MOBBLY BAYOU

WILDERNESS PRESERVE

RESOURCE MANAGEMENT PLAN

Submitted to
Office of Environmental Services
Division of State Lands
Florida Department of Environmental Protection

Submitted by
Pinellas County Department of Environmental Management
Environmental Lands Division

May 19, 2004

EXECUTIVE SUMMARY

Mobbly Bayou Wilderness Preserve is an approximately 380-acre preserve located with the municipality of Oldsmar in Upper Tampa Bay. It is the fourth largest preserve in Pinellas County (behind Brooker Creek Preserve, Weedon Island Preserve, and Shell Key Preserve). The Preserve was collectively purchased by Pinellas County and the City of Oldsmar over a 15 year period using "Penny for Pinellas" sales tax revenues. Acquisition is ongoing, and the County has thus far contributed $1,678,940 towards the purchase of 110 acres.

The County and the City of Oldsmar also share management responsibility for the Mobbly Bayou Wilderness Preserve. By an interlocal agreement, effective April 5, 2001, Pinellas County is responsible for management decisions regarding the "Preserve Management Areas" and the City of Oldsmar is responsible for management decisions regarding the "Recreational Management Areas." These areas are depicted in "Exhibit B" drafted for the original interlocal agreement (see Figure 2.) Per this agreement, there are portions of the Preserve that are managed by the County, but owned by the City and vice versa.

The City of Oldsmar has designated two areas of the Preserve as Recreational Management areas. The *North Recreational Support Area* is located at the north end of the Preserve south of Lafayette Boulevard and is adjacent to several man-made brackish ponds. Proposed recreational infrastructure at this location includes restrooms, picnic shelters, a canoe launch, a fishing pier, parking, a playground, and an educational kiosk. The *South Recreational Support Area* is located at the end of Shore Drive and will be developed as a beach park with most of the natural live oak hammock vegetation on the shoreline remaining to provide shade. This area will also have parking, restrooms and picnic shelters.

Pinellas County is responsible for the Preserve Management Areas. The Preserve is comprised of a diverse array of natural habitats and vegetative communities with over 70% being estuarine, or tidal wetland in nature. Ecological communities include mangrove forest, salt marsh, saltern (salt barrens), pine flatwoods, cabbage palm/pine flatwoods, and mesic hardwood hammock. Much of the estuarine mangrove forest and salt barrens have been altered hydrologically from mosquito ditching activities in the 1950's and 60's and have consequently become invaded with the exotic Brazilian pepper (*Schinus terebinthifolius*). Upland areas of the south end of the Preserve experienced a wildfire as recently as 2000, however fire has generally become excluded from the upland ecosystems of the Preserve, which historically experienced it in regular intervals.

A primary resource management focus for this Preserve will be restoration of estuarine habitat and the re-introduction of fire to fire-dependent communities over the next several years. Along with the design and construction of a SWFWMD/SWIM habitat restoration project and implementation of a prescribed burn plan; the County will be responsible for nuisance exotic species removal, firebreak and trail maintenance, and floral/faunal monitoring, as needed.

Whereas, the site is currently used for horseback riding, the County conducted a feasibility study in order to assess whether this use could somehow be continued (Appendix L). Also, the City passed a resolution supporting the pursuit of "installation of horse trails in the upland portion of the preserve". During the October 14, 2003 Board of County Commission workshop meeting, the Board directed staff to pursue the construction of an upland trial prior to final adoption of this Resource Management Plan. This trail was constructed in January 2004. The Addendum to Appendix L discusses final Pinellas County policy regarding equestrian use of the Preserve.

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INTRODUCTION

Mobbly Bayou Wilderness Preserve is an approximately 383-acre preserve located at the north end of Upper Tampa Bay in Pinellas County predominantly within the corporate limits of the City of Oldsmar (see Figure 1, Project Location Map). It is the fourth largest Preserve in Pinellas County behind Brooker Creek Preserve, Weedon Island Preserve, and Shell Key Preserve, respectively. The Preserve is comprised of a series of parcels owned by both the City of Oldsmar (the "City") and Pinellas County (the "County"). The Preserve is located within Sections 24, 25, 26, and 36; Township 28 South; Range 16 East; and is bordered to the north by Lafayette Blvd, to the west by Shore Drive, to the south by Progress Energy owned land, and to the east by Racetrack Road and the Hillsborough County border.

Pinellas County and the City of Oldsmar share management responsibility for the Mobbly Bayou Wilderness Preserve. By an interlocal agreement, effective April 5, 2001, Pinellas County is responsible for management decisions regarding the "Preserve Management Areas" and the City of Oldsmar is responsible for management decisions regarding the "Recreational Management Areas." These areas are depicted in "Exhibit B" drafted for the interlocal agreement (see Figure 2.) Per this agreement, there are portions of the Preserve that are managed by the County, but owned by the City and vice versa.

The parcels comprising the Preserve have been steadily acquired over the last decade. In 2000, 14 additional acres were acquired at the south end of Shore Drive with the aid of a grant through Florida Communities Trust Preservation 2000 Program. Acquisition is currently ongoing with several targeted parcels at the north end of the Preserve just south of Lafayette Boulevard. A Florida Communities Trust (FCT) grant application was submitted in May 2003 acquire these parcels. Acquisition of these parcels will prove critical to effective natural resources management and recreation in the near future.

Figure 3 shows a detailed map of all ownership and management areas as well as proposed acquisitions.

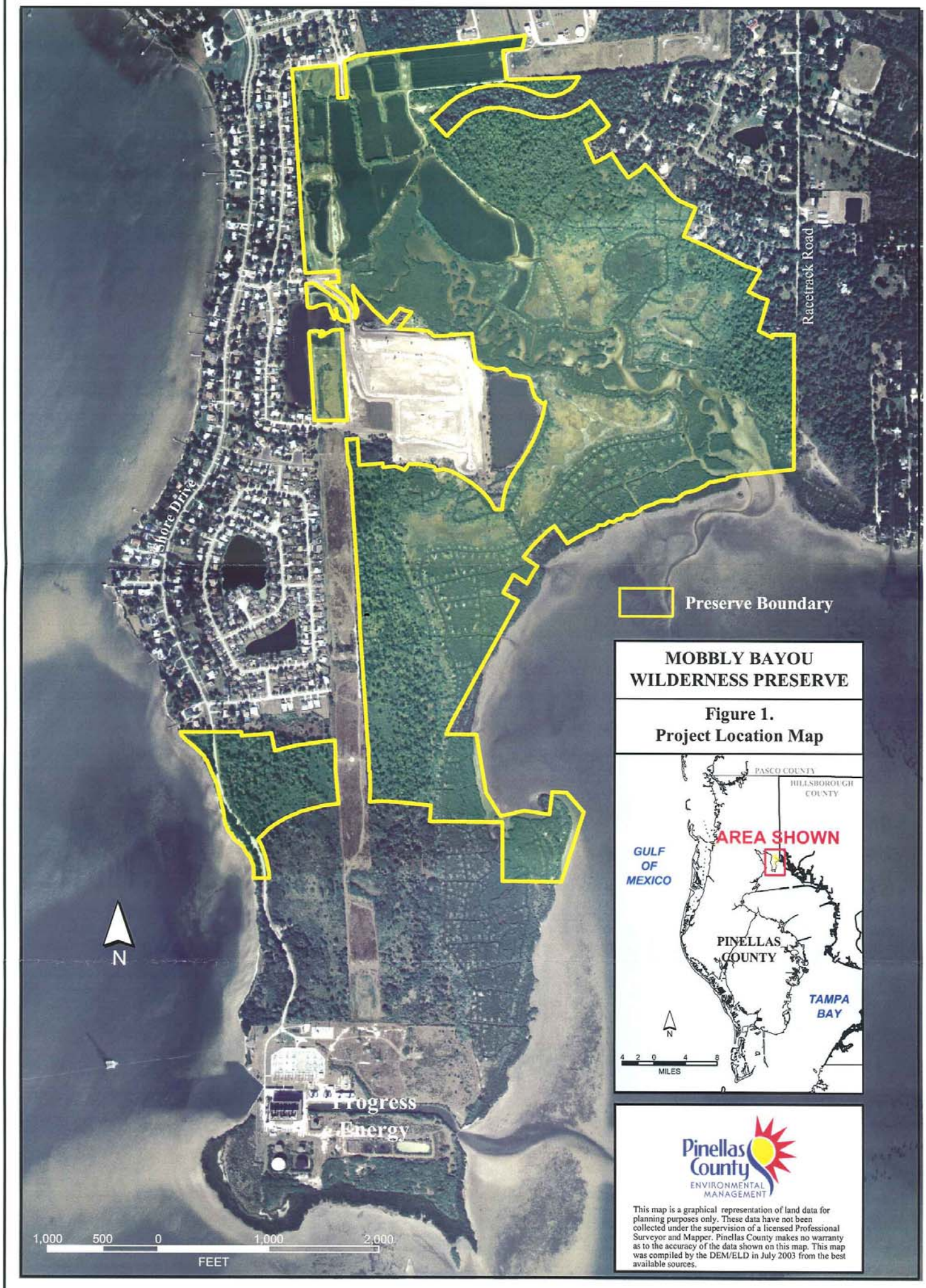
The City of Oldsmar has designated two areas of the Preserve as recreational development areas. The North Recreational Support Area is located at the north end of the Preserve south of Lafayette Boulevard and is adjacent to several man-made brackish ponds. Proposed recreational infrastructure at this location includes restrooms, picnic shelters, a canoe launch, a fishing pier, parking, a playground, and an educational kiosk. The South Recreational Support area is located at the end of Shore Drive and will be developed as a beach park with most of the natural live oak hammock vegetation on the shoreline remaining to provide shade. This area will also have parking, restrooms and picnic shelters.

The Preserve is comprised of a diverse array of natural habitats and vegetative communities with over 70% being estuarine, or tidal wetland in nature. The estuarine communities include mangrove forest, salt marsh, and saltern (salt barrens) and tidal creek; an increasingly rare assemblage of habitats in Tampa Bay. Much of the mangrove forest and saltern have been altered

hydrologically from mosquito ditching activities in the 1950's and 60's. Restoring hydrology where feasible will be a primary management priority for this Preserve.

Upland natural communities found onsite include pine flatwoods, cabbage palm/pine flatwoods, and mesic hardwood hammock. Uplands within the Preserve experienced three wildfires as recently as 2000, however only one of these was started naturally by lightening and fire has generally become excluded from the upland ecosystems of the Preserve that historically experienced it in regular intervals. A major focus of resource management for the upland areas of the Preserve will be the re-introduction of fire to fire-dependent communities over the next several years.

This plan serves as the basic statement of policy and direction for the management of the Mobbly Bayou Wilderness Preserve.



MOBBLY BAYOU WILDERNESS PRESERVE

Figure 1. Project Location Map

Pinellas County
ENVIRONMENTAL MANAGEMENT

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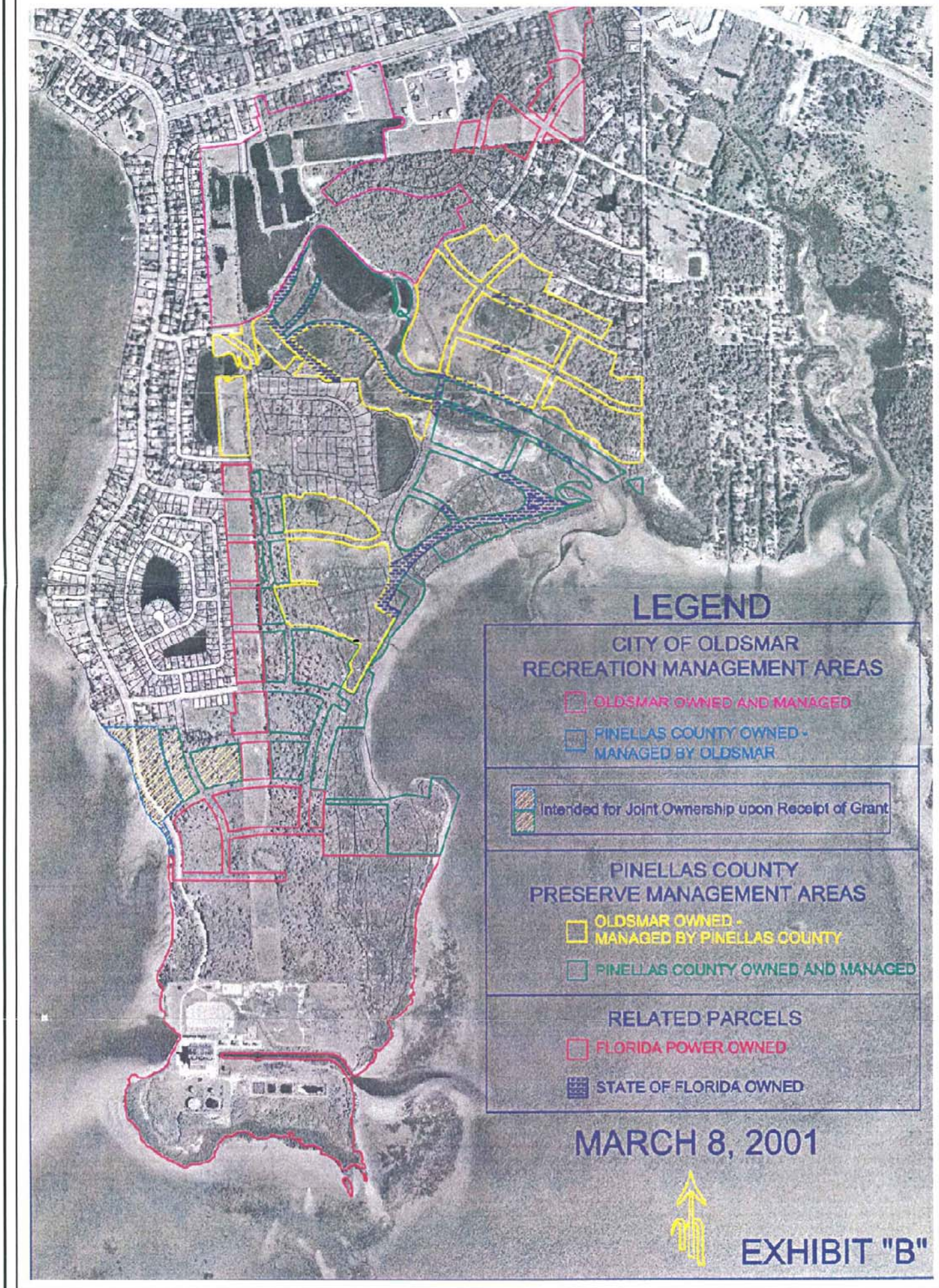
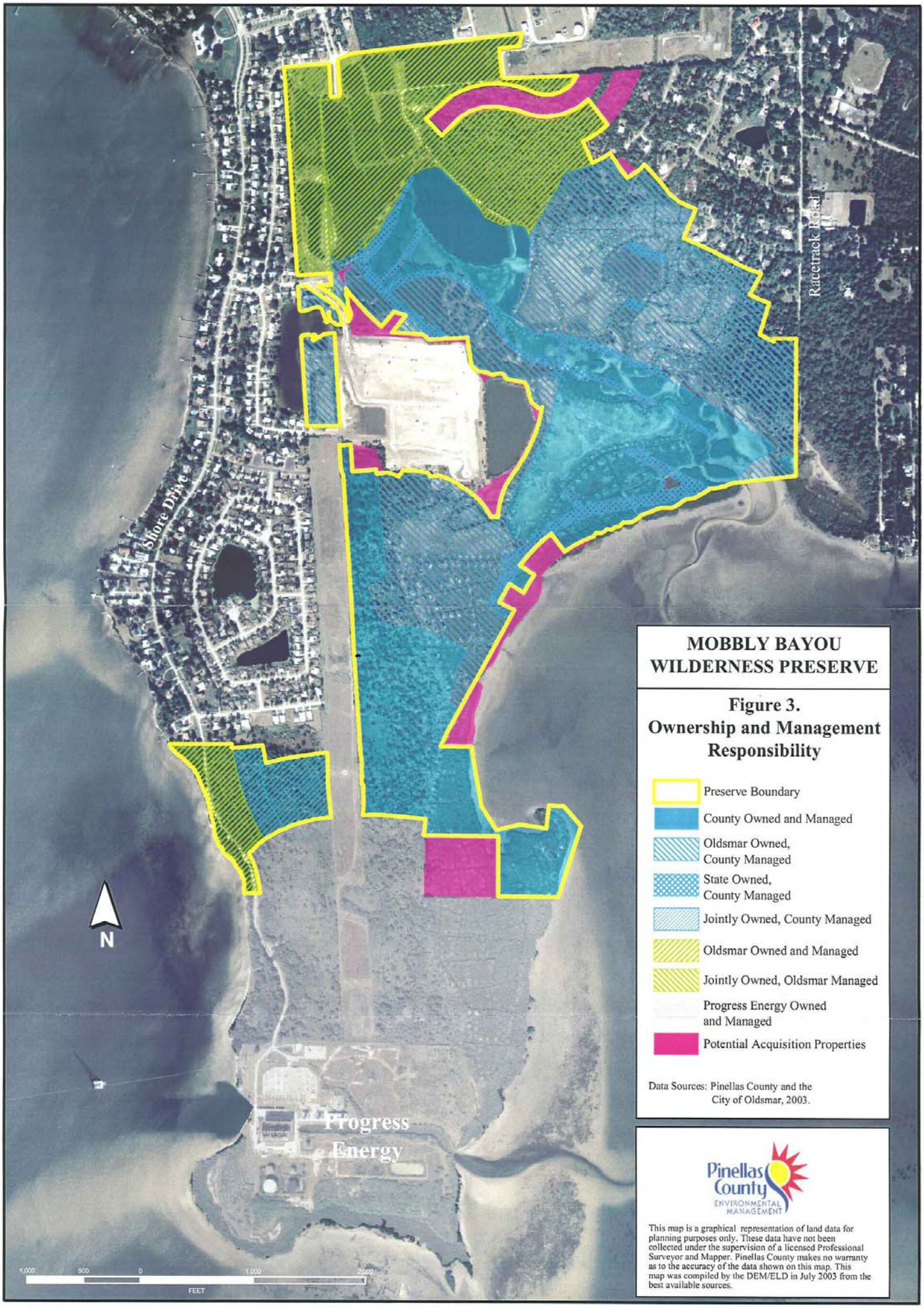


Figure 2: Exhibit "B".



MOBBLY BAYOU WILDERNESS PRESERVE

Figure 3. Ownership and Management Responsibility

- Preserve Boundary
- County Owned and Managed
- Oldsmar Owned, County Managed
- State Owned, County Managed
- Jointly Owned, County Managed
- Oldsmar Owned and Managed
- Jointly Owned, Oldsmar Managed
- Progress Energy Owned and Managed
- Potential Acquisition Properties

Data Sources: Pinellas County and the City of Oldsmar, 2003.

Pinellas County
ENVIRONMENTAL MANAGEMENT

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SECTION 1. TARGET CONDITIONS, OBJECTIVES, AND POLICY COMPLIANCE

Mission Statement

The mission of the Environmental Lands Division is to provide sound stewardship to the County's wild lands and opportunities for the appreciation of their intrinsic value. The mission of the Land Management Section within the ELD is to manage the County environmental lands in a manner that promotes the health and quality of habitats native to the County with special emphasis on maintaining natural biological diversity and locally rare, historically indigenous species.

Long-range Target Conditions

Prior to ownership by the County and City, the land comprising Mobbly Bayou Wilderness Preserve, like many areas throughout the State, was subjected to disruption of its natural environment and natural communities. During the 1940's and 50's the mangrove areas of the southeastern portion of the Preserve along with most of Tampa Bay were ditched extensively for mosquito control purposes. The carving of these ditches created associated spoil mounds that are now havens for exotic species such as Brazilian pepper (*Schinus terebinthifolius*). The purpose of the ditching was ostensibly to reduce populations of the salt marsh mosquito (*Aedes taeniorhynchus*). This has proven an ineffective measure however, and the impediments to normal tidal flows and general habitat degradation that has resulted makes the endeavor of restoring these ditched mangrove areas a primary long range target for the Preserve.

Since the 1980's the area of tidal salt marsh in the southeastern portion of the Preserve has been subjected to unregulated equestrian use. The network of trails that has resulted from this use is extensive with individuals trails rutted up to a foot below grade. As a result, the hydrology of the surrounding area has become altered and many of these trails now function as ditches to divert sheet flow of water that would normally pass overland. This alteration of normal hydrology has made conditions more hospitable to the establishment of exotic species such as Brazilian pepper, which thrive in areas slightly upland from the mean water line in both fresh water and salt water environments. One of the long range target conditions for the Preserve will be the restoration of this impacted area; including the removal of exotic species and regrading of disturbed trails areas back to historic grades to restore normal hydrology.

The upland portions of the Mobbly Bayou Wilderness Preserve historically experienced natural fires every three to five years. With the encroachment of urbanization, the probability of chance ignitions or of fires reaching the Preserve decreased to a greater degree over time. Although the northern portion of the Preserve experienced a lightening strike and accompanying wildfire as recently as 3 years ago, natural fires have generally become excluded from the system. This has had the negative effect of altering the structure and function of upland habitats for the wildlife that inhabit them. As part of the long-term management for the Preserve, we intend to reintroduce fire through prescribed burning to the areas of the Preserve that historically experienced it. This activity alone will have the potential benefit of allowing for the reintroduction of species that depend on open, fire-maintained habitats; for example, Sherman's fox squirrel (*Sciurus niger shermani*), and gopher tortoise (*Gopherus polyphemus*) with many of

its associated commensals; as well as several species of birds that depend on open pine flatwoods for forage; and many species of plants that cannot germinate without the stimulus of fire or the canopy gaps created from it.

Objectives

1. To restore, enhance, and maintain the Preserve's natural vegetative communities.

2. To restore the historical hydrology of the Preserve and repair damage from past use where ecologically and economically feasible.

3. To restore habitats that have been altered due to human disturbance or long-term fire suppression.

4. To re-establish natural burn regimes to fire dependant communities.

5. To continue the control of invasive exotic vegetation and animals.

6. To improve the hiking trail system.

7. To increase and coordinate all proposed ecological and cultural research and educational opportunities.[1]

8. To maintain the Preserve's current and future infrastructure. This includes but is not limited to the maintenance of firebreaks, hiking trails, boundary fencing, boardwalks, and any interpretive displays and signage.

9. To develop a dynamic interactive GIS based management plan that may be updated electronically and is actively used as a guiding tool for Preserve management. The completion of this management plan initiates the process of interactive management plan development.

10. To continue and promote the management partnership that exists between the County and the City of Oldsmar.

11. To ensure the consistency of all development and management activities with previous and potential grant award agreements from Florida Communities Trust.

[1] The Preserve is managed by the County's Environmental Lands Division (ELD) which consists of three programs: Land Management, Education, and Research. The Land Management Program is responsible for site management. Management decisions area carefully planned in coordination and with full cooperation from the Education and Research Programs.

State and Local Policy Compliance

State

This plan is intended to meet the planning requirements of Section 253.034, Florida Statutes, and Chapter 18-2, Florida Administrative Code (See Appendix A).

This management plan is in accordance with the guidelines and conditions established by Florida Communities Trust and agreed upon by the County and City prior to the disbursement funds for land acquisition.

County

This management plan will assist the County in implementing the goals, objectives, and policies of the County's Comprehensive Plan. The areas of the Comprehensive plan targeted are the Future Land Use, Natural, Historical, and Cultural Resource Elements (See Appendix B, Pinellas County Comprehensive Plan).

This plan is in compliance with Ordinance 2-6 established by Pinellas County providing rules and regulations on Pinellas County Preserves and Management areas. (See Appendix C, Environmental Lands Ordinance).

Local

This plan is consistent with the Future Land Use Element, Coastal Management and Conservation Element, and Recreation and Open Space Element of the City of Oldsmar Comprehensive Plan (See Appendix D).

This plan is in accordance with the Interlocal Agreement effective April 5, 2001 between the County and the City delineating management responsibility for County and City with regard to parcels owned by each within the Preserve (See Appendix E).

SECTION 2. EXISTING CONDITIONS

General

Mobbly Bayou Wilderness Preserve is a 383-acre preserve located in Upper Tampa Bay. The Preserve is managed jointly by the City of Oldsmar and Pinellas County. 307 acres are managed by Pinellas County to promote the success of natural communities and ecological processes, while approximately 76 acres are managed by the City of Oldsmar as recreational areas. These recreational areas occur in both the northwestern and southwestern sections of the Preserve.

The Preserve encompasses a diverse array of natural ecological communities. These include mangrove forests, salt marsh, saltern, pine flatwoods, cabbage palm flatwoods, coastal hammock, and freshwater marsh. Over seventy three percent of the total area of the Preserve is estuarine habitat. Much of this is mangrove forest and salt marsh that has been altered hydrologically from mosquito ditching activities in the 1950's. A major focus of resource management for this Preserve will be restoration of estuarine habitat over the next several years.

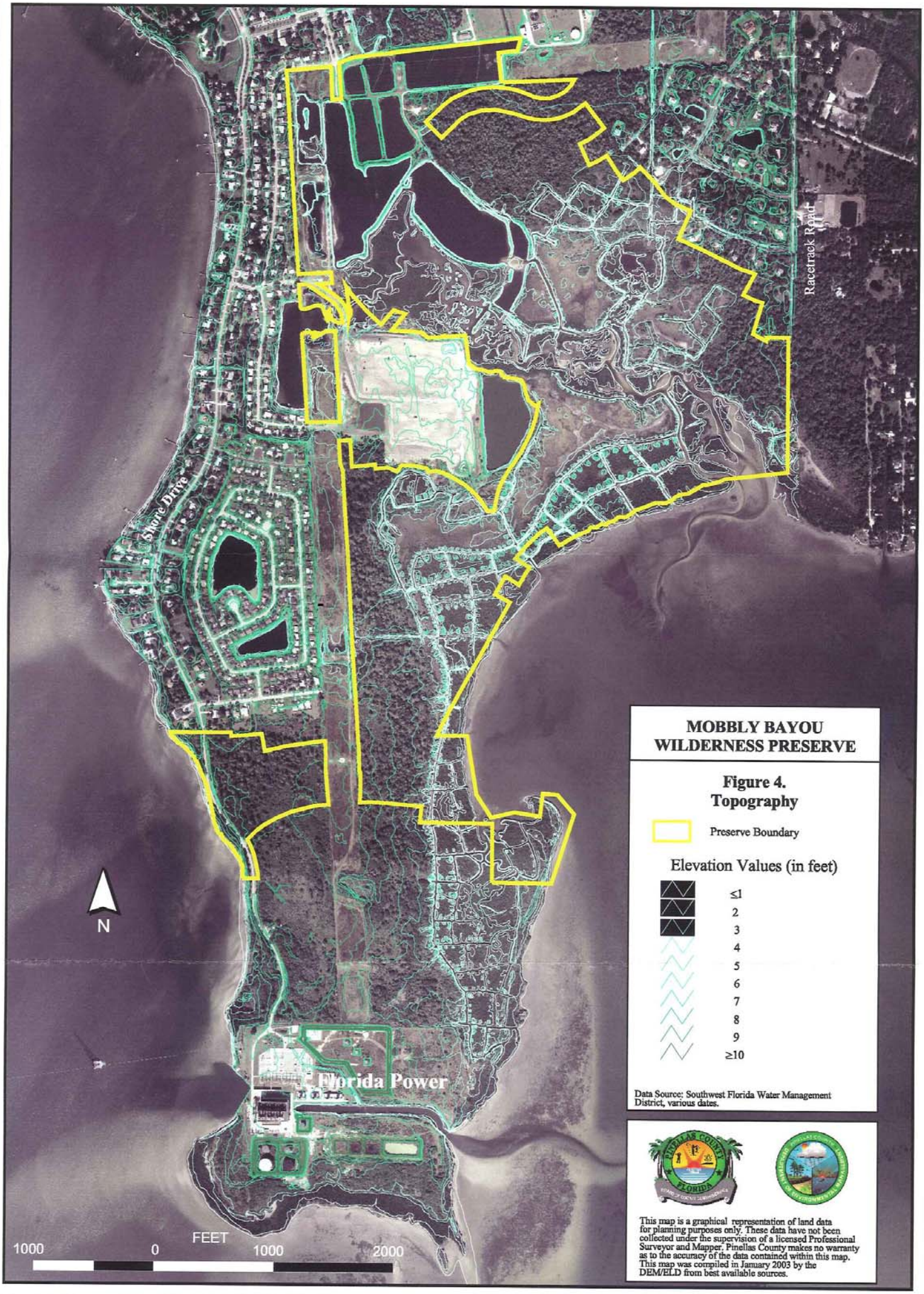
Topography

The physiography of the Oldsmar area has been identified as being coastal lowlands. The topography of the lowlands consists of low, nearly level plains and gently undulating areas with intermittent sands, swamps, marshes, lakes, and perennial streams. Elevations within the coastal lowlands generally range from sea level to 30 feet. Areas adjacent to Old Tampa Bay are characterized by relatively flat, swampy lowlands. These lowlands form a broad plain that gently slopes towards the shoreline.

Mobbly Bayou Wilderness Preserve ranges in elevation from >1 feet below mean sea level to 11 feet above mean sea level (see Figure 4). The Preserve is relatively flat with slopes no greater than 5% across the majority of the Preserve. Generally, the highest natural elevations occur at the south end of the Preserve on the western side on Booth Point, the peninsula within which the Preserve occurs. From the west, with elevations of 7-8 ft above sea level, the topography gradually slopes down towards the east to sea level. At the north end of the Preserve there are some very large spoil mounds associated with prior land use by the water treatment facility. The largest of the spoil mounds has an elevation of 12 feet above sea level. Natural elevations at the north end of the Preserve range from 4-5 feet above sea level in the upland areas and sloping southward to sea level in Mobbly Bayou. Mangrove and salt marsh areas with mosquito ditching have elevations of 1-2 feet; and up to 3 feet above this surrounding grade associated with the mounds formed from cast spoil.

Soil Types

Information retrieved from the Southwest Florida Management District database indicates Mobbly Bayou Wilderness Preserve consists of six different soil classifications (See Figure 5). These soil types reflect modifications of the Pinellas County Soil Survey (Vanatta *et al.,* 1972). The soils have been grouped into three categories: xeric, mesic, and hydric. Xeric soils correspond to sandhill,



MOBBLY BAYOU WILDERNESS PRESERVE

Figure 4. Topography

Preserve Boundary

Elevation Values (in feet)

- ≤1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- ≥10

Data Source: Southwest Florida Water Management District, various dates.

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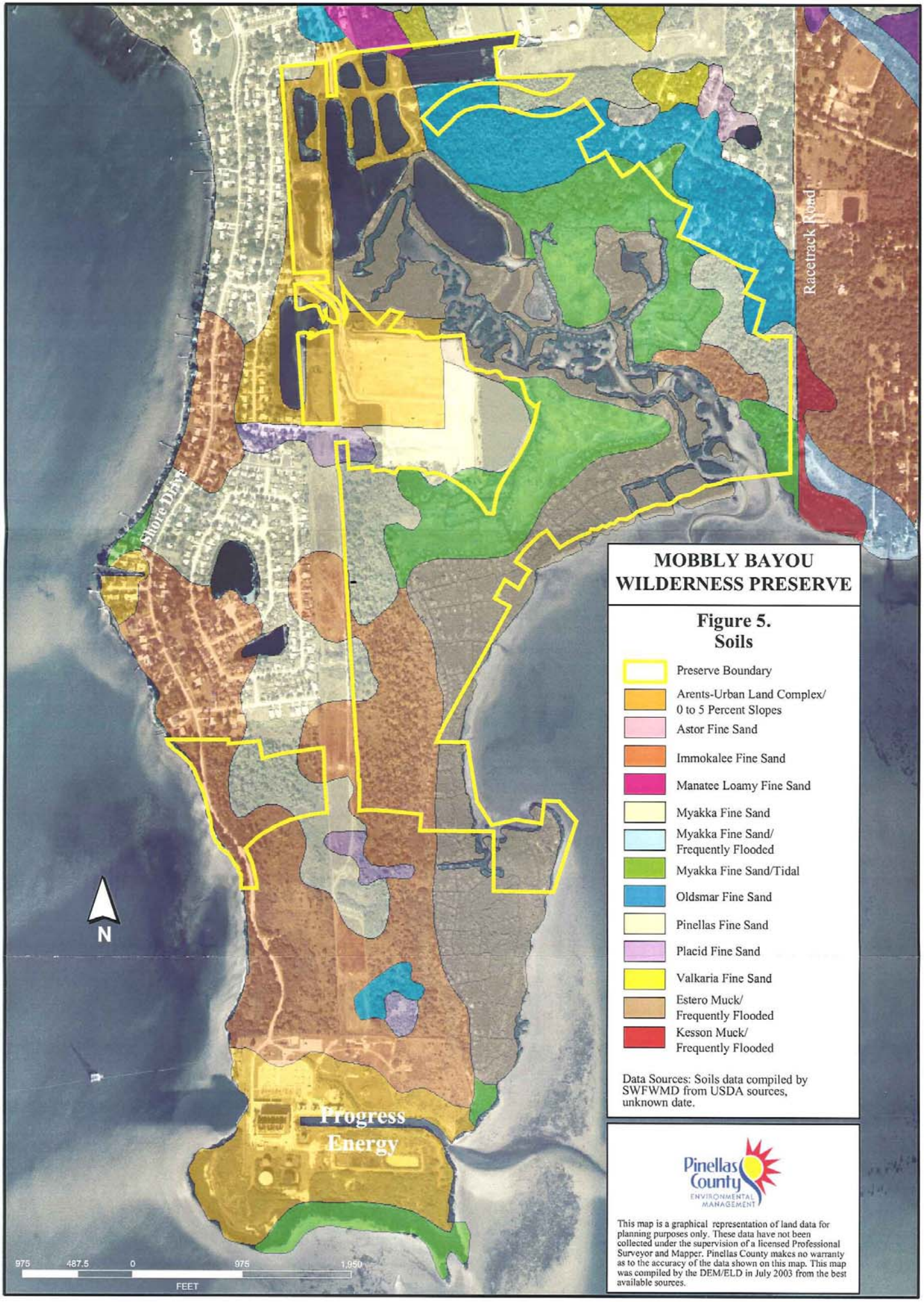

MOBBLY BAYOU WILDERNESS PRESERVE

Figure 5. Soils

- Preserve Boundary
- Arents-Urban Land Complex/ 0 to 5 Percent Slopes
- Astor Fine Sand
- Immokalee Fine Sand
- Manatee Loamy Fine Sand
- Myakka Fine Sand
- Myakka Fine Sand/ Frequently Flooded
- Myakka Fine Sand/Tidal
- Oldsmar Fine Sand
- Pinellas Fine Sand
- Placid Fine Sand
- Valkaria Fine Sand
- Estero Muck/ Frequently Flooded
- Kesson Muck/ Frequently Flooded

Data Sources: Soils data compiled by SWFWMD from USDA sources, unknown date.

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scrub, and xeric hammock[2]. They occur at the highest elevations. Mesic soils correspond to pine flatwoods and mesic hammock communities. Hydric soils correspond to the various wetland habitats on site (see habitat descriptions section, below). The most prevalent soils within Mobbly Bayou Wilderness Preserve are hydric because of the tidal mangrove swamps and salt marshes that dominate the Preserve.

Arents/Urban Complex 0-5% Slopes are man made soils created from dredging and earth-moving activities. They consist of mixed sand clay, hard rock, shells, and shell fragments that have been moved and reworked by heavy equipment. There is no soil profile. Estimates such as depth to the water table and other drainage characteristics cannot be made with this soil type because these properties are too variable.

Xeric

There are no soils classified as xeric, or well drained, within the boundaries of the Mobbly Bayou Wilderness Preserve.

Mesic

Immokalee Fine Sand is poorly drained, acidic sandy soil and nearly level. The water table is usually at a depth of 10 to 40 inches. It is near the 10-inch depth for about 1 to 2 months during the rainy season. The surface layer is usually about 5 inches of black fine sand. Below this is gray to white fine sand around 31 inches thick. The third layer is around 14 inches of reddish-brown fine sand. The upper part of this layer is slightly darker and is weakly cemented. Beneath the third layer is pale brown fine sand that extends to an 80-inch depth. This soil type supports South Florida flatwoods. This soil type dominates the southern portion of the Preserve. Habitats found here include pine flatwoods and mesic hardwood hammock.

Myakka Fine Sand is poorly drained, acidic sandy soil and nearly level. The water table is usually at a depth between 10 to 30 inches. It will rise to the surface for short periods during the wet seasons and fall below 30 inches during times of drought. The surface is usually about 4 inches of black fine sand. This surface covers a 12 inch layer of loose gray fine sand. Below this is a layer of organic matter stained weakly cemented and that is about 14 inches thick. This layer is black on top, dark reddish brown in the middle and dark yellowish brown on the bottom. The next layer extends to a depth of about 84 inches and is comprised of light colored fine sand. Myakka fine sand supports South Florida flatwoods. On site these areas contain pine flatwoods, and mesic hammocks.

Oldsmar Fine Sand is a poorly drained sandy soil and is nearly level. The water table is usually at a depth of 10 to 30 inches. It is near 10 inches for about 1 to 2 months during the rainy season, and at 10-30 inches for 2 to 6 months during most years. The surface layer is about 5 inches of black sand. This surface covers a 7-inch layer of loose gray fine sand. Below this is a layer of

[2] Hammocks, by definition, are temperate hardwood forests that occur along the coastal plain of the southeastern United States from the Carolinas to eastern Texas (Platt and Schwartz, 1990). Hammocks in Pinellas County, particularly xeric and mesic hammocks, are often a result of fire suppression. In urbanized areas, remnant patches of scrub, turkey oak sandhill or pine flatwoods succeed to a hammock.

light gray loose fine sand about 22 inches thick. The fourth layer consists of black fine sand weakly cemented and coated with organic matter about 4 inches thick. Below this is a layer about 6 inches thick composed of dark reddish brown fine sand coated with organic matter and weakly cemented. The last layer extends to a depth of 65 inches and is comprised of coarsely mottled brown, grayish brown, and olive brown heavy fine sandy loam, which is coated with clay. Oldsmar Fine Sand supports South Florida flatwoods. On the Preserve, this soil supports a late successional wet pine flatwoods, with several areas succeeding to hardwood hammock.

Hydric

Estero Muck (Frequently Flooded) is usually covered by water several inches at low tide and 1 to 2 feet during high tide. Numerous mosquito ditches have been carved in these areas to remove trapped water left by falling tides. The surface layer can range from fibrous peat 6 to 18 inches thick to sandy clay to stratified sand and organic matter. The subsurface layers can consist of gray to pale brown sand mixed with shell fragments to loam or marl. The soil usually contains varying amounts of seashells and shell fragments at different depths. This soil type supports the growth mangrove swamp communities with intermittent patches of salt marsh. Within the Preserve the majority of this soil supports tidal swamp dominated by red mangrove (*Rhizophora mangle*) with patches of tidal marsh. The mosquito ditches are a dominant feature, crisscrossing the full extent of the mangrove swamp

Myakka Fine Sand (tidal) is very poorly drained, acidic sandy soil and nearly level. The water table is usually near the surface and will be inundated at times from tidal action. The surface is usually about 4 inches of black fine sand. This surface covers a 12-inch layer of loose gray fine sand. This layer is black on top, dark reddish brown in the middle and dark yellowish brown on the bottom. The next layer extends to a depth of about 84 inches and is comprised of lighter colored fine sand. This soil supports salt marsh communities comprised predominantly of salt tolerant rushes, sedges, and grasses. Within the Preserve, this soil is found inland from the Estero Muck/Mangrove association, and supports salt marsh communities with encroachment by mangroves. Mosquito ditching is prevalent throughout this area as well.

Water Resources

Mobbly Bayou Wilderness Preserve lies within the Double Branch Creek sub-watershed basin of the Tampa Bay/Anclote River Watershed. The tidal creek of Mobbly Bayou is the major water feature within the Preserve; in addition to approximately 33 acres of man made oligohaline (brackish) ponds, which function as stormwater treatment ponds.

Booth Point is the peninsula within which the Preserve occurs. It is located in Old Tampa Bay and separates the smaller embayments of Safety Harbor and Mobbly Bay. The tidal marshes adjacent to Mobbly Bay within the Preserve consist of saltmarsh and mangrove vegetation. Mosquito ditches have been carved to traverse across the marsh area to improve water circulation. Ditching operation have cast spoil material into the adjacent marsh systems.

Mobbly Bay, part of Old Tampa Bay, represents the northwest extension of Tampa Bay. Two large tributaries to the north of Mobbly bay supply most of the water to the bay. The easternmost

tributary, Boat Bayou, drains principally lowland marshes in Hillsborough County, while the western tributary, Mobbly Bayou, drains much of the urban area of the City of Oldsmar at the northern section of the drainage basin. Review of historic data revealed that Mobbly Bay was receiving large amounts of nitrogen from two major contributing bayous. According to the Oldsmar Comprehensive Plan, Coastal Management Element, the influence of Boat Bayou appears to be greatest due to its larger flow. Additional potential pollution sources include agricultural and residential stormwater runoff.

The waters of Mobbly Bay are classified as Class II. According to the Chapter 176-3 FAC, Class II waters are suitable for shellfish propagation and harvesting, and must be maintained at this level. In addition, all waters of the state surrounding Pinellas County have been designated an aquatic preserve.

Plant Communities and Cover Types

The plant communities that comprise the Mobbly Bayou Wilderness Preserve are predominantly estuarine, mangrove forest, pine flatwoods, mixed hardwood conifer, and mesic hammock (see Figure 6, Land Use and Cover Types). The Preserve north and east of the Estuary Mobbly Development is comprised of intertidal zones of salt marsh and mangrove islands, as well as pine flatwoods which are sub-dominated by and cabbage palm, laurel oak, Brazilian pepper, and live oak. The Preserve south and west of the Estuary Mobbly Development is also comprised predominantly of intertidal zones of salt marsh and mangrove, however pine flatwoods make up a greater proportion of available upland habitat in this area. The character of the pine flatwoods in the southern portion of the Preserve is also generally drier with less cabbage palm and more fire maintained with some patches of unburned areas comprised of mesic hammock (see habitat descriptions below).

All habitats were classified using the system described by Florida Natural Areas Inventory (FNAI, 1990). General descriptions of habitats found within Mobbly Bayou Wilderness Preserve follow. Acreages of habitats are approximations only.

MOBBLY BAYOU WILDERNESS PRESERVE

Figure 6.
Land Use and Cover Types

- Preserve Boundary
- Freshwater Marsh
- Saltwater Marsh
- Tidal Flats
- Mangrove Swamp
- Hardwood Conifer Mixed
- Shrub and Brushland
- Other Open Lands/Rural
- Utilities; Residential/ Built-up/Other

Data Source: SWFWMD, 1999.

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Habitat Descriptions.[3]

Wet Flatwoods/Coastal Hammock (32 acres) This community is identified as Hardwood Conifer Mixed on Figure 6. It occurs primarily at the north end of the Preserve. Wet flatwoods are generally characterized as relatively open-canopy forests of scattered pine trees and cabbage palms possessing either a think understory of shrubs and sparse ground cover, or a dense groundcover of hydrophytic herbs and shrubs with little subcanopy. Soils in this community type are derived from beds of sand over alkaline material such as marl or shell bed; a common occurrence in coastal areas. There are many variations in the community structure of wet flatwoods, most of which is a result of fire periodicity. Without frequent fires, wet flatwoods succeed to hardwood-dominated forests with a closed canopy that inhibits the growth of groundcover and herbs. Wet flatwoods are extremely vulnerable to changes in hydrology and fire regime and are readily invaded by exotic species. The wet flatwoods community occurring at the north end of the Preserve is in a late successional stage and likely disturbed, as indicated by the dominance of hardwoods such as laurel oak (*Quercus laurifolia*), live oak (*Quercus virginiana*), and red maple (*Acer rubrum*) and exotics such as Brazilian pepper (*Schinus terebinthifolius*).

Spoil Mounds[4] Spoil mounds occur in areas associated with mosquito ditching. They are the result of the systematic casting of sand and shell into mounds during the ditching of mangrove swamps for mosquito control. Spoil mounds are the result of an extreme ecological disturbance and, as a result, are often dominated by exotic species such as Brazilian pepper and Australian pine (*Casuarina spp.*). The vegetation of the spoil mounds within the Preserve includes these species as well as native species such as live oak; the latter of which may be a function of the length of time the mounds have existed on site (40+ years). Over time, these mounds will stabilize ecologically and slowly erode back into the bay.

Mesic Pine-Flatwoods (45 acres) Mesic Pine flatwoods are the dominant upland community type found within the Preserve, and are in fact, the most common upland community type found in Florida. These forests are found on gently sloping lands with sandy soils that are moderately to poorly well-drained with a fluctuating water table. Pine flatwoods are generally dominated by long leaf pine (*Pinus palustris*) and slash pine (*Pinus elliotii*). They are often composed of a dense shrub layer of saw palmetto (*Serenoa repens*)[5] and associated grasses and forbs. Because they occur so extensively throughout the state, Pine flatwoods can be thought of as the matrix within which other native community types in Florida occur. They function as a transition in the landscape between the truly dry sandhill, scrub, and scrubby flatwoods habitats, and the wet cypress, hardwood swamp, and intertidal wetland habitats.

These areas dominate the uplands at the south end of the Preserve and are depicted as Hardwood Conifer Mixed and Shrub and Brushland on Figure 6. Dominant vegetation found in these

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[3] Habitat or vegetative community nomenclature generally corresponds to polygon labels in Figure 6. These habitat maps are modifications of the SWFWMD Land Use maps.

[4] This is not a habitat type, but an anthropogenic disturbance. Spoil mound locations are known but acreages have not been quantified to date.

[5] High coverage of saw palmetto is a habitat condition often exacerbated by prescribed winter fires.

communities includes slash pine, wiregrass (*Aristida beyrichiana*), saw palmetto, gallberry (*Ilex glabra*), shiny blueberry (*Vaccineum myrsinites*), and wax myrtle (*Myrica cerifera*).

A natural fire schedule of 1 to 8 years would be appropriate in the mesic flatwoods that occur in the Preserve.

Ruderal There is a small 6-acre area at the northwestern tip of the Preserve that contains this community. The area was disturbed during the excavation of the adjacent ponds and subsequent use by the water treatment plant to the north. Vegetation such as bahia grass (*Paspalum notatum*), lantana (*Lantana camara*), smut grass (*Sporobolis indicus*), and castor bean (*Ricinus communis)* dominate. This area is slated to be developed the City of Oldsmar as a recreational area to include picnic shelters, a playground, restrooms, an educational center/open air building and associated parking

Marine Unconsolidated Substrate - The western edge of the Preserve contains less than 1 acre of this community type. This beach area is characterized as relatively open areas of subtidal, intertidal and supratidal zones which lack dense populations of vegetation.

Tidal Swamp (102 acres) This community dominates the Mobbly Bayou Wilderness Preserve; approximately 30 percent is tidal swamp. This community is characterized as dense mangrove forests. These areas contain extensive areas of dredged mosquito ditches. Mangroves are the typical vegetation and include the red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), and white mangrove (*Laguncularia racemosa*); in this order seaward to landward.

Tidal Marsh (47 acres) This community is found in and around Mobbly Bayou in the central area of the Preserve. This area is protected from tidal wave action and grades into mangrove tidal swamps. The typical vegetation includes black needle rush (*Juncus roemerianaus*), smooth cordgrass (*Spartina alterniflora*), seashore dropseed grass (*Sporobolis virginicus*), saltgrass (*Distichlis spicata*), glasswort (*Salicornia virginica*), sea purslane (*Sesuvium portulacastrum*), key grass (*Monanthochloe littoralis*), and saltwort (*Batis maritima*). Large expanses of salt marsh are dominated by the exotic Brazilian pepper, This species is particularly associated with the spoil mounds and hydrologically disrupted areas of high marshes.

Saltern (2 acres) There are two small patches of this community nestled in the mangrove tidal marshes. These areas are characterized as flat, treeless barrens of open sandy areas closely associated with high salt marsh vegetation. This habitat type usually serves as a transitional area between upland pine flatwoods and tidal mangrove swamps and marshes. Extreme high tides and seasonal rains periodically flood these areas. Salterns develop at an elevation just high enough to receive fewer tidal inundations that adjacent seaward zones. Long periods between flooding prevent dilution and favor water loss by percolation and evaporation. The flatness across tidelands is formed by the daily ebb flow of tides, which act as a leveling agent. Erosion of adjacent uplands during storm tides contributes sand to the bordering saltern area. High soil salinities often preclude even the most salt tolerant plants, and the area remains 'barren' of rooted plant life. These sites are important shorebird habitat. Occasionally highly stressed, shrubby trees

such as buttonwood (*Conocarpus erectus*), and black and white mangroves encroach upon or recolonize these areas.

Depression Marsh/Ephemeral Pond There is a 0.3-acre freshwater pond located within the Preserve. This pond is ephemeral, or seasonal, in nature and is situated within the hydric pine flatwoods of the southwestern preserve. Vegetation includes red root (*Lachnanthes caroliniana)* and several species of *Juncus, Rhyncospora, Hypericum,* and *Xyris.*

Seagrass[6] (unknown acreage) This community occurs in subtidal zones in clear coastal waters where wave energy is moderate. Seagrasses beds most frequently occur on unconsolidated substrate of marl, muck or sand. Other factors that affect the establishment and growth of seagrass beds include water temperature, salinity, wave energy, tidal activity and available light. In Tampa Bay, light availability is one of the main factors affecting the growth of seagrass beds. Higher standards for wastewater discharge into Bay waters and enforcement of non-point source pollution discharges into stormwater systems have helped the nutrient levels in the Bay to decline overall. With the decline in nutrients in the water column, the turbidity levels have also been declining, improving the water clarity in the Bay and light availability to sea grasses. This has led to an average increase in sea grass cover throughout Tampa Bay. Although generally Bay wide, the trend of increasing cover of sea grasses does not hold for Mobbly Bay. Sea grass cover initially rebounded in Mobbly Bay in the early nineties, but experienced a decline again in the mid nineties (Janicki, 2000). This may be a result of impacts at the watershed level. Double Branch watershed is expected to be one of the most polluted with nitrogen and phosporous within the next decade because of large-scale development and conversion of agricultural land uses to residential (SWFWMD, 2000).

Motorboat use in shallow seagrass areas also leads to the decline in bed coverage. Seagrass regrowth, in prop scarred areas, can take many years and, at times, recovery never occurs. Limiting combustion engine boat access and establishment of minimum and no wake zones can also help in the protection of the seagrasses within Mobbly Bay

Mollusk Reef[4] (unknown acreage) Marine and estuarine mollusk reefs are faunal based natural communities typically characterized as expansive concentrations of sessile mollusks generally occurring in estuarine areas.

The major threats to mollusk reefs continue to be pollution and substrate degradation due, in large part, to upland development. As stated in the above seagrass section, there have been improvements in Tampa Bay water quality. Substrate degradation due to upland development is not likely, as the areas surrounding Mobbly Bayou are already established developed lands.

Developed Currently, there are no developed areas within the Preserve. This is scheduled to change in 2004 with the development of the City of Oldsmar Parks and Recreation support areas at the north and south ends of the Preserve.

[6] Not delineated on map – not readily distinguishable from aerial photographs.

Wildlife

Non-structured pedestrian surveys were conducted on five separate occasions during 2002 and 2003 to document incidental observations of wildlife. Structured and comprehensive wildlife surveys have not yet been performed. To date, 46 vertebrates have been documented on the Preserve including 4 species of amphibians, 5 species of reptiles, 30 species of birds, and 7 species of mammals. No doubt, many more species will be documented as additional wildlife surveying progresses, particularly with regard to those associated with marine habitats.

Based upon a review of available literature, known geographic ranges, specific distribution records, and species specific habitat requirements, 13 species of amphibians, 38 species of reptiles, 159 species of birds and 35 species of mammals potentially use the Preserve (FNAI, 1990; Paul, 1987; Kaufman, 1996; Conant and Collins, 1991; Jones et. al, 1992; Burt and Grossenheider, 1980). The results of this review are arranged in a matrix, which identifies potential habitat use by each species and season of occurrence in the case of birds (see Appendix F).

Listed Species

Flora

The vegetative communities supporting listed species include all natural habitats on site. Known or potential occurrence of listed species was determined through: (1) review of Florida Natural Areas Element Occurrence Records for the region (See Appendix G), (2) review of on site selected surveys, and (3) review of known geographic ranges and species-specific habitat requirements of listed plants. (Table 1). Nine federally and/or state listed species of plants potentially occur on the Mobbly Bayou Wilderness Preserve (U. S. Fish and Wildlife Service, 1988). One state listed species of plant, Tampa mock vervain (*Glandularia tampensis*), was observed on site during surveys conducted before purchase of the 14 acre Holmes tract (southwestern Preserve) in 2000 (C. Huegel, pers. comm.). A full list of all vegetative species observed to date is included in Appendix H. Floral Inventories.

Table 1. Listed Plant Species that are known to or potentially could occur at Mobbly Bayou Wilderness Preserve

Common Name	*Scientific Name*	FWC[1]	USFWS[2]	Habitats
Golden leather fern	*Acrostichum aureum*	E		Mangrove swamps, brackish water
Ray fern	*Actinostachys pennula*	E		Wet hammocks
Many-flowered grasspink	*Calopogon multiflorus*	E		Dry to moist flatwoods
Sand dune spurge	*Chamaesyce cumulicola*	E		Coastal dunes
Sanibel love grass	*Eragrostis tracyi*	E		Disturbed coastal areas, beaches
Tampa vervain*	*Glandularia tampensis*	E		Live oak/cabbage palm hammocks and pine flatwoods
Wild cotton	*Gossypium hirsutum*	E		Coast hammocks and beaches
Gulf coast Florida lantana	*Lantana depressa var sanibelensis*	E		Coastal hammocks
Catesby's lily	*Lilium catesbaei*	T		Wet pine flatwoods
Celestial lily	*Nemastylis floridana*	E		Wet pine flatwoods, cabbage palm hammock edges
Hand fern	*Ophioglossum palmatun*	E		"Boots" of cabbage palms in wet hammocks
Swamp plume poly pody	*Pecluma ptilodon*	E		Strand swamp, roackland hammock, wet woods
Chaffseed	*Schwalbea americana*	E	E	Grassy ecotones around ponds in sandhills and flatwoods
Rain lily	*Zephyranthes simpsonii*	T		wet meadows and pine flatwoods

* Documented on site

[1]Florida Fish and Wildlife Conservation Commission (FWC): E = Endangered; T = Threatened

[2]United States Fish and Wildlife Service (USFWS): E = Endangered; T = Threatened

Fauna

According to Florida Natural Areas Inventory records (Appendix G), a wading bird colony occurs within the Preserve. The location of the of the colony has not been confirmed, but species listed in the record include least bittern, limpkin, bald eagle, clapper rail, and osprey. An active eagle nest occurs just outside of the Preserve to east. It is located in a long leaf pine near the corner of State Street and Racetrack Road. Adult and juvenile eagles, likely from this nest, have been observed roosting and foraging within the Preserve.

As noted in Table 2, potentially occurring species include Sherman's fox squirrel *(Sciurus niger shermani)*. Previous observations must be verified. This species' primary habitat is mature fire maintained longleaf pine turkey oak sandhill and flatwoods communities. Given the current isolated and unburned/overgrown nature of much of the upland systems on the Preserve, and the large home range required by fox squirrel's, this species may no longer occur.

Gopher tortoise, another potentially occurring species, has not been observed on site. Soil conditions may be generally too wet for this species. As well, the overgrown nature of much of the potentially suitable pine flatwoods habitat may preclude it from occurring currently. Gopher tortoises prefer sunny, open fire maintained habitat that allows for the success of its favorite forage; grasses and herbs (Auffenberg and Franz, 1978; Breininger et. al., 1988).

Table 2. Listed Animal species that are known to or potentially could occur at Mobbly Bayou Wilderness Preserve

Common Name	*Scientific Name*	FWS[1]	USFWS[2]	Comments
Eastern indigo snake	*Drymarchon corais couperi*	T	T	Occur in dry sandy habitas. Use gopher tortoise burrows for shelter. Not likely to occur on site.
Gopher tortoise	*Gopherus polyphemus*	SSC	C2	Occur in scrub, scrubby flatwoods, pine flatwoods, and old field. Also occurs on the fringes of sand pine forest. Require open dry areas with adequate forage. Not observed. Preserve may be too wet for this species.
Diamondback terrapin	*Malaclemys terrapin*			Salt and brackish waters; marshes and tidal creeks. Often associated with mangroves.
Loggerhead turtle	*Caretta caretta*	T	T	Coastal bays and lagoons used by juveniles.
Green turtle		E	E	Estuarine and marine waters; coastal bays and lagoons used by juveniles.
Kemp's ridley	*Lepidochelys kempii*	E	E	Juveniles use bays, inlets and lagoons.
Florida sandhill crane	*Grus canadensis pratensis*	SSC		May use Florida Power property and corridor for forage.
Roseate spoonbill*	*Ajaia ajaia*	SSC		Observed foraging on site. Nest in mangroves. Forage in shallow waters.
Little blue heron*	*Egretta caerula*	SSC		Observed foraging on site. Nest in mangrove, cabbage palm, Brazilian pepper.
Snowy egret*	*Egretta thula*	SSC		Observed foraging on site. Forages and nests in estuarine habitats. Nest in mangroves.
Tricolored heron*	*Egretta tricolor*	SSC		Observed foraging on site. Forages and nests in estuarine habitats. Nest in mangroves.
Reddish egret	*Egretta rufescens*	SSC		Almost exclusively coastal, often nest in mangroves.
Piping plover	*Charadrius melodus*	T	T	May use tidal mudflats and sand flats for foraging.
Limpkin	*Aramus guarauna*	SSC		Mangroves, freshwater marshes, swamps, pond and river margins. Preffered food- apple snails.
White ibis*	*Eudocimus albus*	SSC		Observed foraging on site. Forage in marshes, mudflats, lake edges, and mangrove lagoons. Nests in mangroves.
Artic peregrine falcon	*Falco peregrinus tundrius*	E		Observed on site. Possible migratory habitat on open areas on Florida Power property.
Southeastern American kestrel	*Falco sparverius paulus*	T		Possible migratory habitat on open areas on Florida Power property.
American oystercatcher*	*Haematopus palliatus*	SSC		Observed foraging on site. Forage in tidal mudflats and salt marshes.
Wood stork*	*Mycteria americana*	E	E	Observed foraging on site. Forages mainly in freshwater. Nests in cypress swamps and mangroves.
Brown pelican*	*Pelecanus occidentalis*	SSC		Observed foraging on site. Nests in mangroves.
Black skimmer*	*Rynchops niger*	SSC		Observed foraging on site. Nest on open sandy beaches; none suitable occur on site. Preserve suitable for foraging.
Least tern*	*Sterna antillarum*	T		Observed foraging on site. Occur in bays and salt flats.
Bald eagle*	*Haliaeetus leucocephalus*	T	T	Coastals bays and water bodies, usually nest in tall Pines. Possibly nesting on Preserve. Nest undetected.
Sherman's fox Squirrel*	*Sciurus niger shermani*	SSC		Prefers sandhills, pine flatwoods and pasture. Requires variety of oaks as well as pine for forage and nesting. Home range size requirements make current species presence questionable.
West Indian manatee	*Trichechus manatus*	E	E	Sheltered coves important for feeding, resting, and calving.

[1]Florida Fish and Wildlife Conservation Commission (FWC):
E = Endangered; T = Threatened; SSC = Species of Special Concern

[2]United States Fish and Wildlife Services (USFWS):
C2 = A candidate for listing with some evidence of vulnerability, but for which not enough data exist to support listing.
T(S/A) = Threatened due to Similarity of Appearance

* Observed on site.

Archaeological and Cultural Resources

The Florida Master Site Files indicated no sites within the management area of the Mobbly Bayou Wilderness Preserve (T28S, R16E, S24, 25 and 36), nor have any surveys been performed within this area. However, the property is located on the northern shores of Old Tampa Bay west of the famous Safety Harbor Site, home to native peoples from about AD 1000 until the first Europeans landed in Pinellas County.

The Safety Harbor site is situated on twenty foot bluffs within the current boundaries of Philippe Park in Pinellas County and consists of a village site and mound complex.

View of the Safety Harbor Site West of Mobbly Bay.

The north rim of Old Tampa Bay including the Mobbly Bay Wilderness Preserve was probably used by the Tocobaga people who were first recorded by the Spanish explorers who passed through the Pinellas peninsula during the 16th Century. (Milanich 1998) The Preserve is likely to contain archaeological resources because of its proximity to this site, although no sites have been recorded to date.

On October 15, 2002 a Cultural Resource Team was assembled to walk over three areas of the Preserve: the existing equestrian trails, the north recreational area and the south recreational area. Two judgmental shovel tests were placed in the uplands adjacent to the equestrian trails, and one was excavated on the west side of Shore Drive in the south recreational area. No artifacts were recovered. A small deposit of shells was examined along the shoreline to the east of the equestrian trails. This contained no cultural materials and was composed almost entirely of oysters. The north recreational area had large areas of deposited fill. Upon examination of the aerial and of the contents of the filled areas, it was determined that the majority of this area was disturbed.

This was not an extensive archaeological survey of the property, however. The probability of archaeological sites remains.

Adjacent Land Use

Mobbly Bayou Wilderness Preserve occurs in an urbanized portion of Pinellas County, partially within the corporate limits of the City of Oldsmar. It is surrounded primarily by medium density residential development. These developments occur along the western, northern, and northeastern boundaries of the Preserve. Progress Energy owns approximately 161 acres of land immediately south of the Preserve including the decommissioned Higgins Power Plant (74 acres

are undeveloped). They also have a power line easement which effectively bisects the Preserve from north to south, and also forms the northern boundary of the Preserve (see Figure 6). At the eastern boundary of the preserve, on the Hillsborough County side, approximately 30 acres of privately held undeveloped land occurs. This property is listed for potential acquisition under Hillsborough County's Environmental Lands Acquisition Program (ELAP) and if acquired would help to form a corridor to Upper Tampa Bay Park, a 2,144 acre nature preserve and home to many protected species.

Existing Infrastructure and Improvements

Easements

As noted above, Progress Energy possesses an easement through a portion of the Preserve. The power line corridor is 300 feet wide and runs the length of the Preserve from south to north, then east to west, forming the northern boundary of the Preserve.

Buildings

There are currently no buildings within the boundaries of the Preserve. The only existing structures are four dilapidated water storage tanks in the northwestern corner of the Preserve (see Figure 7, Existing Infrastructure), and several power line support structures within the Progress Energy corridor described above.

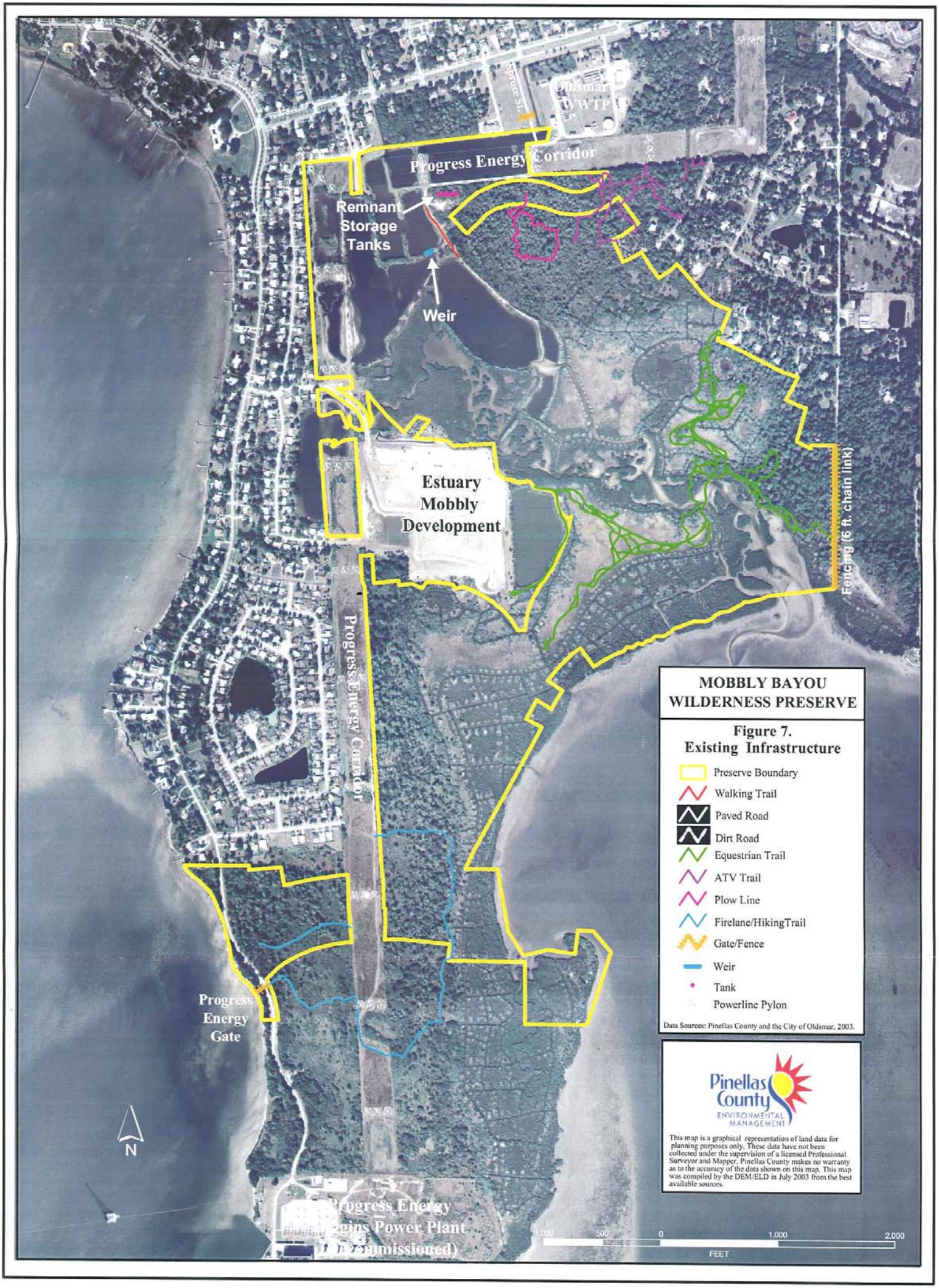
Roads

A new road named Spruce Street was constructed by the City of Oldsmar in 2002 to provide public access to the North Support Area of the Preserve. This road also provides a connection from Bicentennial Park to the Preserve and allows for pedestrian access between the two facilities (see Figure 7).

Fencing/Gates

Chain link fencing is in place along the eastern perimeter of the Preserve extending from the southernmost extent of Racetrack Road northward along the road right of way until the first residence on Racetrack Road (see Figure 7). This fencing was installed summer of 2001. From this point, net wire fencing (or field fence) extends westward along the properties on Gilford Street until wetland soils are encountered. There is no fencing along the Progress Energy Corridor marking the northern boundary of the Preserve as there is a cable gate at the entrance to the Preserve on Spruce Street effectively keeping vehicles out of the northern portion of the Preserve after hours. In the southern portion of the Preserve, property owners on the south side of Lexington Avenue have installed wood fencing. Just south of the intersection of Lexington Avenue and Shore Drive, Progress Energy has a gate near the boundary of their property.

Residents of Timber Bay Circle and Country Club Drive are not immediately adjacent to the Preserve, but instead to the Progress Energy easement. Many or most also possess there own fencing. As such, no fencing was installed along the Preserve boundary adjacent to these properties.


Progress Energy Corridor
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Weir
Estuary Mobbly Development
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Progress Energy Corridor
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MOBBLY BAYOU WILDERNESS PRESERVE
Figure 7.
Existing Infrastructure
Preserve Boundary
Walking Trail
Paved Road
Dirt Road
Equestrian Trail
ATV Trail
Plow Line
Firelane/HikingTrail
Gate/Fence
Weir
Tank
Powerline Pylon
Data Sources: Pinellas County and the City of Oldsmar, 2003.
Pinellas County
ENVIRONMENTAL MANAGEMENT
This map is a graphical representation of land data for planning purposes only. These data have not been collected under the supervision of a licensed Professional Surveyor and Mapper. Pinellas County makes no warranty as to the accuracy of the data shown on this map. This map was compiled by the DEM/ELD in July 2003 from the best available sources.

Access

Current access points to the Preserve exist at the south end of Shore Drive for the South Recreational Area; the south end of Spruce Street from Lafayette Boulevard for the North Recreational Area; and at the south end of Racetrack Road for pedestrian and equestrian access. There is no associated parking are at this location.

Parking

Non-structured parking is available in both the North and South Recreational Support Areas of the Preserve only (see Section 3, Site Management for details on planned recreational development)

Signage

Signage is in place at entrances to the Preserve located on Shore Drive, and Spruce Street, and at the south end of Racetrack Road which identifies the area as a nature preserve and specifies that the Preserve is open to the public and was purchased with assistance from Florida Communities Trust, the City of Oldsmar, and Pinellas County, and was developed with financial assistance from the Florida Department of Environmental Protection through the Florida Recreation Development Assistance Program. There is additional signage in place near the entrance of the Preserve from Racetrack Road which specifies the following rules: "alcoholic beverages prohibited; deposit litter in receptacles; no pets allowed; parking in designated areas only; no open fires permitted; park hours 8 am to dusk; no motorized vehicles in the park area." Additionally, there is signage located on the boundary fence at this entrance approximately 150 feet from the fence, which specifies the area as wetlands and states: "no motorized vehicles or equestrian use beyond this point; Oldsmar City ordinance, Sec. 42-66 and Sec. 42-119)."

Trails

There currently exists an extensive network of trails through the mangrove and intertidal areas of the northeastern portion of the Preserve (see Figure 7). These trails were created over the last decade predominantly by unauthorized equestrian use. The trails here are still heavily utilized by horses and show signs of extreme rutting in certain areas. In the northern section of the Preserve there is a plow line loop created during a wildfire in July 2000, and a network of ATV (All Terrain Vehicle) trails adjacent to private property at the north end of the Preserve. In the southwestern portion of the Preserve there is another network of plow lines and fire breaks created during wildfires in July 1997 and March 2000. East of the power line corridor at the southern end of the Preserve there is a trail utilized by ATV's and pedestrians. All existing trails vary in width and the degree of usage. ATV use is also apparent in the central salt marsh area of the Preserve which is also utilized by horses.

SECTION 3. SITE MANAGEMENT

Ecological Management

Management of the natural resources at the Mobbly Bayou Wilderness Preserve are the responsibility of the County's Environmental Lands Division (ELD). Planned management activities are listed below with timeline provided in the Table 3 detailing the schedule of all preserve and park related development.

Species Inventories and Habitat Mapping

Comprehensive surveys will be performed to assess the full species assemblages present on the Preserve. Particular attention will be made to searches for potentially occurring listed species (see Tables 1 and 2). Classifications of vegetation communities will be further refined from the major groups discussed in Section 2, Plant Communities and Cover Types. This information will be added to an interactive GIS database and updated regularly.

Restoration.

The County has entered into an agreement with the Water Management District's Surface Water Improvement and Management (SWIM) Program for a restoration project that will benefit the Preserve's water quality and ecological function. This project will:

1) Enhance 33 acres of oligohaline stormwater ponds through the creation intertidal littoral planting shelves; for improved habitat function and increased stormwater polishing;
2) Enhance 179 acres of estuarine salt marsh, mangrove and saltern habitat by removal of 68 acres of exotic Brazilian pepper and native species replanting;
3) Enhance 25 acres of adjacent upland habitat by removal of Brazilian pepper;
4) Restore historic tidal circulation patterns and promote saltern and intertidal habitat restoration by the selective blocking and/or filling of 15 acres of mosquito ditches, and the restoration/removal of 6.2 acres of below-grade trails created by unauthorized equestrian use;
5) Decrease nitrogen loading to Upper Tampa Bay by the creation of 2 acres of Freshwater marsh to capture stormwater runoff from developed areas north of the Preserve.

Subsequent to the completion of the SWIM restoration plan, the County and SWIM will identify other potential restoration sites including, but not limited to:

1) Rehabilitation of erosion associated with past land uses
2) Further consideration of hydrologic restoration associated with the mosquito ditching. The mosquito ditching has altered the character of the mangrove systems and introduced a network of tidally-influenced canals that function, as a system, very differently than historically. Prior to mosquito ditching, mangrove forests were structurally different with salt collecting in areas (salterns) stunting growth and creating variably aged and diverse stands of mangroves and other subcanopy species.
3) Restoration of flatwoods to a pre-fire suppression structure and composition. The oak canopy coverage is greater than desired. Additionally, saw palmetto, oaks and other

Table 3. Mobbly Bayou Wilderness Preserve Management Plan. Time Line for Management Plan Implementation.

	2000				2001				2002				2003				2004				2005				2006				2007			
Task	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Park Management Area Development																																
Closing																																
Surveying																																
Engineering																																
Permitting																																
Road Development																																
Park Dedication/Ground Breaking																																
Fencing																																
Trash Removal																																
Parking Area																																
Exotics Removal																																
Planting/Landscaping																																
Recreational Infrastructure Development (See Section 3)																																
North Support Area																																
Canoe Trail																																
Canoe Launch																																
Education Center Development																																
Picnic Shelters																																
Restroom																																
Playground																																
Boardwalk																																
Hiking Trail																																
Observation Platform																																
Fishing Pier																																
South Support Area																																
Picnic Area																																
Picnic Shelters																																
Restroom																																
Road Relocation																																
Play Areas																																
Hiking Trail																																

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Task	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
SWIM Habitat Restoration (See Section 3)																																
Fisheries Monitoring (USGS)																																
Contract Executed																																
Notice to Proceed																																
Pre-Survey Exotics Species Removal																																
Survey																																
Geotech																																
Design and Permitting																																
Contract Close Out																													?			
Project Construction																																
Other Management Activities (See Section 3)																																
Species Inventories											Ongoing																					
Habitat Mapping																																
Pine Flatwoods Restoration																																
Exotic Species Removal/Maintenance																		Ongoing														
Cultural Resource Survey																																
Presecription Burn Plan Development																																
Prescribed Burns																																
Listed Species Habitat Enhancements																		Ongoing														
Ecological Monitoring																																

woody shrubs (gallberry in drier areas; wax myrtle in wetter flatwoods) dominate the shrub stratum. The objective is to open up this shrub component to allow for regeneration of herbaceous species that are likely to be present in the underlying seed bank. These goals can be accomplished with the application of prescribed fire followed by selective thinning and roller chopping. The fire is likely to kill many of the hardwood species thus opening up the canopy. This objective will open up the flatwoods for wildlife species adapted to typical, open flatwoods, such as the eastern towhee, Bachman's sparrow, overwintering sparrows, American goldfinch, palm warbler, and pine warbler.

4) Additionally, areas that are densely vegetated with exotic species will be replanted as necessary (see below).

Invasive Exotic Species Control Program

Invasive species control is a ~~type~~ of restoration. As is the strategy of the ELD on all newly acquired sites, nuisance (=invasive) exotic species removal will be done in two phases. During initial site assessments, ELD biologists identify the dense stands of exotic species.[7] The areas identified as having dense concentrations of exotics will be candidates for an initial "first strike" using outside contractors. The County in the past has looked to the Florida Department of Environmental Protection's Suncoast Working Group Grant Program to assist with funding for this action. Once the dense stands have been removed, the County controls exotics with staff members qualified in the identification of target exotics and the proper application of herbicides and/or mechanical removal. (See Appendix I. FLEPPC 2001 List of Invasive Species). Our long term goal is to eradicate species that are identified as Category I or II Nuisance Exotic Species by the Florida Exotic Pest Plant Council (see list of species in Appendix I). Due to the urbanized nature of the region, we recognize that total eradication, albeit an objective, requires constant vigilance. We will patrol the site on a regular basis subsequent to initial strikes to identify any pods of recolonization.

Species that have been identified on site to date include: Brazilian pepper (*Schinus terebinthifolius*), Australian pine (*Casuarina spp.*), Maleleuca (*Maleleuca quinquenervia*), castor bean (*Ricinus communis),* vasey grass, (*Paspalum urvillii*), air potato vine (*Discorea bulbifera*), and woman's tongue (*Albizia lebbeck*). Several infestations of these species have already been targeted for eradication by both the City of Oldsmar Parks and Recreation Department and the ELD. Australian pine and Brazilian pepper have been the main targets by the City thus far and have been removed from both the North and South Recreational Support Areas where infrastructure and trail development are planned.

Prescribed Burn Program

Prescribed burns are the controlled application of fire to wildland fuels in either a natural or modified state under specific environmental conditions. These conditions will allow the fire to be confined to a predetermined area and produce the intensity required to attain planned resource management objectives. Benefits of prescribed fire include public safety (because of the decrease

[7] "Dense", as used here, is defined as areas where the nuisance exotics comprise greater than 30% of the total plant density.

in potential for damaging wildfire), fuel reduction, site preparation, plant disease control, wildlife management, and biological community restoration and maintenance. (see Appendix J, Prescription Form, Prescribed Burn Notice and Sample Letter –"Why it is Necessary to Burn")

A prescribed burn program is part of the planned management for the Preserve and is currently in development.

Ecological Monitoring Program

Floral and faunal surveys within selected areas of the Preserve will be performed to monitor habitat quality, vegetative succession, and wildlife utilization. Based on the findings of these surveys, species-specific management strategies will be developed to enhance conditions for desirable species that can be viably maintained on site, and potentially provide for the reintroduction of historically occurring species

Public Use Element

The City of Oldsmar has planned for the development of recreational infrastructure to occur at both the northern and southern ends of the Preserve. (See Figure 8. Proposed Recreational Development). Table 3 is the schedule of implementation for all park related development. Park-related infrastructure and active recreational activities are the responsibility of the City of Oldsmar Parks and Recreation Department. These include the following:

Access

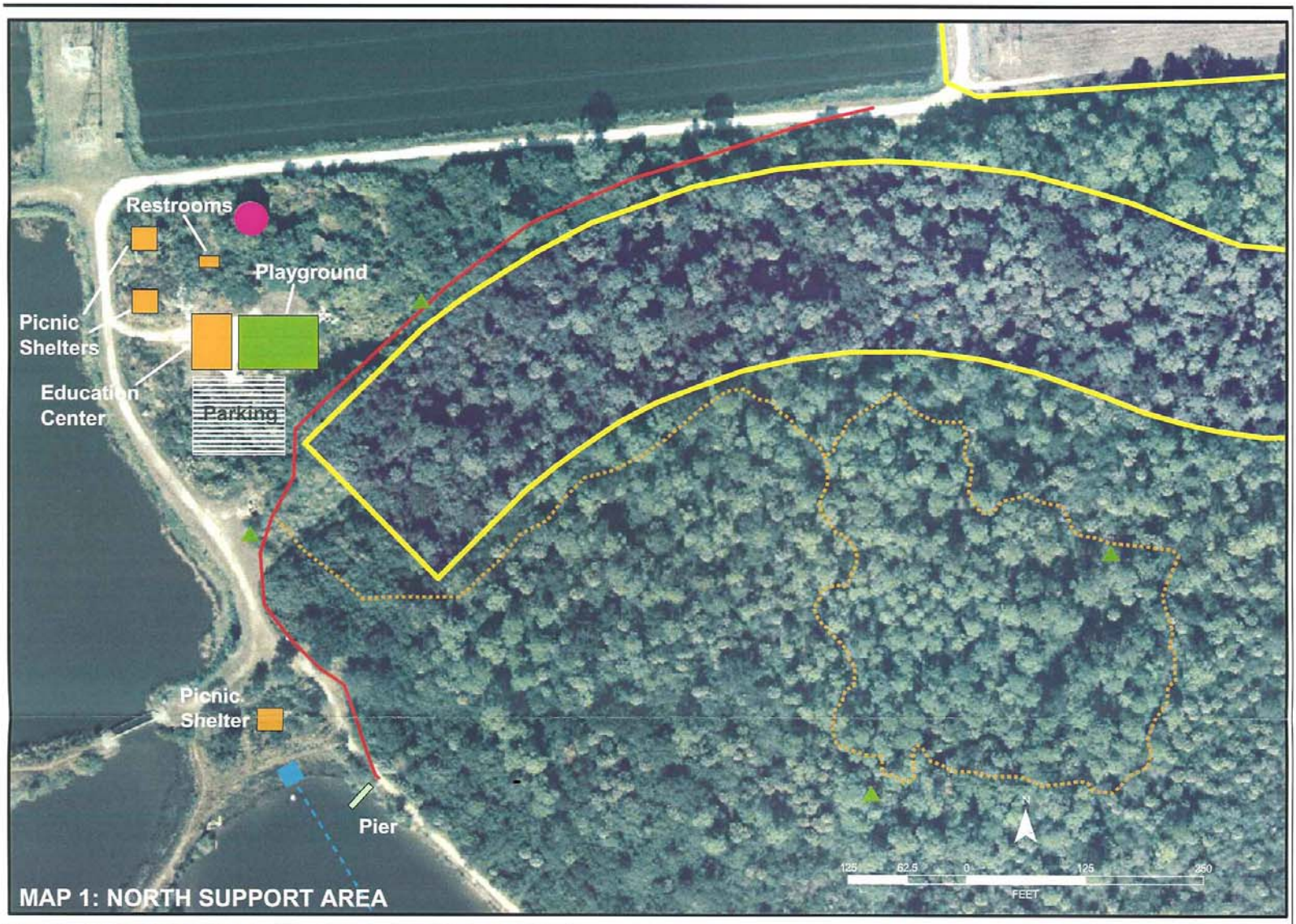
Access to the Preserve is currently possible from three separate locations. The main access point is ~~off~~ of Spruce Street from Lafayette Boulevard ~~at the~~ north end of the Preserve. Spruce Street was constructed by the City of Oldsmar in 2002 for the sole purpose of providing access to this Preserve. Access points are also located at the south end of the Preserve from Shore Drive, and for residents at the eastern edge of the Preserve, at the south end of Racetrack Road. There is no public parking available at this latter location, however, and generally only those able to walk to the gate may access it.

Parking

Parking proposed for the North Support Area will consist of two handicap spaces and 15 additional spaces of grass-paver-type parking with additional landscaping. The South Support Area parking will be developed with access off Shore Drive and will consist of approximately 30 spaces.

Fencing/Gates

Six-foot chain link fencing with a gate is currently in place along the eastern edge of the Preserve on Racetrack Road (see Figure 7). Field fence extends westward from this fence along the properties on Gilford Street. Fencing is proposed for the entry to the North Support area and will be installed during 2003. At the south end of the Preserve, private property fencing extends



MAP 1: NORTH SUPPORT AREA

MAP 2: SOUTH SUPPORT AREA

MOBBLY BAYOU WILDERNESS PRESERVE

Figure 8. Proposed Recreational Development

- Preserve Boundary
- Building
- Playground
- Parking Area
- Beach Area
- Open Area
- Walking Trail
- Proposed Hiking Trail
- Proposed Road Realignment
- Canoe Trail
- Canoe/Kayak Launch
- Benches
- Observation Tower

Data Sources: Pinellas County, and the City of Oldsmar, 2003.

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behind the properties along Lexington Avenue. This fencing also marks the northern boundary of the County and City-owned property, and will be extended with chain link to the pavement of Shore Drive. Just south of this location on Shore Drive, there is currently a gate near the entry of the Progress Energy owned property. It is planned that this gate will be removed and another one placed at the park entrance in line with existing and proposes fencing behind the properties on Lexington Avenue. The new gate will provide for access to all affected property owners (Progress Energy, the County, and the City), and will be opened only from dawn until dusk.

Maintenance

The City will be specifically responsible for:

- Site security for the North and South Recreational Support Areas.
- Emptying garbage receptacles located at the Recreational Support Areas and all Preserve access points. Litter control associated with public use in the recreation areas.
- Keeping literature dispensers and miscellaneous educational materials stocked at the proposed education center/kiosk.
- Maintenance of all gates and fencing.
- Trailhead maintenance for hiking trails within the Recreational Support Areas.
- Exotic species control within the Recreational Support Areas, with assistance from the County as needed.
- Restroom cleaning and security.

The county will be specifically responsible for:

- Trail and fire lane maintenance within the Preserve Management Areas.
- Garbage removal within the Preserve Management Areas.
- Exotic species control within the Preserve Management Areas, with assistance from the City, as needed.
- Signage maintenance associated with the Preserve Management Areas.

Recreational Amenities

The following uses are proposed recreational developments for the North and South Recreational Support Areas to be managed by the City of Oldsmar (see Figure 8).

Proposed facilities at the North Support Area include:

• Picnic Shelters	3	900 square feet each
• Observation Decks	2	900 square feet each
• Education Center	1	3000 square feet each
• Restroom	1	200 square feet
• Parking Lot		17 spaces
• Canoe Launch	1	200 square feet
• Fishing Pier	1	400 square feet
• Playground	1	2500 square feet

Proposed facilities for the South Support Area include:

Picnic Shelters	3	900 square feet each
Restroom	1	200 square feet
Parking Lot	30	spaces
Benches	5	each
Loop Trail	2	miles
Road Realignment	1	
Beach Access		

Proposed Trails

As noted in the previous section and in Figure 7, a network of existing equestrian and ATV trails, plow lines and firebreaks occur within the Preserve. This network is patchy, but it is has grown to the point that ecological damage has resulted to the natural vegetative communities. This is particularly true ~~at~~ the north and northeastern sections of the Preserve. To create a more functional trail system for the public, we have selected a subset of trails within the existing network to continue use, ~~and we will create~~ a limited amount of trails in other areas, as necessary, to make complete loops. We will close off the other portions of the trail network to allow for repair to the natural communities.

The trails will be located primarily in parts of the Preserve managed by the County, with trailheads and parking located in the Recreational Support Areas managed by the City (see Figure 8). The trails collectively traverse representations of most native habitats that occur on the preserve. They will support passive recreational activities such as hiking/walking. Biking will not be supported on these trails because of potential conflicts with pedestrians, however bike racks will be placed in the Recreational Support Areas near trailheads. Pets will be allowed in the recreational areas and on marked trails, but they must remain leashed at all times and owners must pick up their waste. The loop trail in the South Recreational Area may eventually cross the Progress Energy corridor and into pine flatwoods habitats east of the corridor, pending a use agreement with Progress Energy.

To fully assess preferred public uses of the Preserve, a public survey was sent in October 2002 to all residents within an 850 foot radius from the Preserve boundary. Residents were asked to rate their preferred uses on a scale of 1 to 5 (1=least important, and 5=very important) for the following uses: hiking/walking trails, biking trails, canoe trails, fishing piers with boardwalks, equestrian riding trails, picnicking areas, motorized boat use/access, nature appreciation/educational opportunities; and provide comments as they deem necessary. The results of this survey are summarized in Appendix K.

County staff researched the feasibility of all these uses, and examined the preferences of the survey respondents. Through an objective, evaluative process, equestrian use, motorized boat access, ATV (all terrain vehicles) use, and other motorized biking were deemed to be incompatible with this Preserve's identified uses and management objectives. Additionally, the

survey responses indicated these uses were not considered the most important among affected residents.

At a preliminary public meeting in April 2001, several members of the public expressed an interest in the continuation of horseback riding. Because of this, the County conducted a comprehensive evaluation of this land use and concluded for multiple reasons that continuation of horseback riding in its current location was not feasible, nor was horseback riding compatible with the identified uses and management goals for the Preserve's uplands. (see Appendix L Equestrian Use Evaluation and Feasibility Assessment, and attached Addendum to Appendix L detailing final County policy regarding equestrian use of the Preserve).

Coordination

- City of Oldsmar. As a condition of the management agreement, ongoing management of the Preserve shall be implemented by the City of Oldsmar (public use, active recreation, infrastructure construction and maintenance) and Pinellas County (natural resources management).

- Florida Fish and Wildlife Conservation Commission (FWC). The FWC will be conferred with in the development of wildlife survey methodologies and listed species information and other pertinent information will be relayed for use in their statewide Element Occurrence Record (WILDOBS) database.

- Southwest Florida Water Management District. In addition to collaboration on the SWIM project and the planning of future restoration projects, the District will be notified if any infrastructural development occurs in resources under their jurisdiction.

- All listed species documentation will be provided to the Florida Natural Areas Inventory using the appropriate reporting forms (See Appendix H)

- The Department of Agriculture and Consumer Services, Division of Forestry (DOF). The DOF will be asked to assist preserve staff in the development of ecological burn plans and wildfire emergency plans. They also furnish permits for ecological burning.

- Florida Communities Trust (FCT). The County and City must notify FCT of any proposed actions potentially contrary to the management plan submitted and approved as a condition for disbursement of acquisition funding.

- Progress Energy. The County will be notifying Progress Energy in the next year with the objective of offering management of their natural resource areas adjacent to the Preserve at the southern tip of Booth Point, north of the decommissioned Higgins Power Plant. Currently, the County has this relationship with Progress Energy regarding lands owned by them within the Weedon Island Preserve located in the southern portion of the County.

- General Public. Several public meetings have been held; most recently on 15 April 2002, and 24 February 2003 at the Oldsmar Parks and Recreation Center located off of Lafayette Blvd. in Oldsmar. At these meetings, planned public recreational amenities

were presented and the issue of equestrian use and other public uses of the Preserve were discussed at length. A timeline was provided for the development of this draft management plan. Public comments were received and incorporated into the development of this draft plan.

Volunteer Programs

The Pinellas County Department of Environmental Management currently has a group of about 222 individuals that volunteer and provide assistance for areas such as: Weedon Island Preserve, Brooker Creek Preserve, Shell Key Preserve, Ozona Management Area, and Joe's creek Management Area, as well as other management areas where their services area deemed necessary. The Environmental Lands Division utilizes volunteers on its Preserve and Management Areas for projects involving exotic species removal, native species replanting, mammal tracking, wildlife surveying and monitoring, vegetation surveying and monitoring, fence line monitoring, trail blazing and maintenance, archaeological research, educational and public use materials development, signage enhancement/maintenance at public access points, and trash collection.

A volunteer program was recently initiated at Mobbly Bayou to perform baseline wildlife and vegetation surveys and assess current public use within the northeastern section of the Preserve. This program will be expanded to include other areas of the Preserve.

Security

The City of Oldsmar will be responsible for providing security within the Recreational Support Areas. Pinellas County will provide security within the Preserve Management Areas. Through a contract with the Pinellas County Sheriffs Department, deputies have been assigned to patrol all environmental lands managed by the County as Preserves to enforce rules, ordinances, and laws. This contract is renewed annually and is part of the Preserve's annual operating budget.

Signage is in place at entrances to the Preserve located on Shore Drive, and Spruce Street, and at the south end of Racetrack Road which identifies the area as a nature preserve. There is additional signage near the entrance of the Preserve at the south end of Racetrack Road. These signs specify wetland areas and prohibit equestrian use beyond certain points. Additional signage will be placed behind residences, and along the perimeter of the Preserve in 150-foot intervals, and along the waterward extent of the Preserve to clearly identify regulatory zones for boaters (i.e., motor exclusion areas). These activities will help discourage trespassing and protect valuable natural resources such as sea grass beds. Other marine areas within the Preserve will be posted as idle speed zones. Signage will also be utilized within the Preserve to notify users of prescribed burn areas, educational issues, and special use information.

Chain link fencing is in place along the eastern perimeter of the Preserve with field fencing bounding the properties to the north. There is no fencing along the Progress Energy Corridor marking the northern boundary of the Preserve, however there is a cable gate at the entrance to the Preserve on Spruce Street effectively keeping vehicles out of the northern portion of the Preserve.

At the south end of the Preserve, property owners have installed fencing behind their properties along Lexington Avenue. This fencing also marks the northern boundary of the County and City-owned property for the south end of the Preserve. The City will provide additional fencing to extend it to Shore Drive. Just south of this location on Shore Drive, there is currently a gate marking the entry to the Progress Energy owned property. It is planned that this gate will be removed and another one placed at the park entrance in line with existing and proposed fencing marking the northern boundary of the property south of Lexington Avenue. Access to the new gate will be provided for all affected property owners (Progress Energy, the County, and the City), and will be opened from dawn until dusk. This new gate will provide for greatly increased security at the south end of the Preserve; an area that has historically experienced many problems because of unrestricted use.

SECTION 4. RESEARCH PROGRAM

Introduction

Ecological research is an integral component of successful management of natural communities. Understanding the complex interrelationships between habitat, hydrology, fauna and flora will assist land managers in restoring natural communities at Mobbly Bayou Wilderness Preserve. Current and future research objectives will be met through partnerships and agreements with other research organizations and institutions.

Environmental Lands Division (ELD) Research Section Mission Statement

The mission of the ELD Research Program is to investigate and provide answers to questions posed by managers engaged in land management and wild land conservation activities. Through research, the ELD advances the scientific knowledge of our protected wild lands, provides opportunities of professional advancement to students and other environmental professionals, and shares its experience and knowledge with other agencies and the scientific community

Current Research

At this time, no research has been conducted at Mobbly Bay Wilderness Preserve.

Potential Research Opportunities at Mobbly Bayou

Study A: Fish Utilization of the mosquito ditches

Historically, management efforts within the mangrove habitats of the Preserve included the construction of permanent mosquito ditches. Because the current mosquito ditch configuration has been in place for an extended period of time (perhaps more than 40 years), there is a high probability that these artificial habitats are used by both adult and larval stages of local fish. Mosquito ditches have been identified as potential restoration target for the Southwest Florida Water Management District (SWFWMD) Surface Water Improvement Management (SWIM) project. Efforts to restore the ditches include bringing them to grade, thereby creating additional mangrove, salt marsh or saltern habitats. Current fisheries utilization should be estimated to ensure that no impact to local populations would occur with the restoration of this wetland area, and to provided baseline pre-restoration data regarding habitat utilization.

The U.S. Geological Society (USGS) is initiating fisheries data collection in Fall 2003 within Mobbly Bayou. Samples will be taken from three separate areas of the Preserve within mosquito ditches and natural tidal creeks. Mobbly Bayou is but one of several sites throughout Tampa Bay and is part of a larger study termed the Tampa Bay Project. One the goals of the USGS study is is to determine the differences in habitat utilization between mosquito ditches and natural tidal creeks along a salinity gradient. The preliminary results of this study will help determine which mosquito ditches within the Preserve are functioning as good fisheries habitat, vs. those that are

not, and which may be targeted for restoration (filling) during design of the SWIM habitat restoration project

Study B: Vegetation Recovery of Horse trails

Equestrian use has severely impacted parts of the Preserve. Ruts, created from prolonged horse trail use have changed the hydrological flow through portions of the Preserve. This hydrological impact has impacted vegetative communities. Questions to be addressed during the proposed restoration of the trails include:

- Have the extensive ruts created by horses altered the surrounding vegetative structure/hydrology, and will there be a quantifiable effect on vegetation and/or hydrology once those ruts if they are restored?
- How much do horse trails contribute to hydrological disturbance?

Study C: Non-point pollution

Because Mobbly Bay is located at an urban interface, non-point pollution, pollution inputs from non-focused, or non-identifiable sources may impact biodiversity, ecosystem function, and commercially important fish populations. Both Boat Bayou and Mobbly Bayou contribute nitrogen to the area of Mobbly Bay adjacent to the preserve, and potentially the residential areas surrounding the Preserve may contribute additional pollution. Questions that could be addressed include:

- What is the level of non-point pollution in the section of Mobbly Bay adjacent to the Preserve?
- If non-point pollution is present in the region of the Preserve, what role does it play in biodiversity and ecosystem function?
- Are ecologically or commercially important species being affected by non-point pollution originating in or near the Preserve?
- What roles do salt marshes and nearby sea grass beds play in nutrient cycling and productivity?

Initial approaches to these questions may include studying the hydrodynamics, tidal exchange, contamination loading, and water quality along the shoreline and within the tidal areas of Preserve to determine whether non-point pollution is occurring in the preserved area.

Study D: Utilization of Preserve estuarine habitats by shorebirds and herons

Estuarine systems provide habitat for many wading and shorebird species that are protected in the State of Florida. Potential listed species that may utilize the Preserve include the roseate spoonbill (*Ajajia ajaja*), piping plover (*Charadrius melodus*), little blue heron (*Egretta caerulea*), reddish egret (*Egretta rufescens*), snowy egret (*Egretta thula*), tricolored heron, (*Egretta tricolor*), white ibis (*Eudocimus albus*), American oystercatcher (*Haematopus palliates*), wood stork (*Mycteria americana*), osprey (*Pandion haliaetus*), brown pelican (*Pelecanus occidentalis*), black skimmer (*Rynchops niger*), and least tern (*Sterna antillarum*).

Thorough assessment of habitat use of the Preserve by these species will indicate whether specific nesting, roosting, or feeding sites should be protected during restoration efforts.

Yearly post-restoration monitoring of the estuarine habitat may be conducted to see if the restoration attempts have increased the number of birds using the Preserve for feeding, roosting, or nesting.

Study E: Brazilian Pepper management technique study

Brazilian pepper (*Schinus terebinthifolius*) is widespread on much of the Preserve. Current management calls for extensive removal and/or prescribed burning of areas that contain Brazilian pepper. Because this species is widespread throughout Pinellas County, and is a management concern on many other County owned properties, it may prove useful to study the response of Brazilian pepper to various management techniques. Various proposed management techniques include burning followed by mulching, manual removal, and herbicide treatments.

Proposed research may compare the effects of basal treatment of Brazilian pepper with herbicide (leave standing dead tree in place) versus the effects of cut and mulch (with stump spray of herbicide) on the growth of native vegetation after treatment. Also the rate at which Brazilian pepper returns to the site should also be examined. Examining both of these methods to determine which effectively promotes long term habitat restoration may prove useful for other County-owned properties, including Weedon Island Preserve.

Additional Monitoring Objectives

- Design and carry out a comprehensive inventory of flora and fauna that are present at the Preserve to serve as baseline data.
- In upland areas prior to prescribed fires and removal of exotics, conduct surveys for Sherman's fox squirrel (*Sciurus niger shermani*) and gopher tortoise (*Gopherus polyphemus*).
- Post-fire monitoring of upland areas for upland vertebrate species.
- Monitoring of the establishment of native salt marsh vegetation and mangroves in restoration areas.

SECTION 5. EDUCATIONAL PROGRAM

Introduction

The Education Section within the Pinellas County Department of Environmental Management Environmental Lands Division is charged with educating the public on a variety of timely environmental issues through its two Education Centers at Brooker Creek Preserve and Weedon Island Preserve and through the publication of environmentally focused materials. In addition, the Education Section is responsible for distributing information on the importance of the Research and Land Management Sections as well as sharing the details of the activities they undertake.

Mission

The mission of the Education Section is to raise awareness and understanding of natural Florida and of human interactions with this environment, in order to encourage people to make informed decisions.

Brooker Creek Preserve Environmental Education Center

Scheduled to open in the fall of 2003, the Center's three building complex will be the premier environmental education facility in North Pinellas. The Center's exhibit/administration building will include 5,300sq.ft. of state-of-the-art, hands-on, immersive exhibits as well as, a resource center equipped with the latest materials and methods to help individuals and groups undertake environmental projects. The Auditorium building will provide a focal point for a vast array of workshops, lectures, and conferences. A series of environmental and scientific lectures and art and music events are currently being scheduled to coincide with the opening of the Center. The Classroom building will be the place for in-depth study of the local flora and fauna found within the Preserve. Partnerships are now being developed with community agencies and teachers to develop meaningful educational programs that will utilize this building. In addition to the programs being offered within the buildings; a series of boardwalks and trails will also be utilized to educate the public. Volunteers are currently being recruited and trained to serve as interpretive hike guides and, for those who would rather experience nature on their own, interpretive signage will be installed along the boardwalk and trail system.

Weedon Island Preserve Natural and Cultural History Center

The Weedon Island Preserve Cultural and Natural History Center opened to the public in December of 2002 after months of intensive communication between Center staff and Native Americans. The result of these cultural values workshops is a building that not only belongs with the landscape of Weedon Island, but blends native cultural aesthetics with the functional applications of the Center.

Publications

In addition to the two Centers, the Education Section is responsible for the output of publications for the Environmental Lands Division (ELD). Every year an annual report is produced, along with several brochures, field guides, trail guides and various other interpretive materials. This is a valuable resource for the entire Division and the citizens of Pinellas County.

Mobbly Bayou Educational Opportunities

Proposed educational opportunities for the Mobbly Bayou Wilderness Preserve include installation of interpretive signage along selected points of interest on the nature trails. For example, signage may document changes in habitat, characteristic vegetation, restoration areas, and other land management activities such as prescribed burning.

Working in coordination with the City of Oldsmar, the Education Section will help to produce interpretive brochures, field guides, and trail guides specific to the Mobbly Bayou Wilderness Preserve for use in the planned education center/kiosk at the north end of the Preserve.

REFERENCES

Aquatic Weed Management Guide. Publication SP55. University of Florida, Institute of Food and Agricultural Sciences, Gainesville.

Auffenberg, W., and R. Franz. 1978. *Gopherus polyphemus*. Cat. Amer. Amphib. Rept. 215-1, 215-2.

Breininger, D., A. Schmalzer, D. Rydene, and R. Hinkle. 1988. Burrow and habitat relationships of gopher tortoise in coastal scrub and slash pine flatwoods on Merritt Island, Florida. Florida Game and Fresh Water Fish Commission Nongame Wildlife Program Final Report.

Burt, W.H., R.P. Grossenheider. 1980. A Field Guide to the Mammals North America North of Mexico. Houghton Mifflin Compant. New York, NY. 289 pp.

Collins, J.T., R. Conant, J.E. Huheey, J.L. Knight, E.M. Rundquiest, and H.M. Smith, 1982. Standard common and current scientific names for North American amphibians and reptiles. Society for the Study of Amphibians and Reptiles, Miami Univ., Oxford, Oh.

Conant, R., and J.T. Collins. 1991. A Field Guide to the Reptiles and Amphibians of North America. Houghton Mifflin Company. New York, New York. 450 pp.
Florida Exotic Pest Plant Council. FLEPPC 2001 List of Florida's Most invasive Species. Internet: http://www.fleppc.org/01list.htm

Florida Weed Management Guide. Annually updated reference for chemicals used in weed control in Florida. Publication SP53. University of Florida, Institute of Food and Agricultural Sciences, Gainesville

Guide to the Natural Communities of Florida. 1990. Florida Natural Areas Inventory and Florida Department of Natural Resources.

Janicki Environmental. 2000. Summary of Seagrass Coverage Data for Tampa Bay. Tampa Bay Estuary Program. 17 pp.

Jones, Jr., J.K., R.S. Hoffman, D.W. Rice, C. Jones, R.J. Baker, and M.D. Engstrom. 1992. Revised checklist of North American mammals north of Mexico, 1991. Occ. Papers Mus. Texas Tech. Univ. No. 146:1-23. Lubbock, Tex.

Kaufman, Ken. 1996. The Lives of North American Birds. Houghton Mifflin Company. New York, NY. 675 pp.

Langeland, K.A., and R.K. Stocker. 1997. Control on non-native plants in natural areas of Florida. Publication SP242. University of Florida, Institute of Food and Agricultural Sciences, Gainesville.

Milanich, Jerald T. 1998. Florida's Indians from Ancient Times to the Present. University Press of Florida, Gainesville.

Myers, Ronald L. and John J. Ewel. 1990. Ecosystems of Florida. University of Central Florida Press. Gainsville, FL. 765 pp.

Paul, R.T. 1987. Florida Region. Amer. Birds 41: 1425-1428.

Platt, W.J. and M.W. Schwartz. 1990. Temperate Hardwood Forests *in* Ecosystems of Florida, (Myers, L.R. and J.J. Ewel, eds). University of Central Florida Press, Orlando,.

Robbins, L.E. and R.L,. Myers. 1989. Seasonal effects of prescribed burning in Florida: a review. Prepared for Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program. The Nature Conservancy, Fire Management and Research Program, Tallahassee, FL.

Robertson, Jr., W.B., G.E. Woolfenden. 1992. Florida bird species: an annotated list. Florida Ornithological Society, Special Pub. No. 6. Gainesville, FL.

Southwest Florida Water Management District. 2002. Tampa Bay/Anclote River Comprehensive Watershed Management Plan. 217 pp.

Straub, William L. 1929. History of Pinellas County, Florida. St. Augustine, Florida Record Company.

Vanatta, Jr., E.S., Stem, L.T., Wittstruck, W.H., Pettry, D.E., Spieth, J.W. 1972. Soil Survey of Pinellas County, Florida. United States Department of Agriculture, Soil Conservation Service in cooperation with University of Florida Agricultural Experiment Stations. Washington, D.C.

Wunderlin, Richard P. 1998. Guide to Vascular Plants of Florida. University Press of Florida.