and where appropriate restore, natural resources and provide for appropriate opportunities for public use.

OWNERSHIP, ACQUISITION HISTORY and FUNDING

The project area is comprised of a pair of properties separated by McGregor Road. Both of these properties are owned solely by the County of Volusia and were acquired independently from one another.

(i) Portion of the Project Area located north of McGregor Road

- Size – Approximately 72 acres
- Acquisition - Acquired in 2010.
- Funding Source(s) – County General funds

(ii) Portion of the Project Area located south of McGregor Road

- Size - Approximately 68 acres*
- Acquisition - Acquired in 2008.
- Funding Source(s) – Volusia Forever

* Subsequent to acquiring this portion of the project area, research conducted by the County's Public Works Department in conjunction with the planned "Sunrail" project indicated that the entirety of the railroad corridor adjacent to the project area is apparently within the ownership of the railroad company. Accordingly, the western boundary of this portion of the project area does not extend to the centerline of this abutting segment of the railroad corridor. Given this and concerns associated with errors in the original surveying and design of the adjoining West Highlands plat located to the east/southeast of this portion of the project area, it has been determined that the County has no ownership interest south from roughly the line dividing Townships 17 and 18 South. The approximate acreage listed for this portion of the project area has been adjusted accordingly.

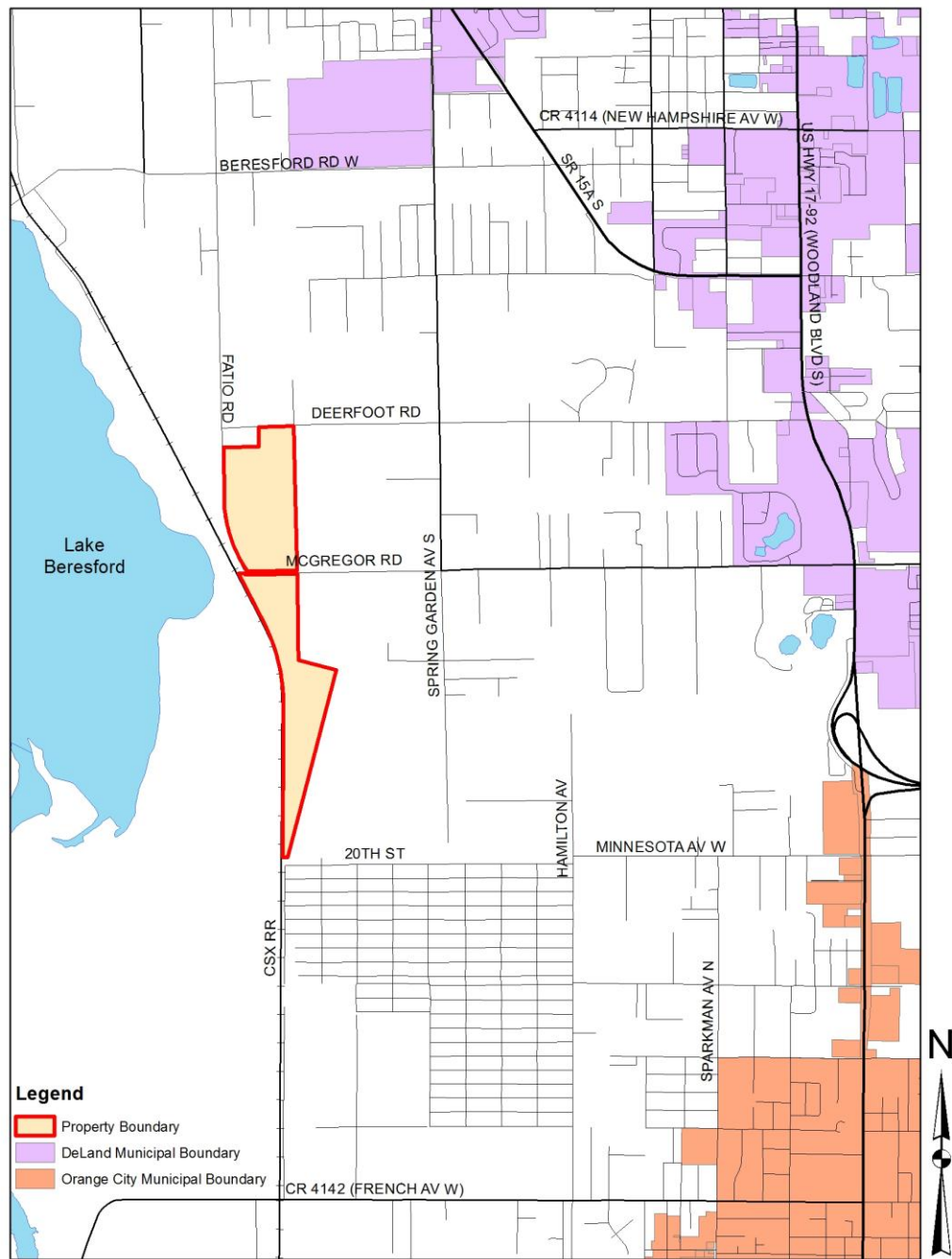
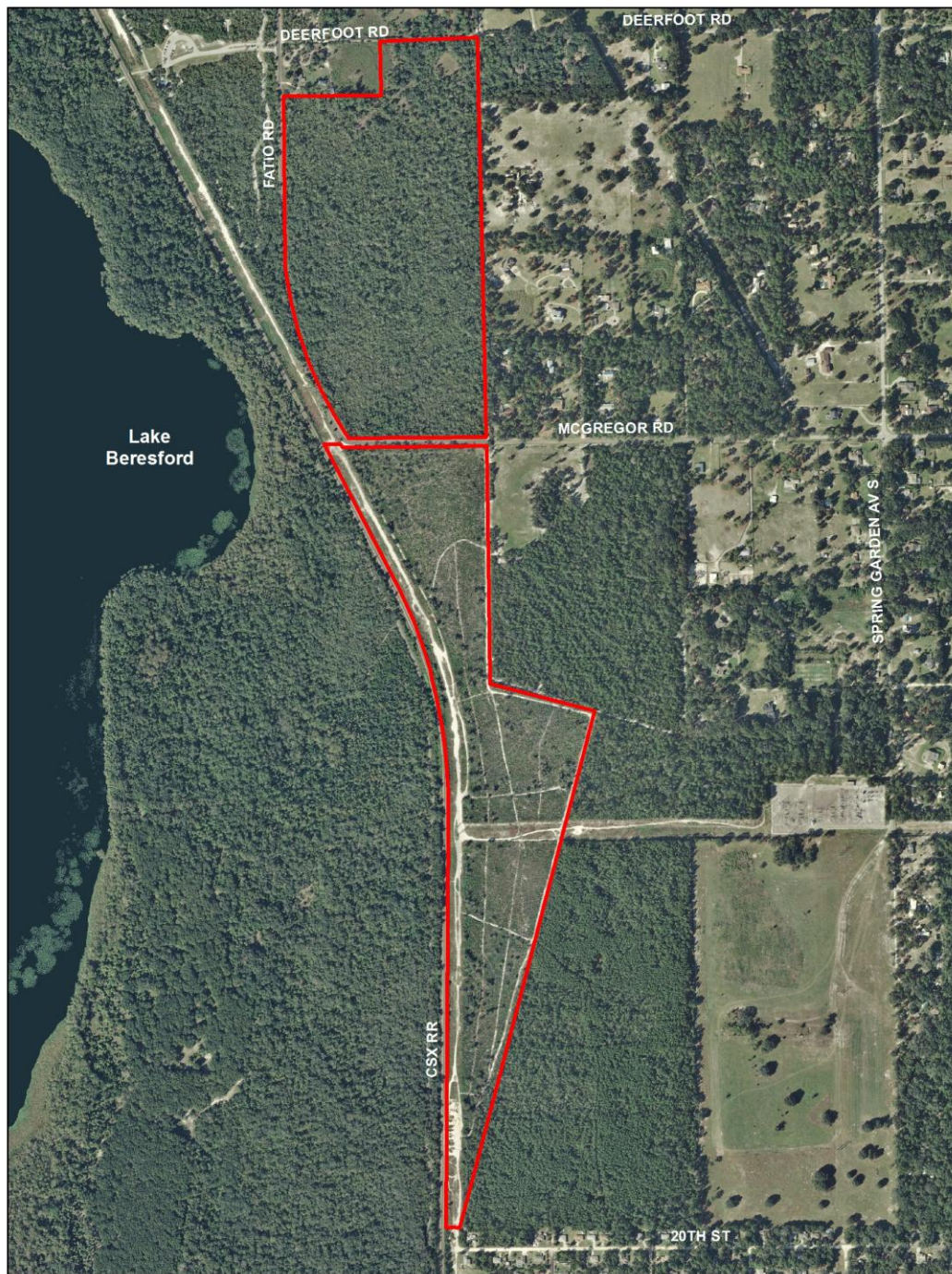


Figure 1. Location

1 inch = 2,500 feet



Legend

Property Boundary

Figure 2. Aerial Photograph

1 inch = 900 feet

Aerial Photo Date: Dec 2011/Jan 2012

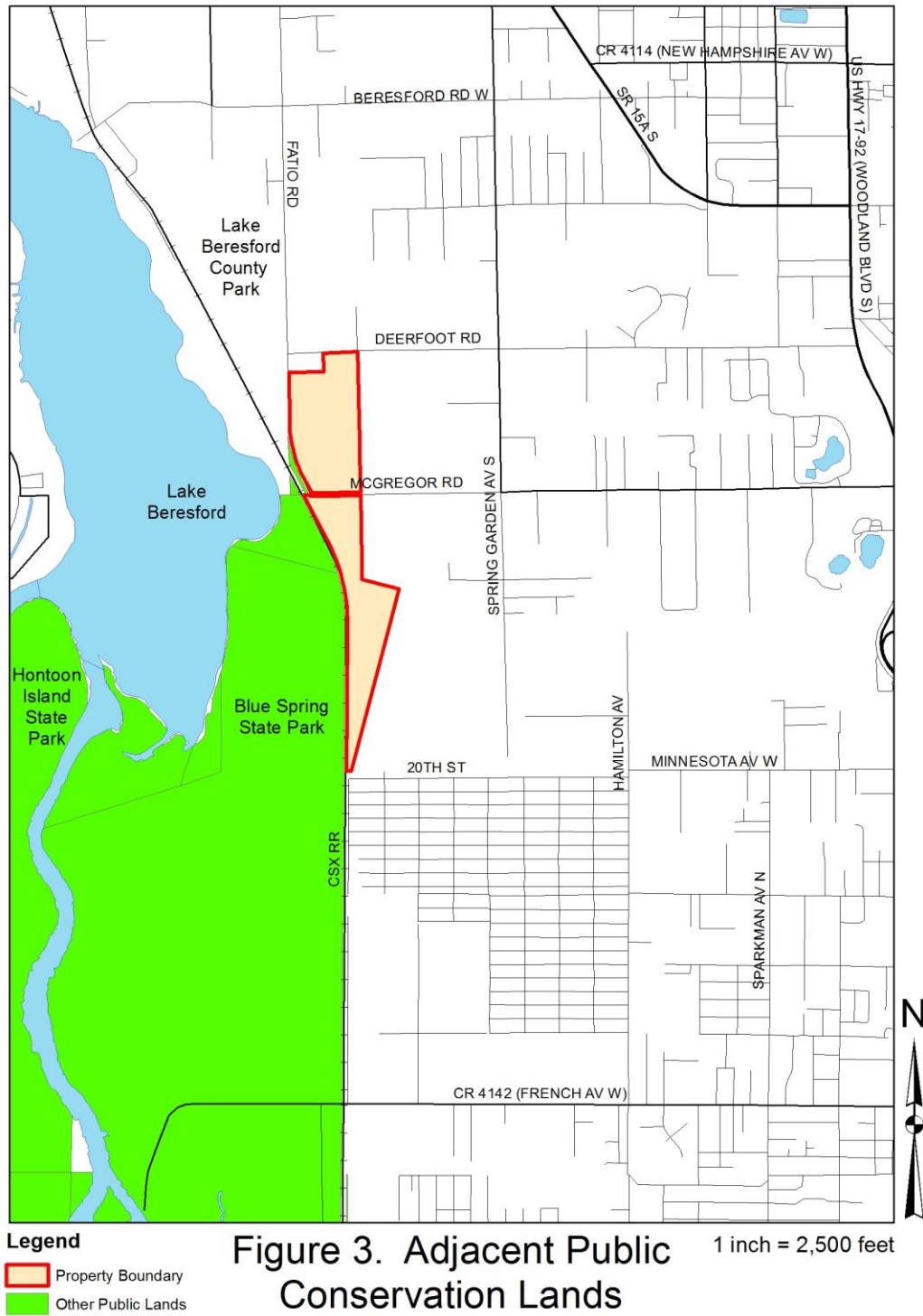
REGIONAL OVERVIEW AND SIGNIFICANCE

The Preserve is adjacent to both Blue Spring State Park and the County's Lake Beresford Park. Collectively, these nearby public lands extend for over five miles along the eastern shore of Lake Beresford and the St. Johns River (Figure 3).

Blue Spring State Park covers more than 2,600 acres, including the largest spring on the St. Johns River. In addition to providing a broad range of recreational opportunities, the park's diverse natural communities provide habitat for several listed species, including an apparently stable population of Florida scrub-jay (*Aphelocoma coerulescens*).

Named for the water body upon which it is sited, the County's Lake Beresford Park encompasses over 200 acres. The park includes various recreational uses, notably a 1.8-mile multi-use trail that follows the perimeter of the parcel. This trail connects to the regional "Spring-to-Spring" trail which allows patrons to walk, run, skate or bike three miles to Blue Spring State Park.

The proximity of these adjoining conservation lands compliments the resource values of the Preserve and offers the potential for additional opportunities for public use.



OVERVIEW OF EXISTING CONDITIONS

Easements, Leases and Concessions

Easements

A pair of electrical transmission corridors traverse the area south of McGregor Road (Figure 4). Both of these corridors represent easements held by Florida Power Corporation (Progress Energy). The easement extending from the eastern boundary to the railroad is approximately 120 feet in width, whereas the easement paralleling the railroad is approximately 80 feet in width.

Leases and Concessions

None.

Significant Improvements / Alterations

The minimal existing significant improvements/alterations are found in the southern portion of the Preserve. Dominant among these features are a pair of areawide electrical transmission lines that are sited within the aforementioned easements. These corridors, especially the one paralleling the adjacent railroad, have been intensively used in the past by off-road vehicles. As a result the ground within the corridor has been highly disturbed.

With the exceptions of the encroachments described below, there are no existing significant improvements/alterations located on the northern portion of the Preserve.

Encroachment(s)

Several encroachments are found in the northern portion of the Preserve.

A small pole barn/stable is sited adjacent to the northern boundary and several hundred feet east of Fatio Road. This structure, of approximately 680 square feet, is associated with the privately owned property abutting this portion of the project area. A potential resolution of this situation is under consideration by the respective parties. Limited sections of fencing, principally adjacent to the aforementioned pole barn, are also found in this portion of the area.

Deerfoot Road is a privately maintained, unpaved, one lane wide route traversing the residential area between Fatio Road and South Spring Garden Avenue located to the north/northeast of the Preserve. An approximately one-quarter of a mile segment of this route is contained within the project area.

There are no encroachments in the southern portion of the project area. However, it is noted that platted, but unopened, roads within an adjoining plat (Hamilton Heights) parallel sections of the Preserve boundary.

Future Land Use Designation and Zoning Classification

The future land use and zoning of the Preserve is shown in Table 1.

Table 1. Future Land Use and Zoning

| Portion of Project Area | County Future Land Use Designation(s) | County Zoning Classification(s) |
|--------------------------------|--|---|
| South of McGregor Road | Conservation (C) | Conservation (C) |
| North of McGregor Road | Rural (R) and Conservation (C) | Rural Agriculture (A-2) and Transitional Agriculture (A-4) |

The future land use designation and zoning classification assigned to the southern portion of the Preserve are representative of public ownership and stewardship for conservation purposes.

Upon resolution of the encroachment on the northern portion of the Preserve, the future land use and zoning assigned to this portion of the area will be changed to be consistent with the balance of the property.

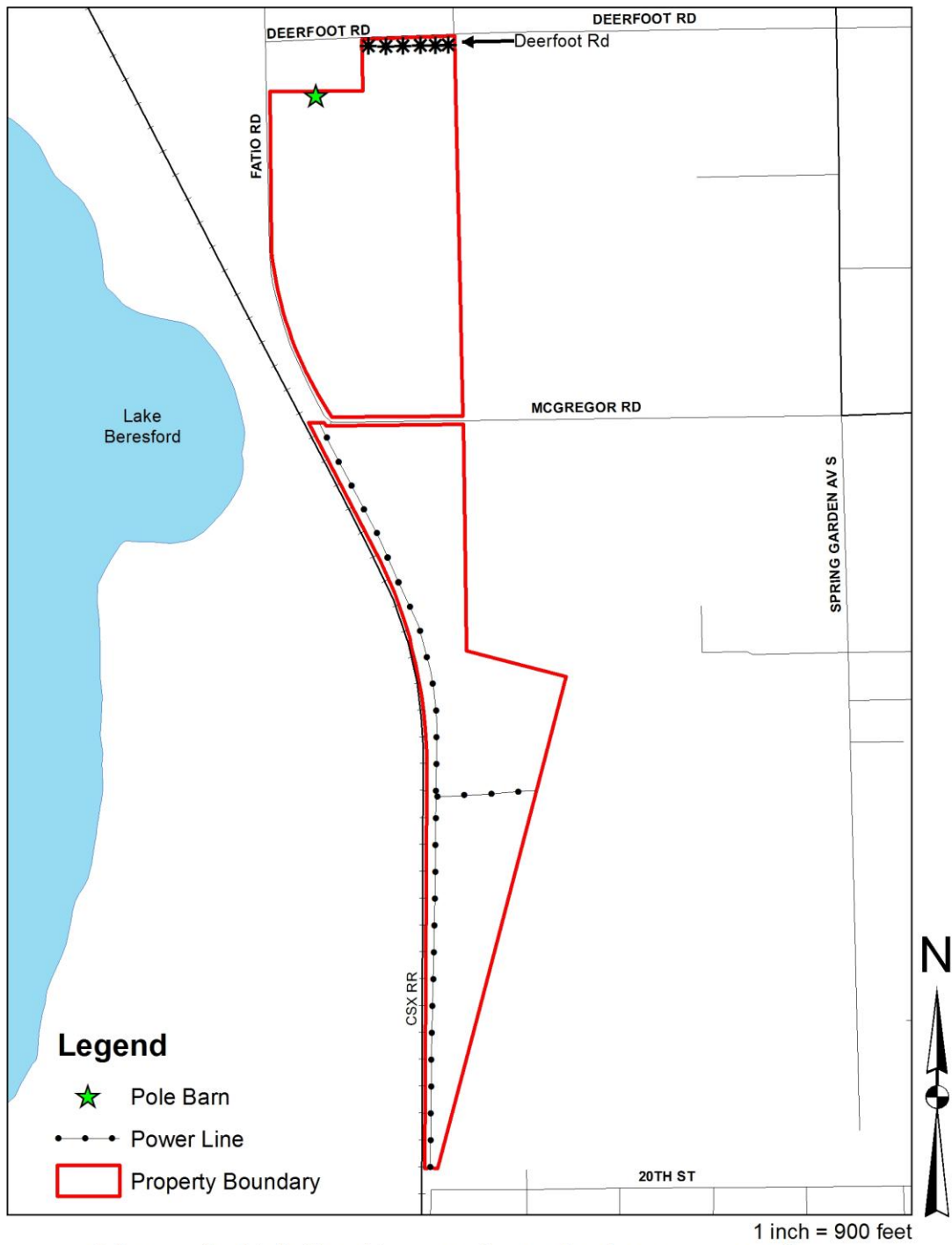


Figure 4. Existing Encroachments, Improvements, and Alterations

Topography and Surface Hydrology

The Preserve is characterized by gently rolling topography with elevations ranging from approximately 10 to 50 feet (Figure 5). The highest points occur north of McGregor Road and adjacent to the eastern boundary of the portion south of this roadway.

There are no ditches occurring within the Preserve or direct surface hydrological connection with adjacent properties or water bodies.

With the exception of a small, isolated, ephemeral pond (sandhill upland lake) there are no water bodies present. This functionally isolated feature, encompassing approximately one-half of an acre, is sited amid the remanent sandhill community located in the extreme northeastern corner of the Preserve.

A second, highly disturbed, portion of another sandhill upland lake is also situated in this portion of the Preserve. This feature, containing dogfennel (*Eupatorium capillifolium*) and isolated small carolina willow (*Salix caroliniana*) and wax myrtle (*Myrica cerifera*), appears to be part of a larger uphill sandhill lake that historically extended to the west and to the north, across Deerfoot Road.

Soils

The Preserve is underlain almost entirely by well drained to excessively drained sandy soils (Figure 6). The exceptions to this generalization are a couple of small areas of poorly drained soils adjacent to the northern and western boundaries of that portion of the Preserve north of McGregor Road. However, only a small area of soil adjacent to the northern boundary is poorly drained to the extent as to be deemed hydric. Depending upon resolution of the aforementioned encroachment, this hydric soil may be reduced or eliminated from the Preserve.

Table 2. Soils

| Soil Name | Characteristic | Hydric |
|--|-------------------------|--------|
| Apopka fine sand, 0 to 5 percent slopes | Well drained | No |
| Astatula fine sand, 8 to 17 percent slopes | Excessively drained | No |
| Electra fine sand, 0 to 5 percent slopes | Somewhat poorly drained | No |
| Paola fine sand, 0 to 8 percent slopes | Excessively drained | No |
| Placid fine sand, depressional | Very poorly drained | Yes |
| Tavares fine sand, 0 to 5 percent slopes | Moderately well drained | No |

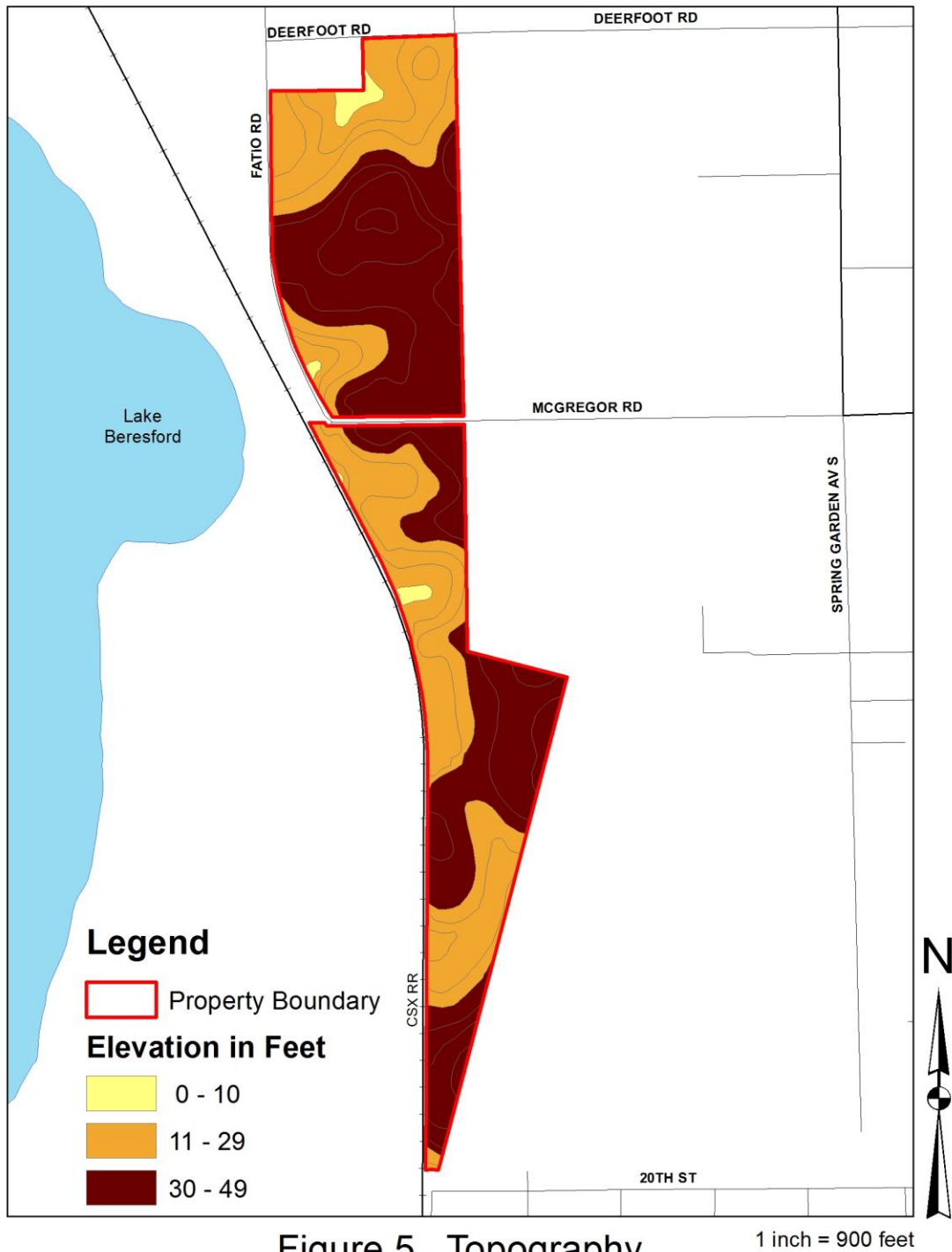


Figure 5. Topography

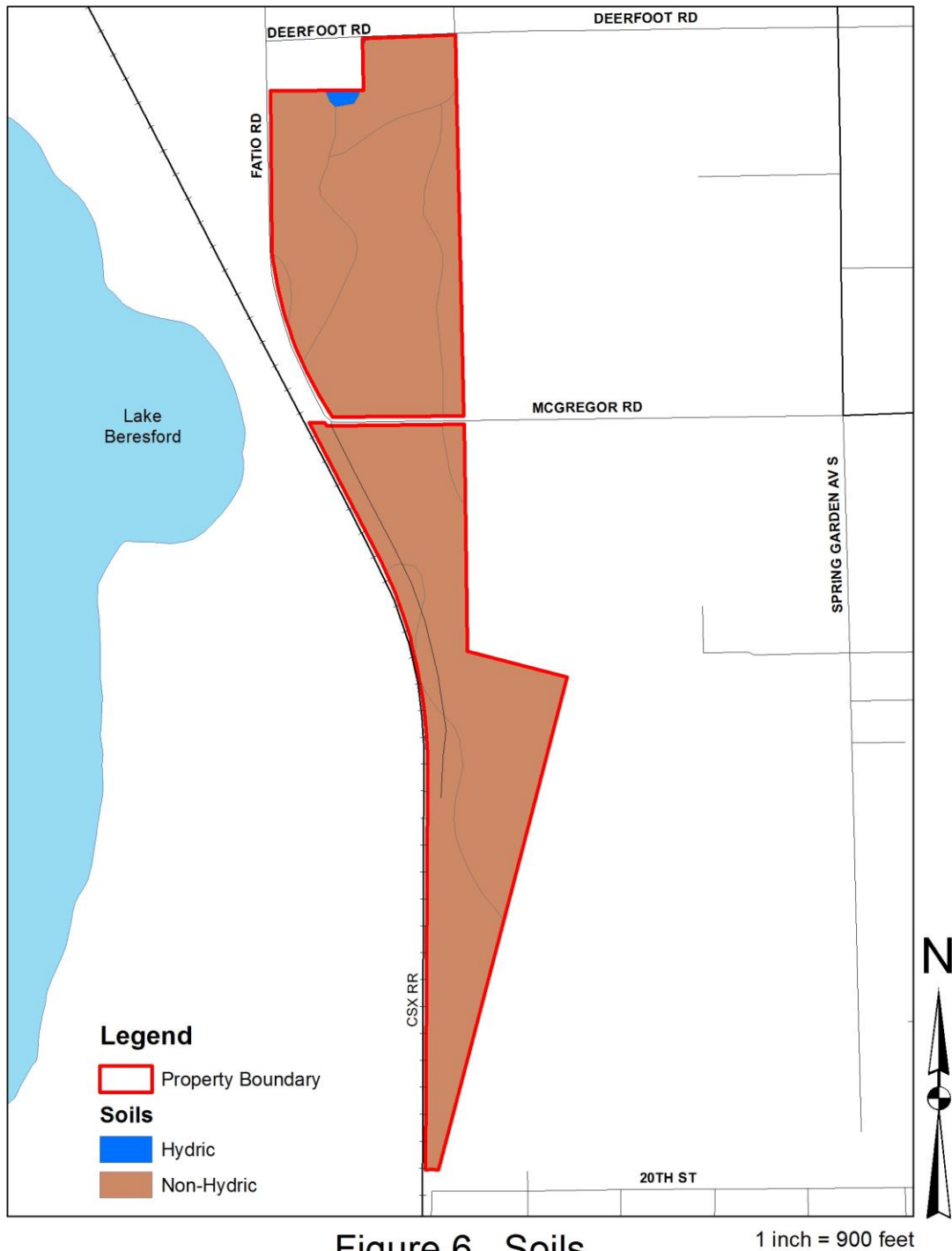


Figure 6. Soils

Natural Communities

The Preserve is dominated by upland, more specifically xeric, natural communities. This mosaic is consistent with that which may be expected to be associated with the property's soils and topography.

The imperiled natural community of scrub dominates the Preserve (Figure 7). Smaller areas of sandhill and sandhill upland lake, both of which are imperiled natural communities, are also found on the property.

Table 3. Natural Communities

| Community | Approximate Acreage |
|--------------------------------|---------------------|
| Scrub | 112 |
| Sandhill | 16.5 |
| Xeric Hammock | 4 |
| Mesic Hammock | 4 |
| Sandhill Upland Lake (altered) | 3 |
| Sandhill Upland Lake | 0.5 |

Each of the natural communities of the Preserve is briefly described below.

Scrub – Found on uplands with a deep sandy substrate, a couple of variants of this community occur on the property. Scrub on that portion of the Preserve south of McGregor Road is characterized by low evergreen shrubs and shrubby oaks. Typical plants in this portion of the community include sand live oak (*Quercus geminata*), Chapman's oak (*Quercus chapmanii*), rusty lyonia (*Lyonia ferruginea*) and ground lichens. With the exceptions of scattered, small, live oaks (*Quercus virginiana*) remaining from the prior restoration activities, there is no overstory in this area. Prior to the restoration effort in this portion of the project area (see past management summary), much of this area was occupied by dense stands of sand pine (*Pinus clausa*). In contrast, the scrub community located on that portion of the Preserve north of McGregor Road is characterized by a dense, higher, understory of various oak species with an overstory of numerous sand pines. This condition is reflective of the long term absence of fire from this pyrogenic community. The only natural perturbation to this community has likely been that from severe weather events.

Sandhill – Occurring on gently rolling topography and deep sands, this community would typically be characterized by widely spaced longleaf pine (*Pinus palustris*) trees with a sparse understory of oaks and dense ground cover. As found on the Preserve this community is characterized by longleaf pines, mature trees and saplings, widely interspersed among an understory to mid-story comprised of numerous laurel oaks (*Quercus laurifolia*) and scattered live oaks. The moderately thick layer of duff on the forest floor is generally devoid of natural groundcover associated with this community and natural pine regeneration.

Xeric Hammock – Located on well-drained soils, this is an evergreen forest with a low, partially open, canopy comprised of various oak species with a relatively open understory comprised of species associated with scrub or sandhill, depending upon the origin of the hammock. On the Preserve, this community represents the ecotonal zone between the adjacent scrub and mesic hammock communities. The composition of the canopy of the xeric hammock is consistent with the general description of the community as it is comprised of sand live oak and other oak

species. However, the understory, comprised of various plants such as saw palmetto (*Serenoa repens*), scrub wild olive (*Osmanthus megacarpus*), rusty lyonia (*Lyonia ferruginea*) deerberry (*Vaccinium stamineum*) and various oak saplings is denser than that associated with the prototypical community.

Mesic Hammock – Sited at the periphery of the Preserve, this community is generally representative of the prototypical community as it is a well-developed hardwood forest containing species such as live oak, southern magnolia (*Magnolia grandiflora*), pignut hickory (*Carya glabra*), saw palmetto (*Serenoa repens*), and American beautyberry (*Callicarpa americana*). This community is not adapted to fire and, as such, has benefited from its absence.

Sandhill Upland Lake and Sandhill Upland Lake (altered) – This is generally a permanent water body, without significant surface inflow or outflow, which occurs as a shallow depression in sandy upland communities. Water may largely be derived from the lateral movement of groundwater from the adjacent well-drained uplands. As such, the water level may substantially fluctuate and the water body may become completely dry during droughts. Typical plants include a mixture of grasses and aquatic vegetation, depending upon the water level. Sandhill Upland Lakes are important breeding areas and serve as watering holes for wildlife inhabiting adjacent xeric communities.

A small, isolated, example of this community is sited amid the sandhill community located in the extreme northeastern corner of the Preserve. This is a comparably undisturbed water body, encompassing approximately one-half of an acre, which is generally consistent in character with the typical community. However, it appears that water levels have been excessively low for an extended period as widely scattered longleaf pine regeneration is occurring within the confines of the water body.

A second highly disturbed portion of another sandhill upland lake is also situated in this portion of the Preserve. This area, containing dogfennel (*Eupatorium capillifolium*) and isolated small carolina willow (*Salix caroliniana*) and wax myrtle (*Myrica cerifera*), appears to be part of a larger sandhill upland lake that historically extended to the west and to the north, across Deerfoot Road. The current condition of this area is likely attributable to the decrease of areal extent of the waterbody, alteration of the natural surface hydrology, and the lowering of groundwater level.

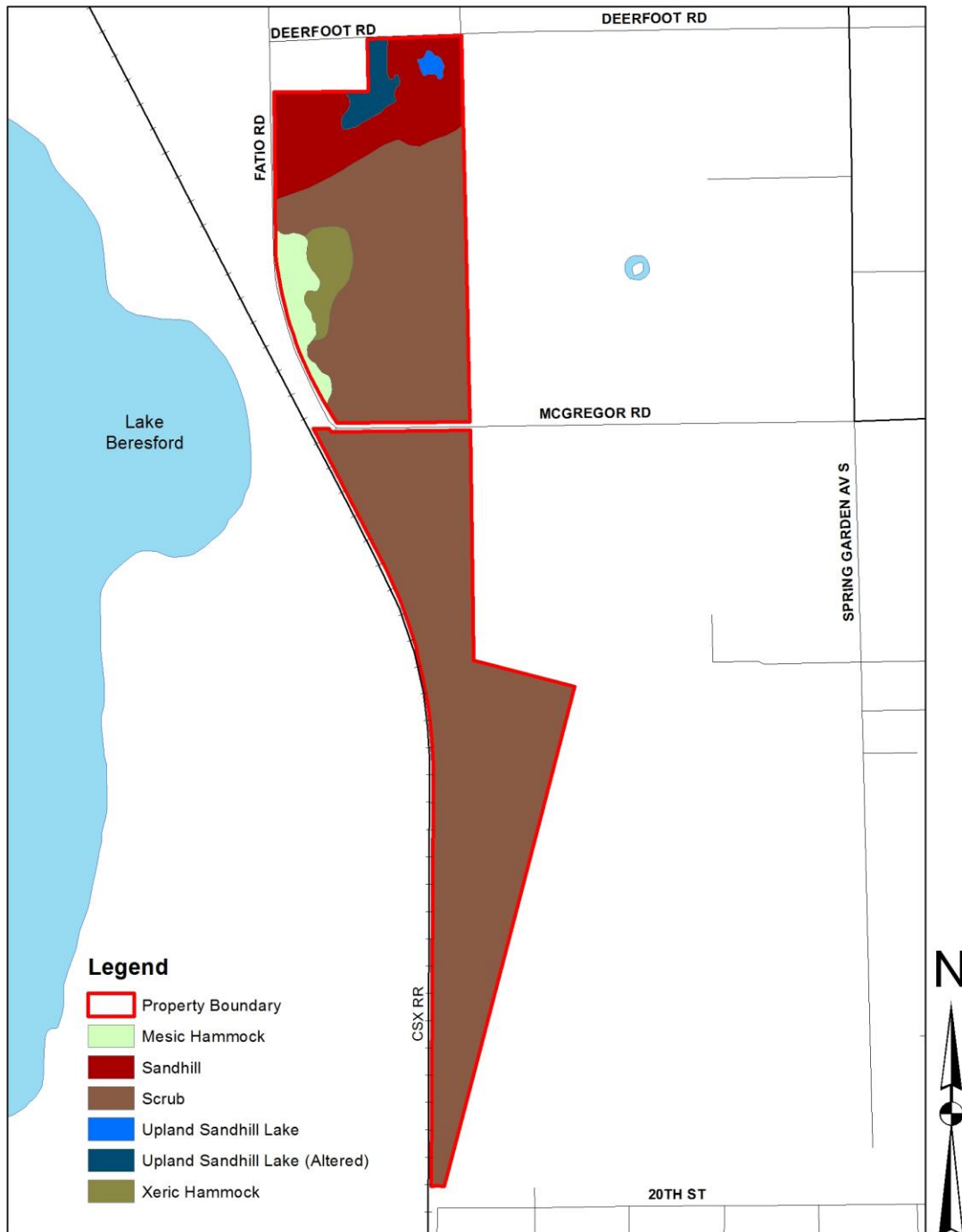


Figure 7. Natural Communities

1 inch = 900 feet

Listed and Other Significant Species

Faunal - Several significant faunal species, listed and non-listed, have been noted on the Preserve.

Listed Species

The Florida scrub-jay (*Aphelocoma coerulescens*), listed as threatened by both the Florida Fish and Wildlife Conservation Commission and the United States Fish and Wildlife Service, and the gopher tortoise (*Gopherus polyphemus*), listed as threatened by the Florida Fish and Wildlife Conservation Commission and a candidate for listing by the United States Fish and Wildlife Service, have each been observed on the southern portion of the Preserve.

Also observed is the Florida pine snake (*Pituophis melanoleucus mugitus*), listed as a Species of Special Concern by the Florida Fish and Wildlife Conservation Commission. The habitat of this reptile is characterized by dry sandy soil and it may co-exist with the gopher tortoise.

Other Species

An occasional sighting of the Florida black bear (*Ursus americanus floridanus*) has occurred on this property. Other evidence of the presence of this animal includes tracks. Until recently this animal was listed by the State as a threatened species throughout most of Florida. However, with the completion and approval by the Florida Fish and Wildlife Conservation Commission of a specific management plan, the bear, while protected, is no longer a listed species.

Floral - No listed plant species have been identified on the Preserve.

Exotic and Invasive Species

There is a minimal presence of exotic and invasive species over the Preserve.

Floral

The largest concentration of invasive species on the property is found in the aforementioned altered wetland area situated next to Deerfoot Road. Dogfennel (*Eupatorium capillifolium*), an aggressive native perennial, occupies a significant portion of this disturbed area.

No other significant expanses of exotic or invasive plant species have been detected. However, isolated occurrences of air potato (*Dioscorea bulbifera*), camphor tree (*Cinnamomum camphora*), old world climbing fern (*Lygodium microphyllum*), cogon grass (*Imperata cylindrica*) and mimosa tree (*Albizia julibrissin*) have been observed. Each of these species are classified as a Category I invasive exotic by the Florida Exotic Pest Plant Council. Plants within this category are considered to be the most deleterious to native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. Air potato, cogon grass, and old world climbing fern have each been classified as a noxious weed by the Florida Department of Agriculture and Consumer Services. Cogon grass is also listed as a noxious weed by the United States Department of Agriculture.

Faunal - No occurrences of exotic animal species have been observed on the Preserve.

Cultural / Historical Resources

While numerous cultural and historical resources are found in the vicinity, there are no recorded sites located on the Preserve. However, a small area which may be of a potential cultural site has been identified on the southern portion of the property. The significance, if any, of this feature has not been comprehensively assessed.

PAST MANAGEMENT SUMMARY

General Overview of Resource Stewardship Activities Undertaken By Prior Owners

Based upon evaluation of existing site conditions, it appears that minimal stewardship was practiced by the Preserve's previous owners. This stewardship may not have extended beyond occasional site visits or other correspondingly modest activities.

Dumping of household and debris and use of the property by off-road vehicles were apparently frequent occurrences.

General Overview of Activities Undertaken Since Public Acquisition

Since obtaining ownership of the Preserve, the County has undertaken several management activities.

An extensive scrub restoration project has been initiated in the portion of the Preserve south of McGregor Road. This on-going activity, which encompassed the entirety of this portion of the Preserve, began in 2009 with the removal of a dense stand of sand pine and other overstory species, mechanical site preparation (mulching) and the use of prescribed fire. Additional prescribed burns have been undertaken in this area as well as the removal of remnant oaks.

The restoration of this portion of the Preserve has also included extensive, on-going, efforts for the control of exotic and invasive species.

Subsequent to acquisition, the deposits of household and other debris have been removed and the Preserve has been secured through the installation of fencing and gates.

Efforts, in conjunction with the adjoining private landowner, have been initiated for a mutually acceptable resolution of the aforementioned boundary encroachment.

FUTURE MANAGEMENT STRATEGIES

The following set of strategies provides general guidance for the stewardship of this specific conservation land. These strategies are intended to supplement and compliment the broader goals for the management of conservation lands adopted by County Resolution.

Resource Management

Future activities in the southern portion of the Preserve will be determined, in large measure, by the challenges and successes associated with the on-going scrub restoration and maintenance efforts.

Restoration and maintenance efforts will also be the focal points for future management of the balance of the Preserve.

Strategies

- Continue scrub restoration and maintenance efforts in the southern portion of the Preserve. Activities may include, but may not be limited to, the use of mechanical (e.g. roller chopping, mulching) and chemical techniques and practices, removal of trees, and prescribed fire.
- Explore the potential for establishing a gopher tortoise bank on the southern portion of the Preserve.
- Protect the small Sandhill Upland Lake in the northeastern corner of the Preserve.
- Restore the Sandhill and Scrub communities in the northern portion of the Preserve, with the first priority being the Sandhill community.
- Implement a program of prescribed fire consistent with the natural fire return intervals for the affected communities. In lieu of fire, mechanical (roller chopping, mulching, etc.) or other alternatives may be used.
- Establish and continue a program for the monitoring and control of any identified invasive or exotic species.
- Ensure that any invasive or exotic species located in the Sandhill Upland Lake (Altered) do not encroach upon adjacent natural communities.
- Evaluate the significance of the potential cultural/historical resource located on the southern portion of the Preserve. If deemed to be of significance and qualifies, the site should be reported and recorded on the Florida Master Site File.
- Continue to monitor for the presence of cultural/historical resources and appropriately protect any identified sites.

Public Access and Use

The conceptual plan for public access and use of the Preserve is depicted in Figure 8.

The adjacent publicly-owned properties lands of Blue Spring State Park and Lake Beresford Park presently afford residents and visitors a range of opportunities (trails, picnic, etc.) to explore and enjoy the area's resources. Given the variety and proximity of these uses, there is limited need for the establishment of similar resource-based opportunities on the Preserve.

The functional isolation of the northern portion of the Preserve, being that is separated from the adjacent conservation lands by thoroughfares, further limits the potential for safe, interconnected, public access. Accordingly, no public access or use is proposed for this portion of the Preserve.

The scrub, and its maintenance, in the southern portion of the Preserve provide a unique set of experiences for the visitor. An opportunity also exists to link, via trail, this is portion of the Preserve with the adjoining County park. Therefore, a modest level of access and use is proposed for this portion of the Preserve.

Strategies

- Implement the conceptual plan for public access and use. As depicted by this plan, no public access or use is presently proposed for the northern portion of the Preserve and a modest level of public access and use is proposed for establishment in the southern portion of the Preserve.
- Incorporate, as appropriate, scrub restoration in educational / outreach efforts conducted on the Preserve.

Miscellaneous

The following strategies addressing various miscellaneous administration and maintenance strategies, specific to this conservation land, are intended to further the general stewardship of the of the property.

Strategies

- Undertake the processes of changing the Future Land Use and zoning assigned the Preserve to the appropriate designation and classification.
- Resolve the matter of the encroachment of the pole barn / stable on the northern portion of the Preserve.
- Complete boundary marking / fencing.
- Explore the potential for the closing of Deerfoot Road as it traverses the northern portion of the Preserve.

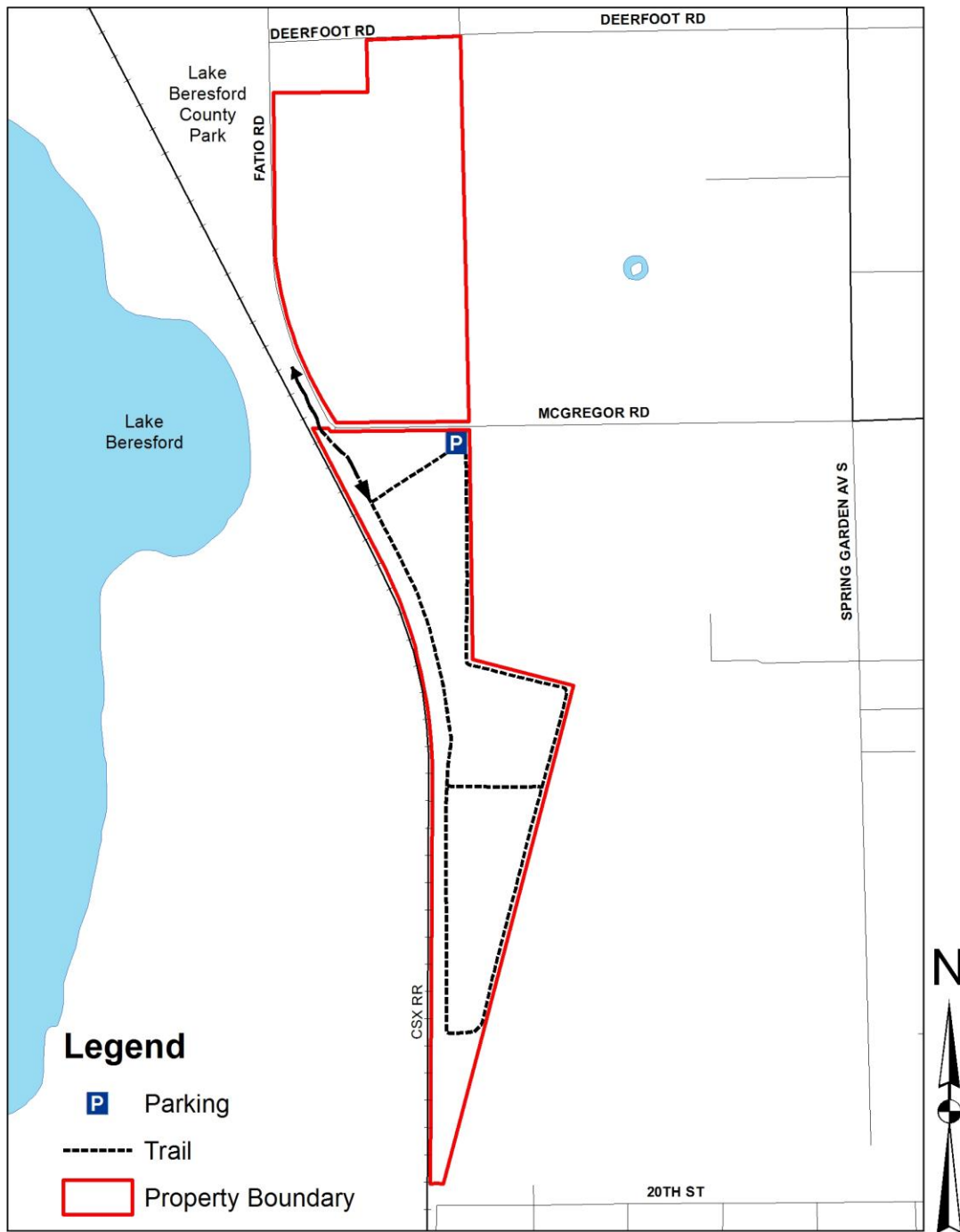


Figure 8. Conceptual Public Use

1 inch = 900 feet

SOURCES

Blue Spring and Hontoon Island State Parks Unit Management Plan, Florida Department of Environmental Protection, Division of Recreation and Parks

Soil Survey of Volusia County Florida, United States Department of Agriculture, Soil Conservation Service

Field Guide to the Rare Plants and Animals of Florida, Florida Natural Areas Inventory

Invasive Plant List, Florida Exotic Pest Plant Council