

*A Plan for the
Use and Management
of the*

Hidden Lake Property

July 1998

Southwest Florida Water Management District

Principal Author: Jason Robertshaw

The Southwest Florida Water Management District (District) does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the District's functions including one's access to, participation, employment, or treatment in its programs or activities. Anyone requiring reasonable accommodation as provided for in the Americans With Disabilities Act should call (904) 796-7211 or 1-800-423-1476, extension 4400; TDD ONLY 1-800-231-6103; FAX (904) 754-6874 / Suncom 663-6874.

EXECUTIVE SUMMARY

The Hidden Lake property is a 589-acre site located in west-central Pasco County and acquired by the Southwest Florida Water Management District in 1985 under the Save Our Rivers Program. It is part of an interconnected system of lakes within the Rocky Sink/Boggy Creek basin of the Bear Creek Watershed. The Pithlachascotee River lies to the south. District ownership of the property ensures protection of the lake and the surrounding forested wetlands and will help preserve water quality within the lake and sub-basin. In addition, the natural drainage pattern of the site is protected, as well as the site's ability to detain storm generated flood waters.

Natural vegetation on the Hidden Lake property consists primarily of basin swamp and hydric hammock. Hidden Lake, a 46-acre blackwater lake with an undeveloped natural shoreline, lies in the center of the property. Small patches of freshwater marsh, cypress stands and uplands occur along the edge of the property, remnants of the natural communities supplanted by residential development in the areas surrounding the property.

In accordance with District Procedure 61-3, the District used a standardized methodology to prepare this management and land use plan. The purpose of this plan is to guide the long-term management of the Hidden Lake property, including the identification of appropriate public access and potential recreational uses, while ensuring that the water management and natural resource values of the property are maintained. The preservation of the lake

and the surrounding wetlands and the natural drainage of the site served as the primary basis for its acquisition and preservation of those values is the recognized land management goal of the property.

District policy requires that District-held lands be made available for public uses that are compatible with resource protection and management needs. However, the small size of the property, the predominance of sensitive wetlands and the ring of private-ownership around it place unique limitations on the amounts and types of recreational opportunities available to the public. Consequently, recreation will be limited to passive, resource-based uses like hiking, bird watching, fishing and nature study. Prohibited activities will include hunting, diving, swimming, camping, horseback riding and motorized uses.

Access and security are the two major challenges of managing the Hidden Lake property. The site is bounded by residential and transportation development which place severe constraints on access by the public and District personnel, as well as isolating it from other natural communities. There are currently no points available for entry by the public, and legal access by District personnel is limited to the northern side of the property. The District will pursue efforts to enhance accessibility of the site for monitoring and maintenance purposes by District personnel and will remain open to opportunities to increase public access. In order to curtail prohibited activities and illegal dumping, standard District signs will be posted at all trailheads and as necessary along the perimeter. Due to the limited amount of uplands and the extent of sensitive wetlands, public access will be limited to those on foot. Fencing will be

used as necessary to limit unauthorized vehicular access. In addition, maintaining good-neighbor relationships with adjacent property owners will be essential to the long-term maintenance of this site.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
TABLE OF CONTENTS	iv
LIST OF FIGURES	v
INTRODUCTION	1
Description of the Property	1
Planning Process	1
Management Philosophy and Emphasis	3
PROJECT OVERVIEW	4
Water Management Function	4
Water Conveyance	4
Enhancements to Water Quality	6
Flood Protection	6
Land Cover	7
Wildlife Values of the Property	10
Adjacent Land Uses	10
Soils	10
CONCEPTUAL LAND USE PLAN	12
Special Protection Areas	12
Access	12
Recreational Uses	13
Lake Use	14
RESOURCE PROTECTION	15
Land Management	15
Prescribed Burning	15
Exotic Species Control	15
Illegal Dumping	16
Security	16
ADMINISTRATION	18
External Coordination	18
Florida Department of Environmental Protection	18
Pasco County	18
Adjacent Property Owners	18
Internal Coordination	18
REFERENCES	19

LIST OF FIGURES

Figure	Page
1 HIDDEN LAKE LOCATION MAP	2
2 HIDDEN LAKE & NEARBY DEVELOPMENTS	5
3 VEGETATION MAP FOR THE HIDDEN LAKE PROPERTY	8

INTRODUCTION

This document is the product of an ongoing effort by the Southwest Florida Water Management District to prepare long-range management plans for each District-owned property. The District acquires land throughout its jurisdiction for a variety of water management functions. Included among these are flood protection, water quality enhancement, natural systems management and the protection of water supplies. This plan is specific to the Hidden Lake property.

Description of the Property

The Hidden Lake property is a 589-acre site located in west-central Pasco County (Figure 1). It is part of an interconnected system of lakes within the Rocky Sink/Boggy Creek basin of the Bear Creek Watershed. To the south is the Pithlachascotee River. In the center of the property is Hidden Lake itself, a 46-acre blackwater lake with an undeveloped shoreline. Basin swamp and hydric hammock surround the lake, interspersed with freshwater marsh, cypress stands and uplands. Several rare and endangered plant species have been identified on the property including native orchids, cycads, bromeliads and ferns. The site is bounded by residential and transportation developments, which restricts access and isolates the property from other natural communities. Disturbance of the property seems minimal, though there is evidence of trash dumping and past logging.

Acquisition of the site occurred in 1985 under the Save Our Rivers program. Almost all of the property lies within the 100-year floodplain. The benefits of ownership

include the protection of the lake and surrounding forested wetlands and preservation of the natural drainage and water quality within the lake and basin. The site also protects surrounding developments by detaining storm generated flood waters.

Planning Process

In accordance with District Procedure 61-3, a standard methodology is employed in the development of land use plans for District-owned properties (Christianson, 1988). The first step of this systematic process is the identification of special features occurring within the property. These may include wetlands, floodplains, flood control features, potable water sources and significant ecologically sensitive areas. Restrictions on the use of the property are imposed to ensure the protection of these features. Land use constraints resulting from the size and configuration of an area are also considered during this phase of the process.

The ultimate objective is to concentrate land uses in appropriate areas and to prevent incompatible or conflicting uses from occurring within a property.

Each property is also evaluated to determine its placement within a classification system. The two factors upon which the property classification is based are population density of the area surrounding the property and the extent to which the property has been developed or altered. The classifications have been devised to provide guidance in the formulation of an overall management philosophy for each property. The management philosophy is an expression of the level of development that should be

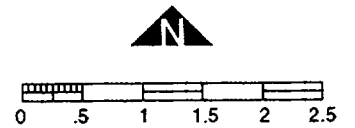
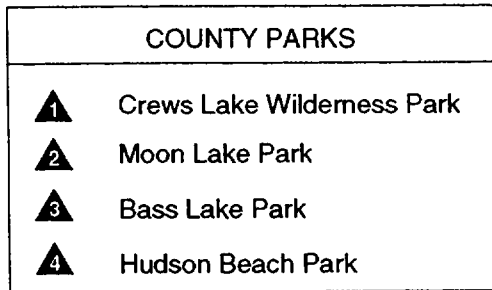
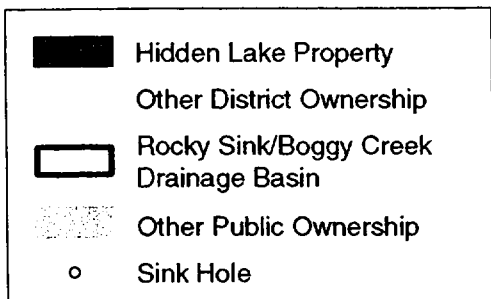
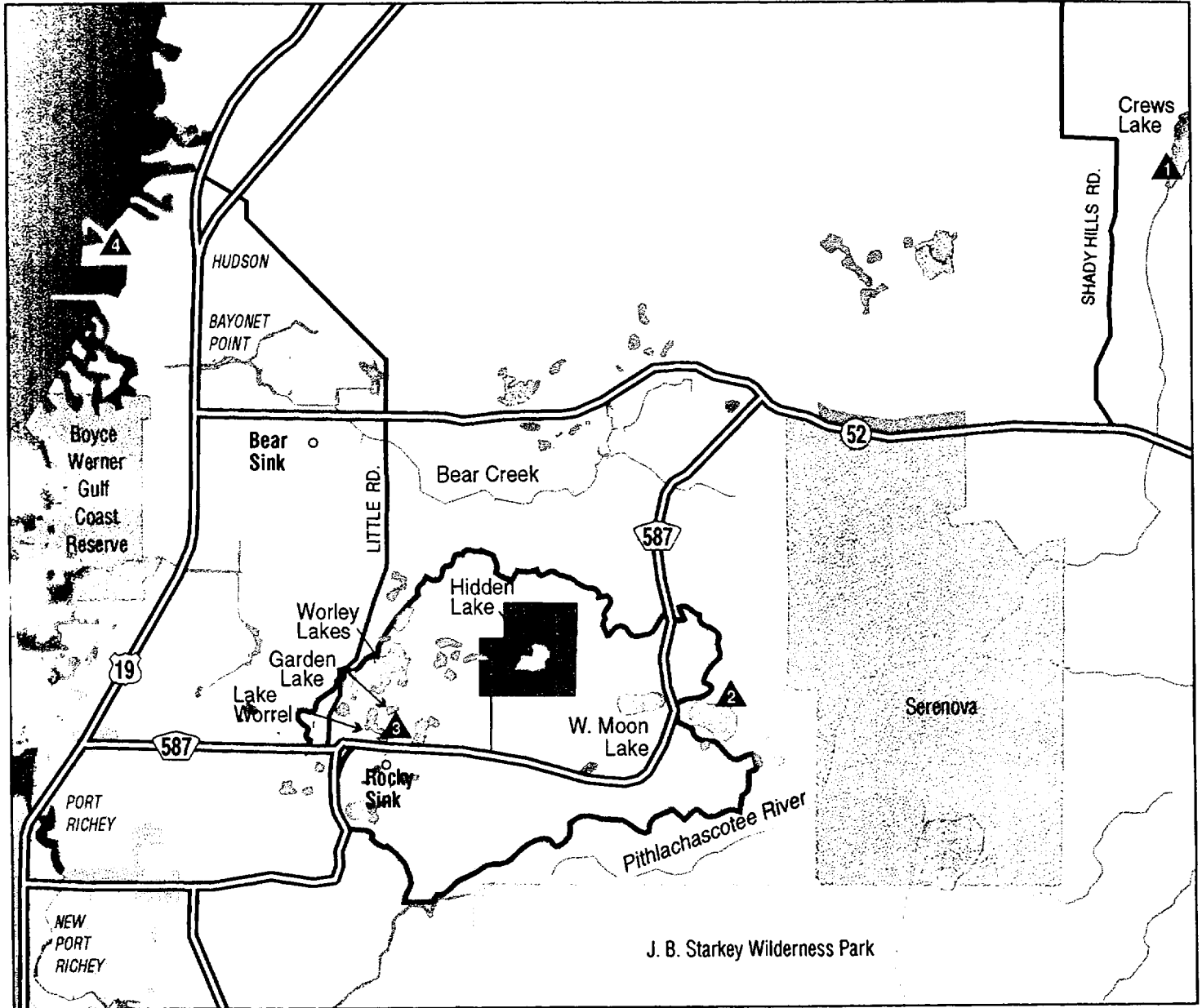


Figure 1. Hidden Lake Location Map.

allowed on the property and the types of uses that are appropriate.

The planning process is initiated by an interdisciplinary team of District staff. Affected local governments and others with a vested interest in the property may also be invited as appropriate. Prior to presenting the plan for the approval of the District's Governing Board and the appropriate Basin Board, management plans must be reviewed and approved by the Land Acquisition and Management Task Force. This committee is composed of senior District staff and other personnel assigned various roles in directing the management, acquisition and use of District-owned lands. Final review and approval of all plans by the Governing Board are conducted in a public meeting during which members of the public may provide comments regarding the plan.

Management Philosophy and Emphasis

The management philosophy is an expression of the level of development that should be allowed on the property and the types of uses that are appropriate. Based on the small size of the property, the high density of nearby residential communities and the proximity of roads open to unrestricted motorized traffic, the Hidden Lake property has been designated an urban parkland. This classification of District-owned lands includes areas that have been maintained in a natural state but which lie in regions of urbanized development. Their proximity to large population centers and the availability of public access usually makes this category of District-owned lands attractive for a variety of passive, resource-based recreational uses. However, though the Hidden Lake property

meets the size and development criteria for designation as an urban parkland, its inaccessibility, history of development and extent of sensitive natural communities places unique constraints on the extent of available recreational opportunities. The surrounding developments put a premium on the natural value of the property, but also impose severe limitations on access. Consequently, recreational usage will remain limited to that which has historically occurred on the property. This includes hiking, bird watching, fishing, nature study, canoeing and boating use by small craft lacking internal combustion engines. Prohibited uses will include hunting, horseback riding, camping, swimming and diving. In addition, high intensity, activity-based recreation and land uses requiring extensive disturbance of the property are not compatible with the District's goal of preserving the natural resource values and attractiveness of the site and will not be allowed.

The ring of private-ownership around the Hidden Lake property will also prove a challenge in the proper maintenance and security of the site, and efforts to increase accessibility will continue to be a priority for the District. Protection of the lake and wetlands and preservation of the site's natural drainage patterns, water quality enhancements and flood control features will be recognized goals for this property.

PROJECT OVERVIEW

Water Management Functions

The District acquires land to achieve a number of water management benefits, in addition to preservation and restoration of natural systems. These include protection of water conveyances, enhancement of water quality and maintenance of natural flood controls. The following section describes some of the hydrologic features of the Hidden Lake property, the functions associated with them and the benefits expected from their management.

The primary water management benefit served by public ownership of the Hidden Lake property is the protection of the lake itself and the surrounding wetlands and their role in the natural drainage and water quality enhancement of the site. In addition, almost all of the property lies with the 100-year floodplain. The swamps around Hidden Lake have a natural flood control function and are capable of reducing heavy flows during severe storms. The swamps also serve to reduce sediment and nutrient loads from upgradient developments before emptying into down-gradient lakes and wetlands. These water management functions are discussed in greater detail below.

Water Conveyance

The site lies within the Rocky Sink/Boggy Creek basin, one of five basins within the Bear Creek Watershed. The watershed drains a local area of 39.3 square miles (mi²) and itself lies within a much larger, internally drained karst region of about 600 mi² which extends along the coasts of Pasco,

Hernando and Citrus counties (SWFWMD, 1988a). Bear Creek is the definitive drainage feature of the watershed. It originates at Bee Tree Pond and flows to the north of Hidden Lake before terminating at Bear Sink. Under most conditions, there is little inter-basin flow between the Rocky Sink/Boggy Creek basin and the basin of Bear Creek (SWFWMD, 1993).

Surface runoff enters the Hidden Lake property from the south and east (Figure 2). Drainage is to the southwest, through the lake system consisting of Lakes Worrell, Garden, Worley, Yellow and Scout. In general, all surface drainage north of CR587 and south of Lakeview Drive is contained within the 10 mi² of the Rocky Sink/Boggy Creek basin and passes through this lake system. The primary outlet for stormwater conveyed through the system is beneath CR587, through two wetlands and into Rocky Sink. The capacity of Rocky Sink to discharge water to the Floridan Aquifer is directly related to head conditions at the surface and in the aquifer at any given time. This capacity has been exceeded in the past, effectively shutting it off and causing the lake system to attain higher levels for extended periods. When water surface elevations are sufficiently high, Rocky Sink floodwaters discharge to the south, at which point the Rocky Sink/Boggy Creek basin technically becomes part of the Pithlachascotee River Watershed.

Though sinkholes are not known to occur on the property, they are common in the area, and it has been suggested that Hidden Lake originated as one. This has not been confirmed, but the lake is unusual in that its level does not appear to fluctuate much beyond its estimated seasonal elevation

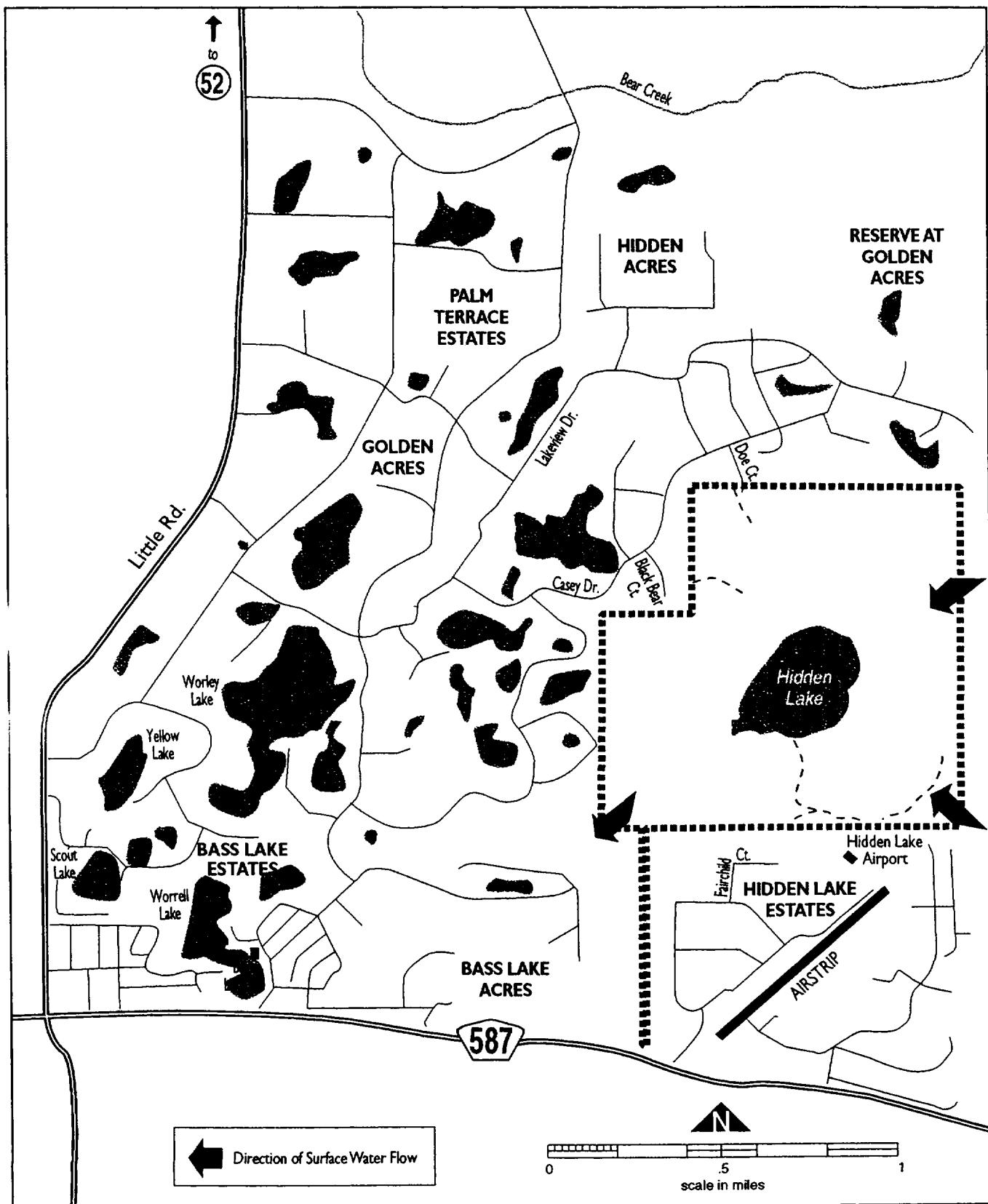


Figure 2. Hidden Lake & Nearby Developments.

of 23 feet above sealevel and the shoreline is rather abrupt. The lake also lies just within the limits of upward leakage from the Floridan Aquifer, which suggests the lake level is sustained by hydraulic pressure from below (SWFWMD, 1988b). No well-defined channels directing flow into or out of the lake proper have been observed.

Enhancements to Water Quality

Water samples from Hidden Lake were collected twice in 1987 as part of the resource evaluation process (SWFWMD, 1988b). Low to moderate nutrient levels in the water suggest the lake is generally of the oligotrophic-mesotrophic type. The relatively acidic and highly colored waters of Hidden Lake reflect the influence of the surrounding basin swamp. In addition, the high surface light levels, low turbidity and the lentic nature of the system produced high algal concentrations at the time of sampling. Overall, however, the water quality of Hidden Lake was found to be quite good.

The natural contaminant uptake of the lake and surrounding swamp is important to the ecology of the site and the surrounding area, and contributes directly to the water quality of the lake system receiving flow from the property. In addition, internal drainage from the lake system through sinkholes results in a strong water quality influence on the underlying aquifer. Thus, groundwater quality indirectly benefits from the natural enhancement performed by the lake and swamp. This natural function will become increasingly important as urbanization continues to encroach.

District ownership of the Hidden Lake property protects the water quality enhancement value of the site proper. In addition, maintaining the integrity of the wetlands adjacent to the property and limiting further encroachments into the 100-year floodplain will also help preserve this function. The regulatory authority of the District, the Florida Department of Environmental Protection and Pasco County should provide substantial protection to the wetland systems outside the property boundaries and help preserve their function.

Flood Protection

Wetlands and floodplains have a natural ability to store or detain water generated during storm events. Recognition of this innate characteristic of wetlands is one of the major factors motivating contemporary efforts to preserve them. This strategy of utilizing a natural, non-structural approach to flood management has been embraced by the District and has received greater emphasis as the environmental and fiscal impact of structural controls, and the consequences of their catastrophic failure, has become evident.

Due to the flow-through character of the site, the majority of the flood control benefits are in the form of detaining flood waters and attenuating downstream impacts (SWFWMD, 1988a). Flood retention, though not as significant, is also a component of the flood protection function. However, the degree to which the site represents a regionally significant flood control feature is somewhat limited, since the 100-year floodplain extends well beyond the protection of the property's boundaries. In addition, an analysis by the District into

the use of the Hidden Lake property and its surrounding wetlands as a water storage area for flood control confirmed the merits of a non-structural approach. It was determined that, in order for a structural approach to work, a levee would have to be constructed through pristine wetlands, originally purchased with Save Our Rivers (SOR) funding. Environmental problems associated with this approach were considered insurmountable, and altering the natural capacity would merely exacerbate flood heights and velocities elsewhere. Increasing hydroperiods would also lead to detrimental changes in the vegetative communities, resulting in poor regeneration of canopy cover and ground flora (SWFWMD, 1989). Thus, preservation of natural, non-structural flood storage areas was found to provide the maximum amount of flood protection for the least amount of environmental impact.

Land Cover

The majority of the Hidden Lake property consists of basin swamp (409 acres, or 70 percent of total land area), a community type characterized by long hydroperiods and little perceptible flow (Figure 3). Drainage of the swamp is irregular because of terrain subsidence and the resulting uneven build up of organic matter, but the large amount of organic matter also enables the swamp to support complex food chains.

The composition of the forest canopy in the swamp varies depending on the substrate, water depth, proximity to the lake and position relative to hydrological connections. Common species include bald cypress (*Taxodium distichum*), red maple (*Acer rubrum* var. *trilobum*), water oak

(*Quercus nigra*), laurel oak (*Q. laurifolia*), pop ash (*Fraxinus caroliniana*), red bay (*Persea borbonia*), sweet bay (*Magnolia caroliniana*) and cabbage palm (*Sabal palmetto*). Closer to the lake, Dahoon holly (*Ilex cassine*), loblolly bay (*Gordonia lasianthus*) and Virginia willow (*Itea virginica*) were observed. A number of rare and protected plants occur in the moist and humid conditions under the canopy. These include cinnamon fern (*Osmunda cinnamomea*), shield fern (*Dryopteris leudoviciana*), netted chain fern (*Woodwardia areolata*), several orchid species (*Encyclia tampensis* and *Habenaria* spp.) and bromeliads (*Tillandsia* spp.).

Like the canopy, the understory is fairly dense and diverse and includes greenbriar (*Smilax walteri*), poison ivy (*Toxicodendron radicans*), Blechnum fern (*Blechnum serrulatum*), Jack-in-the-pulpit (*Arisaema triphyllum*), Green Arum (*Peltandra virginica*), beak rush (*Rhynchospora milliacea*), lizard's tail (*Saururus cernuus*) and marsh pennywort (*Hydrocotyle umbellata*).

In the center of the property is Hidden Lake itself, a 46-acre blackwater lake which occupies about eight percent of the property. The entire edge of the lake is forested, and there is little to no shallow area. In addition, there are few floating or submerged aquatic plants along the shoreline. The remote location and the limited shoreline have contributed to very light recreational fishing over the years.

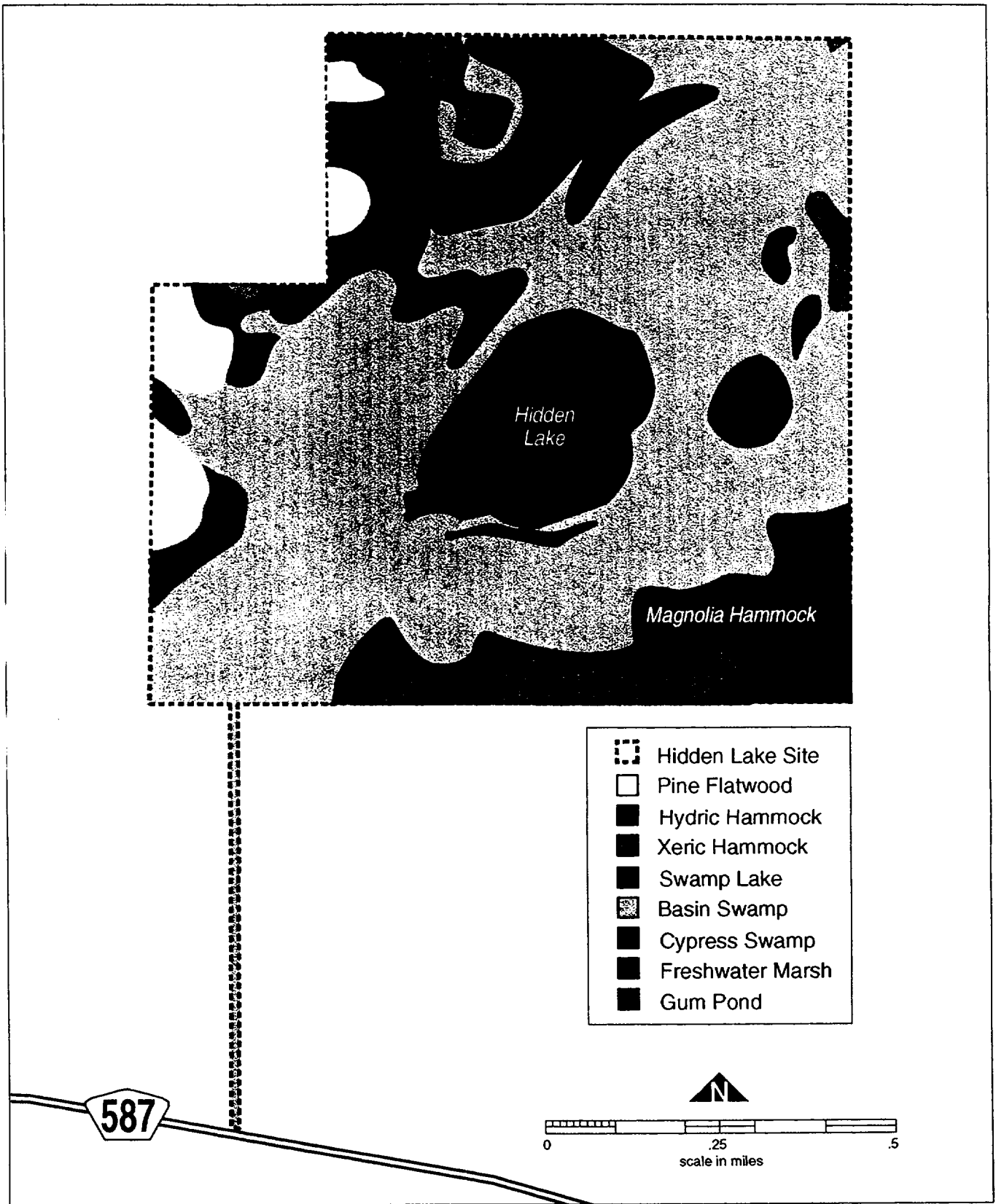


Figure 3. Vegetation map for the Hidden Lake Property.

Just over 100 acres (17 percent of total land area) are sufficiently elevated above the basin swamp to support hydric hammock, a community of hardwood forest with a variable understory of ferns and vines. Typical vegetation includes cabbage palm, red maple, swamp bay, sweetbay, southern magnolia (*Magnolia grandiflora*), water oak, laurel oak, and black cherry (*Prunus serotina*). Understory plants include wax myrtle (*Myrica cerifera*), saw palmetto (*Serenoa repens*), wild coffee (*Psychotria nervosa*), yellow jessamine (*Gelsemium sempervirens*), rattanvine (*Berchemia scandens*), muscadine (*Vitis munsoniana*) and Virginia creeper (*Parthenocissus quinquefolia*). Bromeliads, ferns and orchids are also found here. These areas are typically regarded as well developed, complex vegetational communities and provide valuable habitat for many native plant and animal species. The hammock in the southeast corner is especially notable for the many large magnolias found there. This area also has a large infestation of the exotic Boston fern (*Nephrolepis exalta*), a particularly difficult species to eradicate.

Freshwater marsh dominated by sawgrass occurs in the northwest portion of the property, and accounts for just over 20 acres on the site (about four percent of total land area). Freshwater marshes are typically shallow depressions that are subject to regular flooding and support a variety of herbaceous species (Kushlan, 1990). The largest section is being invaded by the surrounding basin swamp and consequently overtaken by red maple, wax myrtle and buttonbush (*Cephalanthus occidentalis*). Freshwater marsh is a fire maintained community, and will continue to succeed into basin swamp without it (FNAI, 1990).

A few areas (about two percent of total land area) are dominated by cypress. Past logging removed most of the larger trees, evident from several large stumps, but younger trees have grown up and are regaining canopy dominance. Hardwoods associated with cypress are red maple, laurel oak, bluebeech (*Carpinus caroliniana*) and red bay. Cypress stands also support epiphytic species like orchids and bromeliads, while at ground level ferns and wetland herbs are common. Most areas of cypress are flooded in normal rainfall years and at peak rainfall standing water can reach a depth of two feet or more.

A small patch of xeric hammock occurs along the southeastern boundary of the property where deep, well drained, sandy soils occur. This area is dominated by very dense, low canopied oaks, which typifies this advanced successional stage of scrub or sandhill. The groundcover is dominated by saw palmetto, although highbush blueberry (*Vaccinium corymbosum*), shiny blueberry (*Vaccinium myrsinites*), staggerbush (*Lyonia ferruginea*), fetterbush (*Lyonia lucida*) and sparkleberry (*Vaccinium arboreum*) are also common. In addition, a native cycad, the Florida coontie (*Zamia floridana*), was found in part of this hammock. Coontie is listed as a Commercially Exploited species by the Florida Department of Agriculture. Also within this area is a small gum pond. It appears to be an isolated depression with a comparatively open canopy and a small stand of gum trees (*Nyssa biflora*) in the center and a ground cover of netted chain fern and highbush blueberry. A number of game trails were observed to converge at this point.

A similar but smaller stand of xeric vegetation (less than four acres) is found in the northwest corner of the property. It appears to be a remnant of the original upland vegetation once found throughout the surrounding residential communities to the north. This area is not as thickly forested as the southern area, but the importance of both sites to wildlife was evident by the number of animal burrows observed during field investigations. There is also a curious little barren of sand and longleaf pines in the midst of the northern xeric community that may reflect a former homestead.

Finally, several spots along the western perimeter of the property appear to have been cleared for pasture prior to District acquisition. Because of the difficulty in accessing these areas, no on-ground investigation was performed. However, evidence from aerial infra-red photography indicates a natural succession into pine flatwoods.

Wildlife Values of the Property

Protected areas are becoming increasingly important to wildlife as their natural habitat is lost and fragmented by increasing development (Cox, 1994). Smaller preserves like the Hidden Lake property serve as vital refuges for native and migratory animals and the plants they depend on. The importance of the natural resources of Hidden Lake to wildlife was observed by District personnel during field investigations. Based on the quality and quantity of suitable habitat on the property, it is estimated that nearly 200 vertebrate species may inhabit the area (SWFWMD, 1988). This number is enhanced by the

proximity of the larger J.B. Starkey Wilderness Park to the south (Figure 1). Typical animals include: white-tailed deer, bobcat, raccoons, river otters, gray squirrels, opossum, songbirds, pileated woodpeckers, barred owls, turkeys, red-shouldered hawks, swallowtail kites, wood ducks, cottonmouths, chicken turtles, mud turtles, cricket frogs and crayfish. Evidence of feral hogs was not observed on the property.

Adjacent Land Uses

Most of the lands adjacent to Hidden Lake have been developed for residential purposes (Figure 2). Hidden Lake Estates is the community to the south of Hidden Lake and is unusual in that it has an airstrip in the midst of the subdivision. This airstrip accommodates light-engine aircraft. To the west and north are other residential estates including Golden Acres, Bass Lake Estates and Hidden Acres. Part of the area to the north was in the original proposal for acquisition but was dropped after it was determined that wetland regulations protected most of it. The upland portions are now being developed into the Reserve at Golden Acres. When completed, this subdivision will link Lakeview Dr. with CR587, thereby completely circumscribing Hidden Lake with paved roads. Most of the area along the east side of the property is under single ownership. It is zoned Agricultural-Residential, and formerly was managed as a horse farm.

Soils

The predominant soil type for the Hidden Lake property is Chobee soils, a black mucky soil characterized by frequent

flooding and various organic content. This soil type comprises 80-90 percent of the site (Soil Conservation Service, 1982). The balance of the soils are composed of various fine sands including Anclote, Myakka, Narcoosee, Immokalee, Sellers and Smyrna. In their undrained state, these sandy soils have slow water infiltration and transmission rates.

CONCEPTUAL LAND USE PLAN

Special Protection Areas

Special Protection Areas (SPA's) are distinct regions or features within a property that can be readily defined. They include areas that are especially sensitive to disturbance; that harbor unique or regionally-significant natural features; or play a critical role in maintenance of the water management values of the property. Protective measures in these areas take precedence over other land use and management considerations.

Nearly all of the area at Hidden Lake consists of sensitive wetlands and all of its functions in preserving water quality. Consequently, no particular area at the Hidden Lake property appears more meritorious of special consideration than another. Therefore, no Special Protection Areas have been designated at this time. However, SPA's may be used to guide future management under certain circumstances. For instance, the shoreline of Hidden Lake appears to be a good location for Bald Eagle nesting, although none are known to occur at present. If Bald Eagles were to begin nesting at Hidden Lake, an SPA designation would be appropriate for the nest site. The presence of several unique and rare plant species on the property may also require special protection if their wild populations continue to dwindle. No sinkholes are known on the property, but such formations would require special consideration. And finally, previous District reports mention that small mounds along the lake's edge may have some archeological significance (SWFWMD, 1989). Field investigations confirmed that excavations were made in these areas, but

were unable to confirm the supposition that these were for archeological exploitation. However, should the mounds prove significant, they will require special protection and should be designated as SPA's (SWFWMD, 1988c).

Access

As mentioned previously, private residential and transportation developments surround Hidden Lake (Figure 2). Consequently, there are no official points for public entry. This also restricts access by District personnel and limits their ability to properly maintain the property. Over the years the District has attempted to improve the accessibility of the site. This included an analysis on paving an all-weather road along the 50' right-of-way from CR587 to the southwest corner of the property. However, the length (½ mile), narrowness and landcover (mostly wetlands) of this right-of-way make it unsuitable as an access corridor, and the road concept proved too expensive (over \$500,00 in 1986 dollars). Other proposals included acquisition of additional lands and securing access easements through adjoining properties. All have proven infeasible, or too expensive.

Currently, District staff have no ready and legal access to the south side of the property. There is a trail that leads from a point behind the Hidden Lake Airport hangars all the way to the lake, but the roads and the gated communities around it are all private. This trail appears on aerial photographs dating prior to District acquisition and it is clearly being used for access across the property by neighboring residents. Vehicle access is possible through the upland portions of the trail, but it becomes too muddy and flooded

in areas intersected by swamp. The District should investigate the possibility of gaining a perpetual access easement to this trail for the purposes of operation, management and monitoring of the property. Just such a request was made in January 1986 for access off Fairchild Court, in the western portion of the Hidden Lake Estates, but it was turned down due to deed restrictions with an adjoining homeowner. However, negotiating for access through the airport itself, instead of through the subdivision, may prove feasible, and should be pursued.

Access to the north side of the property is available to District staff through Doe Court. Although minor public access is occurring here, this point's location at the end of a residential cul-de-sac makes it unsuitable for establishing an official public entrance. The trail from Doe Court is more overgrown than the southern trail and it does not go all the way to the lake. Instead, it is confined to the upland areas on this side of the property.

Unauthorized entry is also occurring at the end of Black Bear Court, and a trail extends here for about 200 yards into the interior of the property before becoming mired in the swamp. Unlike Doe Court, private property intercedes between the District's property line and the end of the cul-de-sac, making it unsuitable as a point for access by District personnel. This also makes it unsuitable for public access.

No other clear points of entry were observed during field investigations for this report. Aerial photos suggest that there may be other trails on the eastern side of the property, but again, these occur through private property. Under the current situation, access will continue to be a

problem. The District will remain open to any opportunity to increase access, both for the purposes of public recreation and for site maintenance. Otherwise, the Hidden Lake property will remain relatively inaccessible to the general public.

MANAGEMENT ACTION AND STRATEGY:
Pursue a perpetual access easement with the owners of the Hidden Lake Airport for ingress and egress through the airport for the purposes of surveying, marking boundary lines and periodic monitoring, operation and management of the Hidden Lake property, with access limited to District staff and vehicles. This action will begin before the end of the 1999 fiscal year.

Recreational Uses

It is the policy of the District (Board Policy 610-3) that appropriate, public recreational usage of District-held lands be permitted, provided that such usage is compatible with water resource management and protection needs. Generally, the development, operation and maintenance of recreational facilities is to be at the expense of outside entities and the facilities must be open to the general public. Those recreational activities which are not dependent on the natural resource values of a site generally will not be permitted.

Physical constraints related to the property's size, urban location and predominance of wetland communities severely limits the range of appropriate recreational uses. In addition, the current limited access makes high levels of recreational activity impossible at this time. It is also expected that most visitors will continue to come

from neighboring residential communities. In any event, access will remain limited to foot traffic only, with no vehicular entrance allowed—ATV's, motorbikes and bicycles will not be permitted on the property. Usage will remain limited to that which historically occurred on the property. This includes hiking, bird watching, fishing, nature study, canoeing and boat use by small craft lacking internal combustion engines. Prohibited uses include hunting, horseback riding, camping, swimming and diving.

Lake Use

The lake is a likely destination for most visitors and many recreational activities will depend on lake access. However, besides the difficulty in getting to the property itself, access to the lake once on the property is equally challenging. The distance from property edge to lake edge is slightly less than half a mile, and passage is through rough, muddy trails that flood during periods of high water. Nonetheless, incidental observations of boating have been reported by the Pasco County Sheriff's Office, which maintains flight operations in the Hidden Lake Airport. While boating is a permitted activity, visitors must portage their vessels and will not be allowed to leave them on the property. A boardwalk could improve lake access, but the expense for construction and maintenance would have to be borne by an outside entity.

It should be noted that Pasco County already has several parks with lake access, all located within a reasonable distance of Hidden Lake (Figure 1). The first, Bass Lake Park, is located within a mile of Hidden Lake. Also, nearby Moon Lake Park

is somewhat larger and affords greater recreational opportunities. Swimming, boating and fishing are all available here. There are also several picnic shelters and a playground. Finally, Crews Lake Wilderness Park is a major county recreation area less than ten miles from Hidden Lake. Crews Lake has a boat ramp, fishing pier and lookout tower, but swimming is not permitted. Hiking trails, a softball field, full-sized playground and paved bike trail are also available at Crews Lake.

MANAGEMENT ACTIONS AND STRATEGIES:

Limit access to foot traffic only, with no vehicular entrance allowed—ATV's, motorbikes and bicycles will not be permitted on the property. Permitted recreational uses includes hiking, bird watching, fishing, nature study, canoeing and boat use by small craft lacking internal combustion engines. Prohibited uses include hunting, horseback riding, camping, swimming and diving.

RESOURCE PROTECTION

Land Management

The District engages in a variety of land management activities to protect the natural resource values of its properties. The following is a discussion of the land management practices at Hidden Lake.

Prescribed Burning

Fire-maintained communities on the property are small, comprising less than thirty acres (less than five percent of total land area). Of this, the most conspicuous example is the marsh community in the northwest corner. Fire normally maintains this herbaceous community by restricting shrub and hardwood invasion. However, given the relatively small size of the marsh and since the natural return period for fire is probably long, succession into swamp is probably what would occur naturally (SWFWMD, 1989), and it will not be burned.

In contrast to the marsh, the sparsity of herbs and the relatively incombustible oak litter in the xeric hammocks precludes most fires and tends to perpetuate this natural community (FNAI, 1990). If fire were to occur, it would likely be catastrophic and may revert these areas back to an early successional stage of scrub or sandhill. Mature examples of xeric hammock are becoming increasingly rare in our state due to their prime real estate value. Therefore, protection from fire and development is required to perpetuate this natural community.

Given the extremely limited extent of fire maintained vegetation, planning and mobilizing District staff for prescribed burns at this site would be impractical. For this reason, and because of the very close proximity of residential developments and the airport, there are no plans to burn at Hidden Lake. Mechanical methods may be employed as necessary to reduce fuel loads and reduce the risk of wildfires.

**MANAGEMENT ACTION AND STRATEGY:
Utilize mechanical methods as necessary to reduce fuel loads and reduce risk of wildfires to nearby communities.**

Exotic Species Control

Invasion by exotic, non-native species is currently one of the main threats to the natural communities of Florida. Since their natural predators and population controls are not present, non-native plants and animals are often successful in displacing native species and thereby altering the natural ecosystem. 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.

Currently, most of the interior of the Hidden Lake property appears to be in a healthy condition and has been spared any large-scale invasion by exotic plants or animals. Hidden Lake proper is particularly exceptional in that it appears to be completely free of the aquatic pest plants commonly found throughout Florida's waterbodies. However, there are instances where exotic plant species are growing along the edge of the property. Most of these appear to be recruiting from neighboring residential yards and from yard debris

dumped illegally along interior trails. Brazilian pepper (*Schinus terebinthifolius*), banana trees and wild taro (*Colocasia esculenta*) were observed by District personnel during a survey of the southern perimeter. Given the comparatively small edge-to-interior ratio of the property, these may eventually pose a threat to the interior of the property (Burke, 1998). District staff will remain vigilant for occurrences of exotic species and control measures will be implemented as necessary in accordance with the guidelines established in Board Procedure 61-9.

MANAGEMENT ACTIONS AND STRATEGIES: The illegal dumping of yard debris and recruitment from residential developments bordering the property represent the primary sources of exotic introduction. Monitoring and treatment of the property will be conducted to prevent establishment and encroachment of exotics from these areas, in accordance with Board Procedure 61-9. Trash removal and site security will also prevent them from gaining a foothold.

Illegal Dumping

There are several areas on the south side of the property where trash has been illegally dumped. These dump sites occur near the border of the property, along the trails in the upland areas. Most of the waste seems to consist largely of yard-debris, beverage containers and roofing tiles. No hazardous materials or dumping in the wetlands was observed.

This trash will need to be removed. As mentioned previously, yard debris can be a source for the introduction of exotic and

invasive plant species, and there is already some evidence of this occurring. As discussed below, posting and fencing the boundary will help check this activity in the future.

MANAGEMENT ACTION AND STRATEGY: Remove trash piles from the property, and continue monitoring the site for illegal dumping. This action will be completed by the end of the 1999 fiscal year.

Security

The Hidden Lake property has experienced many of the common abuses suffered by publicly-owned natural areas. These include trash dumping, vandalism and destructive use by unauthorized vehicles. Property integrity and visitor safety will therefore rely upon the placement of warning signs, placement of vehicle barriers, fencing, and the cooperation of law enforcement officers and adjacent property owners.

Signage will be an essential component of securing the site. Currently the District's boundary is not posted, and conversations with adjoining property owners confirmed that there is a general level of ignorance about the District's ownership of Hidden Lake. Standard District signage, which identifies the District as the landowner and lists allowed and prohibited activities, will be maintained at all trail heads, and as appropriate along the perimeter.

Conversations with the deputies from the Pasco County sheriffs' office, which maintains flight operations in the Hidden Lake Airport, indicate unauthorized vehicular access is occurring at two points in

the upland areas behind the airport's hangers. This includes both street and off-road vehicles, as well as bicycles. There is also a point of entry on the western side of Hidden Lake Estates, off Fairchild Court. Barriers to vehicular access will be established and maintained at these trail heads, and at any future point where illegal access occurs. Perimeter fencing will be used as needed to reduce illegal access. However, at this time it should not be necessary to fence the entire boundary, since most of it consists of wetlands and is inaccessible to all but pedestrian traffic. A major benefit of securing the site should be a reduction in the amount of illegal dumping occurring on the property. In addition, vehicular traffic and trash dumping have a destabilizing influence on the habitat and natural systems of the property, and precluding these activities will have a positive effect on the recovery of impacted areas.

Another essential component of site security is cooperation between the District and adjacent property owners. Maintaining good-neighbor relations and communications will be essential in preserving the integrity and natural resource values of Hidden Lake. Until access is readily available for District personnel, this may prove to be the most effective method for monitoring the site. Interested homeowners and homeowner associations will be provided with information on how to contact the District to report their concerns and District personnel will be available to speak with them as they require.

The proximity of the Pasco County Sheriff's flight operations at the Hidden Lake Airport

is another resource which could prove invaluable in monitoring and securing the site. The District will continue to communicate and cooperate with the law enforcement personnel and encourage deputies to report any unauthorized activities they observe. Deputies will be informed of the permitted and prohibited activities for the property, and be given the appropriate information for contacting the District.

MANAGEMENT ACTION AND STRATEGY: Posting and fencing strategic portions of the boundary is a priority, as well as controlling points for unauthorized vehicular access. This action will be completed by the end of the 1999 fiscal year. In addition, maintaining good-neighbor relations with adjacent property owners will be essential to site security, especially given the limited access currently available to District personnel. Interested homeowners' associations will be given a copy of this plan following its approval by the Governing Board. The cooperation and support of the Pasco Sheriff's office will also be enlisted to monitor the site for unauthorized activities. The Sheriff's office will be contacted by the end of the 1998 fiscal year to discuss cooperative monitoring of the site.

ADMINISTRATION

External Coordination

The District must coordinate with many outside public agencies and private interest groups to manage its properties effectively. This section identifies those management activities and concerns which cross, or potentially cross, the limits of jurisdictional control or interest.

Florida Department of Environmental Protection

All the wetlands in the Hidden Lake area are contiguous and under the joint jurisdiction of the Florida Department of Environmental Protection (DEP) and the District. Through its permitting and regulatory authority, DEP has a major role in protecting water quality. The District will work closely with the DEP to resolve any threats to water quality at Hidden Lake.

Pasco County

As the local governmental entity with authority over the lands around the Hidden Lake property, Pasco County will be instrumental in guiding adjacent land uses. The District will work with the County to exclude land uses that may degrade the water quality and natural drainage of the area and encroach on the 100-year floodplain. Any future recreational developments at the Hidden Lake property will also likely require the participation of the County. In addition, the proximity of the Pasco County Sheriff's office to the Hidden Lake property makes them an ideal partner in maintaining site security. The District

will enlist the support and cooperation of the Sheriff's office in monitoring the property.

Adjacent Property Owners

The area around the Hidden Lake property is already developed, and there is the potential for future conflicts. The District will work with neighboring communities to ensure that land use conflicts are averted or resolved.

Internal Coordination

District staff from the Land Resources Department and Planning Department have played key roles in the development of this land use plan. Its effective implementation will require the continued cooperation of these and other departments of the District.

REFERENCES

- Burke, Dawn M. and Erica Nol. 1998. Edge and Fragment Size Effects on the Vegetation of Deciduous Forests in Ontario, Canada. Natural Areas Journal. Rockford, Illinois.
- Christianson, R.A. 1988. Guidelines for the Development of Site-Specific Plans for the Use and Management of District-Owned Properties. Southwest Florida Water Management District. Brooksville, Florida.
- Cox, James, R. Krautz, M. MacLaughlin, and T. Gilbert. 1994. Closing the Gaps in Florida's Wildlife Habitat Conservation System. Office Of Environmental Services. Florida Game and Fresh Water Fish Commission. Tallahassee, Florida.
- Ewel, K.C. 1990. Swamps. From: Ecosystems of Florida. Myers and Ewel, Editors. University of Central Florida Press. Orlando, Florida.
- Florida Natural Areas Inventory and Florida Department of Natural Services. 1990. Guide to the Natural Communities of Florida. Florida Natural Areas Inventory. Tallahassee, Florida.
- Florida Game and Fresh Water Fish Commission. 1996. Florida's Endangered Species and Species of Special Concern. Prepared by: Don Wood. Florida Game and Fresh Water Fish Commission. Tallahassee, Florida.
- Harris, L.D. and R. Hulholland. 1983. Southeastern bottomland ecosystems as wildlife habitat. From: Appraisal of Florida's Wetland Harwood Resource. D.M. Flinchum, G.B. Doolittle, and K.R. Munson, Editors. University of Florida School of Forestry Resource Conservation. Gainesville, Florida.
- Kushlan, James A. 1990. Freshwater Marshes. From: Ecosystems of Florida. Myers and Ewel, Editors. University of Central Florida Press. Orlando, Florida.
- Soil Conservation Service. 1982. Soil Survey of Pasco County, Florida. United States Department of Agriculture.
- Southwest Florida Water Management District. 1993. Bear Creek Stormwater Management Master Plan, Volume 1. Prepared by: Ghioto and Associates. Brooksville, Florida.
- _____. 1989. Ecological Resource Protection Study: Alligator Creek, Brooker Creek, Hidden Lake, Jerry Lake, Medard Reservoir, Sawgrass Lake, and the Canal Projects. Prepared by: Biological Research Associates. Brooksville, Florida.
- _____. 1988a. Ground-Water Resource Availability Inventory: Pasco County, Florida. Southwest Florida Water Management District. Brooksville, Florida.

- ___ 1988b. Resource Evaluation of the Proposed Hidden Lake Water Management Land Acquisition. Southwest Florida Water Management District. Brooksville, Florida.
- ___ 1988c. A Comprehensive Archeological Resource Inventory for the Southwest Florida Water Management District Brooksville. Prepared by: Brent R. Weisman and William H. Marquardt, Department of Anthropology, Florida Museum of Natural History. Gainesville, Florida.

03402

REPORT NAME:
A PLAN FOR THE USE AND

AUTHOR & REPORT DATE:
ROBERTSHAW, JASON 07/98

KEY WORD:
HIDDEN LAKE

CART #/PG #:

215.1 / REPORTS AND PUBLICATIONS