



**EDWARD MEDARD PARK
LAND MANAGEMENT AND
LAND USE PLAN**

**REGIONAL PARKS AND CONSERVATION
SECTION**

**HILLSBOROUGH COUNTY PARKS, RECREATION
AND
CONSERVATION DEPARTMENT**

JULY 2009

EDWARD MEDARD PARK LAND MANAGEMENT AND LAND USE PLAN



Hillsborough County
Florida

Prepared for

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AND
CONSERVATION DEPARTMENT
CONSERVATION SERVICES SECTION
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JULY 2009

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EDWARD MEDARD PARK

LAND MANAGEMENT AND LAND USE PLAN

1.0 GENERAL INFORMATION

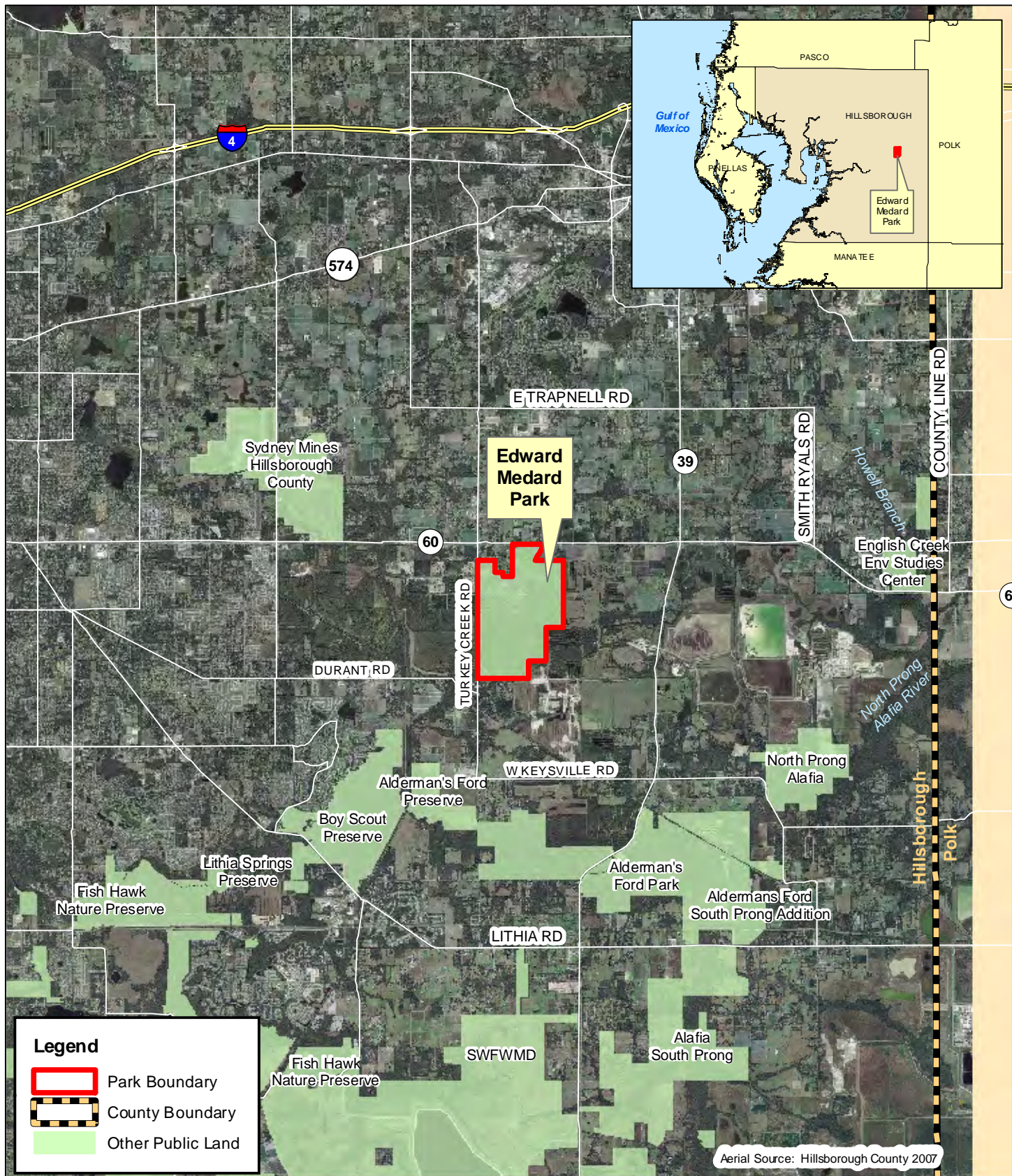
1.1 Location of Edward Medard Park

Edward Medard Park (Park) is located in east-central Hillsborough County, Florida, 15 miles east of Tampa. The Park lies south of State Highway 60 in portions of sections 25, and 36 of Township 29 South, Range 21 East and Section 30, Township 29 South, Range 22 East, and is bordered on the west by Turkey Creek Road. The property totals 1287 acres and is bisected by the original course of the Little Alafia River. The Edward Medard Reservoir, which was excavated across a two mile length of the Little Alafia River channel accounts for approximately 770 acres of the total Park area (SWFWMD, 1991). Land uses surrounding the Park include agriculture, old mine lands, and rural residential areas. Figure 1 provides a location map of Edward Medard Park, as well as other public lands in the vicinity. Appendix A provides the legal description, warrantee deeds, boundary survey, easements, lease and management agreements, and other legal documents for the Park. This includes the lease agreement with the Turkey Creek Stables for the use of the Park, the management agreement between Hillsborough County and the Southwest Florida Water Management District (SWFWMD), the warranty deed between American Cyanamid and SWFWMD, and the easement owned by the Florida Gas Transmission Line.



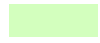
1.2 History and Objectives of the Park

Most of the lands comprising Edward Medard Park were donated to SWFWMD by the American Cyanamid Company in 1969. Figure 2 provides an aerial photograph of the land prior to the mining activity. American Cyanamid had mined the 1160 acre tract for phosphate ore between 1963 and 1969. The company had approached SWFWMD to propose the future land donation prior to initiating mining operations on the current reservoir site. SWFWMD determined that the proposal was consistent with water management plans for the Alafia River Basin and agreed to cooperatively develop the reservoir for flood control, water conservation, and public recreation. Originally the site was called Pleasant Grove Park and Reservoir, although some historic documents list the name of the reservoir as Lake Sucarnoochee. The lake was renamed Medard Reservoir when the Park was renamed the Edward Medard Park in 1977 in honor of a District governing board member who was instrumental in initiating the project (SWFWMD, 1991).

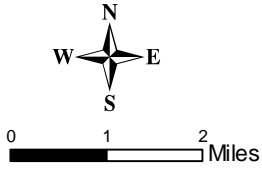
Since 1977, Hillsborough County, through its Parks, Recreation and Conservation Department has operated and maintained Edward Medard Park under an Operating Agreement with SWFWMD (Appendix A). According to this agreement, SWFWMD



Legend

-  Park Boundary
-  County Boundary
-  Other Public Land

Aerial Source: Hillsborough County 2007



0 1 2 Miles

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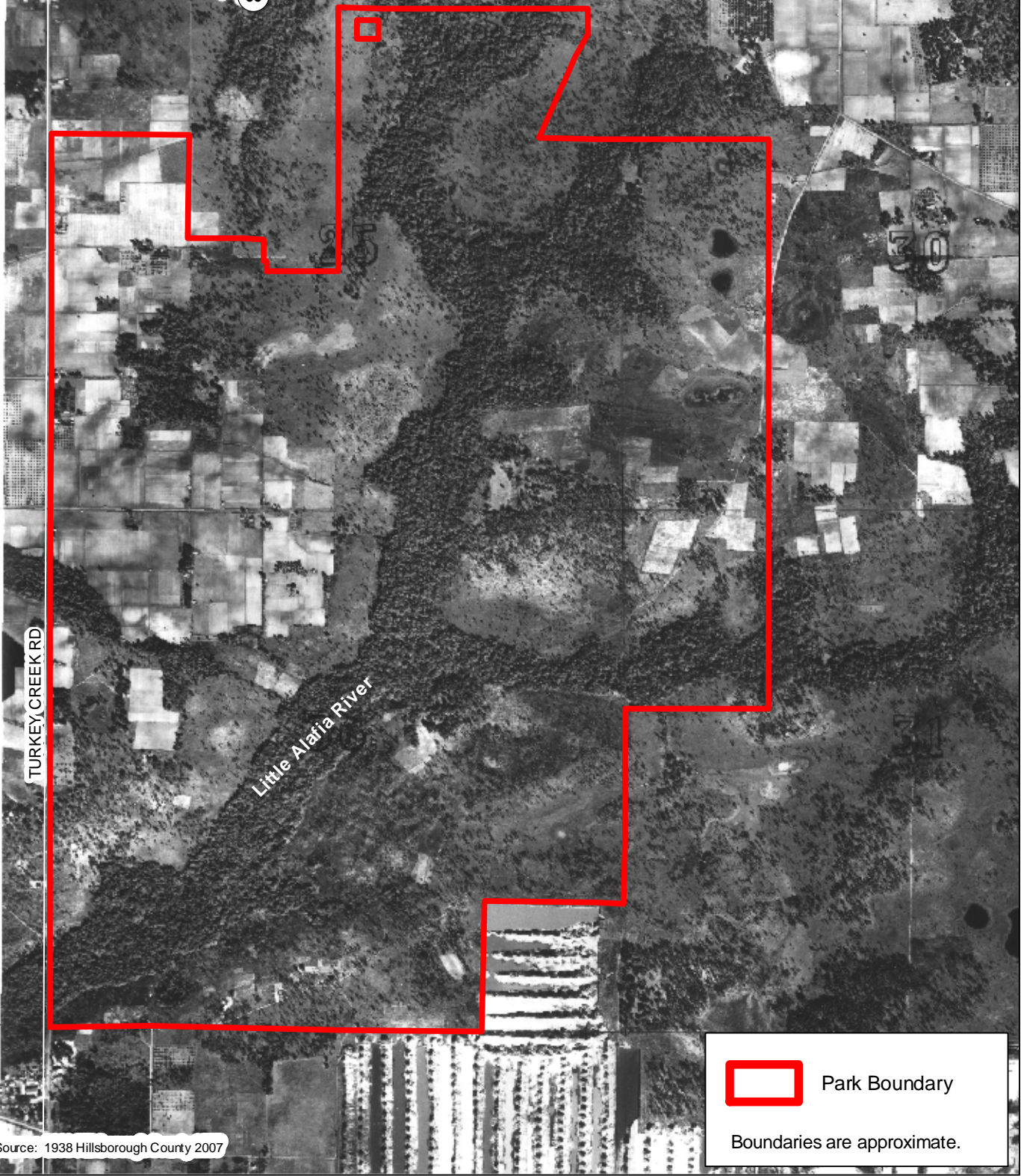
Hillsborough County
Florida

FIGURE 1
Edward Medard Park
Location Map

JAN 8 - 1938


60

3631



TURKEY CREEK RD

Little Alafia River

 Park Boundary

Boundaries are approximate.

Aerial Source: 1938 Hillsborough County 2007



0 750 1,500 Feet

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FIGURE 2
Edward Medard Park
1938 Aerial Map

would retain the responsibilities for the management and maintenance of the on-site flood control structures and for the control of aquatic weeds in the reservoir. The County is responsible for the management of all recreational usage and most of the routine land management and maintenance activities. Any new land uses proposed for the Park must be approved by both SWFWMD and the Alafia River Basin Board. This revision of the original management plan (SWFWMD, 1991) maintains the stated purpose of the park: to provide resource-based recreation while promoting the continued establishment of natural vegetation.

2.0 NATURAL RESOURCES

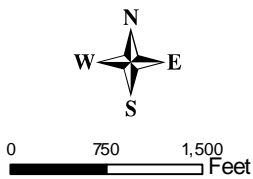
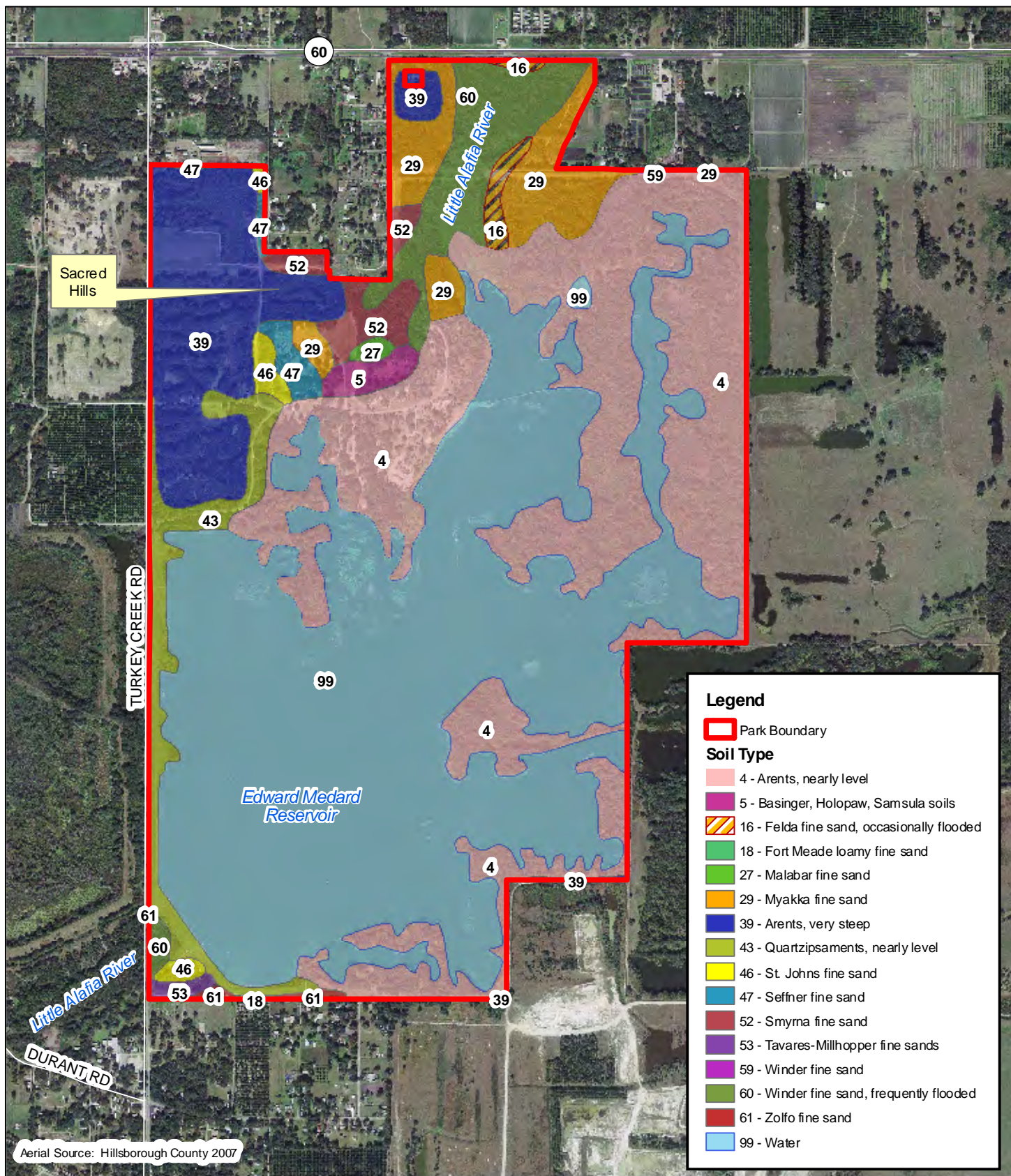
2.1 Soil Resources

2.1.1 Soils Distribution

According to the United States Department of Agriculture/Natural Resource Conservation Service (formerly Soil Conservation Service) Soil Survey of Hillsborough County (USDA 1989), there are fifteen different classifications of soils found in Edward Medard Park. Table 1 lists the soils and the surface area they cover within the Park. Figure 3 highlights the fifteen soil types and shows their distribution throughout the Park.

Table 1 Edward Medard Park Soils Distribution¹		
Map Number	Soil Type	Acreage
4	Arents, nearly level	347.36
5	Basinger, Holopaw, and Samsula soils, depressional	8.68
16	Felda fine sand, occasionally flooded	7.08
18	Fort Meade loamy fine sand	0.42
27	Malabar fine sand	2.24
29	Myakka fine sand	55.76
39	Arents, very steep	113.85
43	Quartzipamments, nearly level	42.88
46	St. Johns fine sand	8.16
47	Seffner fine sand	8.76
52	Smyrna fine sand	20.17
53	Tavares-Millhopper fine sands, 0 to 5% slopes	3.10
59	Winder fine sand	0.42
60	Winder fine sand, frequently flooded	53.5
61	Zolfo fine sand	2.58
99	Open water	661.72
Total Acreage		1286.69

¹USDA Natural Resource Conservation Service, Soil Survey Graphic (SSURGO) Database for Hillsborough County, Florida, 2004.



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FIGURE 3
Edward Medard Park
Soil Map

2.1.2 Soils Description

Arents, nearly level (4). This soil type has been excavated, reworked, and reshaped by earthmoving equipment to form a heterogeneous soil material. This soil type comprises the majority (27%) of the upland areas within the Park and is a remnant of the previous mining activity.

Basinger, Holopaw, and Samsula soils, depressional (5). This soil type makes up around 0.67% of the Park and commonly supports wetland species, specifically cypress swamp. This soil complex is usually found in cypress strands or domes, but within the Park, it is located in an upland area of remnant overburden in the northwestern section. The area supports non-hydric species such as laurel oaks, southern red cedar and sand live oak on a series of overburden mounds known as Sacred Hills by the park staff and frequent visitors.

Felda fine sand (16). This soil type includes nearly 0.55% of the surface soils within the Park and is found in two locations within the remnants of the Little Alafia River floodplain in the northern portion of the Park. The native vegetation is intact in this area and includes slash pine and cabbage palm, with saw palmetto, wax myrtle, and pineland threeawn in the understory. These two areas act as mesic, transitional habitat between the floodplain and the more xeric vegetation associations.

Fort Meade loamy fine sand (18). This soil type is nearly level to gently sloping and is found in upland communities, specifically in sandhill communities. The soil comprises only 0.03% of the total surface soils and is located in a small strip of land on the southwestern boundary. This area is associated with the berm around the reservoir and the adjacent access area. The vegetation in this area is limited to grasses and common herbaceous weeds and it is currently being used as a storage area for soil, paving materials and mulch.

Malabar fine sand (27). The Malabar fine sand soils are usually found in depressions within pine flatwoods. These soils make up only 0.17% of the soil cover within the Park and are limited to one location in the northwestern corner.

Myakka fine sand (29). Approximately 4.33% of the surface soil within the Park fits this classification and is found on two individual areas. This soil type supports pine flatwoods in its natural condition and the vegetation in four areas within the Park appear to be relatively intact, but overgrown with hardwoods. The four areas are scattered throughout the northern portion of the Park, east of SR 39.

Arents, very steep (39). This area is a relict of the phosphate mining operation and includes the high piles of overburden and the long, steep-sided pits. Some of the pits contain water and some have been filled in for safety reasons. This soil composes almost 9% of the total soil surface areas within the Park and is located in the northwestern corner.

Quartzipammets, nearly level (43). This is a nearly level, sandy soil resulting from phosphate mining operations. The soil comprises 3.33% of the surface soils and is present in the western portion of the Park, forming the dam on the reservoir. Vegetation usually consists of early successional native and opportunistic exotic species, but in this case, the vegetation is predominantly native and cultivated grasses.

St. Johns fine sand (46). The St. Johns soil type makes up 0.63% of the surface soil in the Park, and is found in two very small areas; one on the southern boundary near the western edge of the Park, and one in the northwestern corner. The native vegetation in these areas would be species common to pine flatwoods such as slash pine, saw palmetto, gallberry, and others. The vegetation in these areas appears to be intact.

Seffner fine sand (47). Seffner fine sands are nearly level and somewhat poorly drained and are found on broad, low ridges in the flatwoods. The vegetation usually found on undisturbed sites includes flatwoods species such as longleaf and slash pines, laurel oak, creeping bluestem, saw palmetto, grass-leaved golden aster, and pineland threeawn. These soils comprise approximately 0.68% and are located in the northwestern corner of the Park.

Smyrna fine sand (52). This soil classification provides 1.57% of the surface soils in the Park. This soil type is found on broad low-lying, convex swells in drier flatwoods communities. This soil type is found in one small area within the northwestern corner. The native vegetation would typically include longleaf and slash pine, gallberry, running oak, saw palmetto, wax myrtle, and other species common to pine flatwoods.

Tavares-Millhopper fine sands (53). This soil type is found in uplands and on low ridges in pine flatwoods. This soil comprises 0.24% of the Park and is found in one very small location in the southwestern corner of the Park.

Winder fine sand (59). This nearly level, poorly drained soil is found in broad, low-lying sloughs within pine flatwoods. Natural vegetation includes slash pine, cabbage palm, live oak, saw palmetto, wax myrtle, and pineland threeawn. This soil type comprises only 0.03% of the Park and is found near the northeastern boundary.

Winder fine sand – frequently flooded (60). This soil classification is mainly associated with the floodplains of the Little Alafia River and it makes up 4.16% of the Park. This soil typically supports an alluvial forest of hydric hardwoods, cabbage palm, and herbaceous species tolerant of periodic inundation. Within the Park, this soil type is limited to the northern portion and southwestern boundary along the remnant of the Little Alafia River. The majority of this vegetation is intact, protected from development by the frequent flooding.

Zolfo fine sand (61). The Zolfo fine sand soil is nearly level and poorly drained and found on broad, low ridges in the flatwoods. This soil type supports turkey oak, live oak,

longleaf pine, slash pine, broomsedge, saw palmetto, creeping bluestem, lopsided Indian grass, and pineland threeawn if in unaltered condition. The Zolfo soils comprise 20% of the total surface soils and are found in two very small areas on the southern boundary.

Open Water (99). The open water areas consist of Edward Medard Reservoir which occupies almost half (47.5%) of the area within the Park. The reservoir is the major attraction to the park and offers fishing, boating, birding, and other recreational opportunities to park visitors.

2.1.3 Soils Management Measures

In this Park, the threat of erosion is moderate due to the relative flat topography throughout the majority of the Park. However, the popularity of this site makes maintaining a ground cover difficult, and some erosion may occur during heavy rains on areas where the grasses have been worn away by foot traffic. This is especially true in the area known as “Sacred Hills”, located between Panther Loop and Sacred Hills Circle in the northern portion of the Park (See Figure 3). This area is a remnant of overburden; piles of soils remaining from the previous mining activities. Over the last forty years, this area had re-vegetated with trees, but since the Park was opened, the area has become popular with children as a playground. The activity has caused significant erosion (Kent Newcomb, personal communication, 2008) exposing tree roots and even undermining some of the trees to the point that they are dying and/or falling down. As this area is not a natural area, the loss of the trees is not considered an impact to wildlife habitat, but the falling trees and the exposed tree roots may provide a hazard to children.



This photograph shows the erosion around the roots of the trees in the area called “Sacred Hills”. This unique area is popular with children who like to climb and play on the “hills” which are actually piles of overburden remaining from the mining days.

It is very important to preserve the integrity of the existing native vegetation, landscaped areas, and soils as much as possible, especially in those areas around the reservoir. The Park staff and its contractors will need to take special care with fire lane and future trail construction to avoid erosion. Any activity that may disturb the soil or vegetation should implement Best Management Practices, such as those published by the Florida Division of Forestry specifically for the construction of fire lanes (http://www.fl-dof.com/forest_management/bmp/table.html).

2.2 Vegetation Communities

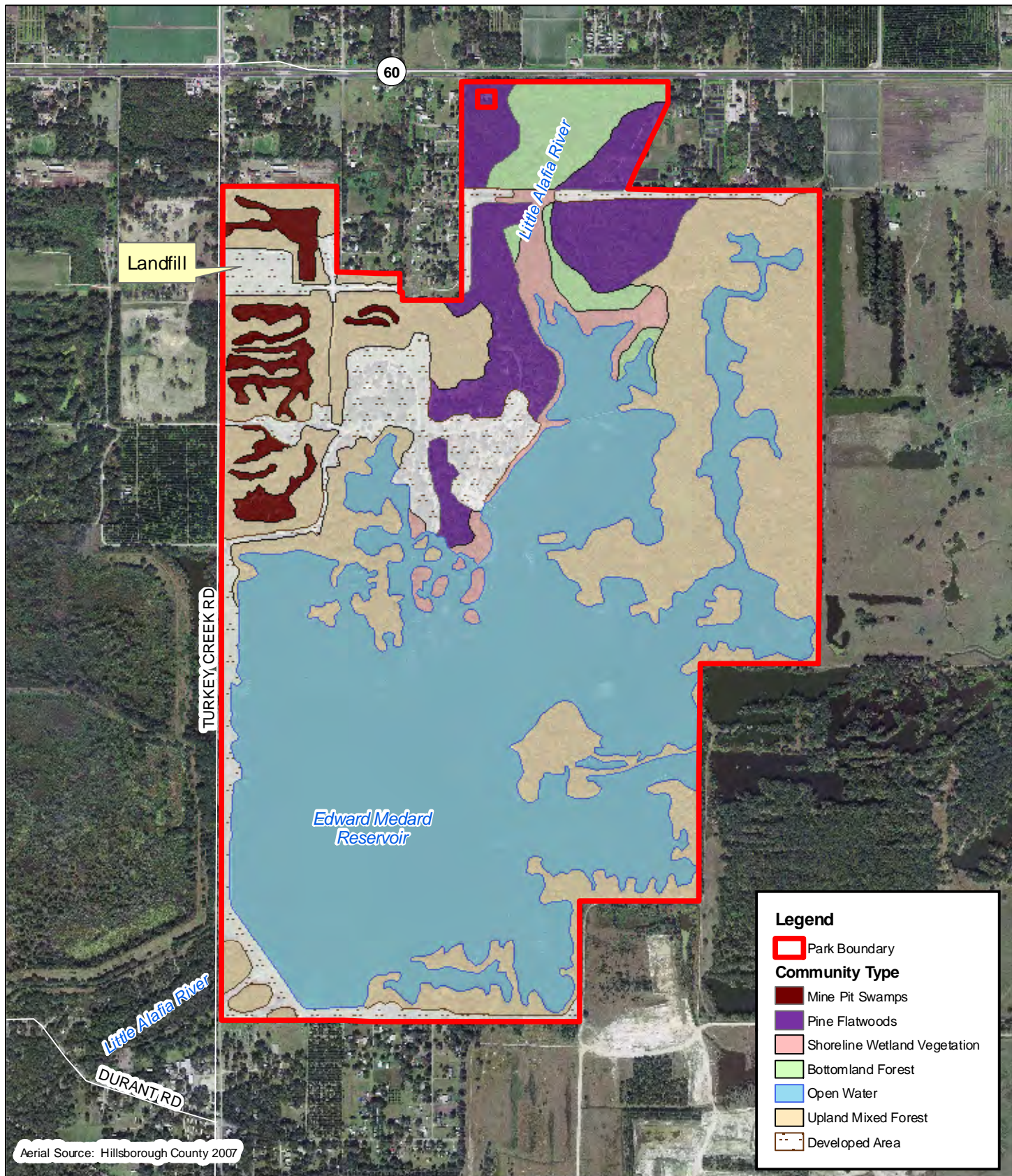
2.2.1 Mapping Process

The discussion of natural communities describes the distinct vegetation associations on the Edward Medard Park. Most of the communities in the Park have been altered significantly through the historic phosphate mining activity which created the reservoir and left pits and overburden in the northwestern corner of the Park. In addition to the disturbances caused by the mining activity, one of the mining pits was used as a County-operated landfill. The landfill was closed in 1963 and is currently monitored, but the landfill was never completely restored. The landfill is shown in Figure 4.

Some areas of native vegetation remain in the northern portion of the Park, and some previously mined areas have re-vegetated to a degree that they appear to be natural areas. Other alterations to the existing vegetation communities include thirty years of fire suppression, the unimpeded introduction of non-native species, the creation of paths and roadways, and the construction of park amenities and maintenance buildings.

The vegetation community areas were estimated and then mapped by interpretation of aerial photography (2007 full color photography at a scale of 1" = 300') with limited ground truthing, and with input from Park staff. See Figure 4 for a representation of the existing natural communities and man-made areas within Edward Medard Park. The vegetation communities were digitized and converted to GIS shape files for planning purposes and discussion.

The system employed in this plan of classifying the natural communities was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as geology, climate, soils, hydrology, and fire determine the species composition of an area and that areas which are similar with respect to these factors will tend to have natural communities with similar species compositions. The six vegetation communities and man-made areas are listed in Table 2 with the total area that each community occupies within the Park.



0 750 1,500 Feet

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FIGURE 4
Edward Medard Park
Natural and
Manmade
Communities

Table 2 Edward Medard Park Natural Vegetation Communities		
Vegetation Community	Acres	%
Pine flatwoods	97.16	7.6
Upland mixed forest	364.34	28.3
Bottomland forest	45.05	3.5
Shoreline vegetation	30.96	2.4
Mined pits swamps	31.21	2.4
Developed areas	112.62	8.8
Open water	605.35	47.0
TOTAL	1286.69	100.00

2.2.2 Vegetation Community Descriptions

The following paragraphs describe the five distinct plant communities, the developed areas, and the open water area. Figure 4 shows their estimated extent and location within the Park. As stated previously, the mapping was completed with limited ground truthing and the locations of the plant communities and descriptions of the vegetative cover are approximations. As part of the 10-year management process, the Park staff should continue ground-truthing and refining the delineation of plant community types, including making simple observations of tree mortality and changes in vegetation structure, as well as continuing to update the flora and fauna species lists.



This photograph was taken in the northern part of the Park within the edges of the bottomland forest. Carolina willow is the dominant species in the areas with the deeper water. Cabbage palms, sweet gum, and red maple are also visible in the photograph.



This is another photograph of the bottomland forest. This photo was taken during the dry season; during the rainy season these trees would be in standing water, as evidenced by the buttressed roots.

Bottomland forest. The bottomland forest community is located in the northern portion of the Park and comprises the unmined remnant of the Little Alafia River. This area supports a canopy of water oak, sweet gum, red maple, and cabbage palm, with an understory of ferns and hydric forb species. The stream has been channelized through the forest, draining the community somewhat. Despite the alterations to hydrology, this area appears to be fairly healthy and floristically intact.

Management measures for the bottomland forest. This type of habitat is prone to infestation by exotic species, specifically in the mesic fringes. Invasive vines such as old world climbing fern, skunk vine, and air potato can engulf large portions of the canopy in a matter of months. While it does not appear that this community has a critical infestation at this time, it is important that an exotic species control plan be implemented in this Park as soon as possible. Other important management measures for this community type are the protection of the natural hydroperiod and the prevention of soil erosion by retaining vegetative cover on slopes.

Pine flatwoods. The pine flatwoods is located in the northernmost portion of the Park. These areas were not mined and still support native vegetation for this community. This community is significantly invaded by hardwood species including laurel oak and water oak, but the slash and longleaf pine dominate the canopy. Other species present include saw palmetto, green briar, wax myrtle, and persimmon. The campgrounds are located in the pine flatwoods habitat, and the remainder of the habitat is relatively untouched and provides a buffer along the northern unmined portion of the Little Alafia River.



Most of the campground is located in the pine flatwoods community in the northern portion of the Park. The campground is very popular and provides a shady retreat under the mixed pine/oak canopy.

Management measures for the pine flatwoods. The pine flatwoods areas have not been burned on a regular basis. In some areas the undergrowth is sparse and moist and does not present a serious fire hazard, while in other areas, the dry duff and understory vegetation presents a dangerous potential for wildfires. These communities are fire dependent and must be burned to maintain their character and habitat value. In addition, a wildfire may result in property damage, liabilities, and may, at the worst, cause injuries or the loss of human life.

Pine flatwoods are also susceptible to the influx of exotic plant species such as Brazilian pepper, which flourish in open areas within the flatwoods. Many of the areas along the shoreline and other open areas have serious infestations of Brazilian pepper. There may be a need to control the hardwood species and to replant native flatwoods species to restore the pine flatwoods, especially if large areas of exotic vegetation and hardwoods are removed.

Upland mixed forest. The upland mixed forest communities occur on lands that were previously mined, and are located throughout the Park. This community supports a canopy that is dominated by laurel oak, water oak, live oak, cabbage palm, pines, wax myrtle, and other species common to areas that have been subject to historic disturbances. There is a lot of variation in this community, and a more thorough mapping effort is recommended.



This photograph shows the trail through the northwestern portion of the Park. The trail is wide and carefully maintained to accommodate the equestrians visiting the park. Note the variety of tree species in the forest.

Management measures for upland mixed forest. These areas typically have a high percentage of nuisance exotic vegetation so control of these species is an important management measure. In addition, this community should be evaluated for prescribed burns to control hazardous fuel buildup and improve wildlife habitat.

Shoreline vegetation. The shoreline vegetation includes those species found on littoral shelves around the lake, as well as those found in the northern end of the lake where the Little Alafia River discharges into the reservoir. Vegetation in these areas includes Carolina willow, cattail, bulrush, primrose willow, and other hydric species. These areas are very important for wildlife habitat and water quality, and the vegetation prevents erosion from boat wakes.



The shoreline of the lake is vegetated for the most part. Controlling nuisance species along the shoreline and replanting native plants greatly improves the habitat for fish and wildlife.

Management measures for shoreline vegetation. The most important management measure with respect to the littoral shelf areas is to prevent the infestation of exotic species in these communities. The exotic species, such as cattail, primrose willow, and on the upper banks, Brazilian pepper, create dense monocultures which lowers the habitat value.



The vegetation in one of the pit swamps can be seen between the two trees. Vegetation species include elderberry, primrose willow, and Carolina willow. Most of the pits have been filled somewhat and do not pose drowning hazards.

Mined pit swamps. Phosphate mined sites are easily identified by the deep, narrow pits adjacent to linear piles of overburden soils with steep side slopes. The mined pits in the Park are located in the northwestern corner and have re-vegetated with a variety of hydric species depending upon the hydrology and depth of the pit.

Some pits are deeper and the water surface within these pits is covered with water lettuce, duck weed or other floating aquatic vegetation. Shallower pits support saplings of red maple, cypress, water oak, and shrubs of Carolina willow, salt bush, or wax myrtle.

Management measures for mined pit swamps. These pits have re-vegetated and are now providing some wildlife habitat. Restoration of these pits would be costly, and may only provide marginal environmental benefits. The maintenance of the invasive exotic plants and animals within the pits, protection/survey of native wildlife and maintaining good water quality are the main management measures for these areas.

Developed areas. The developed areas include the cleared and maintained areas for parking, picnic tables and shelters, playgrounds, open fields, roadways, maintained easements, the landfill, and the maintained berm on the western side of the Park. The developed areas are found on the western border and within the central portion of the Park. Most of these areas are routinely maintained by mowing and seeding with grass seeds, and are within the former mined areas.



This is an example of the developed area in the Park. The picnic shelter in the background is one of several around the Park. This area supports a few trees but is mainly open areas of routinely mowed turf grass.

Management measures for developed areas. No special management measures for these areas are proposed other than to continue to mow and provide for public safety, avoid the use of fertilizers and pesticides near the reservoir, and maintain the grassy cover to prevent erosion. When supplemental planting is undertaken, an emphasis on native species is recommended.

Open water areas. The open water area comprises almost half of the total area of the Park and consists of Medard Reservoir, a former phosphate mined area. The lake has numerous nooks and crannies, and has depths that range from two to almost thirty feet (Kathy Chambers, personal communication, 2008). These factors make it an ideal fishing area for which it is very popular. The reservoir was originally proposed as a potable water source but the small capacity and past water quality issues made it impractical for this purpose (SWFWMD, 1991).



The reservoir does not meet water quality standards for swimming. But fishing is very popular and the fish are safe to eat (Church, personal communication, 2008).

Management measures for open water areas. Park staff spend a significant amount of time cleaning up trash and encouraging park visitors to comply with ordinances protecting the park resources. Trash and pollutants can enter the lake through stormwater runoff, and this would have a negative effect on fish and wildlife habitat. Other management measures used include the maintenance of vegetation on the shoreline to prevent erosion, the prohibition of outboard motors to prevent wake damage, and the operation of waste collection areas and restrooms for campers. The open water areas are sprayed for invasive vegetation by SWFWMD, and the FFWCC manages fish stocking.

Management measures for all vegetation communities. Management measures which would benefit all communities in the Park would be the removal of exotic nuisance vegetation and the monitoring and control of new infestations. An exotic vegetation control program is needed in this Park as soon as possible to avoid the loss of important habitat. In addition, a fire management program should be implemented as soon as possible to restore the pine flatwoods communities.

2.3 Water Resources

2.3.1 Aquatic Preserves and Outstanding Florida Waters

There are no Aquatic Preserves within 25 miles of Edward Medard Park and the Little Alafia River is not considered an Outstanding Florida Water (OFW) (<http://www.dep.state.fl.us/water/wqssp/ofw.htm>).

2.3.2 Water Quality

The Edward Medard Reservoir was proposed as a potable water source but was later determined not to be a significant potential public water supply and was not identified as a future water source in the District's draft Water Supply Needs and Sources study (SWFWMD, 1991). The low potential for this water body as a reservoir is related primarily to the limited quantities that would be available and the fact that several of the water quality parameters, such as dissolved oxygen, PCBs, coliform, and other various parameters failed to meet the



state potable water quality standards (SWFWMD, 1991). The water quality within the reservoir in 2004 [the latest recorded assessment, according to the Florida Department of Environmental Protection (FDEP)], was considered poor with a trophic state index (TSI) value of 90. The TSI takes into account chlorophyll, nitrogen, and phosphorus, which are nutrients required by plant life. The FDEP uses this information to determine a rating for the waterbody. Ratings extend from 0 (good) to 100 (poor) (<http://www.hillsborough.wateratlas.usf.edu/lake/default.asp?wbodyid=5464&wbodyatlas=lake>). The information on the County-maintained water atlas website seems to indicate that the reservoir has been monitored only sporadically and this must be taken into consideration.

The water quality issues in the lake are suspected to be connected to the presence of the Pleasant Grove Landfill located in the northwestern corner of the Park. This landfill is a Superfund/Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) site first identified in 1989 and inspected in 1991 (http://oaspub.epa.gov/enviro/cerclis_web.report?pgm_sys_id=FLD984169763). The site was determined to be a low priority for remediation. However, the disposal of waste oil sludge in the unlined landfill, and the subsequent discovery of PCBs and other hydrocarbons in the lake have resulted in a ban on swimming. No further activity or studies are listed on the EPA website after the “discovery” in 1991.

As discussed in the original management plan (SWFWMD, 1991) three groundwater monitoring wells were installed to monitor off-site impacts of groundwater withdrawals from the nearby South Central Wellfield, operated by Tampa Bay Water. A fourth well is located near the southern property boundary and is used by the SWFWMD to monitor water elevations in the Floridan aquifer. The original management plan stated that there were other wells located around the Park but their use was not known at that time. The plan stated that SWFWMD would evaluate the wells to determine if the wells presented any threat to groundwater or public safety and would act appropriately to negate any such threats (SWFWMD, 1991). Two existing wells provide water for the Park, and are monitored by the Hillsborough County Water Department.

Edward Medard Park is located in the Alafia River Watershed (see inset to the right), which drains approximately 254 square miles in Hillsborough County and contains 30 named rivers, streams and canals and 11 named lakes and canal. There are also numerous springs along the river. Water quality is considered good throughout 47% of the basin, and fair in 14% with the remainder of the basin unknown. The water quality trend is considered to be stable or improving in 36% of the basin. Only 15% of the watershed is considered wetlands, predominantly within the river’s floodplain. A more detailed map and additional information about the watershed prepared by the Hillsborough County Stormwater Department can be viewed online at <http://maps.wateratlas.usf.edu/hillsborough/index.asp?watershedid=1&thename=Water Resources>.

In 1999, the Hillsborough County Stormwater Department contracted a consulting firm to prepare a watershed management plan for the Alafia River Watershed. In 2001, the consultants presented their findings and made numerous recommendations to improve water quality, flood control, water supply and natural systems. None of the recommendations will directly affect Edward Medard Park. The watershed management plan is available at <http://www.hillsborough.wateratlas.usf.edu/watershed/>.

The Southwest Florida Water Management District prepared the Alafia River Comprehensive Watershed Management Plan (SWFWMD, 2001) which discussed the water quality, flooding, water supply and natural systems concerns for the watershed. They identified the main issues within the watershed with respect to natural systems and proposed projects and strategies to address those issues. Many of the strategies included the conservation and protection of habitat through land preservation which included lands adjacent to and directly affecting Edward Medard Park as part of the Save Our Rivers Program.

According to John McGee of the Hillsborough County Public Works Department (personal communication, 2009), the reservoir is scheduled for a lake assessment, which will include an invasive species determination, water chemistry studies, vegetation study, and bathymetric analysis. The results of this assessment can be utilized to assess water quality issues and make informed recommendations for the improvement of water quality.

2.3.3 Water Resource Management Measures

Management measures required with respect to maintaining or improving the water quality in the vicinity of the Park and within the reservoir would be to:

- control invasive exotic vegetation with an approved herbicide used according to the label, or use biocontrol agents if available,
- avoid soil disturbances to prevent erosion and subsequent turbidity and sedimentation in surface waters,
- Implement Lake-Watch monitoring program, using staff if no volunteers are available.
- Regular maintenance of all on-site septic tanks.
- be vigilant with respect to trash, debris, lighter fluid, and other patron-generated hazards to prevent them from washing into the river, or into groundwater, and
- Always implement best management practices during any construction or other disturbance of the soils or vegetation.
- Keep close contact with the Hillsborough County Public Works Department and work with them on the lake assessment of the reservoir.

2.4 Fish and Wildlife Resources

2.4.1 Existing Conditions

Approximately 1,050,000 people visited Edward Medard Park in 2008 based on car counts (Kathy Chambers, personal communication, 2008), and most of these people were on or around the reservoir at some time during their visit. Despite this, the reservoir provides breeding and foraging habitat for numerous species of birds including rookeries for herons, egrets, anhingas, and cormorants. As stated in the 1991 management plan, there is an active bird rookery in the reservoir (See Figure 5). The island is posted with signs and regularly patrolled by volunteers from the Tampa Audubon Society. Audubon of Florida conducts annual surveys and the results are in Appendix B (Paul, 2009).

A comprehensive list of other wildlife and plant species present in the Park has not yet been prepared, but will be conducted in the near future.

2.4.2 Management Measures for Fish and Wildlife

The main management measures for the protection and conservation of wildlife in the Park should be the inventory and monitoring of the plant and animal species by the Park staff. Once the species are identified and located, it will facilitate the planning of habitat management measures for the species present. It is important to know what exists in the park in order to plan the secondary objectives which are the maintenance of nuisance exotic vegetation and animals, and the implementation of a prescribed burn plan. Exotic plant and animal control is also one of the most urgent needs for this park. If the staff recognizes the problems in the early stages, they will be able to control the infestation before it becomes widespread. Other measures currently implemented include maintaining site security, posting signs describing the park-specific rules as listed in the ordinance discussed in Section 7.1, preventing trespassing, poaching, and controlling exotic wildlife, such as feral hogs, cats, and dogs.

The Medard Reservoir is one of the most popular freshwater fishing areas in the state. According to the original management plan (SWFWMD, 1991) the FFWCC evaluated the fish populations and conditions in the reservoir and prepared a fish management plan. The original fish management plan is not available but the recommendations made in the plan are still in effect. In the original plan, the District recommended the prohibition of commercial fishing and expected the fish management plan to issue a ban. However, commercial netting of tilapia is still allowed in the reservoir, likely due to FFWCC determination that this activity is thought to reduce competition with the bass and other native species for bedding areas (SWFWMD, 1991).

Although the fish management plan is not available, specific conditions of the plan were implemented and the activities of the FFWCC in the last twenty years include:

- Creels (angler surveys) to estimate angler effort, catch, harvest, and catch rate (success fish/hr). Creels run in spring February-May; 1992, 1994, 1995, 1996, 1998, 1999, 2000, 2001, and 2002.
- Electro-fishing to document largemouth bass relative abundance and size structure. Electro-fishing used to evaluate slot limit and check status of the bass population. 1991 to Present.
- Regulation management, to protect the largemouth bass with the goal of providing a quality fishery for the anglers. A 14 -18 inch protective slot with a 4 fish limit with one over 18 inches was implemented on 1 July 1992 through 30 June 1999. Slot changed in 1999 to meet agency tier system of freshwater regulations; 1 July 1999 to present a 15-24 inch protective slot with a three fish bag limit.
- Stocking of sunshine bass (striped bass x white bass hybrid) stocked annually (spring). From 1989 to 1994 stocked 10 sunshine bass per acre (8,000 fish) from 1995 to 2007 stocked 100 sunshine bass per acre (80,000 fish).
- Fish Feeders installed in 1992 program ended around 1996.
- Brush fish attractors installed in 1992.
- Bulrush planted (2.5 acres) in 1993.
- Bluegill populations surveyed by electro-fishing in 2008.
- Black crappie populations surveyed by otter trawls in 2009.
- Fish communities surveyed by electro-fishing in 2009.

FFWCC also monitors the take to make sure that the reservoir is not overfished and that people do not take more than the established limit. Cast netting is allowed for tilapia and catfish, and commercial fishing is allowed for Nile perch. Enforcement of the rules and regulations regarding fishing is the responsibility of the FFWCC.

The proposed draw-down of the lake (see Section 4.1) would allow the FFWCC opportunities to conduct the following activities, if funding is available from SWFWMD:

- Remove current freshwater regulations on the lake at least one month prior to the drawdown to allow open harvest of all fish species.
- Conduct a renovation of remaining fish population in March 2010 using a fish toxicant while the lake is drawn down. *Contingent on available funds for the chemical.
- Install 10-30 brush fish attractors in various locations on the lake.
- After refill restock the lake with largemouth bass, black crappie, channel catfish, bluegill and red ear sunfish.
- Set regulations to protect the fishery for the first 2-3 years after refill.
- Monitor response of the fishery to management activities.

2.5 Special Status Species

Information regarding the special status species on Edward Medard Park was obtained from the Park staff, Audubon of Florida, and relevant literature. State and/or federally listed plant and animal species documented as occurring in Edward Medard Park include those listed in Table 3. Their habitat needs are discussed in the following paragraphs. Only a few formal surveys have been conducted in this Park due to its primary use as a recreational area, but recognition of the natural resources present in the Park has indicated that natural resource management should be included in the mission of the Park.

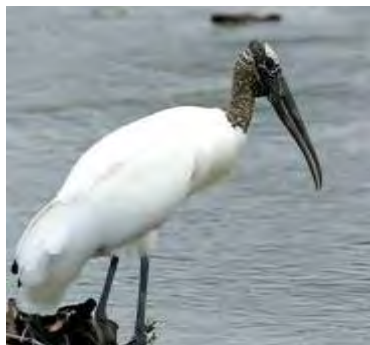
Maintenance of the bird colony is of critical importance. Management of the colony includes the preservation of the water level in the reservoir, upkeep and/or replacement of informational signage around the island in both English and Spanish, control of predator species such as Tegus or Nile Monitors (see Section 5.2.2), removal of trash and monofilament line from the reservoir and especially the area around the island and limiting human interference during nesting season. These measures are currently being addressed by volunteers (Ewing, personal communication, 2009) and must continue as long as the colony is intact and active. Staff should continue to be in contact with volunteers and assist when needed. Any future drawdown of the reservoir should be timed to avoid the nesting season to the greatest extent practicable (SWFWMD, 1991).

Table 3 Special Status Species Observed in Edward Medard Park			
Species		Ranking	
Common Name	Scientific Name	FED	STATE
Birds			
Limpkin	<i>Aramus guarawna</i>		SSC
Snowy Plover	<i>Charadrius alexandrinus</i>		T
Little Blue Heron	<i>Egretta caerulea</i>		SSC
Snowy Egret	<i>Egretta thula</i>		SSC
Tricolored Heron	<i>Egretta tricolor</i>		SSC
White Ibis	<i>Eudocimus albus</i>		SSC
American Wood Stork	<i>Mycteria americana</i>	E	E
Brown Pelican	<i>Pelecanus occidentalis</i>		SSC
Roseate Spoonbill	<i>Platalea ajaja</i>		SSC
Reptiles And Amphibians			
American alligator	<i>Alligator mississippiensis</i>		SSC(S/A)
Gopher tortoise	<i>Gopherus polyphemus</i>		T

According to FFWCC records there are no known eagle nests in the vicinity at this time (<http://myfwc.com/eagle/eaglenests/Default.asp>), but an eagle's nest was active on private land in the southeastern corner of the Park in 1986. Several staff members have seen a Florida panther in the Park, but this sighting occurred many years ago. Such sightings are difficult to substantiate, but there have been confirmed reports of uncollared panthers in the area (Kent Newcomb, 2008).

2.5.1 Descriptions of Special Status Species

American Wood Stork. The Wood Stork has been observed foraging in the Park, but no rookeries are known to occur on the site or in the vicinity. Wood Storks have nested in the Alafia River Corridor Nature Preserve in the past, but this site was abandoned (<http://www.fws.gov/northflorida/WoodStorks/Documents/WOST0201-2003.pdf>). Wood Storks are birds of freshwater and brackish wetlands, primarily nesting in cypress or mangrove swamps. They feed in freshwater marshes, narrow tidal creeks, or flooded tidal pools. Wood Storks use a specialized feeding behavior called tactolocation, or grope feeding. A foraging Wood Stork wades through the water with its beak immersed and partially open. When it touches a prey item, a Wood Stork snaps its mandibles shut, raises its head, and swallows what it has caught. Storks will often stir the water with their feet, a behavior which appears to startle hiding prey. Tactolocation allows Storks to feed at night and use water that is turbid or densely vegetated. However, the prey must be concentrated in relatively high densities for Wood Storks to forage effectively. Particularly attractive feeding sites are depressions in marshes or swamps where fish become concentrated during periods of falling water levels (<http://www.fws.gov/southeast/vbpdfs/species/birds/wost.pdf>).



Management measures for the American Wood Stork.

The Park provides foraging and roosting habitat for the Wood Stork, but no nesting activity for Wood Storks is occurring at this time. Management of foraging habitat includes the preservation of existing natural and manmade wetlands on site, control of exotic species, especially in wetlands, and limiting human interference. All of these management measures are currently being addressed and will continue in perpetuity. A specific recovery plan prepared for the Wood Stork by the USFWS is found at:

<http://www.fws.gov/southeast/vbpdfs/species/birds/wost.pdf>.

Limpkin. The Limpkin is a heron-like brown and white flecked bird with a long neck, bill and legs. Limpkins were once hunted for food, but that practice ceased in the early 1950s and populations began to recover. The primary food staple of the Limpkin is the apple snail and as a result, Limpkin can be found along wide, well-vegetated shallows of rivers and streams state-wide, as well as around lake perimeters, marshes, and swamps of central and south Florida. This dependence upon apple snails has led to another decrease in populations due to the alteration of the apple snail habitat and the

influx of exotic aquatic vegetation such as water hyacinth, elodea and hydrilla. The exotic plants crowd out the native eelgrass which is the most important forage plant for the apple snail (Rodgers *et al.*, 1996).



Limpkins nest in a wide variety of habitats, including piles of slowly sinking aquatic vegetation, among tall marsh grasses, in the tops of sabal palms, and on the knees or high in the branches of cypress trees (Rodgers *et al.*, 1996).

Management measures for Limpkin. The most important measures for protecting populations of Limpkins are to protect their nesting and foraging habitat, preventing impacts to apple snails, and the judicious use of herbicides on aquatic vegetation. Spraying of pesticides can sometimes leave large swaths of area barren of vegetation, which impacts the food source for the apple snail, which in turn impacts the Limpkin (Rodgers *et al.*, 1996).

Snowy Egret. The Snowy Egret nests in both inland and coastal wetlands, often in mangroves or willows, but also in cypress, buttonbush and Brazilian pepper. Nesting occurs over shallow water or on islands separated from the mainland by broad expanses of open water. They forage almost anywhere the water is shallow and calm, and their diet consists of small fish, frogs, small rodents, prawns, crayfish, grasshoppers, worms, and a variety of other aquatic invertebrates. The Snowy Egret is declining due predominantly to the loss of nesting and foraging habitats (Rodgers *et al.*, 1996).



Management measures for the Snowy Egret. The Edward Medard Park provides foraging and nesting habitat for the Snowy Egret. This species has been documented as nesting in the reservoir. Management of the nesting colony as outlined above is of critical importance for this species. . Management of foraging habitat includes the preservation of wetlands on site, control of exotic species, and limiting human interference.

Little Blue Heron. Little Blue Herons require shallow freshwater, brackish or saltwater habitats for foraging. Their diet consists of fish, amphibians, and invertebrates, but nesting herons need freshwater fish for their young. Their numbers have been steadily declining due to the loss of foraging habitat as more and more wetlands are drained or altered. Also contributing to their decline is exposure to pesticides and heavy metal contamination, and the alteration of wetland hydrocycles (Rodgers *et al.*, 1996).



Management measures for the Little Blue Heron. Edward Medard Park provides nesting and foraging habitat for the Little Blue Herons on the islands within the reservoir and the species has been documented as nesting on the islands. This species, as well as other wading bird species prefer to nest on islands surrounded by a broad expanse of open water to reduce nest predation. Management of the nesting island is outlined above. Management of foraging habitat includes the preservation of wetlands on site, control of exotic species, and limiting human interference. All of these management measures are currently being addressed

and will continue in perpetuity.

Tricolored Heron. The Tricolored Heron prefers mangrove islands for their nesting colonies, but they can also be found nesting in Carolina willow in freshwater wetlands. Other less frequent nesting trees include Australian pine, cypress, Brazilian pepper, and saltbush. Almost all nesting areas are over standing water or on islands. The Tricolored Heron forages in almost any shallow wetland and on the edges of ponds and lakes. Their diet is similar to that of the snowy egret, but small fish are their most preferred food. These birds are declining due to the loss of nesting and feeding habitat, and due to disturbance during breeding (Rodgers *et al.*, 1996).



Management measures for the Tricolored Heron. As with the birds listed previously, the Edward Medard Park provides foraging and nesting habitat for the Tricolored Heron. The management measures listed for the previous species also apply to the Tricolored Heron. Maintenance of the bird colony is critically important in order to protect the nesting habitat of this species of special concern.

White Ibis. The White Ibis has been observed on numerous occasions foraging on the Park for insects, crayfish, and small amphibian and reptiles. Ibis will also eat fish when abundant. Nesting White Ibis require freshwater foraging areas because their fledglings cannot tolerate salt and will decline and die if salt is ingested (Rodgers *et al.*, 1996). White Ibis are very vulnerable to disturbance and one episode of human impact on a nesting colony can result in massive mortality of young birds (Rodgers *et al.*, 1996).



Management measures for White Ibis. The shallow wetland areas in the Park are essential foraging areas for the White Ibis, especially during the breeding season. These wetlands support fish populations which are

concentrated during the dry season when the water recedes. The White Ibis and other wading birds forage on the fish and expend less energy for the effort. The White Ibis was observed nesting in the bird colony in 2005, and possibly in 2008 (Paul, 2009). The measures outlined above for the protection of the bird colony should be strictly observed.

Roseate Spoonbill. The numbers of Roseate Spoonbills nesting in the Tampa Bay area is steadily increasing from 183 pairs in 2001 to 303 pairs in 2003 (Zink, 2003). Most of the nests are in the Alafia Bank Sanctuary, but a few pairs nest in Pinellas County coastal waters. While the Park provides abundant foraging opportunities for Roseate Spoonbills and other wading birds, there are no nesting colonies of Roseate Spoonbills. The Park may be too popular with humans to accommodate the privacy needed by Roseate Spoonbills. These species also prefer nesting on islands within broad areas of open water to protect their nests from predation by raccoons and other land mammals.



Spoonbill diets consist mainly of small fish, but they are also known to eat shrimp, crayfish, isopods, amphipods, and insects (Rodgers *et al.*, 1996). While the populations in Tampa Bay are increasing, management measures should be implemented to ensure that this trend continues.

Management measures for the Roseate Spoonbill. Management of foraging habitat for the Roseate Spoonbills includes the preservation of existing natural wetlands on site, control of exotic plant species and feral animals, maintaining water quality to protect fish populations, and limiting human interference. All of these management measures are currently being addressed and will continue in perpetuity.

Snowy Plover. Snowy Plovers are common visitors to Edward Medard Park even though their numbers are declining rapidly nationwide. The birds are usually seen on beaches scurrying back and forth in the surf. Their diet consists of aquatic invertebrates, beetles, flies, small mollusks, and seeds (Kale *et al.*, 1992).



The Florida population of the Snowy Plover is a resident species of the Gulf coast. Their preference for nesting on the beach near the front dunes is causing their rapid decline. The plovers are quick to leave their nests when disturbed by people and their dogs.

Management Measures for Snowy Plover. The Snowy Plovers observed in the Park were likely vagrants as the species does not leave the coastal areas often (Kale *et al.*, 1992). There are no suitable breeding areas within the Park and no specific

management measures, with the exception of maintaining the water quality, are needed.

Brown Pelican. The Brown Pelican requires small to medium sized islands for nesting, and these islands are usually covered with mangroves. Approximately 20% of the Florida population of Brown Pelicans nests in the Tampa Bay area. In addition, the birds require mangrove islands and sandbars for loafing and roosting. This species, as with the others listed above, is declining due to the direct loss or degradation of habitat, nest disturbance, chemical spills, and human activity, such as getting tangled in fishing line, etc. (Rodgers *et al.* 1996). The Preserve provides some roosting and foraging habitat for the Brown Pelican, but there is no nesting habitat available.



Management measures for Brown Pelican. As with the other bird species discussed in this section, protecting water quality and limiting human access and interference will protect the food supply of these species. Due to the popularity of fishing in this Park, extra care needs to be taken to avoid tangling or hooking the pelicans. Procedures for removing hooks from birds can be posted in kiosks located close to boat launches and docks.

American alligator. The American alligator is the largest reptile in North America. The alligator can be distinguished from the endangered American crocodile by its short, rounded snout and darker color. Adult alligators can reach 18 feet in length, but the average length and weight is 13 feet and 450 to 600 pounds. An alligator's tail accounts for half the length. Male alligators are generally larger than females. Alligators can be found in rivers, swamps, marshes, bogs, lakes, ponds, creeks, canals, and bayous and they can tolerate some salt water (Moler, 1992).

Alligators eat just about anything, including lizards, fish, snakes, turtles, small mammals, birds, crustaceans, and even small alligators. They hunt for prey underwater and often swallow their meal whole. Alligators that have been fed by humans lose their fear of humans and may attack or get too close. This usually results in the destruction of the alligators or their relocation to another more remote area. Removal of "nuisance" alligators is usually undertaken by a licensed wildlife trapper.

Management measures for the American alligator. Protecting the alligators in the Park will require protection from poaching, disturbance of nests, if present, and other forms of human interference. Gator nesting areas should be surveyed annually during nesting season, and removed from public traffic if needed. Information regarding alligators and the importance of not feeding them should be made available to visitors.

Gopher tortoise. The gopher tortoise lives in extensive subterranean burrows in dry upland habitats such as longleaf pine sandhill, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. Tortoises can also live in man-made environments, such as pastures, old fields, and grassy roadsides. To be suitable for gopher tortoises, the habitat must have well-drained sandy soils for digging burrows, herbaceous food plants, and open sunny areas for nesting and basking (Moler, 1992). In a managed habitat, periodic prescribed burns play an important role in maintaining tortoise habitat by opening up the canopy and promoting growth of herbaceous food plants. Burrows have been observed in the upland areas within the Park.

Gopher tortoise burrows remain at a fairly constant temperature and humidity level year-round, thus providing shelter for the tortoise during periods of extreme temperatures, drought, and fire. Tortoise burrows also afford refuge to other animals including listed species such as the eastern indigo snake, Florida pine snake, gopher frog, Florida mouse, and gopher cricket.



Management measures for gopher tortoise. The gopher tortoise has been re-listed by the Florida Fish and Wildlife Conservation Commission (FWWCC) as “threatened” (FWWCC, 2006) and a new management policy which no longer allows “incidental take” has been implemented (Rule 68A-27.004, F.A.C.). Management measures for the gopher tortoise in Edward Medard Park include collecting GPS coordinates for all active and inactive burrows. Areas where the burrows occur should be

restricted against all vehicular traffic to prevent impact to active burrows. Egg predation should be reduced as much as possible, and if possible, should include controlling raccoon and fire ant populations in the Park. Regular prescribed burns are necessary to maintain tortoise habitat, and all areas with tortoise populations should have a plan to conduct prescribed burns.

2.5.2 Management Measures for All Special Status Species

Management measures for all protected species in the Park include the control of invasive exotic vegetation and animals which may cause damage to habitat, the maintenance of natural hydroperiods and drainage patterns, the restriction of vehicular traffic to nest areas, the banning of inappropriate recreational uses, the apprehension and prosecution of poachers and trespassers, and periodic monitoring to assess the status of the various species. The public should be educated so that they know to avoid disturbing these species and that their carelessness with trash, cigarettes, and other debris could contribute to the decline of these protected species. In addition, interpretative signage should be posted in kiosks throughout the Park with information regarding the Roseate Spoonbill banding survey, the identification and control of exotic species such as the Tegus and Nile Monitor lizards, and other management measures.

Wildlife surveys conducted on an annual basis are recommended to determine the presence and monitor the status of the protected species on the Park. These surveys may be conducted by qualified volunteers to avoid overloading the staff. GPS tracking of burrows, nests, territories, and the location of listed plant populations is recommended for resident species or important foraging areas. It is also important to check the reservoir for nesting species during any time period when the water elevation in the reservoir is lowered. Any species documentation or reports should be verified and relayed to SWFWMD or regulatory authorities.

3.0 CULTURAL RESOURCES

3.1 Definition of Terminology

There are five widely accepted categories of cultural resources: 1) archeological resources; 2) historic structures; 3) cultural landscapes; 4) ethnographic resources; and 5) museum collections. In Edward Medard Park, only archaeological or historic resources are likely to be present. As defined in the National Historic Preservation Act and its implementing regulations in *36 Code of Federal Regulations (CFR) 800*, historic properties are those buildings, Area of Potential Effects, sites, districts, artifacts, and remains that are related to culturally important places and events, and that are listed in or eligible for inclusion in the National Register of Historic Places.

The significance of historic properties is assessed by the property's ability to meet the following four criteria for inclusion in the National Register of Historic Places (36CFR60.4):

- Association with events that made a substantial contribution to our history;
- Association with the lives of persons important in our past;
- Sites that embody characteristics of a type, period, or methods of construction or that represent the work of a master, possess high artistic value, or represent a distinguishable entity; or
- Have yielded, or may be likely to yield, information important to prehistory or history.

Properties may be eligible for the National Register of Historic Places for contribution at the national, state, or local level. In order for a structure to be listed in the National Register of Historic Places, it must possess historic integrity of those features necessary to convey its significance, such as location, designs, setting, workmanship, materials, feeling, and association in accordance with National Register guidelines.

3.2 Cultural Resources Surveys

Hillsborough County has been provided records from the Florida Public Archaeology Network (FPAN) that indicate at least one site in the Park. Several areas of the Park

have been surveyed, such as the easement in which the Florida Gas Pipeline was located. (Sheryl Bowman, personal communication, 2009).

3.3 Management Measures for Cultural Resources

Due to the history of the Park as a former phosphate mine, the likelihood of significant cultural resources on the property is small. Some of the northern parts of the property were not mined and may have cultural resources. The Park staff will be working closely with the local Florida Public Archaeology Network (<http://www.flpublicarchaeology.org/>) to learn more about the protection and interpretation of cultural resources. Impacts to cultural resources may occur with the construction of future park facilities or flood control projects, or with public works projects such as the expansion of the Florida Gas Transmission Pipeline. Best Management Practices for Protecting Archaeological Sites are provided as Appendix D. Staff should be permitted to continue training in the management of cultural resources if such training becomes available.

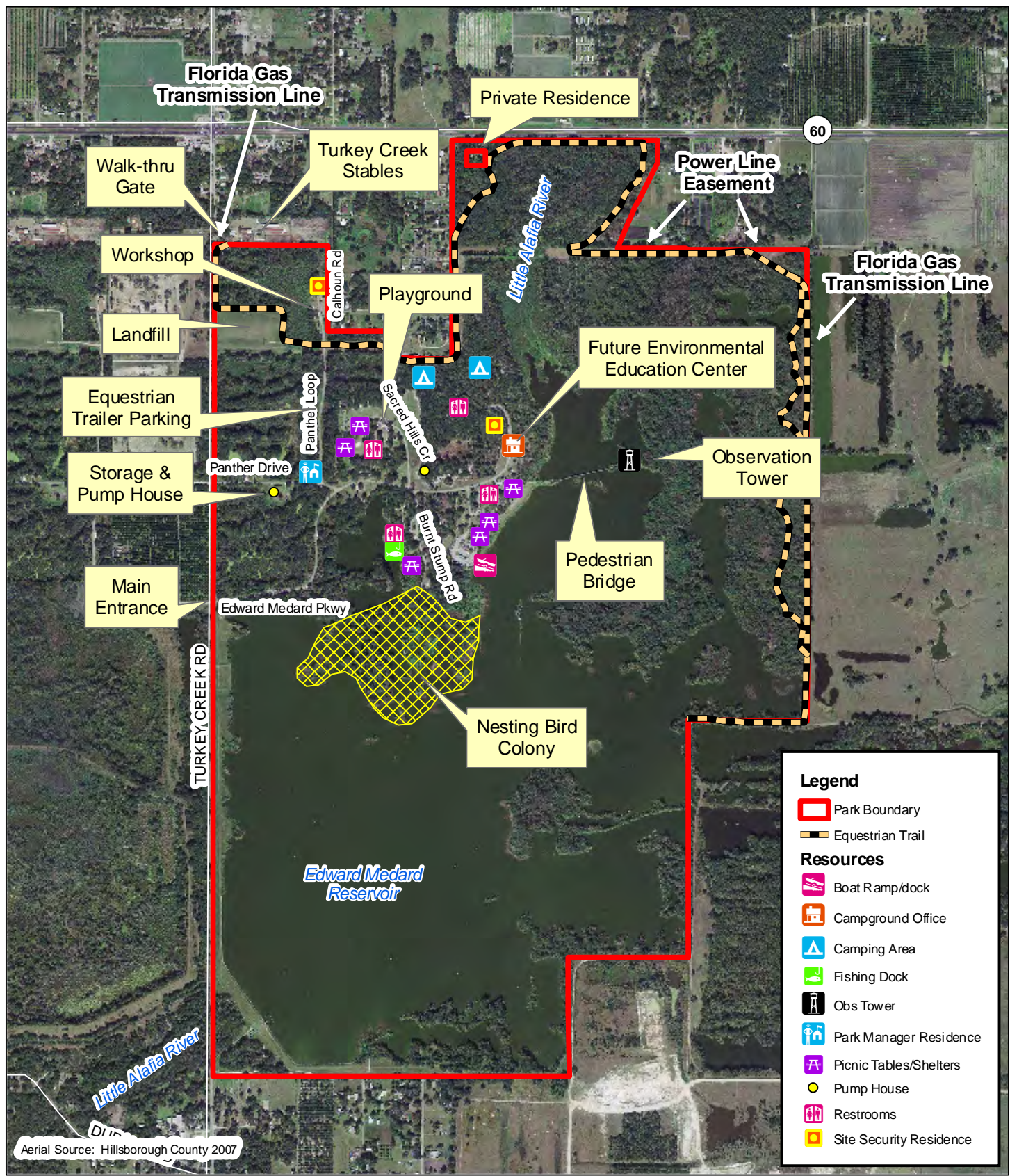
4.0 RECREATIONAL RESOURCES

4.1 Existing Recreational Facilities

The Park is a very popular spot, drawing in over a million visitors annually (Newcomb, personal communication, 2008). The Park offers fishing, boating, camping, equestrian trails, children's playgrounds, picnicking, and nature study. Figure 5 shows the existing facilities. No swimming is allowed in the Park due to the water quality problems (see Section 2.3.2). There are 14 picnic shelters, thirteen large and one small shelter. Three of the shelters are available by reservation. There are unsheltered picnic tables located all over the Park. Three restrooms are available in the picnic area. There is also a pedestrian bridge located near the picnic area that extends from the parking area to an observation tower on the eastern side of the main body of water.

An unimproved trail leads from the observation tower through the peninsula on the eastern side of the reservoir. There are about 280 parking areas, including parking for horse trailers off of Panther Loop, and plenty of room on unpaved areas for overflow parking. The mined sand compacts to form excellent informal parking areas (Newcomb, personal communication, 2008).

As stated previously, fishing is the most popular use of the Park. The Florida Fish and Wildlife Conservation Commission (FWWCC) stocks the lake on a regular basis. The FWWCC controls this activity and monitors the fish populations. It is known that on different occasions they have stocked the lake with bass, sunfish, pickerel, bluegill, crappies and warmouth. Section 2.4.2 describes the fish management activities conducted by the FWWCC.



Legend

- Park Boundary
- Equestrian Trail

Resources

- Boat Ramp/dock
- Campground Office
- Camping Area
- Fishing Dock
- Obs Tower
- Park Manager Residence
- Picnic Tables/Shelters
- Pump House
- Restrooms
- Site Security Residence

0 750 1,500 Feet

PARSONS

4925 Independence Parkway, Suite 120
Tampa, Florida 33634
813-933-4650

Prepared for:

Hillsborough County
Florida

FIGURE 5
Edward Medard Park
Recreational
Resources and
Existing Facilities



This impressive boat ramp area was installed within the last two years. It is a source of pride for the staff and a popular attraction for the fishermen that come to the Park. The facility is made of aluminum and was constructed by staff and volunteers.

Boating facilities have improved in the Park. In 2007, the Southwest Florida Water Management District and the County jointly funded the replacement of the wooden docks with aluminum docks, and leveled and resurfaced the boat ramps and parking areas. The entire project cost \$270,000 with most of the labor provided by Park staff and community service workers (Newcomb, personal communication, 2008).



This is one of the two new bath houses constructed within the last few years. As can be seen from this photograph, the campground is very shady, spacious, and well maintained.

Camping is also a very popular use of the Park, with 25,723 camping permits issued in 2008. There are 40 family campsites and two large group camping sites. All of the campsites have water and electricity. There are two new bathhouses with shower facilities and two large screened shelters available for recreation. Camping costs only \$12 per night and some length of stay restrictions have been implemented to prevent people from living in the County campgrounds permanently (Newcomb, personal communication, 2008).

The equestrian trails are also very popular. Visitors can either bring in their own horses by trailer to ride on the designated trails or they can rent horses at the privately-owned stables adjacent to the northwestern boundary of the Park. In 1993, the owners of the Turkey Creek Stables (Rider Horse Leasing, Inc.) and Turkey Creek Riding Club, Inc. entered into a license agreement Hillsborough County and the Southwest Florida Water Management District to pay the County \$200 a month for the use of the Park. Among other conditions they agreed to obtain all necessary insurance to protect the District and the County from any liability with respect to the equestrians. The agreement was approved for a five-year period until 1998 and then was renewable each year thereafter (Appendix A).

4.2 Future Recreational Facilities

The original management plan (Hillsborough County, 1991) specifically recommends that no additional recreation be planned for the six-acre TECO electrical transmission line easement. Currently the equestrian trail uses portions of the easement. The Park is considering allowing vendors to lease space for kayak or canoe rental concessions. There are concerns about the safety of the paddlers in the reservoir and potential conflicts with the fishermen. Also, the additional boat traffic on the reservoir may disturb the nesting bird colony.

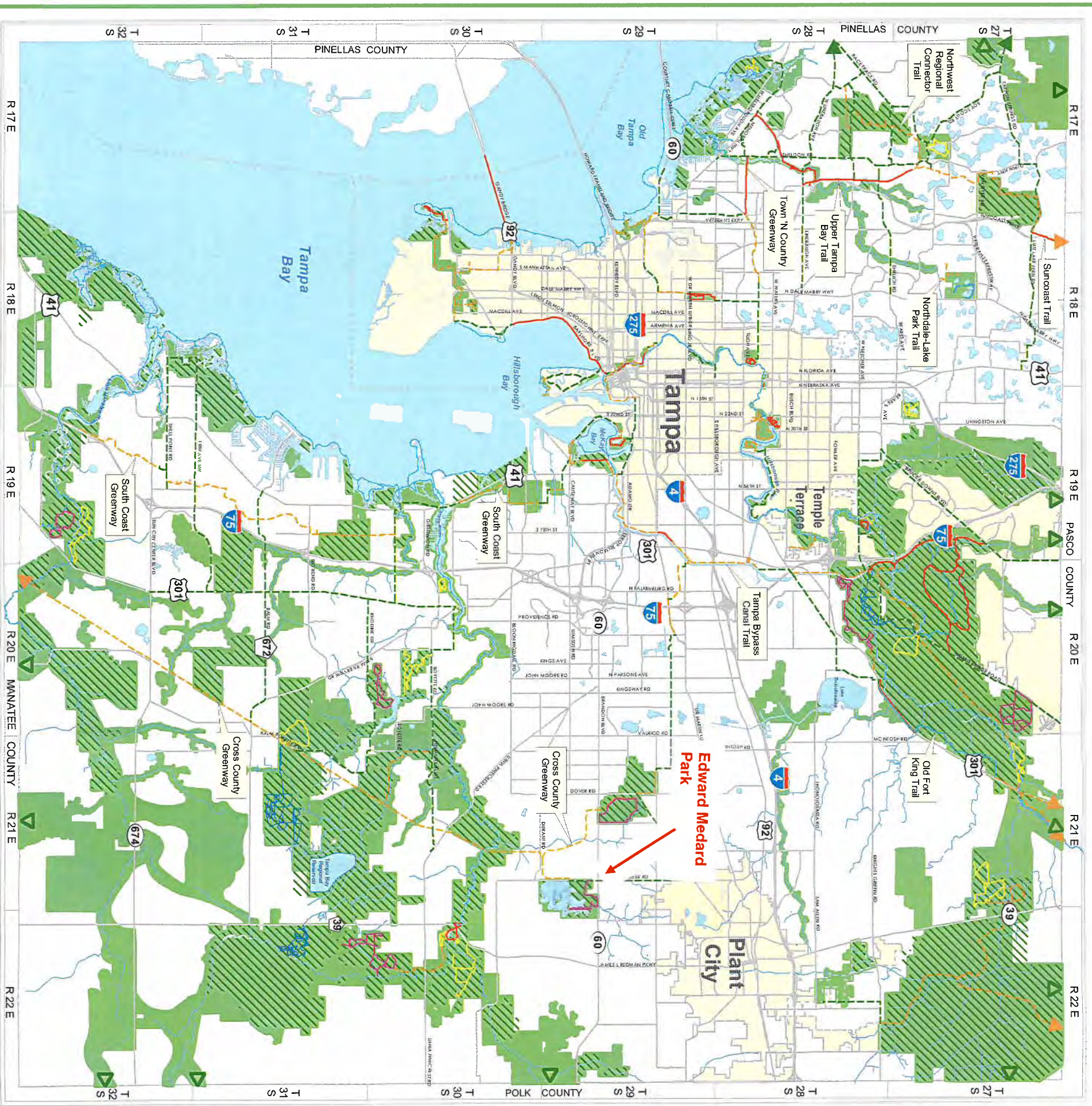
The County proposes to build an environmental education center where the camping rental site is currently located (See Figure 5). This will be accomplished by either refurbishing and expanding the existing building or constructing a new building. Environmental education and nature interpretation are important objectives of the County and SWFWMD, however, there are currently no programs of this type in place at this Park. The new building would be funded by SWFWMD, but managed and operated by the County. The new building will require design approval from SWFWMD.

No other facilities or major improvements are proposed for the next ten years.

4.3 Greenways and Trails

The Hillsborough County Greenways Committee proposes to connect the trails within the Edward Medard Park with trails to the south and west, connecting to the Cross County Greenway (<http://www.hillsboroughcounty.org/parks/greenways/>). The proposed greenway will extend between Pasco and Manatee counties using an abandoned railroad corridor for the majority of the trail. A relevant excerpt from the Hillsborough Trails Master Plan and associated maps are provided in Appendix E. Figure 6 shows the proposed trails with respect to the Park. Greenway development may or may not happen during the life of this plan due to funding constraints.

Hillsborough Greenway System



- NATURAL CORRIDORS**
- Proposed Natural Areas and Preserves
 - Public or Otherwise Protected Conservation Lands

- RECREATIONAL CORRIDORS**
- Existing Trails
- Multi-Use, Paved
 - Multi-Use, Soft path
 - Equestrian
 - Hiking
 - Mountain Biking
 - Paddle

- Proposed Trails**
- Trail

- Bikeways**
- Bike lane*, route or side path

INTER-COUNTY CONNECTIONS

- Possible connections to Natural Corridors
- Possible connections to Recreational Corridors

- Cities
- Unincorporated County
- Rivers & Streams
- Major Roads

* For a map of existing bike lanes, see <http://www.hillsboroughmpo.org/plans/bicycle.htm>



**Figure 6
Greenways
and
Trails Map**

5.0 RESOURCE MANAGEMENT

5.1 Site Security.

The Park lies in unincorporated Hillsborough County and is therefore within the jurisdiction of the County Sheriff's Department. The park manager and two senior rangers reside in the Park and share in the security duties. The manager's residence and the maintenance buildings are located near the exit road for the Park, and the two ranger residences are located in the northwest section of the Park. If the staff notices any infractions or if vagrants, poachers, or trespassers are present, they notify the Sheriff. Figure 5 shows the locations of the Park entrances and site security residences.

There is a disaster plan in place in case there is a breach in the dam on the western side of the reservoir. The disaster plan provides a flow chart which shows the chain of command and who to call in the event of such a disaster. The plan is periodically updated and includes current phone numbers for important contacts, as well as emergency procedures (Kisinger Campo & Associates, Corp, 2008).



This photograph shows one of the site security/ranger residences in the Park. All of the residences are neat and well kept. This residence is near the camping grounds.

The perimeter fencing needs to be replaced in areas of the Park, especially along Luckasavage Road. In addition, signs should be posted with Park Ordinance 08-17 along all boundaries in accordance with State Statutes. Since the Park is managed by Hillsborough County, the Hillsborough County Parks, Recreation, and Conservation Department Policies regarding site security are appropriate and are provided in Appendix C.

5.2 Exotic Species Management

Exotic, "alien" or "non-native" species refer to plants, animals, fungi or other organisms that have been accidentally or purposefully introduced to an area outside of their origin.

Exotic species can come from another continent, another part of a country or even from another watershed. Organisms evolve with other species that moderate their population (for example, plant pests and diseases). When an organism is taken out of its original environment and placed in another, species that help keep it in check may not be a part of this new environment (<http://mdc.mo.gov/nathis/exotic/>).

5.2.1 Invasive Exotic Plants

Exotic plants can be treated by mechanical, physical, chemical or biological methods or combinations of one or more of these methods. Mechanical treatments include the cutting or pulling of the vegetation and often is followed by chemical spraying. Physical treatments include prescribed fire or water impoundment to kill or at least slow the spread of the exotic plants. Chemical treatments are the most widely used and usually most effective methodology, involving the use of herbicidal sprays applied from backpack sprayers, tanks mounted on small vehicles or trucks, or helicopters. Biological controls are the slowest form of treatment, but when used properly, can be the most effective over the long term. Biological control involves the introduction of a natural predator or pathogen that destroys the exotic species. Biological treatment requires long years of testing to ensure that the introduced control does not create problems in the environment. Integrated Pest Management uses of one or more treatment methodologies.

Treatment methodologies for exotic plant species are continually changing as new herbicides and biological controls are developed. There are numerous references available for types of chemical herbicide application and biological treatment and the science is changing all the time. The Park staff is committed to using the latest technology and the safest methodology available to reduce existing infestations. Some resources on line include:

Center for Aquatic and Invasive Plants Web site <http://plants.ifas.ufl.edu>.

Florida Exotic Pest Plant Council Web site <http://fleppc.org>.

[Identification and Biology of Non-Native Plants in Florida's Natural Areas](#). K.A. Langeland and K. Craddock Burks. 165 pp. 1998. IFAS Publication SP 257.

[Control of Non-Native Plants in Natural Areas of Florida](#). K.A. Langeland and R.K. Stocker. 34 pp. 2001. IFAS Publication SP 242.

[Help Protect Florida's Natural Areas from Non-Native Invasive Plants](#) . K.A. Langeland. 1999. IFAS Circular 1204.

The most effective method for the treatment of exotic plant infestations is prevention. This will require periodic monitoring of vulnerable areas in the Park and maintenance of all occurrences while they are in the early stage of development. Priorities for the treatment of invasive species should be made part of the Park maintenance schedule

and continued training for the staff should be provided. Community service workers should also be trained to assist with the effort, and volunteer invasive removal days should be a regular part of the park routine. Kiosks in the Park should be used to provide information to the public. Assistance from the Hillsborough County Invasive Species Task Force can be provided (<http://www.hillsboroughcounty.org/parks/conservationservices/invasive.cfm>).

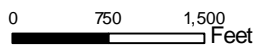
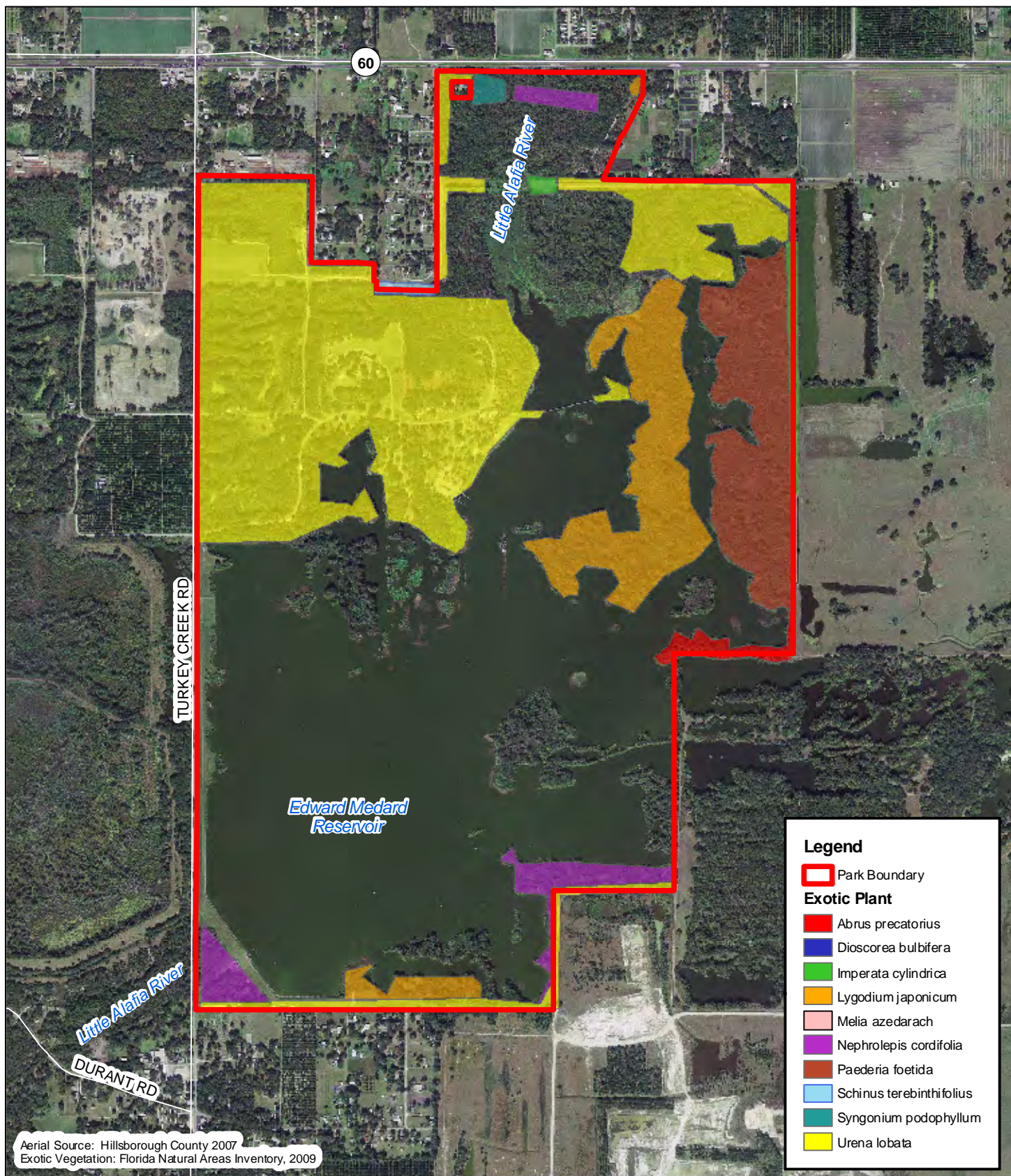
In Edward Medard Park, SWFWMD is responsible for spraying any aquatic invasive plants in the reservoir including water hyacinth, hydrilla, and water lettuce. Although SWFWMD also provided the initial control of upland invasive plants, that responsibility was transferred to the County as part of the operating agreement of 1977. Since that time, park staff has not had the resources to control the exotic vegetation and over the years problem areas have developed in the Park (Newcomb, personal communication, 2008).

Recently the FNAI hired Anne Cox, to map the upland invasive species. The result of that effort is provided in Figure 7. This figure can be misleading, however, because it does not indicate the densities of the exotic vegetation in the habitat. Although the figure shows Caesar weed as the most prevalent weed in the Park, according to Park staff, the predominant terrestrial invasive exotic plants known to exist at this time in the Park are Brazilian pepper, skunk vine, Japanese climbing fern, air potato, and cogon grass (Kevin Church, personal communication, 2008).

A major effort is needed to eradicate the Brazilian pepper in the Park, and the best time to do this would be during the reservoir drawdown. The pepper should be cut and the stumps painted with an herbicide that can be used around wetlands. For a comprehensive plan for the control of Brazilian pepper in the state of Florida, see http://www.fleppc.org/Manage_Plans/BPmanagPlan06.pdf.



This photograph was taken from the top of the observation tower looking west at the main portion of the lake. The majority of the shrubs seen from this area are Brazilian pepper, one of the most invasive plants in the state.



PARSONS

4925 Independence Parkway, Suite 120
 Tampa, Florida 33634
 813-933-4650

Prepared for:



FIGURE 7
Edward Medard Park
Exotic Vegetation

5.2.2 Invasive Exotic Animals.

Exotic animals known to occur in the Park include feral hogs, dogs, cats, red-eared sliders, blue tilapia, Tegus lizards, and Nile monitor. Feral dogs and cats often kill wildlife and destroy habitat, and they can be dangerous to park visitors. These animals are routinely captured by staff and turned over to the County Department of Animal Services. The County has wildlife trappers under contract to control feral hogs on County-managed lands. The hogs are extremely harmful to wildlife habitat, especially in wetlands where they root up and disturb the native soil. The rooting activity can cause erosion and often results in infestations of exotic vegetation. Hogs and wild dogs can also be dangerous to campers and are a potential liability to the Park. Information on the management of feral hogs is located in Appendix F.

The blue tilapia is a fish species from Africa and southwestern Middle East that has been imported to the United States as a food fish for the aquaculture trade, and has escaped cultivation. The fish is tolerant of a wide range of environmental conditions, can adapt to a wide range of trophic levels, breed prolifically, and can flourish even in overcrowded conditions (<http://bio-nica.info/Biblioteca/Canonico2005Tilapia.pdf>). While these traits make the fish ideal for aquaculture, it is a serious threat to native aquatic populations when it escapes. The Global Invasive Species Database identifies the blue tilapia as one of the 100 worst invasive species in the world (<http://www.invasivespecies.net/database/species/ecology.asp?fr=1&si=813&sts=>

The Nile monitor and Tegus lizards are a serious threat to birds and amphibians in the Park. These species can access nests and tortoise burrows and eat the eggs, destroying the breeding efforts of a species for an entire year. Although none have been sighted so far, the Park staff should be on the alert for the island apple snail (originally mis-identified as the channeled apple snail). This large snail can decimate the vegetation within a freshwater system and completely out-compete the native snail. These snails must be identified and their eggs destroyed before they hatch (http://myfwc.com/docs/WildlifeHabitats/FWC_applesnails_FLMS_handout.pdf).

Some native species can become nuisance species if they lose their fear of humans. As an example, the Park has been having problems with turkey and black vultures which are attracted to the unwanted “trash” fish left by fishermen near the boat ramp. While the vultures are native birds, they are a nuisance in the Park. They gather in large numbers and have been known to tear windshield wipers and chrome pieces off cars parked near the boat ramp. Their droppings will remove paint from cars and the smell can be overpowering. The senior Park Ranger has estimated that the birds have caused over \$100,000 in damage to property and efforts to chase them off have been unsuccessful. The Park is currently pursuing a permit from the Florida Fish and Wildlife Conservation Commission to shoot or trap them (Church, personal communication, 2008). An option to the permit would be to request that Park users avoid parking in areas in which the birds have congregated, or to cover their vehicles while using the Park.

5.3 Prescribed Burns.

5.3.1 The Importance of Fire

Prescribed fire is a land management tool used to restore and maintain fire-dependent ecosystems, enhance forest health, improve wildlife habitat, and prevent dangerous, uncontrolled wildfire by reducing hazardous fuels. Fire promotes healthy ecosystems by clearing out competing vegetation, cycling nutrients into the soil, providing food for wildlife, and stimulating fire-dependent plants to grow and produce seed (<http://www.fs.fed.us/fire/fireuse/rxfire/ecology/index.html>). Concerns regarding smoke created by prescribed fire are a priority, including potential visibility problems on SR 60 and Turkey Creek Road, and smoke hazards in the adjacent residential areas.

One of the greatest benefits of prescribed fire is that it reduces "fuels" such as the underbrush, branches, pine needles, leaves, and dead plant debris that have built up on the forest floor over time. If fuels are not reduced every few years, a wildfire caused by lightning or arson can occur and become intense, hot, and very destructive (<http://www.fs.fed.us/fire/fireuse/rxfire/ecology/index.html>).

Because of Florida's long history of lightning fires, many of the state's natural systems are adapted to fire and depend on periodic fire to remain healthy. Prescribed burning is a vital tool for managing pine flatwoods, pine sand hills, and sand pine/oak scrub found in the region. These natural systems shelter many threatened and endangered plant and animal species that rely on fire to survive, such as Florida black bear, Florida scrub-jay, eastern indigo snake, gopher tortoise, and scrub holly. When fire is kept out of these areas, some plant and animal populations decline and eventually disappear (Myers, 1990).

Because natural fires can no longer move across the landscape as they did historically, prescribed fire at appropriate intervals is necessary to maintain these unique natural communities. For example, prescribed fire reduces the height of scrub vegetation to a level that is suitable for the Florida scrub jay and opens up sandy areas which allows the jays to store their acorns. Fire also generates fresh seeds, fruits, and native plant growth, providing food for these rare species (Myers, 1990).

Many people have expressed concern about the safety of wild animals during prescribed fires. Most wild animals migrate to safety during the relatively slow-moving prescribed fires. Some animals take refuge by moving to unburned or previously burned areas. Small animals seek shelter under logs, in old trees, and in burrows like those of the gopher tortoise. Few animals are killed by fire, especially during the growing season when it's warm and most animals are active. Mammals are rarely killed, and ground nesting birds build new nests and benefit from increased numbers of insects after the fire (Myers, 1990).

Prescribed fire is also beneficial to the people of Florida. It prevents wildfires and provides improved wildlife habitat, forest, and grazing land. As Florida's population continues to grow, more and more areas will be developed that will require fire protection services. Prescribed fire is a safe and effective land management tool for preventing wildfires (Myers, 1990).

5.3.2 Management Measures for Fire.

SWFWMD conducted several prescribed burns in Medard Park during the 1980's and 1990's (Love, personal communication, 2009). Now that the County has its own prescribed burn team, it is able to begin to manage the responsibility for planning and executing burns and is also required to do so according to the management agreement (Appendix A). The agreement states, however, that the District will assist the County in identifying individual burn units and in conducting initial prescribed burns on each burn unit. Prescribed fires are conducted on County lands when climate conditions are appropriate. Preparation for burns includes the drafting of a burn plan, creation of fire lanes, surveying pre-burn site conditions, and notifying adjacent landowners that may be affected by the burn. Some of these responsibilities can be shared by the Conservation and Regional Parks Section and some occur with the assistance of the Florida Division of Forestry or specialized contractors. Fire-dependent habitats in the Park, such as the pine flatwoods, should be maintained by regular prescribed burns. The Park will implement a prescribed burn program to manage for wildlife, particularly listed species, and to prevent serious wildfires which may damage Park facilities and endanger the general public. A sample burn plan is included as Appendix G.

5.3.3 Other Resource Management Issues

The pedestrian bridge and several of the fishing docks are in need of repair, especially the bridge, but funding is not available for the repairs. A drawdown is proposed for the reservoir, during which the repairs to the docks and bridge may be undertaken if funding is available. The lowered water elevations would make it easier to repair these features.

The reservoir and the associated wells, berms, and control structures are all managed and maintained by SWFWMD. Management activities include mowing the berm and the vegetation in the vicinity, raising and lowering the water level control structure as appropriate, and keeping the equipment in good working order. The structure and levee are inspected twice weekly and the results are reported to the Operations Manager and Supervisor at SWFWMD. A copy of the checklist for the inspection is provided in Appendix A.



This photograph shows the control structure on the dam/berm. This control structure maintains the water level in the lake and monitors discharges.

The reservoir drawdown is scheduled to occur in late 2009 or 2010 (Church, personal communication, 2008). The purpose of the drawdown is to facilitate the repair of cracks and other problems with the berm in the southwest corner of the reservoir. The berm functions as a dam and has been seeping the last few years, indicating a potential for a breach or failure. SWFWMD is managing the drawdown project, which will consist of lowering the water in the lake by opening the control structure on the dam/berm, removing the riprap on the slope of the berm, making the repairs in the concrete walls of the berm, replacing the riprap, and then allowing the lake to refill with water.

6.0 HABITAT RESTORATION

Hillsborough County Environmental Lands Acquisition and Protection Program (ELAPP) policies regarding habitat restoration are provided in Appendix C. Restoration of some areas may be necessary when an exotic vegetation control plan is implemented in the Park. For the purposes of clarity, this section is divided into descriptions of upland and wetland restoration within the Park.

6.1 Wetland Restoration

The vegetation on the shoreline of the reservoir is dominated in areas by Brazilian pepper. These portions of the shoreline will need to be replanted with native species after treatment to prevent erosion, to provide habitat, and to reduce opportunities for re-infestation with exotic species. Other areas along the shoreline that are dominated by cattail and other exotic weeds would benefit from a planting of other emergent aquatics that would provide water quality and wildlife habitat benefits. Well planted littoral areas are also good nurseries for fish. The lake assessment to be conducted in conjunction with the drawdown will provide a planting plan for the shoreline and littoral areas of the

reservoir. The drawdown and replanting are being conducted by SWFWMD with assistance and cooperation from Park staff and FFWCC. The FFWCC plans to use the brush and woody debris to build fish attractors in the reservoir, if possible. The Environmental Protection Commission of Hillsborough County (EPC) is requiring a one year post-drawdown monitoring period to determine the success of the project. If there is a high rate of mortality with the vegetation, SWFWMD will be required to replant (Jeff Hagberg, personal communication, 2009).

6.2 Upland Restoration

Exotic vegetation is also present in the upland areas within the Park. Removal and treatment of the exotic species will leave voids in the landscape that should be replanted with natives and monitored to determine the success of the project. If not planted, the voids should be monitored to ensure that the open area becomes re-vegetated with native species. Other restoration activities will be the implementation of the prescribed burn program, and the removal of exotic animal species. These activities are the responsibility of Hillsborough County as part of their cooperative agreement with SWFWMD as the landowners.

7.0 COMPLIANCE

7.1 Policies and Ordinances

Hillsborough County's Park ordinance 08-17 provides for the more efficient and effective operations of Hillsborough County Parks, Recreation and Conservation areas and provides rules to protect such facilities. It also enables people to use such parks and property for recreation purposes without unwarranted interference or obstruction occasioned by inconsistent uses. This ordinance is provided in its entirety in Appendix H.

SWFWMD's strategic initiatives with respect to natural systems and sensitive and environmental lands are provided in Appendix H. These initiatives are excerpted from the SWFWMD Strategic Plan 2010 to 2014.

7.2 Compliance with Comprehensive Plans

Edward Medard Park will assist Hillsborough County in implementing the goals, objectives and policies of the Conservation and Aquifer Recharge Element, Future Land Use Element, and Recreation and Open Space Element of the County's Comprehensive Plan (<http://www.theplanningcommission.org/hillsborough>). The preservation of wildlife habitats and the development of resource-based improvements and environmental conservation activities on the Preserve will help to accomplish or further enhance the goals and objectives described in Section 8.0. Copies of the relevant elements of the County's Comprehensive Plan are included as Appendix I.

8.0 SUMMARY OF MANAGEMENT GOALS AND OBJECTIVES

Funding for Hillsborough County park operations comes from the general county-wide fund and general operating fund which must be re-submitted every two years. Some special projects and maintenance needs can be funded by private corporations as compensation for the taking of land, as for utility easements, or as compensation for impacts to wildlife habitat. An example of additional outside sources of funding would be what was transacted during the installation of the Florida Gas Transmission (FGT) line in 2000. In exchange for the acquisition of the easement, FGT agreed to provide the partial remediation of the Pleasant Grove Landfill. FGT plans to install an additional gas pipeline within the existing easement in the near future, and this will provide additional funding for the Park. The Park may use this money to pay for some badly needed boundary fencing, contracting for exotic species removals, contracting for prescribed burns, or paying for the installation of upland native plants.

Table 4 lists the existing staff for the Park and proposed staff for the ten years that the management plan covers. While no additional staff are needed at this time, the department proposes to upgrade one of the Park Ranger II positions to Senior Park Ranger.

TABLE 4 EXISTING AND PROPOSED STAFFING NEEDS FOR EDWARD MEDARD PARK		
POSITION DESCRIPTION	EXISTING	PROPOSED
SENIOR PARK MANAGER	1	1
SENIOR PARK RANGER	1	2
PARK RANGER II	5	4
PARK RANGER I	3	3
TOTAL	10	10

The Operating Budget for Fiscal Year 2009 is provided in Table 5. This budget is expected to increase only moderately over the next ten years.

Table 5
Edward Medard Park
Annual Operating Budget

COST DESCRIPTION	AMOUNT IN DOLLARS
Reg Pay Classified	307,902.00
Longevity Pay	1,400.00
Employer Deferred	7,698.00
Cafeteria Plan IRS	17,280.00
Overtime Pay	12,401.00
FICA/MEDICARE Taxes	26,521.00
FI Retirement System	31,975.00
Employee Medical I	77,256.00
Employee Life Insurance	387.00
Disability Insurance	3,795.00
OPEB Expense (Other	5,400.00
Worker Comp Assessment	16,327.00
Attrition Savings	(10,167.00)
Total Personnel Budget	\$498,175.00
Other Professional	1,800.00
Other Contractual	2,000.00
Fleet Fuel And Oil	19,930.00
Fleet Vehicle Rent	77,296.00
Telecommunication	1,300.00
Electricity	38,460.00
Utility Services	9,280.00
Other Rental & Lease	750.00
Maintenance Building	27,810.00
Maintenance Equipment	500.00
Maintenance of Grounds/Land	10,815.00
Fleet Management Service	25,400.00
Printing & Binding	500.00
Non Adval Assess Service	3,200.00
Office Supplies/Expenses	1,500.00
General Operating	16,900.00
Uniforms & Safety	5,000.00
Memberships And Dues	75.00
Training/Education	200.00
Total Operating Budget	\$242,716.00
Total Budget	\$740,891.00

Listed below are the goals and objectives proposed for the 10-year period of this management plan.

Goal #1: Implement prescribed burn program.

Objective #1: A prescribed burn program is needed to reduce the hazardous fuel load in the Park, and to manage the natural vegetation communities and rare and threatened

wildlife species such as gopher tortoises which depend on periodic prescribed fire to survive. The responsibility for implementing the burn plan would fall to the County.

Goal #2: Implement an invasive species control program.

Objective #2: The invasive species program must target both plants and animals and should coordinate closely with the Hillsborough County Invasive Species Task Force (<http://www.hillsboroughcounty.org/parks/conservationservices/invasive.cfm>).

Goal #3: Implement habitat restoration program.

Objective #3: The removal of the invasive plant species will leave extensive voids in the landscape that should be filled with native species to provide habitat, to improve aesthetics, to prevent erosion, and to reduce the incidence of re-infestation of the exotic plants. Grants from the Native Plant Society and similar non-profits should be pursued if funding sources are not available from the County or SWFWMD.

Goal #4: Continue to survey and protect wildlife species.

Objective #4: The survey work includes inventory and monitoring of listed species, as well as broad assessments of the effects of the habitat management efforts implemented as Goals #1 and #2. Continue to work with volunteers to protect the nesting bird colonies and any additional important habitats as yet undiscovered.

Goal #5: Continue to implement safety and security measures.

Objective #5: Portions of the boundary fence are in poor condition and need to be replaced, especially in those areas adjacent to roads where it may be easy to access the Park outside the hours of operation. Ensure that all structures within the Park are safe for visitor use and conduct regular facility inspections using the Structure and Levee Inspection Checklist (Appendix A). Train staff in emergency action plan.

The bridge and boardwalks in the Park all are in need of regular inspection and analysis to determine their condition with respect to safety. It is recommended that an inspection by a structural engineer specializing in bridges be conducted as soon as possible. If any facility is determined to be structurally unsound, it should be closed to traffic. If repairs or replacement are needed, the bridge and boardwalk facilities should be prioritized over other improvements for visitor safety and usefulness issues. Costs will depend on the amount of repair needed, materials used, and if redesign and permitting are required. It is recommended that renewable resources be used as much as possible.

The closing of the Sacred Hills area should also be considered. Although this area is popular with children, it poses a considerable hazard for potential liability. There are

trip-and-fall hazards, potential cave-in hazards, and trees that have been undermined by erosion that may fall on park visitors.

Goal #6: Update and maintain signage.

Objective #6: Signs need to be posted around the perimeter of the Park listing the regulations outlined in the new Ordinance 08-17. The County must continue to comply with Section 12 of the management agreement to acknowledge the District as owner of the land. Signage around the nesting colony should be maintained in both English and Spanish.

Goal #7 – Build environmental education center.

Objective #7: An environmental education center would enlighten Park patrons regarding the natural and cultural resources of the Park and the area. Design, construction and operation of the center would be the responsibility of the County. It would likely be built on the site that currently is used as the office from which campsites are rented.

TABLE 6 PROPOSED 10-YEAR MANAGEMENT PLAN GOALS AND OBJECTIVES FOR EDWARD MEDARD PARK		
OBJECTIVE	SCHEDULE	ESTIMATED COST
Personnel Budget Total (@ \$/year)	2007 to 2017	\$4,056,020.00
Operating Budget Total (@ \$175,000/year)	2007 to 2017	\$1,750,000.00
Control exotic vegetation (annual treatments @ \$600.00)	Ongoing	\$6,000.00
Conduct prescribed burns (3 burns @ \$2,000)	Ongoing	\$6,000.00
Monitoring, inventories (\$850.00/yr)	Ongoing	\$8,500.00
Bridge inspection and replacement (if needed, estimated)	2009-2010	\$500,000.00
Signage	2017	\$6,000.00
New boundary fencing (11,400 feet @ \$100.00/foot installed)	2012	\$60,000.00
Build an interpretive center	2011-2017	To be determined
	Total	\$6,772,520.00

The items above include those listed on a typical annual budget, extended over a period of ten years. The funding for the monitoring and surveys recommended in this plan should be incorporated into the annual operating budget.

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