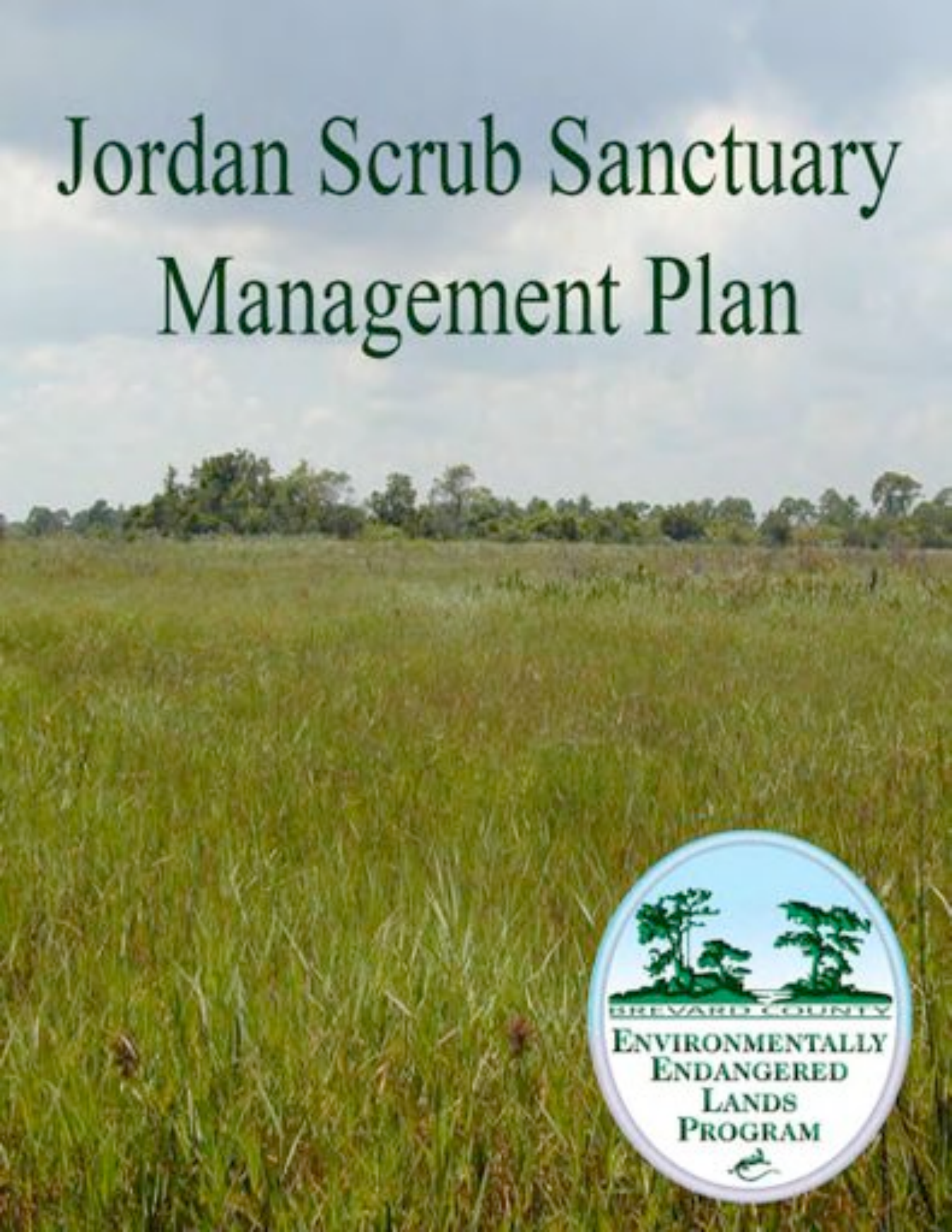
Jordan Scrub Sanctuary Management Plan



Florida Department of
Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

October 15, 2007

Mr. Chris O'Hara, South Region Land Manager
Brevard County EEL Program
91 East Drive
Melbourne, Florida 32904

Re: Jordan Scrub Sanctuary Lease #4623

Dear Mr. O'Hara:

On **October 12, 2007**, the Acquisition and Restoration Council recommended approval of the **Jordan Scrub Sanctuary** management plan. Therefore, the Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, approved the management plan for the **Jordan Scrub Sanctuary**. Pursuant to Sections 253.034 and 259.032, Florida Statutes, and Chapter 18-2, Florida Administrative Code this plan's ten-year update will be due on **October 12, 2017**.

Approval of this land management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

Paula L. Allen
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

JORDAN SCRUB SANCTUARY
MANAGEMENT PLAN

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I. EXECUTIVE SUMMARY

The Jordan Scrub Sanctuary (JSS) is part of the sanctuary network established by the Environmentally Endangered Lands (EEL) Program in Brevard County. The intent of the program is to acquire environmentally sensitive lands as a first step "towards long-term protection of essential natural resources, open space, green space, wildlife corridors and maintenance of natural ecosystem functions" (Brevard County, 1995). The program also establishes a network of public land to provide passive recreation and environmental education programs to Brevard County residents and visitors.

Acquired by the EEL Program in 1997 (Caron Balkany), the JSS consists of 354 acres in Malabar (South Brevard County), Florida. The State reimbursed the County for approximately 50% of the purchase price in 2002. It is situated 1 mile south of Malabar Road, east Marie Street. Jordan Blvd divides the JSS into two units, north and south. This sanctuary contains a diversity of natural habitats, including scrubby flatwoods, depression marshes and mesic flatwoods. Protected wildlife species noted on site include the bald eagle (*Haliaeetus leucephalus)*, Florida scrub-jay (*Apheloma coerulescens*), gopher tortoise (*Gopherus polyphemus*) and the wood stork (*Mycteria americana*). The privately owned areas to the north, south and east are on the EEL Program's current proposed acquisition list.

Further acquisition information is available in Appendix N.

The primary management goals for the JSS include the conservation and restoration of ecosystem function, natural communities and native species' habitat. The collection and documentation of natural and cultural resource data are also important management goals. As described in the EEL Sanctuary Management Manual, the JSS is a Category 2, or intermediate use site, which means that this site will receive minimal capital improvement that may include limited trails, footbridges, boardwalks and kiosks. Due to the sensitive nature of the resources, access will be limited to passive recreation activities such as hiking, nature study, horseback riding and environmental education. The JSS will also provide outstanding opportunities for scientific research and guided or self-guided interpretive tours featuring the sanctuary's ecological diversity.

JSS will be managed as a part of the EEL Program's South Mainland Regional Management area, with the Malabar Scrub Sanctuary hosting a management and education center for the south region. Sanctuaries such as Malabar Scrub and Jordan Scrub are targeted as potential sites to support nature-based tourism activities. Public access will encourage awareness of the County's natural and cultural assets, foster a greater understanding of the balance between access and non-consumptive use of the sites' resources, and promote environmental stewardship, benefiting both the local community and the EEL Program. Emphasis will be placed on providing educational opportunities to the Brevard County school system to promote the understanding and appreciation of the unique and valuable resources available in Brevard County and thereby promote long-term preservation.

II. INTRODUCTION

In a 1990 referendum, Brevard County voters approved the Environmentally Endangered Lands (EEL) Program. The Program Vision Statement is as follows:

"The Environmentally Endangered Lands (EEL) Program acquires, protects and maintains environmentally endangered lands guided by scientific principles for conservation and the best available practices for resource stewardship and ecosystem management. The EEL Program protects the rich biological diversity of Brevard County for future generations through acquisition and management. The EEL Program provides passive recreation and environmental education opportunities to Brevard's citizens and visitors without detracting from the primary conservation goals of the program. The EEL Program encourages active citizen participation and community involvement."

The Program established a conceptual framework and funding mechanism to implement an EEL sanctuary network in Brevard County. The EEL Program sanctuary network represents a collection of protected natural areas that form a regional conservation effort focused upon protection of biological diversity. Within the countywide EEL sanctuary network, four management areas are geographically defined within Brevard County. For each management area, a specific site is identified as a Center for Regional Management. The sites that will function as centers for regional management for the EEL Program are:

- Barrier Island Ecosystem Center
  Regional Management Center for South Beaches

- Enchanted Forest Sanctuary
  Regional Management Center for North Mainland

- Pine Island Conservation Area
  Regional Management Center for Central Mainland

- Malabar Scrub Sanctuary
  Regional Management Center for South Mainland

These centers provide strategically located hubs for implementing the countywide conservation, passive recreation and environmental education goals of the EEL Program. These sites are proposed for varied public access and development of environmental education/land management centers.

As outlined in the Sanctuary Management Manual (SMM), the EEL Program will adopt and implement an ecosystem approach to environmental management. Ecosystem management is defined as an integrative, flexible approach to the management of natural resources. Key themes of ecosystem management include the following:

1. Adaptive Management - Natural areas must be managed in the context of the landscape in which they exist and based on scientific knowledge. Resource managers must adapt to continuing advances in the scientific understanding of ecosystems and changing environmental and human influences on the resources.

2. Partnerships - Interagency and private sector partnerships are essential to manage and protect ecosystems. Natural resource management is complex and requires multi-disciplinary skills and experiences.

3. Holistic Approach -Ecosystem management includes the maintenance, protection and improvement of both natural and human communities. This systems approach to management considers the "big picture" of natural resource protection, community economic stability and quality of life.

Land management issues, such as fire management, protection and restoration of natural hydrologic cycles, threatened and endangered species, and removal of invasive exotics must be integrated with issues, such as provisions for public access and levels of human use. The integration of ecosystem protection and human needs combine to form the foundation of an effective ecosystem management strategy.

The *Sanctuary Management Manual* of the EEL Program establishes a general framework for management of specific sites and establishes ten Principles of Conservation summarized, to achieve the following:

1. Maintain all sites in a natural state and/or restore sites to enhance natural resource values.

2. Protect natural resource values by maintaining biological diversity and using conservation as a primary goal for decision-making.

3. Balance human use with the protection of natural resources.

4. Apply the most accurate scientific principles to strategies for conservation.

5. Collect and use the most accurate data available for developing site management plans.

6. Consider the interests and values of all citizens by using scientific information to guide management policy making.

7. Promote effective communication that is interactive, reciprocal, and continuous with the public.

8. Promote the value of natural areas to Brevard County residents and visitors through the maintenance of the quality of resource values, public services, and visitor experiences.

9. Promote the integration of natural resource conservation into discussions of economic development and quality of life in Brevard County.

10. Provide a responsible financial strategy to implement actions to achieve long-term conservation and stewardship goals.

In addition to the conservation principles, this management plan provides specific goals, strategies and actions to guide management of the Jordan Scrub Sanctuary in terms of the objectives of the EEL Program. The plan is divided into the following 10 sections:

I. *Executive Summary* identifies the location, size, general natural resource features and primary management goals for the site.

II. *Introduction* provides a brief introduction to the EEL Program as well as a description of the structure of the management plan

III. *Site Description and Location* provides a detailed site location and description.

IV. *Natural Resource Descriptions* includes physical resources (climate, geology, topography, soils, and hydrology), biological resources (ecosystem function, flora, fauna, special concern species, and biological diversity), and cultural (archeological, historical, land-use history, public interest).

V. *Factors Influencing Management* includes natural trends, human-induced trends, external influences, legal obligations and constraints, management constraints, and public access and passive recreation.

VI. *Management Action Plans* include specific goals, strategies and actions.

VII. *Projected Timetable for Implementation* prioritizes activities and provides a timeframe for management plan implementation.

VIII. *Financial Considerations* discusses funding mechanisms and projected management costs.

IX. *Bibliography* cites original research and publications used to develop the Management Plan.

X. *Appendices* include supplemental information.

JSS is a Category 2 site, which means that this Sanctuary will have minimum capital development. Improvements to Category 2 sites might include nature trails, interpretive signs along nature trails, and some limited facilities such as kiosks, overlooks and boardwalks. JSS will be open to the public during daylight hours and may eventually have legal ADA access. Any nighttime activities will be by special permit only.

III. SITE DESCRIPTION AND LOCATION

JSS consists of 354 acres, located one mile south of Malabar Road, west of U.S. Highway 1, with its northwest corner at the south end of Marie Street (Figure 1) and is bisected by Jordan Boulevard running east/west (Sections 5-8 Township 29 South and Range 38 East). The tax parcels IDs are 29-38-07-00-754, 29-38-06-00-756, 29-38-07-00-1, 29-38-08-00-251.2 and 29-38-08-00-270. The legal descriptions are attached as Appendix E. JSS is divided into a main body located west of the railroad tracks and a smaller outer section to the east of the railroad tracks. Access to the main body of the site by vehicle is limited to four locations: one at the south end of Marie Street, one at the north end of Leghorn Road, and two on Jordan Boulevard on the west and east boundaries (Figure 2). These are all gated. There is no existing designated vehicle access for the eastern outer portion of the JSS.

This Sanctuary is comprised of many natural plant communities including depression marshes, scrub, mesic flatwoods and scrubby flatwoods. These ecosystems are disappearing quickly throughout Florida. The acquisition of scrub in south Brevard County is vital to the long-term survival of the threatened Florida Scrub-jay. Any further land acquisition adjacent to the JSS would serve to bolster the Sanctuary's role in conserving the population of Florida's only endemic bird.

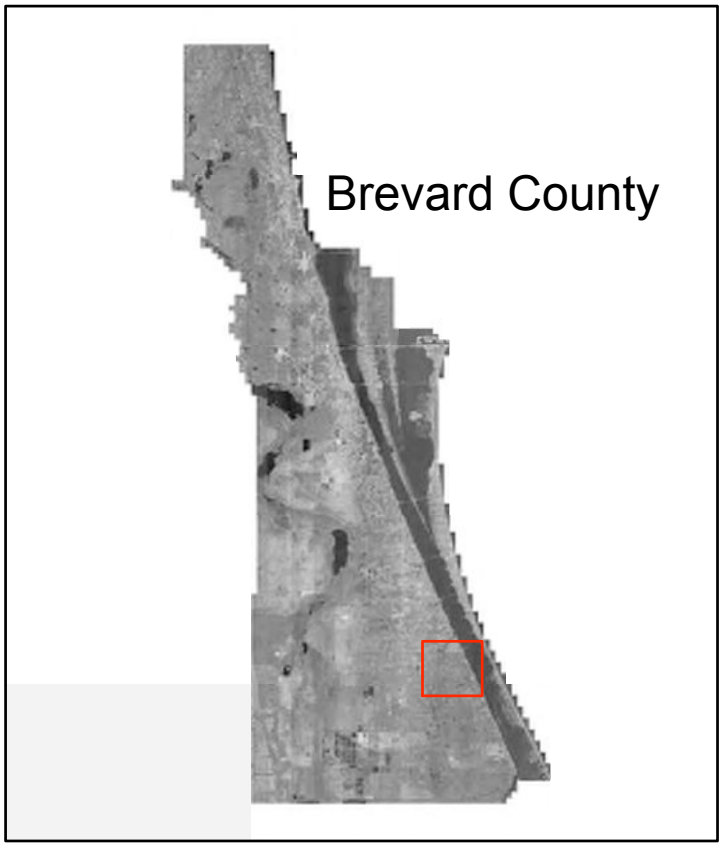
IV. NATURAL RESOURCE DESCRIPTIONS

This section provides descriptions of natural resources, including physical resources (climate, geology, topography, soils and hydrology), biological resources (ecosystem function, flora, fauna, special concern species, and biological diversity), and cultural resource information (archeological, historical, land-use history, and public interest).

A. Physical Resources

a. Climate

The JSS is located in east central Florida, an isothermal area at the junction of the temperate and sub-tropical climatic zones. Temperature data from representative locations in Brevard County indicate an average annual temperature of approximately 74 °F. August is typically the warmest month, averaging 82 °F, whereas January is the coolest month, averaging about 62 °F (Schmocker, et. al., 1990). Summer temperatures are moderated by frequent afternoon thunderstorms. Periods of extreme cold weather are infrequent due to the site's latitude and proximity to the Atlantic Ocean. There are reliable rainfall records from Titusville that span approximately 100 years, and



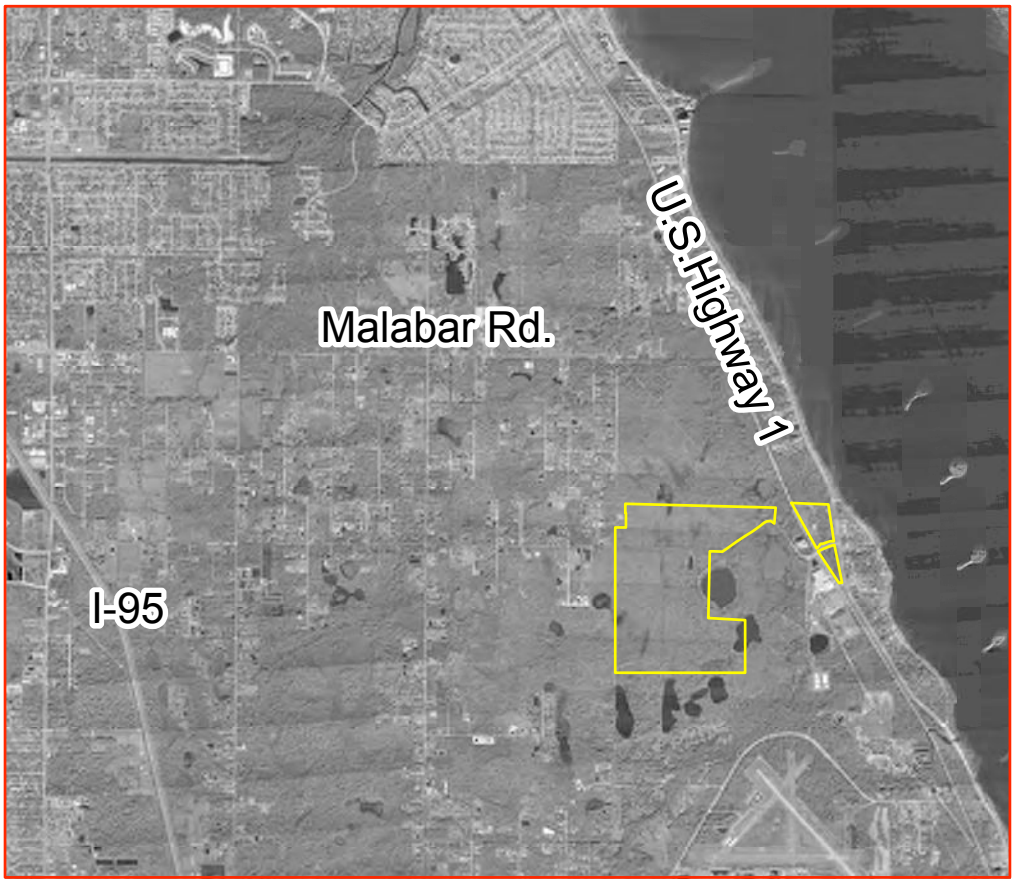


Figure 1: Jordan Scrub Sanctuary Location

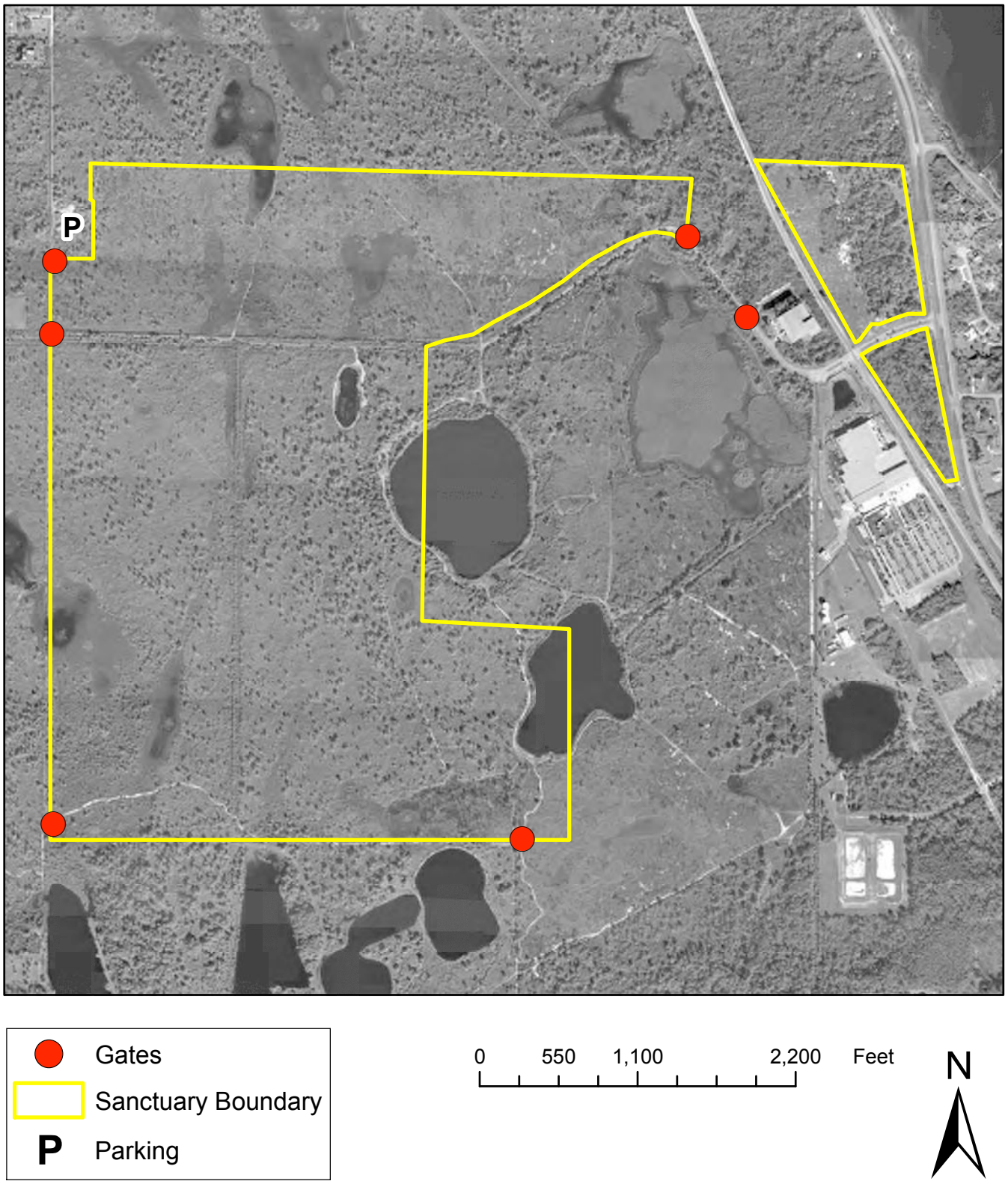


Figure 2: Jordan Scrub Sanctuary
Vehicle Access Point

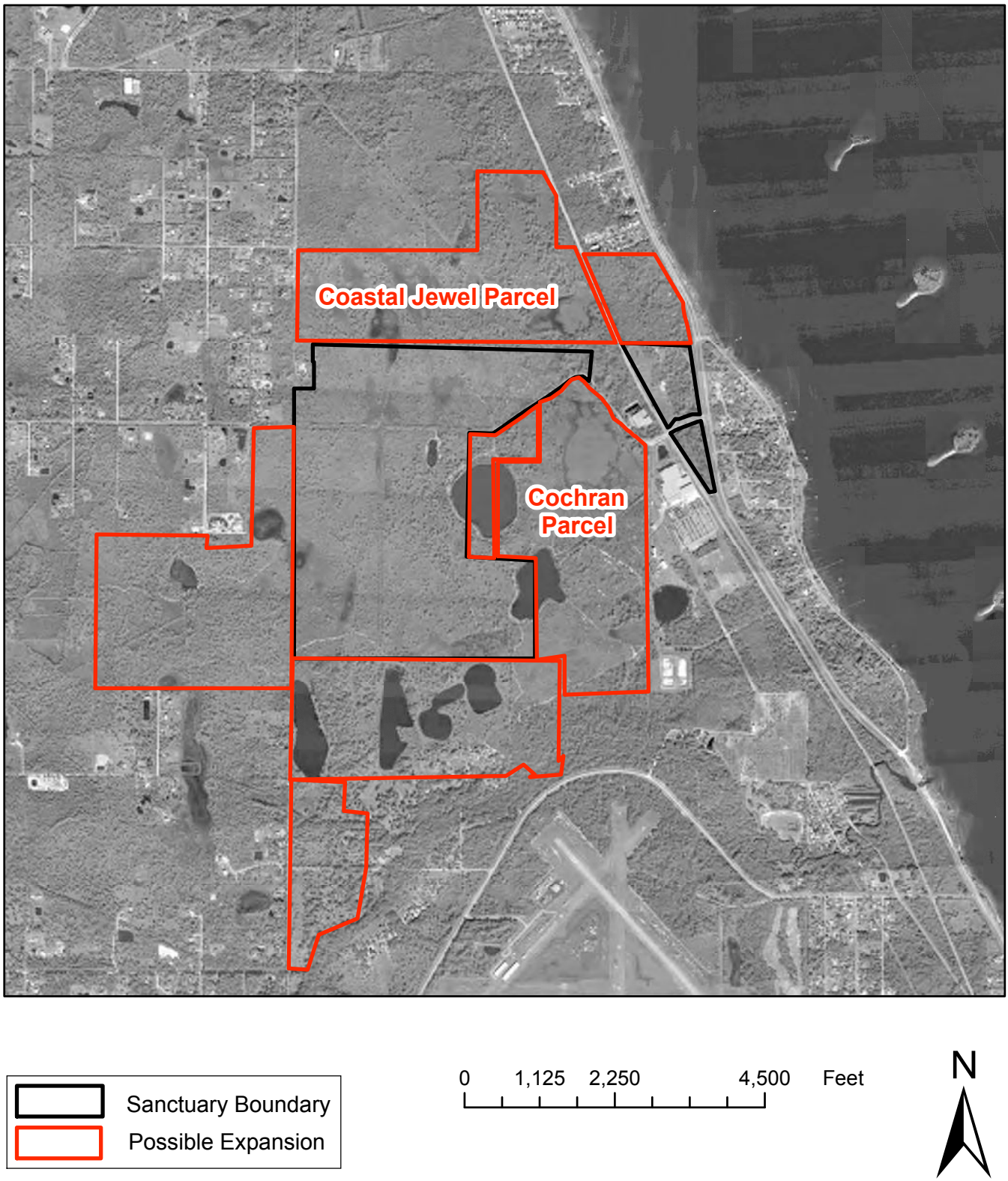


Figure 3: Jordan Scrub Sanctuary Possible Expansion

average 53.8 inches. Wet and dry seasons are typically well defined, with the wet season occurring between May and October and the dry season between November and April. Annual and seasonal rainfall is subject to large variation in both amount and distribution. During spring and summer, Brevard County experiences numerous thunderstorms often coupled with frequent lightning strikes. Historical alteration in climate in association with intermediate disturbance events such as hurricanes and lightning-induced wildfires directly and indirectly affect the composition and distribution of species and natural communities in Florida, and Brevard County is no exception.

Prevailing winds are generally from the north to northeast during the dry season (November-April) and from the east-southeast during the wet season (May-October) (ESMC, 1989). Weather patterns such as cold fronts and thunderstorms will affect local wind direction depending upon the time of year.

b. Geology

Since the late Oligocene, Florida has been a continuous peninsula, comprised of numerous ecosystems. The most ancient terrestrial systems are probably the mesic forests and the xeric oak/scrubby ecosystems. Scrub ridges that are present throughout Florida and Brevard County remained high and dry during historical water level fluctuations that dramatically shaped the composition of the state's rich scrub biota (Myers, 1990). JSS lies within the Atlantic Coastal Ridge formation.

Most of Florida's major lakes, bayheads, and swamps are newly formed since the Wisconsinan glacial stage (Webb, 1990). This implies that these wetland systems have been repopulated during the last several thousand years in a manner comparable to island colonization (Webb, 1990).

c. Topography

The JSS has relatively flat topography ranging from 15 feet National Geodetic Vertical Datum (NGVD) in the creek along the railroad tracks, up to 28 feet NGVD along the higher scrub/sand ridges on the eastern boundary (Figure 8). Intermittent depression areas forming wetlands and seasonal ponds exist between slightly higher sections in the flatwoods areas. These slight differences in elevations are enough to support the varied ecosystems present within the Sanctuary. Drainage ditches present on site may be filled in at a future time to restore more natural hydrological conditions.

d. Soils

The soil types within the JSS, defined by the Natural Resource Conservation Service (formally the Soil Conservation Service), are as follows (Figure 4):

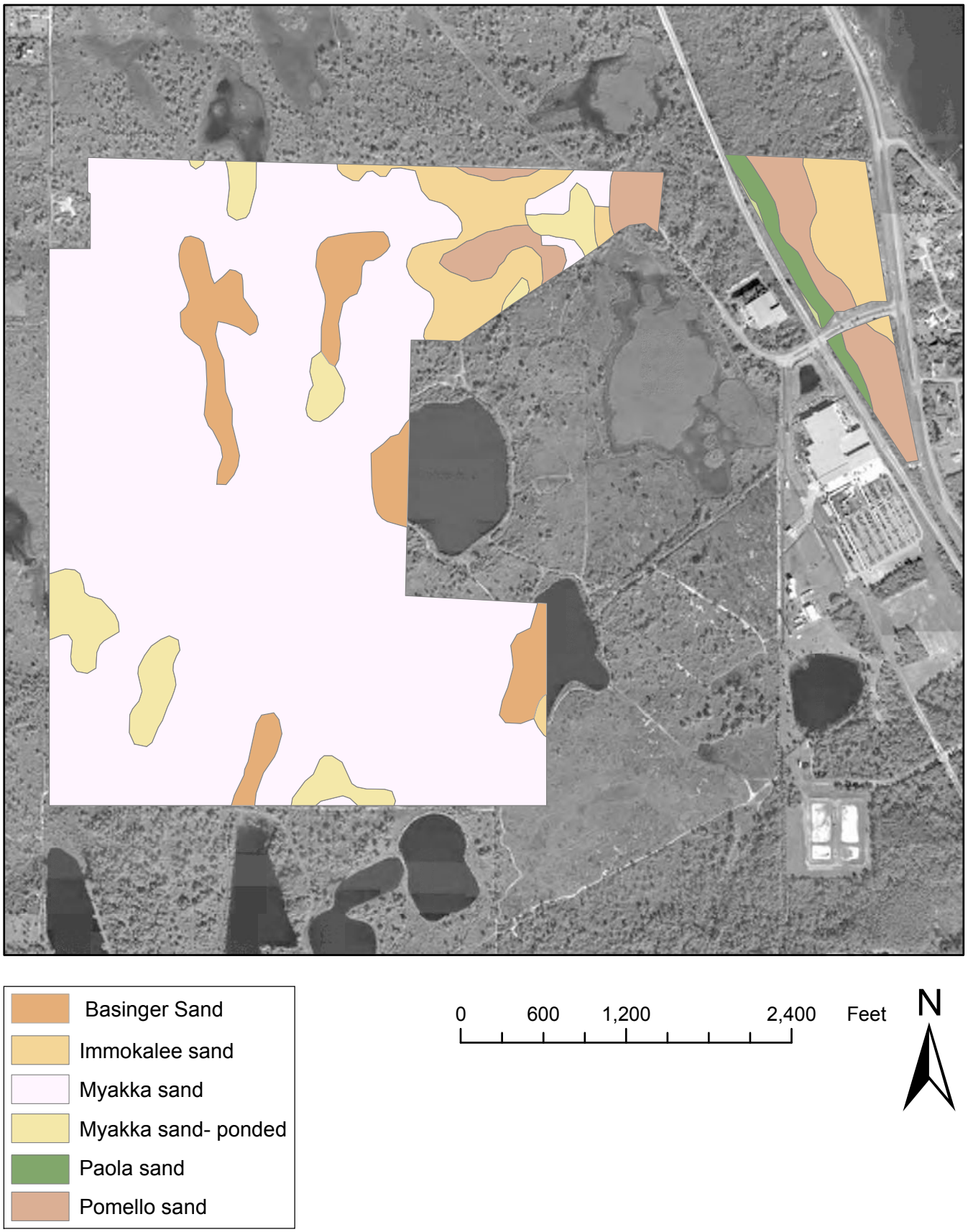


Figure 4: Jordan Scrub Sanctuary Soils

Basinger Sand (Ba)*
Immokalee Sand (Im)
Myakka Sand (Mk)
Myakka Sand, ponded (Mp)
Paola Fine Sand, 0 to 5 percent slopes (PfB)*
Pomello Sand (Ps)*

Note: * denotes a soil with aquifer recharge characteristics.

Basinger Sand (Ba)
This is a nearly level, poorly drained, sandy soil found in sloughs of poorly defined drainage ways and depressions in the flatwoods. It is occasionally flooded for 2 to 7 days following heavy rains. In most years the water table is within a depth of 10 inches for 2 to 6 months of the year, and between 10 and 40 inches for 6 months or more. In the dry seasons it is below a depth of 40 inches for short periods. Typical vegetation on this soil may include scattered pines with maidencane and St Johnswort in the lowest areas. Basinger sand is an aquifer recharge soil.

Immokalee Sand (Im)
These soils consist of nearly level, poorly drained sandy soils in broad areas in the flatwoods, on low ridges between sloughs, and in low narrow areas between sand ridges and lakes and ponds. These soils formed in beds of marine sands. In normal years the seasonal high water table is within 12 inches of the surface for 1 to 4 months. In other months the water table is below 12 inches. Rarely is it above the surface. Typical vegetation on this soil type may include saw palmetto, gallberry, slash pine, and wiregrass.

Myakka Sand (Mk)
These soils consist of nearly level, poorly drained soils in broad areas in the flatwoods, and in areas between sand ridges, ponds, and sloughs. These soils formed in beds of marine sands. In normal years the seasonal high water table is within 12 inches of the surface for 1 to 4 months. In other months, the water table is below 12 inches. Rarely is it above the surface. Typical vegetation on this soil type may include second growth slash pine with an understory of saw palmetto, runner oak, native grasses, and gallberry.

Myakka Sand, Ponded (Mp)
This is a nearly level poorly drained sandy soil occurring in shallow depressions in the flatwoods. This soil is Myakka sand, but it is in low places where water accumulates. In most years it is flooded for 6 to 12 months. Typical vegetation on this soil type includes maidencane and St Johnswort. Clumps of water tolerant trees maybe found in some places. Water lilies and pickeral weed are in places where standing water is deepest.

Paola Fine Sand, 0 to 5 percent slopes (PfB)
This is an excessively drained soil on ridges. The water table is below a depth of 10 feet. Typical vegetation on this soil type includes sand pine and an scattered understory of palmetto, rosemary, and cactus.

Pomello Sand (Ps)
This is a nearly level, moderately well drained sandy soil on broad low ridges. These soils formed in thick beds of marine sand, and are often very acidic. The water table is 30 to 40 inches below the surface for 2 to 4 months in most years and between 40 and 60 inches for more than 6 months. During dry periods it is below 60 inches for short periods. Typical vegetation on this soil type includes longleaf pine with an understory of live oak, and saw palmetto. Pomello sand is an aquifer recharge soil.

Note: the descriptions of vegetation associated with soil series from the Brevard County Soil Survey are generic and not specific to the Jordan Scrub Sanctuary.

e. Hydrology

JSS lies within Parcel Numbers 12009C0610F and 12009C0605E of the FEMA Flood Insurance Rate Maps dated August 18, 1992 and April 3, 1989 respectively. Approximately 70% of the property lies in the flood zone X, outside of the 100-year flood plain. The remaining 30% of the tract lies in the A flood zone; both of these areas are within the 100-year flood elevation (Appendix I).

One major hydrological altering feature of this site includes an old ditch system that runs along both sides of Jordan Boulevard (Figure 5). Another ditch structure runs from the south end to the north terminating at the Jordan Boulevard. It is partially filled, but still has a negative hydrological impact on adjacent wetlands and has facilitated the growth of exotic vegetation. A future project involves the installation of a culvert on Jordan Boulevard to restore the north-south water flow and in turn a more natural hydrology to the site. Further hydrological impact has also resulted from fire control lines installed by the Florida Division of Forestry during a wildfire in 2003 that will require rehabilitation.

Aerials dated from 1943 to present were examined for evidence of changes in hydrology (Figure 6 & 7). Jordan Boulevard and its associated ditches appear to have had the greatest impact on the wetlands, with depression marshes closest to Jordan Boulevard changing in size and lacking exchange flow. Depression marshes located throughout the remainder of the property on Myakka ponded sands and Basinger sands form the majority of the wetlands on this tract, and most of them have remained relatively consistent in size throughout the 50 years as evidenced by the aerials examined.

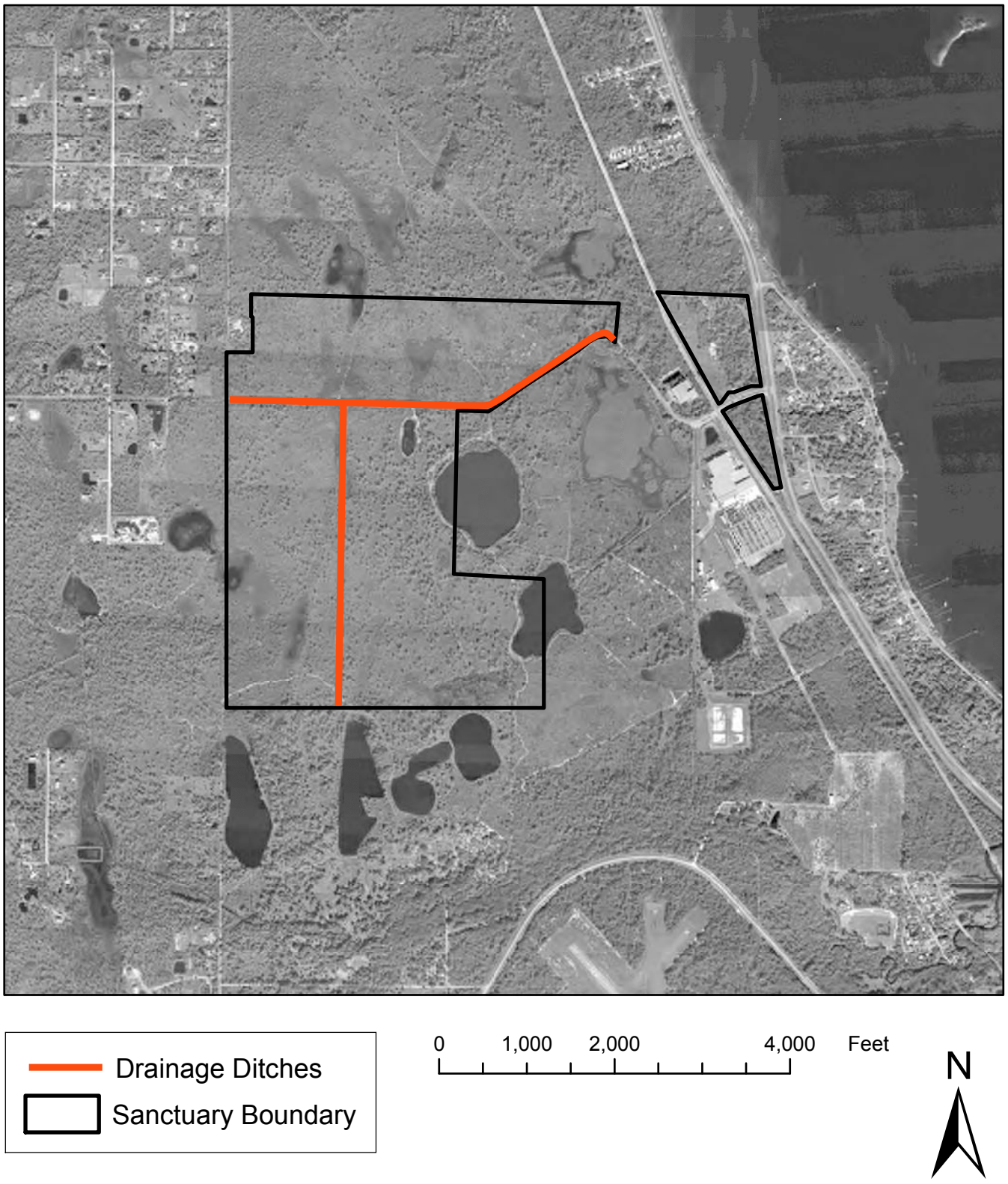


Figure 5: Jordan Scrub Sanctuary
Hydrological Alterations

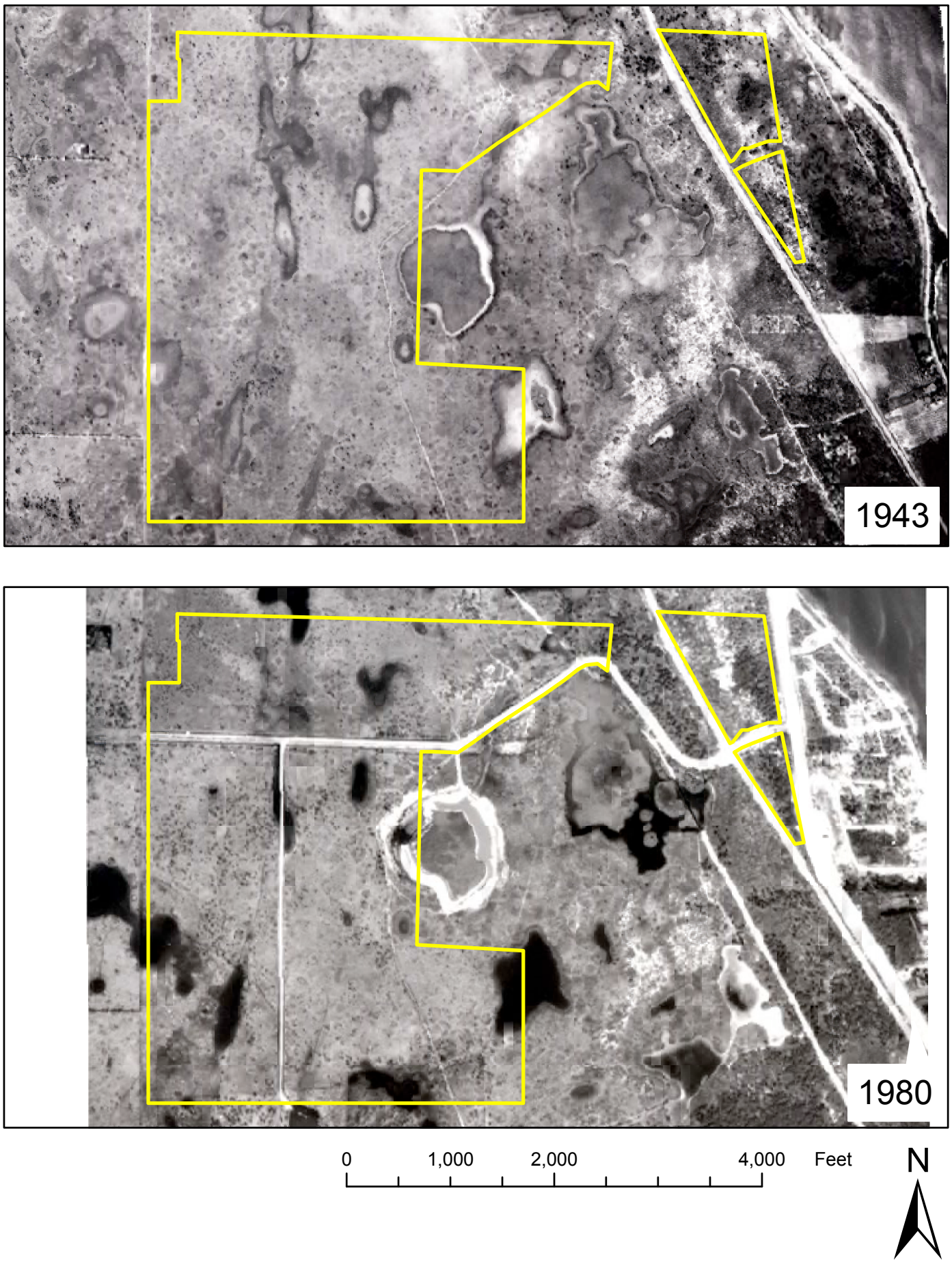
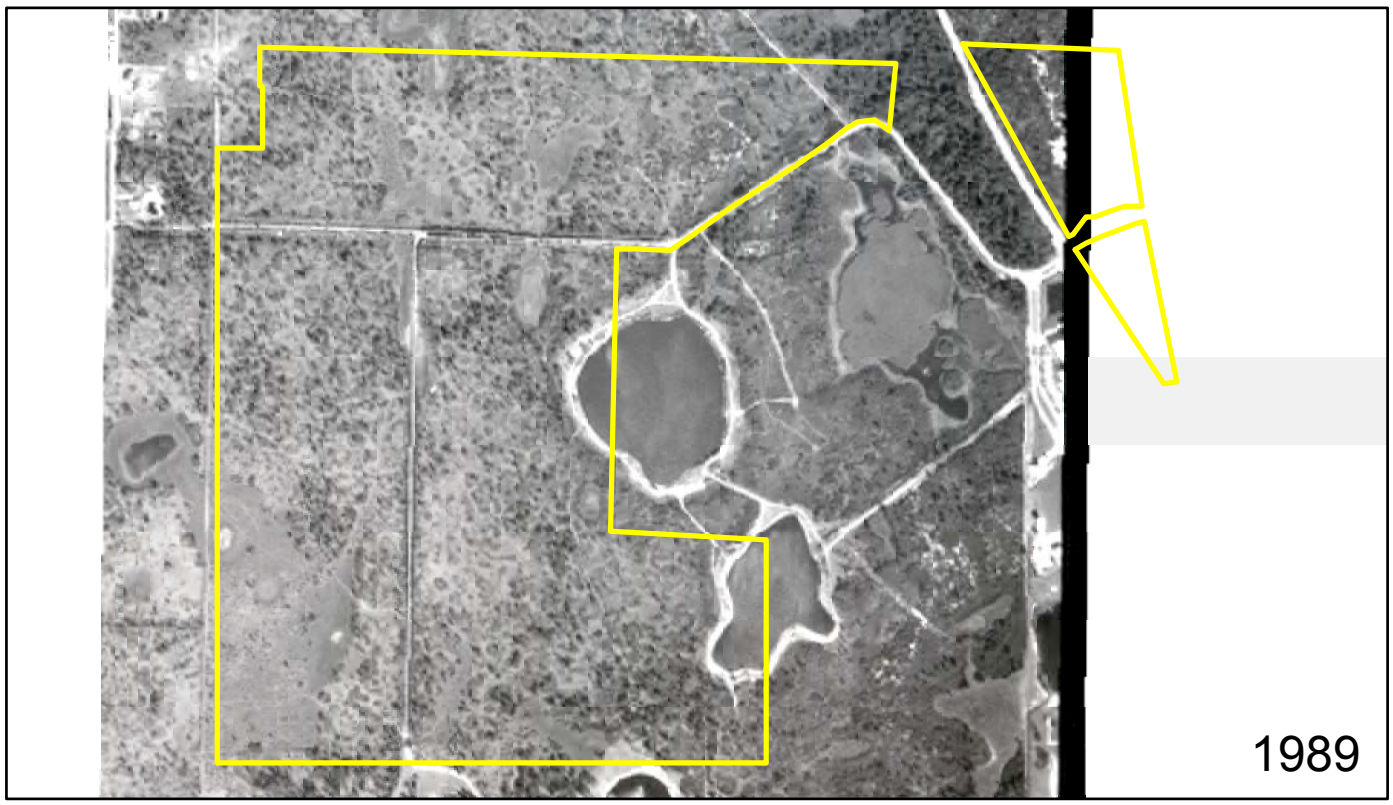


Figure 6: 1943 and 1980 Historical Aerials



*1989 aerial picture incomplete to the East

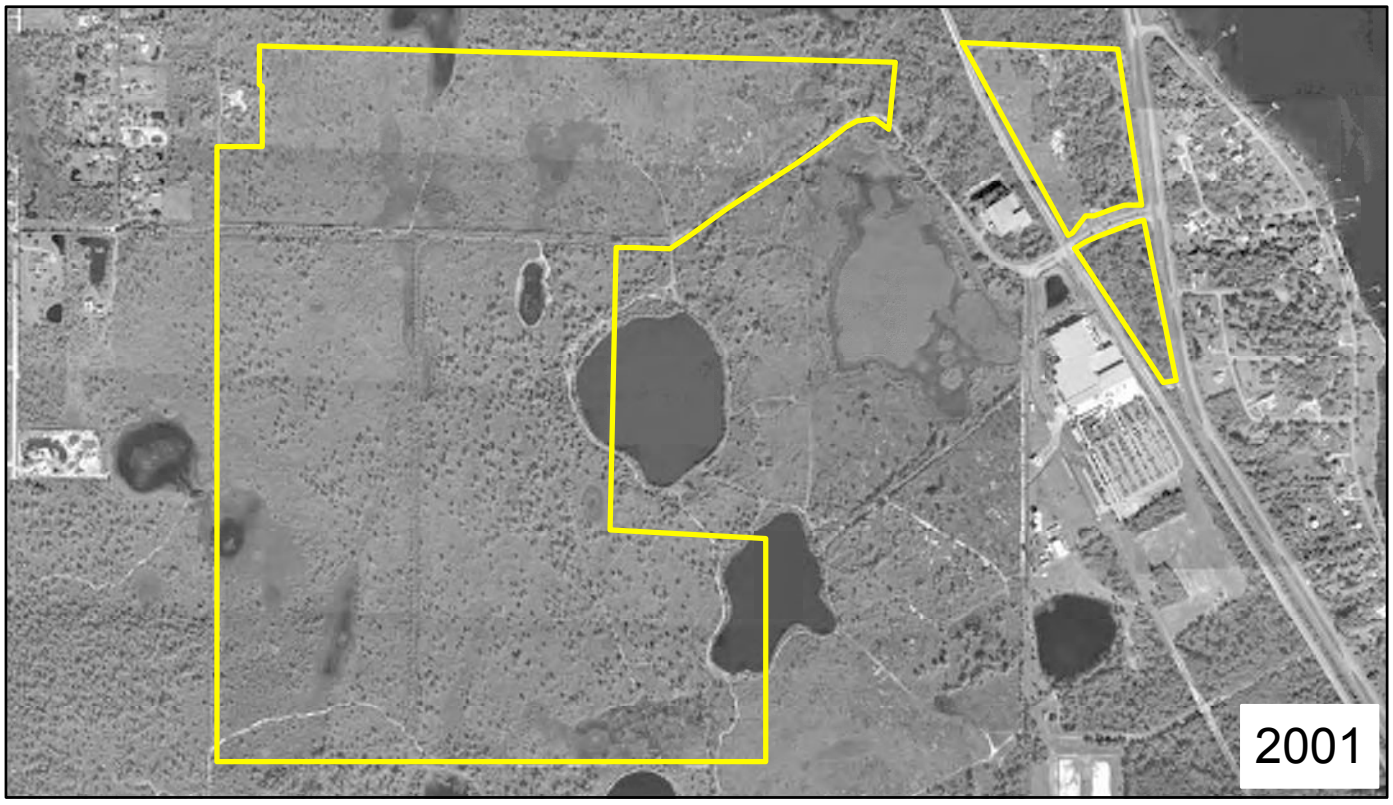


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Figure 7: 1989 and 2001 Historical Aerials

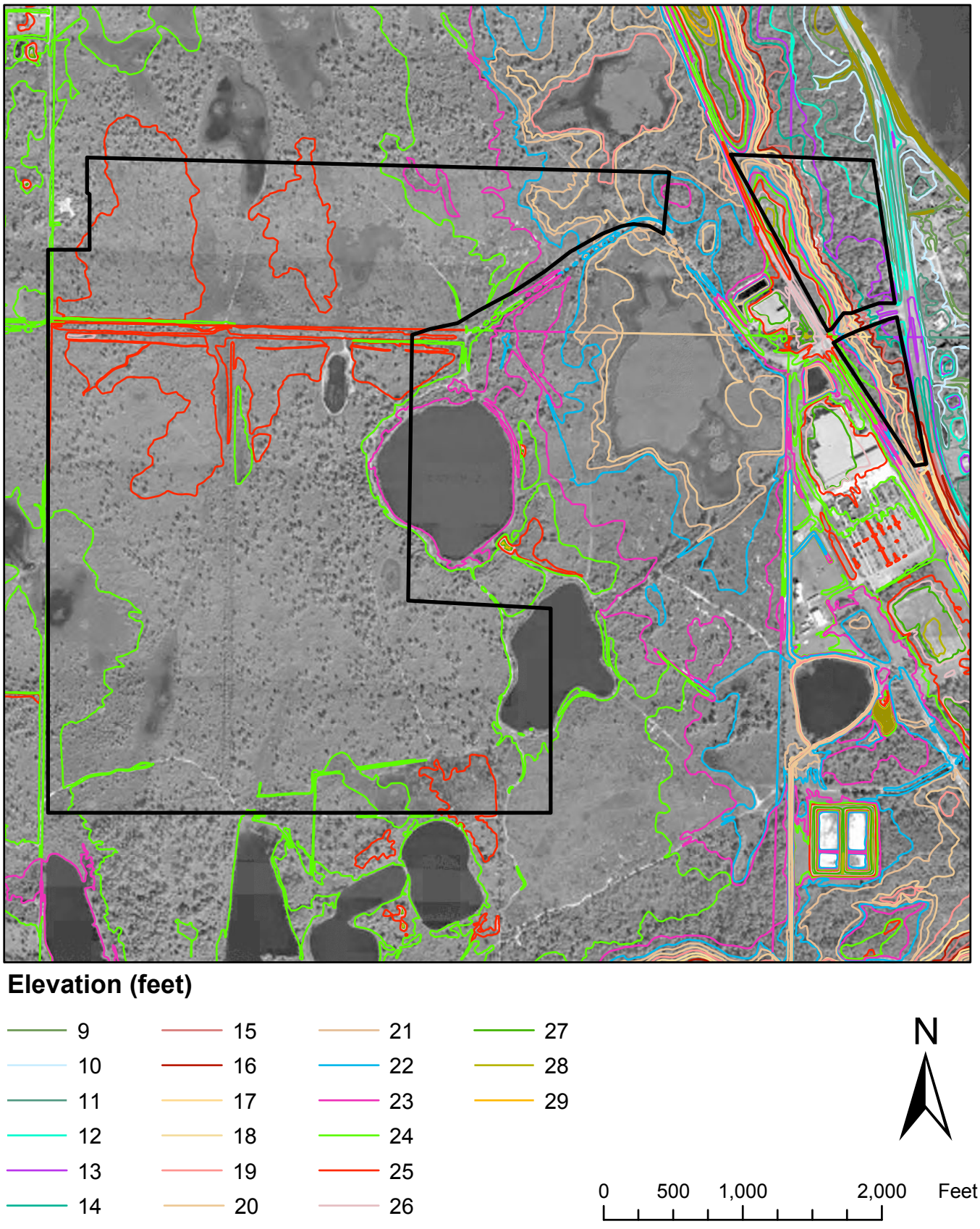

Figure 8: Jordan Scrub Sanctuary Topography

B. Biological Resources

Protection of the natural resources within JSS depends upon five key management issues: Reintroduction of a fire regime, restoration of any historical hydrological processes that have altered plant communities, removal of exotic vegetation, limitation of recreational impacts and monitoring all these above items.

Proper management of the JSS is essential for the protection of the Florida scrub-jay population in the south area of Brevard County. The JSS contains a diverse assemblage of natural communities and associated species. This association of habitats on site represents a natural mosaic typical of coastal Florida.

a. Ecosystem Function

This entire property, with the exception of the ruderal portion, is a mixture of flatwoods (mesic and scrubby) and scrub (Figure 9). The uniqueness of this property comes not in the component communities that make up the 354-acre tract but in the combination of these communities into a mosaic. Protection and management of this property lies in the management of vegetative succession. Flatwoods communities are a result of the mixing of two powerful elements, fire and water. The biodiversity of this tract will be maintained and improved through the careful application of fire and hydrological restoration. Aerials from 1943 illustrate that the depression marshes have not changed significantly in comparison to modern aerials. Their persistence is vital for the wildlife dependent upon their existence for their breeding and foraging needs. Federal, state or locally protected animals recorded on-site include the Florida scrub-jay, bald eagle, and gopher tortoise.

b. Vegetation

The JSS is comprised of many natural communities, all separated into classification types (Figure 9). These communities often overlap, but the distinct habitats are important, for this allows management decisions to be made based on known responses to management activities such as fire or hydrological alteration. The natural community component of this property is diverse with excellent examples of the natural community transitions typical of this Atlantic Coastal Ridge system. Aerial photographs from 1943 to the present were examined to determine what changes have occurred within these plant communities. The most obvious habitat changes occurred in the fire-dependant ecosystems that were historically more open, with lesser tree density than exists at present. Human activities have interrupted the pine flatwoods' natural cycle by both altering the fire regime and by changing the hydrology.

The dominant plant community on-site is flatwoods, both scrubby and mesic. Slash pine (*Pinus elliottii*) and longleaf pine (*Pinus palustris*) are the dominant tree species comprising the canopy layer, while saw palmetto (*Serenoa repens*), gallberry (*Illex glabra*) and various oaks are most prevalent in the shrub layer. In the herbaceous layer

soil type and water availability influences the percentage of grasses and herbs. In the freshwater marshes the dominant species are 80% *Hypericum* spp.
The following natural plant communities (listed by their FNAI classification) have been documented on-site:

Mesic Flatwoods

This plant community occupies the greatest area within JSS. Pine density and type varies, with most areas containing a combination of longleaf pine and slash pine. An open canopy forest of widely spaced pine trees with little or no understory and a dense ground cover of herbs and shrubs characterize mesic flatwoods. Typical understory vegetation consists of saw palmetto, gallberry, fetterbush (*Lyonia lucida*), and grasses. A portion of this habitat has been altered due to historic grazing, turpentine harvesting industry or the interruption of historic fire frequencies. A return to a more natural fire regime is necessary for all of the mesic flatwoods on property.

Fetterbush and gallberry are often dominant shrubs in this ecosystem, but in many stages of mesic flatwoods, saw palmetto can be dominant. The height of the shrub layer accurately reflects the period since the last fire event. Occasionally pawpaw (*Asimina reticulata*), tar flower (*Befaria racemosa*), and redbay (*Persea borbonia*) are present. Ground cover contains yellow-star grass (*Hypoxis juncea*), pennyroyal (*Piloblephis rigida*), and big yellow milkwort (*Polygala rugelii*).

Mesic flatwoods occur on relatively flat, moderately to poorly drained terrain. The soils typically consist of 1-3 feet of acidic sands overlying an organic hardpan or clay like subsoil. The hardpan substantially reduces the percolation of water below and above its surface. During the rainy seasons, water frequently stands on the hardpan's surface and briefly inundates much of the flatwoods; while during the drier seasons, ground water is unobtainable for many plants whose roots fail to penetrate the hardpan. Thus, many plants are under the stress of water saturation during the wet seasons, and under the stress of dehydration during the dry seasons.

Finally, mesic flatwoods are fire dependent ecosystems. Fires likely occurred in these communities every 1 to 8 years during the pre-Columbian times. Nearly all plants and animals inhabiting mesic flatwoods are adapted to periodic fires; several species actually depend on fire for their continued existence. In the absence of a natural fire regime habitat structure changes occur. Pine densities increase, shrub layer height increases, shrub cover increases, and herbaceous cover decreases. These changes are detrimental to the native fauna of flatwoods and to many plant species, particularly herbs that require open conditions. Structural changes occur well before successional changes (i.e. replacement of flatwoods by hardwood forests). For central Florida, the extent or rate of successional change of flatwoods to hardwood forest is not well established. Mesic flatwoods often grade into wet flatwoods, dry prairie, or scrubby flatwoods, depending upon elevation.

Depression Marshes

Depression marshes are the seasonally wet ponds scattered throughout the mesic flatwoods. They are characterized as shallow depressions in sand substrate with herbaceous vegetation often in concentric bands. These wetlands are essential for the conservation of many of the site's amphibians and provide breeding grounds for sandhill cranes. Fire is important in maintaining this community type by restricting invasion by shrubs and trees and in the formation of peat. Hydrological conditions vary, but most of the depression marshes present on the site are dry most of the year. They are ringed by dense saw palmetto with sandweed (*Hypericum fasciculata*) as the dominant species. Sphagnum moss occurs in some. Bloodroot (*Lachnanthes caroliniana*), pipeworts (*Eriocaulon* sp.) are present. Off-road vehicle users have disturbed most depression marshes present on the JSS and this is an important management issue that is currently being addressed. This represents a natural community fast disappearing to development in Brevard County.

Two lakes are found on the eastern boundary of the JSS. The 1943 aerials show that these lakes were originally what appeared to be low lying wetlands similar to the surrounding depression marshes. The existing lakes at their current depth are likely to be the result of dredging activity. The lakes vegetation is largely restricted to a narrow band along the shore, composed of hydrophitic grasses and herbs. The water is typically clear and oligotrophic, seldom becoming eutrophic. Wading birds such as herons, egrets and, ducks have been observed using these lakes as a feeding area.

Scrubby Flatwoods

Scrubby flatwoods occur on higher soil elevations than mesic flatwoods. An open canopy of widely scattered pine trees with a sparse shrubby understory and areas of barren white sand characterize scrubby flatwoods. Fire is an important component of this habitats' overall health, and should be introduced in a rotational pattern to impose a mosaic formation within the community to insure long-term Scrub-jay fecundity. Myrtle oak is the dominant oak species with a shrub layer of saw palmetto, fetterbush, and rusty lyonia (*Lyonia furruginea*) present. Wiregrass, shiny blueberry (*Vaccimnium myrsinites*), dwarf huckleberry (*Gaylussacia dumosa*), lupine (*Lupinus difusus*), and ground lichens are present. Sand live oak (*Quercus geminata*) also occurs in the scrubby flatwoods of Jordan Scrub Sanctuary.

Ruderal

A disturbed area colonized to some extent by plants that do not constitute the naturally occurring community characterizes in this community. Many times opportunistic non-native species will be the first ones to appear. In the case of the JSS, an old canal that runs north to south from Jordan Boulevard all the way to the south boundary of the property has been primarily colonized by the Brazilian pepper (*Schinus terebinthifolius*). The removal of the Brazilian pepper and restoration of the natural community is an important management concern.

Scrub

Scrub occurs in many forms and is often defined by a closed to open canopy forest of

sand pines with dense clumps or vast thickets of scrub oaks and other shrubs dominating the understory. Where the overstory of sand pines is widely scattered or absent altogether, the understory and barren sands are exposed to more intense sunlight. In the Jordan Scrub Sanctuary, sand pine density in the scrub habitat is high due to the alteration of fire regimes, resulting in a community sometimes referred to as sand pine scrub. The ground cover is generally very sparse and is dominated by ground lichens or rarely herbs. Open patches of barren sand are common. Typical plants include sand pine, sand live oak (*Quercus geminata*), Chapman oak (*Quercus chapmanii*), myrtle oak (*Quercus myrtifolia*), Florida rosemary (*Ceratiola ericoides*), saw palmetto, rusty lyonia, ground lichens, and stagger bush. The scrub's loose sands drain rapidly, creating very xeric conditions for which the plants have evolved water conservation strategies. This community is essentially maintained by hot, fast burning fires, which allow for the regeneration of the scrub community.

Floral surveys were performed by Paul A. Schmalzer and Tammy E. Foster on July 30, 2003 and March 30, 2004 (**Appendix A**). The floristic list is not complete. Further surveys will be performed in all major habitats throughout the growing season to obtain a complete list of flora species.

Non-native plant species within JSS are concentrated along the disturbed areas created by the dredging of ditches and feral hog damage. The primary exotic invasive plants on-site are the Brazilian pepper (*Schinus terebinthifolius*), cogon grass (*Imperata cylindrica*), Japanese climbing fern (*Lygodium japonicum*) and melaleuca (*Melaleuca quinquenervia*). Chemical treatment of Brazilian pepper, melaleuca, cogon grass and Japanese climbing fern is a continuous management activity. The EEL Program is dedicated to the long-term removal of invasive exotic plants from within the JSS.

c. Fauna

Florida scrub-jay surveys were first conducted by David Breininger and Jeffrey Cox in 1987 and are continuously updated. The information gather through the Florida scrub-jay surveys will guide future management practices within JSS. EEL staff members have started surveys of gopher tortoises on this site with the use of GPS technology. The gopher tortoises survey will give the EEL Program base-line data that will help future monitoring of the site. A small mammal survey is being planned along with other general surveys. The surveys will be initiated with the assistance of local universities, volunteers, and local environmental groups.

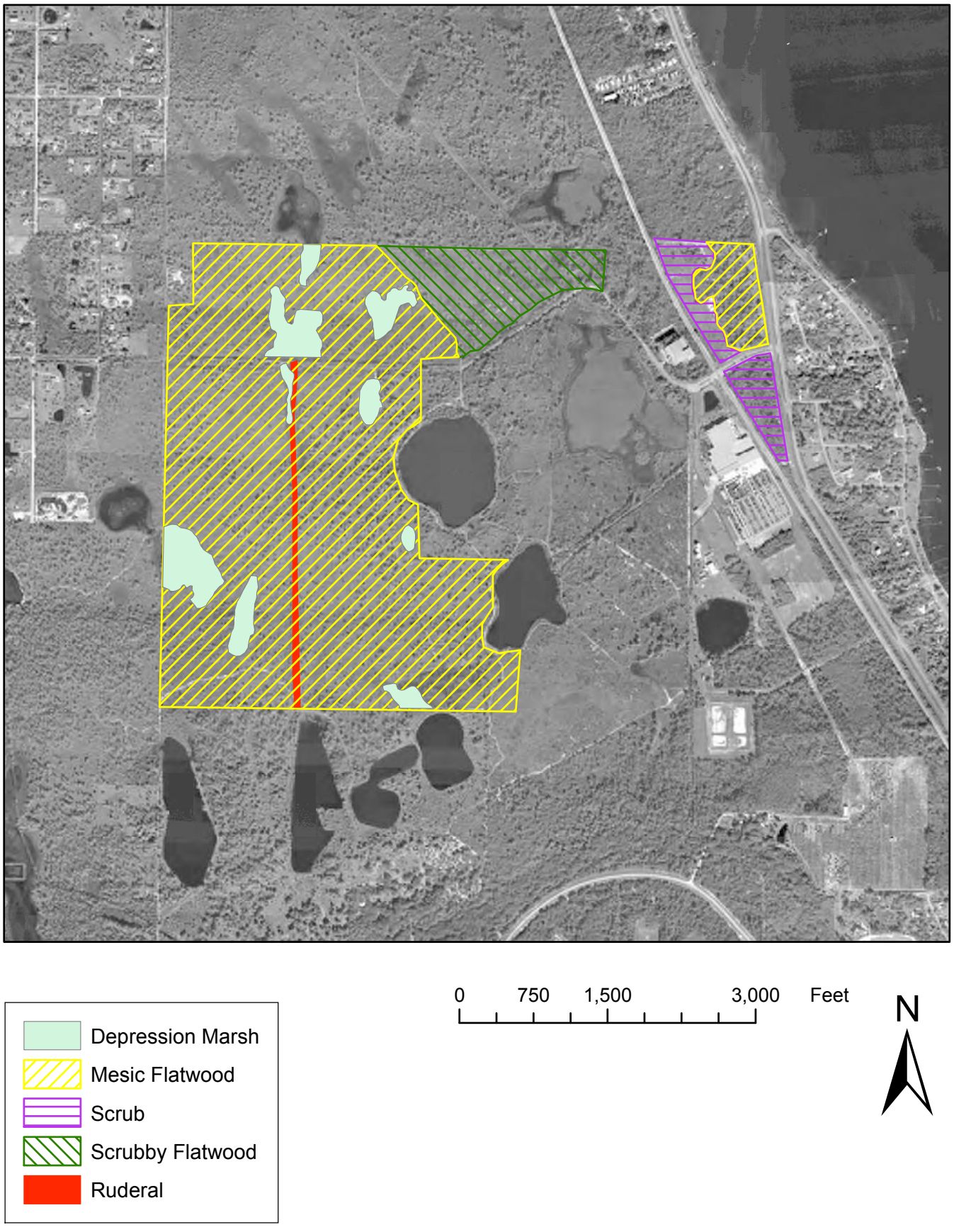

Figure 9: Jordan Scrub Sanctuary
Natural Communities

Insects
General insect surveys will include the use of year-long methods, such as Malaise and pitfall traps. These quantifiable methods of surveying will document any listed insect species and provide a survey of insects through the seasons.

Birds
Birds observed in the JSS are listed in **Appendix B**. There is a need for a more extensive species survey. The JSS exhibits interesting bird habitat characteristics as it is the territory of a group of Florida scrub-jays and bald eagles have also been observed on this site.

Reptiles and Amphibians
The reptiles and amphibians noted within the JSS are listed in **Appendix C**. There is a need for more extensive species surveys, especially in the many depression marshes and both lakes, which probably support a wide variety of frogs and other amphibians.

Mammals
The mammals recorded on-site are listed in **Appendix D**. There is a need for more extensive mammal surveys, especially for small rodents. A small mammal survey using Sherman traps is planned for the near future.

d. Protected Species
The JSS is home to several federal, state or locally listed plants and animal species. The presence of these species will be taken into account when planning prescribed fires and designating trails.

Plants
The US Fish and Wildlife Service (USFWS) and the Florida Department of Agriculture and Consumer Services (FDACS), compile lists of protected plant species. The USFWS classifies protected plant plants as either endangered or threatened. The FDACS lists plants that are considered state endangered/threatened and/or commercially exploited.

Paul Schmalzer and Tammy Foster surveyed the Jordan Scrub Sanctuary for rare scrub plants in March 2005. Florida Beargrass (*Nolina atopocarpa*) and yellow butterwort (*Pinguicula lutea*) occur within the sanctuary boundaries and are both listed as threatened by the State of Florida. *Lechea cernua* (Florida, Threatened) and *Lechea divaricata* (Florida, Endangered) also occur nearby. (Schmalzer and Foster, 2005). Additional surveys will be necessary. Baseline datas are considered during management practices such as creation of trails and exotics removal efforts.

Animals
The USFWS and the Florida Fish and Wildlife Conservation Commission (FWC) also compile lists of wildlife species considered to be under the possible threat of extinction. These species are categorized as either endangered or threatened. The FWC utilizes an additional category called, "species of special concern (SSC)", for several animal species that may ultimately be listed as endangered or threatened. This classification provides

the SSC listed animal with a particular level of protection that varies from species to species.

Reptiles and amphibians

The Eastern indigo snake requires large areas up to 2,500 acres in order to maintain a stable population (Tennant, 1997). The Eastern indigo snake has been observed within JSS. However, even with the addition of the proposed acquisition areas, this sanctuary will not be large enough to support a stable population.

Birds

The EEL Program has been able to obtain aerials of the Jordan Scrub Sanctuary that date back to 1943, and show an abundance of Scrub-jay habitat in the form of open scrubby flatwoods. A statewide population survey of jays was started by the USFWS in 1993, but information within JSS was not gathered until a colorbanding project was initiated in 1996. According to Breininger et al. (2000), the numbers of jay breeding pairs within Jordan were as high as 11 in 1997, but then declined to 8 in 1999, and consisted of 12 pairs in 2004 and 2006 (Figure 10).

Jordan is similar to other scrubby habitat throughout Brevard County in that decades of fire suppression has led to poor quality habitat. A primary cause for jay decline is poor demographic success associated with reductions in fire frequency (Woolfenden and Fitzpatrick, 1984). The physical effects of fire suppression are increases in shrub height, decreases in open space, increases in tree densities, and the replacement of scrub and marshes by forests (Duncan and Breininger, 1998). Dense tree layers also make it difficult for jays to spot potential predators such as the Cooper's hawk (*Accipiter cooperi*). Habitat in poor condition is unlikely to support a population for more than a few decades (Breininger, 2001). Many large expanses of scrub are unoccupied or are below carrying capacity because of a reduction in fire regimes, but it is these large areas such as the JSS that have the greatest possibilities for population persistence if restored (Stith 1999). It has been speculated (Breininger, 2001) that 289 hectares of the JSS could become suitable Scrub Jay habitat, which corresponds to 29 potential territories with active management such as mechanical thinning and prescribed fire.

Recommendations for the EEL Program to enhance habitat in JSS suitable for the scrub jay include frequent fire (Breininger et al. 2000), and completing the acquisition of land adjacent to the sanctuary. It is imperative to maintain and improve this habitat, because combined with the Valkaria Scrub Sanctuary, it represents the area with the greatest probability for maintaining a viable scrub-jay population along the Atlantic Coastal Ridge in Brevard County. These areas should form a contiguous open scrub landscape fragmented only by Valkaria Road. Together these areas have potential to support 54 scrub jay territories.

*Data courtesy of David Breininger

Scrub Jay Territories in 2006

Sanctuary Boundary

0 1,000 2,000 4,000 Feet

N

Figure 10: Jordan Scrub Sanctuary
Florida Scrub Jay Territories

e. Biological Diversity

The JSS exhibits a moderate diversity of plant communities, but does exhibit a complex diversity of soil types and hydrological regimes. The enhancement of plant diversity will rely on the reintroduction of fire and restoration of hydrological functions. No specific surveys were performed on the JSS specifically designed to measure biological diversity (both richness and evenness). Surveys of this type will be planned as future management activities. Sampling protocols exist for all floral and fauna groups, and should be explored for their usefulness. Quantitative information on the abundance of species will enable the JSS land manager to make informed decisions on such issues as restoration, management activates and public access and usage.

C. Cultural

a. Archaeological

The State of Florida Division of Historical Resources lists no archaeologically significant sites within the Jordan Scrub Sanctuary. If significant archaeological sites are discovered, policies will be implemented that will serve to protect these sites from disturbance. Native American Indian artifacts are protected by Florida Statues and will be also protected on-site.

b. Historical

The EEL program purchased JSS in 1997. Caron Balkany owned the property before its purchase by the EEL Program. Prior to that Anthony S. Caserta owned the parcel.

c. Land-Use History

Aerials were examined from 1943, 1980, 1989 and 2001. Few interior roads existed on the property in 1943. Two main trails are visible going through the property oriented in a north-south direction, of these a wider trail follows the western boundary of the property as an extension of Marie Street, and a narrower trail follows the western side of the lakes. Pine density appears to be very low in 1943 and the dominant community appears to be an open mesic flatwoods habitat. In the 1980 aerial, Jordan Boulevard is now visible going through the property from west to east, on the north side of the lakes. A ditch has also been dredged going from the northern boundary to the southern boundary of the property and connecting two depression marshes. From the 1943 aerials to the 1980 aerials, pine density greatly increased and what was once an open mesic flatwoods habitat in 1943 appears to be a dense flatwoods community in 1980. The site was historically used by the turpentine industry and a great number of clay pots and clay fragments still remain on the JSS. The 1989 aerial photography shows very high pine density especially in the western portion of the property. This is probably explained by the lack of fire during the time period (1980-1989). The 2001 aerial shows the return to more open flatwoods communities, a direct result of the prescribed fires performed by the EEL Program in 2000. The north-south ditch appears overgrown in the 2001 aerial, which has

specific management consequences. Disturbed areas, such as ditches, facilitate the growth of invasive exotic species.

d. Public Interest

Horseback riders frequent JSS on a regular basis and local fishermen commonly use both lakes. In the recent years prior to county management the property became a popular off-roading site particularly for all-terrain vehicles (ATVs) users. Because of impacts on the environment, the use of off-road vehicles such as ATVs, is not authorized on EEL Sanctuaries. The construction of a fence around the property and the regular presence of EEL staff members have resulted in drastic reduction of improper uses of the property. However, these issues are still being continuously addressed. The EEL Program encourages passive recreation use within JSS in the form of hiking, horseback riding and bicycling.

V. FACTORS INFLUENCING MANAGEMENT

A. Natural Trends

The main natural factors influencing the diversity of this site are fire frequency, lightning, hydroperiod and water quality. In the absence of fire, invasion by native and non-native woody species occurs rapidly. Within JSS, the natural fire regime must be re-established and maintained to insure the continuation of the native flora and fauna unique to these pyrogenic natural communities. Alteration of the natural water table and drainage patterns has already occurred, so monitoring future changes in vegetation patterns is important. Any long-term management plan must include the use of prescribed fire and the monitoring of the water levels and amounts. Habitat range of Florida scrub-jays also is a natural trend that is affected by human-induced trends. Continual communication with David Breininger and other local experts will insure that the scrub-jay population as a whole (throughout the County) are managed to insure long-term viability of the populations.

B. Human-Induced Trends

Human influences on-site include:

<u>Fire suppression/alteration of natural cycles</u>
Naturally occurring fires have been suppressed during recent times mainly for public safety and the protection of structures. Timbering also requires specific fire cycles that are different than natural regimes. Management activities such as these tend to result in plant and animal compositions that are different than what might have existed under more natural regimes. A more natural cycle under the prescribed burn plan (Appendix G) will address this problem.

Small roads/trails that run through property
These will be used as firebreaks and hiking trails when appropriate. Trails that historically run through sensitive wetland areas will be closed to prevent disturbances to sensitive habitat.

Localized soil disturbance by feral hogs
Feral hogs (*Sus scrofa*) have negatively altered the native communities within JSS for many years. A trapping program needs to be scientifically evaluated so that a true population estimate might be calculated, and other, more intensive removal methods might be considered. The EEL Program is currently developing a feral hog removal policy.

Hydroperiod alterations
The construction of Jordan Boulevard reduces water flow between wetlands situated on both sides of the road. The EEL Program plans the installation of a culvert that would reinstate water flow to more natural levels.

Management goals and actions must be developed to reduce the impacts of human induced activities on-site. Carrying capacity studies should be implemented, with focus on studies performed by the National Park Service. Separate parameters must be considered regarding individual species, ecosystems and individual activities.

C. External Influences

Besides the constant invasion of exotic plants and animals from outside the sanctuaries' boundaries, there are no known encroachments from adjoining property owners on the JSS.

Robert Cochran, the landowner to the east of the main parcel is required to donate his mitigation land (approximately 194 acres) to fulfill development permit requirements for protected species and habitat impacts. The parcel, if donated, would be managed under an amendment to this management plan. The parcel directly to the north of JSS (Coastal Jewel) is in the acquisition identified by the EEL Program. Although past negotiations to acquire the land have been unsuccessful, the EEL Program will continue its acquisition efforts.

There is evidence that access by foot for the purposes of hunting has been occurring along the southern boundary of the JSS for many years. Off-road vehicles periodically enter the site along the western boundary by cutting the fence. The EEL Program has responded to this by replacing fence sections where necessary, making sure that boundary signs are replaced when damaged or stolen, and meeting regularly with local law enforcement to review specific problem areas and illegal activities.

D. Legal Obligations and Constraints

Florida Power and Light
FPL maintains an easement through the east side of JSS running north south.

Brevard County
Jordan Boulevard road easement: refer to Appendix K**.**

Florida Division of Forestry (DOF)
The Florida DOF issues permits for prescribed fires to land managers that possess certified burn numbers.

Town of Malabar
Management practices will be consistent with ordinances of this municipality.

E. Management Constraints

a. Fire

Utilizing prescribed fire within the JSS will benefit ecosystems, individual plants and animals that have evolved under the influences of this natural process in Florida. The EEL Program's prescribed fire goals include:

- Restore or preserve fire-adapted communities with the reintroduction of fire
- Maximize biological diversity by the creation and maintenance of a vegetation mosaic
- Manage Threatened and Endangered species
- Provide educational opportunities
- Reduce fire hazards by managing fuels and fire
- Conduct safe prescribed fires
- Actively encourage cooperation between all parties with a vested interest in prescribed fire

The EEL Program Fire Management Manual is a separate document which addresses in great detail the overall fire objectives of the EEL Program, lists equipment needed to perform prescribed fires, outlines fire's effects on natural communities and Threatened and Endangered species found within the Sanctuary network and contains copies of all necessary paperwork needed to perform prescribed fires. Attached to the JSS Management Plan in Appendix G is a site-specific Fire Management Plan that bridges the EEL Program Fire Management Manual and the Unit-specific Burn Prescription. This site-specific plan will include:

- Sanctuary Fire Management Goals
- Burn Unit Descriptions and Map
- Fire History and Map
- Species of Special Concern
- Archaeological, Cultural and Historic Resources
- Fire Sensitive Areas
- Smoke Management Issues
- Fire Regime

- Public Notification
- Wildfire Policy
- Cooperation with Other Agencies
- Fireline Maintenance
- Fire Effects Monitoring and Photopoint Location

The JSS has been broken up into Burn Units (Figure 11) that allow the EEL Program to safely conduct prescribed fires and to allow for the natural heterogeneity inherent in more natural fires to be created. These Units were chosen based on existing roads/trails.

b. Exotic Control

Plants

Invasive, exotic and/or nuisance plants have the potential to displace native species and to significantly alter natural ecosystem function. Four plants are of concern; Brazilian pepper, cogon grass, Melaleuca, and the climbing fern (both Japanese and Old-World). All are continuously being eradicated within the Sanctuary's borders. Long-term monitoring will be needed to insure that these invasive exotics are removed or kept at very low levels on-site.

Animals

The exotic species that is causing the most damage on-site is the feral hog. A feral pig eradication program within JSS needs to be developed in order to address the problem. The control of the red imported fire ant (*Solenopsis invicta*) will be an on-going task, with spot treatment with Amdro or a similar chemical as needed. Since they prefer to nest in disturbed habitats, firebreaks through the flatwoods will be regularly monitored for new mounds.

F. Public Access and Passive Recreation

Public access and opportunities for passive recreation will be provided at JSS pursuant to public use and recreational policies of the EEL Program Sanctuary Management Manual (Brevard County 97) adopted by Brevard County Board of County Commissioners. It has been determined that passive recreational activities best support the EEL Program goals. The EEL Program Sanctuary Management Manual defines passive recreation as follows:

"a recreational type of use level of use and combination of uses that do not, individually or collectively, degrade the resource values, biological diversity, and aesthetic or environmental qualities of a site."

Figure 11: Jordan Scrub Sanctuary Fire Units

This site is proposed as a "Category 2 site" within the EEL Program and as such, minimal capital improvements will be allowed on-site. Activities that will be encouraged include hiking, nature observation, and limited horseback riding and bicycling.

The Recreation and Education Advisory Committee approved a final public access plan in November of 2005 (Figure 12). This figure shows the planned improvement to trails and access points. The recreation plan is intended to encourage recreation activities while protecting the resources. This construction may be funded through grants, volunteer projects or out of the EEL Program capital budget.

An observation tower has slated for this site to be located near the southern lake. The tower would provide an elevated vantage point of the surrounding area. The optimal height and design have not yet been determined. This tower would also provide a destination for the trail system and promote passive recreation.

1) Parking and public access

Parking remains an unresolved issue at the JSS with no existing designated parking area. One possibility that is being evaluated would be the conversion of land owned by the Town of Malabar adjacent to the north boundary of the JSS that is currently being used for dumping vegetative debris. Public access is available with three pedestrian walkthroughs located at the northwest, northeast and southwest gates, designed to allow access to horses, hikers, and bicyclists.

2) Hiking

Hiking trails will be designed to follow existing firebreaks, roads and older firelines and will be located to give visitors the opportunity to experience the diverse habitats within the Sanctuary. Trails will be split between short trails and longer, more difficult trails. These hiking trails will bring visitors through the diverse habitats of the JSS, from mesic pine flatwoods to scrubby flatwoods. Informative signs will be placed along the trails, and information on any research or restoration projects that are ongoing will be included in the signage.

In the future the trails at JSS may become a part of the Brevard County Spine Trail that is proposed by the Metropolitan Planning Organization along the Marie Street right of way. All trail surfaces within the sanctuary boundary are proposed as natural non-hardened foot paths.

3) Horseback riding and bicycling

These are acceptable passive recreational activities within the JSS and will be allowed on the trail system. However, biking and horseback riding will be allowed strictly within the designated trail to avoid damage to the natural communities. The EEL Program retains the ability to close off trails to these and other activities if negative impacts are observed.

4) Hunting and fishing
No hunting will be allowed within the JSS with the exception of nuisance species trapping and removal. Fishing will be allowed within the lakes at JSS. Access to the lakes will be by foot, bike or horses only.

VI. MANAGEMENT ACTION PLANS

The following is a comprehensive outline of the goals, strategies and actions necessary to manage the JSS.

A. Goals

The Sanctuary Management Manual of the EEL Program provides the following management goals for the all Sanctuaries within the EEL Program.

- Documentation of historic public use
- Conservation of ecosystem function
- Conservation of natural (native) communities
- Conservation of species (including endemic, rare, threatened and endangered species)
- Documentation of significant archeological and historic sites
- Provision of public access and responsible public use
- Assessment of carrying capacity of natural resources with public use
- Provision of environmental education programs
- Opportunities for multiple uses and compatibility
- General upkeep and security of the property

B. Strategies and Actions

The following is an outline of the specific management strategies and actions that are needed to meet the management goals for the JSS.

GOAL: DOCUMENTATION OF HISTORIC PUBLIC USE

Strategy 1: Document historic public use

Actions:
- Collect historic information (such as aerials, historic photos, interviews with previous landowners) regarding the types of activities that have occurred on-site;

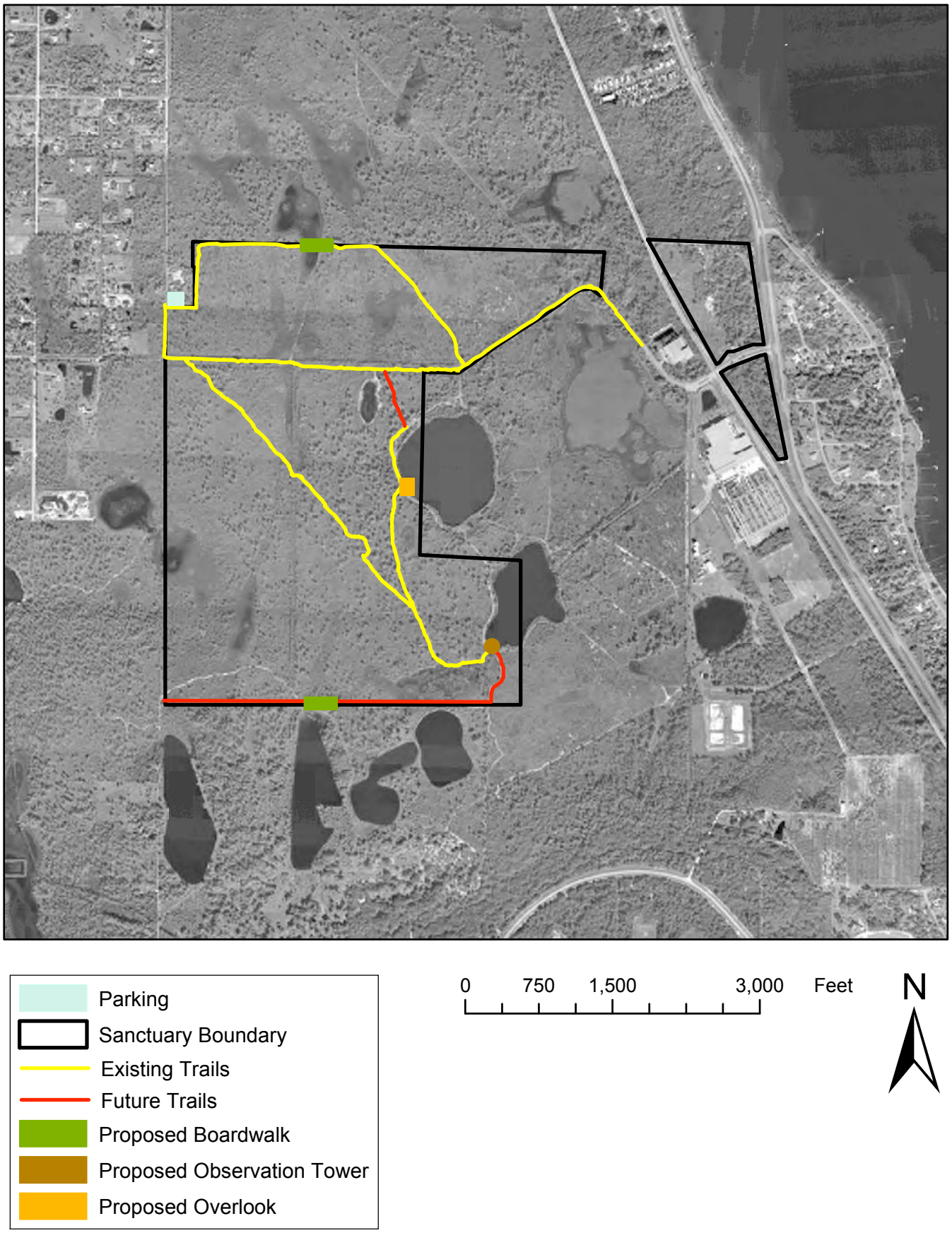

Figure 12: Jordan Scrub Sanctuary Recreation Plan

- Evaluate how historic public use impacted the site's natural resources;
- Consider historic public use patterns in planning future public uses.

GOAL: CONSERVATION OF ECOSYSTEM FUNCTION

Strategy 2: Protect, maintain, and restore native diversity, ecological patterns, and the processes that maintain diversity.

Actions:
- Research and monitor baseline conditions of natural systems;
- Research the connection of on-site natural resources with adjacent resources;
- Research hydrologic patterns on and off-site;
- Focus natural community restoration efforts on enhancing native diversity;
- Investigate the historic hydroperiod and restore natural hydrologic patterns.

Strategy 3: Ensure that natural upland-wetland interfaces are protected and enhanced.

- Collect data to analyze the existing community interfaces;
- Protect communities from deleterious impacts deriving from external influences;
- Restore/enhance natural communities where and as possible.

GOAL: CONSERVATION OF NATURAL (NATIVE) COMMUNITIES

Strategy 4: Restore degraded, disturbed, or altered wetlands within the JSS.

Actions:
- Establish baseline conditions within wetlands;
- Use native plants for restoration efforts;
- Consult local experts and current literature regarding best scientific methods for wetland restoration
- Prioritize the wetland communities in need of restoration based upon ease of accomplishment, expected habitat value yield, or financial considerations;
- Assess possible impacts of proposed restoration on adjacent communities and offsite properties;
- Implement the selected restoration activities (i.e. remove exotic species, restore natural hydrologic flood, etc.);
- Monitor the effects of the restoration activities, evaluate the success of the restoration projects, and revise the restoration plan, as necessary.

Strategy 5: Restore degraded, disturbed, or altered uplands within the JSS.

- Establish baseline conditions within the upland communities;
- Consult local experts and current literature regarding best scientific methods for

upland restoration;

- Prioritize the upland communities in need of restoration based upon ease of accomplishment, expected habitat value yield, or financial considerations;
- Use native plants for restoration efforts;
- Assess possible impacts of proposed restoration on adjacent communities and offsite properties;
- Implement the selected restoration activities (i.e. remove exotic species, restore natural disturbance regime, replant native species, etc.);
- Monitor the effects of the restoration activities, evaluate the success of the restoration projects, and revise the restoration plan, as necessary.

Strategy 6: Design and implement a "natural" fire management program.

- Identify natural communities that require prescribed fire management;
- Document listed species within Sanctuary that require fire for their propagation
- Identify and evaluate individual proposed burn management units;
- Identify the goal of the application of fire to each proposed burn unit;
- Identify and plan perimeter and internal fire breaks;
- Write prescriptions for each unit;
- Incorporate all of the above into a Sanctuary-specific fire management plan to be attached to this plan as an Appendix;
- Develop and implement public education campaign including programs and literature regarding the need for prescribed fires;
- Secure the necessary permits from the State Division of Forestry;
- Begin prescribed fire management program;
- Monitor the effects of the fire management activities, evaluate the success of the program, and revise the program strategies as needed.

GOAL: CONSERVATION OF SPECIES (INCLUDING ENDEMIC, RARE, THREATENED AND ENDANGERED)

Strategy 7: Protect on-site populations of endemic, rare, threatened and endangered species through the utilization of existing habitat management and species recovery plans.

Actions:

- Develop a methodology and work plan to accomplish the identification of designated plant and animal species;
- Survey for, and identify, designated plant and animal species;
- Plot the location of identified designated species within and/or adjacent to the sanctuary for use in the implementation, or re-distribution, of amenities or site improvements;

- Periodically update these baseline survey data to determine possible changes in designated species distribution or density;
- Review management plans for consistency with USFWS and FFWCC guidance concerning listed species;
- Implement habitat restoration activities for listed species (i.e. removal of exotic/nuisance species, restoration of ecosystem function);
- Establish periodic monitoring of habitat suitability (where indices are available for a given species), species population levels, diversity levels, and exotic/nuisance species, as a means of evaluating the success of management strategies.

GOAL: DOCUMENTATION OF SIGNIFICANT ARCHAEOLOGICAL AND HISTORIC SITES

Strategy 8: Survey for archaeological and historic sites within the Jordan Scrub Sanctuary.

Actions:
- Contact the State Division of Historic Resources to conduct a Phase I survey of the site;
- Review available maps and historic records for indications of past usage of the site;
- Map all archaeological and historic sites for future reference.

GOAL: PROVISION FOR PUBLIC ACCESS AND RESPONSIBLE PUBLIC USE

Strategy 9: Establish and enforce specific policies and management techniques for public access and responsible public use.

Actions:
- Use daily or seasonal quotas, restricted access or limited parking to enforce established carrying capacities;
- Coordinate recreational use with the ecological burning strategies of the EEL Program;
- Minimize unauthorized trail expansion by establishing sufficient trails, constructing handrails, and the development of written guidelines;
- Construct hiking trails in accordance with the USDA Forest Service "Standard Specifications for the Construction of Trails";

GOAL: ASSESSMENT OF CARRYING CAPACITY OF NATURAL RESOURCES WITH PUBLIC USE

Strategy 10: Establish a monitoring program to assess effects of public usage on natural resources.

Actions:

- Establish baseline vegetation monitoring transects to provide data regarding existing conditions prior to development;
- Establish a methodology and record keeping system to document public use;
- Conduct regular monitoring to assess impacts of public use on natural habitats;
- Conduct regular "walk-throughs" over frequently used sites to assess the need for changes in routing/user types, or user intensity;
- Re-route users from sensitive areas or popular sites on a regular or as-needed basis;
- Re-align public use to avoid areas which observations or data indicate are too sensitive for the level of use originally planned.

GOAL: PROVISION OF ENVIRONMENTAL EDUCATION PROGRAMS

Strategy 11: Develop a plan to provide on-going environmental education programs to Brevard County residents and visitors.

Actions:
- Determine target audiences and types of programming best suited to those groups;
- Design and develop outdoor exhibits, signs and printed materials;
- Include educators, friends groups and other organizations in the design, development and delivery of programs;
- Develop and coordinate a docent program to assist in program delivery;
- Develop and provide training and site specific informational materials for use by docents and other educators;
- Develop criteria and process of evaluation for program review and refinement.

GOAL: OPPORTUNITIES FOR MULTIPLE USES AND COMPATIBILITY

Strategy 12: Provide opportunities for multiple use and compatibility when practical.

Actions:
- Use fire breaks for multi-use recreation trails when not needed for resource management;
- Include multiple benefits of natural community restoration efforts in education program.

GOAL: GENERAL UPKEEP AND SECURITY OF THE PROPERTY

Strategy 13: Secure and maintain the Sanctuary to the highest degree possible using EEL staff. Parks and Recreation staff, contract employees and volunteers.

Actions:
- Contract for maintenance of parking areas, fire breaks, trails, boardwalks, bridges, benches as needed;
- Coordinate daily maintenance tasks using staff and volunteers.

VII. PROJECTED TIMETABLE FOR IMPLEMENTATION

Part VII recommends a timeline for management plan implementation. The timeline has been divided into immediate, short-term and long-term time frames. Immediate time frame is defined as within one year of the adoption of this management plan, short term is 1 to 5 years, and long-term is more than 5 years. Some actions are also defined as on-going, if the activity is required for the on-going maintenance of the Jordan Scrub Sanctuary.

ACTION	**ACTIVITY TIMELINE**
Strategy 1: Document historic public use	
Collect historic information (aerials, historic photos, interviews) regarding the types of activities that have occurred on-site	On-Going
Evaluate how historic public use impacted the site's natural resources	Completed
Consider historic public use patterns in planning future public uses	Completed
Strategy 2: Protect, maintain, and restore native diversity, ecological patterns, and the processes that maintain diversity	
Research and monitor baseline conditions of natural systems	Immediate
Research the connection of on-site natural resources with adjacent resources	Immediate
Research hydrologic patterns on and off-site	Immediate
Research native species' movement patterns on and off-site	Immediate
Focus natural community restoration efforts on enhancing native diversity	Short-Term
Investigate the historic hydroperiod and restore natural hydrologic patterns	Long-Term
Strategy 3: Ensure that natural upland-wetland interfaces are protected and enhanced	
Collect data to analyze the existing community interfaces	Immediate
Protect communities from deleterious impacts deriving from external influences	On-going
Restore/enhance natural communities where and as possible	On-going
Strategy 4: Restore degraded, disturbed, or altered wetlands within the Jordan Scrub Sanctuary	
Establish baseline conditions within wetlands	Immediate
Use native plants for restoration efforts	Immediate
Consult local experts and current literature regarding best scientific methods for wetland restoration	Immediate
Prioritize the wetland communities in need of restoration based upon ease of accomplishment, expected habitat value yield, or financial considerations	Immediate
Assess possible impacts of proposed restoration on adjacent communities and offsite properties	Immediate
Implement the selected restoration activities (remove exotic species; restore natural hydrologic flood, etc.)	Short-term

Monitor the effects of the restoration activities, evaluate the success of the restoration projects	On-going

Strategy 5: Restore degraded, disturbed or altered uplands within the Jordan Scrub Sanctuary

Establish baseline conditions within the upland communities	Immediate
Consult local experts and current literature regarding best scientific methods for upland restoration	On-Going
Prioritize the upland communities in need of restoration based upon ease of accomplishment, expected habitat value yield, or financial considerations	Immediate
Use native plants for restoration efforts	On-Going
Assess possible impacts of proposed restoration on adjacent communities and off-site properties	Immediate
Implement the selected restoration activities	Short-Term
Monitor the effects of the restoration activities, evaluate the success of the restoration projects, and revise the restoration plan as necessary	Long-Term

Strategy 6: Design and implement a "natural" fire management program

Identify natural communities that require prescribed fire management	Completed
Document listed species within the Sanctuary that require fire for their propagation	On-Going
Identify and evaluate individual proposed burn management units	Completed
Identify the goal of the application of fire to each proposed burn unit	Completed
Identify and plan perimeter and internal fire breaks	Completed
Write prescriptions for each unit	Immediate
Incorporate all of the above into a Sanctuary-specific fire management plan to be attached to this plan	Completed
Develop and implement public education campaign including programs and literature regarding the need for periodic controlled burns	On-Going
Secure the necessary permits from the State Division of Forestry	On-Going
Begin prescribed fire management program	Completed
Monitor the effects of the fire management activities, evaluate the success of the program, and revise the program strategies as needed	On-going

Strategy 7: Protect on-site populations of endemic, rare, threatened and endangered species through the utilization of existing habitat management and species recovery plans

Develop a methodology and work plan to accomplish the identification of designated plant and animal species	Immediate
Plot the location of identified designated species within and/or adjacent to the sanctuary for use in the implementation, or re-distribution, of amenities or site improvements	On-Going
Periodically update these baseline survey data to determine possible changes in designated species distribution or density	Short-Term
Review management plans for consistency with guidance concerning listed species	On-Going

Implement habitat restoration activities for listed species	Short-Term
Establish periodic monitoring of habitat suitability, species population levels, diversity levels, and exotic/nuisance species, as a means of evaluating the success of management strategies	Immediate

Strategy 8: Survey for archaeological and historic sites within the Jordan Scrub Sanctuary.

Contact the State Division of Historic Resources to conduct a Phase I survey of the site	Completed
Review available maps and historic records for indications of past usage of the site	Completed
Map all archaeological and historic sites for future reference	On-Going

Strategy 9: Establish and enforce specific policies and management techniques for public access and responsible public use

Use daily or seasonal quotas, restricted access or limited parking to enforce established carrying capacities	Long-Term
Coordinate recreational use with the ecological burning strategies of the EEL Program	On-Going
Minimize unauthorized trail expansion by establishing sufficient trails, constructing handrails, and the development of written guidelines	On-Going

Strategy 10: Establish a monitoring program to assess effects of public usage on natural resources

Establish baseline vegetation monitoring transects to provide data regarding existing conditions prior to development	Immediate
Establish a methodology and record keeping system to document public use	Short-Term
Conduct regular monitoring to assess impacts of public use on natural habitats	On-Going
Conduct regular walk-throughs over frequently used sites to assess the need for changes in routing/user types, or user intensity	On-Going
Re-route users from sensitive areas or popular sites on a regular or as-needed basis	On-Going
Re-align public use to avoid areas which observations or data indicate are too sensitive for the level of use originally planned	On-Going

Strategy 11: Develop a plan to provide on-going environmental education programs to Brevard County residents and visitors

Determine target audiences and types of programming best suited to those groups	On-Going
Design and develop outdoor exhibits, signs and printed materials	On-Going
Include educators, friends groups and other organizations in the design, development and delivery of programs	Short-Term
Develop and coordinate a docent program to assist in program delivery	Long-Term
Develop and provide training and site specific informational materials for use by docents and other educators	Long-Term
Develop criteria and process of evaluation for program review and refinement	Long-Term

Strategy 12: Provide opportunities for multiple use and compatibility when practical	
Use fire breaks for multi-use recreation trails when not needed for resource management	On-Going
Include multiple benefits of natural community restoration efforts in education program	On-Going

Strategy 13: Secure and maintain the Sanctuary to the highest degree possible using EEL staff. Parks and Recreation staff, contract employees and volunteers	
Employ a land manager to oversee maintenance and security activities	On-Going
Contract for maintenance of parking areas, fire breaks, trails, boardwalks, bridges, benches as needed	On-Going
Coordinate daily maintenance tasks using staff and volunteers	On-Going

VIII. FINANCIAL CONSIDERATIONS

The following is a breakdown of the general costs estimated for the annual operations of the JSS, as well as past expenditures on capital improvements (The salaries stated are for the entire region):

Annual Management

Staff Salaries (2005)

Land Manager (f.t.)	$38,000
Assistant Land Manager (f.t.)	$32,000
Land Management Technician (f.t)	$25,000
Land Management Technician (f.t)	$22,000
Sanctuary Steward (f.t.)	$30,000
Naturalist (f.t.)	$28,000
Contract maintenance	$2,000.00
Management Activities (prescribed fire, exotic control, fence repair)	$10,000.00

A land manager and assistant land manager have been hired as of December 2004 to oversee maintenance, resource management activities for the JSS as part of their land management responsibilities within the South Mainland Management Area. The cost estimate for expected personnel is based on the large size of the South Mainland Area and the time expected to accomplish basic maintenance tasks such as exotic control and boundary inspections.

Contract maintenance includes expected annual costs for vegetation management utilizing heavy equipment, and will vary year to year.

In addition to the on-going maintenance and operations costs, past and proposed capital expenditures are listed below.

	Capital Improvement
Perimeter fencing (west, 2004)	$4,000.00
Perimeter fencing (Remainder)	$20,000.00
Kiosks	$1,500.00 (1 installed)
Gates	$1,000.00 (10 installed)
Interpretive panels	$1,000.00
Boardwalks over wetlands	$20,000.00
Overlook	$20,000.00

Any of these costs might be adjusted depending upon the availability of assistance through grant programs and cooperative ventures with non-profit and private groups. Capital items might also be added or removed dependant upon changes in Sanctuary boundaries as acquisitions continue.

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X. APPENDICES

A. Jordan Scrub Sanctuary Plant Species
B. Jordan Scrub Sanctuary Avian Species
C. Jordan Scrub Sanctuary Herptile Species
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E. Jordan Scrub Sanctuary Legal Description
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Appendix A:
Jordan Scrub Sanctuary Plant Species

Paul A. Schmalzer and Tammy E. Foster
Surveys of July 30, 2003, March 30, 2004, and December 11, 2004

CLASS	FAMILY	GENUS	SPECIES	VARIETY
p	Blechnaceae	*Blechnum*	*serrulatum*	
p	Blechnaceae	*Woodwardia*	*virginica*	
p	Dennstaedtiacea	*Pteridium*	*aquilinum*	
p	Lycopodiaceae	*Lycopodiella*	*appressa*	
p	Polypodiaceae	*Phlebodium*	*aureum*	
g	Pinaceae	*Pinus*	*clausa*	
g	Pinaceae	*Pinus*	*elliottii*	*densa*
g	Pinaceae	*Pinus*	*palustris*	
a	Agavaceae	*Yucca*	*aloifolia*	
a	Agavaceae	*Yucca*	*filamentosa*	
a	Alismataceae	*Sagittaria*	*lancifolia*	
a	Anacardiaceae	*Rhus*	*copallina*	
a	Anacardiaceae	*Schinus*	*terebinthifolius*	
a	Annonaceae	*Asimina*	*reticulata*	
a	Apiaceae	*Eryngium*	*aromaticum*	
a	Apiaceae	*Eryngium*	*yuccifolium*	
a	Apiaceae	*Hydrocotyle*	*bonariensis*	
a	Apocynaceae	*Asclepias*	*sp.*	
a	Apocynaceae	*Catharanthus*	*roseus*	
a	Aquifoliaceae	*Ilex*	*cassine*	
a	Aquifoliaceae	*Ilex*	*glabra*	
a	Araliaceae	*Hydrocotyle*	*umbellata*	
a	Arecaceae	*Sabal*	*palmetto*	
a	Arecaceae	*Serenoa*	*repens*	
a	Asteraceae	*Ambrosia*	*artemissifolia*	
a	Asteraceae	*Baccharis*	*glomerulifora*	
a	Asteraceae	*Baccharis*	*halimifolia*	
a	Asteraceae	*Bidens*	*alba*	*radiata*
a	Asteraceae	*Carphephorus*	*carnosus*	
a	Asteraceae	*Carphephorus*	*corymbosus*	
a	Asteraceae	*Cirsium*	*horridulum*	
a	Asteraceae	*Conyza*	*canadensis*	
a	Asteraceae	*Coreopsis*	*leavenworthii*	
a	Asteraceae	*Elephantopus*	*elatus*	
a	Asteraceae	*Emilia*	*fosbergii*	
a	Asteraceae	*Erechtites*	*hieracifolia*	
a	Asteraceae	*Erigeron*	*querquefolius*	
a	Asteraceae	*Erigeron*	*vernus*	
a	Asteraceae	*Eupatorium*	*album*	
a	Asteraceae	*Eupatorium*	*capillifolium*	
a	Asteraceae	*Eupatorium*	*mohrii*	
a	Asteraceae	*Gamochaeta*	*purpurea*	
a	Asteraceae	*Helenium*	*amarum*	
a	Asteraceae	*Helenium*	*pinnatifidum*	
a	Asteraceae	*Heterotheca*	*subaxillaris*	

a	Asteraceae	*Hieracium*	*megacephalon*	
a	Asteraceae	*Lygodesmia*	*aphylla*	
a	Asteraceae	*Mikania*	*sp.*	
a	Asteraceae	*Palafoxia*	*integrifolia*	
a	Asteraceae	*Pityopsis*	*graminifolia*	
a	Asteraceae	*Pluchea*	*rosea*	
a	Asteraceae	*Pterocaulon*	*pycnostachyum*	
a	Asteraceae	*Solidago*	*odora*	*chapmanii*
a	Asteraceae	*Sphagneticola*	*triloba*	
a	Brassicaceae	*Lepidium*	*virginicum*	
a	Brassicaceae	*Polansia*	*tenuifolia*	
a	Campanulaceae	*Lobelia*	*feayana*	
a	Campanulaceae	*Lobelia*	*paludosa*	
a	Chrysobalanacea	*Licania*	*michauxii*	
a	Cistaceae	*Helianthemum*	*corymbosum*	
a	Cistaceae	*Lechea*	*torreyi*	
a	Clusiaceae	*Hypericum*	*cistifolium*	
a	Clusiaceae	*Hypericum*	*fasciculatum*	
a	Clusiaceae	*Hypericum*	*reductum*	
a	Clusiaceae	*Hypericum*	*tetrapetalum*	
a	Commelinaceae	*Commelina*	*diffusa*	
a	Cyperaceae	*Cladium*	*jamaicense*	
a	Cyperaceae	*Cyperus*	*distinctus*	
a	Cyperaceae	*Cyperus*	*odoratus*	
a	Cyperaceae	*Fuirena*	*pumila*	
a	Cyperaceae	*Rhynchospora*	*colorata*	
a	Cyperaceae	*Rhynchospora*	*decurrens*	
a	Cyperaceae	*Rhynchospora*	*fascicularis*	
a	Cyperaceae	*Rhynchospora*	*inundata*	
a	Cyperaceae	*Rhynchospora*	*latifolia*	
a	Cyperaceae	*Scleria*	*ciliata*	*pauciflora*
a	Droseraceae	*Drosera*	*capillaris*	
a	Ericaceae	*Bejaria*	*racemosa*	
a	Ericaceae	*Gaylusaccia*	*dumosa*	
a	Ericaceae	*Lyonia*	*fruticosa*	
a	Ericaceae	*Lyonia*	*lucida*	
a	Ericaceae	*Vaccinium*	*myrsinites*	
a	Eriocaulaceae	*Eriocaulon*	*decangulare*	
a	Eriocaulaceae	*Eriocaulon*	*lineare*	
a	Eriocaulaceae	*Lachnocaulon*	*beyrichiana*	
a	Eriocaulaceae	*Syngonanthus*	*flavidulus*	
a	Euphorbiaceae	*Chamaesyce*	*hirta*	
a	Euphorbiaceae	*Euphorbia*	*polyphylla*	
a	Euphorbiaceae	*Poinsettia*	*cyanthophora*	
a	Euphorbiaceae	*Stillingia*	*sylvatica*	
a	Fabaceae	*Abrus*	*praecatorius*	
a	Fabaceae	*Chamaecrista*	*fasciculata*	
a	Fabaceae	*Chamaecrista*	*nictitans*	*aspera*

a	Fabaceae	*Crotolaria*	*pallida*	*obovata*
a	Fabaceae	*Desmodium*	*sp.*	
a	Fabaceae	*Galactia*	*elliotttii*	
a	Fabaceae	*Macroptilium*	*lathyroides*	
a	Fabaceae	*Mimosa*	*quadrivalis*	
a	Fabaceae	*Sesbania*	*vesicaria*	
a	Fabaceae	*Vicia*	*acutifolia*	
a	Fabaceae	*Vigna*	*luteola*	
a	Fagaceae	*Quercus*	*geminata*	
a	Fagaceae	*Quercus*	*minima*	
a	Fagaceae	*Quercus*	*myrtifolia*	
a	Gentianaceae	*Sabatia*	*brevifolia*	
a	Gentianaceae	*Sabatia*	*grandiflora*	
a	Haemodoraceae	*Lachnanthes*	*caroliniana*	
a	Hypoxidaceae	*Hypoxis*	*juncea*	
a	Iridaceae	*Sisyrinchium*	*angustifolium*	
a	Lamiaceae	*Piloblephis*	*rigida*	
a	Lauraceae	*Cassytha*	*filiformis*	
a	Lauraceae	*Cinnamomum*	*camphora*	
a	Lentibulariacea	*Utricularia*	*subulata*	
a	Lentibulariaceae	*Pinguicula*	*lutea*	
a	Lentibulariaceae	*Pinguicula*	*pumila*	
a	Magnoliaceae	*Magnolia*	*virginica*	
a	Melastomataceae	*Rhexia*	*mariana*	
a	Melastomataceae	*Rhexia*	*nuttallii*	
a	Myricaceae	*Myrica*	*cerifera*	
a	Myrtaceae	*Melaleuca*	*quinquenervia*	
a	Nartheciaceae	*Aletris*	*sp.*	
a	Olacaceae	*Ximenia*	*americana*	
a	Onagraceae	*Gaura*	*angustifolia*	
a	Onagraceae	*Ludwigia*	*maritima*	
a	Orobanchaceae	*Buchnera*	*americana*	
a	Oxalidaceae	*Oxalis*	*corniculata*	
a	Poaceae	*Aristida*	*stricta*	*beyrichiana*
a	Poaceae	*Ctenium*	*aromaticum*	
a	Poaceae	*Dichanthelium*	*leucothrix*	
a	Poaceae	*Heteropogon*	*contortus*	
a	Poaceae	*Imperata*	*cylindrica*	
a	Poaceae	*Paspalum*	*notatum*	
a	Poaceae	*Paspalum*	*urvillei*	
a	Poaceae	*Setaria*	*parviflora*	
a	Poaceae	*Spartina*	*bakeri*	
a	Poaceae	*Sporobolus*	*junceus*	
a	Poaceae	*Sporobolus*	*sp.*	
a	Polygalaceae	*Polygala*	*cruciata*	
a	Polygalaceae	*Polygala*	*grandiflora*	
a	Polygalaceae	*Polygala*	*lutea*	
a	Polygalaceae	*Polygala*	*nana*	

a	Polygalaceae	*Polygala*	*ramosa*	
a	Polygalaceae	*Polygala*	*rugelii*	
a	Polygalaceae	*Polygala*	*setacea*	
a	Pontederiaceae	*Pontederia*	*cordata*	
a	Rosaceae	*Rubus*	*cuneifolius*	
a	Rubiaceae	*Spermacoce*	*vericillata*	
a	Ruscaceae	*Nolina*	*atopocarpa*	
a	Rutaceae	*Zanthoxylum*	*clava-herculis*	
a	Salicaceae	*Salix*	*caroliniana*	
a	Smilacaceae	*Smilax*	*auriculata*	
a	Solanaceae	*Physalis*	*walteri*	
a	Tetrachondracea	*Polypremum*	*procumbens*	
a	Turneraceae	*Turnera*	*ulmifolia*	
a	Typhaceae	*Typha*	*domingensis*	
a	Verbenaceae	*Phyla*	*nodiflora*	
a	Verbencaeae	*Callicarpa*	*americana*	
a	Veronicaceae	*Bacopa*	*caroliniana*	
a	Veronicaceae	*Gratiola*	*hispida*	
a	Veronicaceae	*Lindernia*	*dubia*	*dubia*
a	Violaceae	*Viola*	*lanceolata*	
a	Vitaceae	*Vitis*	*rotundifolia*	
a	Xyridaceae	*Xyris*	*brevifolia*	
a	Xyridaceae	*Xyris*	*caroliniana*	
a	Xyridaceae	*Xyris*	*longisepala*	
a	Xyridaceae	*Xyris*	*smalliana*	

Appendix B:
Jordan Scrub Sanctuary Avian Species

Note: Species are sorted by Family

COMMON NAME	SCIENTIFIC NAME	PROTECTION STATUS	
		FGFWFC	USFWS
ACCIPITRIDAE			
Red-tailed hawk	*Buteo jamaicensis*		
Red-shouldered hawk	*Buteo lineatus*		
Bald eagle	*Haliaeetus leucocephalus*	T	T
ANATINAE			
Wood duck	*Aix sponsa*		
Mallard	*Anas platyrhynchos*		
ARDEIDAE			
Great blue heron	*Ardea herodias*		
Great egret	*Casmerodius albus*		
Snowy egret	*Egretta thula*	SSC	
Tricolored heron	*Hydranassa tricolor*	SSC	
CATHARTIDAE			
Turkey vulture	*Cathartes aura*		
Black vulture	*Coragyps atratus*		
CICONIIDAE			
Wood stork	*Mycteria americana*	SSC	
COLUMBIDAE			
Ground Dove	*Columbina passerina*		
Mourning dove	*Zenaida macroura*		
CORVIDAE			
Florida scrub-jay	*Aphelocoma coerulescens*	T	T
Fish crow	*Corvus ossifragus*		
EMBERIZIDAE			
Northern cardinal	*Cardinalis cardinalis*		
Pine warbler	*Dendroica pinus*		
Rufous-sided towhee	*Pipilo erythropthalmus*		
GRUIDAE			
Sandhill crane	*Grus canadensis pratensis*	T	
HIRUNDINIDAE			
Barn swallow	*Hirundo rustica*		
LANIIDAE			
Loggerhead shrike	*Lanius ludovicianus*		

COMMON NAME	SCIENTIFIC NAME	PROTECTION STATUS	
		FGFWFC	USFWS
MIMIDAE			
Northern mockingbird	*Mimus polyglottos*		
PANDIONIDAE			
Osprey	*Pandion haliaetus*	SSC	
PARULIDAE			
Pine warbler	*Dendroica pinus*		
Prairie Warbler	Dendroica discolor		
PHALACROCORACIDAE			
Double-crested cormorant	*Phalacrocorax auritus*		
PHASIANIDAE			
Northern bobwhite	*Colinus virginianus*		
PICIDAE			
Northern flicker	*Colaptes auratus*		
Red-bellied woodpecker	*Melanerpes carolinus*		
Downy woodpecker	*Picoides pubescens*		
SCOLOPACIDEA			
Common Snipe	*Capella gallinago*		
THRESKIORNITHIDAE			
Roseate Spoonbill	*Ajaia ajaja*	SSC	
White ibis	*Eudocimus albus*	SSC	
TROGLODYTIDAE			
Carolina wren	*Thryothorus ludovicianus*		

Notes:

FGFWFC: Florida Game and Fresh Water Fish Commission
USFWS: U.S. Fish and Wildlife Service
T: Threatened
E: Endangered
SSC: Species of Special Concern

Appendix C:
Jordan Scrub Sanctuary Herptile Species

Note: Species are sorted by Family

COMMON NAME	SCIENTIFIC NAME	PROTECTED STATUS	
		FGFWFC	USFWS
COLUBRIDAE			
Southern black racer	*Coluber constrictor priapus*		
Eastern coachwhip snake	*Masticophis flagellum*		
Florida Eastern Indigo Snake	*Drymarchon corais couperi*		T
CROCODYLIDAE			
American Alligator	*Alligator mississipiensis*	T	SSC
POLYCHRIDAE			
Carolina anole	*Anolis c. carolinensis*		
RANIDAE			
Southern leopard frog	*Rana utriculata*		
TESTUDINAE			
Gopher tortoise	*Gopherus polyphemus*	SSC	
TRIONYCHIDAE			
Florida softshell turtle	*Trionyx ferox*		
VIPERIDAE			
Eastern diamondback rattlesnake	*Crotalus adamanteus*		

Notes:

FGFWFC: Florida Game and Fresh Water Fish Commission
USFWS: U.S. Fish and Wildlife Service
T: Threatened
E: Endangered
SSC: Species of Special Concern

Appendix D:
Jordan Scrub Sanctuary Mammal Species

Note: Species are sorted by Order

COMMON NAME	SCIENTIFIC NAME	PROTECTED STATUS	
		FGFWFC	USFWS
ARTIODACTYLA			
White-tailed deer	*Odocoileus virginianus*		
CARNIVORA			
Bobcat	*Lynx rufus*		
Raccoon	*Procyon lotor*		
LAGOMORPHA			
Eastern cottontail rabbit	*Sylvilagus floridanus*		
MARSUPIALIA			
Opossum	*Didelphis marsupialis*		
RODENTIA			
Eastern gray squirrel	*Sciurus carolinensis*		
XENARTHRA			
Nine-banded armadillo	*Dasypus novemcinctus*		

Notes:

FGFWFC:	Florida Game and Fresh Water Fish Commission
USFWS:	U.S. Fish and Wildlife Service
T:	Threatened
E:	Endangered
SSC:	Species of Special Concern

Appendix E:
Jordan Scrub Sanctuary Legal Description

Exhibit "A"

An ell-shaped parcel of land lying in Section 7, Township 29 South, Range 38 East, in Brevard County, Florida, more particularly described as: From the Northwest corner of said Section 7, proceed 52.01 feet bearing S 0°36'31" W along the Western boundary of said Section to a point on the Southern right-of-way boundary of Jordan Boulevard, being the Point of Beginning; thence continue Southerly 2596.63 feet, bearing S 0°36'31" W along said Western boundary of Section 7 to the Western quarter corner of said Section 7; thence continue Southerly 865.65 feet bearing S 0°36'32" West along this Western boundary of said Section 7 to a point on the Western section line of said Section 7, which point lies 1782.14 feet Northerly by right angle measure from the Southern boundary of said Section 7; thence run 2549.96 feet bearing S 89°28'54" E along a line parallel to said Southern boundary of said Section 7 and lying 1782.14 feet Northerly therefrom to the point of intersection of this course with the North/South quarter line of said Section 7; thence continue 873.69 feet bearing S 89°29'18" E along this line parallel to said Southern boundary and 1782.14 feet distant therefrom by right angle measure; thence run 838.91 feet bearing N 0°04'54" W along a line parallel with the Eastern boundary of said Section 7, to the point of intersection of this course with the East/West quarter line which point lies 1675.19 feet Westerly measured along said East/West quarter line from the Eastern quarter point of said Section 7; thence run 663.09 feet bearing N 0°00'52" E along a line parallel to the Eastern boundary of said Section 7; thence run 924 feet bearing N 88°13'40" W along a line parallel with the Northern boundary of said Section 7 to a point; thence run 1886.19 feet bearing N 0°00'52" E along a line parallel with the Eastern boundary of said section to a point lying on the Southern boundary of Jordan Boulevard; thence run 2463.80 feet bearing N 88°13'40" W along the Southern boundary of Jordan Boulevard to the Point of Beginning.

AND

An odd shaped parcel of land lying in Sections 5 and 6, Township 29 South, Range 38 East, Brevard County, Florida, more particularly described as: From the Southwest corner of Section 6, Township 29 South, Range 38 East, in Brevard County, Florida, proceed 52.01 feet Northerly bearing N 0°32'42" E along its Western boundary of said Section 6 to the Point of Beginning; thence continue 534.61 feet bearing N 0°32'42" E along the

Western boundary of said Section 6 to a point lying 2061.54 feet Southerly on said section line from the Western quarter corner of said Section 6; thence proceed 285.0 feet bearing S 89°02'05" E along a line parallel with the East/West quarter line of said Section 6 and 2061.50 feet distant by right angle measure therefrom; thence proceed 600 feet bearing N 0°32'42" E along a line parallel to the Western boundary of Section 6; thence proceed 4568.44 feet bearing S 89°02'05" E along a line parallel with the East/West quarter line of said Section 6 and 1461.5 feet distant by right angle measure therefrom to its point of intersection with the Western right-of-way boundary of Florida East Coast Railway Co; thence proceed 91.19 feet bearing S 22°54'19" E along said Western right-of-way boundary of Florida East Coast Railway Co. to a point of curve; thence proceed Southeasterly 690.46 feet along said Western right-of-way boundary being the arc of a curve, concave to the Northeast, having chord length 690.02 feet and radius of 5573.23 feet; thence run 403.85 feet bearing S 58°03'39" W to a point on the Northerly boundary of Jordan Boulevard; thence run 424.47 feet bearing N 37°05'24" W along said Northerly boundary of Jordan Boulevard to a point of curve; thence run 699.19 feet along the arc of the curve of the Northern boundary of Jordan Boulevard, said curve being concave toward the South and having chord length 634.16 feet and radius of 461.30 feet to a point of tangency; thence run 760.59 feet bearing S 56°04'03" W along the Northerly boundary of Jordan Boulevard to a point of curve; thence run 860.31 feet along the arc of curve of the Northern boundary of Jordan Boulevard, said curve being concave to the Northwest and having chord length 846.46 feet and radius of 1380.55 feet to the point of tangency lying 52 feet distant Northerly by right angle measure from the East/West Southern boundary of said Section 6; thence run 2539.07 feet bearing N 88°13'40" W along the Northern boundary of Jordan Boulevard, being a line parallel to and 52 feet distant Northerly by right angle measure from the East/West Southern boundary of said Section 6 to the Point of Beginning.

LESS AND EXCEPT

An odd-shaped parcel of land lying in Sections 5 and 6, Township 29 South, Range 38 East, in Brevard County, Florida, more particularly described as:

From the Southeastern corner of Section 6 being also jointly the Southwestern corner of Section 5, the Northeastern corner of Section 7 and the Northwestern corner of Section 8, in Township 29 South, Range 38 East, Brevard County, Florida, run 52 feet Northeasterly bearing N 52°54'36" E to a point on the Northeastern boundary of Jordan Boulevard;

thence run 394.40 feet Northwesterly bearing N 37°05'24" W along this Northeastern boundary of Jordan Boulevard to the Point of Beginning. Thence continue 424.7 feet Northwesterly bearing N 37°05'24" W along this Northeasterly boundary of Jordan Boulevard to the point of curve of an arc concave to the South; thence continue Northwesterly 217.00 feet along said arc of said curve having radius of 461.30 feet and chord length of 215.01 feet bearing N 50°34'04" W; thence run 447.30 feet Northerly bearing N 0°57'54" E to the point of intersection with the Southern boundary of Parcel 1 described in Official Records Book 201, Page 450, of the Public Records of Brevard County, Florida; thence run 414.40 feet Easterly bearing S 89°02'05" E along this last aforesaid Southern boundary being a line parallel to the East-West quarter line of said Section 6 and lying 1461.5 feet distant Southerly by right angle measure therefrom, to the point of intersection with the Western right-of-way boundary of Florida East Coast Railway Co.; thence run 91.19 feet Southeasterly bearing S 22°54'19" E along said Western right-of-way boundary of Florida East Coast Railway Co., to a point of curve of an arc concave to the Northeast; thence proceed Southeasterly 690.46 feet along said Western right-of-way boundary being the arc of a curve concave to the Northeast, having chord length 690.02 feet and radius of 5573.23 feet; thence run Southwesterly 403.85 feet bearing S 58°03'39" W to the Point of Beginning.

Appendix F:
Florida Natural Areas Inventory Element Occurrences Map

FLORIDA Natural Areas INVENTORY

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

July 26, 2004

Chris O'Hara
Brevard County
EEL Program
5560 N. US 1
Melbourne, FL 32940

Dear Mr. O'Hara:

Thank you for your request for information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

Project:	Jordan Scrub Sanctuary – Land Management Plan
Date Received:	July 21, 2004
Location:	Brevard County

Based on the information available, this site appears to be located on or very near a significant region of scrub habitat, a natural community in decline that provides important habitat for several rare species within a small area. Additional consideration should be given to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

Element Occurrences

A search of our maps and database indicates that currently we have several Element Occurrences mapped within the vicinity of the study area (see enclosed map and table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

The Element Occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates the precision of the element occurrence location, defined as second (within about 300 feet of the point), minute (within about one mile), or general (within about 5 miles). For animals and plants, Element Occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations that may no longer be extant.

Potential Habitat for Rare Species

Portions of the site appear to be located on or near Potential Habitat for Rare Species. This potential habitat is associated with a known occurrence in the vicinity of: wood stork

Florida Resources and Environmental Analysis Center

Institute of Science and Public Affairs

The Florida State University

(*Mycteria americana*), Florida scrub-jay (*Aphelocoma coerulescens*) and Florida sandhill crane (*Grus canadensis pratensis*).

FNAI Potential Habitat for Rare Species indicates areas, which based on landcover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Potential habitat layers have been developed for approximately 250 of the most rare species tracked by the Inventory, including all federally listed species.

Potential Habitat is not a regulatory designation, and should not be confused with "critical habitat", which is an official designation made by the U.S. Fish and Wildlife Service. Information on critical habitats can be found in the Code of Federal Regulations, 50 CFR 17.95, which lists all critical habitats that have been designated. The Code of Federal Regulations can be accessed through the following website: "www.access.gpo.gov/nara/cfr/cfr-table-search.html".

The Inventory always recommends that a site-specific survey be conducted to determine the current presence or absence of rare, threatened, or endangered species. Surveys should be conducted by persons familiar with Florida's flora and fauna. For your convenience, a summary of the elements documented or reported for Brevard County is enclosed.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. FNAI data may not be resold for profit.

Thank you for your use of FNAI services. If I can be of further assistance, please give me a call at (850) 224-8207.

Sincerely,

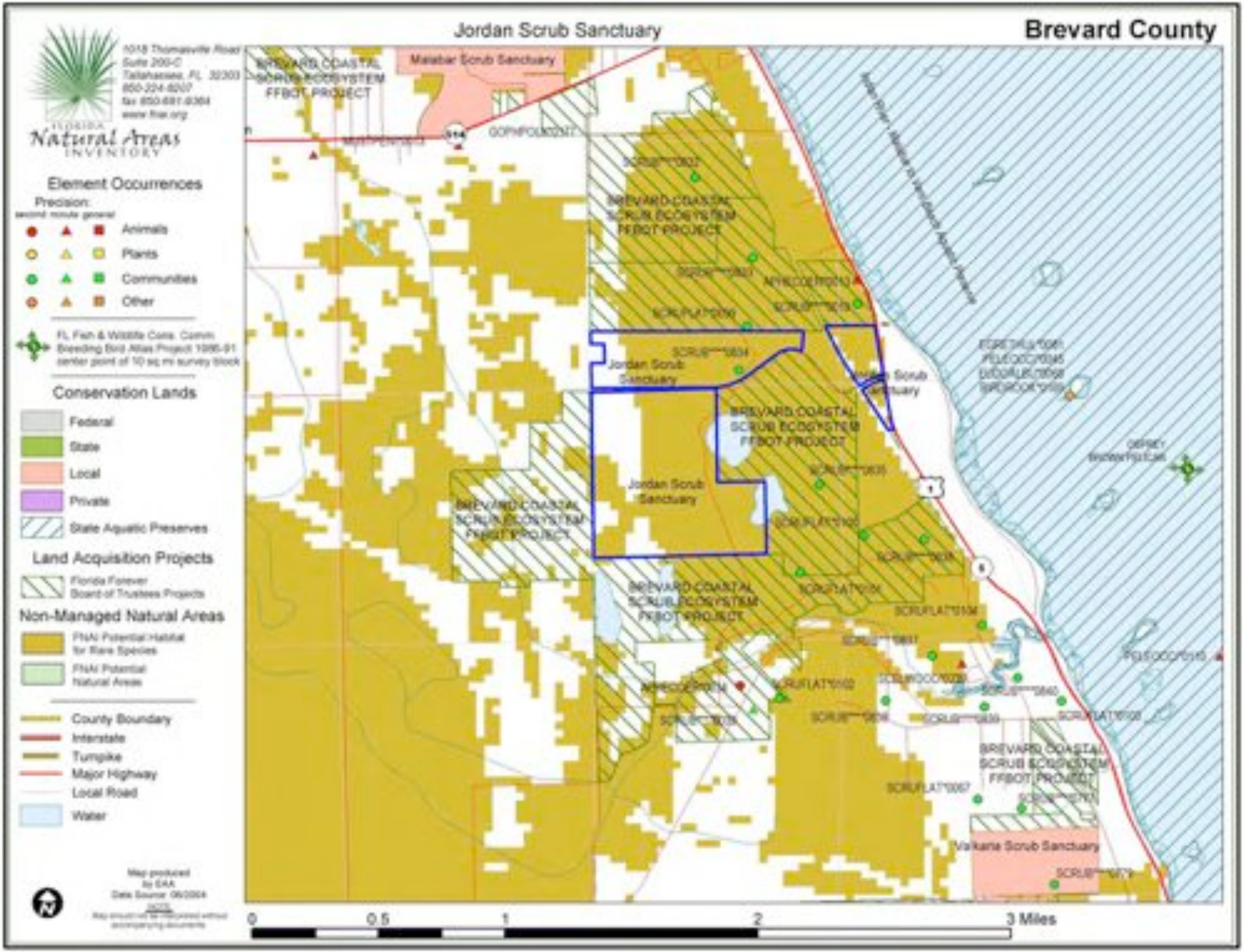
Edwin A. Abbey

Edwin A. Abbey
Environmental Reviewer

encl

Jordan Scrub Sanctuary

Brevard County



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Florida Natural Areas Inventory

ELEMENT OCCURRENCES MAPPED ON
JORDAN SCRUB SANCTUARY

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
SCRUB****0834	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.

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Florida Natural Areas Inventory

ELEMENT OCCURRENCES MKAPPED NEAR
JORDAN SCRUB SANCTUARY

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
EGRETHUL*0081	Egretta thula	Snowy Egret	G5	S3	N	LS	1988-10-28	DOMINANT TERRESTRIAL VEGETATION-BRAZILIAN PEPPER, AUSTRALIAN PINE, CABBAGE PALM.	No EO data given
GOPHPOLY*0177	Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS	ZZ	No general description given	No EO data given
MUSTPENI*0013	Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	N	N	ZZ	No general description given	C. Bossie, IND, observation. Speciem in Bossie's freezer. Plans to mount.
PELEOCCI*0110	Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS	1989-05-10	Cedar, palm, Australian pine.	1989/05/10: J.A. Hovis, GFC. Surveyed from helicopter. Site visited by plane on 04/28/89. "Total" = D (includes GREG, BRPE, DCCO).
PELEOCCI*0045	Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS	1988-10-28	DOMINANT TERRESTRIAL VEGETATION-BRAZILIAN PEPPER, AUSTRALIAN PINE, CABBAGE PALM.	100 INDIVIDUALS: NESTING.
ARDEALBA*0256	Ardea alba	Great Egret	G5	S4	N	N	1989-05-10	Spoil Island with cedar, palm, Australian pine.	1989/05/10: J.A. Hovis, GFC; Surveyed from helicopter. Site visited by plane on 04/28/89. "Total" = D (includes GREG, BRPE, DCCO).
APHECOER*0013	Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	LT	1981-05-13	SAND PINE SCRUB 	1981-05-13: 1 SCRUB JAY
APHECOER*0034	Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	LT	1981-05-13	MOSTLY OAK SCRUB 	1981-05-13: 14 SCRUB JAYS (U81COX01). 1991-08-15: 4 ADULT JAYS AND 3 JUVENILE JAYS REPORTED; NUMEROUS DATES: 31 ADULT JAYS AND 10 JUVENILE JAYS REPORTED (U91SNO01). SNODGRASS ET AL. ESTIMATED RECORDS 75 AND 76 TO CONSTITUTE A LARGE POPULATION OF > 30 FAM
EUDOALBU*0068	Eudocimus albus	White Ibis	G5	S4	N	LS	1988-10-28	DOMINANT TERRESTRIAL VEGETATION-BRAZILIAN PEPPER, AUSTRALIAN PINE, CABBAGE PALM.	No EO data given
SCELWOOD*0239	Sceloporus woodi	Florida Scrub Lizard	G3	S3	N	N	1986-05-13	Coastal scrub	1986-05-13: K.E. Enge, GFC - Also seen on 2 August 86. See Enge et al (1986; Coop Unit Tech Rep No 26).
BIRDROOK*0169	Bird rookery	ZZ	GNR	SNR	N	N	1988-10-28	DOMINANT TERRESTRIAL VEGETATION-BRAZILLIAN PEPPER, AUSTRALIAN PINE, CABBAGE PALM.	No EO data given
SCRUB****0832	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.

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Florida Natural Areas Inventory

ELEMENT OCCURRENCES MKAPPED NEAR
JORDAN SCRUB SANCTUARY

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
SCRUB****0838	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0777	Scrub	ZZ	G2	S2	N	N	1992-06-19	Sand Pine Scrub grading into Scrubby Flatwoods that in turn grade into Mesic to Wet Flatwoods with extensively interspersed Depression Marshes.	Nearly closed canopy (ca. 60') of dense Pinus clausa with a lower ericaceous component including Lyonia ferruginea, L. fruticosa, L. lucida and Befaria racemosa. This scrub type also supports individuals of Persea humilis, Ceratiola ericoides, Vitis rotu
SCRUB****0836	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0835	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0833	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0840	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0839	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0837	Scrub	ZZ	G2	S2	N	N	1991	No general description given	At late stages of succession.
SCRUB****0779	Scrub	ZZ	G2	S2	N	N	1992-06-19	Xeric Oak-dominated Scrub.	The low (15'-20') canopy is composed of a dense growth of various scrub oaks including Quercus myrtifolia, Q. geminata, and Q. chapmanii mixed with a slightly lower ericaceous component. Occasional individuals of Pinus elliottii and/or P. palustrus are s
SCRUB****0010	Scrub	ZZ	G2	S2	N	N	1991	SAND PINE SCRUB	OCCURRENCE AT SITE
SCRUB****0039	Scrub	ZZ	G2	S2	N	N	1981-05-13	MOSTLY OAK SCRUB 	OCCURRENCE AT SITE; MOST 2-4 M. OAK SCRUB
SCRUFLAT*0103	Scrubby flatwoods	ZZ	G3	S3	N	N	1991	No general description given	Occurrence on site.
SCRUFLAT*0067	Scrubby flatwoods	ZZ	G3	S3	N	N	1992-06-19	Scrubby Flatwoods in association with Scrub and Mesic to Wet Flatwoods.	Sparse canopy of slash pine, thick saw palmetto with a significant presence of scrub oaks, rusty lyonia and tarflower. Wiregrass, gallberry, wild coco, yellow foxglove, and hairy hyssop are also found in this community.
SCRUFLAT*0100	Scrubby flatwoods	ZZ	G3	S3	N	N	1991	No general description given	Occurrence on site.

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Florida Natural Areas Inventory

ELEMENT OCCURRENCES MKAPPED NEAR
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Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
SCRUFLAT*0099	Scrubby flatwoods	ZZ	G3	S3	N	N	1991	No general description given	Occurrence on site.
SCRUFLAT*0101	Scrubby flatwoods	ZZ	G3	S3	N	N	1991	No general description given	Occurrence on site.
SCRUFLAT*0104	Scrubby flatwoods	ZZ	G3	S3	N	N	1991	No general description given	Occurrence on site.
SCRUFLAT*0102	Scrubby flatwoods	ZZ	G3	S3	N	N	1991	No general description given	Occurrence on site.

Florida Natural Areas Inventory

SUMMARY OF ELEMENT OCCURRENCES MAPPED ON OR NEAR
JORDAN SCRUB SANTUARY

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	#FNAI Elements
Animals **10**						
Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	LT	**2**
Ardea alba	Great Egret	G5	S4	N	N	**1**
Egretta thula	Snowy Egret	G5	S3	N	LS	**1**
Eudocimus albus	White Ibis	G5	S4	N	LS	**1**
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS	**1**
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	N	N	**1**
Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS	**2**
Sceloporus woodi	Florida Scrub Lizard	G3	S3	N	N	**1**
Communities **20**						
Scrub	ZZ	G2	S2	N	N	**13**
Scrubby flatwoods	ZZ	G3	S3	N	N	**7**
Other **1**						
Bird rookery	ZZ	GNR	SNR	N	N	**1**
				Grand Total:		**31**

FLORIDA NATURAL AREAS INVENTORY

Florida Scrub-Jay Survey and Breeding Bird Atlas Data Layers

In addition to our element occurrence database of rare species and natural community locations, the Inventory has additional data layers that have been provided by state and federal agencies.

Florida Scrub-Jay Survey - U.S. Fish and Wildlife Service

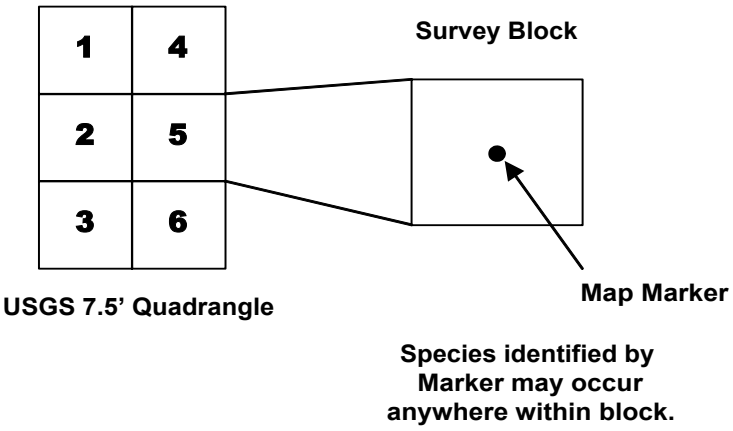
This survey was conducted by staff and associates of the Archbold Biological Station from 1992 to 1996. An attempt was made to record all scrub-jay (*Aphelocoma coerulescens*) groups, although most federal lands were not officially surveyed.

Each map point represents one or more groups.

Florida Breeding Bird Atlas Project - Florida Game and Fresh Water Fish Commission (now Florida Fish and Wildlife Conservation Commission)

This study was conducted from 1986 to 1991, (final report, *An Atlas of Florida's Breeding Birds* by Kale, Pranty, Stith, and Biggs, Nongame Wildlife Program, Florida Game and Fresh Water Fish Commission). The study divided the state into "blocks", with each block representing one-sixth of a U.S. Geological Survey 7.5 minute topographic quadrangle map. Several categories of breeding activity were recorded by observers.

Each map point is located at the center of a block, and represents species listed as Possible or Probable Breeders within the surrounding block (approximately 10 square miles in area).



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Florida Resources and Environmental Analysis Center
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The Florida State University

Tracking Florida's Biodiversity

Florida Natural Areas Inventory
Potential Natural Areas (PNA) Data Layer

POTENTIAL NATURAL AREAS (PNA)

The Potential Natural Areas data layer indicates, throughout the State of Florida, lands that are in private ownership and are not managed or listed for conservation purposes that are possible examples of good quality natural communities. These areas were determined from FNAI's scientific staff vegetative interpretation of 1988-1993 FDOT aerial photographs and from input received during Regional Ecological Workshops held for each regional planning council. These workshops were attended by experts familiar with natural areas in the region. Element occurrences in the FNAI database may or may not be present on these sites. In order to be classified as a Potential Natural Area (with the exception of internal rank PNA-5) the natural communities identified through aerial photographs must meet the following criteria:

1. Must be a minimum of 500 acres. *Exceptions*: sandhill, min. 320 acres; scrub, min. 80 acres; pine rockland, min. 20 acres; dry prairie, min. 320 acres; *or* any example of coastal rock barren, upland glade, coastal dune lake, spring-run stream or terrestrial cave.

2. Must contain at least one of the following:
    a. One or more high quality examples of FNAI state ranked S3 or above natural communities.
    b. An outstanding example of any FNAI tracked natural community.

Potential Natural Areas have been assigned ranks of PNA-1 through PNA-4 mostly based on size and perceived quality and type of natural community present. The areas included in internal rank PNA-5 (former ACI Category C) are exceptions to the above criteria. These areas were identified through the same process of aerial photographic interpretation and regional workshops as the PNA 1 through 4 ranked sites, but do not meet the standard criteria. These PNA 5 areas are considered lower priority for conservation than areas ranked PNA 1- 4, but nonetheless are believed to be ecologically viable tracts of land representative of Florida's natural ecosystems.

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FLORIDA Natural Areas INVENTORY

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July 2004

Brevard County Summary

Rare Species and Natural Communities Documented or Reported

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
FISH					
Acipenser oxyrinchus oxyrinchus	Atlantic Sturgeon	G3T3	S1	N	LS
Bairdiella sanctaeluciae	Striped Croaker	G5	S2	N	N
Gobiomorus dormitor	Bigmouth Sleeper	G4	S2	N	N
Gobionellus pseudofasciatus	Slashcheek Goby	G3G5	S1	N	N
Microphis brachyurus	Opossum Pipefish	G4G5	S2	PS:C	N
Rivulus marmoratus	Mangrove Rivulus	G3	S3	N	LS
AMPHIBIANS					
Rana capito	Gopher Frog	G3	S3	N	LS
REPTILES					
Alligator mississippiensis	American Alligator	G5	S4	T(S/A)	LS
Caretta caretta	Loggerhead	G3	S3	LT	LT
Chelonia mydas	Green Turtle	G3	S2	LE	LE
Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Dermochelys coriacea	Leatherback	G2	S2	LE	LE
Drymarchon couperi	Eastern Indigo Snake	G3	S3	N	LT
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	LS
Lampropeltis calligaster	Mole Snake	G5	S2S3	N	N
Lepidochelys kempii	Kemp's Ridley	G1	S1	LE	LE
Pituophis melanoleucus mugitus	Florida Pine Snake	G4T3?	S3	N	LS
Sceloporus woodi	Florida Scrub Lizard	G3	S3	N	N
BIRDS					
Accipiter cooperii	Cooper's Hawk	G5	S3	N	N
Aimophila aestivalis	Bachman's Sparrow	G3	S3	N	N
Ajaia ajaja	Roseate Spoonbill	G5	S2	N	LS
Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	LT
Aramus guarauna	Limpkin	G5	S3	N	LS
Ardea alba	Great Egret	G5	S4	N	N
Ardea herodias occidentalis	Great White Heron	G5T2	S2	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	LS
Buteo brachyurus	Short-tailed Hawk	G4G5	S1	N	N
Caracara cheriway	Crested Caracara	G5	S2	LT	LT
Charadrius melodus	Piping Plover	G3	S2	LT	LT
Dendroica discolor paludicola	Florida Prairie Warbler	G5T3	S3	N	N
Egretta caerulea	Little Blue Heron	G5	S4	N	LS
Egretta rufescens	Reddish Egret	G4	S2	N	LS
Egretta thula	Snowy Egret	G5	S3	N	LS
Egretta tricolor	Tricolored Heron	G5	S4	N	LS
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Elanus leucurus	White-tailed Kite	G5	S1	N	N
Eudocimus albus	White Ibis	G5	S4	N	LS
Falco columbarius	Merlin	G5	S2	N	N
Falco peregrinus	Peregrine Falcon	G4	S2	N	LE
Falco sparverius paulus	Southeastern American Kestrel	G5T4	S3	N	LT
Fregata magnificens	Magnificent Frigatebird	G5	S1	N	N
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	LT
Haematopus palliatus	American Oystercatcher	G5	S2	N	LS
Haliaeetus leucocephalus	Bald Eagle	G4	S3	LT	LT
Ixobrychus exilis	Least Bittern	G5	S4	N	N
Laterallus jamaicensis	Black Rail	G4	S2	N	N

Rare Species and Natural Communities Documented or Reported

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
BIRDS					
Mycteria americana	Wood Stork	G4	S2	LE	LE
Nyctanassa violacea	Yellow-crowned Night-heron	G5	S3	N	N
Nycticorax nycticorax	Black-crowned Night-heron	G5	S3	N	N
Pandion haliaetus	Osprey	G5	S3S4	N	LS*
Pelecanus occidentalis	Brown Pelican	G4	S3	N	LS
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	LS
Picoides villosus	Hairy Woodpecker	G5	S3	N	N
Plegadis falcinellus	Glossy Ibis	G5	S3	N	N
Recurvirostra americana	American Avocet	G5	S2	N	N
Rynchops niger	Black Skimmer	G5	S3	N	LS
Sterna antillarum	Least Tern	G4	S3	N	LT
Sterna caspia	Caspian Tern	G5	S2	N	N
Sterna maxima	Royal Tern	G5	S3	N	N
Sterna sandvicensis	Sandwich Tern	G5	S2	N	N
Vireo altiloquus	Black-whiskered Vireo	G5	S3	N	N
MAMMALS					
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S2	N	N
Eubalaena glacialis	Black Right Whale	G1	S1	LE	LE
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	N	N
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peromyscus polionotus niveiventris	Southeastern Beach Mouse	G5T1	S1	LT	LT
Podomys floridanus	Florida Mouse	G3	S3	N	LS
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	LS
Trichechus manatus	Manatee	G2	S2	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	LT*
PLANTS					
Argusia gnaphalodes	Sea Lavender	G4	S3	N	LE
Calamovilfa curtissii	Curtiss' Sandgrass	G3	S3	N	LT
Centrosema arenicola	Sand Butterfly Pea	G2Q	S2	N	LE
Chamaesyce cumulicola	Sand-dune Spurge	G2	S2	N	LE
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Dennstaedtia bipinnata	Hay Scented Fern	G4	S1	N	LE
Dicerandra thinicola	Titusville Balm	G1	S1	N	LE
Glandularia maritima	Coastal Vervain	G3	S3	N	LE
Glandularia tampensis	Tampa Vervain	G2	S2	N	LE
Halophila johnsonii	Johnson's Seagrass	G2	S2	LT	N
Harrisia simpsonii	Simpson's Prickly Apple	G2	S2	N	LE
Lantana depressa var. floridana	Atlantic Coast Florida Lantana	G2T1	S1	N	LE
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Lechea divaricata	Pine Pinweed	G2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Nolina atopocarpa	Florida Beargrass	G3	S3	N	LT
Ophioglossum palmatum	Hand Fern	G4	S2	N	LE
Pavonia spinifex	Yellow Hibiscus	G4G5	S2	N	N
Peperomia humilis	Terrestrial Peperomia	G5	S2	N	LE
Pteroglossaspis ecristata	Giant Orchid	G2	S2	N	LT
Tephrosia angustissima var. curtissii	Coastal Hoary-pea	G1T1	S1	N	LE
Warea carteri	Carter's Warea	G3	S3	LE	LE
Zephyranthes simpsonii	Rain Lily	G2G3	S2S3	N	LT
NATURAL COMMUNITIES					
Basin swamp		G4	S3	N	N
Beach dune		G3	S2	N	N
Bottomland forest		G4	S3	N	N
Coastal grassland		G3	S2	N	N
Coastal interdunal swale		G3	S2	N	N
Coastal strand		G3	S2	N	N
Depression marsh		G4	S4	N	N
Dome swamp		G4	S4	N	N

Rare Species and Natural Communities Documented or Reported

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
NATURAL COMMUNITIES					
Dry prairie		G2	S2	N	N
Estuarine grass bed		G3	S2	N	N
Estuarine tidal marsh		G5	S4	N	N
Estuarine tidal swamp		G5	S4	N	N
Hydric hammock		G4	S4	N	N
Maritime hammock		G3	S2	N	N
Mesic flatwoods		G4	S4	N	N
Scrub		G2	S2	N	N
Scrubby flatwoods		G3	S3	N	N
Shell mound		G2	S2	N	N
Wet flatwoods		G4	S4	N	N
Xeric hammock		G3	S3	N	N
OTHER ELEMENTS					
Bird rookery		GNR	SNR	N	N
Manatee aggregation site		GNR	SNR	N	N

Total count:

Number of tracked elements: 115
Number of distinct occurrences: 793

FLORIDA Natural Areas INVENTORY
1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

GLOBAL AND STATE RANKS

Florida Natural Areas Inventory (FNAI) defines an **element** as any rare or exemplary component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature. FNAI assigns two ranks to each element found in Florida: the **global rank**, which is based on an element's worldwide status, and the **state rank**, which is based on the status of the element within Florida. Element ranks are based on many factors, including estimated number of occurrences, estimated abundance (for species and populations) or area (for natural communities), estimated number of adequately protected occurrences, range, threats, and ecological fragility.

GLOBAL RANK DEFINITIONS

G1	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or human factor.
G2	Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or human factor.
G3	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals), or found locally in a restricted range, or vulnerable to extinction from other factors.
G4	Apparently secure globally (may be rare in parts of range).
G5	Demonstrably secure globally.
GH	Occurred historically throughout its range, but has not been observed for many years.
GX	Believed to be extinct throughout range.
GXC	Extirpated from the wild but still known from captivity or cultivation.
G#?	Rank uncertain (e.g., G2?).
G#G#	Range of rank; insufficient data to assign specific global rank (e.g., G2G3)
G#T#	Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species, and the T portion refers to the subgroup; T# has same definition as G#.
G#Q	Ranked as species but there is some question as to whether it is a valid species.
G#T#Q	Same as above, but validity as subspecies or variety is questioned.
GU	Global rank unknown; due to lack of information, no rank or range can be assigned.
G?	Temporarily not ranked.

STATE RANK DEFINITIONS

State ranks (S#) follow the same system and have the same definitions as global ranks, except they apply only to Florida, with the following additions:

SA	Accidental in Florida and not part of the established biota.
SE	Exotic species established in Florida (may be native elsewhere in North America).
SX	Believed to be extirpated from state.

Florida Resources and Environmental Analysis Center
Institute for Science and Public Affairs
The Florida State University

FEDERAL AND STATE LEGAL STATUSES

Provided by FNAI for information only.
For official definitions and lists of protected species, consult the relevant state or federal agency.

FEDERAL LEGAL STATUS

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

LE	Endangered: species in danger of extinction throughout all or a significant portion of its range.
LT	Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
E(S/A)	Endangered due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
T(S/A)	Threatened due to similarity of appearance (see above).
PE	Proposed for listing as Endangered species.
PT	Proposed for listing as Threatened species.
C	Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
XN	Non-essential experimental population.
MC	Not currently listed, but of management concern to USFWS.
N	Not currently listed, nor currently being considered for listing as Endangered or Threatened.

FLORIDA LEGAL STATUSES

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

LE	Endangered: species, subspecies, or isolated population so few or depleted in number or so restricted in range that it is in imminent danger of extinction.
LT	Threatened: species, subspecies, or isolated population facing a very high risk of extinction in the future.
LS	Species of Special Concern is a species, subspecies, or isolated population which is facing a moderate risk of extinction in the future.
PE	Proposed for listing as Endangered.
PT	Proposed for listing as Threatened.
PS	Proposed for listing as Species of Special Concern.
N	Not currently listed, nor currently being considered for listing.

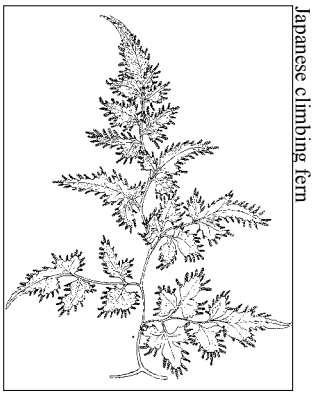
Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505.

LE	Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
LT	Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
PE	Proposed for listing as Endangered.
PT	Proposed for listing as Threatened.
N	Not currently listed, nor currently being considered for listing.

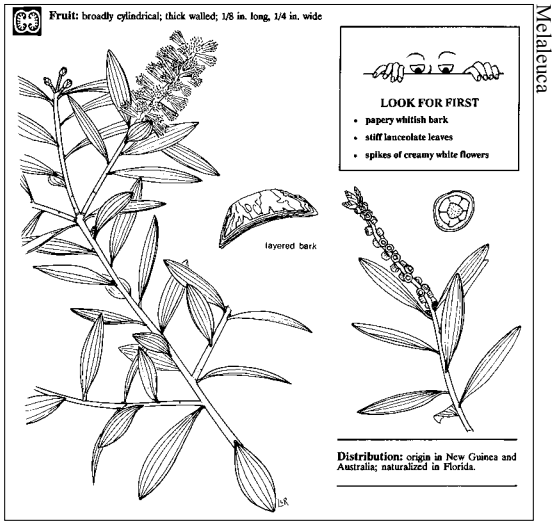
Chinese tallow

A Note on
Invasive Exotics

Native biodiversity in any habitat can be severely disturbed or diminished by the invasion of highly competitive non-native plant species. With the support of the Bureau of Invasive Plant Management, Florida Department of Environmental Protection, and the collaboration of many other agencies and organizations, Florida Natural Areas Inventory is developing a map-linked database of invasive exotics in Florida conservation lands.



Japanese climbing fern



Melaleuca

The goal of this effort is to produce a statewide picture of the invasive plants in our natural areas and to assist in management decisions on a broad scale. Pilot-area data sets are presently being compiled. Full establishment of the Florida Invasive Plants Database will include easy access to data through interactive map pages at the FNAI website, www.fnai.org (look for first-phase pages later in 2004).

Current information on the extent of invasive exotics in your parks and preserves is most welcomed. For more details on how you can contribute to this database, contact Kathy Burks at KBurks@fnai.org.

For a look at existing text-based data on invasives in conservation lands, visit the website of Database co-sponsor, the Florida Exotic Pest Plant Council, www.fleppc.org/database. For more on invasive plant management in Florida, visit the Bureau's website, http://www.dep.state.fl.us/lands/invaspec/index.htm.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 (fax)
www.fnai.org

FLORIDA Natural Areas INVENTORY

Appendix G:
Jordan Scrub Sanctuary Fire Management Plan

Copies of the forms necessary to conduct prescribed fires are located in the EEL Program Fire Management Manual

Sanctuary-Specific Fire Management Goals

1) Restore fire frequencies typical of mesic flatwoods, scrubby flatwoods and sand pine scrub ecosystems
2) Maintain scrub ecosystems in optimal condition to provide for long-term stability of Florida scrub-jay populations on-site
3) Maintain low levels of fuel loads in order to mitigate the effects and behavior of wildfires that either start on-site or off property

Burn Unit Descriptions, Fire Regimes

Unit 1, 104 acres.
Located at the northern portion of the Sanctuary, Unit 1 is bordered by a created firebreak on the north, Jordan Blvd. To the south, a powerline to the east and a dirt road extension of Marie Street to the west. Houses along LaCourt Street are closest to the west, while commercial buildings are about half a mile to the east, along US1. Approximately half of Unit 1 is comprised of scrubby flatwoods, while the other half is mesic flatwoods. Depression ponds are scattered throughout. This Unit contains the bulk of jay nesting habitat, so nesting season burns are prohibited. Since the majority of this Unit is comprised of flatwoods, it can be burned on a three to five year cycle. If jay nesting sites are discovered within oak clumps, they should be protected. Mechanical treatment of the peppers and other vegetation along the disturbed southern boundary (along an old ditch) is recommended if this vegetation becomes too difficult to burn. Another option would be to split Unit 1 in half using the north-south trail, separating the bulk of the flatwoods from the scrubbier component, and then burning the two halves at different intervals.

Unit 2, 21 acres.
On the eastern side of the Sanctuary, Unit 2 sits between US1 and the F.E.C. railroad. The only created firebreak present is on the north side. There are grassy shoulders along US1, the railroad and Jordan Boulevard to the south. Even thought this Unit is small, there is an interesting mix of habitats on-site; sand pine scrub, mesic and scrubby flatwoods and even a low wetland slough. Mechanical reduction of fuels was performed in 2001 in order to reduce the height of oaks along the western side. This Unit displays the effects of being fire sheltered and disturbed; heavy fuel loads and weedy vegetation are the main issues. This Unit can be burned on a five to seven year cycle, first in the winter months then a switch to the growing season. Due to the proximity of US1, an eastern wind component is essential, as well as a very thorough mop-up operation.

Unit 3, 238 acres.
Comprising the majority of the southern portion of the Sanctuary, Unit 3 is surrounded by dirt trails and dirt roads that function as firebreaks. Several fireplow scars are visible, attesting to the recent wildfires within the Unit. This Unit is comprised primarily of mesic flatwoods, which responds well to a more frequent fire cycle, from two to four years. There is an old drainage ditch that runs from north to south, which is overgrown with peppers. This ditch effectively blocks fire spread within the Unit, and so any fire

plan within Unit 3 must include some form of strategy that deals with getting fire through/around this impediment.

Unit 4, 7 acres.
Very similar to Unit 2, Unit 4 is situated between US1 and the F.E.C. railroad, with Jordan Boulevard to the north. There are no created firebreaks within this Unit. This Unit is comprised primarily of sand pine scrub, and so responds well to a fire cycle of 10 to 30 years. Due to the proximity of US1, an eastern wind component is essential, as well as a very thorough mop-up operation. The small size of this Unit and the close proximity to US1 places this Unit low on the priority list.

Since there are jays nesting within the JSS, the fire cycle should be alternated among the Units, especially Units 1 and 3. Dave Breininger should be consulted before any burns are conducted within Unit 1 to insure that any nesting sites are protected.

Fire History

There have been two prescribed fires and three wildfires within the Jordan Scrub Sanctuary since 1998. The local fire department (Town of Malabar Volunteer Fire Department) is close by and so therefore wildfires in and around the Jordan Scrub site have been quickly suppressed. The flatwoods ecosystem rapidly recovers from fire events, and so can support the spread of wildfires as early as two years post-fire. The intensity of these wildfires within previously burned areas is low.

Species of Special Concern

The Florida scrub-jay is present on-site, and their population numbers are being monitored. Gopher tortoises and the Eastern indigo snake have also been reported from this site, and so all fire management activities within the JSS will be based on the recommendations from the EEL Program Fire Manual, enhancing the habitat for the long-term survival of these species on-site.

Archaeological, Cultural and Historic Resources

The only historic resources that have been recovered from the JSS are turpentine pots, revealing the past history of turpentine activity. Any catface trees that are discovered should have the needle duff raked away from the trunk prior to any fire in order to protect them from extreme fire behavior.

Fire Sensitive Areas

The only fire sensitive areas within JSS are any potential scrub-jay nesting trees within Unit 1, and the large depression marshes in Units 1 and 3, which might pose a muck fire problem in drier weather.

Smoke Management Issues

US1 to the east, residents of Malabar to the west, the Harris Company to the west of Units 2 and 4 and the FEC Railroad to the west of Units 2 and 4. Due to the close proximity of US1, all of the Units should be burned with an easterly component, avoiding west winds. For Units 2 and 4, close attention should be paid to the nighttime conditions

during any burning planning cycle, for residual smoke directly adjacent to US1 will cause problems.

Public Notification

Besides the general list in the EEL Fire Manual, these additional contacts need to be notified as a part of the fire planning process:
Manager, Town of Malabar: (321) 723-3261, (321) 722-2234 fax
Town of Malabar Fire Department: (321) 723-2858
Malabar Post Office: (321) 724-1630, (321) 722-0059 fax
Palm Bay Hospital: (321) 434-8054
Harris Corporation: (321) 768-4231
Data Management: (321) 725-8081
FEC Railroad: (800) 342-1131

Wildfire Policy

The first responders to a wildfire within the JSS will most likely be the Town of Malabar Fire Department. They are instructed to contact the Florida Division of Forestry and the EEL Program when they are heading towards the wildfire. The EEL Program will assist with suppression efforts, but only as much as the EEL equipment can safely allow. The EEL Program will fit into the ICS when wildfires are being managed by the FDOF.

Cooperation with Other Agencies

Site-specific partners with the EEL Program for the JSS include:
Town of Malabar Fire Department

Fireline Maintenance

The firebreaks for the JSS are displayed in Figure 11. All firebreaks should be inspected throughout the year, and maintained with the EEL tractor and disc attachment twice per year, in the winter and spring. All firebreaks are accessible by 4WD vehicles.

Appendix H:
Florida Master Site File

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

July 27, 2004

Chris O'Hara
Brevard County
5560 US Highway 1
Melbourne, FL 32940
FAX#: 321-255-4499

Dear Mr. O'Hara:

In response to your inquiry of July 26, 2004, the Florida Master Site File lists three previously recorded archaeological sites, and no historical standing structures in the following parcels of Brevard County:

T29S, R38E, Sections 5-8

In interpreting the results of our search, please remember the following points:

- **Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites or historical structures.**
- **While many of our records relate to historically significant properties, the entry of an archaeological site or an historical structure on the Florida Master Site File does not necessarily mean that the structure is significant.**
- **Since vandalism is common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **As you may know, federal and state laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.**

If you have any further questions concerning the Florida Master Site File, please contact us as below.

Sincerely,

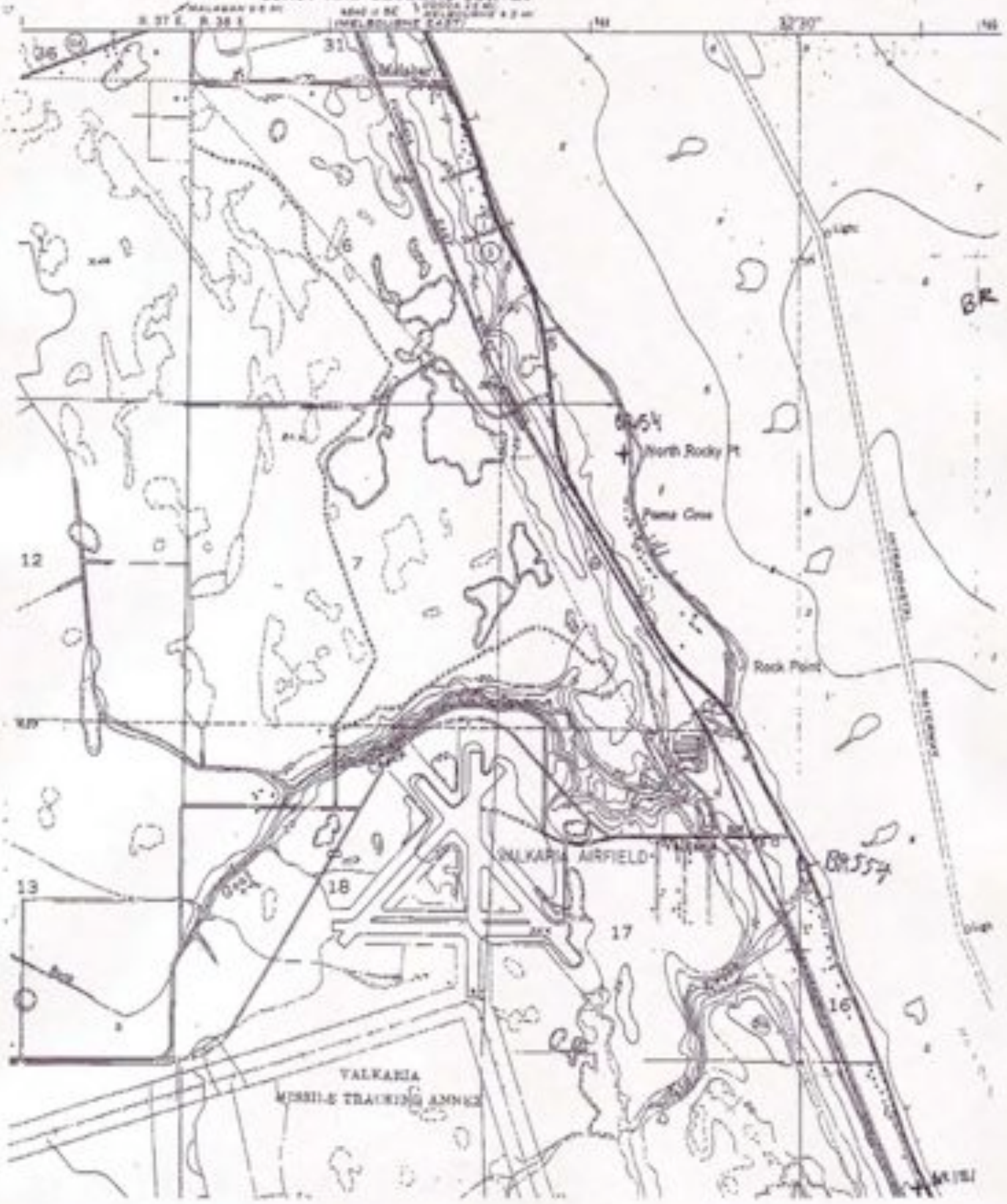
Nicholas Bertram
Data Analyst, Florida Master Site File
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

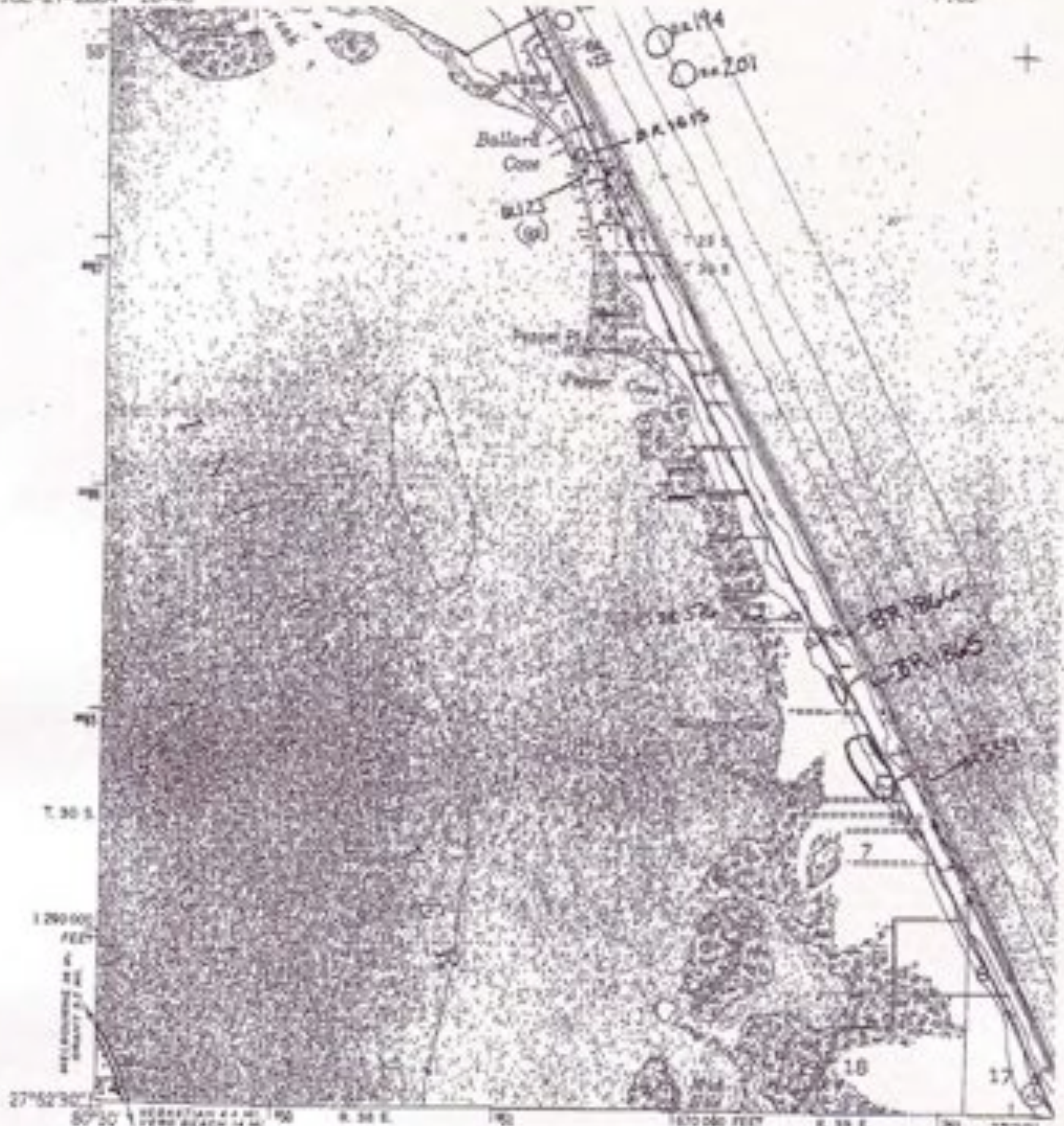
Phone 850-245-6453, Fax: 850-245-6439
State SunCom: 205-6440
Email: *fmsfile@ dos.state.fl.us*
Web: *http://www.dos.state.fl.us/dhr/msf/*

SITEID	FORMNO	T-R-S	CR	SITENAME	NRLIST	SURVEY	LOCATION	OTHER
5MO0054	MELD	29S/36E/8	AR	DAMON			Map: GRAN	Culture: PREH Sitetype: MDBD, SOCE
5MO1865	200308		AR	HARDWOOD		9296	Map: SANW	Culture: SJZ Sitetype: MDSN
5MO1866	200308	29S/36E/7	AR	HARDWOOD II		9296	Map: SANW	Culture: INDE Sitetype: MDSN

1 site(s) evaluated; 3 form(s) evaluated.
Print date: 7/27/2004 9:15:15 AM

UNITED STATES
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY





Mapped by the U. S. Coast & Geodetic Survey
Edited and published by the U. S. Geological Survey
Control by USC&GS (C) and USED (E)
Culture and drainage in part compiled from
aerial photographs taken 1947
Topography by plane-table methods. Field checked 1949
Polyconic projection. 1927 North American datum
[illegible]-foot grid based on Florida coordinate system,
east zone
[illegible]-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue
The difference between 1927 North American Datum and North American
Datum 1983 (NAD 83) for 7.5-minute intersections is given in USGS
[illegible]. The NAD 83 is shown by dashed corner ticks
[illegible] between dwellings, barns,
[illegible] buildings
[illegible] approximate location
[illegible] is known
[illegible] to major culture or drainage

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1970. This information not field checked

Appendix I:
FEMA Flood Maps

THIS AREA IS SHOWN ON MAP NUMBER 12009C0607

THIS AREA IS SHOWN ON MAP NUMBER 12009C0609

LEGEND

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

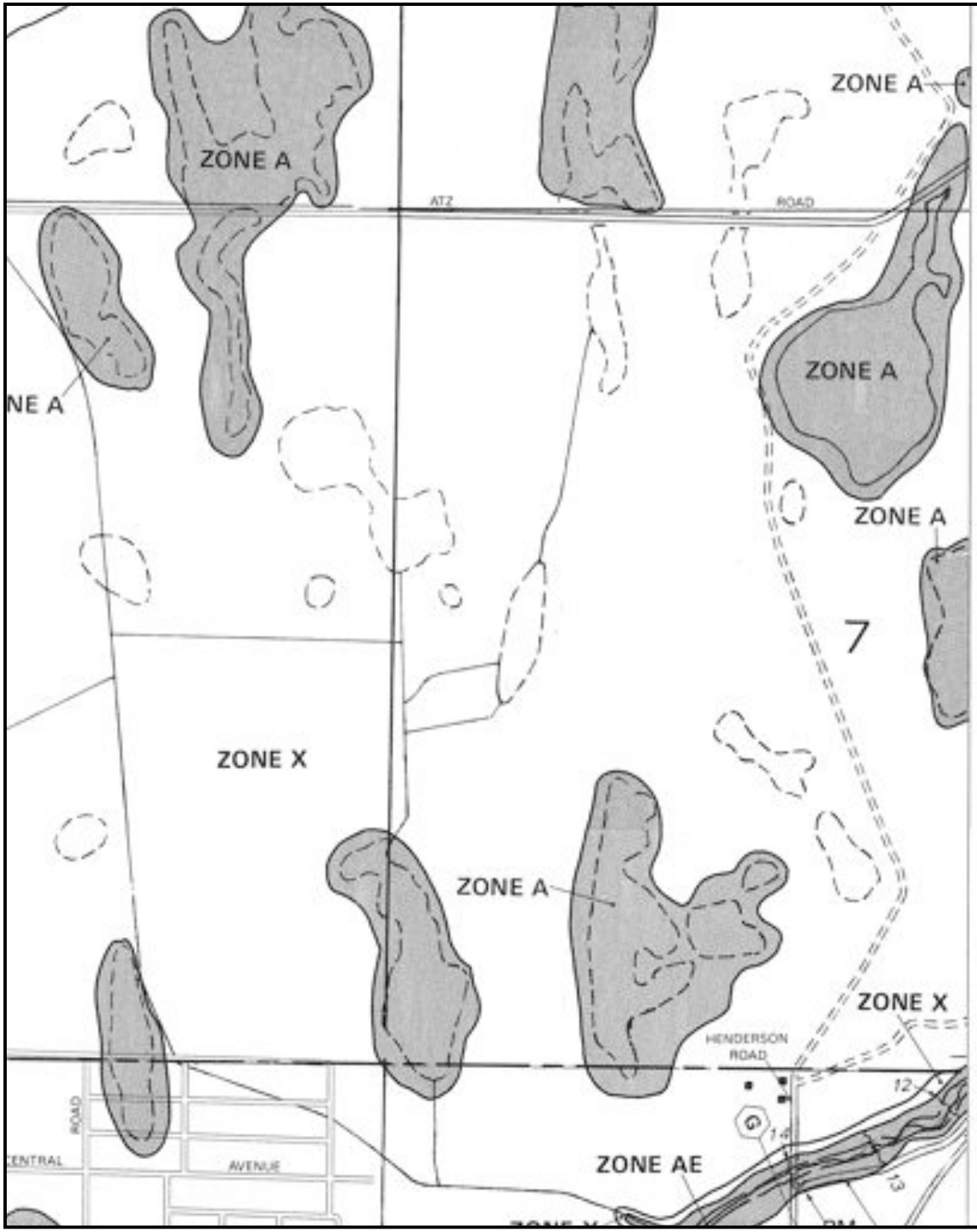
BREVARD COUNTY,
FLORIDA AND
INCORPORATED AREAS

PANEL 609 OF 727

MAP NUMBER
12009C0609 F

MAP REVISED
AUGUST 28, 2008

Federal Emergency Management Agency



N

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

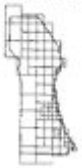
BREVARD COUNTY,
FLORIDA AND
INCORPORATED AREAS

PANEL 605 OF 727

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MALABAR, TOWN OF	120024	0605	E
PALM BAY, CITY OF	120404	0605	E
UNINCORPORATED AREAS	125092	0605	E

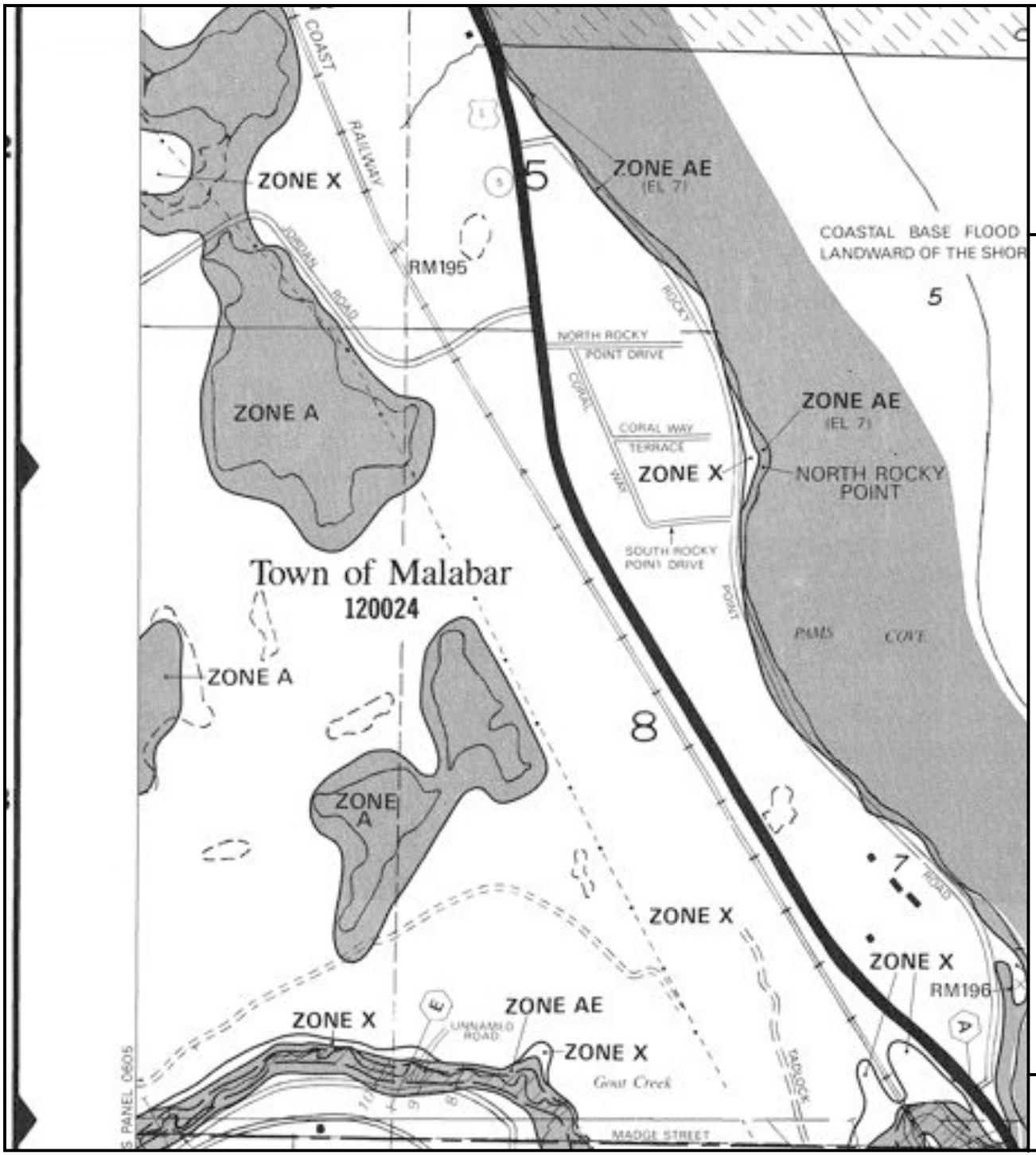
PANEL LOCATION



MAP NUMBER:
12009C0605 E

EFFECTIVE DATE:
APRIL 3, 1989

Federal Emergency Management Agency



N

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

BREVARD COUNTY,
FLORIDA AND
INCORPORATED AREAS

PANEL 610 OF 727

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MALABAR, TOWN OF	120024	0610	F
UNINCORPORATED AREAS	125092	0610	F

—NOTE—

THIS MAP INCORPORATES APPROXIMATE BOUNDARIES OF COASTAL BARRIER RESOURCES SYSTEM UNIT AND/OR OTHERWISE PROTECTED AREAS ESTABLISHED UNDER THE COASTAL BARRIER IMPROVEMENT ACT OF 1990 (PL 101-591).

MAP NUMBER:
12009C0610 F

MAP REVISED:
AUGUST 18, 1992

Federal Emergency Management Agency

Appendix J:
Division of Historical Resources
Documentation Review

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Chris O'Hara
Brevard County Parks and Recreation
Environmentally Endangered Lands Program
5560 North US Highway 1
Melbourne, Florida 32940

September 13, 2004

RE: DHR Project File Number: 2004-8346
Received by DHR August 9, 2004
Request for Land Management Plan Information
Jordan Scrub Sanctuary
Brevard County

Dear Mr. O'Hara:

In accordance with this agency's responsibilities under Sections 253.034(5) and 259.032(3)(h), *Florida Statutes*, we have reviewed the information in the Florida Master Site File to determine whether any historic properties are recorded in the referenced management area, and also to determine the potential for such resources, which are presently unrecorded to be located within it.

We have reviewed the Florida Master Site File and our records and no historic properties are known to exist in the management area. However, this area has never been subjected to professional archaeological investigation, this is not necessarily indicative of the absence of archaeological materials. It is the opinion of this office that because of the project nature there is a low to medium probability of proposed project activities impacting significant archaeological or historical sites

If future project activities involve land clearing or ground disturbing activities within the park, the proposed project activities should be submitted to this agency for review and comment to determine the impact of the proposed project(s) on historic properties. The contact person for such reviews is Ms. Susan Harp, Historic Preservation Planner, at the address listed below.

We have enclosed for your use a copy of Management Procedures for Archaeological and Historic Sites and Properties on State-Owned or Controlled Lands. This document should be referred to where appropriate in your land management plan, and attached to it.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

☐ Director's Office (850) 245-6300 • FAX: 245-6435
☐ Archaeological Research (850) 245-6444 • FAX: 245-6436
☑ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
☐ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
☐ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *seedwards@dos.state.fl.us*, or at 850-245-6333 or 800-847-7278.

Sincerely,

Laura A. Kammerer, Deputy SHPO

for Frederick Gaske, Director, and
State Historic Preservation Officer

Enclosure

FLORIDA DEPARTMENT OF STATE
DIVISION OF HISTORICAL RESOURCES

MANAGEMENT PROCEDURES

FOR

ARCHAEOLOGICAL AND HISTORICAL SITES AND PROPERTIES

ON STATE - OWNED OR CONTROLLED LANDS

(revised August, 1995)

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

❒ Director's Office (850) 245-6300 • FAX: 245-6435
❒ Archaeological Research (850) 245-6444 • FAX: 245-6436
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❒ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
❒ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
❒ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

MANAGEMENT PROCEDURES FOR ARCHAEOLOGICAL AND HISTORICAL SITES AND PROPERTIES ON STATE - OWNED OR CONTROLLED LANDS

(revised August, 1995)

A. GENERAL DISCUSSION

Archaeological and historic sites are defined collectively in 267.021(3), F.S., as "historic properties" or "historic resources". They have several essential characteristics which must be recognized in a management program.

- First of all, they are a finite and non-renewable resource. Once destroyed, presently existing resources, including buildings, other structures, shipwreck remains, archaeological sites and other objects of antiquity, cannot be renewed or revived. Today, sites in the State of Florida are being destroyed by all kinds of land development, inappropriate land management practices, erosion, looting, and to a minor extent even by well-intentioned professional scientific research (e.g., archaeological excavation). Measures must be taken to ensure that some of these resources will be preserved for future study and appreciation.

- Secondly, sites are unique because individually they represent the tangible remains of events which occurred at a specific time and place.

- Thirdly, while sites uniquely reflect localized events, these events and the origin of particular sites are related to conditions and events in other times and places. Sites can be understood properly only in relation to their natural surroundings and the activities of inhabitants of other sites. Managers must be aware of this "systemic" character of historic and archaeological sites. Also, it should be recognized that archaeological sites are time capsules for more than cultural history; they preserve traces of past biotic communities, climate, and other elements of the environment that may be of interest to other scientific disciplines.

- Finally, the significance of sites, particularly archaeological ones, derives not only from the individual artifacts within them, but also equally from the spatial arrangement of those artifacts in both horizontal and vertical planes. When archaeologists excavate, they recover, not merely objects, but also a record of the positions of these objects in relation to one another and their containing matrix (e.g., soil strata). Much information is sacrificed if the so-called "context" of archaeological objects is destroyed or not recovered, and this is what archaeologists are most concerned about when a site is threatened with destruction or damage. The artifacts themselves can be recovered even after a site is heavily disturbed, but the context - the vertical and horizontal relationships - cannot. Historic structures also contain a wealth of cultural (socio-economic) data which can be lost if historically sensitive maintenance, restoration or rehabilitation procedures are not implemented, or if they are demolished or extensively altered without appropriate documentation. Lastly, it should not be forgotten that historic structures often have associated potentially significant historic archaeological features which must be considered in land management decisions.

B. STATUTORY AUTHORITY

Chapter 253, Florida Statutes ("State Lands") directs the preparation of "single-use" or "multiple-use" land management plans for all state-owned lands and state-owned sovereignty submerged lands. In this document, 253.034(5), F.S., specifically requires that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites, as well as other fragile resources..."

Chapter 267, Florida Statutes is the primary historic preservation authority of the state. The importance of protecting and interpreting archaeological and historic sites is recognized in 267.061(1)(a), F.S.:

The rich and unique heritage of historic properties in this state, representing more than 10,000 years of human presence, is an important legacy to be valued and conserved for present and future generations. The destruction of these nonrenewable historic resources will engender a significant loss to the state's quality of life, economy, and cultural environment. It is therefore declared to be state policy to:

1. *Provide leadership in the preservation of the state's historic resources; [and]*
2. *Administer state-owned or state-controlled historic resources in a spirit of stewardship and trusteeship;...*

Responsibilities of the Division of Historical Resources in the Department of State pursuant to 267.061(3), F.S., include the following:

1. Cooperate with federal and state agencies, local governments, and private organizations and individuals to direct and conduct a comprehensive statewide survey of historic resources and to maintain an inventory of such responses.
2. Develop a comprehensive statewide historic preservation plan.
3. Identify and nominate eligible properties to the *National Register of Historic Places* and otherwise administer applications for listing properties in the National Register of Historic Places.
4. Cooperate with federal and state agencies, local governments, and organizations and individuals to ensure that historic resources are taken into consideration at all levels of planning and development.
5. Advise and assist, as appropriate, federal and state agencies and local governments in carrying out their historic preservation responsibilities and programs.
6. Carry out on behalf of the state the programs of the National Historic Preservation Act of 1966, as amended, and to establish, maintain, and administer a state historic preservation program meeting the requirements of an approved program and fulfilling the responsibilities of state historic preservation programs as provided in subsection 101(b) of that act.
7. Take such other actions necessary or appropriate to locate, acquire, protect, preserve, operate, interpret, and promote the location, acquisition, protection, preservation, operation, and interpretation of historic resources to foster an appreciation of Florida history and culture. Prior to the acquisition, preservation, interpretation, or operation of a historic property by a state agency, the Division shall be provided a reasonable opportunity to review and comment on the proposed undertaking and shall determine that there exists historic authenticity and a feasible means of providing for the preservation, interpretation and operation of such property.
8. Establish professional standards for the preservation, exclusive of acquisition, of historic resources in state ownership or control.
9. Establish guidelines for state agency responsibilities under subsection (2).

Responsibilities of other state agencies of the executive branch, pursuant to 267.061(2), F.S., include:

1. Each state agency of the executive branch having direct or indirect jurisdiction over a proposed state or state-assisted undertaking shall, in accordance with state policy and prior to the approval of expenditure of any state funds on the undertaking, consider the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the *National Register of Historic Places*. Each such agency shall afford the division a reasonable opportunity to comment with regard to such an undertaking.

2. Each state agency of the executive branch shall initiate measures in consultation with the division to assure that where, as a result of state action or assistance carried out by such agency, a historic property is to be demolished or substantially altered in a way which adversely affects the character, form, integrity, or other qualities which contribute to [the] historical, architectural, or archaeological value of the property, timely steps are taken to determine that no feasible and prudent alternative to the proposed demolition or alteration exists, and, where no such alternative is determined to exist, to assure that timely steps are taken either to avoid or mitigate the adverse effects, or to undertake an appropriate archaeological salvage excavation or other recovery action to document the property as it existed prior to demolition or alteration.

3. In consultation with the division [of Historical Resources], each state agency of the executive branch shall establish a program to locate, inventory, and evaluate all historic properties under the agency's ownership or control that appear to qualify for the National Register. Each such agency shall exercise caution to assure that

any such historic property is not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly.

4. Each state agency of the executive branch shall assume responsibility for the preservation of historic resources which are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for the purpose of carrying out agency responsibilities, the agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with preservation of such properties, the mission of the agency, and the professional standards established pursuant to paragraph (3)(k), any preservation actions necessary to carry out the intent of this paragraph.

5. Each state agency of the executive branch, in seeking to acquire additional space through new construction or lease, shall give preference to the acquisition or use of historic properties when such acquisition or use is determined to be feasible and prudent compared with available alternatives. The acquisition or use of historic properties is considered feasible and prudent if the cost of purchase or lease, the cost of rehabilitation, remodeling, or altering the building to meet compliance standards and the agency's needs, and the projected costs of maintaining the building and providing utilities and other services is less than or equal to the same costs for available alternatives. The agency shall request the division to assist in determining if the acquisition or use of a historic property is feasible and prudent. Within 60 days after making a determination that additional space is needed, the agency shall request the division to assist in identifying buildings within the appropriate geographic area that are historic properties suitable for acquisition or lease by the agency, whether or not such properties are in need of repair, alteration, or addition.

6. Consistent with the agency's mission and authority, all state agencies of the executive branch shall carry out agency programs and projects, including those under which any state assistance is provided, in a manner which is generally sensitive to the preservation of historic properties and shall give consideration to programs and projects which will further the purposes of this section.

Section 267.12 authorizes the Division to establish procedures for the granting of research permits for archaeological and historic site survey or excavation on state-owned or controlled lands, while Section 267.13 establishes penalties for the conduct of such work without first obtaining written permission from the Division of Historical Resources. The Rules of the Department of State, Division of Historical Resources, for research permits for archaeological sites of significance are contained in Chapter 1A-32,F.A.C.

Another Florida Statute affecting land management decisions is **Chapter 872**, F.S. Section 872.02, F.S., pertains to marked grave sites, regardless of age. Many state-owned properties contain old family and other cemeteries with tombstones, crypts, etc. Section 872.05, F.S., pertains to unmarked human burial sites, including prehistoric and historic Indian burial sites. Unauthorized disturbance of both marked and unmarked human burial sites is a felony.

C. MANAGEMENT POLICY

The choice of a management policy for archaeological and historic sites within state-owned or controlled lands obviously depends upon a detailed evaluation of the characteristics and conditions of the individual sites and groups of sites within those tracts. This includes an interpretation of the significance (or potential significance) of these sites, in terms of social and political factors, as well as environmental factors. Furthermore, for historic structures architectural significance must be considered, as well as any associated historic landscapes.

Sites on privately owned lands are especially vulnerable to destruction, since often times the economic incentives for preservation are low compared to other uses of the land areas involved. Hence, sites in public ownership have a magnified importance, since they are the ones with the best chance of survival over the long run. This is particularly true of sites which are state-owned or controlled, where the basis of management is to provide for land uses that are minimally destructive of resource values.

It should be noted that while many archaeological and historical sites are already recorded within state-owned or controlled-lands, the majority of the uplands areas and nearly all of the inundated areas have not

been surveyed to locate and assess the significance of such resources. The known sites are, thus, only an incomplete sample of the actual resources - i.e., the number, density, distribution, age, character and condition of archaeological and historic sites - on these tracts. Unfortunately, the lack of specific knowledge of the actual resources prevents formulation of any sort of detailed management or use plan involving decisions about the relative historic value of individual sites. For this reason, a generalized policy of conservation is recommended until the resources have been better addressed.

The generalized management policy recommended by the Division of Historical Resources includes the following:

1. State land managers shall coordinate all planned activities involving known archaeological or historic sites or potential site areas closely with the Division of Historical Resources in order to prevent any kind of disturbance to significant archaeological or historic sites that may exist on the tract. Under 267.061(1)(b), F.S., the Division of Historical Resources is vested with title to archaeological and historic resources abandoned on state lands and is responsible for administration and protection of such resources. The Division will cooperate with the land manager in the management of these resources. Furthermore, provisions of 267.061(2) and 267.13, F.S., combined with those in 267.061(3) and 253.034(4), F.S., require that other managing (or permitting) agencies coordinate their plans with the Division of Historical Resources at a sufficiently early stage to preclude inadvertent damage or destruction to known or potentially occurring, presently unknown archaeological and historic sites. The provisions pertaining to human burial sites must also be followed by state land managers when such remains are known or suspected to be present (see 872.02 and 872.05, F.S., and 1A-44, F.A.C.)

2. Since the actual resources are so poorly known, the potential impact of the managing agency's activities on historic archaeological sites may not be immediately apparent. Special field survey for such sites may be required to identify the potential endangerment as a result of particular management or permitting activities. The Division may perform surveys, as its resources permit, to aid the planning of other state agencies in their management activities, but outside archaeological consultants may have to be retained by the managing agency. This would be especially necessary in the cases of activities contemplating ground disturbance over large areas and unexpected occurrences. It should be noted, however, that in most instances Division staff's knowledge of known and expected site distribution is such that actual field surveys may not be necessary, and the project may be reviewed by submitting a project location map (preferably a 7.5 minute U.S.G.S. Quadrangle map or portion thereof) and project descriptive data, including detailed construction plans. To avoid delays, Division staff should be contacted to discuss specific project documentation review needs.

3. In the case of known significant sites, which may be affected by proposed project activities, the managing agency will generally be expected to alter proposed management or development plans, as necessary, or else make special provisions to minimize or mitigate damage to such sites.

4. If in the course of management activities, or as a result of development or the permitting of dredge activities (see 403.918(2)(6)a, F.S.), it is determined that valuable historic or archaeological sites will be damaged or destroyed, the Division reserves the right, pursuant to 267.061(1)(b), F.S., to require salvage measures to mitigate the destructive impact of such activities to such sites. Such salvage measures would be accomplished before the Division would grant permission for destruction of the affected site areas. The funding needed to implement salvage measures would be the responsibility of the managing agency planning the site destructive activity. Mitigation of historic structures at a minimum involves the preparation of measured drawings and documentary photographs. Mitigation of archaeological resources involves the excavation, analysis and reporting of the project findings and must be planned to occur sufficiently in advance to avoid project construction delays. If these services are to be contracted by the state agency, the selected consultant will need to obtain an Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research (see 267.12, F.S. and Rules 1A-32 and 1A-46 F.A.C.).

5. For the near future, excavation of non-endangered (i.e., sites not being lost to erosion or development) archaeological sites is discouraged. There are many endangered sites in Florida (on both private and public lands) in need of excavation because of the threat of development or other factors. Those within state-owned or

controlled lands should be left undisturbed for the present - with particular attention devoted to preventing site looting by "treasure hunters". On the other hand, the archaeological and historic survey of these tracts is encouraged in order to build an inventory of the resources present, and to assess their scientific research potential and historic or architectural significance.

6. The cooperation of land managers in reporting sites to the Division that their field personnel may discover is encouraged. The Division will help inform field personnel from other resource managing agencies about the characteristics and appearance of sites. The Division has initiated a cultural resource management training program to help accomplish this. Upon request the Division will also provide to other agencies archaeological and historical summaries of the known and potentially occurring resources so that information may be incorporated into management plans and public awareness programs (See Management Implementation).

7. Any discovery of instances of looting or unauthorized destruction of sites must be reported to the agent for the Board of Trustees of the Internal Improvement Trust Fund and the Division so that appropriate action may be initiated. When human burial sites are involved, the provisions of 872.02 and 872.05, F. S. and Rule 1A-44, F.A.C., as applicable, must also be followed. Any state agent with law enforcement authority observing individuals or groups clearly and incontrovertibly vandalizing, looting or destroying archaeological or historic sites within state-owned or controlled lands without demonstrable permission from the Division will make arrests and detain those individuals or groups under the provisions of 267.13, 901.15, and 901.21, F.S., and related statutory authority pertaining to such illegal activities on state-owned or controlled lands. County Sheriffs' officers are urged to assist in efforts to stop and/or prevent site looting and destruction.

In addition to the above management policy for archaeological and historic sites on state-owned land, special attention shall be given to those properties listed in the *National Register of Historic Places* and other significant buildings. The Division recommends that the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (Revised 1990) be followed for such sites.

The following general standards apply to all treatments undertaken on historically significant properties.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (see *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* [Revised 1990]).

Division of Historical Resources staff are available for technical assistance for any of the above listed topics. It is encouraged that such assistance be sought as early as possible in the project planning.

D. <u>MANAGEMENT IMPLEMENTATION</u>

As noted earlier, 253.034(4), F.S., states that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites..." The following guidelines should help to fulfill that requirement.

1. All land managing agencies should contact the Division and send U.S.G.S. 7.5 minute quadrangle maps outlining the boundaries of their various properties.

2. The Division will in turn identify site locations on those maps and provide descriptions for known archaeological and historical sites to the managing agency.

3. Further, the Division may also identify on the maps areas of high archaeological and historic site location probability within the subject tract. These are only probability zones, and sites may be found outside of these areas. Therefore, actual ground inspections of project areas may still be necessary.

4. The Division will send archaeological field recording forms and historic structure field recording forms to representatives of the agency to facilitate the recording of information on such resources.

5. Land managers will update information on recorded sites and properties.

6. Land managers will supply the Division with new information as it becomes available on previously unrecorded sites that their staff locate. The following details the kind of information the Division wishes to obtain for any new sites or structures which the land managers may report:

   A. Historic Sites

      (1) Type of structure (dwelling, church, factory, etc.).

      (2) Known or estimated age or construction date for each structure and addition.

      (3) Location of building (identify location on a map of the property, and building placement, i.e., detached, row, etc.).

      (4) General Characteristics: (include photographs if possible) overall shape of plan (rectangle, "L" "T" "H" "U", etc.); number of stories; number of vertical divisions of bays; construction materials (brick, frame, stone, etc.); wall finish (kind of bond, coursing, shingle, etc.); roof shape.

(5) Specific features including location, number and appearance of:

(a) Important decorative elements;
(b) Interior features contributing to the character of the building;
(c) Number, type, and location of outbuildings, as well as date(s) of construction;
(d) Notation if property has been moved;
(e) Notation of known alterations to building.

B. Archaeological Sites

(1) Site location (written narrative and mapped location).
(2) Cultural affiliation and period.
(3) Site type (midden, burial mound, artifact scatter, building rubble, etc.)
(4) Threats to site (deterioration, vandalism, etc.).
(5) Site size (acreage, square meters, etc.).
(6) Artifacts observed on ground surface (pottery, bone, glass, etc.).
(7) Description of surrounding environment.

7. No land disturbing activities should be undertaken in areas of known archaeological or historic sites or areas of high site probability without prior review by the Division early in the project planning.

8. Ground disturbing activities may proceed elsewhere but land managers should stop disturbance in the immediate vicinity of artifact finds and notify the Division if previously unknown archaeological or historic remains are uncovered. The provisions of Chapter 872, F.S., must be followed when human remains are encountered.

9. Excavation and collection of archaeological and historic sites on state lands without a permit from the Division is a violation of state law and shall be reported to a law enforcement officer. The use of metal detectors to search for historic artifacts shall be prohibited on state lands except when authorized in a 1A-32, F.A.C., research permit from the Division.

10. Interpretation and visitation which will increase public understanding and enjoyment of archaeological and historic sites without site destruction or vandalism is strongly encouraged.

11. Development of interpretive programs including trails, signage, kiosks, and exhibits is encouraged and should be coordinated with the Division.

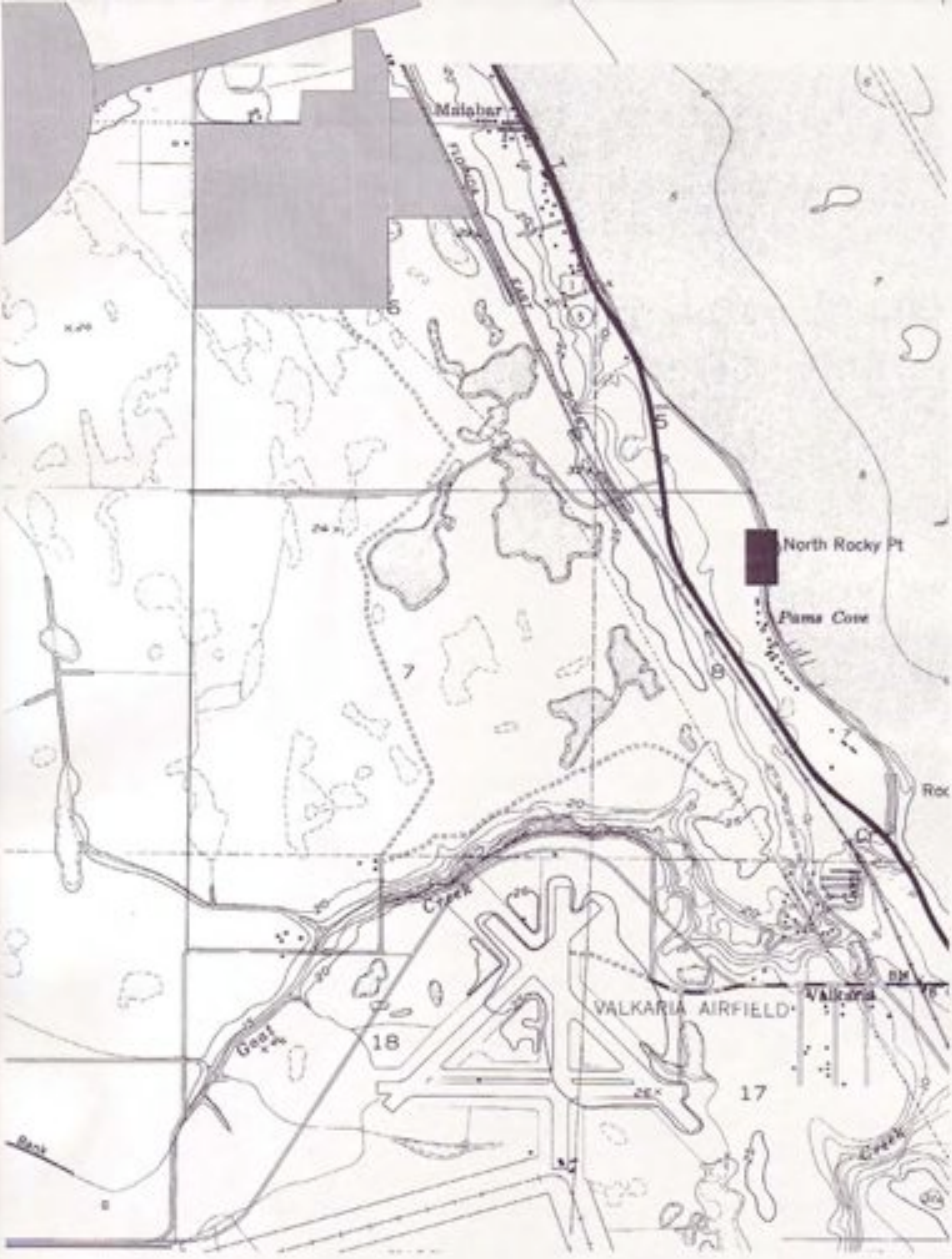
12. Artifacts found or collected on state lands are by law the property of the Division. Land managers shall contact the Division whenever such material is found so that arrangements may be made for recording and conservation. This material, if taken to Tallahassee, can be returned for public display on a long term loan.

E. ADMINISTERING AGENCY

Questions relating to the treatment of archaeological and historic resources on state lands may be directed to:

Susan M. Harp
Historic Preservation Planner
Telephone (850) 245-6333
Suncom 205-6333
FAX (850) 245-6437

Compliance Review Section
Bureau of Historic Preservation
Division of Historical Resources
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250


Malabar
North Rocky Pt
Pams Cove
Rox
Creek
Goat
VALKARIA AIRFIELD
Valkaria
18
17
7
8
Creek

Appendix K:
Jordan Boulevard Easement

ORV 014 PAK 402

Warranty Deed

This Indenture, Made this thirty first day of January, A.D. 19 66,

BETWEEN JORDAN DAVIDSON, a single man, Individually, and as Trustee

of the County of Dade, in the State of Florida, party of the first part, and

COUNTY OF BREVARD

of the County of Brevard, in the State of Florida, party of the second part,

WITNESSETH, That the said party of the first part, for and in consideration of the sum of Dollars,

to him in hand paid by the party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said party of the second part, his successors and assigns, forever, the following described land, situate, lying and being in the County of Brevard and State of Florida, to-wit: A strip of land 104 feet in width in sections 5, 6, 7 and 8, Township 29 South, Range 38 East, Brevard County, Florida; said 104 foot strip of land lying 52 feet each side of the following specifically described center-line:

Beginning at a 2 inch iron pipe marking the Southeast corner of said section 6, bear S 89° 47' 30" E along the south line of said section 5, a distance of 2537.76 feet to the point of curvature of a curve to the left, having a central angle of 33° 42' 17" and a radius of 1132.40 feet;

Thence, Northeasterly along the arc of said curve, a distance of 891.61 feet to the point of tangency;

Thence, N 54° 30' 13" E, a distance of 760.51 feet to the Point of Curvature of a curve to the right, having a central angle of 86° 30' 33" and a radius of 409.26 feet;

Thence, Northeasterly and then Southeasterly, along the arc of said curve, a distance of 618.30 feet to the Point of Tangency;

Thence, S 38° 39' 14" E, a distance of 818.78 feet to a concrete monument, marking the Southeast corner of said Section 6 and the Point of Curvature of a curve to the left, having a central angle of 84° 45' 17" and a radius of 290.84 feet;

Thence, Southeasterly and then Northeasterly, along the arc of said curve, a distance of 430.22 feet to the Point of Tangency;

Thence, N 36° 35' 29" E, at right angles to the Right-of-Way of The Florida East Coast Railway, a distance of 369.77 feet to the Point of Curvature of a curve to the right having a central angle of 23° 39' 26" and a radius of 938.24 feet;

Thence, Northeasterly, along the arc of said curve, a distance of 387.62 feet to the Point of Tangency; said Point of Tangency being on the Westerly right-of-way line of United States Highway Number One and the end of the herein specifically described line.

And the said party of the first part does hereby fully covenant with the said party of the second part, his successors and assigns, that he is lawfully seized of said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said party of the first part has hereunto set his hand and seal the day and year above written.

Signed, sealed and delivered in presence of us:

Jordan Davidson, a single man, Individually, and as Trustee

BOOK 014 PAGE 403

ORANGE COUNTY FLA.
VERIFIED
546139
1966 NOV 22 AM 11 39

CLERK CIRCUIT COURT

State of Florida,
County of Brevard

I Hereby Certify that on this day personally appeared before me, an officer duly authorized to administer oaths and take acknowledgments, JORDAN DAVIDSON, a single man, Individually and as Trustee to me well known to be the person described in and who executed the foregoing Deed, and acknowledged before me that he executed the same freely and voluntarily for the purpose therein expressed.

Witness my hand and official seal at Cocoa in the County of Brevard and State of Florida, this 21st day of November, A.D. 19 66.

My commission expires

Notary Public, State of Florida

Warranty Deed

FROM

TO

Dated

STATE OF FLORIDA
DOCUMENTARY TAX
0.30

546139

[illegible] 1386 [illegible] 287

RESOLUTION

WHEREAS, Brevard County did, on the 31st day of March, 1966, accept title to a strip of land in Sections 5, 6, 7, and 8, Township 29 South, Range 38 East, recorded in Official Record Book 914, Page 102, of the Public Records of Brevard County, Florida, and

WHEREAS, the transfer of title recorded in said O. R. B. 914, Page 102, did not specify the intent of usage by Brevard County, and

WHEREAS, all evidence of record indicates that said strip of land was and is to be used for the purpose of constructing a road for the use by the General Public,

NOW, THEREFORE, BE IT RESOLVED by the Brevard County Board of Commissioners that those lands described and recorded in O. R. B. 914, Page 101, was accepted by Brevard County for a Public Road right-of-way.

DONE, ORDERED, and ADOPTED, in regular session, this 1st day of November, A. D., 1973.

LEE WENNER, CHAIRMAN
BOARD OF COUNTY COMMISSIONERS
BREVARD COUNTY, FLORIDA

ATTEST:

CURTIS R. BARNES, CLERK

SEAL

VERIFIED

Appendix L:
Jordan Scrub Sanctuary Timber Assessment

BREVARD COUNTY ENVIRONMENTALLY ENDANGERED LANDS PROGRAM PROPERTIES

TIMBER MANAGEMENT ASSESSMENT

Prepared by James Roberts
State Lands Silviculturist
and
John T. Marshall
Region 5, Other Public Lands Forester
Florida Division of Forestry
February 2007

Purpose

This document is intended to fulfill the timber assessment requirements for public lands in the state of Florida as required in section 253.036, Florida Statutes. It is being written for portions of the Brevard County Environmentally Endangered Lands (EEL) Program properties in Brevard County, Florida. The goal of this assessment is to evaluate the potential and feasibility of utilizing silvicultural techniques to help managers with their timber resources being managed for conservation and revenue generating purposes on the Brevard County EEL Program's property.

Forest Resource Background and History

The Brevard County Environmentally Endangered Lands Program was established in 1990 after citizens voted to increase their taxes to help purchase and maintain environmentally sensitive lands within the county. The initial length of this taxing period is for 20 years. Matching funds have been provided by the State of Florida through the Preservation 2000 and Florida Forever Acts for these types of purchases as well. The Brevard EEL Program also partners with other conservation and preservation organizations such as the St. Johns River Water Management District and the North American Wetlands Conservation Act to help with the purchase and management of sensitive lands.

Approximately 18,000 acres of environmentally sensitive lands across the county have been purchased since this time and are being managed under the EEL Program. This assessment will only cover a portion of these lands in the inland portion of the county. The properties included are the Helen and Allan Cruickshank Sanctuary, Malabar Scrub, Jordan Scrub, Micco Scrub, Grant Flatwoods Sanctuaries, Turkey Creek Sanctuary, Pine Island Conservation Area, Enchanted Forest Sanctuary, Dicerandra Scrub Sanctuary, North Buck Lake Scrub Sanctuary, Indian Mound Station Sanctuary, South Lake Conservation Area and Tico Scrub Sanctuary.

The Valkaria Scrub Sanctuary is also included and currently comprises approximately 7394 acres. This area was subdivided and sold as residential type lots. The EEL Program is in the acquisition phase on this property and due to the numerous landowners, the property is not all contiguous at this time. Present and future goals include purchasing as many of the lots as possible to secure this property into one manageable tract. It is difficult to discern the boundaries on the ground since no physical lot boundaries are evident. Only with the use of GIS is it possible to overlay boundary lines with aerial photography and distinguish community types and property boundaries. The management options offered in this assessment may not be feasible at this time on all the property of the sanctuary. When more acquisitions are made and larger, more manageable blocks are created and defined, these options should prove valuable to the EEL Program resource managers.

Development in this part of the state is steadily increasing. These properties were purchased to protect and preserve environmentally sensitive lands and the plants and animals associated with them. They also provide educational opportunities and recreation.

Past land uses of much of the property in Brevard County has included naval stores operations and cattle grazing. The EEL Program properties have probably included both at some time in the past. Prescribed burning was an important part of both. Forage production and brush control was dependent on frequent fires. Historically, fire has always been part of the Florida ecosystem and many communities are dependant on fire to maintain their diversity. Lightning caused, low intensity fires burned frequently. Small shrubs and many hardwood species were kept from overtaking the pine forest because of frequent fires. Burning techniques have been revised over the years and more growing season burns are attempted as weather permits. If heavy fuel loads are allowed to accumulate, winter or cool season fuel reduction burns should be done first to minimize timber mortality before growing season burns are attempted again.

Management Goals and Objectives

The Brevard County EEL Program lands are acquired in an attempt to help preserve and restore diminishing natural communities. Their mission statement and primary management objective is to protect and preserve the biological diversity on these lands. These tracts are called sanctuaries and provide for conservation of natural resources, education, and recreation.

Ecological Trends

Human disturbances such as drainage, urbanization, and land use changes such as mining and crop production have occurred throughout the state causing the degradation or loss of many natural communities. Frequent fire that helped create and maintain many natural communities in Florida has been altered or removed. This has allowed an increase of both endemic and non-endemic plants to these once fire dependant communities. Timber management can be useful aid in the restoration of these sites by eliminating the

overcrowding of naturally occurring trees and removing the species that are not typically found in these community types. By removing this additional fuel load, prescribed fire can be reintroduced safely to mimic the natural fire cycles that once existed. Timber management can also help develop multi-aged structures in stands that help maintain dynamic ecosystems. Opening the overstory will also increase the amount of sunlight reaching the forest floor, aiding in natural groundcover recovery and maintenance.

Timber Resources and Management Options

The majority of the timber resources on the EEL Program property that would benefit from silvicultural treatments exist in the pine flatwoods. Mesic, wet, and scrubby flatwoods all fall into this general category. Slash and longleaf pine are the dominant overstory species that currently exist with an understory of palmetto, gallberry, wiregrass, scrub oaks and other understory grasses and woody plants.

General Timber Management Guidelines

Basal Area (BA) is a common measurement used to identify stand density. The basal area is measured on a tree four and one half feet above the ground, identified as diameter at breast height or DBH, and is expressed in square feet ($ft.^2$). The BA is the total measure of the cross sectional area in square feet of the stems of trees occupying space on one acre of land. Fewer large diameter trees are needed to equal the same BA as many small diameter trees. For example, 509 evenly distributed six inch diameter trees over one acre has a BA of 100 $ft.^2$. Only 127 twelve inch diameter trees, evenly spaced on one acre, are needed to create the same 100 $ft.^2$ of BA.

Basal area can also be correlated to crown coverage. Basal areas around 50 square feet per acre of mature, healthy trees can help prescribed burning efforts by increasing the fuel dispersion and loads with needle cast. This needle cast should allow prescribed fires to carry across areas while still allowing adequate sunlight to reach the forest floor to maintain native grasses.

Current Timber Resources

The Brevard County EEL Program Lands encompass many thousands of acres. Identifying and defining individual stands and treatments for each stand is not the goal of this assessment. Detailed stand descriptions would be necessary to help plan for long term timber management on these sites. While timber management is not the primary goal for these properties, many of the silvicultural recommendations can be implemented along with preservation activities to maintain or restore these areas to their once natural condition.

The following are general descriptions and management recommendations. The diversity of the EEL Programs land and the management objectives for each will be the ultimate guiding principal. Areas with populations of gopher tortoises can sustain higher BA's than those being managed for scrub jays but less than some of the wetter flatwoods sites.

Natural Pine:
All of these areas have been harvested or have burned hot enough to reduce the standing timber to an unmerchantable volume. They all appear to have supported stands of large timber at one time, but the lack of any forestry type management in the past has converted these forest to fire-climax communities composed mainly of saw-palmetto that are fire hazards. The one exception is the North Buck Lake Scrub Sanctuary that has a fair stand of young sand pine. Saw-palmetto responds to fire by resprouting immediately and can return to preburn levels in as little as 1 year. This makes it very hard to regenerate a stand of trees because the seedlings have a hard time getting through the saw palmetto and if they do they stand a good chance burning up because of the volume of fuel produced by the saw-palmetto. If a forest community is desired, burning alone will not restore these communities to their original forested state. Saw-palmetto flourishes **in** full sun light but is also somewhat tolerant of shade**.** A complete overstory of trees creates shade and slows the growth. Shade with prescribe fire seems to keep it in check but some mechanical removal will be required to get the trees established.

Planted Pine:
There are 205 acres of planted pine in the Micco Scrub Sanctuary. It appears to be north Florida slash pine planted in an area that should have been planted in south Florida slash or longleaf. It was an old field, pasture, or had some heavy site preparation before it was planted as there is very little saw palmetto in the understory. The rows of trees were planted with about 8 feet between rows which is very close at today's standards. When the basal area reaches 100 this area should be thinned. This could be done by removing every other row, every third row, or every third row and thinning in between, depending on the desired remaining stand.

In under stocked areas, longleaf pine can be planted if sites are suitable. This species is more adapted to fire and is longer lived than the other southern pines. A "rule of thumb" is that if palmetto is dominant, longleaf can be planted. If gallberry dominates, then it is probably too wet for longleaf and slash pine should be planted.

Access

Adequate access is a necessity for land management activities. Law enforcement patrol, prescribed burning activities and fire suppression are but a few of the activities that benefit from improved road access. Most of the EEL Program's land is adjacent to a paved road of some sort. Internal access to some of the properties is limited by weather. Low areas become very wet and high areas become excessively dry depending on the season. Parts of the road system would need improvements to facilitate movement of heavy equipment for restoration or maintenance purposes. Widening current roads, installing culverts or low water crossings, or capping soft roads with shell, rock or clay are some of the possibilities for needed upgrades.

Economics

It is difficult to predict with any certainty the amount of revenue that can be derived through timber harvests on the Brevard County Environmentally Endangered Lands. Brevard County is approximately 100 miles to the nearest major wood processing facilities in Palatka, Florida. Market conditions, harvest prescriptions, product mix, logging conditions and distance to manufacturing facilities are factors in stumpage prices. Even though economics are hard to predict, they should be analyzed before making any management decisions.

Summary

There are approximately 10,000 acres in the EEL Program with current or future potential for timber management. Exclusive timber management would not meet the objectives for which this property was purchased, however, silviculture is a valuable tool to help restore and maintain native ecosystems, increase diversity and improve wildlife habitat. It is possible to manage nearly all of the sandhill, mesic flatwood, scrubby flatwood, and ruderal areas in order to retain their natural appearance and produce revenue from timber harvests. Currently a market does exist for timber products in the Brevard County area.

Road access within would need to be improved in some areas to allow for silvicultural activities**.** Public roads and highways to the park need to be monitored for weight restrictions on bridges.

Appendix M:
Public Comments

DATE	MEETING
11-10-05	Recreation & Education Advisory Committee
06-30-06	Selection of Management Committee/Advisory Group
	Advisory Group Comments/Public
10-17-06	Selection of Management Committee
10-23-06	Removed from Board of County Commissioners
04-24-07	Board of County Commissioners

ENVIRONMENTALLY ENDANGERED LANDS (EEL) PROGRAM
RECREATION AND EDUCATION ADVISORY COMMITTEE
November 10, 2005
Attendance List

RECREATION AND EDUCATION ADVISORY COMMITTEE MEMBERS

Murray Hann
Karen Hill
Eve Owens
Beverly Pinyerd
Paul Saia
Steven Webster
Dorn Whitmore

SUB-COMMITTEE MEMBERS

Barbara Meyer, Brevard County, Bicycle/Pedestrian Trail Program Coordinator
Paul Schmalzer, Selection and Management Committee

EEL PROGRAM STAFF

Laura Clark
Mike Knight
Brad Manley
Chris O'Hara

GUESTS

Susan Gosselin, Brevard County Natural Resources Management Office
Gayle Hoffman, Brevard County Natural Resources Management Office

ENVIRONMENTALLY ENDANGERED LANDS PROGRAM
RECREATION AND EDUCATION ADVISORY COMMITTEE
November 10, 2005
Meeting Minutes

CALL TO ORDER:

Murray Hann called the meeting to order at 6:05 PM. He introduced Karen Hill as a new member of the REAC Committee. Mike Knight introduced Brad Manley, the new Public Access/Volunteer Coordinator for the EEL Program. Brad will be directly involved with the REAC Committee meetings in the future.

PUBLIC COMMENT:

None.

MINUTES:

No minutes were presented for approval.

OLD BUSINESS:

Facility Construction Costs

Mike provided cost information on a maintenance facility that was recently completed by Parks and Recreation in the south end of the county.

The contract at the Barrier Island Center in the South Beaches is being rebid as a result of significant estimated cost increases.

The group discussed the importance of getting the best value for the money while providing space for both management needs and educational opportunities at each of the EEL Program facilities.

NEW BUSINESS:

Jordan Scrub Proposed Public Access Plans

The EEL Program is in the process of preparing the Management Plan for the Jordan Scrub Sanctuary which is located in the Town of Malabar. A Public Access Plan is required as part of the Management Plan. Mike and Chris O'Hara, Land Manager for the South Region, provided information on a proposed Public Access Plan for the sanctuary and requested comments from the REAC Committee.

The plans for this Category 2 site will primarily be used for equestrian trails, hiking, and off road bicycling. The proposed plans include parking for 8 – 10 vehicles, continued use of most of the existing trails, construction of 3 boardwalks and a possible observation deck.

During the discussion, the following was noted:

- There is ATV use in some of the areas which is incompatible with the EEL Program passive recreation goals.
- Significant portions of the site are very wet.
- Possible additional land acquisitions, future land development in the area, and impacts to wildlife will be considered when final trails and observation platform locations are determined.

MOTION ONE:
Eve Owens moved to approve the conceptual public access plan as described by staff for the Jordan Scrub Sanctuary; and, to request that the EEL Program consider using a section of trail within the Sanctuary for an unimproved access connection to the South Brevard Linear Trail. This connection is to be on a temporary basis until a permanent, more suitable location can be found, and with the understanding that the connection will not involve stabilized surfaces.

Beverly Pinyerd seconded the motion.

The motion carried unanimously.

Additional Discussion

EEL Staff will arrange for an opportunity for REAC Committee members to visit some of the sanctuaries so that they can learn more about the areas.

NEXT MEETING:

The next meeting will be held December 8, 2005. Location to be determined.

ADJOURNED:

The meeting was adjourned at 8:08 PM.

SUMMARY OF MEETING MOTIONS:

- Motion to approve the conceptual public access plan as described by staff for the Jordan Scrub Sanctuary; and, to request the that EEL Program consider using a section of trail within the Sanctuary for an unimproved access connection to the South Brevard Linear Trail. This connection is to be on a temporary basis until a permanent, more suitable location can be found, and with the understanding that the connection will not involve stabilized surfaces.

ENVIRONMENTALLY ENDANGERED LANDS (EEL) PROGRAM
SELECTION & MANAGEMENT COMMITTEE (SMC)
June 30, 2006
Attendance List
DRAFT

SELECTION & MANAGEMENT COMMITTEE MEMBERS

Dave Breininger
Mark Bush
Ron Hight
Ross Hinkle
Paul Schmalzer

EEL PROGRAM STAFF

Sandy Carnival
Laura Clark
David Drake
Mike Knight
Katrina Morrell
Chris O'Hara
Brad Manley

THE NATURE CONSERVANCY

Danika Feodoroff
Keith Fountain

MALABAR** AND **JORDAN SCRUB SANCTUARIES MANAGEMENT PLAN ADVISORY GROUP

Anne Birch, The Nature Conservancy
Bob Day, St. Johns River Water Management District
Steve Rivet, Malabar Town Council

GUESTS

Susan Gosselin, Natural Resources Management Office
Liz Lackovich, District 1 Commission Office
Hank Saunders, Citizen
Amy Tidd, Citizen

ENVIRONMENTALLY ENDANGERED LANDS PROGRAM
SELECTION AND MANAGEMENT COMMITTEE
June 30, 2006
Meeting Minutes
DRAFT

CALL TO ORDER:

Ross Hinkle called the meeting to order at 1:04 PM.

OLD BUSINESS:

Draft Management Plan Reviews

Chris O'Hara provided an overview of the Management Plan approval process and explained that the draft management plans for the Malabar Scrub and Jordan Scrub Sanctuaries would be discussed at today's meeting. He introduced Steve Rivet from the Malabar Town Council, Bob Day from the St. Johns River Water Management District, and Anne Birch, from The Nature Conservancy, who were on the Malabar and Jordan Scrub Sanctuaries Management Plan Advisory Group.

Information on both plans has been provided to the appropriate municipalities, the Management Plan Advisory Group, local stakeholders, the Selection and Management Committee (SMC), and the general public. EEL Program and Parks & Recreation Department personnel have worked closely to add the Draft Management Plans to the EEL Web Site. Comments received will be documented, and incorporated into the draft plan when possible.

Chris outlined the Management Plan Process:

- Public comments incorporated into public access plan (option) (public meeting)
- Presented to the Recreation and Education Advisory Committee (pubic meeting)
- Draft management plan reviewed by the Selection and Management Committee (SMC) (internal review)
- 30 day public review
- Presented to SMC for recommendation and Advisory Committee review (pubic meeting)
- Submitted to Board of County Commissioners for approval (public meeting)
- Submitted to State Acquisition and Restoration Council (ARC) for final approve (public meeting, Tallahassee)

Malabar Scrub Sanctuary Draft Management Plan Review

Chris O'Hara provided information on the draft Management Plan for the Malabar Scrub Sanctuary. This is a Category I site proposed for public access and development of active environmental education/land management centers.

- **Public Access Plans**

  Tract 1 - East

  - Provide almost 6 miles of multi-use trails
  - ¾ mile ADA trail
  - Closing small sections of trail to protect existing gopher tortoise burrows and provide greater emphasis of maintenance on remaining trails
  - Parking and boardwalks are in place
  - One additional footbridge

Tract 2 - West

- One additional multi-use trail
- Trail improvements
- 1.1 miles of mountain bike and hiker only trail
- Possible ½ mile of additional mountain bike and hiker only trail

❖ **South Region Facilities (Management and Education Centers)**

- Tentative plans are for the Management and Education facilities to be two separate buildings. Consideration will be given to alternatives that cause the least possible amount of impact to the natural resources

❖ **Restoration**

Tract 1 - East

- Established sanctuary will require a small amount of restoration and routine maintenance

Tract 2 – West

- 1943 aerial photograph shows the previously open landscape which has become overgrown due to fire suppression
- Purchased recently, this area requires a large restoration effort to restore the habitat of a core conservation area that will be managed for Scrub-Jays and other scrub species

Comments:

- ❖ SMC comments were forwarded to Chris prior to the meeting.
- ❖ Anne Birch also forwarded written comments prior to the meeting. She requested that they be distributed to the SMC and other Management Plan Advisory Group members.
- ❖ Steve Rivet stated he felt that the plans did not include specific information regarding plans for fencing or prescribed fire; on how to address concerns regarding illegal uses like hunting and ATV activity; and that they did not include timeframes for accomplishing work.
- ❖ Steve stated the fuel that has accumulated on the sites was a strong concern for residents bordering the sanctuary.
- ❖ Anne suggested that the Management Plans be used as a means for recording the acquisition history, the management history, and relationships with state and local municipalities at each site.
- ❖ Anne spoke of the importance of adequate parking.
- ❖ Bob Day suggested that EEL staff consider including comments and other specific information that had been requested as appendices to the Management Plan.
- ❖ Ron Hight asked if there were plans to provide equipment fueling at the sanctuary.

Chris explained that although specific information was not always included in the Management Plans, that fencing plans were included with the firebreak information and that it was anticipated that the fencing for the Malabar West section would be going out to bid in a few weeks. A plan for prescribed fire is currently included in the appendices. Additional information will be included in the Plan's appendices or as amendments.

Chris explained that the EEL Program was working closely with the Agriculture/Marine Officer at the Sheriff's Office and with Fish and Wildlife Conservation Officers related to illegal activity at the sites. Steve said that the Town of Malabar would be willing to discuss funding in that area.

There are no plans to provide equipment fueling capabilities at the Malabar Scrub Sanctuary.

Chris explained that a restoration plan for the western portion was going to be written and that the public would be notified and given an opportunity to provide comment as the restored area will be quite different from the way the site looks now.

David Drake explained that EEL Program and Parks & Recreation staff were currently working on a land acquisition database that would track acquisition and management plan activity and he invited anyone with experience with this type of database to provide suggestions.

Jordan Scrub Sanctuary Draft Management Plan Review

Chris provided information on the Jordan Scrub Sanctuary Draft Management Plan. This is a Category II site with minimal capital development.

- **Public Access Plans**
  - No facilities will be constructed at this site
  - Trail use
  - Small boardwalks, possibly an overlook tower or observation deck in the future

- **Security**
  - Illegal use – ATV activity, illegal dumping
  - Fence installed in 2004 has required approximately $5,000 in repairs
  - Sheriff's Dept. and FWC law enforcement now getting involved
  - Habitat in some areas is recovering as a result of the decrease in illegal use, especially in the wetland areas

- **Restoration**
    - Some restoration complete
    - Additional restoration to reduce the overall height of the sand pine and the scrub will be partially funded through mitigation
    - This sanctuary will be managed for Scrub-Jays and other scrub species

- **Parking**
    - Parking needs and provisions being clarified
    - Possible Memo Of Understanding with Town of Malabar

Mike stated the next step would be for Chris to review all comments, incorporate those that were appropriate, and re-distribute the Draft Management Plan back to the Advisory Committee Members and the SMC with the hope of coming back to the SMC for approval or recommendation at their next meeting.

Ross recommended that staff document the comments and responses as part of the Management Plan, perhaps in the appendix. Mike confirmed that comments would be documented, whether they were incorporated into the Plan, or not.

Steve indicated he felt communication between the EEL Program and the Town of Malabar was improving but needed a great deal of work. He said that in his opinion, the biggest irritant they had was that Malabar was not consulted regarding possible EEL Program acquisitions, and that they did not have veto over the acquisition of large amounts of land. He suggested the EEL Program consider establishing a maximum amount of land to be acquired within the Town boundaries and stop when acquisition reached that point. He suggested continuing communication efforts and stated that in the long term, the Program and the Town should be working together, and that he thinks they can.

Comment from Bob Day Advisory Board Member (via e-mail)

Chris:

The following are a few comments on the above referenced management plans. On the whole, these plans are well done and should serve as a good tool to guide future management of these properties. As both plans follow the same template, these comments apply to both plans.

As I mentioned last Friday, I would suggest providing references for items such as the soils descriptions, references to FEMA maps, and discussions of the ecosystems and vegetative communities present on the properties.

The colors on the lines on the elevation map are very similar, making it difficult to distinguish between them (a picky comment).

While Dave Breininger is certainly the pre-eminent authority in this area on scrub and scrub jays listing him as your sole authority for questions about management may be problematic in the future (What happens if Dave is not available?) Perhaps the solution is to add language to these sentences such as " or other persons with similar expertise in management of scrub communities and scrub jays."

To get at the comment about the lack of specificity in the overall management plans perhaps language could be added (my suggestion would be add something in the introduction to Section VI Management Action Plans). Perhaps the language could be something like this: "Presently many of the action plans are general in nature. More specific plans will be provided as individual strategies and actions are developed to meet the Sanctuary goals. As these individual plans are developed and approved, they will be added as an appendix to this plan" As an example, you could point out that the fire management plan is only generally discussed in the text of the management plan but a much more specific plan is found in the appendix. Adaptive management is another reason to have only general guidance in the overall management plan with specifics in individual plans which can be changed as needed.

thanks for the opportunity to review these plans. Please contact me at your convenience should you have questions.

********** **Robert Day Indian River Lagoon Program St Johns River Water Management District 525 Community College Parkway SE Palm Bay, Florida 32909**

E-mail: rday@sjrwmd.com Telephone: 321/984-4950 FAX: 321/984-4937 Toll-Free (Fl) 800/226-3747 Mobile: 321/863-0011 Web Site: http://www.sjrwmd.com
****

Advisory Group Member
Sent Via Email followed by hand delivery of Hard Copy with all handwritten comments on 6/30/06

TO: Chris O' Hara, EEL Program South Region Land Manager

FROM: Anne Birch, Indian River Lagoon Program Director
The Nature Conservancy

COPY: Mike Knight, EEL Program Manager

DATE: June 30, 2006

RE: Management Plan Reviews for the Malabar Scrub and Jordan Scrub Sanctuaries

Thank you very much for the opportunity to review the above referenced plans. Overall, the plans are comprehensive and well written. I have made several recommendations for modifications to each plan, presented in handwritten comments. Attached are my comments for the Jordan Scrub plan - my comments on the Malabar Scrub plan were provided on 6/27/06. Some of the comments are made in order to clarify facts while others are suggested in order to clarify/expand on a particular concept. The following is a summary of the major recommendations:

1. Recording the history and current conditions of a site is essential to making sound management decisions. Since there is typically no other document that provides a comprehensive summary of the knowledge of a site, management plans should serve this capacity and, therefore, be as inclusive as possible regarding the EEL Program's knowledge of the site, past ownership(s), past/present and future activities and relationships (both legal and otherwise) with municipality(s). This will help the public and subsequent land managers understand the site and present/past management decisions and ensure that the institutional knowledge is not lost with the departure of staff.
2. Provide date and location of acquisition files that contain the boundary survey and other related information. The acquisition information is a valuable tool to reference when determining management activities such as fencing etc.
3. Consider adding an appendix that lists all BoCC actions related to each site and update as future actions occur, again, to provide a comprehensive history of actions that will assist in land management decision making. One example is:
    - Agreement with the City of Palm Bay for development the trail along the north boundary of the Malabar Scrub Sanctuary to connect with Turkey Creek Sanctuary
4. Describe more fully the relationship between the State of Florida and the EEL Program regarding the acquisition and management of each sanctuary. Currently there is only a brief mention regarding the State's reimbursement of acquisition funds. For example, include information regarding the acquisition goals for the sites as a part of the Brevard Coastal Scrub Ecosystem Preservation 2000/Florida Forever project, state as the title holder, the lease agreement between the County and State for each site, process for approval of the management plan at the state level, etc.
5. Include a map showing and the location and relationship of each site within the context of the entire South Region. Indicate both proposed and acquired (identify all entities) conservation lands.
6. Include a map and short paragraph detailing the Optimal Management Boundary for each site. Suggest placing it under the section "Factors Influencing Management".
7. Provide more details on the maps to include identifying features such as roads that are named in the text
8. Ensure that the concept and location of Core Conservation Areas for each site are well defined as to definition of core conservation area per Sanctuary Management Manual, reason for depicting the location(s) and depiction of location(s) on a figure
9. Confirm that each figure and appendix are referenced in the text and that the figure immediately follows the page where it is first referenced.
10. Confirm that current zoning and land use are identified in each plan to include the processes that need to take place, if any, to change zoning to comply with county or municipal ordinances.
11. Omit subjective terms such as "drastic" that cannot be qualified.

12. Reference the floristic survey that was conducted for the Malabar Scrub Sanctuary by Nancy Coile of the Division of Plant Industry, provide the list of plants collected and the location where the specimens are housed.
13. Provide references of all biological surveys that have been conducted to include who conducted them and the date(s). This is the type of information that becomes lost if not recorded.
14. Exclude the subtitles "(Balkany) Lease Agreement #4263" and "Management Lease #4263" from the cover pages of the Jordan Scrub and Malabar Scrub Sanctuary plans, respectively. Add an inside cover page that recognizes the state and county partnership with a management plan compliance statement including lease information.
15. Ensure that the final date of adoption of the plan is located on the cover or inside cover of the plan.

I will attend the June 30th Selection & Management Committee to be available to answer any questions you may have regarding these comments. Again, thank you very much for the opportunity to be involved in this important process!

ENVIRONMENTALLY ENDANGERED LANDS (EEL) PROGRAM
SELECTION & MANAGEMENT COMMITTEE (SMC)
October 17, 2006
Attendance List

SELECTION & MANAGEMENT COMMITTEE MEMBERS
Dave Breininger
Ron Hight
Ross Hinkle
Randy Parkinson
Paul Schmalzer
Kim Zarillo

EEL PROGRAM STAFF
Jenny Ashbury
Sandy Carnival
Laura Clark
David Drake
Judy Gregoire
Mike Knight
Brad Manley
Ray Mojica
Katrina Morrell
Chris O'Hara

THE NATURE CONSERVANCY
Danika Feodoroff
Anne Birch

GUESTS
Susan Gosselin, Brevard County Natural Resources Management Office
William Riley, Citizen
Chris Riley, Citizen
Sean Lambert, Citizen

ENVIRONMENTALLY ENDANGERED LANDS (EEL) PROGRAM
SELECTION & MANAGEMENT COMMITTEE (SMC)
October 17, 2006
Meeting Minutes

CALL TO ORDER:
Ross Hinkle called the meeting to order at 1:02 PM.

PUBLIC COMMENT:
William Riley, spoke of his concerns regarding his inability to access his property through the Grant Flatwoods Sanctuary. The property was purchased under the EEL Program and subsequently transferred to the State for reimbursement. The Brevard County EEL Program is the managing entity under State Lease #4263. Currently, no legal access exists through the property and staff is working closely with Mr. Riley to address his concerns and ensure that he is in contact with the County Attorney's office, and the Division of State Lands.

MINUTES:
The September 26, 2006 minutes were presented for approval.

Mike Knight provided clarification regarding a few revisions that were made to the land acquisition priority maps that were originally distributed with the draft minutes including:

- Northern Map
  - Addition of Darryl White, John White, Taylor, Esposito, and Jeffreys properties to the northern border of Buck Lake Sanctuary.
  - Addition of eight properties as the southern expansion to the Northern Indian River Lagoon/Blueways Project.
  - Color changes on properties now removed from consideration for acquisition.
- Central Map
  - Addition of Boyd and DiChristopher properties in the Merritt Island Sykes Creek area.
  - Addition of Johnson property off Hall Road near Kaboord Sanctuary.
- Southern Map Beachside Map
  - Addition of Vistar/Hog Point, Betrock, and Hatcher properties.
  - Color changes on properties now removed from consideration for acquisition.

Paul Schmalzer noted the following:

- Mike's explanation of the changes to the maps had addressed his questions.
- Minutes
  - Page 2, REAC update: "stakeholder" is usually written as one word.
  - Page 7, North Buck Lake Additions: Include clarification that the depression marsh is adjacent to two of the properties owned by John White.

- Page 9, Cronin: Discussion included consideration of St. Johns River Water Management District as a potential partner regarding the Cronin property.

MOTION ONE:
Paul Schmalzer moved to approve the September 26, 2006 minutes as amended.
Randy Parkinson seconded the motion.
The motion carried unanimously.

ADMINISTRATIVE REVIEW:

The Administrative Review was reviewed.

Paul commented that the South Lake Conceptual Recreation Plan Public Meeting had gone very well.

Mike distributed booklets on invasive exotic plants that have been created as a jointly funded project between the EEL Program and Brevard County Natural Resources Management Office.

REAC Committee

Brad Manley reported that during the REAC Committee meeting on October 12th, Murray Hann was elected Chairman and Bob Champaigne was elected Vice-Chairman for the coming year.

Brad explained that Judy Gregoire, North Region Land Manager, recently presented information on the following sites to the REAC Committee who expressed support for the plans as presented:

- South Lake Conservation Area
  - Proposed access plan presented.
- Indian Mound Sanctuary
  - Mound and habitat restoration plan presented.
  - Request delay of public access until restoration is complete and readdress if additional property to the north is acquired.
- TICO Sanctuary
  - No recreation plan is proposed at this time due to the size and location of the three parcels.
  - Future plans will be dependent on acquisition of additional properties in the area.
  - For reconsideration in three years, unless additional property is acquired before that time.

A second field trip to EEL Program sites will be planned for the group in the near future.

Brad and Paul provided information on a suggestion from Dorn Whitmore regarding the possibility of vacating road rights of ways in some circumstances. Kim Zarillo clarified that the rights of ways would remain in the County's Comp Plan until removed.

REAC Committee members also reviewed a list of topics that would be scheduled for discussion in the future and determined that the next meeting should be held in February 2007, unless staff has items that will require input before then.

Ross commented that he thought the REAC committee was working well.

SMC REPORTS

Paul stated that during the Florida Native Plant Society Field Trip on October 14th, they observed a new, rare plant at Coconut Point Sanctuary in the South Beaches. *Tephrosia angustissima* var. *curtisii,* (common name Curtiss' hoary pea) is listed as Endangered by the State of Florida. This is the first confirmed occurrence of this plant on an EEL Sanctuary.

Ross stated he has been involved in a multi-county project entitled *"How Should We Grow?"* related to planned growth and development, and that protection of the environment was receiving a high priority in the discussions. Sandy Carnival, Support Services Manager, confirmed that EEL Program staff is also participating in the project. Additional information can be obtained on the project at http://www.myregion.org.

STAFF REPORTS:

Volunteer / Public Access

Brad explained that he realized that the SMC received updates on volunteer activities during the Land Manager's regional presentations and stated that he would focus mainly on new information. He provided information on the Volunteer Banquet held last August. Ross asked for clarification of the number of volunteer hours that had been completed. Staff will provide additional information on volunteer hours in the future.

Education

Katrina Morrell gave a presentation on educational activities for the last four months including:

- The EEL Program is involved in the Space Coast Science Educators Alliance (SCSEA) and participated in the Exemplary Science Teachers Awards Dinner.
- The SCSEA held a secondary science teachers workshop where Katrina participated along with Sandy Edmondson and Grace Foley, the EEL Program's two Naturalists, in presenting information about the EEL Program and what it can offer school programs to approximately 100 of Brevard County's secondary level education science teachers.
- Katrina also participated in an elementary teachers science project workshop attended by approximately 120 elementary level science teachers.
- The EEL Program's traveling display has been updated and presented at many recent events, a few of which include:
    - Teacher open house at Brevard Zoo – 100 teachers attending.
    - Erna Nixon Park's Annual Crackerfest – 600 people attending.
    - EEL Program presentation on Bats at North Brevard Library – 150 people attending.
- Information on recent events in several regions including the update of regional themes:
    - North: *"Connected lands provide a bridge for biodiversity".*
        - Study Trips to Enchanted Forest – 566 people attending.
        - Forest Fundays – average 20 people attending each month.
        - Advanced Guide Trainings – 11 people attending.
        - Friends Oyster Mat Program – 22 people attending.

- Central: *"Humans and nature have been forces of change throughout history".*
  - Satellite Beach marine summer camp field trip to PICA.
  - New trail signs at Cruickshank Sanctuary.
- South Beaches: *"From ocean to lagoon, all things are connected."*
  - Presentation to Sierra Club – 25 people attending.
  - National Public Lands Day volunteer event and hike – 12 people attending.
  - Updates on progress in the educational material for the Barrier Island Center.

❖ Eleven EEL staff members have signed up for Certified Interpretive Guide Training.

❖ EEL Program staff will chair a middle school science fair conference next year.

❖ The North Region K-12 curricula and interpretive is plan being developed to complement the FCAT requirements.

THE NATURE CONSERVANCY:

Danika Feodoroff reviewed The Nature Conservancy's October Report to the SMC.

OLD BUSINESS:

Vero Pittsburg Partners, LLC Property

This 41± acre property is located directly adjacent to the Enchanted Forest Sanctuary's north border. It is also adjacent on the eastern boundary to property planned for a facility expansion at Brevard County's W.W. James Park in Titusville. The September 21st site visit report was reviewed at the last SMC meeting when the property received a 1st Majority Vote. The Project Summary Report was reviewed. Vegetation is similar to that of the Forest. There is some disturbance with exotic species along a sand road that runs through the property, but it is in good shape overall. It is thought that acquisition of this property may be the last chance to expand the Forest boundaries. The Property is within the Brevard Coastal Scrub Ecosystem Project Boundaries and was designated as Highest Priority by the SMC.

MOTION TWO
Kim made a motion for a 2nd Majority Vote on the Vero Pittsburg Partners, LLC Property.
Paul seconded the motion.
The motion carried unanimously.

Additional Discussion

Kim and Paul asked for clarification of the *"Perceived Value Range"* section of the Property Summary.

Mike indicated as part of the Land Acquisition Manual appraisal procedures, staff must estimate a range of perceived land value in order to determine the number of appraisals that will be required to meet the County & State appraisal rules.

Staff will provide this clarification as part of the report.

Vero Beach Estates LLC Property

This site is 197± acres is located in the Micco area. It is south of Micco Road and north of the St. Sebastian River Preserve. The September 22, 2006 site visit report was reviewed at the last SMC meeting when the property received a 1st Majority Vote. The Project Summary Report was reviewed. The property is outside of the Brevard Coastal Scrub Ecosystem (BCSE) Project area and will become part of the boundary amendment application when it is submitted. It was designated as Highest Priority by the SMC.

MOTION THREE
Paul moved for a 2nd Majority Vote on the Vero Beach Estates LLC Property.
Randy Parkinson seconded the motion.
The motion carried unanimously.

Smit Property

This 26± acre property is located near Grant, directly adjacent to the Valkaria Scrub Sanctuary with private land to the south. The August 29th site visit report was reviewed at the last meeting when the property received a 1st Majority Vote. The Property Summary Report was reviewed.

Mike reviewed information from the last meeting and provided an update regarding the possibility of the County's Parks and Recreation Department (P&R) acting as a funding partner. The following was noted:

- The property is primarily improved pasture.
- The property contains several structures and is currently operated as an equestrian center.
- Several of the existing buildings could be used as the maintenance facility for the EEL Program's South Region.
- The property could be used as a buffer to protect the Valkaria Scrub Sanctuary, and has potential for restoration.
- Purchase of the property could help facilitate the proposed property exchange with the Florida Inland Navigational District (FIND), which would protect the best of the remaining high quality scrub left in Brevard County.
- P&R has expressed interest in a possible joint use of the property, but at this time is unable to confirm they could be a funding partner. There is no current time-table that would determine if, or when, P&R could confirm their ability to partner on this site.
- The site could provide a trailhead for equestrian use at the Valkaria Scrub Sanctuary.
- Development of the property could have a negative impact on the Valkaria Scrub Sanctuary and complicate the FIND exchange.
- The property is within the Brevard Coastal Scrub Ecosystem Boundaries and was determined to be High Priority by the SMC.
- A 2nd majority vote at this time would allow The Nature Conservancy to negotiate towards a contract that would then come back to the SMC for review before going to the Board of County Commissioners.

MOTION FOUR
Dave Breininger moved for a 2nd Majority Vote on the Smith Property.
Ron Hight seconded the motion.
The motion carried unanimously.

North Buck Lake Additions (fka Continental Acreage)
Taylor, John White (2), Darryl White (2), Espinoza, Jeffreys Properties

These properties are individual, small lots directly north of the Buck Lake Sanctuary, excluding one Darryl White property, which is 9± acres. The August 15th site visit reports were reviewed at the last meeting when the properties received a 1st Majority Vote. It was noted that the Darryl White parcels #3 and #4 were not included in the previous vote. The Project Summary Reports were reviewed. The two John White properties being considered contain portions of a wetland that are partially located on existing EEL Property. These properties are not within the Brevard Coastal Scrub Project, but could be added as part of the future boundary amendment.

MOTION FIVE
Paul moved for a 2nd Majority Vote on the Taylor, John White (2), Darryl White (2), Espinoza, and Jeffreys properties.
Ron seconded the motion.
The motion carried unanimously.

PICA Indian Mound (Jenkins Property)

This item was tabled until a future meeting.

Cronin Properties 1&2

The multi-parcel Cronin property was reviewed by the SMC at the last meeting, but a vote was not taken at that time as the SMC requested clarification regarding the possibility of funding partners. Staff informed the group that the Department of Transportation (DOT) and the St. Johns River Water Management District (SJRWMD) have been contacted regarding possible partnerships on these sites. The SJRWMD is interested in partnering in the possible acquisition of this property, but the DOT is not.

Kim reported that she and EEL Staff met with the owners to provide information and discuss possible methods for putting the land in conservation.

It was determined that the portion which lies east of the intersection of SR 528 and Hwy 407, is currently used for grazing cattle, met the EEL Program criteria for acquisition.

MOTION SIX
Randy moved to decline a 1st Majority Vote on all Cronin properties, excluding the parcel east of the intersection of SR 528 and Hwy. 407.
Additional discussion
Ron Hight stated he needed to abstain from voting on any Cronin property due to his involvement with management of property in the adjacent area through the US Fish and Wildlife Service.
Kim Zarillo seconded the motion.
The motion carried unanimously.

MOTION SEVEN
Paul moved for a 1st Majority Vote on the Cronin property located east of the intersection of SR 528 and Hwy 407 contingent on confirmation that the owner would be a willing seller for just this section before appraisals were ordered.
Kim seconded the motion.
The motion carried unanimously.

Management Plan Approvals

South Region - Malabar Scrub Sanctuary / Jordan Scrub Sanctuary

Chris O'Hara provided a brief review of revisions that were made to this region's management plans after review by the SMC.

MOTION EIGHT
Randy made a motion to approve the Malabar Scrub Sanctuary and Jordan Scrub Sanctuary Management Plans as presented by staff.
Ron seconded the motion.
The motion carried unanimously.

Staff will present the plans to the Board for their approval as the next step in the management plan process.

South Area Mega-Parcel Acquisition Priorities

Mike reviewed acquisition progress in the South Area Mega-Parcel region and outlined the current rational for acquisition priority. The SMC expressed support for the plan as presented.

NEW BUSINESS:

Management Plan Approvals

South Beach Region - Maritime Hammock / Hardwood Hammock / Ocean Ridge / Washburn Cove / Hog Point (Interim)

Ray Mojica provided a brief review of revisions that were made to this region's management plans after review by the SMC.

MOTION NINE
Randy Parkinson moved to approve the Maritime Hammock, Hardwood Hammock, Ocean Ridge, Washburn Cove, and Hog Point (Interim) Management Plans as presented by staff.
Ron Hight seconded the motion.
The motion carried unanimously.

Staff will present the plans to the Board for their approval as the next step in the management plan process.

Indian River Lagoon Management Plan – Anne Birch

Anne Birch from The Nature Conservancy presented information regarding the current ownership and responsibility for management of conservation lands along the Indian River Lagoon. She explained that in order for the State to consider acquisition of additional lands, a managing entity must be determined for each area. The Brevard County Mosquito Control Department has indicated they will assist in the management of some of the wetland areas.

MOTION TEN
Randy moved for the EEL Program to accept responsibility of Lead Managing Entity for the Indian River Lagoon parcels as presented by Anne Birch, if they are acquired by the State for conservation.
Kim Zarillo seconded the motion.
The motion carried unanimously.

Nail Property

Mike provided information on the 850± acre Nail property near Palm Bay. It is outside the existing BCSE but within the newly determined highest priority boundary. The property is currently used for cattle grazing with some sod farming and could help establish connectivity between the St. Sebastian Buffer Preserver and the EEL Program's Micco Sanctuary, which are larger conservation areas. It was determined that a site visit to the area would be scheduled.

MOTION ELEVEN
Randy moved for a 1st Majority Vote on the Nail Property.
Ron seconded the motion
The motion carried unanimously.

Staff will schedule a site visit.

Public Comment:

Shawn Lambert, citizen, spoke of his concerns regarding access at the Pine Island Conservation Area in the Central Region. Staff will assist him in getting his questions answered.

NEXT MEETING:

Staff will poll the SMC to determine a date for the next meeting.

ADJOURNED:

The meeting was adjourned at 4:15.

SUMMARY OF MEETING MOTIONS:

- Motion to approve the September 26, 2006 minutes as amended.
- Motion to approve a 2nd Majority Vote on the Vero Pittsburg Partners, LLC Property.
- Motion to approve 2nd Majority Vote on the Vero Beach Estates LLC Property.
- Motion to approve a 2nd Majority Vote on the Smit Property.
- Motion to approve a 2nd Majority Vote on the Taylor, John White, (2), Darryl White (2), Espinoza, and Jeffreys properties.
- Motion to decline a 1st Majority Vote on all Cronin properties, excluding the parcel east of the intersection of SR 528 and Hwy 407.
- Motion for a 1st Majority Vote on the Cronin property located east of the intersection of SR 528 and Hwy 407, contingent on confirmation that the owner would be a willing seller for just this section, before appraisals were ordered.
- Motion to approve the Malabar Scrub Sanctuary and Jordan Scrub Sanctuary Management Plans as presented by staff.

- Motion to approve the Maritime Hammock, Hardwood Hammock, Ocean Ridge, Washburn Cove, and Hog Point (Interim) Management Plans as presented by staff.
- Motion for the EEL Program to accept responsibility of Lead managing Entity for the Indian River Lagoon parcels as presented by Anne Birch, if they are acquired by the State for conservation.
- Motion for a 1st Majority Vote on the Nail Property.

Section of Minutes from the Brevard County Board of County Commissioners meeting on April 24, 2007.

APPROVAL, RE: JORDAN SCRUB SANCTUARY MANAGEMENT PLAN

Motion by Commissioner Voltz, seconded by Commissioner Bolin, to approve the Jordan Scrub Sanctuary Management Plan under the Environmentally Endangered Lands Program. Motion carried and ordered unanimously.

Appendix N:
Acquisition History

PROPERTY NAME	DATE ACQUIRED	CONTRACT PRICE	EEL SHARE	FUNDS REIMBURSED TO EEL OR PARTNERS	PARCEL IDS	ACRES	LOCATION	ENVIRONMENTAL SIGNIFICANCE	NOTES
			Brevard Coastal Scrub Ecosystem CARL/FF Project (formerly Scrub Jay Refugia CARL Project)						
[illegible] Centre LP	Feb-94	$1,300,000.00	$650,000.00	$650,000.00	30-37-10-00-500	1,023.27	Mims	Scrubby flatwoods, long-leaf, wet prairie,	Approved by CARL as a boundary amendment
					30-37-11-00-500			cypress dome	to the Scrub Jay Refugia CARL Project
					30-37-14-00-250			scrub jays occur within site &	
					30-37-15-00-1			adjacent areas, gopher tortoise population &	Received reimbursement on 7/00
					30-37-14-00-500				
					30-37-15-00-500				
								4 listed plant sp.	
Bellamy	Sept. 97	$1,414,728.00	$707,364.00	$707,364.00	29-38-06-00-501	304.42	Malabar	Scrub habitat and associated species	[illegible]
					29-38-07-00-250			evergreen hardwood - called [illegible] scrub	[illegible]
					29-38-07-00-2				
Malabar Scrub					28-37-36-00-2				
Denton [illegible]	Mar-03	$800,000.00	$400,000.00	$200,000.00	28-37-36-00-250	80.50	Malabar	Oak scrub, scrubby flatwoods,	Received reimb. on [illegible]
[illegible]	Jul-03	$1,404,200.00	$704,267.00	$700,147.40		280.45	Malabar	sand pine scrub, wetlands, mesic flatwoods	Received reimb. on [illegible]
								Threatened & endangered species such as	
								scrub jays, gopher tortoise, scrub lizard	
[illegible] Heritage	Jan-04	$510,000.00	$255,000.00	$255,000.00	28-37-26-00-9	21.07	Malabar		Received reimb. on [illegible]
[illegible]	Jan-04	$105,000.00	$52,500.00	$52,500.00	28-37-26-00-500	20.08	Malabar	closed October 1994	Received reimb. on [illegible]
									First acquired by TNC from RTC
									& held for purchase by the EEL Program
TICO [illegible]	Apr-94	$790,000.00	$790,000.00	$0.00		52.23	Titusville	Scrub habitat and associated species	1st acquisition within the TICO Core [illegible]
									of the Scrub Jay Refugia CARL Project
Rockledge									
[illegible]	Feb-95	$852,000.00	$421,000.00	$421,000.00	25-36-22-00-1	50.65	Rockledge	Scrub habitat and associated species	1st acquisitions within the Rockledge [illegible]
[illegible]	Jan-95	$1,182,000.00	$591,000.00	$591,000.00	25-36-22-00-8	89.21	Rockledge	Scrub habitat and associated species	of the Scrub Jay Refugia CARL Project
									Received reimb. [illegible]
[illegible]	Dec-01	$400,619.00	$200,309.50	$200,309.50	22-35-27-BC-41	44.90	Titusville	Protects the [illegible] scrub mint	Extends protected area
					22-35-27-BC-42				of the Titusville wellfield
									Received a $100,[illegible] reimbursement [illegible]
MCP America, LLC	Aug-05	$2,875,742.77	$2,875,742.77		30-38-18-00-1	1,046.[illegible]	S. Brevard	Protects scrub and wetlands	Adjacent to Micco Scrub Sanctuary
					30-38-27-00-500				
[illegible]	Jul-01	$1,875,000.00	$935,000.00	$935,000.00	30-38-07-00-1	1,403.90	S. Brevard		Reimbursed March 27, 2002
					30-38-05-00-1				
					30-38-06-00-250				
					30-37-01-00-1				
Farm & Grove	Feb-02	$1,354,000.00	$1,354,000.00			540.33	S. Brevard	Protects scrub and wetlands	Phase 1
Edward C. Tieng Land Tr.	Feb-02	$168,000.00	$168,000.00			56.88	S. Brevard	Protects scrub and wetlands	Phase 1
Edward C. Tieng	Feb-02	$97,000.00	$97,000.00			25.09	S. Brevard	Protects scrub and wetlands	Phase 1
[illegible]	Feb-02	$152,000.00	$152,000.00			26.03	S. Brevard	Protects scrub and wetlands	Phase 1
Tieng 4 LLC	Oct-02	$27,767.50	$27,767.50			8.61	S. Brevard	Protects scrub and wetlands	Phase 2
Farm & Grove	Oct-02	$65,271.02	$65,271.02			20.41	S. Brevard	Protects scrub and wetlands	Phase 2
Tieng	Oct-02	$14,000.00	$14,000.00			4.03	S. Brevard	Protects scrub and wetlands	Phase 2
[illegible]	Dec-02	$215,000.00	$115,500.00	$94,500.00	25-36-22-00-758	8.53	Rockledge	Protects scrub	1st joint state closing
[illegible] Investments	Apr-03	$2,400,000.00	$2,400,000.00		28-37-35-00-500	121.74	Malabar	Protects scrub and turkey creek watershed	
[illegible] Invest. - OGT	Oct-03	$300,000.00	$150,000.00	$150,000.00	28-37-35-00-7	16.00	Palm Bay	Protects scrub and turkey creek watershed	Joint closing
National Heritage Foundation	Dec-03	$447,435.50	$440,435.50		28-37-35-00-6	30.00	Malabar	Protects scrub and turkey creek watershed	
[illegible]	Dec-03	$75,000.00	$0.00	$75,000.00		1.73	Rockledge	Protects scrub	State acquired 100% with no EEL [illegible]
PAGE TOTAL		$19,221,860.50	$11,885,549.40	$5,104,113.90		4,275.00			

BREVARD County
BOARD OF COUNTY COMMISSIONERS

FLORIDA'S SPACE COAST

SANDY CRAWFORD, Clerk to the Board, 700 Park Avenue, Titusville, Florida 32780
BERNADETTE S. TALBERT, Deputy Clerk (407) 264-5240

April 23, 1997

MEMORANDUM

TO: Dr. Duane DeFreese, EEL Program Coordinator

RE: Acquisition of Balkany Trust Property in Coastal Scrub Ecosystem CARL Project

The Board of County Commissioners, in regular session on April 22, 1997, executed Assignment of Option to Purchase for acquisition of 354.42± acres from Caron Balkany; and authorized County Finance to issue checks at closing. Enclosed are three fully-executed copies of the Assignment of Option to Purchase.

Your continued cooperation is greatly appreciated.

Sincerely yours,

BOARD OF COUNTY COMMISSIONERS
SANDY CRAWFORD, CLERK

Bernadette Talbert, Deputy Clerk

/sl

Encls. (3)

cc: Environmental Services Administrator
Finance

RECEIVED
APR 2 9 1997
NATURAL RESOURCES MGT.

Mtg Date:
04/22/97

AGENDA REPORT
BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS

AGENDA
Consent
VI.C.1

passed 4 to 1 - Voltz

SUBJECT: Environmentally Endangered Lands (EEL) Program
Acquisition of Balkany Trust property in Coastal Scrub Ecosystem CARL Project

DEPT./OFFICE: Office of Natural Resources Management - EEL Program
Contact: Duane De Freese, EEL Program Coordinator, at 633-2016: email eel@iu.net

Requested Action:

The EEL Selection Committee recommends that the Board of County Commissioners: 1. approve and authorize the Chairman to sign the Assignment of Option to Purchase; and 2. authorize County Finance to issue checks at closing.

Summary Explanation & Background:

The subject property is located in south Brevard County within the municipal boundary of the Town of Malabar. The property is 354.42± acres with 320.9± acres uplands and 33.49± acres jurisdictional wetlands. The property is a mosaic of natural communities, including xeric oak scrub, scrubby flatwoods, dry prairie, mesic flatwoods, and marsh/depression marsh. Ecologically, the property represents a significant acquisition site with high biological diversity, excellent natural resource quality and areas suitable for habitat restoration. This area represents an important sub-population center for the Florida Scrub Jay in southern Brevard County. The property is within dispersal distance of over 20 families of scrub jays. This acquisition within Coastal Scrub Ecosystem CARL Project provides a functional linkage to other scrub properties identified in the CARL Project boundaries.

Acquisition of this property complements plans by the Town of Malabar to create a greenway linking Turkey Creek Sanctuary in Palm Bay to the EEL Program Malabar Scrub Sanctuary (Florida Communities Trust Project) and extending a greenway south along Marie Street to Valkaria Road.

The property was negotiated by The Nature Conservancy land acquisition staff pursuant to a Contract with Brevard County for Land Acquisition and Management Services. The purchase price is $1,410,000 or $3,978 per gross acre. The purchase price was negotiated based on two separate ownerships within the Trust. The parcel zoned for residential was 325.66 acres and the parcels zoned for office/business was 28.56 acres. The Florida Division of State Lands, Bureau of Appraisal Review established the maximum value of the combined properties at $1,435,000 based on appraisals provided by W.H. Benson & Company and Tuttle, Armfield, and Wagner, Inc.). This is a CARL Project partnership acquisition with the Division of State Lands, therefore the EEL Program will receive a reimbursement of 50% of the purchase price from Preservation 2000 funds pursuant to existing Multi-Party Acquisition Agreements with the Florida Division of State Lands.

The County Attorney's Office and Risk Management reviewed the Option Agreements.

FISCAL IMPACTS: This decision expends $1,410,000 of EEL Program capital funds for land acquisitions (Fund 3770; Account 57122). There are no impacts to General Revenue Funds.

Exhibits Attached:

Assignment of Option, Option Agreement, Map of Property

County Administrator's Office	Department
Stephen Peffer	

BCC-149 (Rev. 1/93)

Board of County Commissioners

No. 420698

BREVARD COUNTY

08/07/97

[redacted]

$1,410,024.00

MARJORIE E WOLASKY, ESQ
TRUST ACCOUNT

BOARD OF COUNTY COMMISSIONERS
CONSOLIDATED FUND

SUNTRUST BANK, CENTRAL FLORIDA, N.A.

Copy

⑈420698⑈ ⑆063101153⑆6990215042838⑈

BOARD OF COUNTY COMMISSIONERS P.O. BOX 1496 TITUSVILLE, FL

420698 049606 NAME: MARJORIE E WOLASKY, ESQ
PO NUMBER ACCT PROJ - INVOICE DESC - CASE NUMBER

DATE: 08/07/97

PO NUMBER ACCT PROJ - INVOICE DESC - CASE NUMBER	NET AMOUNT
049606-01 LAND PURCHASE	$1,410,024.00
	$1,410,024.00

PLEASE DETACH AND RETAIN FOR YOUR RECORDS

ASSIGNMENT OF OPTION TO PURCHASE

For the consideration recited hereunder, THE NATURE CONSERVANCY, a District of Columbia nonprofit corporation, whose address is 222 S. Westmonte Drive, Suite 300, Altamonte Springs, FL 32714, as Assignor, hereby transfers and assigns to Brevard County, Florida, a political subdivision of the State of Florida (the "County"), whose address is c/o Environmentally Endangered Lands Program, Office of Natural Resources Management, 2725 Judge Fran Jamieson Way, Melbourne, FL 32940, its successors and assigns, as Assignee, all of its right, title and interest in that certain option to purchase between Caron Balkany, Trustee, Seller and Assignor, as Purchaser, which option agreement and all amendments thereto are attached hereto as Exhibit "A" and by reference made a part hereof (the "Option Agreement"), for the sale and purchase of the real property described in the Option Agreement (the "Property"), subject to terms and conditions thereof and hereby does remise, release and quit claim unto Assignee and its successors and assigns, all of its right, title and interest in and to the Property.

Assignor hereby authorizes and empowers Assignee, on its performance of all the above-mentioned terms and conditions to demand and receive of Seller the warranty deed covenanted to be given in the Option Agreement hereby assigned in the same manner and with the same effect as Assignor could have done had this Assignment not been made.

This Assignment is made pursuant to the Assignee's Environmentally Endangered Lands Program and the Contract for Land Acquisition and Management Services (the "Contract") between Assignor and Assignee and dated March 14, 1997. The consideration for this Assignment shall be payment by Assignee to Assignor according to the terms of said Contract.

TWO WITNESSES AS TO ASSIGNOR

Print Name: Teri Vetter

Print Name: Teresa Coccia

THE NATURE CONSERVANCY

By: _____
Robert L. Bendick, Jr.

Its: Regional Director

Attest:

By: _____
Assistant Secretary

(CORPORATE SEAL)

Date Executed: _____

ACCEPTANCE BY ASSIGNEE

Assignee hereby accepts the above Assignment of Option Agreement and agrees to perform all obligations to be performed by Assignor under the Option Agreement, according to the terms and conditions therein stated.

ATTEST:

By: _____
Clerk SANDY CRAWFORD

(Seal)

BREVARD COUNTY, FLORIDA
BY ITS BOARD OF COUNTY
COMMISSIONERS

By: _____
Chair SANDY O'BRIEN

AS APPROVED BY THE BOARD ON APRIL 22, 1997

Approved as to form and Legal
Sufficiency

Attorney: _____

Date Executed: _____

T:\LEGAL\RICH\BREVARD\BALKANY\ASSIGN.OPT\1697

STATE OF FLORIDA)

COUNTY OF SEMINOLE)

The foregoing instrument was acknowledged before me this 18th day of March 1997, by Robert L. Bendick, Jr. as Regional Director of The Nature Conservancy, a nonprofit District of Columbia corporation, on behalf of the corporation. He is personally known to me and did not take an oath.

[NOTARY SEAL
SEAL]

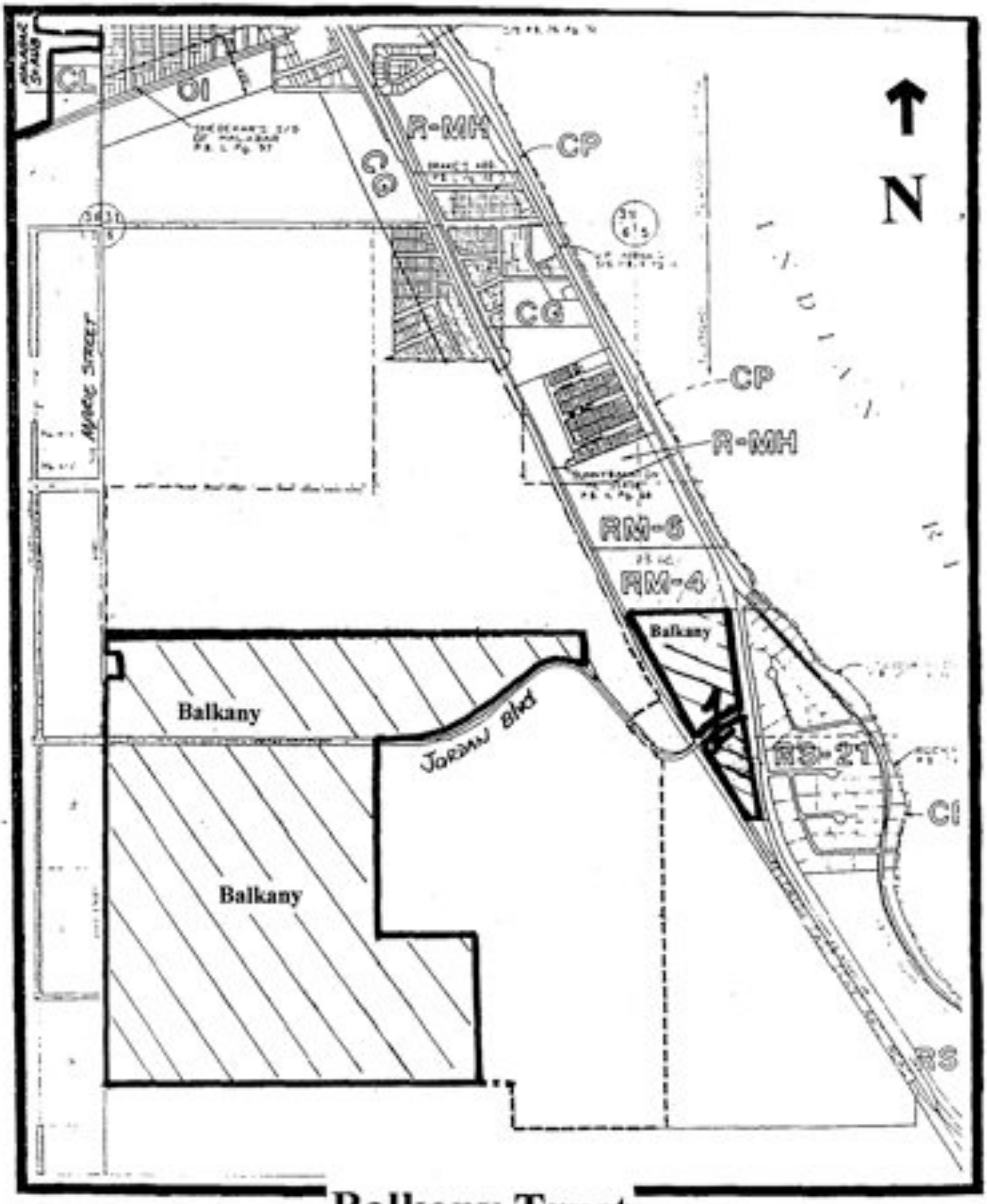
JEN VETTER
My Commission CC666492
Expires Sep. 25, 2000

Notary Public (sign)

Print _____

Commission Number: _____

My Commission Expires: _____



Balkany Trust

354.42 acres