

Sanctuary Management Manual



*Protecting
and Preserving
Biological Diversity
Through Responsible
Stewardship of
Brevard County's
Natural Resources*



Environmentally Endangered Lands Program Sanctuary Management Manual

For information pertaining to the contents of this manual, or to receive copies of the manual, or of any pages herein, please contact:

BREVARD COUNTY
ENVIRONMENTALLY ENDANGERED LANDS PROGRAM

Parks & Recreation Department
91 East Drive
Melbourne, Florida 32904

Phone: (321) 255-4466
Fax: (321) 255-4499
Website: www.eelbrevard.com

Adopted by the Board of County Commissioners on September 23, 1997

Revised and adopted by Resolution 2019-124(a) by the BOCC Chairman on March 5, 2020 as approved by the Board of County Commissioners on August 6, 2019.

The contents of this manual originally prepared by:

THE EEL SELECTION AND MANAGEMENT COMMITTEE
Dave Cox, Margaret Hames, Dr. C. Ross Hinkle, Dr. Randall Parkinson, and Dr. Paul Schmalzer

The EEL Staff
Dr. Duane De Freese & Anne Birch

Layout & design by Jan McLarty



Table of Contents

Preface	5
Environmentally Endangered Lands Sanctuary Management Manual.....	5
Chapter 1	5
Introduction to the Environmentally Endangered Lands Program	5
1.1 History and Authority	5
1.2. EEL Sanctuary Management Manual	7
Chapter 2.....	11
Principles of Conservation	11
2.1. EEL Program Vision	11
2.2. Background	11
2.3. Ecosystem Management	12
2.4. Principals of Conservation	13
Chapter 3.....	14
Management Plan Development	14
3.1. Overview – Planning for Management.....	14
3.2 Management Plan Format	16
Chapter 4	19
Implementing EEL Program Management	19
4.1 Concept – Managing the EEL Sanctuary Network.....	19
4.2 Levels of Use.....	21
4.3 Program Structure	25
4.4 Partnerships—Key to Success	32
Chapter 5.....	36
Funding Long Term Management.....	36
5.1 Background	36
5.2 Approach to Financial Stability	38
5.3 Financial Plan.....	38
Appendix.....	43
A.1 EEL Program Conservation Principles and Directives	43
A.2 EEL Management Plan Description	50
A.3 Nature Based Tourism: Balancing Public Use and Conservation	54

A.4 EEL Species Translocation Policy	58
Vision Statement.....	66

Figures

Figure 1: Sequence for Management Plan Development and Implementation.	16
Figure 2: Proposed Management Plan Format	18
Figure 3: Centers for Regional Management and Regional Management Area	20
Figure 4: Map of Proposed EEL Sanctuary Network.....	22
Figure 5: EEL Sanctuary Network Stewardship Responsibilities.....	26
Figure 6: EEL Program Organizational Structure.	28
Figure 7: Conceptual Graph of EEL Program Revenues and Projected Costs.	40

Tables

Table 1: EEL Program Financial Projections for Revenue, Expenditure, and Management.	41
---	----



Preface

Environmentally Endangered Lands Sanctuary Management Manual

The Environmentally Endangered Lands (EEL) Sanctuary Management Manual presents the guiding principles, policies, and procedures for conservation within the EEL Sanctuary Network.

The EEL Sanctuary Management Manual is presented to the Brevard County, Board of County Commissioners for their review and approval. Significant recommendations include:

1. Ten principles for conservation are provided as directives for conservation, public access, passive recreation, and environmental education with the EEL Sanctuary Network. EEL Program directives were authorized by Resolutions 90-245 and 2004-201 of the Board of County Commissioners of Brevard County, Florida, and approved by Brevard County voters in the 1990 & 2004 EEL Program Referenda.
2. A Vision for the EEL Program that provides for public access, passive recreation activities, and environmental education without detracting from the primary conservation goals of the program. The term “passive recreation” is defined to guide management decisions within the EEL Sanctuary Network.
3. Guidance for Management Plan development and implementation for each sanctuary site within the Network.
4. Categorization of each EEL Sanctuary within the Network based on resource vulnerability, public access, site location, extent of proposed sanctuary development and proposed levels of public use. The categories are:
 - a. Category 1 Sites – “Centers for Regional Management”;
 - b. Category 2 Sites – “Intermediate Use Sites”;
 - c. Category 3 Sites – “Primary Conservation and Research Sites”
5. Recommendations for an EEL Program management structure with projections for staff size, composition, and responsibilities.
6. Recommendation to rename the Selection Committee to the Selection and Management Committee.
7. Financial projections and a plan for long-term funding for EEL Sanctuary management.

Chapter 1

Introduction to the Environmentally Endangered Lands Program

1.1 History and Authority

The Environmentally Endangered Lands (EEL) Program was originally approved by Brevard County voters in a 1990 referendum. A second referendum was approved in 2004. The Program established a conceptual framework and funding mechanism to implement an EEL sanctuary network in Brevard County. Resolutions 90-245 and 2004-201 of the Board of County Commissioners of Brevard County, Florida authorized:

1990: ..." the issuance of bonds, in a principle amount not exceeding Fifty-five Million Dollars and No Cents (\$55,000,000.00), to finance the cost of acquiring, protecting and maintaining environmentally endangered lands and making improvements as appropriate for passive recreation and environmental education" ...

2004: ..."issue bonds to finance the acquisition, improvement and maintenance of environmentally endangered land and water areas for the protection of habitat, public open space, and water resources, and for providing passive recreational opportunities, provided the bonds do not exceed Sixty Million Dollars (\$60,000,000)" ...

The land acquisition program is implemented by the Brevard County Environmentally Endangered Lands Program as a voluntary, willing-seller program that does not regulate or restrict private land rights. The acquisition of environmentally sensitive lands represents:

1. an effective conservation tool to ensure that ecosystems, natural communities and species are protected for future generations;
2. a first step towards long-term protection of essential natural resources, open space, green space, wildlife corridors and maintenance of natural ecosystem functions;
3. a mechanism to enhance community, environmental, and economic values through strategic planning for balanced growth management, conservation and economic development;
4. an opportunity to establish a nature sanctuary network that provides passive recreation and environmental education programs to Brevard County residents and visitors.



The EEL Program has been administered since 1990 with three citizen committees and county staff. The *EEL Procedures Committee* is responsible for the procedures and processes provided in the Land Acquisition Manual. The *EEL Selection and Management Committee* is responsible for establishing scientific criteria for land

selection, creating the EEL Sanctuary Management Manual (provided herein), and providing technical oversight and assistance to develop site-specific management plans and implement responsible land stewardship practices. The EEL Recreation and Education Advisory Committee (REAC) is responsible for reviewing and providing input to staff and the SMC on passive recreation plans on EEL managed lands.

The *Land Acquisition Manual* and the *EEL Sanctuary Management Manual* provide the guiding principles, policies and procedures for the Brevard County Board of County Commissioners, EEL Program Staff, EEL Program Advisory Committees and inter-agency land acquisition and management partners.

1.2. EEL Sanctuary Management Manual

The *EEL Sanctuary Management Manual (SMM)* guides conservation and land stewardship decisions implemented by the Brevard County EEL Program. The manual details principles and directives for conservation, public access and environmental education within the EEL Sanctuary Network.

The EEL Selection and Management Committee and EEL Staff are responsible for the maintenance of the EEL Sanctuary Management Manual. EEL Staff will coordinate all manual issuance.

The SSM is a long-standing document for conservation principles in the EEL Program. While regular revisions are not anticipated, changes or revisions to the manual, as recommended by the EEL Selection and Management Committee or the Board of County Commissioners, must receive final approval from the Board of County Commissioners.

The policies and directives for land management and stewardship (as described herein) were developed by the EEL Selection and Management committee and EEL Program Staff. Post-acquisition implementation of the EEL Program shall focus on four broad program responsibilities described in the EEL Program referendum language and outlined below:



1.2.1. Land Conservation

Conservation is focused on the protection of Brevard’s outstanding biological diversity, natural communities, and rare threatened, endangered or endemic species. Long-term resource protection shall form the foundation for all decisions regarding public access and use on EEL sanctuary sites. The EEL Program shall maintain all EEL Sanctuaries as conservation areas with public access. Each EEL Program project represents a coordinated effort to establish a regional sanctuary network in Brevard County that complements the state and federal conservation network. EEL Program staff shall acquire and protect the lands proposed by the EEL Selection and Management Committee through the implementation of effective conservation practices, innovative partnerships and outside grants or contracts to extend EEL Program funds.

1.2.2. Capital Development and Sanctuary Maintenance

Site improvements shall be made, as needed, to provide property boundary protection, capital improvements for public use, enhanced site access, and restoration of disturbed natural communities. Site improvements shall be located and planned based on program objectives outlined in the SMM and in site-specific management plans, as approved by the Board of County Commissioners. Site design and capital improvements should contribute to environmental and cultural interpretation on-site. Long-term operations and maintenance are essential to achieve site protection and long-term stewardship goals. The SMM recommends a financial approach to ensure stable funding for the recurring costs of operations and management of the EEL sanctuary network.

1.2.3. Public Access and Passive Recreation

Finding a balance between public-use impacts and natural resource protection is a key challenge to implementing effective land protection and stewardship. The term “passive recreation” has a variety of definitions, which can be confusing to land managers and the general public. The term does not adequately address types of use, levels of use and synergistic impacts of multiple use. Therefore, there is a need to clarify a definition of “passive recreation” within the EEL Program.



As a general guideline for EEL Program management decisions, passive recreation is defined as:

“a recreation 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.”

The EEL Program shall provide a range of public use opportunities that are consistent with the conservation and protection goals of the voter-approved referendum. Public use of EEL sanctuary sites shall be consistent with the passive recreation definition provided above.

Public recreation uses such as hiking, nature observation, nature photography, canoeing, kayaking, bicycling, horseback riding, primitive camping, fishing, or hunting may be acceptable at selected sites after thorough site impact analyses. At all sanctuary sites, monitoring of natural resources and visitor impact analyses will be used to evaluate trends in resource quality and quality of visitor experiences.

Nature-based tourism represents an expanding market for Florida tourism. The rapid growth of nature-based tourism (or ecotourism) represents both an opportunity for enhanced conservation and a challenge to maintain natural resource quality with expanding public use.

1.2.4. Environmental Education

Environmental education contributes to public knowledge and awareness of the natural, historical and archaeological resource values of Brevard County. Implementation of the educational component of the EEL Program is essential to provide quality nature-based experiences for residents and visitors.

The EEL Program shall:

1. implement environmental education programs;
2. encourage other agencies to implement environmental education programs; and
3. form partnerships, through formal agreements as approved by the Board of County Commissioners, with existing environmental education programs to provide meaningful and effective environmental education on EEL sanctuary sites.



Environmental education programs that are developed and implemented within the EEL sanctuary network shall:

1. enhance public understanding and awareness of Brevard's rich natural resources;
2. enhance public understanding of conservation and sustainable development;
3. encourage public use of EEL Program sites;
4. consider special access needs of individuals, such as persons with physical disabilities and the elderly;
5. make education programs available to Brevard County schools, colleges, and universities;
6. encourage biological, geological, archaeological or other types of academic research on EEL sanctuary sites to better understand resource values, identify conservation needs and contribute to stewardship goals; and,
7. encourage and enhance environmental education and awareness through nature-based tourism in Brevard County.



Chapter 2

Principles of Conservation

2.1. EEL Program Vision

Vision Statement of the EEL Program

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. 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.

2.2. Background

Programs that focus on land acquisition for conservation must balance a unique blend of issues that include land acquisition, land stewardship, ecosystem management, biology, ecology, geology, economics, environmental education, community planning, public access and recreation. The necessary integration and coordination of these diverse issues represent a major challenge to endangered land acquisition programs responsible for long-term resource protection.

Each sanctuary or management area will have a site-specific Comprehensive Management Plan developed by EEL Staff and the Selection and Management Committee. The EEL Program will strive to maintain a regional approach to managing the EEL Sanctuary Network through the guidance provided in the SMM and through management partnerships with local, state, regional and national conservation agencies and private-sector conservation programs.



The EEL Program must plan for the long-term fiscal, scientific and management responsibilities of land stewardship to effectively implement the program vision. Implementation and funding of countywide EEL Program sanctuary management, as described herein, are considered essential priorities.

2.3. Ecosystem Management

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** – Inter-agency and private-sector partnerships are essential to manage and protect ecosystems. Natural resource management is complex and requires multi-disciplinary skills and experiences.
3. **Human Influences** – People are a part of nature. An important component of ecosystem management is recognizing the human roles and influences on ecosystem processes and patterns.
4. **Values** – Human values play a dominant role in setting ecosystem management goals. Resource management principles, goals, and objectives must be incorporated into the value system of our citizens.
5. **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.



Therefore, implementation of an effective ecosystem management strategy for Brevard County involves the integration of all aspects of the ecosystem including species, natural communities, ecosystem functions, long-term management, community socio-economics and human use of the sites.

The responsibilities for ecosystem management and conservation are complex. Land management issues, such as fire management, protection and restoration of natural hydrologic cycles, removal of invasive exotics, and monitoring of species populations must be integrated with human 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.

Implementation of effective ecosystem management requires a level of partnership, cooperation, and coordination that is unprecedented in Florida. Innovative partnerships among individual citizens, corporations, community groups, and governmental agencies at all levels is required.

2.4. Principals of Conservation

Acquiring, managing and using the resources within the EEL sanctuary network require adherence to the public mandate provided in the language of the 1990 and 2004 EEL Referenda. To ensure that the EEL Program meets the referendum directive and the program vision, as described above, the EEL Selection and Management Committee adheres to ten basic “Principles of Conservation”. These ten principles are the foundation for balancing management and public use issues with the responsibility of resource conservation.



The principles shall be used by the Brevard County Board of County Commissioners, EEL Program Staff, EEL program Advisory Committee, and EEL Program partners as

primary directives to guide decisions made in the implementation of the EEL Program. Policy makers and land managers must understand that decisions made today have long-term implications for the sustainable protection of natural resources. The EEL Program principles are based upon prudent scientific conservation concepts.

The Principles of Conservation are described in detail in **Appendix A1**. In summary, they are based upon the best effort to:

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 resources 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.

Chapter 3

Management Plan Development

3.1. Overview – Planning for Management

Successful conservation and stewardship of endangered lands is dependent on the level and quality of the management planning and implementation process. EEL Program staff (with support from other resources) will be responsible for development of site-specific management plans for each site or management unit within the EEL Sanctuary Network. The EEL Selection and Management Committee shall ensure that management plans reflect the conservation and public use principles outlined in **Chapter 2** and detailed in **Appendix A1**.

EEL Program staff are responsible for ensuring that the site-specific management plans are implemented in a responsible and timely fashion, as funds are available. Site-specific management plans shall establish a performance-based structure for management plan implementation that is consistent with the Brevard County budget and Capital Improvement Plan processes.

Once a property is acquired, the EEL Program staff should strive to develop an interim management plan within 90 days. Interim management plans will describe site resources, site location, dominant natural communities, resource vulnerability, immediate management needs (i.e., site security, garbage removal or endangered species protection) and provisions for public access.



Full Management Plans are to be prepared within one year of the acquisition of the essential management parcel(s) or within one year of being leased to a designated management agency. Management agencies may be government agencies, private not-for-profit conservation organizations or for-profit companies interested in managing all aspects or some aspects of a site through formal lease agreements with the Board of County Commissioners and/or the State of Florida.

Prior to presenting a Site Management Plan to the Board of County Commissioners, EEL staff will present the complete Plan with amendments and appendixes to the Selection and Management Committee (SMC) for final review and authorization to proceed to the Board. The plan should list, for informational purposes, all Recreation and Education Advisory Committee (REAC) recommendations, stakeholder input, and public comment. During the SMC review and discussion, the primary question to be answered is: Does the Site Management Plan meet the Program Objectives and needs and should the EEL SMC recommend that the BOCC approve the plan?

All Management Plans and Lease Agreements for EEL Program acquisitions shall be reviewed and adopted by the Board of County Commissioners. Management Plans for joint acquisitions with the St. Johns River Water Management District or the State of Florida will be developed pursuant to Florida Statutes.

Goals, strategies, and actions for implementation will be described in the Management Action Plan section of the plan. Sanctuary-specific management plans and actions must be adaptive to respond to changing conditions, expanding scientific knowledge and

evolving best management practices. Through ecological monitoring and visitor impact analyses, land managers will be able to modify the Management Plan, as approved by the Board of County Commissioners, to be responsive to changing resource conditions, new scientific knowledge, and visitor impacts.

FIGURE 1: Sequence for Management Plan Development and Implementation

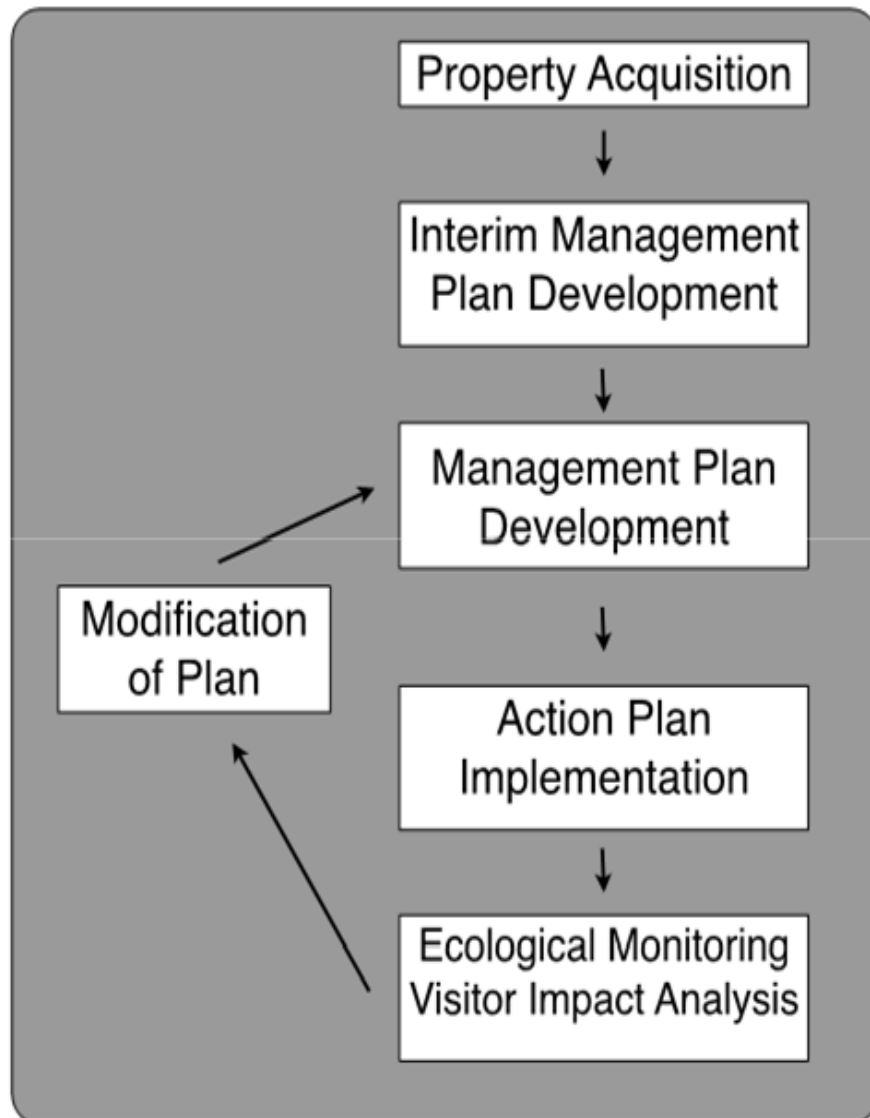


Figure 1: Sequence for Management Plan Development and Implementation.

3.2 Management Plan Format

Figure 2 provides a format outline to guide management plan development. Brief descriptions for each component of a Sanctuary Management Plan are provided in **Appendix A3**.

The format represents the general structure recommended for all management plans developed within the EEL Sanctuary Network. Management plans are expected to vary

from site to site as special environmental issues or different levels of public access and use are identified. The EEL Program Staff and Selection and Management Committee are responsible for management plan development and management plan scientific review, respectively.

Properties acquired by the EEL Program in partnership with the Conservation and Recreational Lands (CARL) Program and more recently the Florida Forever Program of the State of Florida have management policy statements, management prospecti pursuant to §259.032(9)(b), F.S., and identified lead and cooperating management agencies pursuant to §259.035(2)(a), F.S. CARL / Florida Forever projects managed by state agencies or local governments must qualify for state designated uses [§259.032(4), F.S.].

Conservation organizations approved by the State Land Management Advisory Council (LMAC) now known as the Acquisition and Restoration Council (ARC) may also manage CARL / Florida Forever projects via lease agreements with state agencies [§259.032(11)(a), F.S.] and are required to prepare management plans for review by the ARC and for approval by the Board of Trustees of the Internal Improvement Trust Fund, State of Florida [§259.032(10), F.S. and §253.034(4), F.S.].

Management plans must include detailed management, development, and restoration proposals as well as related cost information. The Department of Environmental Protection is authorized to issue “interim assignment letters” to management agencies for CARL / Florida Forever Projects prior to the execution of a formal lease approved by the Board of County Commissioners. ARC has established guidelines for acceptable management practices for managers to follow until management plans are approved.



Figure 2: Proposed Management Plan Format

PROPOSED MANAGEMENT PLAN FORMAT

- I. EXECUTIVE SUMMARY
- II. INTRODUCTION
- III. SITE DESCRIPTION AND LOCATION
- IV. NATURE RESOURCE DESCRIPTIONS
 - A. Physical Resources
 - a. Climate
 - b. Geology
 - c. Topography
 - d. Soils
 - e. Hydrology
 - B. Biological Resources
 - a. Ecosystem Function
 - b. Flora
 - c. Fauna
 - d. Special Concern Species (Endemic, Rare, Threatened or Endangered)
 - e. Biological Diversity
 - C. Cultural
 - a. Archaeological
 - b. Historical
 - c. Land-Use History
 - d. Public Interest
- V. FACTORS INFLUENCING MANAGEMENT
 - A. Natural Trends
 - B. Human-Induced Trends
 - C. External Influences
 - D. Legal Obligations and Constraints
 - E. Management Constraints
- VI. MANAGEMENT ACTION PLANS
 - A. Goals
 - B. Strategies
 - C. Actions
- VII. PROJECTED TIMETABLE FOR IMPLEMENTATION
- VIII. FINANCIAL CONSIDERATIONS
- IX. APPENDIX
- X. BIBLIOGRAPHY

Figure 2: Proposed Management Plan Format

Chapter 4

Implementing EEL Program Management

4.1 Concept – Managing the EEL Sanctuary Network

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 county-wide EEL Sanctuary Network, four management areas are defined within Brevard County. For each management area, a specific site is identified as a Center for Regional Management (Figure 3). These centers provide strategically located hubs for implementing the county-wide conservation, passive recreation and environmental education goals of the EEL Program.

Sanctuary sites within the county-wide network will be designated for differing levels of management and public use. The EEL Selection and Management Committee established general public-use criteria and applied the criteria to the evaluation of each site within the sanctuary network. As sites are acquired and analyzed for ecological attributes, a single category or multiple categories of uses may be assigned to each site. The general categories for public use proposed in this Chapter represent preliminary recommendations which may change as information on natural resources is compiled. Any change to a general category of use shall be approved by the Board of County Commissioners.

All requests to relocate plant and animal species to and from EEL managed lands must follow the Translocation Policy established by the EEL Selection and Management Committee. The policy was developed to establish a guide for considering third-party and internal requests for plant and animal species translocation to sanctuaries managed by the EEL Program. See **Appendix A.4**.

A primary goal of the EEL Program is to implement a holistic approach to natural resources management that enhances natural and aesthetic values for Brevard County residents and visitors. The proposed regional management structure provides opportunities for effective resource protection, sanctuary management and innovative inter-agency management partnerships. The regional EEL sanctuary network structure, as proposed herein, provides opportunities to manage the EEL sanctuary network without excessive capital improvements and with minimal permanent staff. A map of the acquired and proposed EEL Sanctuary Network is provided in Figure 3.

Figure 3: Centers for Regional Management and Regional Management Areas

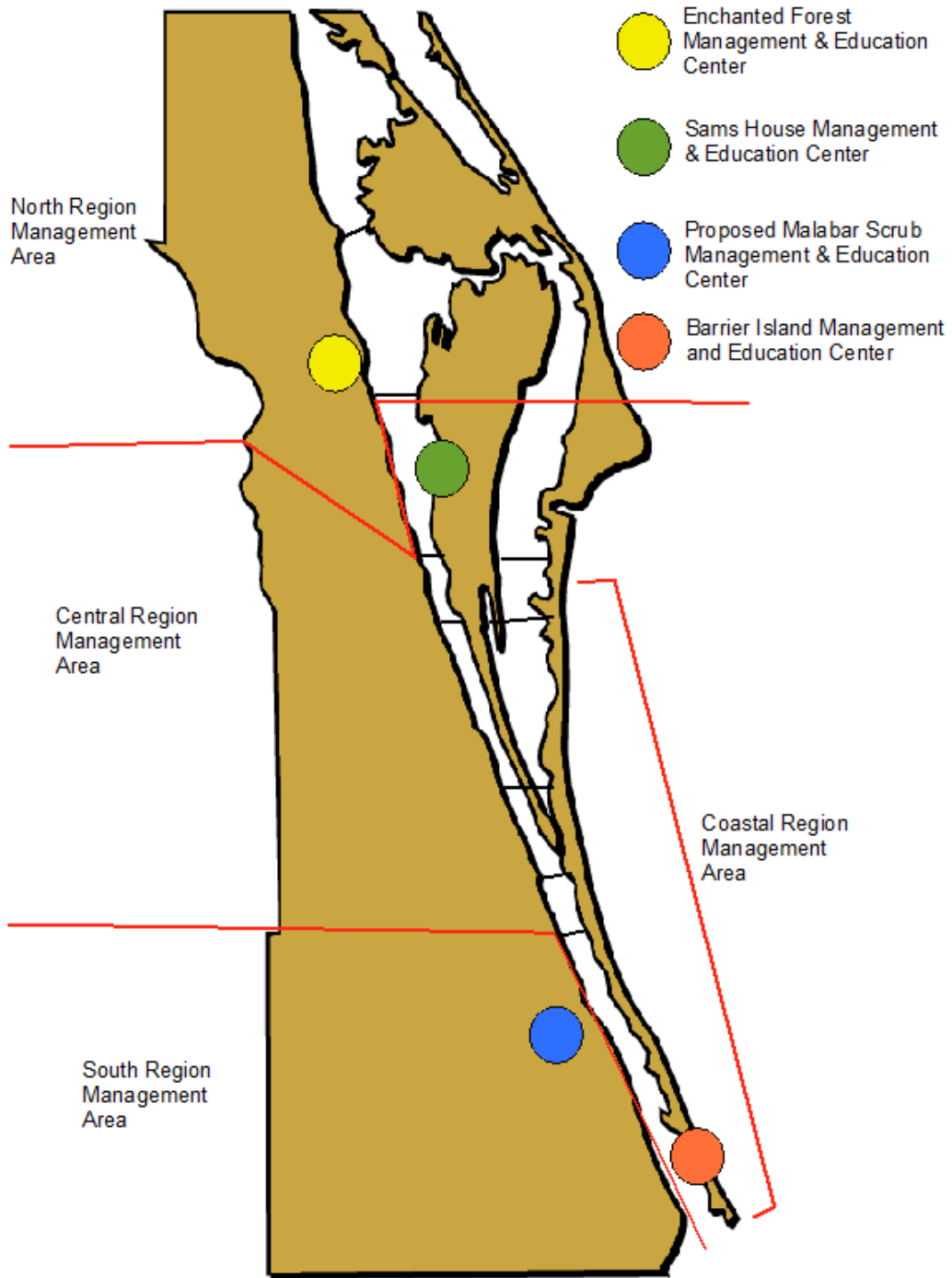


Figure 3: Centers for Regional Management and Regional Management Areas

Public-use levels are characterized by three descriptive categories that broadly define levels of public-use and sanctuary development. Site categorization may change based on opportunities and needs for provision of natural resource conservation and public use.

Sanctuary categories are defined at three levels of use:

1. Category 1 – Center for Regional Management;
2. Category 2 – Intermediate Use Area; and
3. Category 3 – Primary Conservation and Research Area.

A regional approach to EEL Program sanctuary management provides opportunities to streamline sanctuary management, enhance the implementation of ecosystem management principles and decrease the need to provide full facilities and full-time staff on every site within the EEL sanctuary network.

4.2 Levels of Use

4.2.1. Category 1 Sites – Centers for Regional Management

The EEL Selection and Management Committee proposes four Category 1 Sites. Each site was chosen for its accessibility, suitability for environmental education center development, proximity to residential areas of the county and marketability for capital program campaigns to secure financial support from the private sector, foundations and outside grants. Collectively, the sites represent excellent examples of Brevard's rich biological diversity and are geographically located to serve the entire county.

These sites are proposed for extensive public access and development of active environmental education/land management centers. Category 1 Sites will be ADA accessible, will have nature trails with interpretive signs, will sponsor significant environmental education programs and will have extensive volunteer programs. Category 1 Sites will be staffed by a full-time sanctuary manager, who will coordinate all management, education and volunteer efforts on-site and for all EEL sanctuaries within the designated regional management area. The four Category 1 Sites are proposed as *Centers for Regional Management*. Category 1 Sites will be open to the public during daytime hours.

The four Category 1 Sites that will function as centers for regional management for the EEL Program area:

1. *Regional Management Center for North Mainland*
Enchanted Forest Sanctuary – Location: S.R. 405, south of Titusville.
2. *Regional Management Center for Central Mainland*
Sams House at Pine Island Conservation Area – Location: North Merritt Island.
3. *Regional Management Center for South Mainland*
Malabar Scrub Sanctuary – Location: Malabar Road, Malabar (Proposed).
4. *Regional Management Center for South Beaches*
Barrier Island Ecosystem Center (within the Archie Carr National Wildlife Refuge) – Location: South Melbourne Beach.

FIGURE 4: Map of Proposed EEL Sanctuary Network

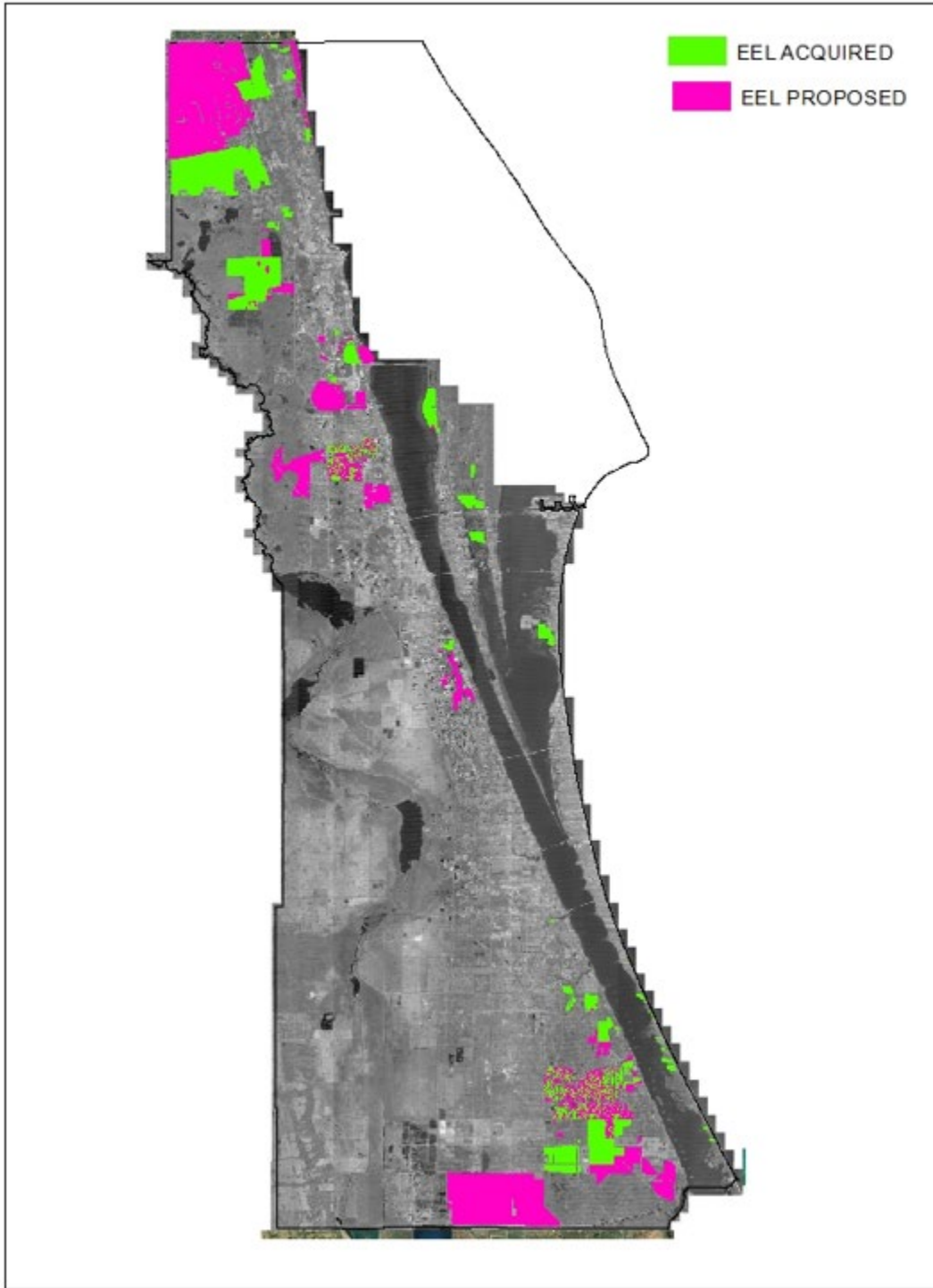


Figure 4: Map of Proposed EEL Sanctuary Network

The inventory of potential Category 1 Sites may be expanded based on public need for passive recreation availability of capital development and management funds, or opportunities for innovative partnerships. Other potential Category 1 Sites include:

1. Turkey Creek Sanctuary
Currently has Margaret Hames Nature Center. Site Manager – City of Palm Bay –
Location: Port Malabar Boulevard, Palm Bay.
2. Pine Island Conservation Area
Site with inter-agency management partners and multiple-use needs that include stormwater management – Location: North Merritt Island.

4.2.2. Category 2 Sites – Intermediate Use Sites

Intermediate use sites will have minimal capital development.

Improvements to Category 2 Sites include nature trails, dedicated parking area, interpretive signs along some nature trails, and some limited facilities (i.e., open shelters, educational kiosk, trail signs, etc.). These sites will be open to public access during daylight hours and will have legal ADA access.

Examples of EEL Program sanctuaries (acquired and proposed) that are likely Category 2 Sites for development include:

1. Kabbord Sanctuary
Location: North of Barge Canal – Sykes Creek.
2. Archie Carr/Maritime Hammock Properties
Location: Four conservation areas with numerous sites along Brevard's south beaches. Conservation areas include Coconut Point, Hog Point, Washburn Cove, and North Florida Beach.
3. Jordan Boulevard Scrub
Location: North and south of Jordan Boulevard, southern section of Malabar.
4. Buck Lake Conservation Area
Location: North of S.R 46; west of I-95.
5. Fox Lake - South Lake Complex
Location: South of S.R. 46; west of I-95.
6. Grissom Road Scrub Complex
Location: East of I-95; between Port St. John and Canaveral Groves.
7. Ten Mile Ridge Scrub Complex
Location: East of Babcock Street; west of I-95; north of Grant Road, Palm Bay.
8. Micco Scrub
Location: North and south of Micco Road; west of I-95; east of Babcock Street.
9. North Indian River Lagoon Properties
Location: east and west of FEC Railroad from Little Flounder Creek north to the Volusia-Brevard County line.
10. Selected Indian River Lagoon Blueway properties
Location: Various locations in Brevard County along Indian River Lagoon shoreline.



4.2.3 Category 3 Sites—Primary Conservation and Research Sites

Category 3 Sites are proposed as sites with minimal or no improvements due to vulnerability of resources and/or need for intensive management and/or restoration. The designation of *Primary Conservation and Research Sites*:

1. Provides enhanced conservation benefits to sites with exceptional resource values or vulnerabilities;
2. Enables the EEL Program to address specific management needs for wildlife recovery or species protection;
3. Provides for public access at levels that will not disturb on-going resource management and research projects; and,
4. Decreases long-term EEL Program costs.

Category 3 Sites will provide opportunities for public access within limited areas of the site or management unit. Public access areas will be controlled at Category 3 Sites through the use of site design decisions and capital improvements, such as, limited trail networks, scenic overlooks, and elevated boardwalks.

Examples of proposed Category 3 Sites include:

1. Dicerandra Scrub
Location: South of S.R 50, Titusville.
2. Titusville Wellfield Area
Location: South of S.R 50, Titusville.
3. Valkaria Scrub
Location: South of Valkaria Airport; north of Grant Road; west of U.S. 1, Valkaria.

4. Indian River Lagoon Blueway properties
Location: Various locations in Brevard County along Indian River Lagoon shoreline.

4.3 Program Structure

The success of the concepts and strategies proposed in the EEL Sanctuary Management Manual (as presented herein) is dependent upon the establishment of an administrative structure that:

1. Employs a highly motivated staff of professional land managers;
2. Establishes a dedicated and organized force of citizen volunteers; and,
3. Implements innovative programs for continuous community involvement.

A reasonably sized, but dedicated, staff can successfully implement the diverse management responsibilities of the EEL Program. To be successful, each sanctuary manager will require a high degree of authority to implement sanctuary management and program goals within each regional management area. A strong emphasis on partnership development and outside funding will be required of each sanctuary manager. Varying levels of public access and passive recreation will be available at each sanctuary. Adequate staff support is essential to provide responsible levels of management with safe and controlled public access within each sanctuary. Labor-intensive tasks that require large staff support, like prescribed burning and scientific monitoring of species, will be implemented through private-sector partnerships, contracts, grants, and volunteers.

The proposed structure of the EEL Program provides opportunities to create an inter-departmental team approach within Brevard County Government that effectively and efficiently uses available staff resources and some staff additions. The EEL Program staff structure and size, proposed herein, is targeted at a minimal level. The number of Program staff may increase as the EEL Program property inventory increases or sanctuary needs expand, pursuant to Board approval. EEL staff positions are authorized by the Board of County Commissioners as part of the annual budget process. The effective implementation of a range of essential program responsibilities will influence the ability of the EEL program to meet the conservation goals of the program and provide public access, passive recreation and environmental education.

FIGURE 5: EEL Sanctuary Network Stewardship Responsibilities

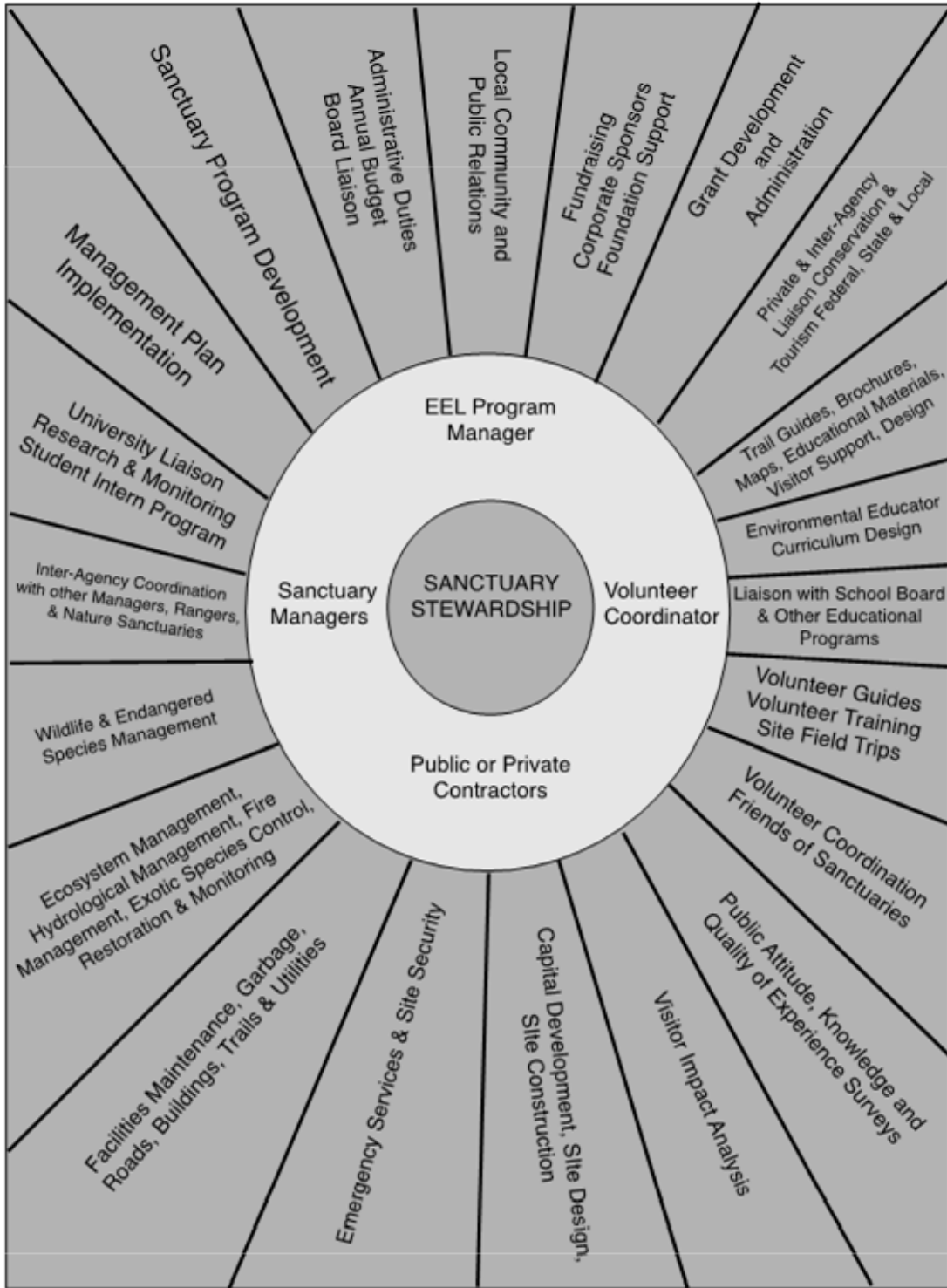


Figure 5: EEL Sanctuary Network Stewardship Responsibilities.

4.3.1 Board of County Commissioners Responsibilities

The Board of County Commissioners has final responsibility for the financing and implementation of all aspects of the EEL Program. Specific responsibilities associated with land acquisition are outlined in the EEL Program Land Acquisition Manual. The Board is responsible for all policy decisions and expenditures of funds for management, passive recreation and environmental education. The Board will make all decisions relative to the funding of the EEL Program through its annual budget process. The Board is specifically authorized to issue ad valorem bonds for land acquisition and capital improvements, as approved by the electors in support of this program, and to expend ad valorem revenues not required for bond debt, as authorized by the Florida Statutes.

4.3.2 EEL Program Staff Responsibilities

EEL Program staff are responsible for the implementation of all aspects of the EEL Program. Specific responsibilities include program administration, land acquisition, land management, environmental education, and passive recreation. Staff are expected to aggressively seek additional funding sources for the program, develop public and private sector partnerships and establish the EEL Program as a model program for Florida. Specific responsibilities are detailed in the Land Acquisition Manual.

Staff Structure and Size

The EEL Program proposes a preliminary program staff of 7 full-time employees. New staff will be added as the responsibilities of the program grow and as necessary to maintain the quality and productivity of the program. The proposed positions include a Program Manager with land management credentials, Volunteer Coordinator, Administrative Secretary, and four Regional Sanctuary Managers. A Sanctuary Manager would be located at each of the environmental management and education centers at the proposed Category 1 sanctuaries.

FIGURE 6: EEL Program Organizational Structure

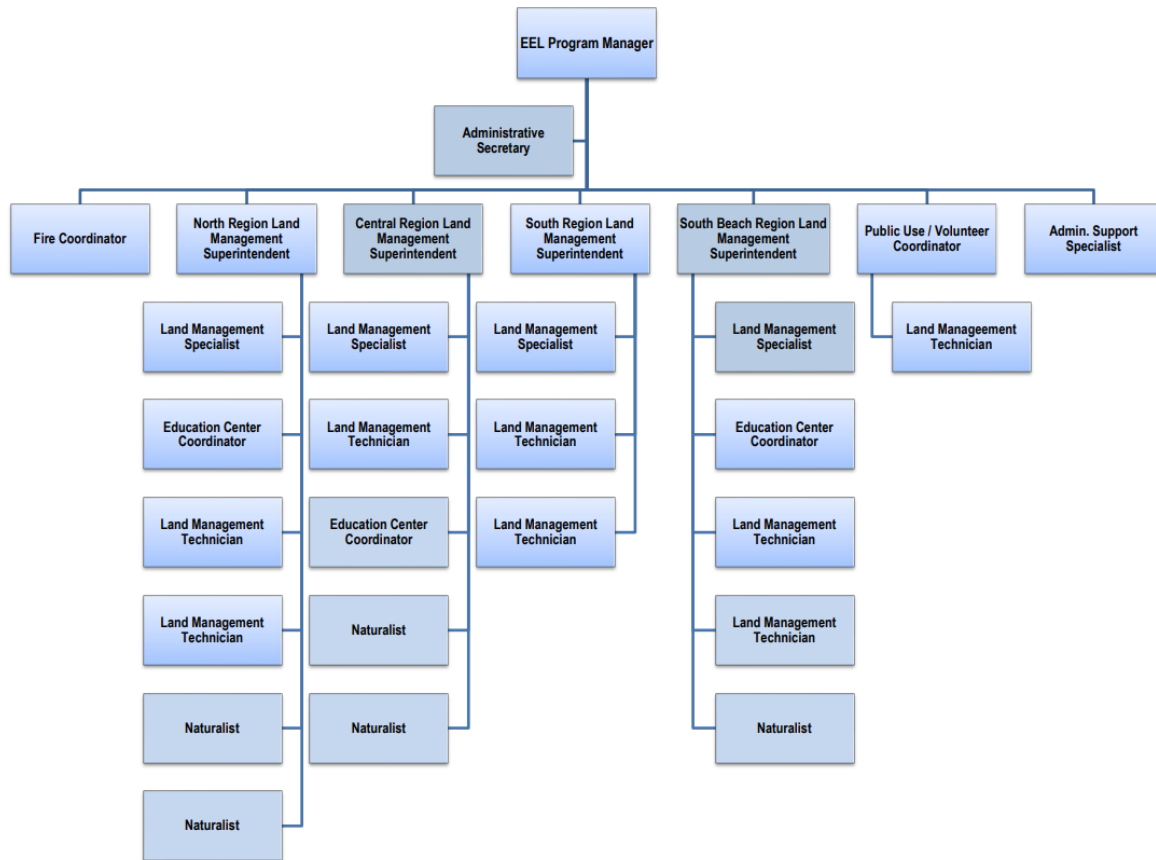


Figure 6: EEL Program Organizational Structure.

Additional staff may be requested from the Board of County Commissioners as part of the annual Brevard County budget process. The proposed staff size (seven full-time positions) is viewed as the minimal number of Program staff required to implement the EEL Program. Funding for staff positions would come from EEL Program administrative funds. At the proposed staff level, most labor-intensive land management activities (i.e., prescribed burning, biological monitoring, invasive exotic species control) and environmental education programs would be implemented through outside contracts with private firms or other government agencies.

The EEL Land Management staff represent a core land management program within Brevard County Government. The Program Coordinator, Administrative Secretary and Volunteer Coordinator would have their primary offices located within the Parks and Recreation Department in Viera. The Sanctuary Managers would each administer one of the four environmental management and education centers identified as Category 1 sanctuaries. Each Sanctuary Manager would have office space within a center. Sanctuary Managers would be responsible for management of all EEL sites identified within the regional management area.

EEL Staff are encouraged to seek outside funding support from the private sector or foundations to provide supplemental salary support, funds for temporary staff positions or funds to implement programs. The full-time EEL Program staff represent the “core” land management component of the EEL Program.

EEL Program staff will coordinate and cooperate with other county offices. EEL Program staff are encouraged to develop a team approach within Brevard County Government to make efficient use of available staff resources and expertise. Interdepartmental partners include, but are not limited to, Office of Natural Resource Management, Parks and Recreation Department, County Attorney’s Office, Public Works Department (Facilities Construction and Road and Bridge), Mosquito Control Department, Office of Agriculture and Extension Service, Public Safety Department, Surface Water Program and Office of Tourism (nature-based tourism).



The County Manager or his/her designee is responsible to advise the EEL Program regarding the establishment of an interdepartmental team within Brevard County Government. The County Manager will work with EEL Staff to identify appropriate roles and responsibilities within each county government office. Participating county offices will work together to ensure good communication and coordination. The EEL Program Manager will ensure that sufficient operations and management funds are available and budgeted on an annual basis to fund internal service distribution costs and inter-departmental transfers of funds.

In addition to inter-departmental support for the EEL Program, EEL Program staff shall serve as a resource management advisory team for other offices of Brevard County Government. As an example, formal agreements should be established, pursuant to approval by the Board of County Commissioners, between the EEL Program and the

County Parks & Recreation Department to address resource management and conservation needs on applicable county park lands, such as Beach & Riverfront acquisition sites within the Archie Carr Sea Turtle Refuge, Spessard Holland scrub, Erna Nixon Park, scrub at the Habitat Golf Course, or wetland conservation issues at the Habitat Golf Course. In such cases, public access will be maintained consistent with the goals of the program(s) responsible for the acquisition of the properties. An effective relationship between the EEL Program and the County Parks and Recreation Department is seen as an essential first step towards coordinated management of natural resources on public lands within Brevard County.

4.3.3 EEL Procedures Committee

Responsibilities

The EEL Procedures Committee shall serve as an Advisory Committee to County Staff and the EEL Selection and Management Committee regarding policies, procedures and standards for land acquisition. The EEL Procedures Committee will meet at the beginning of each fiscal year (between October 1 and December 1) for an Annual Joint Meeting with the Selection and Management Committee. The EEL Procedures Committee will meet as often as needed thereafter to complete any modifications to the Land Acquisition Manual (See Land Acquisition Manual for specific responsibilities).

Committee Structure

See Land Acquisition Manual for specific details.

4.3.4 EEL Selection and Management Committee

Responsibilities

The Selection and Management Committee is intended to be a long-standing scientific advisory committee to the EEL Program and the Board of County Commissioners during site selection, land acquisition, sanctuary management plan development and program implementation. (See Land Acquisition Manual for specific responsibilities).

The EEL Selection and Management Committee (SMC), formerly called the Selection Committee, was renamed as a result of the ratification of the EEL Sanctuary Management Manual, provided herein. The role of the SMC will be to function as a scientific advisory group for acquisition and management to EEL Program staff and the Board of County Commissioners. The SMC reviews acquisition proposals and site-specific management plans. The SMC provides guidance and recommendations regarding sanctuary management objectives, ecosystem management principles and technical support in the development of management partnerships and funding support. The SMC works directly with the EEL Program Manager, each regional sanctuary manager and the Citizens Advisory Committee to implement the management plans, educational programs and passive recreation opportunities throughout the natural EEL Sanctuary Network.

Committee Structure

The SMC will be appointed by the Board of County Commissioners, using the scientific criteria established in the EEL Land Acquisition Manual, as recommended by the Procedures Committee and authorized by the Board of County Commissioners.

4.3.5 Recreation and Education Advisory Committee (REAC)

Responsibilities

Citizen participation will be encouraged by the establishment of the Recreation and Education Advisory Committee (REAC). The primary function of the REAC will be to serve as an advisory committee to the EEL staff and the Selection and Management Committee (SMC). The REAC acts solely in an advisory capacity to the EEL Selection and Management Committee (SMC) and EEL Program staff and shall provide recommendations for public access, passive recreation and environmental education assessments for EEL managed conservation lands.

Committee Structure

The REAC should promote optimal citizen input from knowledgeable individuals representing key areas of interest or constituencies. Collectively, the members of the REAC should represent a broad spectrum of experience and expertise that relate to EEL Program information needs.

The structure of the REAC will be composed of eight (8) members appointed by the EEL Selection and Management Committee for a term of two years. Once citizen shall be recommended by the Tourism Development Council (TDC) ore Economic Development Commission (EDC) to represent eco-tourism. Citizens being appointed to the committee should have interest and / or experience in public access and recreation uses such as hiking, nature observation, photography, primitive camping, fishing, hunting, horseback riding, bicycling, wildlife observation, canoeing, kayaking, eco-tourism, and environmental education. A voting seat will be designated on the Selection and Management Committee for a REAC member selected by a majority vote of the Recreation and Education Advisory Committee for a two-year term.

A representative from the EEL Selection and Management Committee, Americans With Disabilities Act Compliance Department, Metropolitan Planning Office, Tourist Development Council, Parks and Recreation, Economic Development Council or other appropriate agencies will be asked from time to time to participate in a non-voting, advisory capacity.

4.3.6 Community Volunteer Program Responsibilities

The success of the EEL Program is heavily dependent upon the implementation of effective citizen volunteer initiatives and establishment of a formal relationship with local universities and community colleges, as approved by the Board of County Commissioners. Creation of community volunteer groups, like the “Friends of Enchanted Forest”, will be encouraged. EEL Program staff, and the SMC will work collectively with local communities to ensure that effective volunteer groups are

established for each natural area. Category 1 Sites with planned environmental management and education centers will receive priority consideration for the establishment of volunteer programs.

Volunteer responsibilities will be determined by EEL staff at each of the EEL sanctuary sites. The EEL Program will treat citizen volunteers as unpaid staff. The EEL Volunteer Coordinator will establish the policies and procedures for volunteer support to ensure that volunteers:

1. are appreciated for their service to Brevard County;
2. are given appropriate levels of direction and support;
3. receive proper training and supervision; and
4. receive a positive volunteer experience.

Citizen volunteers should be viewed as local representatives and ambassadors for the EEL Program and Brevard County. The long-term success of the EEL Program and the EEL Sanctuary network is directly linked to the level of citizen support, active participation and commitment to conservation.

Volunteer Program Structure

The structure of the Volunteer Programs will be determined by EEL Program staff with advisory support from the Selection and Management Committee.

4.4 Partnerships—Key to Success

The EEL Program shall actively seek partners to implement its goals for conservation, passive recreation and environmental education. Partnership agreements among governmental agencies and private-sector partners involved in land acquisition and stewardship provide numerous opportunities for increased program efficiency and effectiveness. Unfortunately, political and geographical fragmentation and separation among agencies can result in poor communication, inter-agency policy conflicts, overlap of interests and expenditures, and an absence of inter-agency coordination. The immediate need for effective land management and stewardship highlights the critical importance of coordinated and cooperative partnerships. Many of Florida's ecosystems overlap numerous geographical and political boundaries. Innovative partnerships are essential to effectively implement the concepts of ecosystem management.



4.4.1 Land Management Partners

The EEL Program is encouraged to work closely with the St. Johns River Water Management District, Florida Department of Environmental Protection, Florida Division of State Lands, U.S. Fish and Wildlife Service, Florida Natural Areas Inventory, Florida Fish Wildlife Conservation Commission, Florida Forestry Service, Florida Division of Historical Resources, The Nature Conservancy, Trust for Public Lands and other public and private conservation and management organizations. Partnerships in acquisition and management provide excellent opportunities to maximize the effective use of staff and funding. Partnerships establish new lines of communication and cooperation among agencies. EEL Staff will ensure that effective inter-agency partnerships are established, nurtured and continued as long-term relationships.

EEL Staff should continue to seek partners for management through joint acquisition programs, transfer of property title to federal and state agencies as part of matching fund acquisition programs, establishment of Inter-agency Management Agreements and establishment of Inter-agency Working Groups to develop coordinated management plans. Florida Forever is likely to provide continuing management funds to a number of state agencies identified as primary managers of CARL / Florida Forever Projects. EEL Staff is encouraged to seek state agency support for each Brevard County CARL / Florida Forever Project through the various applicable Divisions within the Florida Department of Environmental Protection.

Private-sector partnerships with the growing nature-based tourism industry in Florida provide opportunities for responsible management of public access on endangered lands, enhanced conservation and increased funding for management and environmental education. **Appendix A.3** presents a discussion of the opportunities and challenges to achieve a meaningful balance between nature-based tourism and responsible stewardship within the EEL Sanctuary Network. The section provides

specific guidance to the ecotourism industry and EEL Sanctuary managers to ensure that the resource values of the EEL Sanctuary Network are not degraded and high-quality visitor experiences are maintained.



In addition, partnerships with private landowners having conservation interests provide effective opportunities to extend the resource protection of natural areas and decrease the need for additional land acquisition. Private citizen and local community involvement in EEL Program conservation efforts are considered essential to the regional need of conservation in Brevard County. Areas in Brevard that are in low intensity land uses, such as silviculture and rangeland, may be compatible with the habitat conservation needs of many species. The management of wildlife habitat on a number of private lands in Brevard has been excellent. The EEL Program should seek ways to promote and enhance long-term conservation and management on private lands.

Land acquisition, conservation measures and management programs implemented by the EEL Program should consider and endorse the maintenance of existing, ecologically responsible, land uses on private lands through positive incentive programs such as tax breaks, conservation easements, or cooperative agreements with land owners. As the EEL Program natural areas network becomes established, EEL Staff and advisory committees should seek innovative opportunities through the Office of Natural Resources Management and the inter-agency partners to seek innovative management techniques and partnerships with the potential to provide resource or wildlife protection on private lands in coordination with and as a complement to the lands acquired by the EEL Program.

4.4.2 Environmental Education Partners

With the provision of public access comes the responsibility to educate sanctuary visitors to understand that their presence and behavior has a direct impact on resource quality and the quality of the nature-based experience. In this regard, environmental education is viewed as an essential component of the EEL Program conservation effort. Unfortunately, environmental education is not a traditional service provided by local government. The EEL Program shall identify and promote innovative partnerships to effectively and efficiently meet the program's environmental education objectives.

East Central Florida and Brevard County have numerous government agencies, not-for-profit organizations, public and private universities, public schools, and environmental education programs that provide unique opportunities to meet the environmental education goal of the 1990 and 2004 referenda. There is a diverse and highly qualified pool of individuals and organizations within the Brevard County region to provide environmental education programs on EEL Sanctuary sites. Potential partners for environmental education programming within the EEL Sanctuary Network include academic institutions, government agencies, private nonprofit organizations and private corporations.



If sufficient interest exists, the EEL Program shall establish a student intern program with local academic institutions to provide opportunities for student internships. Implementation of a student intern program provides numerous opportunities for enhancing partnerships with local professors and teachers. Student intern programs can provide essential support to the EEL Program through independent field research, environmental education program development, resource monitoring and management planning. In addition, the EEL Program can provide opportunities to expand and modify local curricula to consider the emerging educational needs of the land management and tourism industry for nature-based tourism in Florida.



Chapter 5

Funding Long Term Management

5.1 Background

Numerous studies show that natural areas and open space contribute positive economic benefits to local communities. These benefits can be generally grouped within four categories: *Environmental, economic, infrastructure and quality of life benefits*. Public land acquisition and land conservation provide natural resource opportunities and options for conservation and public recreation. Lands acquired through the Environmentally Endangered Lands Program represent public capital assets with environmental and economic values that grow over time and contribute to future generations. To increase understanding and awareness about the costs and benefits of land acquisition and conservation, EEL Program staff will generate a summary report on the subject which will be presented to the Board of County Commissioners.

The challenge for long-term stewardship of endangered lands is to develop effective policies and procedures to implement and finance resource management objectives. EEL sanctuaries require a variety of management actions that include provisions for public access, passive recreation, environmental education, active land management, site security and recurring site maintenance. Control of invasive exotic species, fire management, restoration of natural hydrological regimes, endangered species

monitoring, and a variety of other land management issues must be considered as long-term responsibilities.



Projections for management costs vary from site-to-site and agency-to-agency. Management costs generally are influenced by the size and location of a sanctuary, level of human disturbance and resource needs. Natural areas that are fully developed and can sustain high attendance have the largest costs and largest net positive economic impacts on local economies. Small sites, with high volume public use and high levels of restoration are more expensive to manage than large, pristine sites with low levels of public use. The three categories proposed for EEL sanctuary development in Chapter 3 provide a mechanism to deliver varying levels of visitor experiences with minimal costs to the program and protection of natural resources.

The recurring costs of program administration, land management and maintenance are long-term commitments that extend well beyond the land purchase. The direct and indirect costs associated with land acquisition and conservation must be considered in the comprehensive financial planning for endangered lands programs. Few local programs in Florida have established sufficient data bases or have sufficient experience to accurately predict long-term costs of endangered lands management. Few local, state or federal programs have sufficient funds, staff or expertise to manage ecosystems alone. Partnerships and interagency coordination are essential to successful land management and efficient resource allocation.

5.2 Approach to Financial Stability

The EEL Program shall recommend a financial plan to the Board of County Commissioners in the EEL Sanctuary Management Manual (provided herein) to ensure that the Brevard County Environmentally Endangered Lands Program meets its capital bond debt-service obligations and appropriates sufficient funds for long-term non-capital management.

The Brevard County Environmentally Endangered Lands Referenda of 1990 and 2004 were two of the few local endangered lands referenda in Florida to provide language for protecting and maintaining environmentally endangered lands once they are acquired. A stable source of funds to support long-term management, passive recreation and environmental education goals is viewed by the EEL Staff and the Selection and Management Committee as an essential obligation of the EEL Program.

5.3 Financial Plan

The EEL Selection and Management Committee and Staff considered the following financial options to fund the long-term conservation and management responsibilities of the EEL Program.

1. Establishment of a management endowment using annual EEL Program ad valorem revenues not required for bond debt service.
2. Fund management activities until the Year 2011 with annual EEL Program ad valorem revenues not required for bond debt service.
Brevard County may use the ad valorem millage in excess of that necessary for debt service for any lawful purpose solely related to the capital project for which the voted millage was approved, including operations and maintenance. Pursuant to §200.181 F.S. and §125.013 F.S., (as amended in 1996).
3. Bonding to the full capacity of the ad valorem revenue (up to a cap of \$55 million, or the maximum level of bonds and bond debt that can be issued with the voter-approved millage rate of 0.25 mils) and funding 100% of long-term EEL Program management costs from annually appropriated general revenue.
4. Paying for long-term EEL Program management costs from a combination of annually appropriated general revenue and EEL Program ad valorem revenue not required for bond debt reduction. General revenue appropriations would be phased-in at increasing incremental amounts over the 15 years of the program. The general revenue millage levels would be set to ensure that 100% funding levels were achieved through general revenue appropriations in the year 2011. The potential for future bond issues would be based on EEL Program ad valorem millage available for expanded debt service.

On September 23, 1997, the Board of County Commissioners discussed financial options available to fund management within the EEL Sanctuary network. As a result of the discussions, the Board voted to use annual EEL Program ad valorem revenues not required for bond debt to fund management within the sanctuary network. This decision

ensures that sufficient ad valorem funds are available for future land acquisition, sanctuary management, passive recreation and environmental education, pursuant to the EEL Program referendum through 2011.

Figure 7 presents a graphic representation of the relationship between projected ad valorem revenues, debt service responsibilities, projected annual management expenditures and revenues available for legal use within the program.

Table 1 presents projected annual revenues, expenditures, and surplus millage figures for each remaining year of the EEL Program.

Based on the financial projections, the EEL Program shall annually appropriate a portion of the EEL Program ad valorem millage not required for bond debt service to fund annual EEL Program capital and non-capital expenditures. Annual budget appropriations of available EEL Program ad valorem revenues shall begin in FY 1997-1998 and continue until the Year 2011. The EEL Program budget will be reviewed and adopted annually as part of the Brevard County budget process and as authorized by the Board of County Commissioners. After 2011, the Board of County Commissioners will consider funding options and financial resources to address the needs of the EEL Program pursuant to the directives of the 1990 voter-approved referendum.

FIGURE 7 Conceptual Graph of EEL Program Revenues and Projected Costs

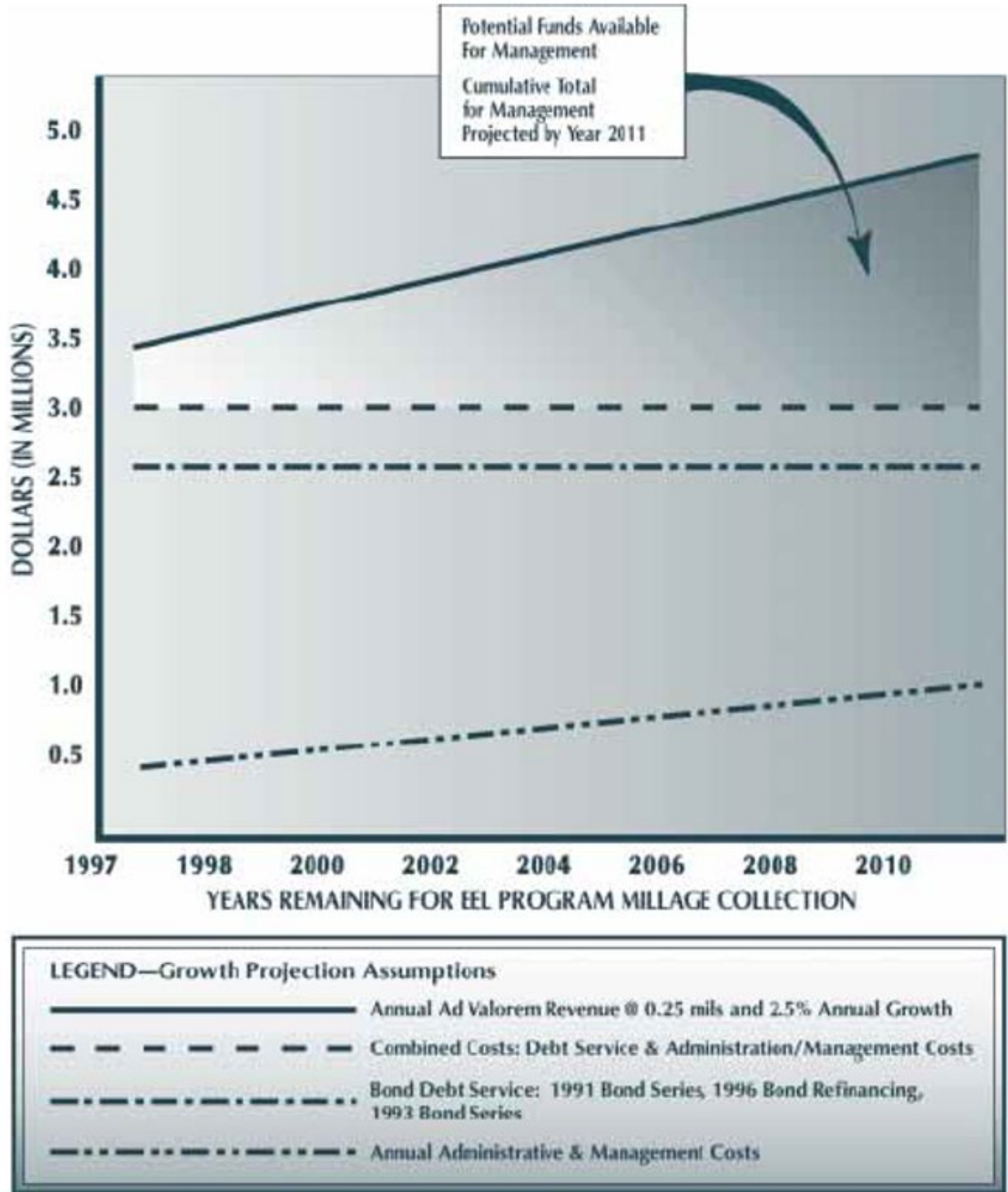


Figure 7: Conceptual Graph of EEL Program Revenues and Projected Costs.

TABLE 1: EEL Program Financial Projections for Revenue, Expenditure, and Management

Fiscal Year	ANNUAL DEBT SERVICE										MILLAGE W/ 0.25 MIL CAP		EXPENDITURES
	Access. Value at Annual Incr.	Tax Coll. Millage	Tax Coll. at 96%	Interest Revenue	Total Revenue	Principal & Interest Payments	Tax Coll. Prop. Appr. & Incid.	Total Disburse.	Millage	Tax Coll. at 96%	Cumul. Total	Annual O & M Expenditure Potential	
1997	\$14,174,745,816	0.197	\$2,674,240	\$100,000	\$2,774,240	\$2,655,688	\$130,000	\$2,785,888	0.053	\$727,683	\$727,683	\$450,000	
1998	\$14,529,134,961	0.192	\$2,676,783	\$100,000	\$2,776,783	\$2,655,066	\$133,250	\$2,788,316	0.058	\$810,209	\$1,537,892	\$450,000	
1999	\$14,892,343,335	0.187	\$2,680,434	\$100,000	\$2,780,434	\$2,655,537	\$136,581	\$2,792,118	0.063	\$893,734	\$2,431,626	\$450,000	
2000	\$15,264,672,419	0.183	\$2,683,309	\$100,000	\$2,783,309	\$2,655,118	\$139,996	\$2,795,114	0.067	\$980,212	\$3,411,838	\$450,000	
2001	\$15,646,289,229	0.179	\$2,686,468	\$100,000	\$2,786,468	\$2,654,908	\$143,496	\$2,798,404	0.071	\$1,068,642	\$4,480,480	\$450,000	
2002	\$16,037,446,460	0.175	\$2,688,462	\$100,000	\$2,788,462	\$2,653,398	\$147,083	\$2,800,481	0.075	\$1,160,525	\$5,641,005	\$450,000	
2003	\$16,438,382,622	0.171	\$2,694,341	\$100,000	\$2,794,341	\$2,655,845	\$150,760	\$2,804,605	0.079	\$1,250,871	\$6,891,876	\$450,000	
2004	\$16,849,342,187	0.167	\$2,697,096	\$100,000	\$2,797,096	\$2,654,946	\$154,529	\$2,809,475	0.083	\$1,346,746	\$8,238,622	\$450,000	
2005	\$17,270,575,742	0.163	\$2,704,087	\$100,000	\$2,804,087	\$2,658,365	\$158,392	\$2,816,757	0.087	\$1,440,851	\$9,679,473	\$450,000	
2006	\$17,702,340,135	0.159	\$2,704,633	\$100,000	\$2,804,633	\$2,655,005	\$162,352	\$2,817,357	0.091	\$1,543,899	\$11,223,372	\$450,000	
2007	\$18,144,898,639	0.156	\$2,712,972	\$100,000	\$2,812,972	\$2,659,602	\$166,411	\$2,826,013	0.094	\$1,641,803	\$12,865,175	\$450,000	
2008	\$18,598,571,105	0.152	\$2,713,674	\$100,000	\$2,813,674	\$2,656,172	\$170,571	\$2,826,743	0.098	\$1,749,972	\$14,615,147	\$450,000	
2009	\$19,063,484,132	0.148	\$2,716,583	\$100,000	\$2,816,583	\$2,654,938	\$174,836	\$2,829,774	0.102	\$1,858,654	\$16,473,800	\$450,000	
2010	\$19,540,071,236	0.145	\$2,724,150	\$100,000	\$2,824,150	\$2,658,450	\$179,206	\$2,837,556	0.105	\$1,965,467	\$18,439,267	\$450,000	
2011	\$20,028,573,016	0.142	\$2,728,104	\$100,000	\$2,828,104	\$2,658,088	\$183,687	\$2,841,775	0.108	\$2,078,754	\$20,518,021	\$450,000	

Table 1: EEL Program Financial Projections for Revenue, Expenditure, and Management.

Each year, during the County budget process, the EEL Program will provide an annual budget for operations and management, a capital expenditure budget, and a capital improvement plan. Funds that remain available in excess of annual debt service requirements can be used for additional capital expenditures for land acquisition, capital improvements, land management, new bonding, bond debt reduction or other lawful purposes solely related to the Environmentally Endangered Lands Program

In recognition of the importance of cost-benefit analyses to assist program planning and annual budget allocations, EEL staff are encouraged to identify and quantify (when possible) the economic costs and benefits of EEL sanctuaries as part of the annual EEL Program budget and capital improvement planning process. The EEL Program is encouraged to contract with professional financial or economic consultants to help EEL Program staff in the collection of economic data. At a minimum, each site or management unit should collect data about annual sanctuary attendance, expenditures and revenues.

The growth of nature-based tourism as a major force in the world and Florida tourism markets suggests that the EEL Sanctuary network has the potential to generate revenues at EEL Sanctuary sites. The EEL Program staff shall explore opportunities for enhanced revenue generation from outside grants, foundation support and private-sector partnerships as long as these efforts are consistent with the EEL Program conservation goals.



Appendix

- A.1 EEL Program Conservation Principles and Directives
- A.2 EEL Management Plan Description
- A.3 Nature-Based Tourism: Balancing Public Use and Conservation
- A.4 Species Translocation Policy



A.1 EEL Program Conservation Principles and Directives

Principle 1

Maintain all sites in a natural state and/or restore sites to enhance natural resource values pursuant to management plans as approved by the Board of County Commissioners. All sites in the EEL Sanctuary Network shall be maintained in a desirable natural state or restored to enhance natural resource values for species, natural communities and ecosystems.

The EEL Program shall:

1. Make management decisions recommendations to ensure that natural resource values are maintained, restored or enhanced as natural assets for future generations.

Principle 2

Protect natural resource values by maintaining biological diversity and using conservation as a primary goal for decision-making. The EEL Program will strive to maintain biological diversity at genetic, species, natural community, and ecosystem levels to secure present and future natural resource values and options.

The EEL Program shall:

1. Make resource management decisions with the understanding that resource conservation was the primary goal of the voter-approved referenda in 1990 and 2004.
2. Manage and monitor total impacts on ecosystems and sites within the natural areas network.
3. Work to preserve essential natural features of the ecosystem.
4. Identify natural communities, species and processes that are particularly important to the maintenance of an ecosystem, and make special efforts to protect them.
5. Manage and monitor in ways that do not further fragment natural areas.
6. Maintain, mimic or enhance patterns of natural processes; including disturbances at scales appropriate to the natural system.
7. Avoid disruption of food webs, especially removal of top or basal species.
8. Avoid significant genetic alteration within populations.
9. Recognize that biological processes are often nonlinear, are subject to critical thresholds and synergism's, and that these issues must be identified, understood and incorporated into management strategies.
10. Recognize that events, like hurricanes, damaging wildfires, or epidemics are unpredictable and potentially devastating to species viability. The EEL sanctuary network should be developed with consideration for the probability of uncontrolled natural events.

Principle 3

Balance human access to EEL Sanctuary sites and public use with the protection of natural resources.

The EEL Program shall:

1. Recognize that an acceptable balance can be attained between resource protection and public use. Land management practices and sanctuary development plans will use spatial, temporal, visual or auditory controls (like elevated boardwalks, scenic overlooks, specific trail location and educational signage) to provide appropriate public access and use, rather than to exclude the public from EEL sanctuaries.

2. Recognize that the total impact of humans on natural resources is the product of human population size, per capita consumption, extent of public access, incidental taking of habitats, and habitat degradation caused by human activities.
3. Recognize that public interest in recreation on protected natural areas is high and that public interest is projected to increase over time.
4. Take appropriate actions to successfully meet the conservation needs of a natural area site with provisions for responsible public access and use.
5. Recognize that natural resource conservation by private land owners on private lands is an important part of the statewide conservation effort in Florida and Brevard County.

Principle 4

Apply the best most accurate current scientific principles to strategies for conservation. Strategies to conserve and manage living resources should be formulated and implemented using the best available scientific and natural resource management principles. The full range of knowledge and skills from both the natural and social sciences is required to achieve a balance between resource conservation and human use.

The EEL Program shall:

1. Identify the local and regional pool of scientific and resource management experts and provide opportunities for their active participation with the EEL Selection and Management Committee and EEL Staff.
2. Establish formal financial partnerships through contracts with interested scientific and land management agencies and institutions, as approved by the Board of County Commissioners, to apply local, regional and national expertise to EEL Program initiatives.
3. Recognize that science is a vital part of natural resource conservation. Science can be used to describe resource inventories, understand natural processes, and provide predictive capabilities.
4. Identify a local and regional pool of individuals recognized for their expertise and knowledge in social sciences (i.e., education, recreation, individuals with special needs, art, literature, tourism, etc.). Encourage their active participation in the EEL Program projects through active participation in the EEL Volunteer Programs.
5. Encourage EEL Staff to consult with a wide range of knowledgeable individuals and institutions recognizing that all conservation issues have biological, economic, and social implications. Ignoring any of these may lead to conflicts that will impair effective conservation.
6. Encourage public participation in land management and stewardship through active community involvement in EEL sanctuary programs and projects.

Principle 5

Collect and use the best data available for developing site management plans. Resource inventories, ecological surveys, and land management assessments should precede and guide the provision of public access and use. The information should be made available for critical scientific and public review.

The EEL Program shall:

1. Develop Interim Management Plans within 90 days and Management Plans within one year after the acquisition of a management unit or sanctuary site. In cases where a management unit may be composed of multiple properties, a management plan would not be required until one year after all the essential properties are assembled. Interim Management Plans can be developed for individual management units within large multi-parcel projects.
In cases where property ownership is to be transferred to the State of Florida Board of Trustees of the Internal Improvement Trust Fund as part of Multi-Party Acquisition Agreements in the Conservation and Recreational Lands (CARL) Program, Management Plans or Interim Management Assignment Letters will be completed within one year of the property transfer to the State as directed in §259.032 F.S. and §253.034 F.S. The EEL Program will comply with future amendments to the Florida Statutes and state land management policies as applicable to joint CARL Projects.
2. Prepare Interim Management Plans, Management Plans or Interim Management Assignment Letters to the Board of County Commissioners for review and ratification to allow for public comment and discussion.
3. Identify uncertainties and assumptions regarding natural history, size and productivity of site resources.
4. Identify major ecological and sociological uncertainties and assumptions regarding resource uses and visitor impacts.
5. The EEL Program shall ensure that the level of resource use does not risk degradation of the resource nor allow expansion of public use at rates that exceed the known vulnerability of the resource and its relationship with other ecosystem components.
6. Evaluate human use impacts through on-going visitor impact analyses. The results of these observations shall guide all resource management decisions.
7. Encourage private sector - public sector partnerships to implement site management or specific programs so that:
 - a. the partnership shall not result in the exclusion of the public from acceptable resource uses defined in the Management Plan, and
 - b. the partnership shall result in a net economic and/or resource management benefit to the EEL Program, the sanctuary site and the citizens of Brevard County.

Principle 6

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

The EEL Program shall:

1. Whenever possible, provide positive incentives to the users of living resources that correspond to the values those resources have to society. Ensure that these incentives promote conservation, and constrain uses that do not promote, or are inconsistent with, the conservation objectives of the EEL Program.

2. Implement conflict resolution mechanisms to minimize conflicts over resource uses among competing stakeholders.
3. Encourage the integration of science and best management practices with policy making, independent of resource users and special interests.
4. Require that policy makers and resource managers be held accountable for the use of the best possible data and analysis in establishing policy and management decisions.
5. Use the criteria and procedures in the EEL Land Acquisition Manual and EEL Sanctuary Management Manual to guide policy and conservation decisions.
6. Ensure that formal institutions responsible for resource management decisions have temporal and spatial perspectives consistent with the ecological character of the resources and organizational structures.

Principle 7

Promote communication that is interactive, reciprocal and continuous.

The EEL Program shall:

1. Ensure that communication is provided to the general public and is based on mutual respect and sound information.
2. Require external and internal review of all reports and analyses to verify objectivity and results.
3. Inform and motivate the public regarding conservation, land stewardship and responsible use of the EEL Program natural areas network.
4. Encourage inter-disciplinary communication to inform decision makers, land managers and the general public.
5. Promote enhanced public understanding and awareness of Brevard's rich biological diversity through programs that support public use of the EEL Program Sanctuary Network, environmental education and responsible nature-based tourism.

Principle 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. The environmental and economic values of the EEL Program sanctuary network depend upon high quality natural resources and the provision of exceptional visitor experiences.

The EEL Program shall:

1. Develop public-use facilities and programs that create a positive visitor experience.
2. Hire sufficient EEL Program staff or contract outside land management services as approved by the Board of County Commissioners to ensure that conservation objectives are achieved and quality passive recreation and environmental education are provided.
3. Implement a long-term economic plan that provides sufficient funding for resource protection, public access and environmental education.

4. Encourage the development of programs that provide natural or human transportation corridors or connections to the surrounding landscape and community. The EEL Program shall ensure that all public access points or trails are compatible with the conservation goals of EEL Sanctuary sites. Examples of connectors include greenways, pedestrian trails, bicycle paths, horse trails and wildlife corridors.
5. Ensure that sanctuary site design and development contribute to environmental and cultural protection and interpretation.
6. Integrate cultural, archaeological, historical and architectural considerations into site protection, site design and interpretive programs.
7. Develop environmental education programs with support from local and regional educators, education programs, nature-based tourism interests, non-profit groups, private corporations and other interested organizations.

Principle 9

Promote the integration of natural resources conservation into community discussions of economic development and quality of life.

The EEL Program shall:

1. Initiate and enhance communication and cooperation with local governments, chambers of commerce, economic development councils, tourist development councils, school boards and other community programs within Brevard County and Florida.
2. Actively participate in local, state and national discussions and planning efforts to expand and promote responsible nature-based tourism in Florida.
3. Recognize that the EEL Sanctuary Network is an integral part of the local community and Brevard County. Public use of a sanctuary site and development within a site shall be compatible with the interests of the local community.
4. Encourage public recognition and understanding of the value of history, natural resource protection and human community development to promote a common vision, pride and respect for Brevard County and Florida.
5. Encourage public sector/private sector partnerships for conservation, education and nature-based tourism.

Principle 10

Provide a responsible financial strategy to support implementation of management actions to achieve long-term conservation and stewardship goals.

The EEL Program shall:

1. Recognize that conservation, passive recreation and environmental education are long-term EEL Program responsibilities that require a financial commitment extending beyond the sunset date of the EEL Program ad valorem revenue collection.
2. Identify and implement a financial strategy that provides sufficient funds for conservation, passive recreation and environmental education programs.

3. Provide a long-term financial plan to the Board of County Commissioners that allows the EEL Program to be economically self-sufficient. The plan shall decrease the future need for increased taxes above and beyond the 1990 EEL Referendum.
4. Acknowledge that all lands acquired by the EEL Program will require varying levels of management and experience varying levels of public use.

A.2 EEL Management Plan Description

Proposed Management Plan Format

I. EXECUTIVE SUMMARY

The executive summary should identify the location, size, general natural resource features, and primary management goals for the site. The Executive Summary should be written for the general public and limited to two pages in length (8.5" X 11").

II. INTRODUCTION

The introduction should serve as a brief introduction to the site. Information could include a brief description of the location, acquisition history, ownership pattern, key resource values, unique resources and a description of the structure of the Management Plan.

III. SITE DESCRIPTION AND LOCATION

Provide a detailed site and location description. Maps should be provided which clearly provide directions for site access.

IV. NATURAL RESOURCE DESCRIPTIONS

A. PHYSICAL RESOURCES

- a. CLIMATE—Describe the climatic conditions that effect the site and relate to the biological diversity or natural resource conditions.
- b. GEOLOGY—Provide a description of the geological resources of the site. Include maps and photographs as appropriate.
- c. TOPOGRAPHY—Provide topographic maps of the site, if available. Describe important topographic features.
- d. SOILS— Provide USGS soil maps for the site with the property boundary clearly delineated and labeled.
- e. HYDROLOGY—Describe major hydrological features of the site. Provide aerial photos and maps of major hydrological features including surface water features and ground water flow, if available.

B. BIOLOGICAL RESOURCES

- a. ECOSYSTEM FUNCTION—Describe the site in the context of the regional landscape. Describe the ecosystem values and the role of the site on key ecosystem functions.
- b. FLORA—List the known plant species on-site. Describe natural communities and dominant plant species. Provide vegetation maps and acreage for natural community types. Describe each natural community occurring on-site. Discuss fire management. Discuss invasive exotic species that impact the site.

- c. FAUNA—List known animals on-site. Provide territory data and maps, if available. Discuss management needs for each major species. Discuss invasive exotic species that impact the site.
- d. SPECIAL CONCERN SPECIES—List all known endemic species that occur on-site. List all known rare, threatened or endangered species that are listed by federal or state agencies. Evaluate the vulnerability of non-listed species special to a site. Identify major management needs for each species. Identify whether recovery plans have been developed and how they relate to on-site management needs.
- e. BIOLOGICAL DIVERSITY—Describe the biological diversity of the site. If species inventories are available, synthesize the data into summaries that can be used to qualitatively or quantitatively describe the biological diversity value of the site. Identify and implement strategies for assessing quality and trends in biological diversity based on indicator species and management practices.

C. CULTURAL

- a. ARCHAEOLOGICAL—List all known archaeological sites on the property. Provide maps with general locations, if available. Site descriptions and locations should be provided to the Division of Historic Resources for the historic record. Care should be taken to not encourage public access to or disruption of significant archaeological resources or burial sites.
- b. HISTORICAL—Provide a brief history of the property to include past ownerships. Include information of historical or cultural interest.
- c. LAND-USE HISTORY—Describe the land-use history of the property. Provide specific details about consumptive resource uses or management strategies that influence current management decisions or restoration plans.
- d. PUBLIC INTEREST—Identify historical user groups on the site and public interests. Describe all public interests that may influence the ability to implement management strategies or cause potential user conflicts. Identify local municipalities and potential management partners.

V. FACTORS INFLUENCING MANAGEMENT

- A. NATURAL TRENDS—Discuss all known natural trends on-site that influence resource values or management strategies.
- B. HUMAN-INDUCED TRENDS—Identify and describe all known human influences on-site. Describe management strategies for reduction of impacts, resource restoration or resource enhancement. Develop ways to assess carrying capacity of natural resources. Implement strategies for visitor impact analysis that consider species-level, natural community-level and ecosystem-level human influences.

- C. EXTERNAL INFLUENCES—Identify and describe any external influences on-site. External influences can include site encroachments from adjoining property owners or uses.
- D. LEGAL OBLIGATIONS AND CONSTRAINTS—Describe any legal obligations or constraints to land management and conservation. Examples may include prescriptive rights, impacts of easements, retained rights for mining or timber operations. Other legal influences may come from local ordinances and land use laws.
- E. MANAGEMENT CONSTRAINTS—Describe the major influences that constrain implementation of a sound management plan. Example of management constraints include problems with access, lack of staff, lack of funding, difficulty implementing prescribed burns due to proximity of a residential neighborhood, etc.
- F. PUBLIC ACCESS AND PASSIVE RECREATION—Identify and describe the types of passive recreation proposed for the site and factors associated with the provision of public access. This section should address how passive recreational opportunities on-site will meet the needs of the community and how site-specific recreation opportunities complement the overall sanctuary network. Capital development needs should be addressed as they relate to public access and use.

VI. MANAGEMENT ACTION PLANS

A. GOALS

B. STRATEGIES

C. ACTIONS— The Management Action Plan section of the Management Plan provides the specific goals to guide implementation. This is one of the most important aspects of a management plan. Management action plans provide a strategic approach to management of a natural area. The management goals should be identified in this section with specific strategies to implement the goals and specific action items required to implement the strategies. Management Action Plans should represent the focus of the EEL Program Vision and consider the Program responsibilities as authorized by the 1990 voter-approved referendum and the EEL Selection and Management Committee ecological criteria (see the EEL Land Acquisition Manual and the EEL Sanctuary Management Manual provided herein). At a minimum, specific management goals should address the following:

- a. Conservation of ecosystem functions.
- b. Conservation of natural (native) communities.
- c. Conservation of species (including endemic, rare, threatened and endangered species).
- d. Restoration of wetlands, wetland/upland ecotones and natural hydroperiod.
- e. Restoration of altered or disturbed uplands, including those altered by fire exclusion or suppression.
- f. Collection of data to refine and improve management.

- g. Documentation of significant archaeological and historic sites.
- h. General upkeep and security of the property.
- i. Documentation of historic public use.
- j. Opportunities for multiple uses and compatibility (i.e., stormwater control, water recharge, etc.).
- k. Provision of public access and responsible public use.
- l. Provision of environmental education programs.
- m. Assessment of carrying capacity of natural resources with public use.

Staff should consult with land managers and potential management partners to ensure that all important conservation and management issues are addressed in the Management Plan. The success of a management plan and management plan implementation shall be evaluated and assessed on an annual basis. Although the general goals of the plan are not likely to change dramatically over time, the specific strategies and action items must be responsive to changing needs and conditions at the site.

An example of a goal with several strategies and recommended actions is provided below to provide staff guidance regarding the level of detail needed to address specific goals, strategies and actions within the Management Action Plan section of the Management Plan document.

Example: Management Action Plan Section

Strategy 1: Design and implement a natural systems fire management program.

ACTIONS:

1. Develop a fire management plan for the site.
2. Identify and evaluate proposed fire management units.
3. Develop a detailed fire prescription for each management unit.
4. Document federal and state listed species within each management unit.
5. Identify and secure perimeter fire breaks.
6. Develop public education and neighborhood information packets.
7. Develop an emergency fire response program
8. Ensure that adequately trained staff or contract consultants are available.
9. Establish photo points of all units.
10. Establish a partnership with the Division of Forestry.

Strategy 2: Restore altered upland habitats within the sanctuary network.

ACTIONS:

1. Evaluate conditions of native upland communities.
2. Inventory the types and environmental quality of all upland habitats within the sanctuary network.
3. Inventory listed species that occur on-site.
4. Identify and prioritize upland sites requiring restoration.

5. Assess effect of management on adjacent habitats or properties.
6. Develop a strategy for restoration activities for each site in the sanctuary network.
7. Implement restoration activities for upland habitats.
8. Monitor impacts of restoration activities and evaluate success of restoration projects.

Strategy 3: Restore or rehabilitate original wetlands, wetland and upland ecotones, natural hydroperiods, and natural wetland linkages with surface waters.

ACTIONS:

1. Ensure the successful implementation of any wetland restoration and mitigation plans on the properties.
2. Integrate restoration and mitigation plans with overall site management planning.
3. Inventory extent and quality of all wetlands within the sanctuary network.
4. Prioritize wetland restoration and rehabilitation projects based on ecological significance and funding availability.
5. Assess management activities on surrounding land uses.

VII. PROJECTED TIMETABLE FOR IMPLEMENTATION

Provide a projected timetable for action plan implementation. Prioritize each action item in the timetable based on relative conservation value and needs. Make timetables realistic.

VII. FINANCIAL CONSIDERATIONS

Discuss the mechanism of funding and projected costs of management plan implementation. Attempt to estimate projected revenues and costs as accurately as possible. Prioritize expenditures based on relative conservation value and needs. Budget projections for individual sites or management units will be used for annual budget preparation for the EEL Program.

VIII. APPENDIX

Provide any additional information or supplemental information important to the management plan.

IX. BIBLIOGRAPHY

Provide citations for original research or publications used to develop the Management Plan.

A.3 Nature Based Tourism: Balancing Public Use and Conservation

Introduction

The vast natural resources of Brevard County and the emergence of ecotourism as one of the fastest growing segments of the world's tourist industry represents a unique

opportunity to create a partnership between the tourist/entertainment industry, the education community and the conservation community in Brevard County.

With over 43 million visitors each year, Florida represents an established tourist destination with a sophisticated tourist infrastructure that markets its assets for high volume use. The protection of Brevard's quality of life and aesthetic values depend upon economic development that is quality oriented and provides a net positive value to the economy and the quality of life in Brevard's local communities. The future of sustainable nature-based tourism in Brevard County depends upon the quality of the nature-based experience rather than the delivery of high-volume tourism.

Although most people link Florida with the traditional tourist destinations of Disney in Orlando and the Kennedy Space Center in Brevard County, Florida's many natural wonders attract a growing number of visitors each year. Nearly half of the tourists in Florida visit a state or national park. These tourists are often searching for an experience that brings them closer to the natural world. For most tourists, the quality of the nature-based experience is related to effective presentation of environmental education programs.

It takes an experienced and knowledgeable eye to appreciate the beauty and complexity of Florida's natural areas. Transitions from one natural community to another are subtle and not easily recognized. For most tourists, discovery of the "real Florida", its people, its natural resources and its heritage requires an educated and entertaining guide. The EEL Program shall work with conservation groups, educators, universities and the tourist industry to develop and provide meaningful and responsible nature-based experiences for Brevard's residents and visitors.

Brevard County is blessed with rich biological diversity and some of the most unique natural areas in Florida. For example:

The Archie Carr National Wildlife Refuge is the most important sea turtle refuge in North America. More Loggerhead turtles' nest along the beaches of Brevard and Indian River Counties than anywhere else in the world.

Kennedy Space Center (KSC), the Cape Canaveral National Seashore, and the Merritt Island National Wildlife Refuge are some of the most important tourist attractions in Brevard County. The Merritt Island National Wildlife Refuge is known internationally for its wildlife resources, saltwater recreational fishing, world-class bird watching and duck hunting resources.

The dry, sandy scrub habitats of Brevard's Atlantic Coastal Ridge and barrier island represent one of the nations most endangered natural communities. Brevard's "ancient desert" community has yet to be discovered by the nature-based traveler to Florida. Many of the plants and animals found in Florida scrub are seen nowhere else in the world.

The St. Johns River is one of the most significant river systems in Florida, providing excellent fresh water fishing, canoeing, air boating, hunting and wildlife viewing opportunities.

The Indian River Lagoon is recognized as one of the nation's most diverse estuaries and an estuary of "national significance". A recent economic study contracted by the Indian River Lagoon National Estuary Program estimated the economic value of the Lagoon at over \$700 million per year for the five-county region.

Within the EEL Sanctuary Network, Brevard County can create and enhance a diverse array of nature-based tourism opportunities and environmental education programs to attract, educate and entertain local residents and tourist visitors.

A successful and sustainable ecotourism industry must maintain the sensitive balance between ecosystem protection and public access. Effective partnerships between the tourism industry and the environmental community must be established through strategic planning, cooperation and open communication. Local communities interested in promoting successful ecotourism programs should focus on providing a quality experience in a well-managed natural area.

If land management decisions are wise, Florida can provide a natural areas network with great value to future generations; the environment, local economies and a high quality of life. Quality is more important than quantity. Development of a stable and sustainable ecotourism industry is more important than maximizing annual profits at the expense of natural areas. In the end, opportunities for ecosystem protection and responsible ecotourism within the EEL Sanctuary Network will be guided by management principles provided in the EEL Sanctuary Management Plan (provided herein) and in comprehensive management plans for specific sanctuaries.

Conservation and Sustainable Ecotourism

The development of a sustainable system of nature-based tourism within the EEL Sanctuary Network depends upon:

- 1) Identification of appropriate goals for nature-based tourism that:
 - a) establish a responsible ethic for public use of natural resources;
 - b) provide public access to natural areas;
 - c) provide knowledge, understanding, & appreciation for environment, culture & history through meaningful high-quality experiences; and
 - d) encourage the tourism industry to share benefits and revenues to enhance conservation.
- 2) Identify appropriate pre-conditions for sustainable nature-based tourism. Preconditions include:
 - a) a commitment to implement resource conservation practices;
 - b) use of information from research and monitoring to direct public use and conservation activities;
 - c) availability of knowledgeable and trained guides or educators;
 - d) placing limitations on land use based on carrying-capacity of resources;

- e) planning human activities based on natural resource assets; and
 - f) provision of facilities and infrastructure to provide quality experiences and support levels for public use.
- 3) Promote actions within the nature-based tourism industry that:
- a) encourage formal partnerships that ensure common management goals and shared benefits;
 - b) identify target audiences and market demand;
 - c) monitor market opportunities and changes;
 - d) train ecotourism guides and educators;
 - e) organize and revise nature-based activity programs on a regular basis;
 - f) evaluate and enforce guidelines which regulate the use of an area;
 - g) strengthen networks among private sector and public sector partners; and
 - h) strengthen partnership trust.
- 4) Plan and implement management strategies to address human use impacts, protection of natural resources, and maintenance of high-quality nature-based visitor experiences. Responsible stewardship of biological diversity should include:
- a) identification of key impact indicators;
 - b) establishment of standards for impact indicators;
 - c) comparison of standards and existing conditions;
 - d) identification of probable causes of impacts;
 - e) identification of management strategies for impact reduction; and
 - f) implementation of management strategies.

Corporate Responsibilities

Economic opportunity and market size will drive the expansion of ecotourism in Brevard County and Florida. To ensure that ecotourism is sustainable and that it promotes responsible conservation, the tourist industry must be educated about conservation and land stewardship responsibilities. The EEL Program shall coordinate and cooperate with the tourist industry through the Tourist Development Council and other state and local tourist programs.

The EEL Program shall integrate EEL Program conservation principles and management plans into corporate strategies for public use and nature-based tourism.

The following are basic guidelines for the tourist industry to ensure that conservation, recreation and education goals of nature-based tourism are compatible with the goals of the EEL Sanctuary Network:

1. create a common vision for sustainable use and conservation;
2. integrate the EEL Program conservation principles and management plans into corporate strategies for public use and nature-based tourism;
3. enhance corporate sensitivity to local issues;
4. promote public education, awareness, appreciation and understanding;
5. support adaptive management, research and long-term monitoring;
6. value quality of visitor experience over quantity of visitors; and
7. lead by example.

Local communities within areas of natural significance have unique opportunities to showcase their local resources to visitors and new residents. The EEL Program Sanctuary Network can create meaningful public-sector and private-sector partnerships to promote conservation, public use of EEL sanctuaries and local economic development.

A.4 EEL Species Translocation Policy

Brevard County
Environmentally Endangered Lands Program
Species Translocation Policy

EEL Program
91 East Drive
Melbourne, FL 32904

(321) 255-4466
www.eelbrevard.com

While the value and feasibility of translocation or relocation of wildlife is highly debated and much research is yet to confirm the viability of such activities, there may be occasions where such actions are reasonable and justifiable. Restocking of reclaimed or repaired habitat, especially in areas too isolated for natural restocking, may be a viable management mechanism for establishing populations of extirpated species or those that have been severely limited by disease or catastrophic events which threaten the long-term sustainability of a population. In general, translocation of species should be used as a management tool at the request of the Brevard County Environmentally Endangered Lands (EEL) Program, part of the EEL Program long term management plan, or for purposes of scientific research to test the viability of such a program.

The EEL Program has created this policy to guide the process for third party requests and internal EEL Program requests for plant and animal species translocations to Sanctuaries managed by the EEL Program. Since translocations may be a viable part of the long-term reestablishment or maintenance of biological diversity on Sanctuary lands, the EEL Program has established the following policy to guide the process of considering and deciding upon such activities. The EEL Program Selection and Management Committee favors a conservative, science-based approach when considering requests for translocation. EEL Program Land Managers will work towards including potential translocation sites and species into the site-specific management plans.

Terms and Definitions

1. **Translocation** - the movement by humans of living organisms from one area with free release in another.
2. **EEL Program Sanctuary** – any Sanctuary that is managed by the Brevard County Environmentally Endangered Lands Program, regardless of the agency that holds the title to the property (i.e., Brevard County, Florida State, etc.).

3. Listed Species

- a. **Fauna** - those animal species identified as Endangered, Threatened, or Species of Special concern by the United State Fish and Wildlife Service (USFWS) and/or the Florida Fish and Wildlife Conservation Commission (FFWCC).

i. United State Fish and Wildlife Service definitions:

1. *Endangered species* – species that are in danger of extinction within the foreseeable future throughout all or a significant portion of its range
2. *Threatened species* – those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges
3. *Species of special concern* - although the species is not endangered or threatened, it is extremely uncommon or has unique or highly specific habitat requirements and deserves careful monitoring of its status; species on the periphery of their range; species that were once threatened or endangered but now have increasing or protected, stable populations.

ii. Florida Fish and Wildlife Conservation Commission definitions:

1. *Endangered species* - as designated by the Commission, a species, subspecies, or isolated population of a species or subspecies which is so few or depleted in number or so restricted in range or habitat due to any man-made or natural factors that it is in imminent danger of extinction, or extirpation from Florida
2. *Threatened species* – as designated by the Commission, a species, subspecies, or isolated population of a species or subspecies which is facing a very high risk of extinction, or extirpation from Florida,
3. *Species of special concern* - as designated by the Commission, a species, subspecies, or isolated population of a species or subspecies which is facing a moderate risk of extinction, or extirpation from Florida,

- b. **Flora** – those plant species identified as Endangered, Threatened, or Commercially Exploited by Florida Department of Agriculture and Consumer Services (FDACS) or those species identified as Endangered or Threatened by the USFWS under the Endangered Species Act (see definitions listed under Fauna).

i. Florida Department of Agriculture and Consumer Services definitions:

1. *Endangered species* - species of plants native to the state 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, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.

2. *Threatened species* - 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 such number as to cause them to be endangered.
3. *Commercially Exploited species* - species native to state which are subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.
4. **Non-native/exotic species** – introduced species not native or endemic to the area in question; for most purposes, those species not occurring within Florida (Central Florida, Brevard County, etc.) prior to European contact, according to the best available scientific and historical documentation.
5. **Rehabilitated wildlife** – wildlife that has received human assistance for injuries or illness with the ultimate goal of release back into the wild
6. **Re-introduction** – the intentional movement of an organism into a part of its native range from which it has disappeared or become extirpated in historic times as a result of human activities or natural catastrophe.
7. **Restocking** – the movement of numbers of plants or animals of a species with the intention of building up the number of individuals of that species in an original habitat.

Translocation Guidelines

- A. When considering translocation of any plant or animal species to an EEL Program Sanctuary, the EEL Program Conservation Principles and Directives (Sanctuary Management Manual, 1997) will be taken into consideration.
 - a. When considering translocation, EEL Program Land Managers shall ensure that sufficient scientific rationale exists for relocating the plant(s) or animal(s). Scientific principles, current or proposed conditions at the original site, historic ecosystem conditions at the proposed EEL Program Sanctuary translocation site, historical presence of the species at the proposed EEL Program Sanctuary translocation site, disease control, genetic drift and population carrying capacity shall all be taken into consideration. Rationale for supporting translocation may include, but are not limited to, conditions at the original site threatening the viability of the species or conditions at the EEL Program Sanctuary translocation site being suitable for increasing the overall viability of the species in its range.
 - b. To the extent possible, the factors which limit a species' distribution and abundance in its native range will be thoroughly studied and understood by biologists/ecologists and its probable dispersal pattern appraised.
- B. All state and/or federal regulations shall be examined prior to an internal EEL Program review of a translocation request. All state and/or federal regulations shall be examined for species that are listed as Endangered, Threatened, Species of Special Concern, or Commercially Exploited on a state and/or federal level. The EEL Program shall monitor ongoing changes in the status of listed species and changes in the state and federal management goals for these listed species.

- C. All Brevard County Board of County Commission (BoCC) regulations shall be examined prior to translocation and prior to consideration of these EEL Program guidelines. In addition to FFWCC requirements, the EEL Program shall follow the guidelines established by the BoCC when considering translocation of gopher tortoises (*Gopherus polyphemus*). Whenever possible, commensal species shall also be taken into consideration when translocating gopher tortoises.
- D. No known invasive non-native plant or animal species shall be translocated to an EEL Program Sanctuary. Exceptions may be made in the case of biological control agents for exotic pest organisms after appropriate scientific and agency review has determined to be safe for release.
- E. Generally, rehabilitated animals shall be translocated to an EEL Program Sanctuary. In most cases, it is difficult to assure that these animals have not imprinted on humans, have lost their fear of humans and/or have the ability to live as a naturally wild animal. Exceptions can be made with approval from the Regional Land Management Superintendent and Program Manager, for the release of rehabilitated river otters under the established guidelines of appendix J.
- F. No organisms shall be translocated to an EEL Program Sanctuary that does not have a completed, approved management plan in place as per Florida state and EEL Program Management Plan Guidelines.
- G. Relocations shall not be authorized solely for humanitarian reasons.
- H. This policy is not meant to serve as a means to provide public lands as "safe havens" for listed species in a way that would encourage habitat loss across private and public holdings. Third parties requesting translocations should educate developers and encourage habitat preservation throughout newly developed areas through strategic planning prior to development.
- I. The EEL Program may determine that
 - a. translocation is appropriate at the proposed EEL Program Sanctuary,
 - b. translocation is appropriate at an alternate EEL Program Sanctuary,
 - c. translocation is appropriate at an alternate property managed by another local agency, if the management entity of the agency approves of the translocation or
 - d. translocation is not appropriate at any EEL Program Sanctuary.
- J. If all Translocation Guidelines are met, the individual or organization proposing the translocation shall complete the EEL Program Species Translocation Application. When considering translocation, many variables will exist for each request and each request shall be considered on a case-by-case basis. The Species Translocation Application shall be submitted to the appropriate Regional Land Manager for the proposed recipient EEL Program Sanctuary. The land manager shall consult with the EEL Program Manager, with other Land Managers (i.e., EEL Program Land Managers, FFWCC Land Managers, SJRWMD Land Managers, etc.), with members of the EEL Program Selection and Management Committee (SMC), and/or with biologists/ecologists with extensive experience studying the proposed species for additional guidance and input. All information that is collected through these consultations shall be presented to the SMC. A majority vote by the SMC is required for approval of the translocation.

- K. In the event that a Monitoring Plan is required by the regulatory agency responsible for the listed species (USFWS, FFWCC, FDACS), the third party shall provide the Monitoring Plan to the EEL Program. The EEL Program may decide that a Monitoring Plan is required for non-listed species; the third party shall provide such a Monitoring Plan to the EEL Program. Monitoring may be required for individual(s) organisms and/or the population after release onto an EEL Sanctuary. In addition, management fees and/or exotic species removal (e.g., feral hogs, invasive plant species) may be required for future management of the species and the habitat.
- L. A third party requesting a translocation to an EEL Program Sanctuary shall be responsible for obtaining and compliance with any permits required for translocation of a listed species.
- M. The EEL Program is not responsible for loss of animals or plants after translocation.
- N. The EEL Program reserves the right to refuse any translocation proposal for lands managed by the EEL Program.
- O. For management purposes, the EEL Program may consider re-introduction of an organism to an EEL Program Sanctuary. Re-introductions should only take place where the original causes of extirpation at the site have been removed. Re-introductions should only take place where the habitat requirements of the species are satisfied. There should be no re-introductions if a species became extirpated because of habitat change which remains un-remedied or where significant habitat deterioration has occurred since the extinction.
- P. For management purposes, the EEL Program may consider restocking of an organism to an EEL Program Sanctuary. Restocking with the aim of conserving a dangerously reduced population should only be attempted when the causes of the reduction have been largely removed and natural increase can be excluded. Before deciding if restocking is necessary, the capacity of the area it is proposed to restock should be investigated to assess if the level of population desired is sustainable. If the population is sustainable, then further work should be undertaken to discover the reasons for the existing low population levels. Action should then be taken to help the resident population expand to the desired level, and restocking should be used if these actions fail.
- Q. The EEL Program reserves the right to request that a veterinarian certify that the animals to be translocated are disease free. Any costs associated with this veterinarian approval will be the burden of the third party requesting the translocation.
- R. In the event of a proposed translocation request of a listed plant or animal for mitigation purposes to an EEL Program Sanctuary where no population survey has been completed for the existing population at the site, the applicant may be required to:
 - a. Hire a consultant/biologist to survey the proposed translocation site to establish the conditions of any existing population. The study parameters and methodology shall be approved in advance by the EEL Program and include a full assessment of the carrying capacity of the site with close consideration being given to the EEL Program goals of biological diversity.

- b. If translocation is deemed appropriate, the applicant shall:
 - i. obtain and comply with all required permits (SJRWMD, FFWCC, USFWS, FDACS, etc.)
 - ii. pay a per acreage fee to the EEL Program for future management of the species or of the habitat required for the species
 - iii. monitor the existing population on the site after the translocation. Monitoring protocols and time frame shall be approved in advance by the EEL Program, with guidance from the EEL Program Selection and Management Committee (SMC) and from the state and/or federal agencies responsible for the guidelines set for the listed species. Monitoring Reports shall be submitted to the EEL Program and SMC for review and approval.
- S. This policy shall be updated as new information becomes available.

Appendix I. Specific requirements for translocation of gopher tortoises

Any proposed translocation of gopher tortoises to EEL Program Sanctuaries must meet all Florida standards as determined by the Florida Fish and Wildlife Conservation Commission (FFWCC). However, the EEL Program has determined that additional criteria will apply to ensure that translocation is of conservation benefit.

1. Translocations will be allowed only under the Conservation Land Permit process of FFWCC. This process is intended to allow for natural expansion of gopher tortoise populations, consistent with the biodiversity mission of the EEL Program.
2. Translocations will be allowed only in sites that have been restored and are in good habitat condition but where gopher tortoise populations are absent or, if present, population densities are low compared to habitat specific gopher tortoise densities from scientific literature.
3. The organization or individual proposing gopher tortoise translocation is responsible for conducting a tortoise population survey that meets or exceeds state standards. SMC approval of survey is required before survey is conducted.
4. Permission to conduct a gopher tortoise population survey does not mean that a translocation will be approved. Survey results are needed to determine if a translocation is appropriate.
5. Numbers of gopher tortoises that can be moved to a site will be determined by site and habitat conditions, population survey results, and habitat specific gopher tortoise population densities. For scrub and flatwoods in Brevard County, habitat specific gopher tortoise population densities are lower than State stocking densities.
6. Any proposal to translocate gopher tortoises to an EEL Program Sanctuary requires approval of the SMC following the established EEL Program Translocation Policy.
7. Reporting requirements on success or failure of gopher tortoise translocations to EEL Sanctuaries may be more frequent and detailed than state standards.

Appendix J. Specific requirements for translocation of rehabilitated river otters.

Any proposed translocation of rehabilitated river otters to EEL Program Sanctuaries must be consistent with the following criteria:

1. River otters are considered a sentinel species for the Indian River Lagoon and can be useful in evaluating the health of the estuary.
2. Translocations will be allowed only from properly permitted wildlife rehabilitation organizations.
3. Translocations will be allowed only in sites that have adequate freshwater resources and adjacent uplands that may be appropriate for nesting. It is not required that the release location be the same location the otters were initially found.
4. The organization releasing the otters is responsible for all release activities.
5. North American River Otters are not a territorial species and sites with other otters in the area can be good locations for release of new individuals.
6. Individuals considered for release should be adequately evaluated to ensure they are able to successfully forage for live food.
7. Any proposal to translocate river otters to an EEL Program Sanctuary requires approval of the Regional Land Management Superintendent and the Program Manager.
8. A list of potential regional release locations will be identified in advance that are not in close proximity to adjacent residential or high use public access areas.

Potential Release Sites:

1. Scottsmoor Flatwoods West
2. Fox Lake
3. South Lake
4. Pine Island
5. Jordan
6. Malabar West
7. Micco
8. Grant Flatwoods
9. Hog Point Cove
10. Maritime Hammock
11. Coconut Point Sanctuary

Environmentally Endangered Land Program



Vision Statement

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 resources, stewardship and ecosystem management. The EEL Program protects the rich biological diversity of Brevard County for future generations. 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.



EEL Sanctuary Network Stewardship Responsibilities

Presents the responsibilities associated with land and resource stewardship and the relative roles for existing and proposed EEL staff. Successful implementation of EEL Program objectives depend heavily on citizen volunteer support, private sector partnership, innovative inter-agency partnerships and creative problem solving.

Sanctuary Stewardship is the central concept supported by the following:

1. EEL Program Manager
2. Sanctuary Managers
3. Volunteer Coordinator
4. Public or Private Contractors

Responsibilities and roles of the support staff:

1. Local Community and Public Relations
2. Administrative duties, Annual Budget, Board Liaison
3. Sanctuary Program Development
4. Management Plan Implementation
5. University Liaison, Research and Monitoring, Student Intern Program
6. Inter-Agency Coordination with other Managers, Rangers, and Nature Sanctuaries
7. Wildlife and Endangered Species Management
8. Ecosystem Management, Hydrological Management, Fire Management, Exotic Species Control, Restoration and Monitoring
9. Facilities Maintenance, Garbage, Roads, Buildings, Trails, and Utilities
10. Emergency Services and Site Security
11. Capital Development, Site Design, Site Construction
12. Visitor Impact Analysis
13. Public Attitude, Knowledge and quality of Experience Surveys
14. Volunteer Coordination, Friends of Sanctuaries
15. Volunteer Guides, Volunteer Training, Site Field Trips
16. Liaison with School Board and other Educational Programs
17. Environmental Educator Curriculum Design
18. Trail Guides, Brochures, Maps, Educational Materials, Visitor Support, Design
19. Private and Inter-Agency Liaison, Conservation and Tourism, Federal, State and Local
20. Grant Development and Administration
21. Fundraising, Corporate Sponsors, Foundation Support

EEL Program Organizational Structure

- 1) Program Manager
 - a) Administrative Secretary
 - b) Fire Manager
 - c) Storekeeper
 - d) North Region Land Manager
 - (1) Assistant Land Manager
 - (2) Sanctuary Steward
 - (3) Land Management Technician
 - (4) Land Management Technician
 - (5) Naturalist
 - (6) Naturalist
 - e) Central Region Land Manager
 - (1) Assistant Land Manager
 - (2) Land Management Technician
 - (3) Education Coordinator
 - (4) Naturalist
 - (5) Naturalist
 - f) South Region Land Manager
 - (1) Assistant Land Manager
 - (2) Land Management Technician
 - g) South Beach Region Land Manager
 - (1) Assistant Land Manager
 - (2) Sanctuary Steward
 - (3) Land Management Technician
 - (4) Land Management Technician
 - (5) Naturalist
 - h) Public Use / Volunteer Coordinator
 - (1) Land Management Technician
 - i) Admin Support Specialist