

# MANAGEMENT PLAN

*Cocoa Beach's*

## **Maritime Hammock Preserve City of Cocoa Beach, Florida**

**Florida Communities Trust Project No. 03 – 035 –FF3**



**Adopted March 18, 2004**

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## I. INTRODUCTION

The City of Cocoa Beach's Maritime Hammock Preserve is a unique site within this largely urbanized area of the City. The project site is within the boundaries of two priority investment areas – the Indian River Lagoon National Estuary Program and the Indian River Lagoon Scenic Highway Corridor. Located just north of the intersection of North Atlantic Avenue (SR A1A) and Cocoa Isles Boulevard, the project site includes a remnant of the marine hammock community once found throughout the Cocoa Beach area. Statewide, the maritime hammock community has been identified by the Florida Natural Areas Inventory as an “imperiled” community. This plant community comprises approximately sixty percent of this 5.4-acre site. The project location map is shown in Exhibit A.

While remnants of a maritime hardwood hammock are found on the project site, much of the property was cleared at some point in the past. Typical hammock understory species are still found on the project site; however they generally occur as individual specimens rather than as part of a cohesive community. Much of the project site has been mowed for many years, preventing regrowth of these species. However, in areas not mowed, Brazilian pepper (*Schinus terebenthifolius*) and Australian pine (*Casuarina* sp.) often invaded and formed dense thickets.

Wildlife present on the site includes a variety of small mammals and reptiles and a number of birds. Bird species noted on-site include listed species such as white ibis (*Eudocimus alba*) and osprey (*Pandion haliaetus*). Many of the species present are typical of those found in old field habitats. Feral animals (specifically cats) may be present on the site (*from time to time*).

To date, no archaeological or historic resources have been identified on the project site; however, there are identified archaeological sites nearby. The location of the site near the Atlantic Ocean and the Banana River may increase the potential for the presence of archaeological resources. Although the project site was cleared in the past and regularly mowed, some artifacts may remain onsite. An archaeological survey will be conducted prior to any development activities on the project site.

The City of Cocoa Beach submitted an application to the Florida Communities Trust in June 2003. Grant funds received from Florida Communities Trust in 2004 will reimburse the City for a portion of the costs of acquiring the project site. This management plan has been developed to ensure that the project site will be managed in accordance with the Grant Award Agreement and in furtherance of the grant application.

The management plan includes a conceptual master site plan, management objectives for the project site, and goals and objectives from the City's comprehensive growth management plan that are related to the management of the project site. Physical improvements planned for the project site were reviewed to identify any permits required to implement proposed land alterations during construction of any improvements. Other items reviewed in the management plan include:

- Proposed improvements,
- easements, concessions, and lease agreements,
- proposed resource management and restoration activities,
- archeological, historical and cultural resources assessment and protection,
- greenway management and connectivity,
- maintenance, security and staffing.

A cost estimate to implement the management plan was prepared based on the items reviewed above and priorities selected from elements of the plan. Provisions for monitoring the health of the natural resources and for measuring progress in implementing the management plan will be documented as well.

## **II. PURPOSE**

The purpose of this project as described in the Florida Communities Trust Program application package reads as follows:

*The purposes of this project include the provision of additional public green space within the City, restoration and preservation of the natural communities and habitats at the project site while providing compatible passive, low-impact recreational opportunities for the public.*

### **a. Future Uses**

The future uses of the project site are for conservation and passive recreation. The project site will be managed in perpetuity only for the conservation, protection and enhancement of natural resources and for public outdoor recreation that is compatible with the conservation, protection and enhancement of the site. Accordingly, the City's future land use and zoning designation for the project site has been amended to conservation. In addition, the project site will be identified in all literature and advertising as being publicly owned and operated as a natural conservation area. These materials will also state that the project site was acquired with funds from the Florida Communities Trust.

### **b. Management Objectives**

To achieve these purposes, several management objectives for the site are proposed. These include:

- Implementing management (removal/control) of exotic, invasive or undesirable species.
- Designing, constructing and maintaining a landscape plan that will serve to protect, preserve, and restore the maritime hammock community and include native species in the landscape components
- Designing, constructing and maintaining a conservation area with amenities such as benches, restrooms, picnic tables, walking/exercise paths, bike racks, educational signage, a water feature/stormwater pond and wildlife viewing platform, which are compatible and consistent with protection and restoration of the natural communities on the project site.

### **c. Major Comprehensive Plan Directives**

#### *Future Land Use Element*

##### Objective I.5

To maintain or improve the current quality of natural and historic resources.

*Conservation Element*

Objective IV.3

To conserve, appropriately use and protect native vegetative communities, fisheries, wildlife and wildlife habitat.

Objective IV.8

To designate environmentally sensitive lands for protection based on State and locally determined criteria.

*Sanitary Sewer, Solid Waste, Stormwater Management, Potable water, Natural Groundwater & aquifer Recharge Element*

Objective VI-D.1

The City of Cocoa Beach shall, effective with the adoption of the Comprehensive Plan, strive to provide for adequate stormwater management in both flood control and water quality to meet the future needs of the City of Cocoa Beach.

*Recreation and Open Space Element*

Objective VII.3

To ensure that parks and recreation facilities are efficiently and effectively provided.

**III. SITE DEVELOPMENT, IMPROVEMENT AND ACCESS**

***a. Existing Physical Improvements***

No structures or other facilities are present on the project site. With the possible exception of clearing of portions of the site and regular mowing, no improvements have been made to the project site. A public utility easement strip, approximately forty feet in width, exists along the west side of the property and runs north from Cocoa Isles Boulevard to Holiday Lane. Collection lines for the City's sanitary sewer and distribution lines for the City's reclaimed water are located within this easement.

***b. Proposed Physical Improvements***

Consistent with the intended use of the project site as a conservation area, facilities anticipated to be constructed on the site are few. Anticipated facilities include a parking area, a restroom, water feature/stormwater pond, wildlife observation deck, recreational trails or paths, benches, picnic tables, and educational signage or kiosks.

The parking area will be located at the southwest portion of the preserve where there is currently an entranceway from Cocoa Isles Boulevard. The restroom will be located adjacent to the parking area at the preserve's entrance. Since the preserve is to be low impact and is readily assessable by walking, bike and public transportation, parking will be limited to ten vehicles. Parking will be grassed and denoted by wooden curb stops. Bicycle racks will be constructed at the parking area.

The stormwater pond will be approximately one acre and will be placed to assure preservation of all valuable habitat on the project site. A wildlife observation deck will be a user amenity to the pond. It will be approximately forty feet in diameter and will include seating and educational kiosks on the relationship between stormwater runoff and the Indian River Lagoon and coastal

habitat. A small maintenance shed will be located along the west easement area, which will house the facilities for alum treatment of the storm runoff. This structure will be approximately eight feet square and, as an alternative, may be designed as an underground chamber. If this structure is built above ground, the design will be rustic in nature to blend with the forested surroundings.

Trails will be approximately a quarter mile in length and will include a nature trail with educational signage and a seven-station fitness loop for users desiring more aerobic recreation. The pond area will include a few picnic tables designed for seating six persons. A tetherball area will be located at the northern fringe of the project site, along the fitness trail, where an existing restaurant precludes the peacefulness found in the other forested areas. A picnic table will be located in the vicinity of the tetherball area. A large entry sign at the Cocoa Isles Boulevard entrance at or near the parking lot will give the history of the maritime hammock and its functionality as coastal habitat for migrating birds and resident wildlife. This sign will inform visitors of the partnership between the City and State for the preservation of this green space. An entry sign will be placed on SRA1A where a bicycle rack and bench will be located. Approximately eight trash receptacles will be placed at the project site, predominantly at the stormwater pond, observation deck, entries and tetherball/exercise area. It is anticipated that stormwater management infrastructure will be constructed in the western border easement in conjunction with the stormwater pond proposed for the project site. All improvements will be placed to compliment the forested areas without disturbing existing native vegetation.

All improvements to the project site will be listed in this management plan. Any proposed modification to this plan and/or alterations or physical improvements not listed explicitly in this management plan requires FCT review and approval prior to any action.

### ***c. Wetland Buffer***

No wetlands currently exist on the project site and there is no evidence that wetlands were historically present on the site. A one-acre water feature/stormwater pond will be created on the project site. This pond will have a sinuous shoreline, resembling a natural pond. The shoreline and adjacent area will be landscaped with native plants to provide water quality and habitat benefits, and to provide a safety buffer between the pond and recreational activities. Appropriate setbacks (10' from a mulched path, 25' from a paved path) will be maintained from these constructed wetlands.

### ***d. Acknowledgement Sign***

Following execution of the management agreement, a sign will be placed along North Atlantic Avenue (SR A1A) informing passersby that the City of Cocoa Beach and Florida Communities Trust acquired the project site in 2004 as public lands. The sign will also alert the community that restoration activities and construction of facilities will commence on the project site in the near future. Longer term, a permanent sign will be installed along North Atlantic Avenue which will identify the project site as a City of Cocoa Beach preserve, acquired and developed in partnership with Florida Communities Trust.

A permanent sign will also be placed at or near the parking area identifying the project site as a City of Cocoa Beach preserve, acquired and developed in cooperation with Florida Communities Trust. It is anticipated that this sign will also contain information about facilities available on the project site, allowed and prohibited activities, hours of operation and similar information.

***e. Parking***

Parking for the project site will be located in a presently cleared and mowed area at the access from Cocoa Isles Boulevard. Six spaces including a handicapped parking spot will be provided. A bike rack and trash receptacle will be provided at or near the parking area. The parking area will not be paved as grass or some form of pervious stabilization such as turf blocks or Geoweb will be used. Drainage from the parking area will be directed to the stormwater pond.

***f. Stormwater Facilities***

A water feature/stormwater treatment pond approximately one acre in size will be located in the southern portion of the project site. The pond will have a sinuous shoreline, resembling a natural pond and will not be fenced. The pond will have shallow slopes and will contain a littoral zone planted with native vegetation such as spartina, pickerel weed and arrowhead to provide both water quality and habitat benefits. It is anticipated that this pond will draw wildlife such as wading birds to the project site. No native hardwood species will be removed in construction of the pond. The exact shape and size of the pond will be subject to engineering design constraints.

In addition to being wildlife habitat and an aesthetic amenity, the pond will treat stormwater from the project site as well as providing offline treatment for stormwater from an 81-acre watershed that currently discharges to the Banana River with minimal treatment. Stormwater treatment will be enhanced with alum injection, a technology recommended by FDEP's Nonpoint Source Management Section. Grant monies for design and construction of the stormwater treatment pond have been awarded by FDEP (Florida Department of Environmental Protection) and SJRWMD (St. Johns River Water Management District).

***g. Hazard Mitigation***

The entire land area of the City of Cocoa Beach is subject to flooding and is completely within the designated hurricane vulnerability zone and coastal high hazard area. Through acquisition of the project site and its designation as conservation area/passive recreational park, the potential for additional development in these zones has been eliminated.

The stormwater pond will serve not only to improve water quality in the nearby Banana River through treatment of stormwater but will also serve to alleviate flooding in nearby areas.

***h. Permits***

Permits will be required from the St. Johns River Water Management District for the construction of the stormwater treatment pond at the project site. Permits for similar projects are typically issued in less than 90 days. Site plan review for the project as a whole will be required by the City of Cocoa Beach as will building permits for several aspects of site development. A National Pollutant Discharge Elimination System (NPDES) construction permit will be required for the construction activity of the stormwater pond.

***i. Easements, Concessions, and Leases***

An existing 41-foot utility easement borders the project site in the west (see Exhibit A – Master Site Plan). Sanitary sewer transmission lines and reclaimed water distribution lines are presently located underground within this easement. It is anticipated that stormwater management facilities

will be constructed in this easement to assist in the conveyance and treatment of the storm runoff. The stormwater infrastructure will be located underground within this utility easement.

No concessions or leases have been identified or are proposed on the project site. Should concessions, leases or additional easements be considered at some future time any such easement, lease, or concession shall be compatible with the purposes and management objectives of this management plan. In the event that a lease, concession or additional easement is considered for the project site, the City of Cocoa Beach will provide 60 day prior notice and information regarding the lease of any interest, the operation of any concession, any sale or option, the granting of any management contracts, and any use by any person other than in such person's capacity as a member of the general public. Prior to the execution of any such document, a review and approval by FCT will be required. Any and all fees collected from any easement, concession, or lease will be placed in a segregated account and go for the upkeep and maintenance of the project site.

#### **IV. NATURAL RESOURCES**

##### ***a. Natural Communities***

The project site, appropriately named the Maritime Hammock Preserve, is comprised of remnant coastal hammock and cleared areas that were planted with citrus in the early 1900s. As is common with ruderal areas, the cleared portions became infested with invasive vegetation such as Brazilian pepper and Australian pine. In the undisturbed hammock areas, typical canopy and understory species endure, providing anchors for ecosystem restoration.

As used in Florida, the term *hammock* generally refers to an area of vegetation that is distinct from its surroundings. This distinction can arise from differences in vegetation, or from a change in topography setting the area apart as either higher or lower than its surroundings. In Brevard County, coastal hammock usually occurs where the physical stresses of the dune zone diminish to the point where a stable forest can grow.

The original vegetation of Cocoa Beach probably consisted of patches of palmetto scrub (*Serenoa repens*) and coastal hammock dominated by a canopy of live oak (*Quercus virginiana*) with a mixed understory consisting of temperate and subtropical species. Remnants of the oak hammock (including some specimens with DBH > 30") still exist in Cocoa Beach, and tropical hammock species can still be found associated with shell middens in the Thousand Islands area of Cocoa Beach.

Coastal plant community makeup is most likely controlled by substrate composition, and disturbances such as storms, fire and infrequent freezes. Calcareous substrates resulting from shell middens and relict beach deposits ameliorate soil acidity and improve drainage, and are often colonized by tropical plants, either as understory or sub-canopy vegetation (Johnson and Barbour, 1990), (Norman, 1976). Where the disturbance regime is less severe the canopy is comprised of live oak with other large trees such as red bay (*Persea borbonia.*), red mulberry (*Morus rubra*), hackberry (*Celtis laevigata*) and strangler fig (*Ficus aurea*).

In certain places within Cocoa Beach, hammock vegetation extends completely to the lee side of the dune e.g. Lori Wilson Park. In other areas, the backdune vegetation is comprised of palmetto/oak scrub as a transition zone between the dune and the hammock. Examples of this transition vegetation can be seen at Archie Carr National Wildlife Refuge and Canaveral

National Seashore. Mature hammock vegetation can be seen at the Castle Windy area of Canaveral National Seashore, with relicts occurring at Lori Wilson Park and elsewhere in Cocoa Beach. These areas provide excellent examples of a restoration target for the project site.

Animal species noted on-site include the following. Reptiles: black racer (*Coluber constrictor*), anoles (*Anolis carolinensis*, *A. sagrei*). Birds: numerous neo-tropical migrants, resident passerines and some raptors. Mammals: evidence of raccoons.

The canopy will provide an area to feed as well as rest for the neo-tropical migrant birds. This in turn, will provide a hunting area for potential use by migratory raptors such as the merlin (*Falco columbarius*). Use by animals is likely to increase as restoration of vegetation takes place.

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 Norman, E. M. 1976. *An analysis of the vegetation at Turtle Mound*. *Fl. Sci.* 39(1):14-18.  
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**b. Listed Animal Species**

**Table IV.a  
Project Site Animal Species Observed (On/Adjacent)**

| CLASS      | SPECIES  | HABITAT      |
|------------|--|--------------|
| Reptiles   | Black Racer ( <i>Coluber constrictus priapus</i> )       | Hammock      |
|            | Green Anole ( <i>Anolis carolinensis</i> )               | Hammock      |
|            | Cuban (Brown) Anole ( <i>Anolis sagrei</i> )             | All          |
| Birds      | Six-lined Racerunner ( <i>Cnemidorphus sexlineatus</i> ) | Palmetto     |
|            | Cattle Egret ( <i>Bubulcus ibis</i> )                    | All          |
|            | Wood Stork ( <i>Mycteria americana</i> )                 | Open areas   |
|            | White Ibis ( <i>Eudocimus albus</i> )                    | Open areas   |
| Passerines | Red-bellied woodpecker ( <i>Melanerpes carolinus</i> )   | Snags, trees |
|            | Yellow-bellied sapsucker ( <i>Sphyrapicus varius</i> )   | Snags, trees |
|            | Pileated woodpecker ( <i>Dryocopus pileatus</i> )        | Snags, trees |
|            | Brown Thrasher ( <i>Toxostoma rufum</i> )                | Hammock      |
|            | Gray (Crested) Kingbird ( <i>Tyrannus dominicensis</i> ) | Hammock      |
|            | Northern Cardinal ( <i>Cardinalis cardinalis</i> )       | Hammock      |
|            | Northern Mockingbird ( <i>Mimus polyglottos</i> )        | Hammock      |
|            | Blue Jay ( <i>Cyanocitta cristata</i> )                  | Hammock      |
|            | Fish crow ( <i>Corvus ossifragus</i> )                   | All          |
|            | Neotropical migrants (several)                           | Hammock      |
| Raptors    | Doves (several)  | Ground       |
|            | American Kestrel ( <i>Falco sparverius</i> )             | Trees        |
|            | Osprey ( <i>Pandion haliaetus</i> )                      | Trees, snags |
|            | Red Shouldered Hawk ( <i>Buteo lineatus</i> )            | Trees        |
|            | Merlin (migratory) ( <i>Falco columbarius</i> )          | Trees        |
| Mammals    | Peregrine falcon (migratory) ( <i>Falco peregrinus</i> ) | Trees        |
|            | Raccoon ( <i>Procyon lotor</i> )                         | Hammock      |
|            | Opossum ( <i>Didelphis virginiana</i> )                  | Hammock      |
|            | Gray squirrel ( <i>Sciurus carolinensus</i> )            | Hammock      |

*Endangered, Threatened, Species of Special Concern, EPPC Invasive*

c. *Listed Plant Species*

**Table IV.b  
Project Site Plant Species List**

| <b>Family</b>  | <b>Genus/species</b>  | <b>Common Name</b>   |
|----------------|---|--|
| Anacardiaceae  | <i>Shinus terebinthifolius</i><br><i>Toxicodendron radicans</i>   | <b>Brazilian Pepper</b><br>Poison Ivy  |
| Apocynaceae    | <i>Catharanthus roseus</i>  | <b>Periwinkle</b>  |
| Araliaceae     | <i>Schefflera actinophylla</i>  | <b>Queensland Umbrella Tree</b>  |
| Arecaceae      | <i>Sabal palmetto</i>   | Sabal Palm   |
| Asteraceae     | <i>Ambrosia artemisiifolia</i><br><i>Bidens alba</i><br><i>Erigeron strigosus</i><br><i>Eupatorium compositifolium</i><br><i>Mikania scandens</i><br><i>Solidago sempervirens</i><br><i>Wedelia trilobata</i> | Common Ragweed<br>Beggarticks<br>Daisy Fleabane<br>Dog Fennel<br>Climbing Hempweed<br>Seaside Goldenrod<br><b>Creeping Oxeye</b> |
| Boraginaceae   | <i>Heliotropium angiospermum</i>  | Scorpion's Tail  |
| Bromiliaceae   | <i>Tillandsia recurvata</i>   | Ball Moss  |
| Burseraceae    | <i>Bursera simaruba</i>   | Gumbo-Limbo  |
| Caricaceae     | <i>Carica papaya</i>  | <b>Papaya</b>  |
| Casuaraceae    | <i>Casuarina glauca</i>   | <b>Australian Pine</b>   |
| Commelineaceae | <i>Commelina erecta</i>   | Whitemouth Dayflower   |
| Convolvulaceae | <i>Ipomoea sp.</i>  | Morning Glory  |
| Curcubitaceae  | <i>Melothria pendula</i><br><i>Momordica charantia</i>  | Creeping Cucumber<br><b>Southern Balsmpear</b>   |
| Dioscoreaceae  | <i>Dioscorea bulbifera</i>  | <b>Air Potato</b>  |
| Euphorbiaceae  | <i>Chamaesyce bombensis</i><br><i>Chamaesyce hirta</i><br><i>Chamaesyce hypericifolia</i><br><i>Ricinus communis</i><br><i>Sapium sebiferum</i>   | Sand-Dune<br>Hairy Spurge<br>Graceful Sandmat<br><b>Castor bean</b><br><b>Chinese Tallow</b>                                     |
| Fagaceae       | <i>Quercus virginiana</i>   | Live Oak   |
| Lauaceae       | <i>Persea borbonia</i>  | Red Bay  |
| Malvaceae      | <i>Malvaviscus sp.</i><br><i>Sida sp.</i>   | <b>Turk's Cap Mallow</b><br>Fanpetals  |

| Family        | Genus/species                           | Common Name                     |
|---------------|---|---------------------------------|
| Moraceae      | <i>Ficus aurea</i>                      | Strangler Fig                   |
|               | <i>Morus rubra</i>                      | Red Mulberry                    |
|               | <i>Ficus sp.</i>                        | <b>Banyan Tree</b>              |
| Myrsinaceae   | <i>Ardisia escallonioides</i>           | Marlberry                       |
| Myrtaceae     | <b><i>Eugenia uniflora</i></b>          | <b>Surinam Cherry</b>           |
| Oleaceae      | <i>Forestiera segregata</i>             | Florida Swampprivet             |
| Onagraceae    | <b><i>Oenothera humifusa</i></b>        | <b>Seaside Evening Primrose</b> |
| Poaceae       | <i>Cenchrus sp.</i>                     | Sandspur                        |
|               | <i>Dactyloctenium aegypticum</i>        | <b>Crowfoot Grass</b>           |
|               | <b><i>Panicum maximum</i></b>           | <b>Guinea Grass</b>             |
|               | <i>Paspalum notatum</i>                 | Bahiagrass                      |
|               | <i>Stenotaphrum secundatum</i>          | St. Augustine Grass             |
| Polygalaceae  | <i>Polygala grandiflora</i>             | Showy Milkwort                  |
| Portulacaceae | <i>Portulaca pilosa</i>                 | Pink Purslane                   |
|               | <b><i>Hedyotis corymbosa</i></b>        | <b>Flattop Mille Grains</b>     |
| Rubiaceae     | <i>Psychotria nervosa</i>               | Wild Coffee                     |
| Sapindaceae   | <b><i>Cupaniopsis anacardioides</i></b> | <b>Carrotwood</b>               |
| Smilacaceae   | <i>Smilax sp.</i>                       | Car Briar                       |
| Solanaceae    | <i>Physalis walteri</i>                 | Groundcherry                    |
| Verbenaceae   | <i>Callicarpa americana</i>             | Beautyberry                     |
|               | <b><i>Lantana camera</i></b>            | <b>Lantana</b>                  |
|               | <i>Lantana involucrata</i>              | Lantana                         |
|               | <i>Phyla nodiflora</i>                  | Carpetweed, Frog-Fruit          |
|               | <i>Vitex sp.</i>                        | Chaste Tree                     |
| Vitaceae      | <i>Ampelopsis arborea</i>               | Peppervine                      |
|               | <i>Parthenocissus quinquefolia</i>      | Virginia Creeper                |
|               | <i>Vitis aestivalis</i>                 | Summer Grape                    |
|               | <i>Vitis shuttleworthii</i>             | Calusa Grape                    |
|               | <i>Vitis rotundifolia</i>               | Muscadine Grape                 |

**Endangered, Threatened, Species of Special Concern, EPPC Invasive, non-native**

***d. Inventory of Natural Plant Communities***

The only natural plant community existing on the project site is the maritime hammock. A portion of the site will be used as a stormwater pond with a littoral vegetated zone for habitat enhancement and stormwater nutrient removal. This small portion of the site will function as a man-made treatment pond nestled in a natural hammock setting and will resemble one of the coastal lake natural communities. It is expected that this pond will attract wading birds such as snowy egrets (*Egretta thula*), little blue herons (*Egretta caerulea*) and tricolor herons (*Egretta tricolor*). It is expected that this pond area will enhance the hammock for migratory bird species and beneficial insects such as dragonflies. No adverse impacts to the primary hammock habitat are anticipated.

***e. Water Quality***

While no waterbodies currently exist on the project site and there is no evidence that a waterbody was present historically on the site. A water feature/stormwater treatment facility approximately one acre in size will be located at the south end of the project site in an area that has been cleared and regularly mowed. The pond will have a sinuous shoreline, resembling a natural pond. The shoreline and adjacent area will be landscaped with native plants to provide both water quality and habitat benefits.

In addition to being potential habitat and an aesthetic amenity, the pond will treat stormwater from the project site as well as providing offline treatment for stormwater from an 83-acre watershed, which is currently discharged, to the Banana River with minimal treatment. Funding for this portion of the project has been obtained from Florida Department of Environmental Protection (FDEP) and St. Johns River Water Management District (SJRWMD).

This segment of the Banana River is presently included on the FDEP Section 303(d) list of impaired waters, primarily due to excess nutrients. Total maximum daily loads (TMDLs) will be established for the Banana River to address impairment. Water quality projects such as this stormwater pond will help meet TMDLs and improve water quality in the Banana River.

***f. Unique Geological Features***

Not Applicable

***g. Trail Network***

The project site will include a combination fitness and nature trail. The fitness trail will be a segment of the nature trail and will include various exercise stations that will allow visitors to work out on a challenging course. The nature trail, which is geared for more passive recreation and education, will wind throughout the project site along the water feature/stormwater pond and through the maritime hammock community. The nature trail will include informational signage at several points discussing the communities and their role in the coastal ecosystem, identifying various plants, discussing the purpose and function of the water feature/stormwater pond and discussing restoration activities underway on the project site.

Several State and local programs support the establishment of trails for walking or bicycling linking sites within a corridor. The project site is located along the Brevard County MPO SR

A1A Urban Trail, which runs from Port Canaveral to Sebastian Inlet, distance of more than 40 miles (See Exhibit E – SRA1A Urban Trail). The project is also located along the Indian River Lagoon Scenic Highway, which runs along SR A1A from Port Canaveral to Wabasso Causeway (SR 510) and along US 1 from Wabasso to Titusville. This project will enhance the trail network by providing trailside facilities and a destination along this trail system.

#### ***h. Greenways***

Within the Indian River Lagoon system basin there are “official” greenways programs such as those implemented by the Florida Department of Environmental Regulation’s (FDEP) Office of Greenways and Trails, the Brevard County Metropolitan Planning Organization (MPO), “unofficial” greenways programs such as the Indian River Lagoon Greenway supported by the Marine Resources Council, a local private interest group, and related programs such as Indian River Lagoon Blueway Project, a consortium of the SJRWMD, SFWMD, and the counties within the Indian River Lagoon basin seeking to acquire and manage wetland areas along the Indian River Lagoon, and the Indian River Lagoon Scenic Highway, a program sponsored by FDOT to protect and restore natural and scenic resources along the Lagoon.

Each of these programs supports the protection of green areas to function as corridors for wildlife migration or as a network of refuges. Many of these programs also support public use of greenways parcels as passive parks, affording a refuge from the hustle and bustle of everyday life. While each of these programs has their own set of goals and objectives, they are consistent with and complimentary to the purposes and objectives established for the project site. In addition to coordinating activities with these programs, it is anticipated that the advice, support and partnership of these programs will be sought in implementing this management plan.

### **V. RESOURCE ENHANCEMENT**

#### ***a. Upland Restoration***

The natural community on the project site has been impacted by previous activities and requires substantial enhancement and restoration. As previously noted, much of the project site was cleared and much of the property was regularly mowed for many years. Many areas, which were not regularly mowed, now support dense growth of Brazilian pepper or Australian pine. The restoration portion of the site is approximately 2 acres.

Initial restoration and enhancement efforts are anticipated to focus on removal or control of exotic species as identified in the Exotic Pest Plant Council’s publication *List of Florida’s Most Invasive Species*. The primary focus of this effort will be control and phased removal of Australian pine and Brazilian pepper. Following removal of the exotic species, part of the ongoing maintenance activities at the project site will be monitoring to insure that these or other exotic or undesirable plants do not re-establish within the project site.

Once the majority of the exotic, invasive or undesirable plants have been removed or are under control in a particular area, restoration of the area will commence. Restoration of the maritime hammock community on site will be a gradual, long-term process. While a number of trees and palms remain on-site, most of the understory has been eliminated by clearing and mowing. Considering the extent of the area to be restored and the complexity of the community to be

restored, it will likely be several years before the natural community on the project site resembles a mature and functional maritime hammock. It is anticipated that the restoration process will involve a series of small to moderate sized projects undertaken over several years. The number and size of these projects accomplished each year will likely be based on the availability of funding and labor available.

All proposed landscaping and restoration areas will be planted with native plant species typical of the maritime hammock community or coastal areas. Landscape materials in the vicinity of the observation deck, picnic areas and parking will consist of native species such as saw palmetto (*Serenoa repens*), sea grape (*Coccoloba uvifera*), beautyberry (*Callicarpa americana*), coontie (*Zamia pumila*) and similar coastal plants. This area includes approximately 1 acre or 18% of the project site. Landscape for these highly visible areas will be accomplished within a year after the completion of the stormwater pond, which is expected to be complete within three years.

Plant materials to be used in restoration of the maritime hammock will include species documented in the well-preserved remnant of maritime hammock at nearby Lori Wilson Park (*Lori Wilson Park Flora Taxa List*; Hames & Zarillo, 1994) or in maritime hammocks found on the Kennedy Space Center (*Flora and Threatened and Endangered Plants of the John F. Kennedy Space Center*, NASA Technical Publication Memorandum 102791, 1990). These species include sabal palm (*Sabal palmetto*), hardwoods such as live oak (*Quercus virginiana*), redbay (*Persea borbonia*), red cedar (*Juiperus silicicola*), gumbo limbo (*Bursera simaruba*); and shrubs or herbaceous understory plants such as wild coffee (*Psychotria nervosa*), marlberry (*Ardisia escalloidides*), Simpson's stopper (*Myrcianthes fragrans var. simpsonii*), tough bully (*Sideroxylon tenax*), and numerous others. The hammock restoration is the largest area for landscaping – approximately 3 acres or 55% of the project site. Initial improvements will be exotic plant elimination and encouragement of existing native species and volunteers. Once all exotics are removed, areas will be prioritized and a diverse array of suitable species will be planted. A few open areas will be left and planted as wildflower habitat to encourage proliferation of our coastal butterflies and beneficial insects. The anticipated schedule for exotic removal is ten years with most areas being addressed within five years. Suitable hammock vegetation will be planted within the restoration areas within seven years. Wildflower areas will be planted within the first three years.

Restoration is anticipated to be accomplished using several strategies. In some areas, the strategy will be to simply cease mowing a selected part of the site. If an adequate seed bank remains after years of mowing, this may allow native understory species to return. The restoration areas will be monitored, species present noted, and invasive or undesirable species removed. The success or failure of this strategy is likely to vary widely from area to area. As a result, it is likely that supplemental plantings will be required to provide the mix and coverage of plant species typically found in the maritime hardwood hammock community.

Other portions of the site may simply be planted with a mix of native sub-tropical hardwood hammock species such as palmetto, wild coffee, live oak, bay, gumbo limbo, nakedwood, Hercules club and similar species. Planting success will be monitored and invasive and other undesirable plants removed.

Another strategy will be to use this property as a “receiver” location for plants that otherwise may be lost to development. Some vacant lots within the City and adjacent areas have remnants of the maritime hammock community. As these lots are developed, appropriate plants will be salvaged and transplanted to the project site as part of the enhancement and restoration process. Another strategy the City may employ for hammock restoration is development of a plan to sell memorial trees (suitable hammock species) to its citizens for planting in the preserve.

Restoration activities have already commenced upon the project site with vast numbers of Brazilian pepper and Australian pine eradicated from the eastern portion. Suffocating vines have been herbicided, allowing the valued hardwoods underneath them to re-leaf and flourish. It is evident that oak, Florida privet and wild coffee are already beginning to revegetate this area of the site. It is anticipated that five years, at a minimum, will be needed to introduce a significant number of maritime hammock species to the project site. It is anticipated that ten (10) to fifteen (15) years will be needed to phase out all of the Australian pine on the property and to transition these affected areas into a functional hammock community.

#### ***b. Wetland Restoration***

While no wetlands currently exist on the project site and there is no evidence that wetlands were historically present on the site, a water feature/stormwater treatment facility approximately one acre in size will be located at the south end of the project site in an area that has been historically cleared and regularly mowed. The pond will have a sinuous shoreline, resembling a natural pond. The shoreline and near-shore area of the water feature/stormwater pond will be planted with native aquatic and transitional species for both aesthetic and functional reasons. Species anticipated to be used in this location include wax myrtle (*Myrica cerifera*), cordgrass (*Spartina patens*), sand cordgrass (*Spartina bakerii*), sea oxeye daisy (*Borrchia sp.*), sawgrass (*Cladium jamaicense*) and similar species. The pond and wetlands vegetated area comprises approximately 1 acre or 18% of the project site. The pond landscaping will be accomplished immediately following completion of the stormwater pond.

In addition to being potential habitat and an aesthetic amenity, the pond will treat stormwater from the project site as well as providing offline treatment for stormwater from an 83-acre watershed, which is currently discharged to the Banana River with minimal treatment. Funding for this portion of the project has been obtained from FDEP and SJRWMD.

#### ***c. Invasive Exotic Plants***

Initial restoration efforts on the project site will focus on removal or control of exotic or invasive species as identified in the Exotic Pest Plant Control Council’s publication *List of Florida’s Most Invasive Species*, found in Exhibit D of this management plan. Noting that Australian pine (*Casuarina sp.*) and Brazilian pepper (*Schinus terebenthifolius*) constitute the bulk of the exotic species present, the primary focus of this effort will be the removal and control of these species. Brazilian pepper on the project site will be removed as soon as possible while removal of Australian pine will be accomplished in phases. Other species such as air potato (*Dioscorea bulbifera*), carrotwood (*Cupania anacardioides*) and sansevieria (*Sansevieria Hyacinthoides*) will be eradicated within target work areas and reinfestation will be monitored as part of the invasive plant removal effort.

Exotic removal/control efforts will be coordinated and overseen by the City of Cocoa Beach. City staff, volunteer, and commercial resources will be used to conduct removal/control projects. Grants and other funding assistance will be sought to fund City, volunteer, or commercial removal and control projects. Potential sources of volunteer labor include organizations such as Marine Resources Council, Keep Brevard Beautiful, scout troops and similar groups.

Oversight of exotic removal/control projects will include ensuring that staff, volunteers or contractors are adequately trained and competent in the removal or treatment of exotic species within sensitive environments. The removal or treatment of exotic species shall have minimal or no impact on the natural resources on the project site.

Brazilian pepper and Australian pine will be eradicated by stump cut and immediate herbicide application. All cut trees will be chipped on site and the mulch stockpiled for use under trees or as path preparation. Cut peppers and pines will immediately be carefully painted with concentrated Garlon 4 herbicide. All effort will be made to perform removal activities when peppers are not flowering or seeding. When flowering or seeding is evident, chipped pepper will be stockpiled and monitored for seedlings. All seedlings shall be treated by spraying with garlon and continued monitoring.

Invasive plant removal activities have already commenced on the project site. The City of Cocoa Beach is holding a Pepper Bust at the project site once a month and will continue to do so until all invasives and undesirable plants are removed. It is anticipated that fifteen years will be needed to phase out all of the Australian pine on the property and to transition these affected areas into a functional hammock community. The first phase will include removal of invasive plants except for large Australian pines, which will be left in place until these newly planted trees have become established. The large Australian pines will be left along SR A1A to act as a buffer between the quiet hammock setting and the busy roadway. Large Australian pines will be left in other areas as noted in Table XI.a. The large Australian pines will be gradually removed over a fifteen-year period as the native trees grow to maturity. This first phase will also include the planting of native trees and shrubs. Once portions of the site are cleared of these invasive or nuisance species, part of the ongoing maintenance activities at the project site will be monitoring and treatment as needed to ensure that these species and other exotic or undesirable plants do not re-establish within the project site.

#### ***d. Feral Animal Program***

While feral animals have not been observed on the project site and no evidence has been found of impacts to resources, habitat or wildlife by feral animals, the project site is located in the middle of a developed area. As a result, there is potential for the presence of feral cats. Should annual monitoring or periodic site visits indicate that feral animals are present or that impacts from feral animals are occurring, assistance will be sought from Brevard County Animal Control to remove these feral animals from the project site area.

## **VI. ARCHEOLOGICAL, CULTURAL AND HISTORICAL RESOURCE PROTECTION**

To date, no archaeological or historic resources have been identified on the project site; however, there are identified archaeological sites nearby. The location of the site near the Atlantic Ocean and the Banana River may increase the potential for the presence of archaeological resources.

Although the project site was cleared in the past and regularly mowed, some artifacts may remain onsite.

Prior to any construction on the project site, the City of Cocoa Beach will contract with a professional archaeological surveyor to determine the presence of any archaeological, cultural or historic resources on the project site.

In the event that archaeological or historic resources are discovered at the project site, the Department of State, Division of Historical Resources, Bureau of Historic Preservation will recommend further action to protect these resources. The collection of artifacts or the disturbance of archaeological and/or historic sites will be prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The management of archaeological and historic resources will comply with the requirements of Chapter 267, Florida Statutes, specifically Sections 267.061 (2) (a) and (b).

## **VII. EDUCATION SIGNS AND PROGRAMS**

No educational programs, museum or nature center will be included as part of the site improvements.

Educational environmental signage will be provided at various locations throughout the project site. A large site map and environmental kiosk will greet visitors at the entrance to the preserve at the parking area adjacent to the Cocoa Isles Boulevard entrance. Another set of environmental kiosks will be incorporated into the wildlife observation deck on the stormwater pond. This signage will offer stormwater management information and its relationship to the Indian River Lagoon and the Maritime Hammock Preserve. Additional educational signage will be placed along the nature and exercise trails for maritime hammock species identification and function.

## **VIII. COORDINATED MANAGEMENT**

The Maritime Hammock Preserve is adjacent to a small City-owned playground on Cocoa Isles Boulevard. This small neighborhood park provides an area for active play, preserving the project site for quieter, less active recreation. This playground sits directly west of the Cocoa Isles Boulevard entrance and with its lush oak shade trees provides an attractive gateway to the project site.

There is no need for coordinated management between properties since they are both owned and managed by the City of Cocoa Beach.

## **IX. MANAGEMENT NEEDS**

### ***a. Maintenance***

Maintenance of the project site will be the responsibility of the City of Cocoa Beach under the direction of the City Commission and City Manager. The City's Public Works department will be responsible for the day-to-day services such as trash pickup and mowing. Long-term maintenance activities, such as trail maintenance, invasive plant monitoring and removal, and native plant and habitat enhancement will be accomplished by City staff, contractors, prisoner labor or volunteer efforts will accomplish removal and native plant and habitat enhancement.

Maintenance to improvements such as the wildlife observation deck, picnic tables and signage will be the responsibility of the City's Public Works department. The City's Stormwater Utility will be responsible for the short-term and rehabilitative maintenance associated with the stormwater pond.

***b. Security***

Similar to other public properties in the City, site surveillance and security will be provided by the City of Cocoa Beach staff, the City's Police Department and nearby Neighborhood Watch programs. It is anticipated that the project site will be closed between sunset and sunrise, like other City parks. The Police Department will include the project site on regular patrols and respond to calls for service. Signage at the preserve entrance will include the hours of operation. The Cocoa Isles Boulevard entrance will include a security gate, which will prohibit parking after the park closes.

***c. Staffing***

No new permanent staff will be needed to operate or maintain the project site. Maintenance will be provided or coordinated by existing Public Works staff. Security will be provided by existing Police Department staff.

***d. Oversight and Stewardship***

A committee to oversee the development and long-term management of this preserve and to promote stewardship by residents and users will be appointed by the City Commission.

**X. COST ESTIMATES AND FUNDING SOURCES**

Cost estimate detail for improvements, along with funding source is found on Table X.a.

**Table X.a  
Maritime Hammock Preserve - Cost Estimate Funding Source**

| Improvement  | Unit Cost              | Quantity    | Cost Estimate | Funding Source | Comments   |
|--|------------------------|-------------|---------------|----------------|--|
| <b>Phase 1 (2004 - 2005)</b>   |                        |             |               |                |  |
| Site Acquisition   |                        | 5.4 acres   | \$1,526,543   | City/FCT       |  |
| Archaeological Survey - DHR requirement  |                        | 5.4 acres   | \$3,500       | City           |  |
| Brazilian Pepper & Selective Invasive Removal  | \$150/hour - 180 hours | 3.4 acres   | \$27,000      | City*          | * use of volunteers and/or inmates can greatly reduce these cost estimates, ~ 15-year period |
| Hauling - debris, wood piles   | \$150/hour - 40 hours  | ~ 5 piles   | \$6,000       | City           |  |
| Tree Planting - oak, redbay, cedar, magnolia   | 200                    | 100         | \$20,000      | City           | * costs can be minimized through transplant and donation efforts                             |
| sabal palm, holly, magnolia, gumbo limbo, mastic   | 125                    | 150         | \$18,750      |                |  |
| Shrubs & Installation - seagrape, myrsine, wild coffee, snowberry, stoppers, beautyberry, coral bean, marlberry      | 15                     | 400         | \$6,000       | City           |  |
| Stormwater Pond - design/engineering/permitting  |                        |             | \$77,000      | SJRWMD         | SJRWMD stormwater cost-share   |
| Total Phase 1 Costs  |                        |             | \$1,684,793   |                | (\$148,750 in improvements/\$71,750 without pond)  |
| <b>Phase 2 (2005 - 2006)</b>   |                        |             |               |                |  |
| Stormwater Pond - construction   |                        |             | \$365,000     | FDEP           | EP 319 grant   |
| Wildlife Observation Deck  |                        |             | \$40,000      | City           | ~ 20' x 20'  |
| Toilet Facility  |                        |             | \$30,000      | City           |  |
| Trail System - nature trail  |                        | ~ 2400 feet | \$6,000       | City           | footpath material & perimeter marker   |
| - fitness trail & equipment  |                        | ~ 600 feet  | \$7,000       | City           | above + exercise equipment   |
| Tetherball Area  |                        |             | \$400         | City           |  |
| Picnic Tables  | 600                    | 6           | \$3,600       | City           | recycled plastic   |
| Grassed Parking  |                        | 100' x 30'  | \$2,000       | City           | curb stops   |
| Preserve Entrance Sign   | 3000                   | 2           | \$6,000       | City           | SRA1A & Cocoa Isles Boulevard  |
| Environmental Kiosks   | 1000                   | 2           | \$2,000       | City           | entrance, observation deck & trails  |
| Bike Racks & Trash Receptacles   |                        |             | \$3,500       | City           | 2 bike racks & 10 trash receptacles  |
| Annual Maintenance Costs   |                        |             | \$8,000       | City           | RECURRING - daily & amenity upkeep   |
| Total Phase 2 Costs  |                        |             | \$108,500     | \$473,500      | (\$108,500 without pond)   |
| <b>Phase 3 (2007 +)</b>  |                        |             |               |                |  |
| Maritime Hammock Enhancement- add understory vegetation in hammock area e.g. wild coffee, beautyberry, myrsine, etc. |                        | 4 acres     | \$3,000       | City           | may not be needed if vegetative volunteer rate is high                                       |

**Total Project Costs      \$2,153,293**

| <b>Totals by Funding Source</b>           |                    |
|---|--------------------|
| Total FCT Costs                           | \$610,617          |
| Total City Land Acquisition Costs         | \$915,926          |
| Total City Improvement Costs (minus pond) | \$192,750          |
| Total FDEP Costs                          | \$365,000          |
| Total SJRWMD Costs                        | \$77,000           |
|   | <b>\$2,161,293</b> |

## **XI. PRIORITY SCHEDULE**

Improvements to the site will be implemented in three phases. The first phase will include removal of invasive plants - except for large Australian pines (> 4" dbh), which will be left in place. Throughout this phase, there will be active planting of large trees and shrubs. The first phase will also include the design and engineering of the stormwater pond, which should take approximately eighteen months. The pond construction should take approximately six months. The second phase will include most of the physical improvements including the wildlife observation deck, restrooms, educational kiosks, nature and exercise trails, picnic tables, landscaping and parking area. Additional habitat restoration will occur in this second phase with continued planting of oak, redbay and hammock tree species, understory shrubs and small open areas of native grasses and wildflowers. The last phase includes complete removal of the Australian pines and an enhancement of the restoration improvements including understory maritime hammock vegetation. The project will most likely continue for ten to fifteen years as the hammock species become large enough to warrant the complete removal of the Australian pine stands. A detailed schedule, showing the phases can be found in Table XI.a.

**Table XI.a  
Maritime Hammock Preserve - Priority Schedule**

| Phase 1   | 2004 - 2005 |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|-------|---|---|---|---|---|---|---|---|---|---|---|
|   | J           | F | M | A | M | J | J | A | S | O | N | D | J     | F | M | A | M | J | J | A | S | O | N | D |
| Brazilian Pepper & Selective Invasive Removal   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Professional Archaeological Survey  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Tree Planting - oaks, redbays, cedars (2-Year)  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Shrubs & Installation - seagrape, wax myrtle, etc.  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Land Use/Zoning Change  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Biannual Monitoring (flora/fauna)   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Stormwater Pond - design/engineering/permitting   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Stormwater Pond - construction  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Phase 2   | 2005 - 2006 |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Australian pine & Selective Invasive Removal  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Wildlife Observation Deck construction  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Trail System - nature trail   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| - fitness trail & equipment   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Tetherball Area   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Picnic Tables   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Grassed Parking   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Preserve Entrance Sign  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Environmental Kiosks  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Toilet Facility   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Biannual Monitoring (flora/fauna)   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Preserve Officially Open to Public  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Phase 3   |             |   |   |   |   |   |   |   |   |   |   |   | 2007+ |   |   |   |   |   |   |   |   |   |   |   |
| Australian pine & Selective Invasive Removal  |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Biannual Monitoring (flora/fauna)   |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |
| Maritime Hammock Enhancement<br>- add understory vegetation in hammock area e.g. wild coffee, beautyberry, myrsine, snowberry, stoppers, FL privet, marlberry, etc. |             |   |   |   |   |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |   |   |   |   |

NOTE: Enhancement of Maritime Hammock with understory native plantings will continue each year until cessation of mowing is achieved.

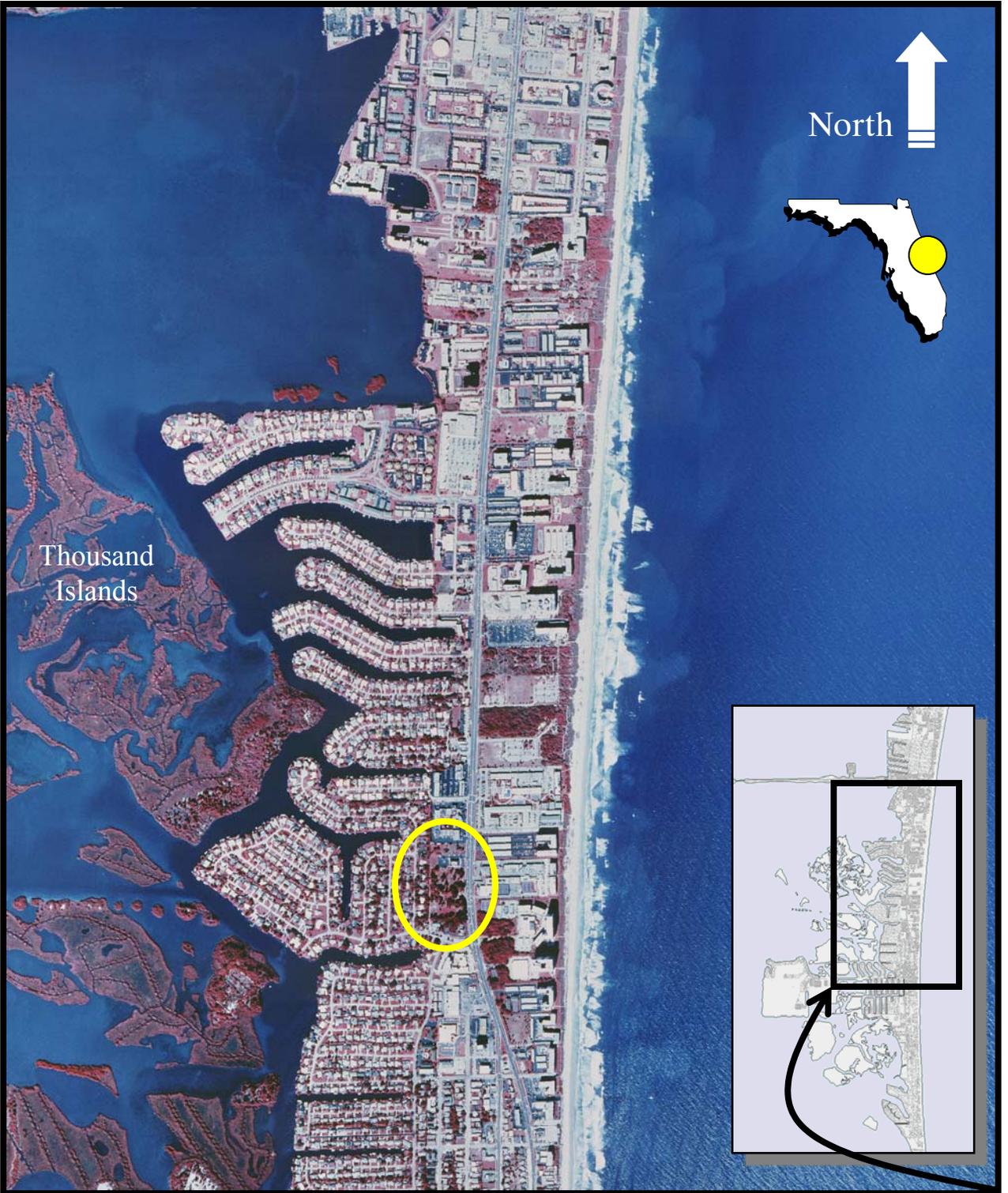
## **XII. MONITORING AND REPORTING**

The City of Cocoa Beach will conduct or coordinate biological monitoring of the project site. Monitoring will occur twice annually; once during the spring/summer seasons and once during the fall/winter seasons. These visits will include a survey of the project site for the presence of listed plant or animal species, invasive or undesirable plant species, feral animals, or evidence of inappropriate human use of the project site. These visits will also assess the general overall condition of the project site as well as the condition and extent of the natural communities located on the project site. Monitoring will include an assessment of progress in restoration of these communities. Additional periodic inspections of the project site, especially to monitor for the presence of invasive or undesirable plants or feral animals, are also anticipated to occur. Should a listed species be identified and confirmed as present on the project site, this occurrence will be reported to the Florida Natural Areas Inventory. The Florida Natural Areas Inventory for plant and animal species can be found in Exhibit C of this management plan. Any revision to this Management Plan must be reviewed and approved by Florida Communities Trust.

The City of Cocoa Beach will prepare and forward to the Florida Communities Trust prior to the anniversary date of project plan approval an Annual Report evaluating implementation of the management plan. The report will include an evaluation of the degree of success in implementing the management plan. This Annual Stewardship Report will be due on January 30 of each year.



**Exhibit A**  
**Maritime Hammock Preserve – Master Site Plan**



**Exhibit B**  
**Maritime Hammock Preserve - Project Location Map (FDEP Quad 3505)**

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Animal Species List

| Scientific Name   | Common Name(s)   | GFC  | FWS    |
|---|--|------|--------|
| <b>Fish</b>   |  |      |        |
| <i>Acipenser brevirostrum</i>   | Shortnose sturgeon                                     | E    | E      |
| <i>Acipenser oxyrinchus</i>   | Atlantic sturgeon                                      | SSC  | T*     |
| <i>Ammocrypta asprella</i>  | Crystal darter   | T    |        |
| <i>Centropomus undecimalis</i>  | Common snook   | SSC  |        |
| <i>Cyprinodon variegatus hubbsi</i>                                     | Lake Eustis pupfish                                    | SSC  |        |
| <i>Etheostoma histrio</i>   | Harlequin darter                                       | SSC  |        |
| <i>Etheostoma okaloosae</i>   | Okaloosa darter  | E    | E      |
| <i>Etheostoma olmstedii maculaticeps</i>                                | Southern tessellated darter; tessellated johnny darter | SSC  |        |
| <i>Fundulus jenkinsi</i>  | Saltmarsh topminnow                                    | SSC  |        |
| <i>Menidia conchorum</i>  | Key silverside   | T    |        |
| <i>Micropterus notius</i>   | Suwannee bass  | SSC  |        |
| <i>Micropterus</i> n. sp. cf <i>coosae</i>                              | Shoal bass; Chipola bass                               | SSC  |        |
| <i>Notropis melanostomus</i>  | Blackmouth (=Pond Creek) shiner                        | E    |        |
| <i>Pteronotropis welaka</i>   | Bluenose shiner  | SSC  |        |
| <i>Rivulus marmoratus</i>   | Mangrove rivulus; rivulus                              | SSC  |        |
| <i>Starksia starcki</i>   | Key blenny   | SSC  |        |
| * Applicable only to the subspecies <i>A.o. desotoi</i> (Gulf sturgeon) |  |      |        |
| <b>Amphibians</b>   |  |      |        |
| <i>Haideotriton wallacei</i>  | Georgia blind salamander                               | SSC  |        |
| <i>Hyla andersonii</i>  | Pine Barrens treefrog                                  | SSC  |        |
| <i>Rana capito</i>  | Gopher (=crawfish) frog                                | SSC  |        |
| <i>Rana okaloosae</i>   | Bog frog   | SSC  |        |
| <b>Reptiles</b>   |  |      |        |
| <i>Alligator mississippiensis</i>                                       | American alligator                                     | SSC  | T(S/A) |
| <i>Caretta caretta</i>  | Atlantic loggerhead turtle                             | T    | T      |
| <i>Chelonia mydas mydas</i>   | Atlantic green turtle                                  | E    | E      |
| <i>Crocodylus acutus</i>  | American crocodile                                     | E    | E      |
| <i>Dermochelys coriacea</i>   | Leatherback (=leathery) turtle                         | E    | E      |
| <i>Diadophis punctatus acricus</i>                                      | Big Pine Key ringneck snake                            | T    |        |
| <i>Drymarchon corais couperi</i>  | Eastern indigo snake                                   | T    | T      |
| <i>Elaphe guttata guttata</i>   | Red rat snake; corn snake                              | SSC* |        |
| <i>Eretmochelys imbricata imbricata</i>                                 | Atlantic hawksbill turtle                              | E    | E      |
| <i>Eumeces egregius egregius</i>  | Florida Keys mole skink                                | SSC  |        |
| <i>Eumeces egregius lividus</i>   | Bluetail mole skink                                    | T    | T      |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Animal Species List

| Scientific Name                             | Common Name(s)                                  | GFC | FWS |
|---|---|-----|-----|
| <i>Gopherus polyphemus</i>                  | Gopher turtle                                   | SSC |     |
| <i>Graptemys barbouri</i>                   | Barbour's map (=sawback) turtle                 | SSC |     |
| <i>Kinosternon bauri</i>                    | Striped mud turtle                              | E*  |     |
| <i>Lepidochelys kempii</i>                  | Atlantic ridley turtle                          | E   | E   |
| <i>Macrochelys temminckii</i>               | Alligator snapping turtle                       | SSC |     |
| <i>Neoseps reynoldsi</i>                    | Sand skink                                      | T   | T   |
| <i>Nerodia fasciata taeniata</i>            | Atlantic salt marsh snake                       | T   | T   |
| <i>Pituophis melanoleucus mugitus</i>       | Florida pine snake                              | SSC |     |
| <i>Pseudemys concinna suwanniensis</i>      | Suwannee cooter                                 | SSC |     |
| <i>Stilosoma extenuatum</i>                 | Short-tailed snake                              | T   |     |
| <i>Storeria dekayi victa</i>                | Florida brown snake                             | T*  |     |
| <i>Tantilla oolitica</i>                    | Miami black-headed snake; rimrock crowned snake | T   |     |
| <i>Thamnophis sauritus sackeni</i>          | Florida ribbon snake                            | T*  |     |
| *Applicable in lower Florida Keys only      |   |     |     |
| <b>Birds</b>                                |   |     |     |
| <i>Ajaia ajaja</i>                          | Roseate spoonbill                               | SSC |     |
| <i>Ammodramus maritimus juncicollis</i>     | Wakulla seaside sparrow                         | SSC |     |
| <i>Ammodramus maritimus mirabilis</i>       | Cape Sable seaside sparrow                      | E   | E   |
| <i>Ammodramus maritimus peninsulae</i>      | Scott's seaside sparrow                         | SSC |     |
| <i>Ammodramus savannarum floridanus</i>     | Florida grasshopper sparrow                     | E   |     |
| <i>Aphelocoma coerulescens</i>              | Florida scrub-jay                               | T   | T   |
| <i>Aramus guaranauna</i>                    | Limpkin   | SSC |     |
| <i>Campephilus principalis</i>              | Ivory-billed woodpecker                         | E   | E   |
| <i>Charadrius alexandrinus tenuirostris</i> | Southeastern snowy plover                       | T   |     |
| <i>Charadrius melodus</i>                   | Piping plover                                   | T   | T   |
| <i>Cistothorus palustris griseus</i>        | Worthington's marsh wren                        | SSC |     |
| <i>Cistothorus palustris marianae</i>       | Marian's marsh wren                             | SSC |     |
| <i>Columba leucocephala</i>                 | White-crowned pigeon                            | T   |     |
| <i>Dendroica kirtlandii</i>                 | Kirtland's warbler                              | E   | E   |
| <i>Egretta caerulea</i>                     | Little blue heron                               | SSC |     |
| <i>Egretta rufescens</i>                    | Reddish egret                                   | SSC |     |
| <i>Egretta thula</i>                        | Snowy egret                                     | SSC |     |
| <i>Egretta tricolor</i>                     | Tricolored (=Louisiana) heron                   | SSC |     |
| <i>Eudocimus albus</i>                      | White ibis                                      | SSC |     |
| <i>Falco peregrinus tundrius</i>            | Arctic peregrine falcon                         | E   |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Animal Species List

| Scientific Name                              | Common Name(s)                   | GFC  | FWS    |
|--|----------------------------------|------|--------|
| <i>Falco sparverius paulus</i>               | Southeastern American kestrel    | T    |        |
| <i>Grus americana</i>                        | Whooping crane                   | SSC  | T(E/P) |
| <i>Grus canadensis pratensis</i>             | Florida sandhill crane           | T    |        |
| <i>Haematopus palliatus</i>                  | American oystercatcher           | SSC  |        |
| <i>Haliaeetus leucocephalus</i>              | Bald eagle                       | T    | T      |
| <i>Mycteria americana</i>                    | Wood stork                       | E    | E      |
| <i>Pandion haliaetus</i>                     | Osprey                           | SSC* |        |
| <i>Pelecanus occidentalis</i>                | Brown pelican                    | SSC  |        |
| <i>Picoides borealis</i>                     | Red-cockaded woodpecker          | T    | E      |
| <i>Polyborus plancus audubonii</i>           | Audubon's crested caracara       | T    | T      |
| <i>Rostrhamus sociabilis</i>                 | Snail kite                       | E    | E      |
| <i>Rynchops niger</i>                        | Black skimmer                    | SSC  |        |
| <i>Speotyto cunicularia</i>                  | Burrowing owl                    | SSC  |        |
| <i>Sterna antillarum</i>                     | Least tern                       | T    |        |
| <i>Sterna dougallii</i>                      | Roseate tern                     | T    | T      |
| <i>Vermivora bachmanii</i>                   | Bachman's warbler                | E    | E      |
| *Applicable in Monroe County only            |                                  |      |        |
| <b>Mammals</b>                               |                                  |      |        |
| <i>Balaena glacialis</i>                     | Right whale                      | E    | E      |
| <i>Balaenoptera borealis</i>                 | Sei whale                        | E    | E      |
| <i>Balaenoptera physalus</i>                 | Finback whale                    | E    | E      |
| <i>Sorex carolinensis (=drevicauda)</i>      | Sherman's short-tailed shrew     | SSC  |        |
| <i>Eumops glaucinus floridanus</i>           | Florida (=Wagner's) mastiff bat  | E    |        |
| <i>Felis concolor coryi</i>                  | Florida panther                  | E    | E      |
| <i>Megaptera novaeangliae</i>                | Humpback whale                   | E    | E      |
| <i>Microtus pennsylvanicus dukecampbelli</i> | Duke's (=Florida) saltmarsh vole | E    | E      |
| <i>Mustela vison evergladensis</i>           | Everglades mink                  | T    |        |
| <i>Myotis grisescens</i>                     | Gray bat                         | E    | E      |
| <i>Myotis sodalis</i>                        | Indiana bat                      | E    | E      |
| <i>Neotoma floridana smalli</i>              | Key Largo woodrat                | E    | E      |
| <i>Odocoileus virginianus clavium</i>        | Key deer; toy deer               | E    | E      |
| <i>Oryzomys argentatus</i>                   | Silver rice rat                  | E    | E      |
| <i>Oryzomys palustris sanibeli</i>           | Sanibel Island rice rat          | SSC  |        |
| <i>Peromyscus gossypinus allapaticola</i>    | Key Largo cotton mouse           | E    | E      |
| <i>Peromyscus polionotus allophrys</i>       | Choctawhatchee beach mouse       | E    | E      |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Animal Species List

| Scientific Name   | Common Name(s)                          | GFC | FWS |
|---|---|-----|-----|
| <i>Peromyscus polionotus niveiventris</i>                                       | Southeastern beach mouse                | T   | T   |
| <i>Peromyscus polionotus peninsularis</i>                                       | St. Andrews beach mouse                 | E   |     |
| <i>Peromyscus polionotus phasma</i>   | Anastasia Island beach mouse            | E   | E   |
| <i>Peromyscus polionotus trissyllepsis</i>                                      | Perdido Key beach mouse                 | E   | E   |
| <i>Physeter catodon</i>   | Sperm whale; cachalot                   | E   | E   |
| <i>Podomys floridanus</i>   | Florida mouse                           | SSC |     |
| <i>Sciurus niger avicennia</i>  | Big Cypress (=mangrove) fox squirrel    | T   |     |
| <i>Sciurus niger shermani</i>   | Sherman's fox squirrel                  | SSC |     |
| <i>Sorex longirostris eionis</i>  | Homosassa shrew                         | SSC |     |
| <i>Sylvilagus palustris hefneri</i>   | Lower Keys marsh rabbit                 | E   | E   |
| <i>Tamias striatus</i>  | Eastern chipmunk                        | SSC |     |
| <i>Trichechus manatus</i>   | West Indian (=Florida) manatee          | E   | E   |
| <i>Ursus americanus floridanus</i>  | Florida black bear                      | T*  |     |
| *Not applicable in Baker and Columbia counties and Apalachicola National Forest |   |     |     |
| <b>Corals</b>   |   |     |     |
| <i>Dendrogyra cylindrus</i>   | Pillar coral                            | E   |     |
| <b>Crustaceans</b>  |   |     |     |
| <i>Palaemonetes cummingi</i>  | Squirrel Chimney (=Florida) cave shrimp | T   |     |
| <i>Procambarus econfinae</i>  | Econfina crayfish                       | SSC |     |
| <i>Procambarus erythrops</i>  | Sims Sink crayfish                      | SSC |     |
| <i>Procambarus pictus</i>   | Black Creek crayfish                    | SSC |     |
| <b>Insects</b>  |   |     |     |
| <i>Heraclides aristodemus ponceanus</i>   | Schaus' swallowtail butterfly           | E   | E   |
| <b>Molluscs</b>   |   |     |     |
| <i>Liguus fasciatus</i>   | Florida tree snail                      | SSC |     |
| <i>Orthalicus reses</i>   | Stock Island tree snail                 | E   | T*  |
| *Applies only to the subspecies <i>O.r. reses</i>                               |   |     |     |
| <b>T = Threatened; E = Endangered; SSC = Species of Special Concern</b>         |   |     |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Plant Species List

| Scientific Name   | Common Name(s)                             | Designated Status |     |
|---|--|-------------------|-----|
|   |  | FDA               | FWS |
| <i>Acacia choriophylla</i>                                  | Tamarindillo                               | E                 |     |
| <i>Acrostichum aureum</i>                                   | Golden leather fern                        | E                 |     |
| <i>Acrostichum danaeifolium</i>                             | Giant leather fern                         | C                 |     |
| <i>Actaea pachypoda</i>                                     | Baneberry; doll's eyes                     | E                 |     |
| <i>Adiantum melanoleucum</i>                                | Fragrant maidenhair fern                   | E                 |     |
| <i>Adiantum tenerum</i>                                     | Brittle maidenhair fern                    | E                 |     |
| <i>Alvaradoa amorphoides</i>                                | Alvaradoa; Crenulate (=Miami) lead plant   | E                 |     |
| <i>Anemia wrightii</i>                                      | Parsley fern                               | E                 |     |
| <i>Aquilegia canadensis</i>                                 | Wild (=Southern; =Canadian) columbine      | E                 |     |
| <i>Arabis canadensis</i>                                    | Sicklepod                                  | E                 |     |
| <i>Argythamnia blodgettii</i>                               | Blodgett's wild-mercury                    | E                 |     |
| <i>Aristolochia tomentosa</i>                               | Dutchman's pipe; pipevine                  | E                 |     |
| <i>Asclepias curtissii</i>                                  | Curtiss' (=sandhill) milkweed              | E                 |     |
| <i>Asclepias viridula</i>                                   | Apalachicola (=green) milkweed             | T                 |     |
| <i>Asimina tetramera</i>                                    | Four-petal (=opossum) pawpaw               | E                 | E   |
| <i>Asplenium auritum</i>                                    | Auricled spleenwort                        | E                 |     |
| <i>Asplenium monanthes</i>                                  | San Felasco (=single sorus) spleenwort     | E                 |     |
| <i>Asplenium pumilum</i>                                    | Dwarf (=chervil) spleenwort                | E                 |     |
| <i>Asplenium serratum</i>                                   | Bird's nest spleenwort; wild birdnest fern | E                 |     |
| <i>Asplenium subtile</i>                                    | Slender spleenwort                         | E                 |     |
| <i>Asplenium trichomanes-dentatum</i>                       | Slender spleenwort                         | E                 |     |
| <i>Asplenium verecundum</i>                                 | Delicate spleenwort                        | E                 |     |
| <i>Aster hemisphericus</i>                                  | Aster (unnamed)                            | E                 |     |
| <i>Aster spinulosus</i>                                     | Pinewoods aster                            | E                 |     |
| <i>Athyrium filix-femina</i>                                | Southern lady fern                         | T                 |     |
| <i>Baptisia hirsuta</i> (=B. calycosa var. <i>hirsuta</i> ) | Pineland (=hairy) wild indigo              | T                 |     |
| <i>Baptisia megacarpa</i>                                   | Apalachicola wild indigo                   | E                 |     |
| <i>Baptisia simplicifolia</i>                               | Coastal Plain wild indigo; scare-weed      | T                 |     |
| <i>Basiphyllaea corallicola</i>                             | Carter's orchid                            | E                 |     |
| <i>Bigelovia nuttalli</i>                                   | Nuttall's rayless goldenrod                | E                 |     |
| <i>Blechnum occidentale</i>                                 | Sinkhole fern                              | E                 |     |
| <i>Bletia purpurea</i>                                      | Pine pink orchid                           | T                 |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Plant Species List

| Scientific Name   | Common Name(s)                                 | Designated Status |     |
|---|--|-------------------|-----|
|   |  | FDA               | FWS |
| <i>Bonamia grandiflora</i>  | Florida (=large-flowered) bonamia              | E                 | T   |
| <i>Bourreria cassinifolia</i>   | Little strongback                              | E                 |     |
| <i>Brassia caudata</i>  | Long-tailed spider orchid                      | E                 |     |
| <i>Brickellia cordifolia</i>  | Flyr's brickell-bush                           | E                 |     |
| <i>Brickellia eupatorioides</i> var. <i>floridana</i><br>(= <i>B. mosieri</i> ) | Florida brickell-bush; Florida boneset         | E                 |     |
| <i>Bulbophyllum pachyrrhachis</i>   | Rattail orchid                                 | E                 |     |
| <i>Bumelia anomala</i>  | Clark's buckthorn                              | E                 |     |
| <i>Bumelia lycioides</i>  | Gopherwood buckthorn                           | E                 |     |
| <i>Bumelia thornei</i>  | Thorne's buckthorn                             | <b>E</b>          |     |
| <i>Burmannia flava</i>  | Fakahatchee burmannia                          | E                 |     |
| <i>Byrsonima lucida</i>   | Locust berry                                   | E                 |     |
| <i>Cacalia diversifolia</i>   | Variable-leaved Indian plantain                | T                 |     |
| <i>Calamintha ashei</i>   | Ashe's savory; lavender basil                  | T                 |     |
| <i>Calamovilfa curtissii</i>  | Curtiss' reedgrass; Curtiss' sand grass        | T                 |     |
| <i>Callirhoe papaver</i>  | Poppy mallow                                   | E                 |     |
| <i>Calopogon barbatus</i>   | Bearded grass pink                             | T                 |     |
| <i>Calopogon multiflorus</i>  | Many-flowered grass pink                       | E                 |     |
| <i>Calycanthus floridus</i>   | Sweetshrub                                     | E                 |     |
| <i>Calyptanthes zuzygium</i>  | Myrtle of the river                            | E                 |     |
| <i>Calystegia catesbaeiana</i>  | Catesby's bindweed                             | E                 |     |
| <i>Campanula robinsiae</i>  | Robins' (=Chinsegut) bellflower                | E                 | E   |
| <i>Campylocentrum pachyrrhizum</i>  | Leafless orchid                                | E                 |     |
| <i>Campyloneurum angustifolium</i>  | Narrow strap fern                              | E                 |     |
| <i>Campyloneurum costatum</i>   | Tailed strap fern                              | E                 |     |
| <i>Campyloneurum phyllitidis</i>  | Long strap fern                                | E                 |     |
| <i>Canella winteriana</i>   | Wild cinnamon                                  | E                 |     |
| <i>Carex baltzelli</i>  | Baltzell's sedge                               | T                 |     |
| <i>Cassia keyensis</i> (= <i>Chaemecrista lineata</i><br>var. <i>keyensis</i> ) | Line partridge pea; Florida Keys; senna; Key c | E                 |     |
| <i>Catesbaea parviflora</i>   | Small-flowered (=dune) lily-thorn              | E                 |     |
| <i>Catopsis berteroniana</i>  | Powdery (=yellow) catopsis                     | E                 |     |
| <i>Catopsis floribunda</i>  | Many-flowered air plant                        | E                 |     |
| <i>Catopsis nutans</i>  | Nodding catopsis                               | E                 |     |
| <i>Celtis iguanaea</i>  | Iguana hackberry                               | E                 |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Plant Species List

| Scientific Name   | Common Name(s)                        | Designated Status |     |
|---|---------------------------------------|-------------------|-----|
|   |                                       | FDA               | FWS |
| <i>Celtis pallida</i>   | Spiny hackberry                       | E                 |     |
| <i>Cereus eriophorus</i>  | Indian River prickly apple            | E                 | E   |
| <i>Cereus gracilis</i>  | West coast prickly apple              | E                 |     |
| <i>Cereus pentagonus</i>  | Dilldoe (=barbed wire) cactus         | E                 |     |
| <i>Cereus robinii</i>   | Tree cactus                           | E                 | E   |
| <i>Chamaesyce cumulicola</i>  | Sand dune spurge                      | E                 |     |
| <i>Chamaesyce deltoidea</i> ssp. <i>deltoidea</i>                     | Wedge (=deltoid; =rockland) spurge    | E                 | E   |
| <i>Chamaesyce garberi</i>   | Garber's spurge                       | E                 | T   |
| <i>Chamaesyce porteriana</i>  | Porter's spurge                       | E                 |     |
| <i>Cheilanthes microphylla</i>  | Southern lip fern                     | E                 |     |
| <i>Chionanthus pygmaeus</i>   | Pygmy fringetree                      | E                 | E   |
| <i>Chrysophyllum oliviforme</i>                                       | Satinleaf                             | E                 |     |
| <i>Chrysopsis cruiseana</i> (=C. <i>gossypinus</i> <i>crioseana</i> ) | Cruise's golden aster                 | E                 |     |
| <i>Chrysopsis floridana</i>   | Florida golden aster                  | E                 | E   |
| <i>Cienfuegosia yucatanensis</i> (=C. <i>heterophylla</i> )           | Yellow hibiscus                       | E                 |     |
| <i>Cladonia perforata</i>   | Perforate reindeer lichen; deer moss  | E                 | E   |
| <i>Cleisthes divaricata</i>   | Rosebud orchid; spreading pogonia     | T                 |     |
| <i>Clitoria fragrans</i>  | Pigeon-wing (=sandhill) butterfly-pea | E                 | T   |
| <i>Clusia rosea</i>   | Balsam apple                          | E                 |     |
| <i>Coccothrinax argentata</i>   | Silver palm                           | E                 |     |
| <i>Colubrina cubensis</i>   | Colubrina                             | E                 |     |
| <i>Conradina breviflora</i>   | Short-leaved rosemary                 | E                 | E   |
| <i>Conradina etonia</i>   | Etonia rosemary                       | E                 | E   |
| <i>Conradina glabra</i>   | Apalachicola (=panhandle) rosemary    | E                 | E   |
| <i>Conradina grandiflora</i>  | Large-flowered rosemary               | E                 |     |
| <i>Corallorhiza odontorhiza</i>                                       | Autumn coralroot                      | E                 |     |
| <i>Cordia sebestena</i>   | Geiger tree                           | E                 |     |
| <i>Cornus alternifolia</i>  | Pagoda dogwood                        | E                 |     |
| <i>Cranichis muscosa</i>  | Moss orchid                           | E                 |     |
| <i>Crataegus phaenopyrum</i>  | Washington thorn                      | E                 |     |
| <i>Croomia pauciflora</i>   | Few-flowered croomia                  | E                 |     |
| <i>Crossopetalum ilicifolium</i>                                      | Christmas berry                       | E                 |     |
| <i>Crossopetalum rhacoma</i>  | Rhacoma                               | E                 |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Plant Species List

| Scientific Name  | Common Name(s)                           | Designated Status |     |
|--|--|-------------------|-----|
|  |  | FDA               | FWS |
| <i>Crotolaria avonensis</i>  | Avon Park rattlebox; Avon Park harebells | E                 | E   |
| <i>Cryptotaenia canadensis</i>                                     | Honewort                                 | E                 |     |
| <i>Ctenitis sloanei</i>  | Red-hair comb fern; Florida tree fern    | E                 |     |
| <i>Ctenitis submarginalis</i>                                      | Brown-hair comb fern                     | E                 |     |
| <i>Cucurbita okeechobeensis</i>                                    | Okeechobee gourd; Indian pumpkin         | E                 | E   |
| <i>Cupania glabra</i>  |  |                   |     |
| <i>Cyrtopodium punctatum</i>                                       | Cowhorn (=cigar) orchid                  | E                 |     |
| <i>Deeringothamnus pulchellus</i>                                  | White squirrel-banana; beautiful pawpaw  | E                 | E   |
| <i>Deeringothamnus rugelii</i>                                     | Yellow squirrel-banana; Rugel's pawpaw   | E                 | E   |
| <i>Delphinium carolinianum</i>                                     | Carolina larkspur                        | E                 |     |
| <i>Dennstaedtia bipinnata</i>                                      | Cuplet (=hay-scented) fern               | E                 |     |
| <i>Dicerandra christmanii</i>                                      | Garrett's mint                           | E                 | E   |
| <i>Dicerandra cornutissima</i>                                     | Long-spurred balm; Robins' mint          | E                 | E   |
| <i>Dicerandra frutescens</i>                                       | Scrub balm; Lloyd's mint                 | E                 | E   |
| <i>Dicerandra immaculata</i>                                       | Lakela's (=Olga's) mint                  | E                 | E   |
| <i>Digitaria pauciflora</i>  | Florida pineland crabgrass               | E                 |     |
| <i>Dodecatheon meadia</i>  | Shooting star                            | E                 |     |
| <i>Drosera filifolia</i>   | Dew-thread                               | E                 |     |
| <i>Drosera intermedia</i>  |  |                   |     |
| <i>Eltroplectris calcarata</i> (=Centrogenium<br><i>setaceum</i> ) | Spurred neottia                          | E                 |     |
| <i>Encyclia boothiana</i>  | Dollar (=dogtooth) orchid                | E                 |     |
| <i>Encyclia cochleata</i>  | Shell (=clamshell) orchid                | E                 |     |
| <i>Encyclia pygmaea</i>  | Dwarf epidendrum                         | E                 |     |
| <i>Encyclia tampensis</i>  | Butterfly orchid                         | C                 |     |
| <i>Epidendrum acunae</i>   | Acuna's epidendrum                       | E                 |     |
| <i>Epidendrum anceps</i>   | Dingy-flowered epidendrum                | E                 |     |
| <i>Epidendrum conopseum</i>  | Greenfly orchid                          | C                 |     |
| <i>Epidendrum difforme</i>   | Unbelled epidendrum                      | E                 |     |
| <i>Epidendrum nocturnum</i>  | Night-scent orchid                       | E                 |     |
| <i>Epidendrum rigidum</i>  | Rigid epidendrum                         | E                 |     |
| <i>Epidendrum strobiliferum</i>                                    | Matted epidendrum                        | E                 |     |
| <i>Epigaea repens</i>  | Trailing arbutus                         | E                 |     |
| <i>Eragrostis tracyi</i>   | Sanibel Island lovegrass                 | E                 |     |

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### Florida Threatened and Endangered Plant Species List

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|---|--|-------------------|-----|
|   |  | FDA               | FWS |
| <i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i> | Scrub buckwheat                              | E                 | T   |
| <i>Ernodea cokeri</i>                                   | One-nerved ernodea                           | E                 |     |
| <i>Ernodea littoralis</i>                               | Beach creeper                                | T                 |     |
| <i>Eryngium cuneifolium</i>                             | Wedge-leaved button snake-root; scrub celery | E                 | E   |
| <i>Erythronium umbilicatum</i>                          | Dogtooth lily; dimpled dogtooth violet       | E                 |     |
| <i>Eugenia confusa</i>                                  | Redberry ironwood                            | E                 |     |
| <i>Eugenia rhombea</i>                                  | Red stopper                                  | E                 |     |
| <i>Eulophia alta</i>                                    | Wild (=ground) coco                          | T                 |     |
| <i>Euphorbia telephioides</i>                           | Telephus spurge                              | E                 | T   |
| <i>Forestiera godfreyi</i>                              | Godfrey's swamp privet                       | E                 |     |
| <i>Galactia smallii</i>                                 | Small's milkpea                              | E                 | E   |
| <i>Galeandra beyrichii</i>                              | Helmet orchid                                | E                 |     |
| <i>Garberia heterophylla</i>                            | Garberia                                     | T                 |     |
| <i>Gentiana pennelliana</i>                             | Wiregrass gentian                            | E                 |     |
| <i>Goodyera pubescens</i>                               | Downy rattlesnake orchid                     | E                 |     |
| <i>Gossypium hirsutum</i>                               | Wild cotton                                  | E                 |     |
| <i>Govenia utriculata</i>                               | Gowen's orchid                               | E                 |     |
| <i>Guaiaacum sanctum</i>                                | Lignum-vitae tree                            | E                 |     |
| <i>Guzmania monostachia</i>                             | Fuch's bromeliad                             | E                 |     |
| <i>Habenaria distans</i>                                | Rein orchid (unnamed)                        | E                 |     |
| <i>Harperocallis flava</i>                              | Harper's beauty                              | E                 | E   |
| <i>Harrisella filiformis</i>                            | Threadroot orchid                            | T                 |     |
| <i>Hartwrightia floridana</i>                           | Florida hartwrightia                         | T                 |     |
| <i>Hasteola robertiorum</i>                             | Gulf Hammock Indian plantain                 | E                 |     |
| <i>Helianthus carnosus</i>                              | Lakeside (=flatwoods) sunflower              | E                 |     |
| <i>Hepatica nobilis</i> (=H. <i>americana</i> )         | Liverleaf                                    | E                 |     |
| <i>Hexalectris spicata</i>                              | Crested coralroot                            | E                 |     |
| <i>Hexastylis arifolia</i>                              | Heartleaf                                    | T                 |     |
| <i>Hippomane mancinella</i>                             | Manchineel                                   | E                 |     |
| <i>Hybanthus concolor</i>                               | Green violet                                 | E                 |     |
| <i>Hydrangea arborescens</i>                            | Wild hydrangea                               | E                 |     |
| <i>Hymenocallis henryae</i>                             | Henry's spiderlily                           | E                 |     |
| <i>Hypelate trifoliata</i>                              | Inkwood; white ironwood                      | E                 |     |

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### Florida Threatened and Endangered Plant Species List

| Scientific Name                  | Common Name(s)                              | Designated Status |     |
|----------------------------------|---|-------------------|-----|
|                                  |   | FDA               | FWS |
| <i>Hypericum cumulicola</i>      | Highlands scrub St. John's-wort             | E                 | E   |
| <i>Hypericum edsonianum</i>      | Edison's St. John's-wort                    | E                 |     |
| <i>Hypericum lissophloeus</i>    | Smooth-barked St. John's-wort               | E                 |     |
| <i>Ilex krugiana</i>             | Krug's holly                                | E                 |     |
| <i>Illicium floridanum</i>       | Florida anise                               | T                 |     |
| <i>Illicium parviflorum</i>      | Yellow star anise                           | E                 |     |
| <i>Ionopsis utricularioides</i>  | Delicate ionopsis; violet orchid            | E                 |     |
| <i>Ipomoea microdactyla</i>      | Wild potato morning glory                   | E                 |     |
| <i>Ipomoea tenuissima</i>        | Rocklands morning glory                     | E                 |     |
| <i>Isoetes engelmannii</i>       | Engelmann's quillwort                       | E                 |     |
| <i>Isotria verticillata</i>      | Whorled pogonia                             | E                 |     |
| <i>Jacquemontia curtissii</i>    | Pineland (=Curtiss') clustervine            | E                 |     |
| <i>Jacquemontia reclinata</i>    | Beach (=reclined) clustervine               | E                 | E   |
| <i>Jacquinia keyensis</i>        | Joewood                                     | T                 |     |
| <i>Justicia cooleyi</i>          | Cooley's water willow                       | E                 | E   |
| <i>Justicia crassifolia</i>      | Thick-leaved (=large-flowered) water willow | E                 |     |
| <i>Kalmia latifolia</i>          | Mountain laurel                             | T                 |     |
| <i>Lantana depressa</i>          | Pineland lantana                            | E                 |     |
| <i>Lechea cernua</i>             | Nodding (=drooping; =scrub) pinweed         | T                 |     |
| <i>Lechea divaricata</i>         | Pine (=spreading) pinweed                   | E                 |     |
| <i>Lechea lakelae</i>            | Lakela's pinweed                            | E                 |     |
| <i>Leitneria floridana</i>       | Florida corkwood                            | T                 |     |
| <i>Leochilus labiatus</i>        | Lipped orchid                               | E                 |     |
| <i>Lepanthopsis melanantha</i>   | Harris' tiny orchid                         | E                 |     |
| <i>Lepuropetalon spathulatum</i> | Little people                               | E                 |     |
| <i>Liatris ohlingerae</i>        | Florida gayfeather; scrub blazing star      | E                 | E   |
| <i>Liatris provincialis</i>      | Godfrey's gayfeather                        | E                 |     |
| <i>Licaria triandra</i>          | Gulf licaria                                | E                 |     |
| <i>Lilium catesbaei</i>          | Catesby's lily                              | T                 |     |
| <i>Lilium iridollae</i>          | Panhandle lily                              | E                 |     |
| <i>Lindera melissifolia</i>      | Swamp spicebush; Jove's fruit; pondberry    | E                 | E   |
| <i>Lindera subcoriacea</i>       | Bog spicebush                               | E                 |     |
| <i>Linum arenicola</i>           | Sand flax                                   | E                 |     |

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### Florida Threatened and Endangered Plant Species List

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|---|--|-------------------|-----|
|   |  | FDA               | FWS |
| <i>Linum carteri</i>  | South Florida (=Everglades) flax       | E                 |     |
| <i>Linum westii</i>   | West's flax                            | E                 |     |
| <i>Liparis nervosa</i>  | Tall twayblade                         | E                 |     |
| <i>Listera australis</i>                                      | Southern twayblade                     | T                 |     |
| <i>Litsea aestivalis</i>                                      | Pond spice; pond bush                  | E                 |     |
| <i>Lobelia cardinalis</i>                                     | Cardinal flower                        | T                 |     |
| <i>Lomariopsis kunzeana</i>                                   | Climbing holly fern                    | E                 |     |
| <i>Lupinus aridorum</i> (=L. westianus var. <i>aridorum</i> ) | McFarlin's (=scrub) lupine             | E                 | E   |
| <i>Lupinus westianus</i>                                      | Gulfcoast (=panhandle) lupine          | T                 |     |
| <i>Lycopodium cernuum</i>                                     | Nodding clubmoss                       | C                 |     |
| <i>Lycopodium dichotomum</i>                                  | Hanging (=coneless) clubmoss           | E                 |     |
| <i>Lythrum curtissii</i>                                      | Curtiss' loosestrife                   | E                 |     |
| <i>Macbridea alba</i>   | White birds-in-a-nest                  | E                 | T   |
| <i>Macradenia lutescens</i>                                   | Trinidad macradenia                    | E                 |     |
| <i>Macranthera flammea</i>                                    | Hummingbird flower                     | E                 |     |
| <i>Magnolia acuminata</i>                                     | Cucumber tree                          | E                 |     |
| <i>Magnolia ashei</i>   | Ashe's magnolia                        | E                 |     |
| <i>Magnolia pyramidata</i>                                    | Pyramidal magnolia                     | E                 |     |
| <i>Malaxis unifolia</i>                                       | Green adder's mouth                    | E                 |     |
| <i>Malus angustifolia</i>                                     | Crabapple                              | T                 |     |
| <i>Marshallia obovata</i>                                     | Barbara's buttons (unnamed)            | E                 |     |
| <i>Marshallia ramosa</i>                                      | Southern barbara's buttons             | E                 |     |
| <i>Matela alabamensis</i>                                     | Alabama milkweed; Alabama anglepod     | E                 |     |
| <i>Matela baldwyniana</i>                                     | Baldwin's milkweed; Baldwin's anglepod | E                 |     |
| <i>Matela flavidula</i>                                       | Yellow-flowered anglepod               | E                 |     |
| <i>Matela floridana</i>                                       | Florida milkweed; panhandle anglepod   | E                 |     |
| <i>Matela gonocarpos</i>                                      | Anglepod (unnamed)                     | T                 |     |
| <i>Maxillaria crassifolia</i>                                 | Hidden orchid                          | E                 |     |
| <i>Maxillaria parviflora</i>                                  | Minnie-max                             | E                 |     |
| <i>Medeola virginiana</i>                                     | Indian cucumber-root                   | E                 |     |
| <i>Melanthera parvifolia</i>                                  | Small-leaved melanthera                | E                 |     |
| <i>Microgramma heterophylla</i>                               | Climbing vine fern                     | E                 |     |
| <i>Monotropa hypopithys</i>                                   | Pinesap (unnamed)                      | E                 |     |

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### Florida Threatened and Endangered Plant Species List

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| <i>Monotropsis reynoldsiae</i>                              | Pygmy-pipes; sweet pinesap                | E                 |     |
| <i>Myrcianthes fragrans</i> (= <i>Eugenia simpsonii</i> )   | Simpson's ironwood; Simpson's stopper     | T                 |     |
| <i>Najas filifolia</i>                                      | Slender naiad                             | T                 |     |
| <i>Nemastylis floridana</i>                                 | Fall-flowering pleat-leaf; celestial lily | E                 |     |
| <i>Nephrolepis biserrata</i>                                | Giant sword fern                          | T                 |     |
| <i>Neurodium</i> (= <i>Paltonium</i> ) <i>lanceolatum</i>   | Ribbon fern                               | E                 |     |
| <i>Nolina atopocarpa</i>                                    | Florida beargrass                         | T                 |     |
| <i>Nolina brittoniana</i>                                   | Scrub (=Britton's) beargrass              | E                 | E   |
| <i>Okenia hypogaea</i>                                      | Burrowing four-o'clock                    | E                 |     |
| <i>Oncidium bahamensis</i>                                  | Dancing lady orchid                       | E                 |     |
| <i>Oncidium floridanum</i>                                  | Florida oncidium                          | E                 |     |
| <i>Oncidium luridum</i>                                     | Mule-ear (=dingy-flowered) orchid         | E                 |     |
| <i>Ophioglossum palmatum</i>                                | Hand adder's tongue fern                  | E                 |     |
| <i>Opuntia spinosissima</i>                                 | Semaphore cactus                          | E                 |     |
| <i>Opuntia stricta</i>                                      | Shell mound prickly pear cactus           | T                 |     |
| <i>Opuntia triacantha</i>                                   | Keys joe-jumper                           | E                 |     |
| <i>Osmunda cinnamomea</i>                                   | Cinnamon fern                             | C                 |     |
| <i>Osmunda regalis</i>                                      | Royal fern                                | C                 |     |
| <i>Oxypolis greenmanii</i>                                  | Giant water dropwort                      | E                 |     |
| <i>Pachysandra procumbens</i>                               | Allegheny spurge                          | E                 |     |
| <i>Panicum abscissum</i>                                    | Cutthroat grass                           | E                 |     |
| <i>Parnassia caroliniana</i>                                | Coastal (=Carolina) grass-of-parnassus    | E                 |     |
| <i>Parnassia grandifolia</i>                                | Grass-of-parnassus                        | E                 |     |
| <i>Paronychia chartacea</i>                                 | Papery whitlow-wort                       | E                 | T   |
| <i>Pecluma dispersa</i>                                     | Polypoda fern (unnamed)                   | E                 |     |
| <i>Pecluma plumula</i>                                      | Plume polypoda fern                       | E                 |     |
| <i>Pecluma ptilodon</i>                                     | Swamp plume polypoda fern                 | E                 |     |
| <i>Pellaea atropurpurea</i>                                 | Cliff brake fern                          | E                 |     |
| <i>Peperomia glabella</i>                                   | Cypress peperomia                         | E                 |     |
| <i>Peperomia humilis</i>                                    | Pepper (unnamed)                          | E                 |     |
| <i>Peperomia magnoliifolia</i> (= <i>P. spathulifolia</i> ) | Spatulate peperonia                       | E                 |     |
| <i>Peperomia obtusifolia</i> (= <i>P. floridana</i> )       | Florida (=Everglades) peperomia           | E                 |     |
| <i>Phoradendron rubrum</i>                                  | Mahogany mistletoe                        | E                 |     |

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|---|---|-------------------|-----|
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| <i>Phyllanthus liebmannianus</i>                                      | Pinewood dainties; Florida leaf flower          | E                 |     |
| <i>Physocarpus opulifolius</i>  | Ninebark  | E                 |     |
| <i>Pinckneya bracteata</i> (=P. pubens)                               | Hairy fevertree                                 | T                 |     |
| <i>Pinguicula caerulea</i>  | Blue flowered butterwort                        | T                 |     |
| <i>Pinguicula ionantha</i>  | Godfrey's (=panhandle) butterwort               | E                 | T   |
| <i>Pinguicula lutea</i>   | Yellow flowered butterwort                      | T                 |     |
| <i>Pinguicula planifolia</i>  | Chapman's (=swamp) butterwort                   | T                 |     |
| <i>Pinguicula primuliflora</i>  | Primrose-flowered butterwort                    | E                 |     |
| <i>Pityopsis flexuosa</i>   | Panhandle (=Florida) golden aster               | E                 |     |
| <i>Platanthera blephariglottis</i>                                    | Large white-fringed orchid                      | T                 |     |
| <i>Platanthera ciliaris</i>   | Yellow-fringed orchid                           | T                 |     |
| <i>Platanthera clavellata</i>   | Little club-spur orchid; green rein orchid      | E                 |     |
| <i>Platanthera cristata</i>   | Golden (=crested) fringed orchid                | T                 |     |
| <i>Platanthera flava</i>  | Southern tubercled orchid; gypsy-spikes         | T                 |     |
| <i>Platanthera integra</i>  | thern yellow fringeless orchid; orange; rein or | E                 |     |
| <i>Platanthera nivea</i>  | Snowy orchid; bog torch                         | T                 |     |
| <i>Pleopeltis astrolepis</i>  | Star-scaled fern                                | E                 |     |
| <i>Pleurothallis gelida</i>   | Frosted orchid                                  | E                 |     |
| <i>Pogonia ophioglossoides</i>  | Rose pogonia                                    | T                 |     |
| <i>Poinsettia pinetorum</i>   | Everglades poinsettia                           | E                 |     |
| <i>Polygala lewtonii</i>  | Scrub milkwort; Lewton's polygala               | E                 | E   |
| <i>Polygala smallii</i>   | Tiny (=Small's) milkwort                        | E                 | E   |
| <i>Polygonella ciliata</i> var. <i>basiramia</i><br>(=P. basiramia)   | Hairy (=tufted) jointweed                       | E                 | E   |
| <i>Polygonella macrophylla</i>  | Large-leaved jointweed                          | T                 |     |
| <i>Polygonella myriophylla</i>  | Small's jointweed; sandlace                     | E                 | E   |
| <i>Polygonum meisnerianum</i>   | Mexican tear-thumb                              | E                 |     |
| <i>Polyradicion</i> (=Polyrrhiza) <i>lindenii</i>                     | Ghost orchid; palm polly                        | E                 |     |
| <i>Polystachya flavescens</i> (=P. concreta; =P. <i>extinctoria</i> ) | Pale-flowered polystachya                       | E                 |     |
| <i>Ponthieva brittoniae</i>   | Mrs. Britton's shadow witch                     | E                 |     |
| <i>Prescottia oligantha</i>   | Small-flowered orchid                           | E                 |     |
| <i>Prunus geniculata</i>  | Scrub plum                                      | E                 | E   |
| <i>Pseudophoenix sargentii</i>  | Buccaneer (=Sargent's cherry) palm              | E                 |     |
| <i>Pteris bahamensis</i>  | Cretan brake fern                               | E                 |     |

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| <i>Pteroglossaspis (=Eulophia) ecristata</i> | Non-crested coco; false coco                | T                 |     |
| <i>Remirea maritima</i>                      | Beach star                                  | E                 |     |
| <i>Rhapidophyllum hystrix</i>                | Needle palm                                 | C                 |     |
| <i>Rhexia parviflora</i>                     | Apalachicola (=small-flowered) meadowbeauty | E                 |     |
| <i>Rhipsalis baccifera</i>                   | Mistletoe cactus                            | E                 |     |
| <i>Rhododendron alabamense</i>               | Alabama azalea                              | E                 |     |
| <i>Rhododendron austrinum</i>                | Florida flame (=orange) azalea              | E                 |     |
| <i>Rhododendron canescens</i>                | Pink azalea                                 | C                 |     |
| <i>Rhododendron chapmanii</i>                | Chapman's rhododendron                      | E                 | E   |
| <i>Rhus michauxii</i>                        | Michaux's sumac                             | E                 |     |
| <i>Ribes echinellum</i>                      | Miccosukee (=Florida) gooseberry            | E                 | T   |
| <i>Roystonea elata</i>                       | Florida royal palm                          | E                 |     |
| <i>Rudbeckia nitida</i>                      | St. John's-susan; yellow coneflower         | E                 |     |
| <i>Ruellia noctiflora</i>                    | Night-flowering wild petunia                | E                 |     |
| <i>Sachsia bahamensis</i>                    | Bahama sachsia                              | E                 |     |
| <i>Salix eriocephala</i>                     | Heart-leaved willow                         | E                 |     |
| <i>Salix floridana</i>                       | Florida willow                              | E                 |     |
| <i>Salvia urticifolia</i>                    | Nettle-leaved sage                          | E                 |     |
| <i>Sarracenia leucophylla</i>                | White-top pitcherplant                      | E                 |     |
| <i>Sarracenia minor</i>                      | Hooded pitcherplant                         | T                 |     |
| <i>Sarracenia psittacina</i>                 | Parrot pitcherplant                         | T                 |     |
| <i>Sarracenia purpurea</i>                   | Decumbant pitcherplant                      | T                 |     |
| <i>Sarracenia rubra</i>                      | Red-flowered (=sweet) pitcherplant          | T                 |     |
| <i>Scaevola plumieri</i>                     | Inkberry                                    | T                 |     |
| <i>Schisandra coccinea</i>                   | Bay star vine                               | E                 |     |
| <i>Schizaea germanii</i>                     | Ray (=tropical curly-grass) fern            | E                 |     |
| <i>Schwalbaea americana</i>                  | American chaffseed                          | E                 | E   |
| <i>Scutellaria floridana</i>                 | Florida skullcap; helmet-flowers            | E                 | T   |
| <i>Selaginella eatonii</i>                   | Pygmy spikemoss                             | E                 |     |
| <i>Silene polypetala</i>                     | Fringed campion; fringed catchfly           | E                 | E   |
| <i>Sphenomeris clavata</i>                   | Parsley (=wedgelet) fern                    | E                 |     |
| <i>Sphenostigma coelestina</i>               | Bartram's ixia                              | E                 |     |
| <i>Spigelia gentianoides</i>                 | Gentian (=panhandle) pinkroot               | E                 | E   |

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### Florida Threatened and Endangered Plant Species List

| Scientific Name                        | Common Name(s)                             | Designated Status |     |
|--|--|-------------------|-----|
|  |  | FDA               | FWS |
| <i>Spigelia loganioides</i>            | Florida (=Levy) pinkroot                   | E                 |     |
| <i>Spiranthes adnata</i>               | Pelexia                                    | E                 |     |
| <i>Spiranthes brevilabris</i>          | Florida ladies' tresses                    | E                 |     |
| <i>Spiranthes costaricensis</i>        | Costa Rican ladies' tresses                | E                 |     |
| <i>Spiranthes elata</i>                | Tall neottia                               | E                 |     |
| <i>Spiranthes laciniata</i>            | Lace-lip ladies' tresses                   | T                 |     |
| <i>Spiranthes longilabris</i>          | Long-lip ladies' tresses                   | T                 |     |
| <i>Spiranthes ovalis</i>               | Oval ladies' tresses                       | E                 |     |
| <i>Spiranthes polyantha</i>            | Florida Keys (=green) ladies' tresses      | E                 |     |
| <i>Spiranthes torta</i>                | Southern ladies' tresses                   | E                 |     |
| <i>Spiranthes tuberosa</i>             | Little ladies' tresses; little pearl twist | T                 |     |
| <i>Stachydeoma araveolens</i>          | Mock pennyroyal                            | E                 |     |
| <i>Stachys crenata</i>                 | Shade betony                               | E                 |     |
| <i>Stachys tenuifolia</i>              | Narrow-leaved betony                       | E                 |     |
| <i>Staphylea trifolia</i>              | Bladdernut                                 | E                 |     |
| <i>Stenorrhynchos lanceolata</i>       | Leafless beak orchid                       | T                 |     |
| <i>Stewartia malacodendron</i>         | Silky camellia                             | E                 |     |
| <i>Strumpfia maritima</i>              | Pride-of-big-pine                          | E                 |     |
| <i>Stylisma abdita</i>                 | Hidden stylisma                            | E                 |     |
| <i>Suriana maritima</i>                | Bay cedar                                  | E                 |     |
| <i>Swietenia mahogani</i>              | West Indian mahogany                       | E                 |     |
| <i>Taxus floridana</i>                 | Florida yew                                | E                 |     |
| <i>Tectaria coriandrifolia</i>         | Hairy (=Hattie Bauer) halberd fern         | E                 |     |
| <i>Tectaria heracleifolia</i>          | Broad halberd fern                         | T                 |     |
| <i>Tectaria fimbriata (=T. lobata)</i> | Least halberd fern                         | E                 |     |
| <i>Tephrosia angustissima</i>          | Narrow-leaved (=coastal) hoary pea         | E                 |     |
| <i>Tetrazygia bicolor</i>              | Tetrazygia                                 | T                 |     |
| <i>Thalictrum cooleyi</i>              | Cooley's meadowrue                         | E                 | E   |
| <i>Thalictrum thalictroides</i>        | Rue anemone                                | E                 |     |
| <i>Thelypteris augescens</i>           | Abrupt-tipped maiden fern                  | T                 |     |
| <i>Thelypteris grandis</i>             | Collier County maiden fern                 | E                 |     |
| <i>Thelypteris patens</i>              | Grid-scale maiden fern                     | E                 |     |
| <i>Thelypteris reptans</i>             | Creeping star-hair fern                    | E                 |     |
| <i>Thelypteris reticulata</i>          | Lattice-vein (=cypress) fern               | E                 |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Plant Species List

| Scientific Name                 | Common Name(s)                     | Designated Status |     |
|---------------------------------|------------------------------------|-------------------|-----|
|                                 |                                    | FDA               | FWS |
| <i>Thelypteris sclerophylla</i> | Stiff star-hair fern               | E                 |     |
| <i>Thelypteris serrata</i>      | Dentate lattice vein fern          | E                 |     |
| <i>Thrinax morrissi</i>         | Brittle thatch palm                | E                 |     |
| <i>Thrinax radiata</i>          | Florida thatch palm                | E                 |     |
| <i>Tillandsia balbisiana</i>    | Inflated (=reflexed) wild pine     | T                 |     |
| <i>Tillandsia fasciculata</i>   | Common (=stiff-leaved) wild pine   | E                 |     |
| <i>Tillandsia flexuosa</i>      | Twisted and banded air plant       | E                 |     |
| <i>Tillandsia pruinosa</i>      | Fuzzy-wuzzy (=hoary) air plant     | E                 |     |
| <i>Tillandsia utriculata</i>    | Giant wild pine; giant air plant   | E                 |     |
| <i>Tillandsia valenzuelana</i>  | Soft-leaved wild pine              | T                 |     |
| <i>Tipularia discolor</i>       | Crane-fly orchid                   | T                 |     |
| <i>Torreya taxifolia</i>        | Florida torrey                     | E                 | E   |
| <i>Tournefortia gnaphalodes</i> | Sea lavender                       | E                 |     |
| <i>Tragia saxicola</i>          | Florida keys (=rocklands) noseburn | E                 |     |
| <i>Trichomanes holopterum</i>   | Entire winged bristle fern         | E                 |     |
| <i>Trichomanes krausii</i>      | Krause's bristle fern              | E                 |     |
| <i>Trichomanes lineolatum</i>   | Lined bristle fern                 | E                 |     |
| <i>Trichomanes punctatum</i>    | Florida bristle fern               | E                 |     |
| <i>Trillium lancifolium</i>     | Lance-leaved wake-robin            | E                 |     |
| <i>Triphora craigheadii</i>     | Craighead's nodding-caps           | E                 |     |
| <i>Triphora latifolia</i>       | Broad-leaved nodding-caps          | E                 |     |
| <i>Triphora trianthophora</i>   | Three-birds orchid                 | T                 |     |
| <i>Tripsacum floridanum</i>     | Florida tripsacum                  | E                 |     |
| <i>Tropidia polystachya</i>     | Young-palm orchid                  | E                 |     |
| <i>Vanilla barbellata</i>       | Worm-vine orchid; link vine        | E                 |     |
| <i>Vanilla dilloniana</i>       | Leafless (=Dillon's) vanilla       | E                 |     |
| <i>Vanilla mexicana</i>         | Unscented vanilla                  | E                 |     |
| <i>Vanilla phaeantha</i>        | Leafy (=oblong-leaved) vanilla     | E                 |     |
| <i>Vanilla planifolia</i>       | Commercial vanilla                 | E                 |     |
| <i>Veratrum woodii</i>          | Woods' false hellebore             | E                 |     |
| <i>Verbena maritima</i>         | Coastal vervain                    | E                 |     |
| <i>Verbena tampensis</i>        | Tampa vervain                      | E                 |     |
| <i>Verbesina chapmanii</i>      | Chapman's crownbeard               | T                 |     |
| <i>Vicia ocalensis</i>          | Ocala vetch                        | E                 |     |

## Exhibit C - Florida Listed Species

### Florida Threatened and Endangered Plant Species List

| Scientific Name                  | Common Name(s)                           | Designated Status |     |
|----------------------------------|--|-------------------|-----|
|                                  |  | FDA               | FWS |
| <i>Viola tripartita</i>          | Yellow violet                            | E                 |     |
| <i>Warea amplexifolia</i>        | Clasping (=wide-leaf) warea              | E                 | E   |
| <i>Warea carteri</i>             | Carter's mustard                         | E                 | E   |
| <i>Xanthorhiza simplicissima</i> | Yellowroot                               | E                 |     |
| <i>Xyris longisepala</i>         | Kral's (=karst pond) yellow-eyed grass   | E                 |     |
| <i>Xyris scabrifolia</i>         | Harper's (=harsh-leaf) yellow-eyed grass | T                 |     |
| <i>Zamia floridana</i>           | Florida coontie                          | C                 |     |
| <i>Zamia integrifolia</i>        | Florida arrowroot                        | C                 |     |
| <i>Zamia umbrosa</i>             | East coast coontie                       | C                 |     |
| <i>Zanthoxylum americanum</i>    | Prickly ash                              | E                 |     |
| <i>Zanthoxylum coriaceum</i>     | Leathery prickly ash                     | E                 |     |
| <i>Zanthoxylum flavum</i>        | Yellowheart                              | E                 |     |
| <i>Zephyranthes atamasco</i>     | Rain lily                                | T                 |     |
| <i>Zephyranthes simpsonii</i>    | Simpson's zephyr lily                    | T                 |     |
| <i>Zephyranthes treatiae</i>     | Treat's zephyr lily                      | T                 |     |
| <i>Zigadenus leimanthoides</i>   | Coastal death camas                      | E                 |     |
| <i>Ziziphus celata</i>           | Florida (=scrub) jujube                  | E                 | E   |

**T = Threatened; E = Endangered; C = Commercially Exploited**

Florida Natural Areas Inventory - Natural Community EOR Form (pg 1 of 2)

Surveysite: \_\_\_\_\_ Surveyors: \_\_\_\_\_ Polygon # or ID: \_\_\_\_\_ date: \_\_\_\_\_
GPS file #: \_\_\_\_\_ lat: \_\_\_\_\_ long: \_\_\_\_\_ Photo #: \_\_\_\_\_ Comments: \_\_\_\_\_
Directions/locational comments: \_\_\_\_\_

Community type: \_\_\_\_\_ Soil series: \_\_\_\_\_ Source: \_\_\_\_\_

DOMINANT VEGETATION WITHIN 20M RADIUS OF OBSERVATION POINT:

Table with columns: STRATA, cov cl, ht cl, DOMINANT SPECIES COVER: Scientific name - Braun/Blanquet scale. Rows include emergent tree, canopy, sub-canopy, tall shrub/ sapling, short shrub/ sapl, seedl., herbaceous tot., graminoid, forb, fern, non-vascular, epiphyte, vine / liana. Includes a legend for Cover Class and Height Class.

SUCCESSION COMMENTS

CANOPY AGE

- 1 old growth 4 younger mature
2 older mature 5 prereproductive trees
3 mature 6 early successional

SUCCESSION COMMENTS (tree size, structure, age, etc.): \_\_\_\_\_

NATURE OF DISTURBANCE

- 1 firebreaks
2 ORV trails or roads
3 agriculture
4 wildlife food plots
5 forestry site prep.
6 logging activities
7 animal digging
8 ditching or hydrologic
9 shrub encroachment
10 exotics encroachment
11 natural disturbances

SEVERITY OF DISTURBANCE

- 1 light
2 moderate
3 heavy
4 severe

Describe: \_\_\_\_\_

WEEDY SPECIES

- 1 absent
2 occasional - <5%
3 common - >5%

List: \_\_\_\_\_

EXOTIC SPECIES

- 1 absent
2 occasional - <5%
3 common - >5%

List: \_\_\_\_\_

Disturbance Comments: \_\_\_\_\_

HYDROLOGIC ALTERATION

- 1 shrub encroachment 6 dams in watershed
2 fire breaks 7 canals
3 ditching 8 salt water intrusion
4 roads 9 groundwater drawdown
5 impoundment 10 cause unknown

COMMENTS (Discuss severity for each type and give overall description):

\_\_\_\_\_

PAST FIRE

- 1 not suppressed 3 not applicable
2 suppressed 4 unknown

Comments/evidence: \_\_\_\_\_

MANAGEMENT COMMENTS

\_\_\_\_\_



Scientific Name: \_\_\_\_\_

County: \_\_\_\_\_

Common Name: \_\_\_\_\_

Date observed: \_\_\_\_\_

Basis for Identification: \_\_\_\_\_

Investigator: \_\_\_\_\_

Location of Animal (please attach map and give specific directions; if possible, mark site on copy of USGS 7.5 minute topo map or draw detailed map on back of this page):

\_\_\_\_\_

Describe habitat/plant community, list dominant species:

\_\_\_\_\_

Extent of this habitat at site that may support animal (e.g., acres, miles) \_\_\_\_\_

Number of individuals (or nests, burrows, etc.) seen:

Estimated no. of individuals in population:

Age/population structure (adults, young, etc.) \_\_\_\_\_

Ecological/behavioral notes (e.g., reproductive stage, activity type, feeding, flying, nesting):

\_\_\_\_\_

Have you seen this species at the same location in the past? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please give date(s): \_\_\_\_\_ Previous condition: \_\_\_\_\_

Is there evidence of disturbance at the site? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please describe:

\_\_\_\_\_  
\_\_\_\_\_

Owner(s) of site: \_\_\_\_\_

Is owner protecting this animal? Yes \_\_\_ No \_\_\_\_\_

Conservation/Management

Needs \_\_\_\_\_

Comments (other useful information concerning this animal and site - e.g., names and addresses of individuals who might be helpful, publications, museum specimen numbers, etc) \_\_\_\_\_

(please include any additional information on the back of this sheet.)

Additional forms may be obtained upon request. Please send completed field report forms to:

Submitted by: \_\_\_\_\_  
Affiliation: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone \_\_\_\_\_ Date: \_\_\_\_\_

Zoologist  
Florida Natural Areas Inventory  
1018 Thomasville Rd., Suite 200-C  
Tallahassee, FL 32303; ph. (850) 224-8207  
Fax (850) 681-9364; dhipes@fnai.org

\*\* note: each form should include only one species, one locality, and one date

**FLORIDA NATURAL AREAS INVENTORY**  
**FIELD REPORT FORM FOR RARE PLANTS**

Thank you for taking the time to complete and mail this form. Information from knowledgeable individuals such as yourself makes an important contribution to the FNAI Biological Conservation Database. If you need help with this form, or would like additional information, please call the FNAI Botanist at 850-224-8207.

Scientific name: \_\_\_\_\_ Common name: \_\_\_\_\_

Basis for identification/manual used: \_\_\_\_\_ Date(s) seen: \_\_\_\_\_

Photograph taken? \_\_\_\_\_ Specimen deposited at a herbarium? \_\_\_\_\_ Name of herbarium: \_\_\_\_\_

Quad name: \_\_\_\_\_ County: \_\_\_\_\_ Site or managed area name: \_\_\_\_\_ Directions  
(please mark site on copy of USGS 7.5 minute quad map and attach to this form, or draw a detailed map on back of this page, or give  
GPS coordinates):

Describe the site where the plant was seen: habitat/plant community; topography; hydrology; dominant species in tree, shrub, and  
ground layers:

Estimated Size of Population (no. of individuals & size of area occupied):

Flowering? Yes\_\_ No\_\_ Fruiting? Yes\_\_ No\_\_ In bud? Yes\_\_ No\_\_ In leaf? Yes\_\_ No\_\_ Dormant? Yes\_\_ No

Comments

Have you seen this species at the same location in the past? Yes\_\_ No\_\_ If yes, give dates: \_\_\_\_\_ If yes,  
describe changes, if any, to site and population since last visit

Are there disturbances or threats (e.g. vehicle use, trash dumping, fire suppression, exotic species invasion) to the population?

If yes, please describe: \_\_\_\_\_ Is there  
evidence (e.g., fire breaks, scorching) of fire at the site? Yes\_\_ No\_\_ if yes, describe and give dates of recent fires, if known

Other useful information concerning the population, its ecological conditions, management history, management needs, names of  
individuals who might be helpful, etc.:

Your name: \_\_\_\_\_ Tel no.: \_\_\_\_\_ E-mail: \_\_\_\_\_

Address: \_\_\_\_\_

Please include any additional information on the back of this sheet. Please send this form to: Botanist, Florida Natural Areas  
Inventory, 1018 Thomasville Rd., Suite 200-C, Tallahassee, FL 32303. THANK YOU!

## Exhibit D

# Florida Exotic Pest Plant Council's 2003

## List of Invasive Species

**Purpose of the List:** *To focus attention on --*

- the adverse effects of exotic pest plants on Florida's biodiversity and ecosystems,
- the habitat losses from exotic pest plant infestations,
- the impacts on endangered species via habitat loss and alteration,
- the need to prevent habitat losses through pest-plant management,
- the socio-economic impacts of these plants (e.g., increased wildfires in Melaleuca areas),
- changes in the seriousness of different pest plants over time,
- the need to provide information that helps managers set priorities for control programs.



**DEFINITIONS:** *Exotic*—a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida. *Native*—a species whose natural range included Florida at the time of European contact (1500 AD). *Naturalized exotic*—an exotic that sustains itself outside cultivation (it is still exotic; it has not "become" native). *Invasive exotic*—an exotic that not only has naturalized but is expanding on its own in Florida plant communities.

### Abbreviations used:

for "Gov. list": **P** = Prohibited by Fla. Dept. of Environmental Protection, **N** = Noxious weed listed by Fla. Dept. of Agriculture & Consumer Services, **U** = Noxious weed listed by U.S. Department of Agriculture.  
for "Reg. Dis.": **N** = north, **C** = central, **S** = south, referring to each species' current distribution in general regions of Florida (not its potential range in the state). See following map.

For additional information on distributions of particular species by county, visit the University of South Florida's Atlas of Florida Vascular Plants web site, [www.plantatlas.usf.edu](http://www.plantatlas.usf.edu). Many of those species entries also have habit and close-up pictures of the species. Additional images for some species may be found at the "Introduced Species" page on the [Univ. of Florida Herbarium](http://www.ufl.edu/herbarium) website, at Fairchild Tropical Garden's [Virtual Herbarium](http://www.fairchildgarden.org) and at the University of Florida's Center for Aquatic and Invasive Plant Website <http://plants.ifas.ufl.edu/>. For other additional information on plants included in this list, see related links and pages at this web site on the [home page](#) menu.

**Category I** - Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. *This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.*

| Scientific Name   | Common Name  | EPPC Cat. | Gov. list      | Reg. Dist. |
|---|--|-----------|----------------|------------|
| <a href="#">Abrus precatorius</a>   | rosary pea   | I         |                | C, S       |
| <a href="#">Acacia auriculiformis</a>   | earleaf acacia   | I         |                | S          |
| <a href="#">Albizia julibrissin</a>   | mimosa, silk tree  | I         |                | N, C       |
| <a href="#">Albizia lebbbeck</a>  | woman's tongue   | I         |                | C, S       |
| <a href="#">Ardisia crenata</a> (= <i>A. crenulata</i> )  | coral ardisia  | I         |                | N, C       |
| <a href="#">Ardisia elliptica</a> (= <i>A. humilis</i> )  | shoebutton ardisia   | I         |                | S          |
| <a href="#">Asparagus densiflorus</a>   | asparagus-fern   | I         |                | C, S       |
| <a href="#">Bauhinia variegata</a>  | orchid tree  | I         |                | C, S       |
| <a href="#">Bischofia javanica</a>  | bischofia  | I         |                | C, S       |
| <a href="#">Calophyllum antillanum</a><br>(= <i>C. calaba</i> ; <i>C. inophyllum</i> misapplied)        | santa maria (names "mast wood,"<br>"Alexandrian laurel" used in cultivation) | I         |                | S          |
| <a href="#">Casuarina equisetifolia</a>   | Australian pine  | I         | <b>P</b>       | N,C,S      |
| <a href="#">Casuarina glauca</a>  | suckering Australian pine  | I         | <b>P</b>       | C, S       |
| <a href="#">Cinnamomum camphora</a>   | camphor-tree   | I         |                | N,C,S      |
| <a href="#">Colocasia esculenta</a>   | wild taro  | I         |                | N,C,S      |
| <a href="#">Colubrina asiatica</a>  | lather leaf  | I         |                | S          |
| <a href="#">Cupaniopsis anacardioides</a>   | carrotwood   | I         | <b>N</b>       | C, S       |
| <a href="#">Dioscorea alata</a>   | winged yam   | I         | <b>N</b>       | N,C,S      |
| <a href="#">Dioscorea bulbifera</a>   | air-potato   | I         | <b>N</b>       | N,C,S      |
| <a href="#">Eichhornia crassipes</a>  | water-hyacinth   | I         | <b>P</b>       | N,C,S      |
| <a href="#">Eugenia uniflora</a>  | Surinam cherry   | I         |                | C, S       |
| <a href="#">Ficus microcarpa</a> ( <i>F. nitida</i> and <i>F. retusa</i> var. <i>nitida</i> misapplied) | laurel fig   | I         |                | C, S       |
| <a href="#">Hydrilla verticillata</a>   | hydrilla   | I         | <b>P, U</b>    | N,C,S      |
| <a href="#">Hygrophila polysperma</a>   | green hygro  | I         | <b>P, U</b>    | N,C,S      |
| <a href="#">Hymenachne amplexicaulis</a>  | West Indian marsh grass  | I         |                | C, S       |
| <a href="#">Imperata cylindrica</a> ( <i>I. brasiliensis</i> misapplied)                                | cogon grass  | I         | <b>N, U</b>    | N, C, S    |
| <a href="#">Ipomoea aquatica</a>  | waterspinach   | I         | <b>P, U</b>    | C          |
| <a href="#">Jasminum dichotomum</a>   | Gold Coast jasmine   | I         |                | C, S       |
| <a href="#">Jasminum fluminense</a>   | Brazilian jasmine  | I         |                | C, S       |
| <a href="#">Lantana camara</a>  | lantana, shrub verbena   | I         |                | N,C,S      |
| <a href="#">Ligustrum lucidum</a>   | glossy privet  | I         |                | N, C       |
| <a href="#">Ligustrum sinense</a>   | Chinese privet, hedge privet   | I         |                | N,C,S      |
| <a href="#">Lonicera japonica</a>   | Japanese honeysuckle   | I         |                | N,C,S      |
| <a href="#">Lygodium japonicum</a>  | Japanese climbing fern   | I         | <b>N</b>       | N,C, S     |
| <a href="#">Lygodium microphyllum</a>   | Old World climbing fern  | I         | <b>N</b>       | C, S       |
| <a href="#">Macfadyena unguis-cati</a>  | cat's claw vine  | I         |                | N,C, S     |
| <a href="#">Manilkara zapota</a>  | sapodilla  | I         |                | S          |
| <a href="#">Melaleuca quinquenervia</a>   | melaleuca, paper bark  | I         | <b>P, N, U</b> | C, S       |
| <a href="#">Melia azedarach</a>   | Chinaberry   | I         |                | N,C,S      |
| <a href="#">Mimosa pigra</a>  | catclaw mimosa   | I         | <b>P, N, U</b> | C, S       |
| <a href="#">Nandina domestica</a>   | nandina, heavenly bamboo   | I         |                | N          |
| <a href="#">Nephrolepis cordifolia</a>  | sword fern   | I         |                | N,C,S      |
| <a href="#">Nephrolepis multiflora</a>  | Asian sword fern   | I         |                | C, S       |
| <a href="#">Neyraudia reynaudiana</a>   | Burma reed; cane grass   | I         | <b>N</b>       | S          |
| <a href="#">Paederia cruddasiana</a>  | sewer vine, onion vine   | I         | <b>N</b>       | S          |
| <a href="#">Paederia foetida</a>  | skunk vine   | I         | <b>N</b>       | N,C,S      |
| <a href="#">Panicum repens</a>  | torpedo grass  | I         |                | N,C,S      |

**Category I** - Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. *This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.*

| Scientific Name  | Common Name  | EPPC Cat. | Gov. list   | Reg. Dist. |
|--|--|-----------|-------------|------------|
| <i>Pennisetum purpureum</i>  | Napier grass                                       | I         |             | C, S       |
| <i>Pistia stratiotes</i>   | waterlettuce                                       | I         | <b>P</b>    | N,C,S      |
| <i>Psidium cattleianum</i> (=P. littorale)   | strawberry guava                                   | I         |             | C, S       |
| <i>Psidium guajava</i>   | guava  | I         |             | C, S       |
| <i>Pueraria montana</i> (=P. lobata)   | kudzu  | I         | <b>N, U</b> | N,C, S     |
| <i>Rhodomyrtus tomentosa</i>   | downy rose-myrtle                                  | I         | <b>N</b>    | C, S       |
| <i>Rhoeo spathacea</i> (see <i>Tradescantia spathacea</i> )  | -  |           |             |            |
| <i>Ruellia brittoniana</i> (may also be referred to <i>R. tweediana</i> )                          | Mexican petunia                                    | I         |             | N, C, S    |
| <i>Sapium sebiferum</i>  | popcorn tree, Chinese tallow tree                  | I         | <b>N</b>    | N, C, S    |
| <i>Scaevola sericea</i><br>(= <i>Scaevola taccada</i> var. <i>sericea</i> , <i>S. frutescens</i> ) | scaevola, half-flower, beach naupaka               | I         |             | C, S       |
| <i>Schefflera actinophylla</i> (=Brassaia actinophylla)  | schefflera, Queensland umbrella tree               | I         |             | C, S       |
| <i>Schinus terebinthifolius</i>  | Brazilian pepper                                   | I         | <b>P, N</b> | N, C, S    |
| <i>Senna pendula</i> (=Cassia coluteoides)   | climbing cassia, Christmas cassia, Christmas senna | I         |             | C, S       |
| <i>Solanum tampicense</i> (=S. houstonii)  | wetland night shade, aquatic soda apple            | I         | <b>N, U</b> | C, S       |
| <i>Solanum viarum</i>  | tropical soda apple                                | I         | <b>N, U</b> | N, C, S    |
| <i>Syngonium podophyllum</i>   | arrowhead vine                                     | I         |             | C, S       |
| <i>Syzygium cumini</i>   | jambolan, Java plum                                | I         |             | C, S       |
| <i>Tectaria incisa</i>   | incised halberd fern                               | I         |             | S          |
| <i>Thespesia populnea</i>  | seaside mahoe                                      | I         |             | C, S       |
| <i>Tradescantia fluminensis</i>  | white-flowered wandering jew                       | I         |             | N, C       |
| <i>Tradescantia spathacea</i><br>(= <i>Rhoeo spathacea</i> , <i>Rhoeo discolor</i> )               | oyster plant                                       | I         |             | S          |
| <i>Urochloa mutica</i> (= <i>Brachiaria mutica</i> )   | Pará grass   | I         |             | C, S       |

**Category II** - Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. *These species may become ranked Category I, if ecological damage is demonstrated.*

| Scientific Name  | Common Name                | EPPC Cat. | Gov. list | Reg. Dist. |
|--|----------------------------|-----------|-----------|------------|
| <i>Adenanthera pavonina</i>  | red sandalwood             | II        |           | S          |
| <i>Agave sisalana</i>  | sisal hemp                 | II        |           | C, S       |
| <i>Aleurites fordii</i> (= <i>Vernicia fordii</i> )                  | tung oil tree              | II        |           | N, C       |
| <i>Alstonia macrophylla</i>  | devil-tree                 | II        |           | S          |
| <i>Alternanthera philoxeroides</i>                                   | alligator weed             | II        | <b>P</b>  | N, C, S    |
| <i>Antigonon leptopus</i>  | coral vine                 | II        |           | N, C, S    |
| <i>Aristolochia littoralis</i>                                       | calico flower              | II        |           | N, C       |
| <i>Asystasia gangetica</i>   | Ganges primrose            | II        |           | C, S       |
| <i>Begonia cucullata</i>   | wax begonia                | II        |           | N, C       |
| <i>Broussonetia papyrifera</i>                                       | paper mulberry             | II        |           | N, C       |
| <i>Callisia fragrans</i>   | inch plant, spironema      | II        |           | C, S       |
| <i>Casuarina cunninghamiana</i>                                      | Australian pine            | II        | <b>P</b>  | C, S       |
| <i>Cecropia palmata</i>  | trumpet tree               | II        |           | S          |
| <i>Cestrum diurnum</i>   | day jessamine              | II        |           | C, S       |
| <i>Chamaedorea seifrizii</i>   | bamboo palm                | II        |           | S          |
| <i>Cryptostegia madagascariensis</i>                                 | rubber vine                | II        |           | C, S       |
| <i>Cyperus involucratus</i> ( <i>C. alternifolius</i> misapplied)    | umbrella plant             | II        |           | C, S       |
| <i>Cyperus prolifer</i>  | dwarf papyrus              | II        |           | C          |
| <i>Dalbergia sissoo</i>  | Indian rosewood, sissoo    | II        |           | C, S       |
| <i>Elaeagnus pungens</i>   | thorny eleagnus            | II        |           | N, C       |
| <i>Epipremnum pinnatum</i> cv. <i>Aureum</i>                         | pothos                     | II        |           | C, S       |
| <i>Ficus altissima</i>   | false banyan, council tree | II        |           | S          |
| <i>Flacourtia indica</i>   | governor's plum            | II        |           | S          |
| <i>Hemarthria altissima</i>  | limpo grass                | II        |           | C, S       |
| <i>Hibiscus tiliaceus</i>  | mahoe, sea hibiscus        | II        |           | C, S       |
| <i>Ipomoea fistulosa</i> (= <i>I. carnea</i> ssp. <i>fistulosa</i> ) | shrub morning-glory        | II        | <b>P</b>  | C, S       |
| <i>Jasminum sambac</i>   | Arabian jasmine            | II        |           | S          |
| <i>Kalanchoe pinnata</i>   | life plant                 | II        |           | C, S       |
| <i>Koelreuteria elegans</i>  | flamegold tree             | II        |           | C, S       |
| <i>Leucaena leucocephala</i>   | lead tree                  | II        |           | N, C, S    |
| <i>Limnophila sessiliflora</i>                                       | Asian marshweed            | II        | <b>P</b>  | N, C, S    |
| <i>Livistona chinensis</i>   | Chinese fan palm           | II        |           | C, S       |
| <i>Merremia tuberosa</i>   | wood-rose                  | II        |           | S          |
| <i>Murraya paniculata</i>  | orange-jessamine           | II        |           | S          |
| <i>Myriophyllum spicatum</i>   | Eurasian water-milfoil     | II        | <b>P</b>  | N, C, S    |
| <i>Nymphoides cristata</i>   | snowflake                  | II        |           | C, S       |
| <i>Panicum maximum</i>   | Guinea grass               | II        |           | C, S       |
| <i>Passiflora biflora</i>  | twin-flowered passion vine | II        |           | S          |
| <i>Pennisetum setaceum</i>   | green fountain grass       | II        |           | S          |
| <i>Phoenix reclinata</i>   | Senegal date palm          | II        |           | C, S       |
| <i>Phyllostachys aurea</i>   | golden bamboo              | II        |           | N, C       |
| <i>Pteris vittata</i>  | Chinese brake fern         | II        |           | N, C, S    |
| <i>Ptychosperma elegans</i>  | solitary palm              | II        |           | S          |
| <i>Rhynchelytrum repens</i>  | Natal grass                | II        |           | N, C, S    |
| <i>Ricinus communis</i>  | castor bean                | II        |           | N, C, S    |
| <i>Sansevieria hyacinthoides</i>                                     | bowstring hemp             | II        |           | C, S       |
| <i>Sesbania punicea</i>  | purple sesban, rattlebox   | II        |           | N, C, S    |
| <i>Solanum diphyllum</i>   | twinleaf nightshade        | II        |           | N, C, S    |
| <i>Solanum jamaicense</i>  | Jamiaca nightshade         | II        |           | C          |

**Category II** - Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. *These species may become ranked Category I, if ecological damage is demonstrated.*

| Scientific Name   | Common Name            | EPPC Cat. | Gov. list | Reg. Dist. |
|---|------------------------|-----------|-----------|------------|
| <i>Solanum torvum</i>   | susumber, turkey berry | II        | N, U      | N, C, S    |
| <i>Syagrus romanzoffiana</i><br>(= <i>Arecastrum romanzoffianum</i> ) | queen palm             | II        |           | C, S       |
| <i>Syzygium jambos</i>  | rose-apple             | II        |           | C, S       |
| <i>Terminalia catappa</i>   | tropical almond        | II        |           | C, S       |
| <i>Terminalia muelleri</i>  | Australian almond      | II        |           | C, S       |
| <i>Tribulus cistoides</i>   | puncture vine, bur-nut | II        |           | N, C, S    |
| <i>Urena lobata</i>   | Caesar's weed          | II        |           | N, C, S    |
| <i>Wedelia trilobata</i>  | wedelia                | II        |           | N, C, S    |
| <i>Wisteria sinensis</i>  | Chinese wisteria       | II        |           | N, C       |
| <i>Xanthosoma sagittifolium</i>                                       | malanga, elephant ear  | II        |           | N, C, S    |

**Citation example:**

FLEPPC. 2003. List of Florida's Invasive Species. Florida Exotic Pest Plant Council. Internet:  
<http://www.fleppc.org/03list.htm>

**The 2003 list was prepared by the FLEPPC Plant List Committee:**

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<![endif]>

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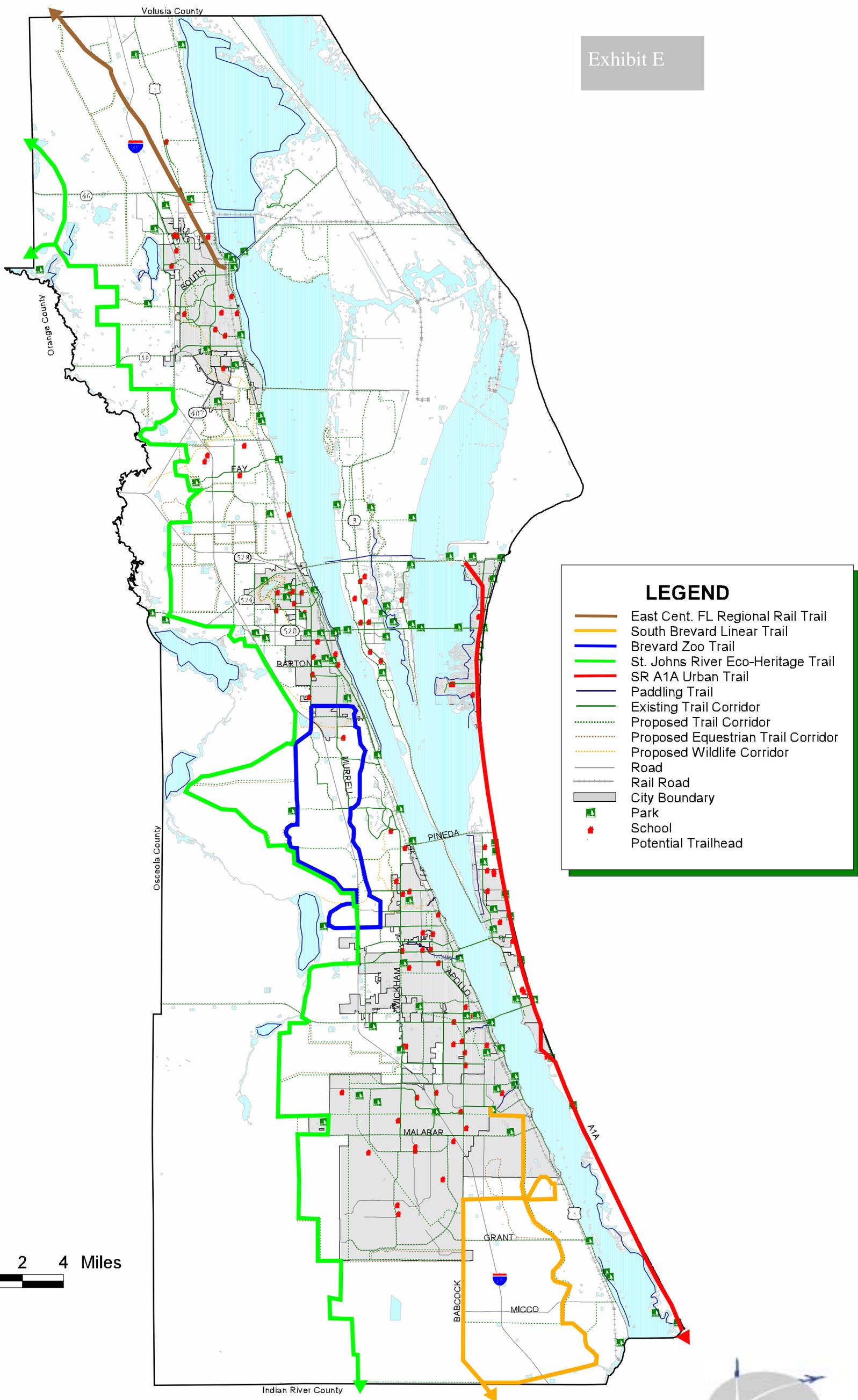
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# GREENWAYS AND TRAILS SHOWCASE PROJECTS

Exhibit E



## LEGEND

- East Cent. FL Regional Rail Trail
- South Brevard Linear Trail
- Brevard Zoo Trail
- St. Johns River Eco-Heritage Trail
- SR A1A Urban Trail
- Paddling Trail
- Existing Trail Corridor
- Proposed Trail Corridor
- Proposed Equestrian Trail Corridor
- Proposed Wildlife Corridor
- Road
- Rail Road
- City Boundary
- Park
- School
- Potential Trailhead



FCT Contract Number 04-CT-9H-03-F3-A1-035  
FLORIDA COMMUNITIES TRUST  
03-035-FF3  
COCOA BEACH MARITIME HAMMOCK PRESERVE  
CSFA# - 52002

**GRANT CONTRACT**

THIS AGREEMENT is entered into on JANUARY 21, 2004, the date the last party executes this Agreement, by and between the FLORIDA COMMUNITIES TRUST (FCT), a nonregulatory agency within the State of Florida Department of Community Affairs, and CITY OF COCOA BEACH, local government of the State of Florida (Recipient). The intent of this Agreement is to impose terms and conditions on the use of the proceeds of certain bonds, hereinafter described, and the lands acquired with such proceeds (Project Site), that are necessary to ensure compliance with applicable Florida law and federal income tax law and to otherwise implement provisions of Sections 259.105, 259.1051, and Chapter 380, Part III, Florida Statutes (F.S.).

\* \* \* \* \*

WHEREAS, Chapter 380, Part III, F.S., the Florida Communities Trust Act, creates a nonregulatory agency within the Department of Community Affairs (Department) that will assist local governments in bringing local comprehensive plans into compliance and implementing the goals, objectives, and policies of the conservation, recreation and open space, and coastal management elements of local comprehensive plans, or in conserving natural resources and resolving land use conflicts by providing financial assistance to local governments and nonprofit environmental organizations to carry out projects and activities authorized by the Florida Communities Trust Act;

WHEREAS, Section 259.105(3)(c), F.S., of the Florida Forever Act provides for the distribution of twenty- two percent (22%) less certain reductions of the net Florida Forever Revenue Bond proceeds to the Department to provide land acquisition grants to local governments and nonprofit environmental organizations through the FCT for acquisition of community-based projects, urban open spaces, natural resource conservation areas, parks, greenways and outdoor recreation areas to implement local comprehensive plans;

WHEREAS, the Bonds are issued as tax-exempt bonds, meaning that the interest on the Bonds is excluded from the gross income of bondholders for federal income tax purposes;

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FLORIDA COMMUNITIES TRUST  
DEPT. OF COMMUNITY AFFAIRS

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WHEREAS, Rule Chapter 9K-7, Florida Administrative Code (F.A.C.), describes the procedures for evaluation and selection of lands proposed for acquisition using funds allocated to the FCT through the Department from the Florida Forever Trust Fund;

WHEREAS, the FCT Governing Board met on October 2 - 3, 2003, to score, rank, and select projects to receive approval for funding;

WHEREAS, the Recipient's project, described in an application submitted for evaluation, was selected for funding and in accordance with Rule Chapter 9K-7, F.A.C., and more particularly described within this Agreement;

WHEREAS, Rule 9K-7.009(1), F.A.C., authorizes FCT to impose conditions for funding on those FCT applicants whose projects have been selected for funding; and

WHEREAS, Rule 9K-7.003(5) F.A.C., recognizes real property owned by the Recipient and included in the application as part of the Project Site as an eligible source of local match, provided that real property owned by the Recipient was acquired by the Recipient within 24 months prior to the application deadline for which the application was made. The date of this application deadline was June 10, 2003;

WHEREAS, the Recipient acquired the fee simple title to the entire Project Site on JANUARY 10, 2003 (Insert date[s]) from TRUST FOR PUBLIC LAND (Insert Seller name[s]);

WHEREAS, the Recipient has requested disbursement of FCT Florida Forever Bond proceeds from FCT subsequent to the closing on the acquisition of the Project Site for the project costs expended for the acquisition of the Project Site by the Recipient; and

WHEREAS, the purpose of this Agreement is to set forth the conditions of approval that must be satisfied by Recipient prior to the disbursement of any FCT Florida Forever funds awarded, as well as the restrictions that are imposed on the Project Site subsequent to its cost reimbursement with the Bond proceeds.

NOW THEREFORE, FCT and Recipient mutually agree as follows:

#### I. GENERAL CONDITIONS

1. At least two original copies of this Agreement shall be executed by the Recipient and returned to the FCT office at 2555 Shumard Oak Boulevard, Tallahassee, FL 32399-2100, as soon as possible and before **December 18, 2003**. If Recipient requires more than one original document, the Recipient should photocopy the number of additional copies needed, and then execute each as an original document. Upon receipt of the signed Agreements, FCT will execute

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the Agreements, retain one original copy and return all other copies that have been executed to the Recipient.

2. This Agreement between the parties sets forth the requirements and responsibilities for cost reimbursement and management of the Project Site, described in the application that was submitted and selected for funding by FCT (Application).

3. Approval for funding shall be until **April 3, 2004** (Expiration Date). In the event that the Project Plan described in Section V. below has not been approved by the Expiration Date, this Agreement shall be terminated. The FCT may extend this Agreement beyond the Expiration Date if the Recipient demonstrates that significant progress is being made toward Project Plan approval or that extenuating circumstances warrant an extension of time. A request for an extension must be made in writing to FCT, fully explaining the reason for the delay and why the extension is necessary. If the Recipient does not request an extension, or if an extension is not granted to the Recipient by the FCT, the Florida Forever award granted to the Recipient shall terminate and all obligations hereunder shall cease.

4. This Agreement may be terminated before its Expiration Date at the written request of the Recipient. Such a request shall fully describe the circumstances that compel the Recipient to terminate the project. A request for termination should be mailed to the FCT at the address given in paragraph 1 above.

5. This Agreement may be terminated before its Expiration Date by the FCT if it is determined by the FCT that no significant progress is being made toward Project Plan approval, non-performance by the Recipient of the requirements listed or that other circumstances are present that would, in all likelihood, preclude or prevent the successful reimbursement for the acquisition costs for the Project Site within the established time frame. Prior to termination, notice of the proposed termination shall be mailed to the Recipient at the address given in paragraph 13 below.

6. Recipient agrees to submit the documentation to FCT that is required in this Agreement as soon as possible so that the Project Site acquisition costs may be reimbursed in an expeditious manner. Deadlines stated in this Agreement, as well as deadlines associated with any FCT activity relating to the project, are strictly enforced. Failure to adhere to deadlines may result in delays in the project, may result in allocation of time or resources to other recipients that responded timely, and may result in this Agreement being terminated by FCT.

It is the responsibility of the Recipient and its representatives to know all project deadlines, to devise a method of monitoring the project, and to adhere to all deadlines. The Recipient shall provide a monthly status report to FCT of progress towards reimbursement of the acquisition project costs.

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7. The FCT Florida Forever award granted to the Recipient will in no event exceed the lesser of Forty Percent (40.00%) of the final total eligible project costs, as defined in Rule 9K-7.002(29), F.A.C., or Six Hundred Ten Thousand Six Hundred Seventeen Dollars And No Cents (\$610,617.00), unless the FCT approves a different amount, after determination of the Maximum Approved Purchase Price as provided in Rule 9K-8.007, F.A.C., and which shall be reflected in an addendum to this Agreement. The amount of the grant shall not exceed the Limitation of Award provided in Rule 9K-7.003(3), F.A.C., and as advertised in the Notice of Application.

8. The grant amount stated in paragraph 7 above is based on the Recipient's estimate of total project costs in its Application, as well as limits on awards in the notice of application period announcing the application cycle. When disbursing funds for the project, the FCT will recognize the actual total project costs, defined in Rule 9K-7.002 (29), F.A.C., for acquisition of the Project Site. The total project costs will be reflected on a grant reconciliation statement prepared pursuant to paragraph 10 below. The FCT will participate in the land cost at either the actual purchase price, or the Maximum Approved Purchase Price based on appraisal reports that comply with requirements set forth in Rule 9K-8.007, F.A.C., whichever is less, and multiplied by the percent stated in paragraph 7 above.

9. The FCT Governing Board has selected the Recipient's Application for funding to acquire the entire Project Site identified in its Application. The FCT reserves the right to withdraw or adjust the FCT award if the acreage that comprises the Project Site is reduced or the project design is changed so that the objectives of the acquisition cannot be achieved. Any request for modification of the boundary of the Project Site identified in the Recipient's Application may be considered by the FCT following the procedures for submission and review of boundary modification requests set forth in Rule 9K-7.010, F.A.C.

10. The FCT funds shall be delivered either in the form of eligible project costs prepaid by FCT to vendors or in the form of a State of Florida warrant to the Recipient. FCT award funds shall only be delivered after FCT approval of the Project Plan and terms of the acquisition of the Project Site. FCT will prepare a grant reconciliation statement prior to the reimbursement that will evidence the amount of local match, if any is required, provided by the Recipient. Funds expended by the FCT for eligible project costs incurred by the FCT will be recognized as part of the FCT grant award amount on the grant reconciliation statement.

11. The Recipient's local match, if any is required, shall be delivered either in the form of eligible project costs prepaid to vendors by the Recipient; purchase price paid to Seller; or eligible documented donation by Seller of land value. The funds expended by the Recipient for eligible project costs incurred by the Recipient will be recognized as part of the local match, if any is required, on the grant reconciliation statement prepared pursuant to paragraph 10 above.

In the event that preacquired land or donated land value is the source of local match, if any is required, the value attributed to the local match shall be determined after an appraisal report(s) that complies with the procedures and requirements set forth in Rule 9K-8.007, F.A.C. is reviewed and approved by FCT prior to FCT funds being delivered for the project.

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12. The Recipient shall provide the required appraisal(s) for review by a date not to exceed 90 days after execution of this Agreement. FCT will review the appraisals and, upon approval, will determine the Maximum Approved Purchase Price as provided in Rule 9K-8.007(5) and (6), F.A.C., for FCT reimbursement.

13. Recipient hereby notifies the FCT that the following administrator, officer, or employee is the authorized key contact, or project manager, on behalf of the Recipient for purposes of coordinating project activities for the duration of the project:

Name: Joanie REGAN  
Title: Stormwater Program Coordinator  
Address: 1600 Mintemew Causeway, Cocoa Beach FL 32931  
Phone: 321 868.3292 Fax: 321 868.3379  
Email: JREGAN@CITYOFCOCOAFL.COM

All contact and correspondence from FCT to the Recipient will be through the key contact. The Recipient must notify the FCT as to any change in the authorization of the key contact on behalf of the Recipient named above. This notification must be made in writing to the Executive Director and signed by the appropriate authorized administrator, officer, or employee or named in paragraph III.4. below.

14. This Agreement may be amended at any time and must be set forth in a written instrument and agreed to by both the FCT and the Recipient. Such amendments shall become a part of this Agreement.

## II. AUDIT REQUIREMENTS

Section 215.97, Florida Statutes, the Florida Single Audit Act, provides uniform state audit requirements for state financial assistance provided by state agencies over the audit threshold as defined in that Section as follows:

1. The Recipient agrees to maintain financial procedures and support documents, in accordance with generally accepted accounting principles, to account for the receipt and expenditure of funds under this Agreement.

2. These records shall be available at all reasonable times for inspection, review, or audit by state personnel and other personnel duly authorized by FCT. "Reasonable" shall be construed according to circumstances, but ordinarily shall mean normal business hours of 8:00 a.m. to 5:00 p.m., local time, Monday through Friday.

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3. The Recipient shall also provide FCT with the records, reports or financial statements upon request for the purposes of auditing and monitoring the funds awarded under this Agreement.

4. In the event that the Recipient expends a total amount of State financial assistance from all state sources equal to or in excess of \$300,000 in any fiscal year of such Recipient, the Recipient must have a State single or project-specific audit for such fiscal year in accordance with Section 215.97, Florida Statutes; applicable rules of the Executive Office of the Governor and the Comptroller, and Chapter 10.600, Rules of the Auditor General.

Section I.7. above indicates State financial assistance through FCT by this Agreement. In determining the State financial assistance expended in its fiscal year, the Recipient shall consider all sources of State financial assistance, including State funds received from FCT, except that State financial assistance received by a nonstate entity for Federal program matching requirements shall be excluded from consideration. The funding for this Agreement was received by FCT as a grant appropriation.

- a. The annual financial audit report shall include all management letters and the Recipient's response to all findings, including corrective actions to be taken.
- b. The annual financial audit report shall include a schedule of financial assistance specifically identifying all Agreement and other revenue by sponsoring agency and Agreement number.
- c. The complete financial audit report, including all items specified in (d) below, shall be sent directly to:

Department of Community Affairs  
Office of Audit Services  
2555 Shumard Oak Boulevard  
Tallahassee, Florida 32399-2100  
and

State of Florida Auditor General  
Room 401 574, Claude Pepper Building  
111 West Madison Street  
Tallahassee, Florida 32302-1450

- d. In connection with the audit requirements addressed above, the Recipient shall ensure that the audit complies with the requirements of Section 215.97(7), Florida Statutes. This includes submission of a reporting package as defined by Section 215.97(2)(d), Florida Statutes, and Chapter 10.550 and 10.650, Rules of the Auditor General.

- e. If the Recipient expends less than \$300,000 in State financial assistance in its fiscal year, an audit conducted in accordance with the provisions of Section 215.97, Florida Statutes, is not required. In the event that the Recipient expends less than \$300,000 in State financial assistance in its fiscal year and elects to have an audit conducted in accordance with the provisions of Section 215.97, Florida Statutes, the cost of the audit must be paid from non-State funds (i.e., the cost of such an audit must be paid from recipient funds obtained from other than State entities).

5. In the event the audit shows that the entire funds disbursed hereunder, or any portion thereof, were not spent in accordance with the conditions of this Agreement, the Recipient shall be held liable for reimbursement to FCT of all funds not spent in accordance with these applicable regulations and Agreement provisions within thirty (30) days after FCT has notified the Recipient of such non-compliance.

6. The Recipient shall retain all financial records, supporting documents statistical records, and any other documents pertinent to this contract for a period of five years after the date of submission of the final expenditures report. However, if litigation or an audit has been initiated prior to the expiration of the five-year period, the records shall be retained until the litigation or audit findings have been resolved.

7. The Recipient shall have all audits completed in accordance with Section 215.97, Florida Statutes, by an independent certified public accountant (IPA) who shall either be a certified public accountant or a public accountant licensed under Chapter 473, Florida Statutes. The IPA shall state that the audit complied with the applicable provisions noted above.

### **III. AFFIRMATIONS, ANNUAL STEWARDSHIP REPORT, AUTHORIZED EXECUTOR AND FEDERAL EMPLOYEE IDENTIFICATION NUMBER.**

By execution of this Agreement, the Recipient affirms that:

1. the Recipient is ready, willing and able to provide the local match, if any is required;
2. the Recipient reaffirms the representations made in its Application;
3. the Recipient shall, on January 30 of each year after FCT reimbursement for project costs for the acquisition of the Project Site, prepare and submit to FCT an annual stewardship report as required by Rule 9K-7.013, F.A.C.;
4. **the Recipient authorizes the administrator, employee, officer or representative named in this paragraph to execute all documents in connection with this project on behalf of the Recipient, including but not limited to the Grant Contract or any addenda thereto, grant reconciliation statement, statements submitted as a part of the Project Plan, and Grant Award Agreement.**

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Name: Charles Billias  
Title: City Manager  
Address: 2 South Orlando Avenue, Cocoa Beach FL 32931  
Phone: 321 868-3200 Fax: 321 868-3226  
Email: CBILLIAS@CITYOFCOCOA BEACH.COM

The Recipient must notify the FCT as to any change in the authorization of the administrator, officer or employee named in this paragraph to execute all documents on behalf of the Recipient. This notification must be made in writing to the Executive Director and signed by the appropriate administrator, officer or employee.

5. the Recipient hereby notifies the FCT that the Recipient's Federal Employer Identification Number is 59-6000-300.

#### IV. MANAGEMENT PLAN APPROVAL

1. Prior to approval of the Project Plan (described in Section V below), and final disbursement of award funds by FCT, the Recipient must prepare a Management Plan that complies with Rule Chapter 9K-7.011, F.A.C., and addresses the criteria and conditions set forth in Sections IV, VI, VII, VIII, and IX herein. Recipient is strongly urged to coordinate with the FCT staff in order to ensure that the FCT approval of the Management Plan occurs prior to the closing date of the real estate transaction(s) associated with the project and delivery of FCT funds.

2. The Management Plan, which is intended to explain how the Project Site will be managed to further the purposes of the project and meet the terms and conditions of this Agreement, shall include the following:

- a. An introduction containing the project name, location and other background information relevant to management.
- b. The stated purpose for acquiring the Project Site as proposed in the Application and a prioritized list of management objectives.
- c. The identification of known natural resources including natural communities, listed plant and animal species, soil types, surface and groundwater characteristics.
- d. A detailed description of all proposed uses including existing and proposed physical improvements and the impact on natural resources.

- e. A detailed description of proposed restoration or enhancement activities, if any, including the objective of the effort and the techniques to be used.
- f. A scaled site plan drawing showing the project site boundary, existing and proposed physical improvements and any natural resource restoration or enhancement areas.
- g. The identification and protection of known cultural or historical resources and a commitment to conduct surveys prior to any ground disturbing activity, if applicable.
- h. A description of how the management will be coordinated with other agencies and public lands, if applicable.
- i. A schedule for implementing the development and management activities of the Management Plan.
- k. Cost estimates and funding sources to implement the Management Plan.
- l. A schedule for implementing the development and management activities of the Management Plan.

3. If the Recipient is not the proposed managing entity, the Management Plan must include a signed agreement between the Recipient and the managing entity stating the managing entity's willingness to manage the site, the manner in which the site will be managed to further the purpose(s) of the project, and identification of the source of funding for management.

In the event that the Recipient is a partnership, the Recipient must also provide FCT with the interlocal agreement that sets forth the relationship among the partners and the fiscal and management responsibilities and obligations incurred by each partner for the Project Site as a part of its Project Plan.

4. To ensure that future management funds will be available for the management of the site in perpetuity pursuant to Section 259.105 and Chapter 380, Part III, F.S., the Recipient(s) shall be required to provide the FCT with Reasonable Assurance, pursuant to Rule 9K-7.002(32), F.A.C., that it has the financial resources, background, qualifications and competence to manage the Project Site in perpetuity in a reasonable and professional manner. Where the Recipient does not include at least one Local Government, the FCT may: require the Recipient to post a performance or other bond in an amount sufficient to ensure that the Project Site shall be reasonably and professionally managed in perpetuity; require the Recipient to establish an endowment or other fund in an amount sufficient to ensure performance; require a guaranty or pledge by the Local Government, in whose jurisdiction the Project Site is located, which shall require the Local Government to take over the responsibility for management of the Project Site in the event the Nonprofit Environmental Organization Recipient is unable to, and may require

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the Local Government to be a named co-signer on the Grant Award Agreement; or require such other assurances as the Governing Board may deem necessary to adequately protect the public interest.

## V. PROJECT PLAN APPROVAL

1. Prior to final disbursement of award funds by FCT, the Recipient must prepare a Project Plan that complies with Rule 9K-8.011, F.A.C. This Project Plan is a compilation of the following items listed below, which must be reviewed and approved by FCT.

The Project Plan shall include, and shall not be considered by FCT unless it includes all of the following documents, to be reviewed and approved by FCT to ensure that the interest of the State of Florida will be protected:

- a. The following closing documents associated with the parcel(s):
  - (1) A copy of the Purchase Agreement(s) for sale and purchase of the parcel(s) between Recipient and TRUST FOR PUBLIC LAND  
(Insert name[s] of Seller[s]).
  - (2) A copy of closing statements from Buyer(s) and Seller(s) for the purchase of the parcels.
  - (3) A copy of the recorded deed(s) evidencing conveyance of title to the parcel(s) to the Recipient.
  - (4) Certified survey(s) of the parcel(s) that meets the requirements of Rule 9K-8.006, F.A.C., and dated within 90 days of the date of acquisition of the parcel(s) by Recipient.
  - (5) A copy of the title insurance policy(s) evidencing marketable title in Recipient to the parcel(s) and effective the date of acquisition of the parcel(s) by the Recipient, including a statement from the title insurer as to the minimum promulgated rate if premium was paid by Recipient, and all documents referenced in the title policy(s).
  - (6) Environmental site assessment(s) of the parcel(s) certified to the Recipient, which meets the standards and requirements of ASTM Practice E 1527, and with a date of certification within 45 days of the date of acquisition of the parcel(s) by Recipient, together with the statement required by Rule 9K-8.012(4), F.A.C.
- b. A letter from FCT indicating approval of the Management Plan written according to Rule Chapter 9K-7.011, F.A.C., and as described in Section IV above.

- c. A statement of the total Project Cost as defined in Rule Chapter 9K-7.002(29), F.A.C.
- d. A statement of the amount of the award being requested from the FCT.
- e. Supporting documentation that the conditions imposed as part of this Agreement have been satisfied.
- f. A signed statement by the Recipient that the Recipient is not aware of any pending criminal, civil or regulatory violations imposed on the Project Site by any governmental agency or body.
- g. Additional documentation as may be requested by FCT to provide Reasonable Assurance as set forth in Section IV.4. above.

2. The FCT strongly encourages the Recipient to request a courtesy review of its Project Plan prior to submission of the Project Plan for approval and release of funds. FCT will recommend approval of complete and accurate Project Plans or disapproval of incomplete or insufficient project plans.

3. Reimbursement for project costs may be made only after FCT approval of the Project Plan.

**VI. REQUIREMENTS IMPOSED BY CHAPTER 259 AND CHAPTER 380, PART III, F.S.**

**RECIPIENT AGREES AS FOLLOWS:**

1. FCT shall approve the terms under which the interest in land is acquired, pursuant to Section 380.510(3), F.S. Such approval is deemed given when the FCT approves the Project Plan containing a copy of the document(s) vesting title to the Project Site in the Recipient.

2. Title to the Project Site shall be titled in the Recipient.

3. Each parcel to which the Recipient acquires title in the Project Site shall be subject to such covenants and restrictions as are, at a minimum, sufficient to ensure that the use of the Project Site at all times complies with Section 375.051 and 380.510, F.S.; Section 11(e), Article VII of the State Constitution; the applicable bond indenture under which the Bonds were issued; and any provision of the Internal Revenue Code or the regulations promulgated thereunder that pertain to tax exempt bonds and shall contain clauses providing for the conveyance of title to the Project Site in the Board of Trustees of the Internal Improvement Trust Fund or another local government or non-profit organization upon failure to use the Project Site conveyed thereby for such purposes.

4. A Grant Award Agreement containing such covenants and restrictions as referenced in paragraph 3 above and describing the real property subject to the Agreement shall be executed by the FCT and Recipient at the time of the reimbursement for the Project Site and shall be recorded in the county in which the Project Site is located. The Grant Award Agreement shall restate the conditions that were placed on the Project Site at the time of project selection and initial grant approval. All statements contained in the Grant Award Agreement are contained in this Agreement, with the exception of statements that do not survive the reimbursement for costs for the acquisition of the Project Site.

5. If any essential term or condition of the Grant Award Agreement is violated, and the Recipient does not correct the violation within 30 days of written notice of violation, title to all interest in the Project Site shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund. The deed transferring title to the Project Site to the Recipient shall set forth the executory interest of the Board of Trustees of the Internal Improvement Trust Fund.

6. The interest acquired by the Recipient in the Project Site shall not serve as security for any debt of the Recipient.

7. If the existence of the Recipient terminates for any reason, title to the Project Site shall be conveyed to the Board of Trustees of the Internal Improvement Trust Fund, unless FCT negotiates an agreement with another local government or nonprofit organization which agrees to accept title and to manage the Project Site.

## **VII. OBLIGATIONS OF THE FCT RECIPIENT AS A CONDITION OF PROJECT FUNDING**

1. Following the reimbursement for costs of the Project Site, the Recipient shall ensure that the future land use designation assigned to the Project Site is for a category dedicated to open space, conservation, or outdoor recreation uses as appropriate. If an amendment to the applicable comprehensive plan is required, the amendment shall be proposed at the next comprehensive plan amendment cycle available to the Recipient subsequent to the reimbursement for costs for the acquisition of the Project Site.

2. Recipient shall ensure, and provide evidence thereof to FCT, that all activities under this Agreement comply with all applicable local, state, regional and federal laws and regulations, including zoning ordinances and the applicable adopted and approved comprehensive plan.

3. The Recipient shall, through its agents and employees, prevent the unauthorized use of the Project Site or any use thereof not in conformity with the Management Plan approved by the FCT as a part of the Project Plan.

4. FCT staff or its duly authorized representatives shall have the right at any time to inspect the Project Site and the operations of the Recipient at the Project Site.

5. All buildings, structures, improvements, and signs shall require the prior written approval of FCT as to purpose. Further, tree removal, other than non-native species, and major land alterations shall require the written approval of FCT. The approvals required from FCT shall not be unreasonably withheld by FCT upon sufficient demonstration that the proposed structures, buildings, improvements, signs, vegetation removal or land alterations will not adversely impact the natural resources of the Project Site. The approval by FCT of the Recipient's Management Plan addressing the items mentioned herein shall be considered written approval from FCT.

#### **VIII. OBLIGATIONS OF THE RECIPIENT RELATING TO THE USE OF BOND PROCEEDS**

1. FCT is authorized by Section 380.510, F.S., to impose conditions for funding on Recipient in order to ensure that the project complies with the requirements for the use of Florida Forever Bond proceeds including without limitation the provisions of the Internal Revenue Code and the regulations promulgated thereunder as the same pertain to tax exempt bonds.

2. Recipient agrees and acknowledges that the below listed transactions, events, and circumstances, collectively referred to as the "disallowable activities", may be disallowed on the Project Site, as they may have negative legal and tax consequences under Florida law and federal income tax law. The Recipient further agrees and acknowledges that these disallowable activities may be allowed up to a certain extent based on guidelines or tests outlined in the Federal Private Activity regulations of the Internal Revenue Service:

- a. any sale or lease of any interest in the Project Site to any person or organization;
- b. the operation of any concession on the Project Site by any person or organization;
- c. any sales contract or option to buy things attached to the Project Site to be severed from the Project Site, with any person or organization;
- d. any use of the Project Site by any person other than in such person's capacity as a member of the general public;
- e. any change in the character or use of the Project Site from that use expected at the date of the issuance of any series of Bonds from which the disbursement is to be made;
- f. a management contract of the Project Site with any person or organization;  
or
- g. such other activity or interest as may be specified from time to time in writing by FCT to the Recipient.

3. If the Project Site, after its acquisition by the Recipient and/or the Trustees, is to remain subject to any of the "disallowable activities", the Recipient shall provide to FCT at least 60 calendar days advance written notice of any such transactions, events, and circumstances, and shall provide to FCT such information as FCT reasonably requests in order to evaluate the legal and tax consequences of such activity or interest for FCT approval.

4. In the event that FCT determines at any time that the Recipient is engaging or allowing others to engage in disallowable activities on the Project Site, the Recipient agrees to immediately cease or cause the cessation of the disallowable activity upon receipt of written notice from the FCT. In addition to all other rights and remedies at law or in equity, FCT shall have the right to seek temporary and permanent injunctions against Recipient for any disallowable activity on the Project Site.

DELEGATIONS AND CONTRACTUAL ARRANGEMENTS BETWEEN THE RECIPIENT AND OTHER GOVERNMENTAL BODIES, NONPROFIT ENTITIES, OR NON GOVERNMENTAL PERSONS FOR USE OR MANAGEMENT OF THE PROJECT SITE WILL IN NO WAY RELIEVE THE RECIPIENT OF THE RESPONSIBILITY TO ENSURE THAT THE CONDITIONS IMPOSED HEREIN ON THE PROJECT SITE AS A RESULT OF UTILIZING BOND PROCEEDS TO ACQUIRE THE PROJECT SITE ARE FULLY COMPLIED WITH BY THE CONTRACTING PARTY.

#### **IX. CONDITIONS PARTICULAR TO THE PROJECT SITE THAT MUST BE ADDRESSED IN THE MANAGEMENT PLAN**

The Management Plan for the Project Site is mentioned throughout this Agreement, and is particularly described in Section IV. above. In addition to the various conditions already described in this Agreement, which apply to all sites acquired with FCT funds, the Management Plan shall address the following conditions that are particular to the Project Site and result from either commitments made in the application that received scoring points or observations made by the FCT staff during the site visit described in Rule 9K-7.009(1), F.A.C.:

1. Two or more resource-based outdoor recreational facilities including a nature trail and wildlife observation platform and two or more user-oriented outdoor recreational facilities including a fitness trail and tetherball court shall be provided. The facilities shall be designed and located with minimal impact to natural resources on the Project Site.
2. A permanent recognition sign shall be maintained in the entrance area of the Project Site. The sign shall acknowledge that the Project Site is open to the public and was purchased with funds from the Florida Communities Trust and the City of Cocoa Beach.
3. Interpretive signage shall be provided to educate visitors about the natural environment of the Project Site.

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4. A biological inventory of the natural communities found on the Project Site, including the dominant and listed plant and animal species, shall be conducted prior to any site development. The inventory shall be used to ensure the protection of biological resources and be updated periodically.
5. The applicant shall construct a 1 acre wetland community on the Project Site which shall be preserved and appropriately managed to ensure the long-term viability of the wetland. The proposed wetland shall be designed to provide recreational open space and wildlife habitat. The development of a wetland shall be done in coordination with the St. Johns Water Management District and Florida Department of Environmental Protection.
6. Approximately 2 acres of degraded maritime hammock shall be restored to a natural community in terms of biological composition and ecological function and appropriately managed to ensure the long-term viability of this community.
7. The Project Site shall be managed in a manner that will protect and enhance the habitat for native wildlife species including wading birds that utilize or could potentially utilize the site. The development of the Management Plan shall be coordinated with the Florida Fish and Wildlife Conservation Commission's Office of Environmental Services to ensure the preservation and viability of native wildlife species and their habitat.
8. An ongoing monitoring and control program for invasive vegetation including exotic (non-native) and nuisance native plant species shall be implemented at the Project Site. The objective of the control program shall be the elimination of invasive exotic plant species and the maintenance of a diverse association of native vegetation. The Management Plan shall reference the Exotic Pest Plant Council's List of Florida's Most Invasive Species to assist in identifying invasive exotics on the Project Site.
9. A feral animal removal program shall be developed and implemented, as necessary, for dogs, cats, ducks, and other non-native wildlife that may be found on the Project Site.
10. Prior to the commencement of any proposed development activities, measures shall be taken to determine the presence of any archaeological sites. All planned activities involving known archaeological sites or potential site areas shall be closely coordinated with the Department of State, Division of Historic Resources in order to prevent the disturbance of significant sites.
11. The location and design of the parking and other site improvements shall have minimal impact on natural resources. The parking area shall incorporate pervious material wherever feasible.
12. Pedestrian and bicycle access to the Project Site shall be promoted through the provision of pedestrian oriented walkways and bicycle facilities that link the Project Site with adjacent residential neighborhoods. Bike parking stands shall be installed at the Project Site to provide an alternative to automobile transportation to the Project Site.

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13. The Project Site shall be developed and managed as a support parcel of the State Road A1A recreational trail system and include trailhead facilities.

14. Proposed site improvements shall be designed and located to minimize or eliminate the long term risk of storm damage or flooding in conjunction with appropriate hazard mitigation agencies or experts.

15. The requirements imposed by other grant program funds that may be sought for activities associated with the Project Site shall not conflict with the terms and conditions of this Agreement.

This Agreement including Exhibit "A", if required, embodies the entire agreement between the parties.

THE FLORIDA COMMUNITIES TRUST'S OBLIGATION TO PROVIDE FUNDS UNDER THIS AGREEMENT IS CONTINGENT UPON AN ANNUAL APPROPRIATION BY THE LEGISLATURE.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement.

CITY OF COCOA BEACH

By: *Charles Billias*  
Print Name: CHARLES BILLIAS  
Title: CITY MANAGER  
Date: 11/19/03

Approved as to Form and Legality:  
By: *James A. Fowler*  
Print Name: JAMES A. FOWLER

FLORIDA COMMUNITIES TRUST

By: *Janice Browning*  
Print Name: JANICE BROWNING  
Title: EXECUTIVE DIRECTOR  
Date: 1/21/04

Approved as to Form and Legality:  
By: *Kristen C. Coors*  
Trust Counsel: KRISTEN C. COORS