A Plan for the Use and Management of the Lake Manatee Reserve

October 26, 2004

Southwest Florida Water Management District
Brooksville, Florida

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EXECUTIVE SUMMARY

The 7,932-acre Lake Manatee Reserve (Reserve), known formerly as the Lake Manatee Lower Watershed Project, is located in central Manatee County approximately 10 miles east of the City of Bradenton. The Reserve lands were acquired by the District for the primary purpose of protecting the watershed of the Lake Manatee Reservoir, which serves as a major source of potable water for the residents of Manatee and Sarasota Counties. This plan is designed to guide the recreational uses and resource management activities on the Reserve in a manner that strikes a balance between both goals. The Reserve has been designated an urban-fringe parkland based on its proximity to the expanding suburbs of unincorporated Manatee County and the City of Bradenton.

Recreational uses accommodated on the Reserve will include hiking, horseback riding, primitive camping, picnicking, birding, and other forms of nature study. Compatible revenue-generating multiple uses, including cattle grazing and timber management, will also be implemented on the Reserve. The Reserve's Gilley Creek North management unit has been popular among equestrian users since the property was initially acquired, and it is proposed that the smaller and more highly altered Gilley Creek South management unit be dedicated to a revenue-generating cattle lease. The various uses proposed for the Reserve will be divided among three disjunct management units based on site-specific resources and characteristics. The District will also explore opportunities to partner with Manatee County in the management of recreational use and will work with other potential partners to make the Reserve available for environmental education.

Water management benefits associated with the Reserve include water supply protection, water quality protection, and flood protection. The Reserve's natural systems values will also be protected through the public's ownership of the property.

Special Protection Areas (SPAs) designated for the Lake Manatee Reserve include active Florida scrub-jay and burrowing owl habitat; several habitat restoration sites; archaeological sites; and resource monitoring sites. Protection of these areas will take precedence over other land use and management considerations.

Major management needs include continued implementation of a prescribed burning program, restoration of altered wetlands, habitat restoration over approximately 530 acres of altered uplands, and the management and monitoring of resident wildlife to maintain or enhance existing levels of biodiversity. Ongoing efforts to control invasive species, and to accommodate compatible recreational usage by the public, will also continue.

INTRODUCTION

The Lake Manatee Reserve (Reserve) is comprised of three disjunct parcels located in central Manatee County (Figure 1). The three parcels, treated as separate management units in this plan, are the Gilley Creek North Unit (Gilley Creek North), the Gilley Creek South Unit (Gilley Creek South), and the Coker Prairie Unit (Coker Prairie). Collectively, these parcels account for a total land area of approximately 7,932 acres. All contribute surface flow to the Manatee River, and ultimately to the Lake Manatee Reservoir (Reservoir). The Reservoir serves as the primary source of water for unincorporated Manatee County and a portion of Sarasota County. Protection of this water supply source was the primary rationale for the District's acquisition of the property.

Gilley Creek North, at approximately 4,700 acres, is the largest of the three parcels. It encompasses much of the Gilley Creek sub-basin and protects most of its shoreline. Gilley Creek is a major tributary to the Manatee River and discharges directly to the Reservoir (Figure 1) shortly after it exits the parcel. Gilley Creek South is approximately 1,100 acres in size. It protects a portion of the south branch of Gilley Creek near its confluence with the main stem of the creek.

Coker Prairie is located about five miles southeast of the Gilley Creek units and is approximately 2,150 acres in size. It contrasts with the Gilley Creek units, which have been subjected to considerable alteration to support agricultural land uses, by being comprised almost entirely of lands that remain in a natural state. Coker Prairie straddles the watershed divide and is divided about equally between the Manatee River Watershed and the Myakka River Watershed (Figure 1).

This plan is designed to guide the recreational uses and resource management activities on the Reserve. It was developed in accordance with District Policy 610-3, District Procedure 61-3, and other pertinent mandates and guidelines for the management of District lands and the preparation of site-specific management plans. The Reserve has been designated an urban-fringe parkland based on its proximity to the expanding suburbs of unincorporated Manatee County and the City of Bradenton.

Property Attributes

The Manatee River watershed encompasses a total land area of 345 square miles (220,800 acres); however, only the uppermost 129 square miles (82,240 acres), or just 37 percent of the entire watershed, drains into the Lake Manatee Reservoir (SWFWMD, 2001). District ownership of the Reserve property ensures that a portion of the contributing area to the Reservoir will be protected from alteration and land uses that could potentially degrade water quality in this important source of public water supply.

The Gilley Creek North and South Units are especially critical to achieving this objective given their location along the downstream end of the Gilley Creek tributary system (Figure 1). Water quality analyses conducted by Manatee County have demonstrated

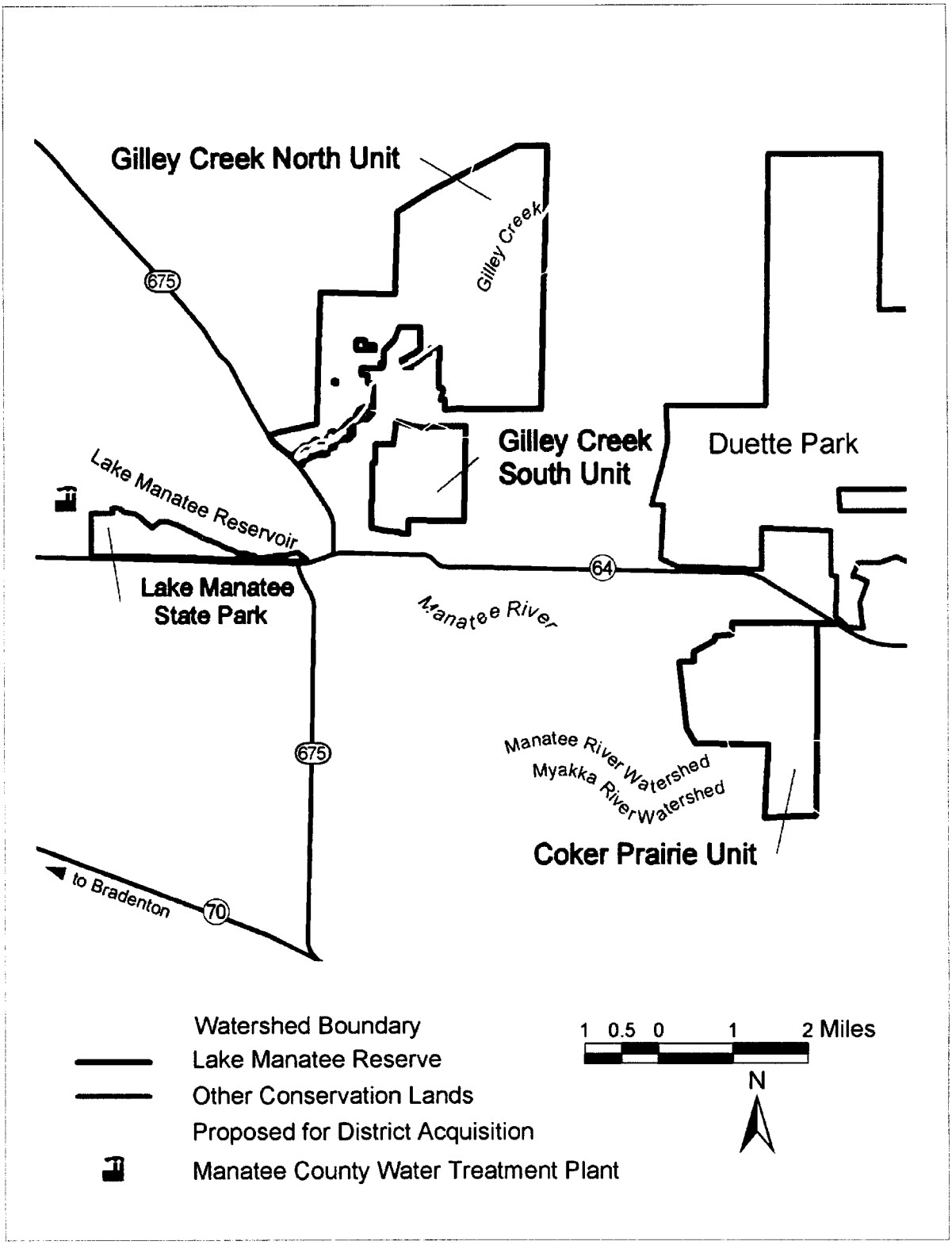

Figure 1. Location of the Lake Manatee Reserve Property.

that nutrient enrichment arising from agricultural land uses in the Reservoir sub-basin is the primary threat to water quality in the Reservoir.

Protection of the Reserve also preserves significant wildlife habitat. The Coker Prairie Unit remains in an essentially natural condition and supports significant stands of rare Florida scrub vegetation. The Gilley Creek Units, though altered to a greater degree than Coker Prairie, also contain remnant stands of natural vegetation. The threatened Florida scrub-jay is present on the Reserve and Gilley Creek North supports a small colony of the Florida Burrowing Owl. The Florida Fish and Wildlife Conservation Commission (FFWCC) delineated "hot spots" of biological resources in Florida by identifying areas that provide habitat suitable for an array of native species (Cox et al., 1994). Figure 2 delineates the "hot spots" identified for the Reserve and the area surrounding it, and provides a relative measure of the Reserve's wildlife value. This value varies considerably among the individual management units; however, the regional significance of the Reserve as a haven for wildlife will probably increase over time as development encroaches from the west. Much of the valuable habitat identified on lands surrounding the Reserve has been converted to row crops and other agricultural usage since the FFWCC study was conducted.

Maintaining a natural connection with the county-owned Duette Park (Figure 1) through additional land acquisition within the approved project area would increase the Reserve's long-term habitat value and the viability of local wildlife populations. The public's recreational use and enjoyment of the Reserve would also be enhanced through protection of a "greenway" linkage between these natural areas. An ongoing effort by Manatee County to create a countywide network of greenways and recreational trails has resulted in delineation of a conceptual greenway network (Manatee County Citizens Trail Committee, 2002). Purchase of the unacquired portions of the project area would further Manatee County's greenway preservation effort while achieving the multiple water resource and natural system protection benefits discussed above.

Land Cover

The following discussion provides a brief description of the natural vegetation and other land cover types present on the Reserve. Figure 3 delineates the extent and configuration of each natural community type.

Wetlands

Wetlands account for a total land area of approximately 1,360 acres, or 17 percent of the Reserve. These include 815 acres of floodplain swamp and 550 acres of freshwater marsh. The distribution of wetlands among the three disjunct management units that comprise the Reserve is not uniform; about 60 percent of the wetland land area is concentrated into the 2,150-acre Coker Prairie Unit, which accounts for little more than 25 percent of entire Reserve land area.

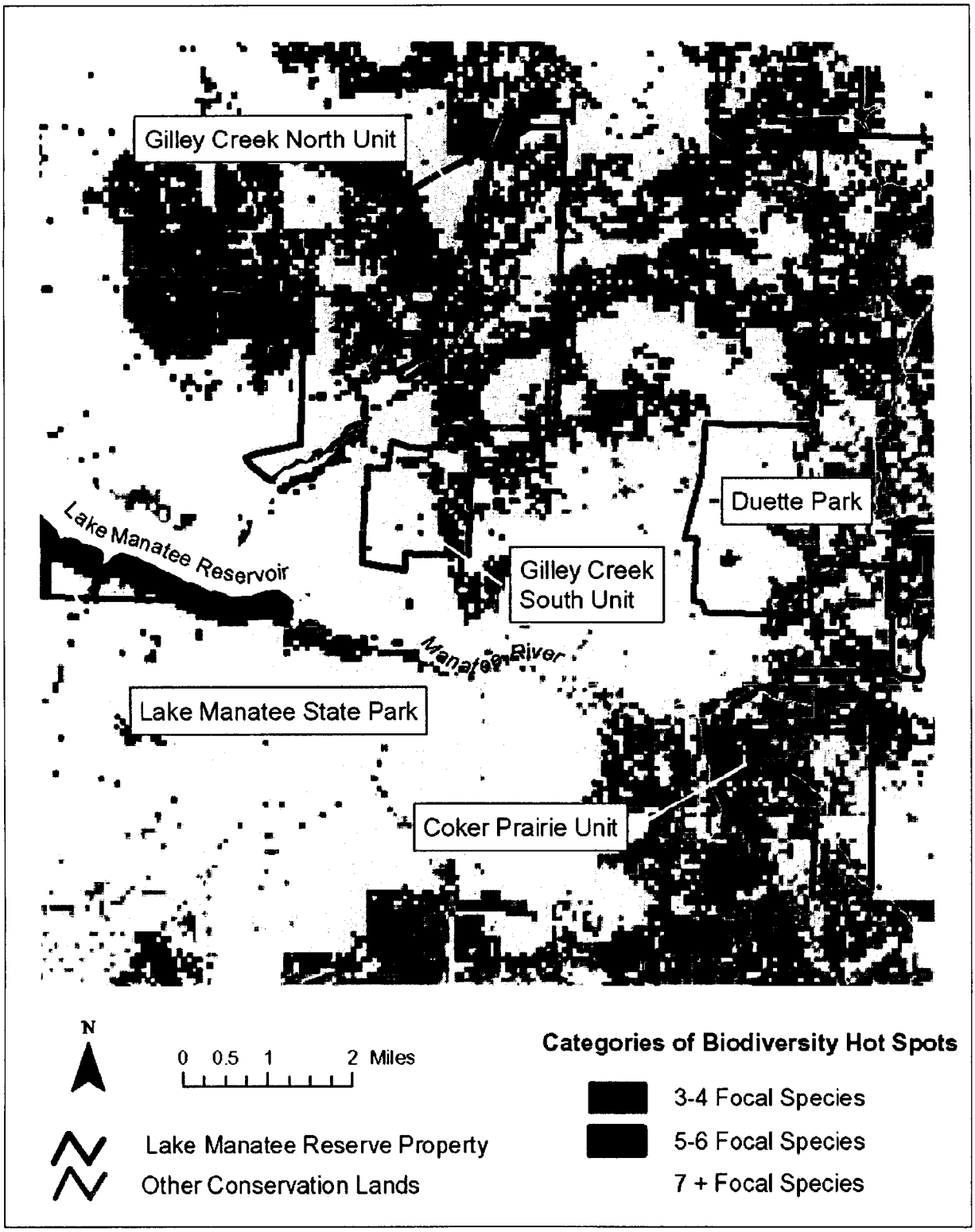

Figure 2. Hot Spots of Biological Resources at the Lake Manatee Reserve and Vicinity. Based on data provided by the Florida Fish and Wildlife Conservation Commission.

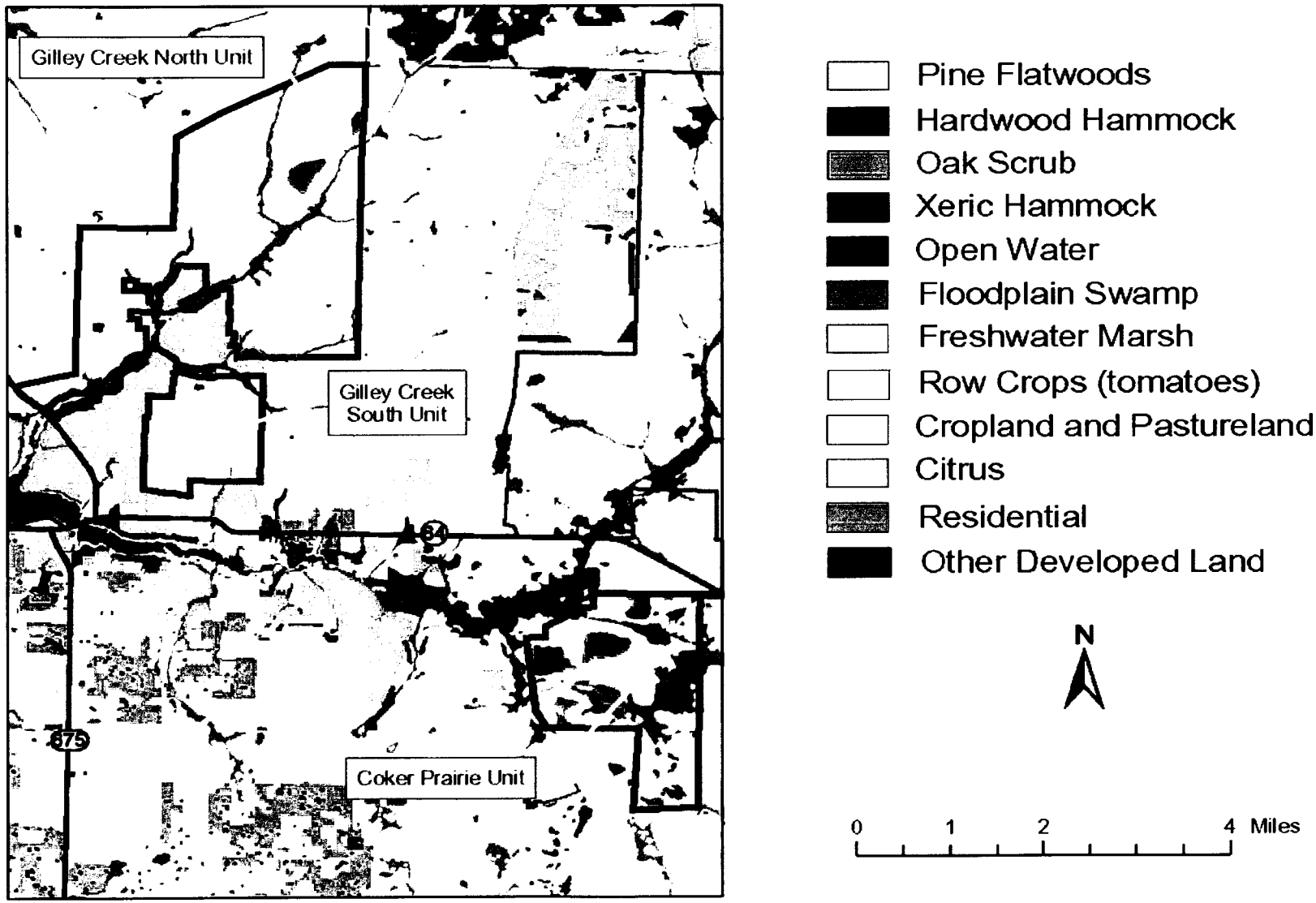

Figure 3. Vegetation Map for the Lake Manatee Reserve and Vicinity.

The floodplain swamp vegetation is closely associated with the water courses that cross the Reserve: Gilley Creek, Coker Creek, and Webb Branch. These forested wetlands are dominated by hardwood species that can tolerate annual flooding of short duration. There is evidence of abnormal stress and mortality among the trees in the floodplain swamp of the Coker Prairie Unit (PBS&J, 1999) and in a portion of the swamp that lines Gilley Creek in the Gilley Creek North Unit. The stress and mortality resemble that observed in the Zone of Potentially Abnormal Mortality and Stress (ZPAMS) in the District's Flatford Swamp Preserve property to the south.

In 1998, in response to the stress and mortality documented in Flatford Swamp canopy, the District initiated an investigation into the cause of the abnormal tree die-off. The investigation concluded that a protracted increase in dry-season water levels was the cause of the die-off (Coastal Environmental, 1998). Seepage from surrounding agricultural lands was identified as the primary source of excessive dry-season water levels in the swamp. A subsequent study that expanded the geographic scope of the investigation noted the appearance of abnormal tree mortality in Coker Prairie's forested wetlands as early as 1995. By 1998, the ZPAMS had expanded to encompass virtually the entire floodplain swamp of the Coker Prairie Unit of the Reserve (PBS&J, 1999).

A narrow strand of floodplain swamp lining Gilley Creek in Gilley Creek North also appears to be exhibiting abnormal tree mortality. The area, which is approximately 8 acres in size, has not been the subject of a formal investigation to confirm the abnormal mortality or to ascertain its cause. The restoration of a natural canopy to these affected wetland systems is one of the primary resource management objectives for the Reserve. Please refer to the discussion of habitat restoration on page 23 for a more detailed treatment of this issue.

Most of the freshwater marsh is concentrated in the Coker Prairie Unit and is associated with the Coker Prairie wetland system, which serves as the headwaters of both Coker Creek and Webb Branch. The other occurrences of freshwater marsh are small, isolated systems scattered through the upland portions of all three units of the Reserve.

An important ecological distinction between the large marshes in Coker Prairie and the smaller, isolated depression marshes occurring elsewhere on the Reserve, is the greater likelihood of the latter to dry up on a seasonal basis. Such ephemeral wetlands provide critically important habitat for many amphibian species because they are free of fish and other aquatic predators that make it difficult for such species to reproduce successfully. These isolated marshes have probably burned regularly through exposure to fires that erupted in adjoining upland areas. It has been estimated that fires would occur naturally in marsh systems at a frequency of once every 1-5 years (FNAI and DNR, 1990). Fire in marsh habitats helps to maintain a preponderance of herbaceous vegetation by precluding the establishment of woody shrubs and trees. Continued exposure to fire

through the District's prescribed burning program will be essential to maintaining the depression marshes and their contribution to the habitat values and heterogeneity of the Reserve's landscape.

Uplands

Over 80 percent of the Reserve property supports upland vegetation consisting primarily of pine flatwoods, oak scrub, and mesic hammock communities. Aerial photography suggests that by 1950 a sizable portion of the Reserve had been converted to improved pasture. During the 1980s, much of the pasture was converted again for the cultivation of citrus and row crops. The unaltered uplands were used as native range to support cattle grazing. Subsequent to acquisition by the District, agricultural land uses ceased on the property and much of the improved agricultural land has since lain fallow. These areas, totaling approximately 1,470 acres (18 percent of the Reserve), are distinguished as pastureland in Figure 3.

The natural uplands are dominated by pine flatwoods (Figure 3), which account for approximately 3,800 acres, or nearly half of the Reserve land area. The historic harvest of pines by previous landowners is still apparent due to a sparse overstory dominated by relatively young pines. Ongoing District management will allow the flatwoods to continue recovery from this historic land use and thereby enhance the wildlife habitat values of the Reserve.

The District's resource management approach will also benefit the Reserve's 400 acres of xeric vegetation. Oak scrub (300 acres total) and xeric hammock (100 acres total) are patchy in distribution, with the vast majority occurring on the Coker Prairie Unit. The xeric hammocks represent an advanced stage of oak scrub that has developed due to suppression of fire. Some of the stands identified as xeric hammock have a dense overstory of sand pine that also reflects a history of fire suppression. These areas are more accurately referred to as sand pine scrub, but are difficult to map at this scale and have been lumped into the xeric hammock category. As with the pine flatwoods, the District's prescribed burning program has been tailored to mimic the natural occurrence of fire and will progressively restore a more natural condition to these areas and enhance habitat value. Recent observations suggest scrub-jay numbers may be increasing at Coker Prairie (Will VanGelder, pers. comm.), and the presence of this threatened species has also been confirmed by occasional sightings at Gilley Creek North.

The Gilley Creek North and Gilley Creek South management units were evaluated to identify pastures that could be leased for environmentally compatible cattle grazing. The evaluation considered a range of issues, and the grazing lease that was subsequently executed was designed to minimize impacts to both the environment and future recreational usage of the Reserve. An area of former pasture at Gilley Creek North has been planted with native pines and designated a Timber Management Zone where the District will cultivate the pines for future harvest and revenue generation. Consistent with longstanding District policy, these

revenue-generating uses will be focused primarily in those previously altered areas identified as pastureland in Figure 3. Please refer to page 17 for a detailed discussion of revenue-generating multiple uses that may be implemented on the Reserve. An area located in the northeast corner of Gilley Creek North that formerly supported row crops will be restored to natural vegetation as part of an ongoing habitat restoration project.

Areas of Responsibility

The acquisition of land important to the management of water resources is an important element in the District's effort to meet its four primary Areas of Responsibility (AORs). These AORs are flood protection, water supply, water quality, and natural systems protection. The Reserve's contribution to meeting these responsibilities is discussed in detail below. The primary water management benefit associated with District ownership of the property is water supply protection.

Water Supply Protection

Most residents of Manatee County derive their potable water from the Manatee County Water Purification Plant located on the southwestern shore of the Lake Manatee Reservoir (Figure 1). The Water Purification Plant has a maximum treatment capacity of 84 million gallons per day (gpd) and treats an average of 42 mgd. The treated water is a combination of surface water withdrawn from the Reservoir and groundwater withdrawn from a series of wells located on the County-owned Duette Park property. Approximately 67 percent of the water comes from the Reservoir, which was formed by the construction of a dam across the Manatee River from 1965 to1967.

Gilley Creek discharges directly into the Reservoir and is the primary tributary to the upper Manatee River above the dam. The Gilley Creek North and South management units comprise a large portion of the Gilley Creek sub-basin, including the creek's southern branch. The Coker Prairie Unit directs outflow via Webb Branch into the upper Manatee River. It also protects a small portion of the neighboring Little Fort Crawford Creek sub-basin.

Protection of the Reservoir's contributing sub-basins, and the resulting protection this confers to Manatee County's most important water supply source, was the primary rationale for District acquisition of the Reserve. The management approach employed on these lands is designed to maintain the Reserve's valuable contribution to the District's water supply mission.

Water Quality Protection

The protection of water quality in Gilley Creek and Webb Branch is an important element of the District's goal to maintain the water supply value of the Reserve. All the Manatee River tributaries upstream of the Reservoir have been designated Class I waterbodies by the State of Florida based on their use as a source of potable water (Chapter 62-302.400, F.A.C.). Protecting water quality in the Reservoir is as fundamental to protecting its water supply values as is maintaining the inflow of water.

In 1998, the United States Environmental Protection Agency

(USEPA) included Gilley Creek in the list of impaired water bodies prepared as a requirement of Section 303-(d) of the Clean Water Act. Coliform, nutrients and dissolved oxygen were listed as the parameters of concern and nutrient levels in the Reservoir had occasionally tested high due to nitrogen content. However, data collected from 1990 through the present suggest that nutrient levels have declined, while coliform and minerals have increased and dissolved oxygen levels are sometimes low (Mark Simpson, Manatee County Water Plant, pers. comm.). The mineralization has been attributed to increases in the use of groundwater to irrigate agricultural lands in the upper watershed.

District protection of the Reserve will help to maintain water quality in the Reservoir. The period of decline in nutrient levels coincides with the period of District ownership, although a direct link to the changes in on-site land use that have occurred since the District acquired the property has not been documented. Natural treatment of surface water draining from neighboring farm fields and other up-gradient agricultural lands through the Reserve's wetlands will also assist in the maintenance of water quality.

The USEPA's 2004 "303-(d)" Master List points to the need for additional monitoring to track water quality conditions in the Reservoir and most of its tributary streams. These include Gilley Creek, which has been placed on the Planning List for continued monitoring. Despite occasional water quality problems, the Florida Department of Environmental Protection reports that water quality in Gilley Creek complies with Federal Clean Drinking Water Act and Florida Safe Drinking Water Act standards. Manatee County will continue to monitor water quality conditions rigorously in association with its use of the Reservoir as source of potable water. Some of the County's monitoring stations are located on the Reserve, or must be accessed by crossing the property. The District will coordinate with the County to ensure they enjoy unimpeded access to these monitoring sites.

Management Actions:

- **Ensure that Manatee County continues to have unimpeded access to the water quality monitoring stations located on, or accessed through, the Reserve property.**

Flood Protection

Flood protection depended historically upon a structural approach to provide for the storage and controlled conveyance of floodwater. A non-structural approach has since been adopted as the more environmentally benign, cost-effective strategy in areas where such an approach is feasible. The District's primary flood protection strategy depends upon identifying and preserving natural floodplains and other land that can serve as storage areas for storm-generated floodwater.

Figure 4 illustrates the extent of flood prone areas at the Reserve. A total of approximately 1,850 acres, or 23 percent of the Reserve, is distinguished as flood prone because it lies within the 100-year floodplain as defined by the Federal Emergency Management Agency, or is wetland located outside the defined floodplain. Most of the flood prone area is concentrated in the Coker Prairie Unit and conforms with the limits of the Coker Prairie wetland system. Indeed, nearly 60 percent of the Reserve's total wetland land area is concentrated in the Coker Prairie Unit of the Reserve. This portion of the Reserve straddles the divide between the Manatee River and Myakka River watersheds (Figure 4). Nearly half of the Coker Prairie wetland drains southward to Flatford Swamp and the Myakka River via Coker Creek. The remainder drains to the Manatee River via Webb Branch.

The limited floodplain in the Gilley Creek North and Gilley Creek South Units (Figure 4) provides for limited detention before conveying flood water to the Lake Manatee Reservoir via the narrow, incised channel of Gilley Creek. The Reservoir serves as the primary water storage area in the middle reaches of the Manatee River watershed. As such, the contribution of the Gilley Creek units to regional flood protection is relatively minor and is exceeded by that of the Coker Prairie Unit, which is better suited for the storage and attenuated release of flood water. Maintenance of the Reserve's flood protection value will be achieved through simple preservation of the property and it's innate storage and attenuation characteristics.

Natural Systems Protection

Many of the Reserve's natural systems values were recounted in a preceding discussion of the property's attributes (page 3). Approximately 80 percent of the Reserve supports native vegetation that is characteristic of at least six different natural community types. These areas provide habitat for a diverse array of native wildlife species, including several that receive protection due to documented imperilment (FFWCC, 1997). The Reserve's importance as a refuge for wildlife will increase as residential construction and other land development continues to encroach from the west. The management approach outlined by this plan will maintain the Reserve's value to regional wildlife populations and to natural systems protection.

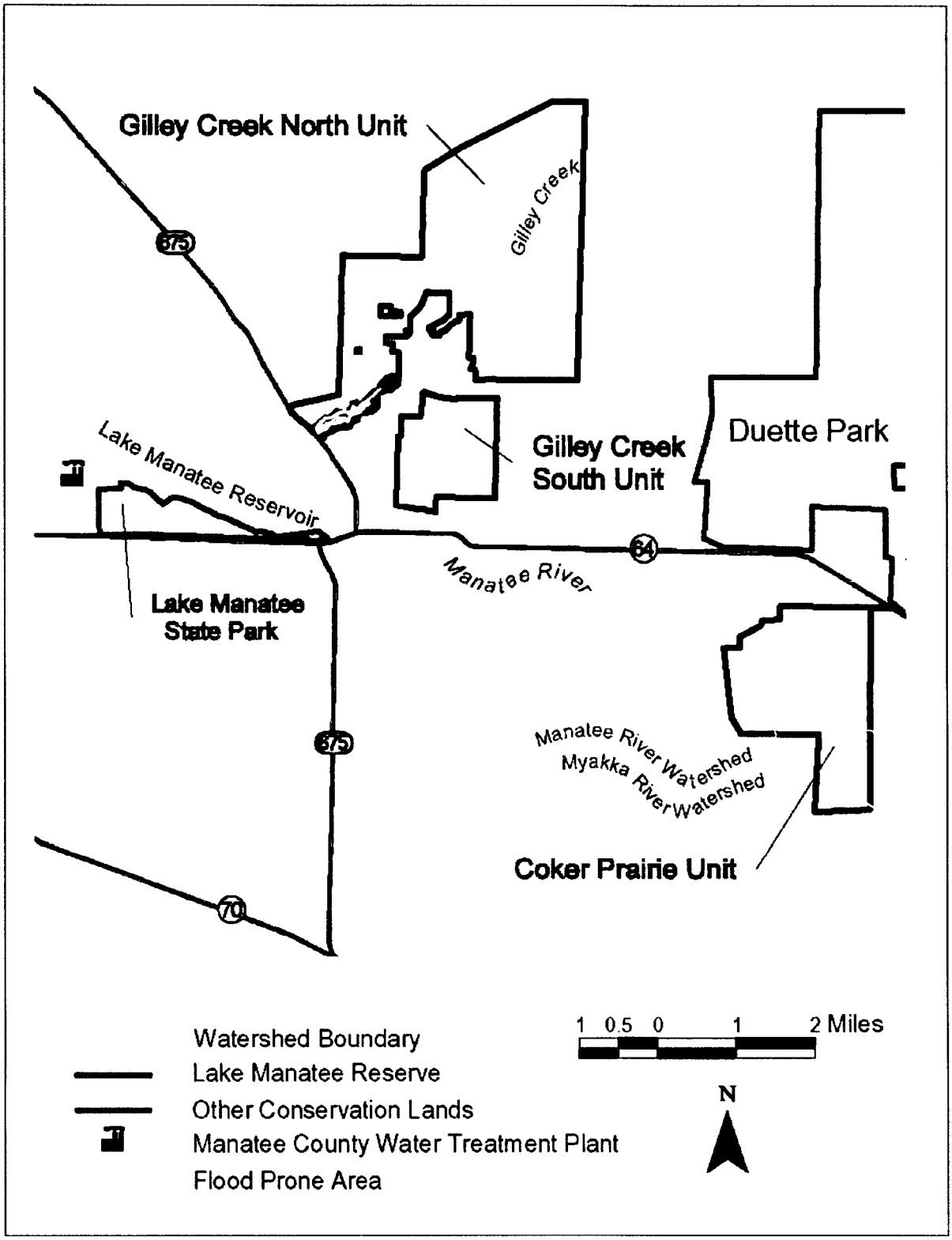

Figure 4. Flood Prone Areas in the Lake Manatee Reserve and Vicinity. Areas distinguished as flood prone include wetlands and the 100-year floodplain as delineated by the Federal Emergency Management Agency.

CONCEPTUAL LAND USE PLAN

Land Use

Recreation

Recreational usage of District lands is guided by Board Policy 610-3, which directs that such usage be permitted provided it is compatible with natural resource management and protection needs. Typically, recreational usage of District land is limited to activities that are "resource-based." Resource-based activities consist of those outdoor recreational or educational pursuits in which natural surroundings are a fundamental requirement for engaging in the activity.

Recreational uses that will be permitted on the Reserve include hiking, horseback riding, picnicking, primitive camping, birding and other forms of nature study. Each management unit will be dedicated to a different mixture of uses based on such site-specific factors as size, accessibility, land cover characteristics, and suitability for revenue-generating multiple uses.

Gilley Creek South, which at 1,100 acres is the smallest of the three parcels, will not be made available for recreational use. Approximately half of the Gilley Creek South land area is improved pasture. Much of the remainder supports pine flatwoods that have been semi-improved through the planting of non-native pasture grasses. This unit is also difficult to access from a public right-of-way. These factors limit its utility and attractiveness for recreational use, while increasing its potential to serve as leased grazing land that will generate revenue to support the District's land management program. As such, nearly the entirety of Gilley Creek South has been incorporated into a grazing lease (Figure 5). If Gilley Creek South ever ceases to be leased for cattle grazing, and if its recreational potential increases due to the acquisition of adjoining lands or other changing circumstances, then this portion of the Reserve will be made available for recreational use.

The limited recreational potential of Gilley Creek South stands in contrast to that of the other units. Coker Prairie remains in an essentially unaltered condition and supports outstanding occurrences of several natural community types. Coker Prairie will be made available for hiking, primitive camping, birding, and other nature study. It is not conducive to equestrian use due to the limited overall size of the unit, a high proportion of wetland, and the prevalence of unconsolidated sandy soils. Approximately 37 percent of the 2,150-acre parcel is wetland and much of the upland land area is sensitive oak scrub habitat characterized by loose sands that cannot withstand sustained use by equestrians. The distribution and limited extent of the remaining uplands make them incapable of providing a satisfactory experience for equestrians. Alternatively, the diverse and scenic natural landscape, and the relative isolation of the parcel, make it attractive for day hikes, birding and nature study. A primitive hike-in campsite will be designated at an interior location to enhance Coker Prairie's recreational potential by

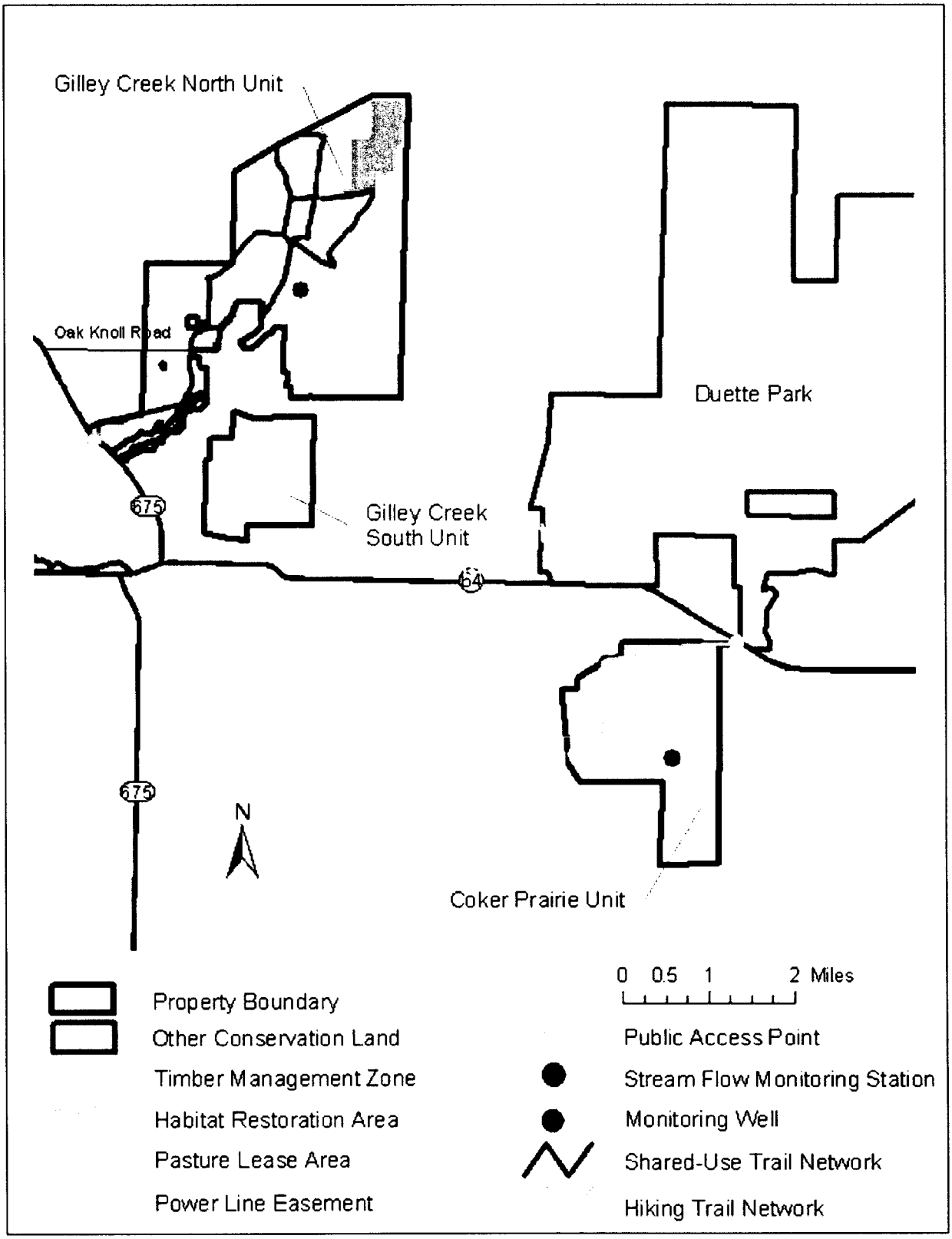

Figure 5. Conceptual Land Use Plan for the Lake Manatee Reserve.

accommodating overnight hiking trips. The total length of hiking trail at Coker Prairie is approximately 6 miles (Figure 5).

Gilley Creek North will be made available for the full range of recreational uses, with the sole exception of primitive camping. With a total land area of 4,700 acres and a small proportion of wetland, Gilley Creek North provides a trail network approximately 12 miles in length. This length of trail is sufficient to satisfy the needs of equestrians and is designated as shared-use trail (Figure 5). There is also potential for the Gilley Creek North trail system to be incorporated into a larger regional network. Manatee County has completed a study that identified a conceptual countywide greenway network (Manatee County Citizens Trail Committee, 2002). The conceptual network identifies an East County Spine Trail that follows a privately owned utility easement bordering the northern boundary of Gilley Creek North (Figure 5). The trail identifies connections northward into Hillsborough County, and includes a southern leg that links with the Lake Manatee State Park.

Maintaining a natural connection with the County-owned Duette Park (Figure 1) by acquiring additional land within the approved project area would increase the Reserve's water management values and natural system value while also creating a recreational greenway linkage between these natural areas. This District will coordinate with Manatee County in any cooperative efforts to protect additional lands within the approved project area.

Management Actions:

- **Make the Reserve available for hiking, horseback riding, primitive camping, birding and various forms of nature study consistent with site-specific limitations.**

- **Construct entrance facilities to accommodate the site-specific recreational uses enumerated in this plan.**

- **Coordinate with Manatee County to integrate recreational use of the Reserve into the conceptual greenway system envisioned by the county, and to maintain a greenway linkage with Duette Park.**

Public Access

Public access points have already been established for both the Coker Prairie and Gilley Creek North units (Figure 5). The Coker Prairie access point is located on State Road 64 and Gilley Creek North is accessed from County Road 675 (Figure 5). The acquisition of these parcels was designed to ensure each site would have a legal point of access from a public right-of-way.

Each access point provides a parking area and walk–thru entrance. Measures to enhance the designated network of trails will also be undertaken, including the installation of interpretive signs at appropriate points of interest, and construction of a kiosk at each entrance to provide a central location for the

dissemination of informational literature. Vehicular access beyond the entrance facilities will not be allowed, although special permits may be granted on a case-by-case basis to allow vehicular access to the interior of the parcels to accommodate special circumstances.

Limitations on vehicular access are imposed to reduce the Reserve's exposure to the physical disturbance and unauthorized activities that can result from uncontrolled and unsupervised vehicular access. Roads and vehicular traffic have also been demonstrated to produce a variety of detrimental impacts to wildlife and contribute greatly to the habitat fragmentation that threatens the long-term survival of much of Florida's native wildlife. Finally, restrictions on vehicular access enhance the property's attractiveness for trail use and other recreational activities that benefit from solitude and undisturbed natural surroundings.

The entrance to the Gilley Creek North Unit is designed to accommodate access by equestrian users. An additional walk-thru entrance may eventually be constructed on the unit's northern boundary if the adjoining private lands are incorporated into the recreational trail network through implementation of Manatee County's conceptual greenway plan.

The only access available to Gilley Creek South is via an easement that allows access by District staff and its assigns, but precludes use by the public. The absence of public access to this unit is not problematic due to its very limited recreational potential and, as stated previously, it has been leased for cattle grazing.

Wet Crossings

Access through both the Gilley Creek North and Coker Prairie Units is hindered by natural watercourses that must be successfully negotiated to make large segments of the Reserve accessible to recreational users. The Gilley Creek North segment of the Gilley Creek system includes several minor tributaries, or branches, that discharge to the main stem of the creek. The Coker Prairie Unit is subdivided by Webb Branch and a tributary of Little Fort Crawford Creek. Several locations where the designated trail network intersects these watercourses must be improved through the construction of stabilized wet crossings. Stabilization will reduce erosion rates at these locations while enhancing public safety and expanding opportunities for year-round recreational access.

An existing wet crossing of Gilley Creek, which has a long history of use by both the previous owner and District staff, has experienced severe erosion that is a source of sedimentation in the stream channel. The localized deposition of sediment is impounding water upstream of the crossing during periods of high flow, and may be a factor in the tree die-off observed in this portion of the Gilley Creek floodplain. The damage at this site also impedes vehicular travel by District staff engaged in official land management duties. The portion of Gilley Creek North lying east of Gilley Creek will not be opened for public use until a stabilized wet crossing, suitable for both vehicular and equestrian traffic, has been constructed at this location.

The improvements constructed at each wet crossing will be designed to accommodate the site-specific uses for which the area has been designated, i.e., the Gilley Creek North crossings will be designed for equestrian use, while those at Coker Prairie will be designed for hikers. They will also be designed, where necessary for land management purposes, to accommodate vehicular use. The crossings at Coker Creek are quite short and consideration will be given to constructing footbridges that obviate the need for hikers to ford these crossings of Webb Branch and Little Fort Crawford Creek.

Creation of New Trails

Although the future development of new recreational trails is not precluded entirely, the development of such trails typically must be conducted in partnership with a local government and/or organized user group, e.g., the Florida Trail Association, who will assist with trail delineation, construction, and long-term maintenance needs. The network of existing trail roads is a legacy of past agricultural use and the creation of new trails through undisturbed portions of the Reserve will not be undertaken until appropriate wildlife surveys and research have been completed. Information provided by such surveys will be essential to guiding future decision regarding any expansion of public use. In summary, prerequisites to creation of new trails will include: formation of a partnership with a local government or established user group; confirmation there is a need or demand for additional trails; and completion of wildlife surveys and other research that ensure the trails will be configured to minimize environmental impacts.

Existing trail roads that are not projected to be needed for future land management purposes, or roads that traverse wetlands or other sensitive natural features, will be retired from use to promote the recovery of native vegetation and to enhance their attractiveness and potential for future recreational enjoyment and wildlife usage.

Management Actions:

- **Construct wet crossings and/or footbridges to enhance year-round accessibility for recreational use and to reduce erosion.**

Multiple Use Potential

In 1996, the District began to evaluate various alternatives for generating revenue on District-held lands in order to assure a continuous source of funding to support land management. Legislative constraints on the use of lands held in trust by the District limited the range of options to those that would be compatible with resource protection needs. As a result, the District considered only those alternatives that would capitalize on existing resources and not result in the alteration of natural, undisturbed lands. Fallow improved pastures were analyzed to determine viability for revenue-generating cattle leases, harvesting of hay, or timber production (Fox and Tully, 1996a; SWFWMD, 1997). Likewise, existing stands of planted pine on District lands were evaluated to project their long-term capability to support continuous, sustainable timber harvests (Fox and Tully, 1996). This comprehensive

analysis resulted in the designation of more than 8,000 acres as Timber Management Zones (TMZs) where sustainable silviculture will be practiced to provide a continuous revenue stream to support land management. Appropriate pastureland has been leased to private citizens to serve as grazing sites for cattle or as sites for the harvest of hay.

Two fallow pastures in Gilley Creek North have been dedicated to timber production as TMZs (Figure 5). These TMZs account for a total land area of approximately 470 acres. The westernmost TMZ is approximately 300 acres in size, and the other accounts for the remaining 170 acres. Both have already been planted in longleaf pine.

An analysis also determined that it would be consistent with the District's multiple use protocols to lease several pasture areas for cattle grazing. A range management plan (PBS&J, 2001) evaluated the compatibility of cattle grazing on the Reserve and calculated stocking rates for various sites. A grazing lease was executed in 2004. The grazing will be confined to specified pastures in the Gilley Creek North and Gilley Creek South Units, and will be managed consistent with the District's resource management objectives. Approximately 1,812 acres of the Reserve have been incorporated into the grazing lease (Figure 5).

Management Actions:

- **Manage the two Timber Management Zones in the Gilley Creek North Unit of Reserve to produce a sustained yield of timber.**
- **Ensure that the grazing of cattle on the Gilley Creek North and South Units is conducted according to best management practices and is consistent with terms of the executed grazing lease.**

Utilities and Other Public Facilities

Consistent with legislation adopted by the State of Florida in 1999, lands acquired through state-funded acquisition programs can be used for a variety of public facilities. These include utility lines and other linear facilities, storm water management projects, and water supply development projects. Approval of such uses is contingent upon a number of criteria, including: the use must be compatible with the natural resource values of the property; reasonable compensation must be provided to the titleholder of said lands; the proposed use must be in the public interest; the use must be located appropriately on the lands with due consideration given to use of other lands; and the proposed use must be consistent with the management plan for the property.

The monitoring wells located on the Reserve meet the criteria established for making public conservation lands available for such uses. The installation of additional monitoring wells may be considered in the future. No other public facilities are currently projected for the property.

Management Actions:

- **Ensure that any utilities or other public facilities permitted to locate on the Reserve are consistent with statutory guidelines established for permitting such uses of publicly owned conservation land.**

Security

Security will be maintained on the Reserve through several means. The District's Land Resources staff, and to a limited extent the staff of other departments, will assist with security by maintaining a regular presence on the property through the course of conducting normal land management activities. Supplemental security will also be provided by limiting access points and restricting vehicular access. In accordance with District policy 610-3, perimeter fencing will be maintained around the perimeter of the Reserve.

Informational signage can aid in providing security by keeping the public informed of permitted and prohibited activities. Limiting public use to daylight hours will also help to reduce both security concerns and concerns related to public safety. Vehicular access and nighttime use of the Reserve will remain limited to those users holding special permits, as issued by the District on a case-by-case basis. The cattle-grazing lease executed for the Reserve will also enhance security by maintaining additional presence on the property.

If serious breeches in security are experienced, the District will consider entering into a contractual agreement with a private security contractor or other party to patrol the Reserve during "off hours." Such patrols would confer a measure of security that cannot be attained solely by District staff patrolling the site during work hours.

Special Protection Areas

Areas that are extremely sensitive to disturbance, that harbor unique or regionally significant natural features, or that play a critical role in maintenance of the water management values attributed to the Reserve, merit designation as Special Protection Areas. Typically, Special Protection Areas must be discrete features that can be readily defined. Although public access to such sites is not normally prohibited, protective measures will take precedence over most other land use and management considerations. Special Protection Areas (SPAs) designated for the Reserve include: monitoring sites established as part of the District's water management data base network; known archaeological sites; active scrub-jay and burrowing owl habitat; a 324-acre habitat restoration site; and a Department of Transportation (DOT) wetland mitigation site located on the Gilley Creek South Unit. Additional information on these sites or features is provided below. Additional SPAs may be established in the future in recognition of other significant resource values or concerns.

Monitoring Stations

There are currently several monitoring sites established on the Reserve. These include a monitoring well at Gilley Creek North and a stream-flow monitoring site at Coker Prairie (Figure 5), and water quality monitoring stations used by Manatee County in association with the Reservoir's use as a source of potable water. Other monitoring sites may be established in the future to monitor hydrologic conditions. All existing and future on-site monitoring stations will be treated as SPAs throughout the duration of their use. Land management and maintenance activities, as well as improvements to accommodate the public's recreational use of the Reserve, will be designed to avoid any alterations or changes that would damage the sites or confound the interpretation of data collected from them.

Management Actions:

- **Treat on-site monitoring stations as Special Protection Areas to prevent physical disturbances that would compromise their continued value as resource monitoring sites.**

Scrub-Jay Management Zones

The Florida scrub-jay has been designated a threatened species by both the United States Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FFWCC). The presence of at least two families of jays has been documented on the Reserve. On-site patches of scrub vegetation that are occupied by scrub-jays will be treated as Special Protection Areas to help ensure continued habitation by this species. The scrub-jays imperiled status is attributed largely to habitat loss and fragmentation resulting from both land development and the long-term suppression of fire in the xeric habitats on which the species is dependent. The use of prescribed fire in ongoing management of the Reserve, as discussed in a subsequent section of this plan, will be tailored to maintain habitat conditions conducive to the Florida scrub-jay. Where necessary, mechanical treatments will be employed to restore areas of scrub that have been affected by long-term fire suppression.

Scrub-jays are also present on the publicly owned Duette Park property (Figure 1) and an ongoing project to translocate scrub-jays to a neighboring, privately owned parcel may result in an expansion of the regional metapopulation. The relocation site is situated between occupied habitat at Coker Prairie and Duette Park, and is owned by IMC Global, Inc (IMC), which is engaging in the relocation project to mitigate for impacts to the species on lands they will mine. A recovery plan for the species (USFWS, 1999) emphasizes the importance of coordinating scrub-jay management among adjoining or proximate conservation tracts. The District will continue ongoing coordination with both Manatee County and IMC to ensure an holistic approach to management and protection of the local scrub-jay metapopulation. Such coordination will include a bird-banding project that will enable the population to be monitored more effectively.

Management Actions:

- **The use of prescribed fire and/or mechanical methods will be employed to maintain or restore habitat conditions conducive to continued habitation by the Florida scrub-jay.**

- **Survey the Reserve's oak scrub and scrubby flatwood sites for the presence of scrub-jays on at least an annual basis, and immediately prior to conducting any prescribed fires within or adjacent to occupied habitat. If surveys for the presence of Florida scrub-jays identify new occurrences, the prescribed burning strategy for such sites shall be amended, as necessary, in a manner consistent with perpetuating such colonization.**

- **The District will continue to coordinate with both IMC and the managers of nearby publicly owned tracts that support scrub-jays to ensure that the local scrub-jay metapopulation is managed in an holistic manner, rather than as individual occurrences, and emphasizing the need for maintenance of potential movement corridors among tracts.**

Active Burrowing Owl Habitat

A number of breeding pairs of the Florida burrowing owl have colonized an area in Gilley Creek North. The Florida burrowing owl has been designated a Species of Special Concern by the FFWCC. The species requires open, well-drained areas with low vegetative growth in which to construct burrows and breed. The occupied Gilley Creek North habitat is located in and around an improved pasture that has been incorporated into the proposed cattle grazing lease. Grazing cattle are not inherently incompatible with productive burrowing owl habitat, as illustrated by regular co-occurrence elsewhere within the species' range. Pastures and ruderal grasslands associated with human development have become increasingly important potential burrowing owl habitat as the species' natural dry prairie and sandhill habitats continue to be supplanted by development. Grazing by cattle helps to maintain the low grass height and openness that is characteristic of occupied habitat. Protection from harassment by precluding recreational use of the leased pasturelands used for nesting, and preventing the destruction or degradation of burrows by establishing appropriate limitations on grazing densities, will help to ensure continued habitation by burrowing owls. At least two burrows have been established in the dry prairie vegetation surrounding the occupied pasture, and management in these areas will be tailored to induce continued habitation in the dry prairie.

Management Actions:

- **Any future cattle grazing lease will include conditions on grazing density, range management, prescribed burning, and other applicable**

issues to ensure the grazing is managed in a manner that will be compatible with continued habitation of the Reserve by burrowing owls.

Wetland Mitigation Site

The Department of Transportation (DOT) implemented a wetland mitigation project on the Gilley Creek South Unit in response to wetland impacts associated with roadway improvements on SR 64. Agricultural uses conducted on the property prior to District acquisition had been facilitated by draining on-site marshes with a series of inter-connecting ditches. The DOT project restored pre-alteration wetland hydrology by back-filling drainage ditches and planting native wetland vegetation. Management of the Gilley Creek South Unit will be conducted in a manner that supports continued recovery of the mitigation wetlands and associated upland buffers. When it has been determined that the mitigation project has met all applicable success criteria and been deemed complete, the Special Protection Area designation will be rescinded.

Habitat Restoration Sites

A habitat restoration project will be implemented on a 330-acre site in the northeast corner of the Gilley Creek North Unit (Figure 5). The project will restore pre-alteration plant communities to former farm fields. Approximately 46 acres of scrub, 142 acres of scrubby flatwoods, and 137 acres of dry prairie will be restored to the site through the installation of native plants and routine management actions that will promote the regeneration of these communities. Restoration activities are scheduled to begin during the 2005 fiscal year and to be completed during the 2008 fiscal year.

As described in the discussion of habitat restoration on page 25, areas of scrub habitat that have succeeded to xeric hammock due to long-term fire suppression are also undergoing restoration. A combination of mechanical methods and prescribed fire are being employed at these sites. These, and any additional restoration sites established in the future, will be managed as Special Protection Areas until restoration has been determined to be complete.

Archaeological Sites

Surveys have identified eight archaeological sites situated along the periphery of the Gilley Creek stream channel. The limits of two of the sites cross the property line and lie partially in the Gilley Creek North Unit. The reports on these sites acknowledge that both have been subjected to major disturbance related to construction of the Lake Manatee Reservoir and a long history of agricultural usage. Both are deemed to merit no additional research; however, the District will conduct future management activities and direct recreational use in a manner that will prevent any additional disturbance to these sites.

Management priorities for these sites will focus primarily on prevention of looting. Land management personnel assigned to the Reserve, and any security staff potentially assigned to the property in the future, will be apprized of the locations of these sites and will be

instructed to monitor them. Although the District does not generally provide funding to support archaeological investigations and assessments, any additional sites found at the Reserve will be made available for supervised study by professional archaeological researchers. Proposals to conduct such research will be reviewed by the District on a case-by-case basis and must satisfy any requirements or protocols dictated by the Division of Historical Resources of the Florida Department of State.

The other archaeological sites along the Gilley Creek channel are located wholly on neighboring private lands situated between the Gilley Creek North and Gilley Creek South Units. A future cattle-grazing lease may designate a cattle crossing through these intervening private lands that would allow cattle to be rotated among the pastures of Gilley Creek North and Gilley Creek South. These archaeological sites, like the two sites located partially on the Gilley Creek North Unit, have already been subjected to major disturbance. However, the District will ensure that any future site designated as a cattle crossing in this location will be selected to avoid additional disturbance to these documented archaeological sites.

Management Actions:

- **Direct future recreational improvements, structures, or other land-disturbing activities away from any known archaeological sites, or plan and conduct such activities in a manner that avoids impacts to such sites.**

Land Management

The District engages in a variety of land management activities designed to protect or enhance the natural resource values of its properties and to ensure public safety. The following is a discussion of some of the management practices and resource protection measures (see Appendix A) to be employed at the Reserve.

Prescribed Fire

Prescribed fire is the most important management tool available to managers of conservation land in Florida. Approximately 6,500 acres (82 percent of total land area) of the Reserve supports vegetation that is dependent on recurring fire for its long-term maintenance and viability. These include the pine flatwoods, oak scrub, and freshwater marsh communities. In the prolonged absence of fire, the vegetative structure, species composition, and habitat values of these areas would be degraded.

The inclusion of a detailed prescribed burning strategy is beyond the scope of this plan. Burn plans are developed for each District-held property individually, and independently of site-specific land management plans such as this. The District's land management staff has extensive experience in the use of prescribed fire and a burning program has already been implemented on the Reserve. Generally, prescribed fires on the Reserve will continue to be designed to mimic natural, lightning-induced fires. Appropriate burn seasons and fire return frequencies are established for each fire-maintained community and will be adhered to whenever possible. Burns

will attempt to create a natural mosaic of burned and unburned patches to maximize heterogeneity of the landscape.

Smoke management will continue to be one of the most problematic issues associated with implementation of the prescribed burning program due to proximity of residential development and publicly traveled transportation corridors. Prescription parameters will be designed to minimize the impact of fire-generated smoke on surrounding lands. Fire breaks have already been established along those portions of the Reserve perimeter that adjoin privately owned lands, and these fire breaks will be maintained through regular discing or other mechanical methods to prevent the escape of fire onto surrounding properties.

Management Actions:

- **Continue implementation of the prescribed burning plan for the Reserve's fire-dependent natural communities and continue to emphasize prescription parameters designed to prevent the escape of fire to adjoining properties and minimize the potential for placement of fire-generated smoke over sensitive areas.**

- **Conduct prescribed fires during the growing season, to the greatest extent practicable, in order to most effectively mimic the effects of natural fire.**

Habitat Restoration

District Policy 610-3 directs that sites on District-managed land that have been altered from a natural state and condition must be restored to a natural condition whenever practical. Decisions regarding the restoration of altered sites also consider the potential for the altered site to support revenue-generating multiple uses, i.e., cattle grazing or haying leases, or the cultivation of pines in Timber Management Zones. As discussed previously, some altered sites within the Gilley Creek North and Gilley Creek South Units will be dedicated to such uses. However, the hardwood swamp that comprises the northern section of the Coker Prairie wetland has been degraded by abnormal stress and mortality within the canopy, consistent with the stress and mortality observed in the downstream Flatford Swamp system (PBS&J, 2001). Promoting recovery of the canopy is the primary habitat restoration need for the Reserve and is considered an important resource management need. The District has initiated a strategy for reversing this abnormal stress and mortality within the Flatford Swamp system, including Coker Prairie, by restoring normal hydroperiods. This strategy has been described in the management plan for the Flatford Swamp Preserve (SWFWMD, 2003). The management approach outlined by this plan is consistent with the ongoing recovery efforts. Additional actions to restore the Coker Prairie canopy will be formulated and implemented if natural regeneration does not occur after normal hydroperiods have been restored in Flatford Swamp.

A section of the Gilley Creek floodplain in Gilley Creek North is also exhibiting signs of potentially abnormal stress and mortality within the canopy, similar to that observed in Coker Prairie; however, this area was not encompassed in the evaluation of the Flatford Swamp system and has not been the subject of a targeted study. An investigation of the site will be conducted in order to confirm the existence of abnormal stress and mortality, and to identify any actions necessary for remediation. Although responsibility for this investigation remains unassigned, the District recently contracted with a private consulting firm to evaluate and implement potential wetland restoration options for the Gilley Creek North unit. Gilley Creek North was subjected historically to hydrologic alterations similar to those addressed in the Rutland South wetland mitigation project. Amendment of the contract will be explored as a potential strategy for evaluation of the Gilley Creek impacts.

Some areas of scrub habitat in the Gilley Creek North Unit have succeeded to xeric hammock due to long-term fire suppression. As noted previously in the discussion of Scrub-Jay Management Zones, restoration of these areas will be actively promoted through the combined use of prescribed fire and mechanical treatments. Similarly degraded lands within the Coker Prairie Unit have already undergone restoration through such methods.

Management Actions:

- **Assess the canopies of Coker Prairie and the Gilley Creek floodplain through the Gilley Creek North Unit for evidence of abnormal stress or mortality, and identify strategies for any necessary remediation.**

- **Utilize mechanical treatments, as necessary, to restore scrub habitat in sites that have succeeded to xeric hammock.**

Control of Exotic Species

The District has adopted a formal procedure (Board Procedure 61-9) to address the control of exotic species in response to the severity of this threat. The ultimate goal of the land management program is eradication of the most invasive species. At a minimum, those invasive exotic species occurring on the properties will be maintained below current densities and areal coverage. No encroachment into natural systems will be tolerated, and spot treatment of exotic species that have invaded the Reserve will occur immediately upon observation.

Plants

Exotic plant species known to be present on the Reserve include: tropical soda apple, Caesar weed, natal grass, cogon grass, rosary pea, Japanese climbing fern, bahiagrass, bermudagrass and camphor tree (PBS&J, 2001). With the exception of natal grass, bermudagrass and Caesar weed, all these plant species have been designated Category I invasive pest plant species by the Florida Exotic Pest Plant Council (Florida Exotic Pest Plant Council, 2001). This designation is reserved for those non-native plant species that have clearly demonstrated a propensity to invade and disrupt

Florida's native plant communities. Natal grass and Caesar weed are designated Category II species, indicating they may potentially invade and disrupt native plant communities. Management will continue to be focused on the eradication or control of these species. The District will also remain alert for the appearance of any other invasive, non-native plant species and will implement appropriate eradication or control measures.

Animals

Non-native animal species also pose a threat to Florida's natural communities. The only such animal that has been noted on the Reserve is the feral hog. Feral hogs represent a significant land management problem in many natural areas. The disturbance caused by hog rooting activities can severely damage natural vegetation in floodplain swamps, hammock, pinelands, and herbaceous wetlands. Hog rooting also creates conditions that promote invasion by exotic plant species. Furthermore, rooting can significantly affect infiltration, sheet flow, and overland drainage to wetlands. Finally, hogs feed on acorn mast produced by scrub oaks on the property and competition for the mast may reduce the value of these sites for native species, including the Florida scrub jay, which relies heavily on acorns as a food source during the winter and early spring. In order to control hog numbers, the District will implement an aggressive trapping program on the Reserve.

Management Actions:

- **Eradicate or control invasive, non-native species consistent with the direction provided in Board Procedure 61-9.**

Preparation of a Mosquito Control Plan

Chapter 388 of the Florida Statutes provides sweeping authority for local governments to form mosquito control programs. This authority was granted in recognition of the potential health threat associated with major swarms of mosquitoes, in addition to the annoyance they can pose in developed areas. The statute also acknowledges the possibility for adverse environmental impacts resulting from mosquito control activities.

A process has been established whereby local governments prepare site-specific "arthropod control plans" for publicly owned conservation lands (Section 388.4111, F.S.) when a tract is officially declared "environmentally sensitive and biologically highly productive" by the managing agency. This designation requires that an arthropod (i.e., mosquito) control plan be developed that offers adequate levels of protection to the natural systems and flora and fauna that occupy the site. The mosquito control district having jurisdiction over the area is responsible for preparation of the required site-specific arthropod control plan. The entire process is administered by the Florida Department of Agriculture and Consumer Services (FDACS). The District will formally designate the Reserve an "environmentally sensitive and biologically highly productive" property and coordinate with FDACS and the Manatee County Mosquito Control District to develop an arthropod control

plan that will ensure protection of the area's natural resources while also ensuring protection of the public's health.

Management Actions:

- **Formally designate the Reserve as "environmentally sensitive and biologically highly productive."**

- **Coordinate with the Manatee County Mosquito Control District in the development of an arthropod control plan.**

Projected Cost of Management

The cost of future land management activities has been projected based on the cost of management-related expenses during three preceding fiscal years (FY2001-FY2003). Based on this analysis, the annual average cost of recurring management expenses is estimated to be approximately $5.11 per acre, or a total of $40,532 for the entire Reserve. Recurring expenses are those typically incurred on an annual basis and include such activities as prescribed burning, control of exotic species, maintenance of roads and recreational facilities, and wildlife monitoring. It is anticipated that recurring expenses will decline since a portion of the property has recently been leased for cattle grazing, because some management responsibilities have been relegated to the lessee.

It is difficult to provide long-range projections of non-recurring expenses. These are associated with such items as capital improvements to accommodate recreational use, and other one-time or unforeseen expenses. The cost of recurring expenses may also rise in response to inflation, or in the event that additional lands are acquired as part of the Reserve.

Administration

External Coordination

The District coordinates with many outside public agencies and public interest groups to effectively manage its properties. This section identifies those management and land use activities that cross, or potentially cross, the limits of jurisdictional authority and interest and will require outside coordination.

United States Fish and Wildlife Service (USFWS)

The USFWS is the agency with primary responsibility for protecting the nation's wildlife resources. This responsibility includes the administration of the Endangered Species Act (ESA). The USFWS will be consulted regarding special management needs of any species protected under the provisions of the ESA that is known to occur on the Reserve or that colonizes the site in the future.

Florida Fish and Wildlife Conservation Commission (FFWCC)

The FFWCC, formerly the Florida Game and Freshwater Fish Commission, is the agency with primary responsibility for protecting and managing Florida's wildlife resources. As such, the District will coordinate closely with the FFWCC in the management and monitoring of state-listed wildlife and critical habitat areas occurring on the Reserve.

Florida Department of Environmental Protection (DEP)

The District will coordinate with DEP, as necessary, in the management and public use of adjoining state-owned lands to maximize efficiency, link recreational usage, and potentially preserve a regional greenway network. DEP may also be responsible for issuing permits that would be required in conjunction with habitat restoration activities, development of recreational facilities, or other projects that may affect wetlands on these properties.

Manatee County

As the local government having jurisdiction over the area in which the Reserve is located, Manatee County has a compelling interest in the future management and use of the property. It will also exercise control over land use decisions for lands surrounding the Reserve. In addition, the Manatee County School Board may serve as a potential partner in the development of an environmental education program that would use the Reserve as an outdoor classroom. Coordination of public use, wildlife management, and other issues that cross ownership boundaries will also require a cooperative relationship with the county, which owns and manages the Duette Park property and envisions creation of a regional greenway network.

Other Private Interests

Various private interests may play a role in future management and use of the Reserve. The District has worked with the Florida Trail Association, Inc., and other organizations that represent recreational user-groups to enhance recreational opportunities on District-managed lands and the District will be prepared to work with these and other stakeholder groups in the development and enhancement of recreational use of this property. IMC World, Inc., is engaged in a project to relocate scrub jays to lands adjoining the Coker Prairie Unit of the property. The District will coordinate with IMC in the management of scrub jays to ensure that the local metapopulation of this threatened species is managed in an holistic manner.

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APPENDIX A

The following list summarizes the specific tasks that will be undertaken by the District to implement the public use and land management approach proposed by the plan.

1) Ensure that Manatee County continues to have unimpeded access to the water quality monitoring stations located on, or accessed through, the Reserve property.
2) Make the Reserve available for hiking, horseback riding, primitive camping, birding and various forms of nature study consistent with site-specific limitations.
3) Construct entrance facilities to accommodate the site-specific recreational uses enumerated in this plan.
4) Coordinate with Manatee County to integrate recreational use of the Reserve into the conceptual greenway system envisioned by the county, and to maintain a greenway linkage with Duette Park.
5) Construct wet crossings and/or footbridges to enhance year-round accessibility for recreational use and to reduce erosion.
6) Complete the establishment of two Timber Management Zones in the Gilley Creek North Unit of Reserve.
7) Incorporate conditions into cattle lease agreements that require best management practices for grazed areas.
8) Ensure that any utilities or other public facilities permitted to locate on the Reserve are consistent with statutory guidelines established for permitting such uses of publicly owned conservation land.
9) Treat on-site monitoring stations as Special Protection Areas to prevent physical disturbances that would compromise their continued value as resource monitoring sites.
10) The use of prescribed fire and/or mechanical methods will be employed to maintain or restore habitat conditions conducive to continued habitat by the Florida scrub-jay.
11) Survey the Reserve's oak scrub and scrubby flatwood sites for the presence of scrub-jays on at least an annual basis, and immediately prior to conducting any prescribed fires within or adjacent to occupied habitat. If surveys for the presence of Florida scrub-jays identify new occurrences, the prescribed burning strategy for such sites shall be amended, as necessary, in a manner consistent with perpetuating such colonization.
12) The District will coordinate with owners and/or managers of nearby publicly owned tracts that support scrub-jays to ensure that the local scrub-jay metapopulation is managed in an holistic manner, rather than as individual occurrences, and emphasizing the need for maintenance of potential movement corridors among tracts.
13) Any future cattle grazing lease will include conditions on grazing density, range management, prescribed burning, and other applicable issues to ensure the grazing is managed in a manner that will be compatible with continued habitation of the Reserve by burrowing owls.

14) Direct future recreational improvements, structures, or other land-disturbing activities away from any known archaeological sites, or plan and conduct such activities in a manner that avoids impacts to such sites.
15) Continue implementation of the prescribed burning plan for the Reserve's fire-dependent natural communities and continue to emphasize prescription parameters designed to prevent the escape of fire to adjoining properties and minimize the potential for placement of fire-generated smoke over sensitive areas.
16) Conduct prescribed fires during the growing season, to the greatest extent practicable, in order to most effectively mimic the effects of natural fire.
17) Assess the canopies of Coker Prairie and the Gilley Creek floodplain through the Gilley Creek North Unit for evidence of abnormal stress or mortality, and identify strategies for any necessary remediation.
18) Utilize mechanical treatments, as necessary, to restore scrub habitat in sites that have succeeded to xeric hammock.
19) Eradicate or control invasive, non-native species consistent with the direction provided in Board Procedure 61-9.
20) Formally designate the Reserve as "environmentally sensitive and biologically highly productive.
21) Coordinate with the Manatee County Mosquito Control District in the development of an arthropod control plan.