A Floristic Survey and Rare Plant Assessment of Caloosahatchee Creeks Preserve, Lee County, Florida Final Report (Abridged Online Version)

Steven W. Woodmansee and Steven E. Green
Woodmansee@regionalconservation.org

December 8, 2006

Submitted by
The Institute for Regional Conservation
22601 S.W. 152 Avenue, Miami, Florida 33170
George D. Gann, Executive Director

Submitted to
Cathy Olson
Conservation 2020 Land Stewardship Supervisor
Lee County Parks & Recreation
3410 Palm Beach Boulevard
Fort Myers, Florida 33916

Table of Contents

Cover photo: Rough skullcap (*Scutellaria integrifolia*), a species once listed as Historical in South Florida by IRC, is now listed as Critically Imperiled in South Florida as a result of its discovery at Caloosahatchee Creeks Preserve. Photos were taken by primary author.

Introduction:

Lee County Parks and Recreation manages the 1,290 acre Caloosahatchee Creeks Preserve (CCP). Lee County possessed very little floristic data on CCP including floristic inventories, lists of rare plant species, lists of exotic species, or status of rare plant species. The Institute for Regional Conservation (IRC) was contracted to provide these data to Lee County for this property.

Methods:

Before visits were made, an IRC biologist coordinated with Lee County staff for any maps, habitat maps, or plant list data for CCP. CCP was visited in each of the seasons by two IRC biologists January 31st, February 1st, April 25th&27th, August 2nd-3rd, and October 18th-19th, 2006. An attempt was made to visit all areas of CCP over the entire study period. At each visit a list of plants was developed and augmented for CCP, existing plant data was reviewed, and these species were sought after with special attention being paid toward rare plants. Taxonomy followed Wunderlin (1998) or Gann et al. (2001-2006). After the second survey date, population sizes on a $\log_{10}$ scale were estimated for all vascular plant species encountered. Population sizes were amended as necessary during subsequent visits. Population estimates are for non cultivated mature adults and do not include seedlings or saplings.

During each visit an attempt was made to visit all habitats for the site as well as new ones encountered. A list of plants for each habitat was made. Habitat guidelines followed Florida Natural Areas Inventory (FNAI) (FNAI & DNR, 1992) and The Institute for Regional Conservation (Gann et al., 2001-2006).

Throughout the study, locations of rare plants were sought after. Plants were considered rare if they were listed by any of the following agencies: The United States Fish and Wildlife Service (USFWS) (FNAI, 2006), The Florida Department of Agriculture and Consumer Services (FDACS) (Coile & Garland, 2001), FNAI (2006), and/or IRC (Gann et al., 2001-2006). When rare plants were encountered, habitat, population size, and plant associates were recorded. Latitudinal and longitudinal coordinates were also recorded for each rare plant population with a Global Positioning System (GPS) device. During surveys if a rare plant species was found to occupy large non-discrete areas, the recording GPS coordinates desisted, and the plant species was recorded as throughout.

In addition to a checklist, plants were collected for herbarium vouchers during this study. Native plants collected met strict criteria. Collections encompassed less than 5% of the population for herbaceous species or 5% of an entire individual for woody species. If determinations could not be made in the field, plants were new to Lee County, or documentation of unusual species was deemed important plants were vouchered. Special attention was paid toward those species which were new or important records for Lee County, or invasive exotic plants which are poorly documented. Exotic plant species are those determined to have become naturalized in Florida after 1492 (post Columbus) or species outside their historic range. Primary herbarium voucher collections were deposited in part at Fairchild Tropical Botanic Garden Herbarium (FTG) in Coral Gables, FL. Duplicate specimens were housed at FTG and are to be deposited at The University of South Florida Herbarium (USF) and other registered herbaria.

Results:

Within the CCP, a total of 518 native and naturalized plant species were recorded in our surveys. An additional 18 plants not recorded during these surveys were reported from an unpublished plant

list provided by Lee County staff (Anonymous, 2005). Of these, five are thought to be false records (*Dalbergia brownei, Galium pilosum, Krameria lanceolata, Pinus clausa,* and *Taxodium distichum*), one is considered to be doubtful at the site (*Cenchrus gracillimus*), and the remaining nine are assumed to be present despite searches (Table 2). The reports of *Dalbergia brownei*, *Galium pilosum*, and *Taxodium distichum* may have been misidentifications of the more common *Dalbergia ecastaphyllum*, *Galium hispidulum*, and *Taxodium ascendens* respectively, all absent from the original list. A different taxonomic system which lumps the two *Taxodiums* may also be a reason for treating *T. distichum* as a false record. *Krameria lanceolata* and *Pinus clausa* are two distinct species which have not been documented for Lee County, and would be unusual to CCP. Despite searches for these two highly recognizable species, they were never encountered by IRC staff. On the southwest coast of Florida, *Cenchrus gracillimus* has not been collected south of Sarasota County (Wunderlin & Hansen, 2004), and although there is habitat (scrubby and mesic flatwoods) for this species, its occurrence is listed as doubtful.

With the inclusion of the additional 12 reported species (Anonymous, 2005) a total of 530 plants were present or assumed present for CCP (Tables 1 & 2). Of these 406 (77%) are considered native to Lee County, two species are doubtfully native (<1%), and 119 (23%) are considered exotic and naturalized. Of the 406 native plants at CCP, 29 (7%) are ruderal (species typical of disturbance only), and occur predominantly in disturbance areas. The two plant species which are doubtfully native to CCP are *Juniperus virginiana* and *Wolffia columbiana.* A single 40 foot tall tree of *Juniperus virginiana* was observed on the edge of mesic hammock and mesic flatwoods. As this species is commonly cultivated nearby, it is unknown whether the germplasm of this individual arrived from plants in cultivation or those naturally occurring along the gulfcoast to the north, therefore it is best to treat the occurrence of this species as doubtfully native. Gann et al. (2001-2006) report *Wolffia columbiana*'s nativity to Florida as doubtful. Of the 119 naturalized exotic species found on the preserve, 54 were considered ruderal or potentially invasive and not invading any natural area of which 19 were listed as invasive or potentially invasive by the Florida Exotic Pest Plant Council (FLEPPC) (tables 2 & 5). Sixty-five exotic plant species were found to be invading intact habitat, of which 37 vascular plants were listed as invasive or potentially invasive by the FLEPPC (Tables 2 & 5). An additional three exotic species, *Ananas comosus*, *Hibiscus rosa-sinensis* var. *schizopetalus*, and *Mangifera indica* were found to be only cultivated at CCP (Table 2).

No plant species listed by the U.S.F.W.S. were recorded. Eleven plant species listed by FDACS either as commercially exploited, threatened, or endangered were recorded. Five plant species listed by FNAI in Florida were recorded. Two species listed by both FDACS and FNAI are not native to CCP. *Roystonea regia* is listed as endangered by FDACS and as imperiled (S2) by FNAI, however, its presence at CCP as well as Lee County is outside of its historic native range, and it is presumed to have been naturalized here from nearby cultivated material. Similarly, *Swietenia mahagoni*, listed as threatened by FDACS, and rare (S3) by FNAI, is even further from its native range on the southern tip of peninsular Florida and Upper Florida Keys. Both species are listed as not native and invasive at CCP. Thirteen plant species considered Critically Imperiled (SF1) in South Florida by IRC (Gann et al, 2001-2006) were recorded. A total of 22 rare plant species native to CCP were recorded (Tables 3 & 4), 5% of the total native plant species recorded. Descriptions, history, and management recommendations for each rare species are provided in Appendix 1.

A total of 13 habitats were surveyed during this study. Habitats surveyed included: coastal berm, depression marsh, disturbed upland, disturbed wetland, floodplain swamp, freshwater tidal swamp, hydric hammock, mesic flatwoods, mesic hammock, scrubby flatwoods, shell mound, strand swamp,

and tidal marsh. Descriptions for each habitat including management recommendations are provided in Appendix 2.

The compiled plant list is provided in two formats. Table 1 provides a list of vascular plants (excluding false or doubtful records) recorded at the site arranged by group, family, and then genus/species. Common names and native status are also provided here. It is recommended that this table be used for distribution. Table 2 provides a list of all vascular plants recorded or reported at the site arranged by genus/species with common names. In Table 2, presence, native status, cultivated status, state status, FNAI status, IRC status, FLEPPC status, habitat location, and collector/collector # are provided. Also in Table 2, population size estimates on a $\log_{10}$ scale of all native and naturalized species recorded by IRC staff are noted. Table 3 provides a list of rare plants recorded at the site. Table 4 provides a list of rare species with GPS coordinates in decimal degrees for discrete locations, and a description of where the plants were observed. It is recommended that Table 4 not be used for distribution. Table 5 provides a list of FLEPPC species recorded at the site.

A total of 89 vascular plant collections were made at the preserve and included 86 vascular plant species.

An electronic copy of this report and a plant list with the above information as well as Invasive Status (ruderal, potentially invasive, etc.) in Microsoft Access format is also provided and also includes herbarium label data for all plants collected.

Acknowledgements:

As with any research endeavor, the authors are indebted to others for their contribution to this project. Hearty thanks go out to Lee County staff Jim Green who assisted with field work and or transportation. Stephen Hodges of IRC assisted with field work and plant collections. Kirsten Hines of IRC assisted with edits. George Wilder provided help with rare species records.

Table 1

The Vascular Plants of

Caloosahatchee Creeks Preserve

The Institute for Regional Conservation
Miami, Florida

Compiled from an anonymous plant list (Anonymous, 2005) provided by Lee County staff and field observations made by IRC staff: Steven W. Woodmansee and Steven E. Green on January 31st, February 1st, April 25th, 27th, and August 2nd-3rd, 2006 and Steven W. Woodmansee and Stephen Hodges on October 18th -19th, 2006

Dicots

Acanthaceae		
E	*Blechum pyramidatum*	Green shrimpplant, Browne's blechum
	Ruellia succulenta	Thickleaf wild petunia
E	*Ruellia tweediana*	Britton's wild petunia, Mexican bluebell
Aceraceae		
	Acer rubrum	Red maple
Aizoaceae		
	Sesuvium portulacastrum	Perennial sea-purslane, Shoreline seapurslane
Amaranthaceae		
E	*Achyranthes aspera*	Common Devil's-horsewhip
E	*Alternanthera philoxeroides*	Alligatorweed
	Amaranthus australis	Southern water-hemp, Southern amaranth
E	*Amaranthus blitum*	Purple amaranth
E	*Gomphrena serrata*	Globe-amaranth
	Iresine diffusa	Bloodleaf, Juba's bush
Anacardiaceae		
CE	*Mangifera indica*	Mango
	Rhus copallinum	Winged sumac
E	*Schinus terebinthifolius*	Brazilian-pepper
	Toxicodendron radicans	Eastern poison-ivy
Annonaceae		
	Annona glabra	Pond-apple
	Asimina reticulata	Common pawpaw, Netted pawpaw
Apiaceae		
	Centella asiatica	Coinwort, Spadeleaf
	Cicuta maculata	Spotted water-hemlock
	Eryngium aromaticum	Fragrant eryngium, Fragrant Eryngo
	Eryngium baldwinii	Baldwin's eryngo
	Eryngium yuccifolium	Button snakeroot, Button rattlenakemaster
	Hydrocotyle umbellata	Manyflower marshpennywort

	Hydrocotyle verticillata	Whorled marshpennywort
	Ptilimnium capillaceum	Mock bishopsweed, Herbwilliam
Apocynaceae		
	Rhabdadenia biflora	Mangrove rubbervine, Mangrovevine
Aquifoliaceae		
	Ilex cassine	Dahoon holly, Dahoon
	Ilex glabra	Gallberry, Inkberry
Araliaceae		
E	*Schefflera actinophylla*	Australian umbrellatree
Asclepiadaceae		
E	*Asclepias curassavica*	Scarlet milkweed, Bloodflower
	Asclepias pedicellata	Savannah milkweed
	Cynanchum scoparium	Hairnetvine, Leafless swallowwort
	Sarcostemma clausum	Whitevine, White twinevine
Asteraceae		
	Ageratina jucunda	Hammock snakeroot
	Ambrosia artemisiifolia	Common ragweed
	Aster carolinianus	Climbing aster
	Aster subulatus	Annual saltmarsh aster
	Baccharis angustifolia	Narrowleaved groundsel, Saltwater Falsewillow
	Baccharis glomeruliflora	Silverling
	Baccharis halimifolia	Saltbush, Groundsel tree, Sea-myrtle
	Balduina angustifolia	Yellow-buttons, Coastalplain Honeycombhead
	Bidens alba var. radiata	Spanish-needles
	Carphephorus corymbosus	Florida paintbrush, Coastalplain chaffhead
	Carphephorus odoratissimus var. subtropicanus	Pineland purple, False vanillaleaf
	Chromolaena odorata	Jack-in-the-bush
	Cirsium nuttallii	Nuttall's thistle
	Conyza canadensis var. pusilla	Dwarf Canadian horseweed
	Coreopsis floridana	Florida tickseed
	Coreopsis leavenworthii	Leavenworth's tickseed
	Eclipta prostrata	False-daisy
	Elephantopus elatus	Florida elephant's-foot, Tall elephant's-foot
E	*Emilia fosbergii*	Florida tasselflower
E	*Emilia sonchifolia*	Lilac tassleflower
	Erechtites hieracifolia	Fireweed, American burnweed
	Erigeron quercifolius	Southern-fleabane, Oakleaf fleabane
	Erigeron vernus	Early whitetop fleabane
	Eupatorium capillifolium	Dog-fennel
	Eupatorium leptophyllum	Falsefennel
	Eupatorium mikanioides	Semaphore eupatorium, Semaphore
	Eupatorium rotundifolium	Roundleaf thoroughwort, False horehound
	Eupatorium serotinum	Lateflowering thoroughwort
	Euthamia caroliniana	Slender goldenrod
	Euthamia graminifolia var. hirtipes	Flattop goldenrod
	Flaveria linearis	Narrowleaf yellowtops
	Flaveria trinervia	Annual yellowtops, Clustered yellowtops
	Gnaphalium falcatum	Cudweed, Narrowleaf purple everlasting
	Gnaphalium obtusifolium	Rabbit's tobacco, Sweet everlasting

	Helianthus angustifolius	Narroleaf sunflower, Swamp sunflower
	Heterotheca subaxillaris	Camphorweed
	Liatris tenuifolia var. quadriflora	Shortleaf gayfeather
	Lygodesmia aphylla	Roserush
	Melanthera angustifolia	Prairie blackanthers
	Mikania cordifolia	Florida Keys hempvine
	Mikania scandens	Climbing hempweed, Climbing hempvine
	Palafoxia feayi	Feay's palafox
	Pectis prostrata	Spreading cinchweed
	Pityopsis graminifolia	Narrowleaf silkgrass
	Pluchea carolinensis	Cure-for-all
	Pluchea foetida	Stinking camphorweed
	Pluchea odorata	Sweetscent
	Pluchea rosea	Rosy camphorweed
	Pterocaulon pycnostachyum	Blackroot
	Rudbeckia hirta	Blackeyed susan
	Senecio glabellus	Butterweed
	Solidago fistulosa	Pinebarren goldenrod
	Solidago gigantea	Giant goldenrod
	Solidago odora var. chapmanii	Chapman's goldenrod
	Solidago sempervirens	Seaside goldenrod
	Solidago stricta	Narrow-leaved goldenrod, Wand goldenrod
	Solidago tortifolia	Twistedleaf goldenrod
E	*Sonchus asper*	Spiny sowthistle
	Verbesina virginica	Frostweed, White crownbeard
	Vernonia blodgettii	Florida ironweed
E	*Vernonia cinerea*	Little ironweed
E	*Wedelia trilobata*	Creeping wedelia, Creeping oxeye
E	*Youngia japonica*	Rocketweed, Oriental false hawksbeard
Avicenniaceae		
	Avicennia germinans	Black mangrove
Bignoniaceae		
	Campsis radicans	Trumpet vine, Trumpet creeper
Brassicaceae		
	Rorippa teres	Southern marsh yellowcress
Buddlejaceae		
	Polypremum procumbens	Rustweed, Juniperleaf
Burseraceae		
	Bursera simaruba	Gumbo-limbo
Cactaceae		
	Opuntia humifusa	Pricklypear
Campanulaceae		
	Lobelia glandulosa	Glade lobelia
Caprifoliaceae		
	Sambucus canadensis	Elderberry, American elder
	Viburnum obovatum	Small viburnum, Walter's viburnum

Caryophyllaceae		
	Drymaria cordata	West Indian chickweed, Drymary
Casuarinaceae		
E	*Casuarina equisetifolia*	Australian-pine, Horsetail casuarina
Cistaceae		
	Helianthemum corymbosum	Pinebarren frostweed
	Lechea sessiliflora	Pineland pinweed
	Lechea torreyi	Piedmont pinweed
Clusiaceae		
	Hypericum cistifolium	Roundpod St. John's-wort
	Hypericum crux-andreae	St. Peter's-wort
	Hypericum hypericoides	St. Andrew's-cross
	Hypericum mutilum	Dwarf St. John's-wort
	Hypericum reductum	Atlantic St. John's-wort
	Hypericum tetrapetalum	Fourpetal St. John's-wort
Combretaceae		
	Laguncularia racemosa	White mangrove
Convolvulaceae		
	Dichondra carolinensis	Pony-foot, Carolina ponysfoot
	Ipomoea alba	Common moonflowers, Moonflowers
	Ipomoea indica var. acuminata	Ocean-blue morningglory
	Ipomoea sagittata	Everglades morningglory
Cornaceae		
	Cornus foemina	Stiff cornel, Swamp dogwood, Stiff dogwood
Crassulaceae		
E	*Kalanchoe pinnata*	Common liveleaf, Cathedral bells, Life plant
Cucurbitaceae		
	Melothria pendula	Creeping-cucumber
E	*Momordica charantia*	Wild balsam-apple, Balsampear
Ebenaceae		
	Diospyros virginiana	Persimmon, Common persimmon
Ericaceae		
	Bejaria racemosa	Tarflower
	Gaylussacia dumosa	Dwarf black-huckleberry, Dwarf huckleberry
	Lyonia fruticosa	Coastalplain staggerbush
	Lyonia lucida	Fetterbush
	Vaccinium myrsinites	Shiny blueberry
	Vaccinium stamineum	Deerberry
Euphorbiaceae		
	Acalypha gracilens	Slender threeseed mercury
E	*Bischofia javanica*	Javanese bishopwood
	Chamaesyce hirta	Hairy spurge, Pillpod sandmat
	Chamaesyce hypericifolia	Eyebane, Graceful sandmat
	Chamaesyce hyssopifolia	Eyebane, Hyssopleaf sandmat
	Chamaesyce thymifolia	Gulf sandmat

	Cnidoscolus stimulosus	Tread-softly, Finger-rot, 7-minute-itch
	Euphorbia polyphylla	Pineland euphorbia, Lesser Florida spurge
E	*Manihot esculenta*	Tapioca
E	*Pedilanthus tithymaloides subsp. smallii*	Jacob's ladder, Devil's backbone
E	*Phyllanthus urinaria*	Chamber bitter
E	*Ricinus communis*	Castor-bean
E	*Sapium sebiferum*	Popcorntree, Chinese tallowtree

Fabaceae

E	*Abrus precatorius*	Rosary-pea, Crab-eyes
E	*Acacia auriculiformis*	Earleaf acacia
	Aeschynomene americana	Shyleaf
E	*Albizia lebbeck*	Woman's tongue, Rattlepod
	Amorpha fruticosa	Bastard indigobush, False indigobush
	Apios americana	Groundnut
	Caesalpinia bonduc	Gray nicker-bean
	Canavalia rosea	Beach-bean, Baybean, Seaside jackbean
	Centrosema virginianum	Spurred butterfly-pea
	Chamaecrista fasciculata	Partridge pea
	Chamaecrista nictitans var. aspera	Hairy sensitive-pea, Hairy partridge-pea
E	*Crotalaria pallida var. obovata*	Smooth rattlebox
	Crotalaria rotundifolia	Rabbitbells
E	*Crotalaria spectabilis*	Showy rattlebox
	Dalbergia ecastaphyllum	Coinvine
	Desmodium incanum	Beggar's-ticks
	Desmodium paniculatum	Panicledleaf ticktrefoil
E	*Desmodium triflorum*	Threeflower ticktrefoil
E	*Enterolobium contortisiliquum*	Earpod tree
	Erythrina herbacea	Coralbean, Cherokee bean
	Galactia elliottii	Elliott's milkpea
	Galactia regularis	Eastern milkpea
	Galactia volubilis	Downy milkpea
E	*Indigofera hirsuta*	Hairy indigo
E	*Indigofera spicata*	Creeping indigo, Trailing indigo
E	*Leucaena leucocephala*	White leadtree
E	*Macroptilium lathyroides*	Wild-bean, Wild bushbean
E	*Pongamia pinnata*	Karumtree, Poonga-oil tree
E	*Senna alata*	Candlestick plant
E	*Senna pendula var. glabrata*	Valamuerto
	Sesbania herbacea	Danglepod
E	*Sesbania punicea*	False-rattlebox
	Vicia acutifolia	Sand vetch, Fourleaf vetch
	Vigna luteola	Cow-pea, Hairypod cowpea

Fagaceae

	Quercus chapmanii	Chapman's oak
	Quercus geminata	Sand live oak
	Quercus laurifolia	Laurel oak, Diamond oak
	Quercus minima	Dwarf live oak
	Quercus myrtifolia	Myrtle oak
	Quercus pumila	Running oak
	Quercus virginiana	Virginia live oak

Gentianaceae		
	Sabatia brevifolia	Shortleaf rosegentian
	Sabatia calycina	Coastal rosegentian
Geraniaceae		
	Geranium carolinianum	Carolina cranesbill
Lamiaceae		
	Hyptis alata	Musky mint, Clustered bushmint
E	*Hyptis pectinata*	Comb bushmint
E	*Hyptis spicigera*	Marubio
E	*Hyptis verticillata*	John Charles
	Piloblephis rigida	Wild pennyroyal
	Scutellaria integrifolia	Rough skullcap, Helmet skullcap
	Trichostema dichotomum	Forked bluecurls
Lauraceae		
	Persea palustris	Swamp bay
Lentibulariaceae		
	Pinguicula pumila	Small butterwort
	Utricularia gibba	Cone-spur bladderwort, Humped bladderwort
	Utricularia subulata	Zigzag bladderwort
Loganiaceae		
	Mitreola petiolata	Miterwort, Lax hornpod
Lythraceae		
	Ammannia coccinea	Scarlet ammannia, Valley redstem
	Ammannia latifolia	Pink redstem, Toothcup
E	*Cuphea carthagenensis*	Colombian waxweed
	Lythrum alatum var. lanceolatum	Winged loosestrife
	Lythrum flagellare	Florida loosestrife
	Lythrum lineare	Wand loosestrife
	Rotala ramosior	Toothcup, Lowland rotala
Magnoliaceae		
	Magnolia virginiana	Sweet-bay
Malvaceae		
	Hibiscus furcellatus	Lindenleaf rosemallow
	Hibiscus grandiflorus	Swamp hibiscus, Swamp rosemallow
CE	*Hibiscus rosa-sinensis var. schizopetalus*	Fringed rosemallow
	Kosteletzkya virginica	Virginia saltmarsh mallow
	Malachra urens	Roadside leafbract
	Sida acuta	Common wireweed, Common fanpetals
E	*Sida cordifolia*	Lima
E	*Sida rhombifolia*	Cuban jute, Indian hemp
E	*Urena lobata*	Caesarweed
Melastomataceae		
	Rhexia cubensis	West Indian meadowbeauty
	Rhexia mariana	Pale meadowbeauty, Maryland meadowbeauty
	Rhexia nuttallii	Nuttall's meadowbeauty

Meliaceae		
E	*Melia azedarach*	Chinaberrytree
E	*Swietenia mahagoni*	West Indian mahogany
Moraceae		
E	*Ficus altissima*	Council tree
	Ficus aurea	Strangler fig, Golden fig
E	*Ficus microcarpa*	Laurel fig, Indian laurel
	Morus rubra	Red mulberry
Myricaceae		
	Myrica cerifera	Wax myrtle, Southern Bayberry
Myrsinaceae		
E	*Ardisia elliptica*	Shoe-button ardisia
	Ardisia escallonioides	Marlberry
	Rapanea punctata	Myrsine, Colicwood
Myrtaceae		
	Eugenia axillaris	White stopper
	Eugenia foetida	Spanish stopper, Boxleaf stopper
E	*Eugenia uniflora*	Surinam-cherry
E	*Melaleuca quinquenervia*	Punktree
	Myrcianthes fragrans	Twinberry, Simpson's stopper
E	*Psidium cattleianum*	Strawberry guava
E	*Psidium guajava*	Guava
E	*Syzygium cumini*	Jambolan-plum, Java-plum
E	*Syzygium jambos*	Rose-apple, Malabar-plum
Nymphaeaceae		
	Nymphaea elegans	Blue waterlily, Tropical royalblue waterlily
Olacaceae		
	Ximenia americana	Hog-plum, Tallowwood
Oleaceae		
	Forestiera segregata	Florida privet, Florida swampprivet
	Fraxinus caroliniana	Water ash, Carolina ash, Pop ash
Onagraceae		
	Gaura angustifolia	Southern gaura, Southern beeblossum
	Ludwigia alata	Winged primrosewillow
	Ludwigia maritima	Seaside primrosewillow
	Ludwigia octovalvis	Mexican primrosewillow
E	*Ludwigia peruviana*	Peruvian primrosewillow
	Ludwigia repens	Creeping primrosewillow
Oxalidaceae		
	Oxalis corniculata	Lady's-sorrel, Common yellow woodsorrel
Passifloraceae		
	Passiflora suberosa	Corkystem passionflower
Phytolaccaceae		
	Phytolacca americana	American pokeweed

Plantaginaceae		
	Plantago virginica	Southern plantain, Virginia plantain
Polygalaceae		
	Polygala grandiflora	Candyweed, Showy milkwort
	Polygala lutea	Orange milkwort
	Polygala nana	Candyroot
	Polygala polygama	Racemed milkwort
Polygonaceae		
	Coccoloba uvifera	Seagrape
	Polygonella polygama	Wideleaf October flower
	Polygonum densiflorum	Denseflower knotweed
	Polygonum hydropiperoides	Mild water-pepper, Swamp smartweed
	Polygonum punctatum	Dotted smartweed
	Rumex verticillatus	Swamp dock
Primulaceae		
	Anagallis pumila	Florida pimpernel
	Samolus ebracteatus	Water pimpernel, Limewater brookweed
	Samolus valerandi subsp. parviflorus	Pineland pimpernel, Seaside brookweed
Rhizophoraceae		
	Rhizophora mangle	Red mangrove
Rosaceae		
	Rubus cuneifolius	Sand blackberry
	Rubus trivialis	Southern dewberry
Rubiaceae		
	Cephalanthus occidentalis	Common buttonbush
	Chiococca parvifolia	Pineland snowberry
	Diodia teres	Poor joe, Rough buttonweed
	Diodia virginiana	Buttonweed, Virginia buttonweed
	Galium hispidulum	Coastal bedstraw
	Hedyotis procumbens	Innocence, Roundleaf bluet
	Hedyotis uniflora	Clustered mille graine
	Psychotria nervosa	Shiny-leaved wild coffee
	Psychotria sulzneri	Shortleaf wild coffee
	Randia aculeata	White indigoberry
E	*Richardia brasiliensis*	Tropical Mexican clover
	Spermacoce assurgens	Woodland false buttonweed
E	*Spermacoce verticillata*	Shrubby false buttonweed
Rutaceae		
E	*Citrus aurantium*	Sour orange
	Zanthoxylum fagara	Wild-lime, Lime prickly-ash
Salicaceae		
	Salix caroliniana	Coastal Plain willow
Sapindaceae		
E	*Cupaniopsis anacardioides*	Carrotwood

Sapotaceae		
	Sideroxylon foetidissimum	Wild mastic, False mastic
	Sideroxylon reclinatum	Recline Florida bully
Saururaceae		
	Saururus cernuus	Lizard's tail
Scrophulariaceae		
	Bacopa monnieri	Water hyssop, Herb-of-grace
	Buchnera americana	American bluehearts
	Gratiola hispida	Rough hedgehyssop
	Linaria canadensis	Canada toadflax
E	*Lindernia crustacea*	Malaysian false-pimpernel
	Lindernia grandiflora	Savannah false-pimpernel
	Micranthemum glomeratum	Manatee mudflower
	Scoparia dulcis	Sweetbroom, Licoriceweed
	Seymeria pectinata	Piedmont blacksenna
Solanaceae		
E	*Lycopersicon esculentum*	Tomato, Garden tomato
	Physalis pubescens	Husk tomato
	Solanum americanum	Common nightshade, American black nightshade
E	*Solanum tampicense*	Aquatic soda-apple
E	*Solanum torvum*	Turkeyberry
E	*Solanum viarum*	Tropical soda-apple
Sterculiaceae		
	Melochia spicata	Bretonica peluda
Ulmaceae		
	Celtis laevigata	Sugarberry, Southern Hackberry
Urticaceae		
	Boehmeria cylindrica	Button-hemp, False nettle, Bog hemp
	Parietaria floridana	Florida pellitory
Verbenaceae		
	Callicarpa americana	American beautyberry
E	*Lantana camara*	Shrubverbena
	Phyla nodiflora	Frogfruit, Turkey tangle fogfruit, Capeweed
E	*Verbena brasiliensis*	Brazilian vervain
	Verbena scabra	Harsh verbena, Sandpaper vervain
Violaceae		
	Viola sororia	Common blue violet
Vitaceae		
	Ampelopsis arborea	Peppervine
	Cissus verticillata	Possum-grape, Seasonvine
	Parthenocissus quinquefolia	Virginia-creeper, Woodbine
	Vitis cinerea var. floridana	Florida grape
	Vitis rotundifolia	Muscadine, Muscadine grape
	Vitis shuttleworthii	Calusa grape

Gymnosperms

Cupressaceae		
DN	*Juniperus virginiana*	Red cedar
	Taxodium ascendens	Pond cypress
Pinaceae		
	Pinus elliottii var. densa	South Florida slash pine

Monocots

Agavaceae		
E	*Sansevieria hyacinthoides*	Bowstring-hemp, Mother-in-laws tongue
	Yucca aloifolia	Spanish-bayonet, Aloe yucca
Amaryllidaceae		
	Crinum americanum	Swamp-lily, Seven-sisters, String-lily
E	*Crinum asiaticum*	Poison bulb
	Hymenocallis palmeri	Alligatorlily
Araceae		
	Arisaema triphyllum	Jack-in-the-pulpit
E	*Colocasia esculenta*	Wild taro, Dasheen, Coco-yam
E	*Epipremnum pinnatum cv. Aureum*	Golden pothos
	Peltandra virginica	Green arum, Green arrow arum
E	*Pistia stratiotes*	Water-lettuce
E	*Syngonium podophyllum*	Nephthytis, American evergreen
E	*Xanthosoma sagittifolium*	Arrowleaf elephantear
Arecaceae		
E	*Phoenix reclinata*	Senegal date palm
E	*Roystonea regia*	Royal palm, Florida royal palm
	Sabal palmetto	Cabbage palm
	Serenoa repens	Saw palmetto
E	*Syagrus romanzoffiana*	Queen palm
E	*Washingtonia robusta*	Desert palm, Washington fan palm
Bromeliaceae		
CE	*Ananas comosus*	Pineapple
	Tillandsia balbisiana	Reflexed wild-pine, Northern needleleaf
	Tillandsia fasciculata var. densispica	Stiff-leaved wild-pine, Cardinal airplant
	Tillandsia recurvata	Ball-moss
	Tillandsia setacea	Thin-leaved wild-pine, Southern needleleaf
	Tillandsia usneoides	Spanish-moss
	Tillandsia utriculata	Giant wild-pine, Giant airplant
Cannaceae		
	Canna flaccida	Golden canna, Bandana-of-the-everglades
Commelinaceae		
E	*Callisia repens*	Basket plant, Creeping inchplant
E	*Commelina diffusa*	Common dayflower
	Commelina erecta	Whitemouth dayflower
E	*Commelina gambiae*	Gambian dayflower
E	*Murdannia spirata*	Asiatic dewflower

Cyperaceae

	Bulbostylis ciliatifolia	Densetuft hairsedge
	Carex longii	Long's sedge
	Carex lupuliformis	Hop sedge
	Carex vexans	Florida hammock sedge
	Carex verrucosa	Warty sedge
	Cladium jamaicense	Saw-grass, Jamaica swamp sawgrass
	Cyperus articulatus	Jointed flatsedge
	Cyperus croceus	Baldwin's flatsedge
	Cyperus flavescens	Yellow flatsedge
	Cyperus haspan	Haspan flatsedge
	Cyperus involucratus	Umbrella plant
	Cyperus ligularis	Swamp flatsedge
	Cyperus odoratus	Fragrant flatsedge
	Cyperus polystachyos	Manyspike flatsedge
E	*Cyperus pumilus*	Low flatsedge
	Cyperus retrorsus	Pinebarren flatsedge
	Cyperus rotundus	Nut-grass
	Cyperus surinamensis	Tropical flatsedge
	Cyperus tetragonus	Fourangle flatsedge
	Eleocharis baldwinii	Baldwin's spikerush, roadgrass
	Eleocharis cellulosa	Gulf Coast spikerush
	Eleocharis interstincta	Knotted spikerush
	Fimbristylis autumnalis	Slender fimbry
E	*Fimbristylis cymosa*	Hurricane sedge, Hurricanegrass
	Fimbristylis puberula	Hairy fimbry
E	*Fimbristylis schoenoides*	Ditch fimbry
	Fimbristylis spadicea	Marsh fimbry
E	*Kyllinga brevifolia*	Shortleaf spikesedge
E	*Lipocarpha aristulata*	Awned halfchaff sedge
	Rhynchospora colorata	Starrush whitetop
	Rhynchospora divergens	Spreading beaksedge
	Rhynchospora fascicularis	Fascicled Beaksedge
	Rhynchospora globularis	Globe beak-rush
	Rhynchospora inundata	Narrowfruit horned beaksedge
	Rhynchospora megalocarpa	Sandyfield beaksedge
	Rhynchospora microcarpa	Southern beaksedge
	Rhynchospora miliacea	Millet beaksedge
	Rhynchospora odorata	Fragrant beaksedge
	Rhynchospora plumosa	Plumed beaksedge
	Scirpus robustus	Saltmarsh bulrush
	Scirpus tabernaemontani	Softstem bulrush
	Scleria georgiana	Slenderfruit nutrush
	Scleria triglomerata	Whip nutrush
	Scleria verticillata	Low nutrush

Dioscoreaceae

E	*Dioscorea bulbifera*	Common air-potato

Eriocaulaceae

	Lachnocaulon anceps	Whitehead bogbutton
	Syngonanthus flavidulus	Yellow hatpins

Haemodoraceae		
	Lachnanthes caroliana	Bloodroot, Carolina redroot
Hypoxidaceae		
	Hypoxis wrightii	Bristleseed yellow stargrass
Iridaceae		
	Iris hexagona	Dixie iris, Prairie iris
E	*Sisyrinchium rosulatum*	Annual blueeyed-grass
Juncaceae		
	Juncus effusus var. solutus	Soft rush
	Juncus marginatus	Shore rush, Grassleaf rush
	Juncus roemerianus	Black needle rush, Needle rush, Black rush
	Juncus scirpoides	Needlepod rush
Juncaginaceae		
	Triglochin striata	Arrowgrass
Lemnaceae		
	Lemna obscura	Little duckweed
	Lemna valdiviana	Valdivia duckweed
DN	*Wolffia columbiana*	Columbian water meal
Orchidaceae		
	Encyclia tampensis	Florida butterfly orchid
	Eulophia alta	Wild-coco
	Habenaria floribunda	Rein orchid, Toothpetal false reinorchid
	Habenaria quinqueseta	Longhorn false reinorchid
	Spiranthes praecox	Greenvein lady's-tresses
Poaceae		
	Andropogon glomeratus var. glaucopsis	Purple bluestem
	Andropogon glomeratus var. hirsutior	Hairy bushy bluestem
	Andropogon glomeratus var. pumilus	Common bushy bluestem
	Andropogon longiberbis	Hairy bluestem
	Andropogon ternarius	Splitbeard bluestem
	Andropogon virginicus	Broomsedge bluestem
	Andropogon virginicus var. decipiens	
	Andropogon virginicus var. glaucus	Chalky bluestem
	Aristida beyrichiana	Southern wiregrass
	Aristida patula	Tall threeawn
	Aristida spiciformis	Bottlebrush threeawn
	Axonopus compressus	Tropical carpetgrass, Broadleaf carpetgrass
	Axonopus fissifolius	Common carpetgrass
	Axonopus furcatus	Big carpetgrass
	Cenchrus echinatus	Southern sandbur
	Cenchrus gracillimus	Slender sandbur
	Cenchrus incertus	Coastal sandbur
	Chasmanthium nitidum	Shiny woodoats
	Chrysopogon pauciflorus	Florida false beardgrass
E	*Cynodon dactylon*	Bermuda grass
E	*Dactyloctenium aegyptium*	Crow's-foot grass, Durban crowfootgrass
	Dichanthelium aciculare	Needleleaf witchgrass

	Dichanthelium commutatum	Variable witchgrass
	Dichanthelium dichotomum	Cypress witchgrass
	Dichanthelium ensifolium	Cypress witchgrass
	Dichanthelium laxiflorum	Openflower witchgrass
	Dichanthelium portoricense	Hemlock witchgrass
	Dichanthelium strigosum var. glabrescens	Glabrescent roughhair witchgrass
	Digitaria ciliaris	Southern crabgrass
E	*Echinochloa colona*	Jungle-rice
	Echinochloa walteri	Coast cockspur
E	*Eleusine indica*	Indian goose grass
E	*Eragrostis amabilis*	Feather love grass
E	*Eragrostis atrovirens*	Thalia love grass
	Eragrostis elliottii	Elliott's love grass
	Eragrostis virginica	Coastal love grass
E	*Eremochloa ophiuroides*	Centipede grass
	Eustachys glauca	Prairie fingergrass, Saltmarsh fingergrass
	Eustachys petraea	Common fingergrass, Pinewoods fingergrass
	Imperata brasiliensis	Brazilian satintail
E	*Imperata cylindrica*	Congongrass, Cogongrass
E	*Neyraudia reynaudiana*	Burmareed, Silkreed
	Oplismenus hirtellus	Woodsgrass, Basketgrass
	Panicum dichotomiflorum var. bartowense	Hairy fall panic grass
	Panicum hemitomon	Maidencane
	Panicum hians	Gaping panicum
E	*Panicum maximum*	Guineagrass
E	*Panicum repens*	Torpedo grass
	Panicum rigidulum	Redtop panicum
	Panicum virgatum	Switchgrass
	Paspalidium geminatum	Egyptian paspalidium
	Paspalum conjugatum	Sour paspalum, Hilograss
	Paspalum dissectum	Mudbank crowngrass
	Paspalum floridanum	Florida paspalum
	Paspalum monostachyum	Gulfdune paspalum
E	*Paspalum notatum*	Bahia grass
	Paspalum setaceum	Thin paspalum
E	*Paspalum urvillei*	Vasey grass
E	*Pennisetum purpureum*	Napier grass, Elephantgrass
	Phragmites australis	Common reed
E	*Rhynchelytrum repens*	Rose Natalgrass
	Saccharum giganteum	Sugarcane plumegrass
E	*Sacciolepis indica*	Indian cupscale
	Sacciolepis striata	American cupscale
	Schizachyrium sanguineum	Crimson bluestem
	Setaria parviflora	Knotroot foxtail, Yellow bristlegrass
	Sorghastrum secundum	Lopsided Indian grass
	Spartina bakeri	Sand cordgrass
	Sporobolus domingensis	Coral dropseed
E	*Sporobolus indicus var. pyramidalis*	West Indian dropseed
	Sporobolus junceus	Pineywoods dropseed
E	*Stenotaphrum secundatum*	St. Augustine grass
	Tripsacum dactyloides	Eastern gamagrass, Fakahatchee grass
E	*Urochloa mutica*	Paragrass
	Zizaniopsis miliacea	Southern wild-rice, Giant cut-grass

Pontederiaceae

E	*Eichhornia crassipes*	Common water-hyacinth
	Pontederia cordata	Pickerelweed

Smilacaceae

	Smilax auriculata	Earleaf greenbrier
	Smilax bona-nox	Saw greenbrier
	Smilax laurifolia	Catbrier, Laurel greenbrier, Bamboo vine
	Smilax tamnoides	Catbrier, Bristly greenbrier, Hogbrier

Typhaceae

	Typha domingensis	Southern cat-tail

Xyridaceae

	Xyris brevifolia	Shortleaf yelloweyed grass
	Xyris caroliniana	Carolina yelloweyed grass
	Xyris difformis var. floridana	Florida yelloweyed grass
	Xyris elliottii	Elliott's yelloweyed grass
	Xyris smalliana	Small's yelloweyed grass

Pteridophytes

Azollaceae

	Azolla caroliniana	Carolina Mosquito Fern

Blechnaceae

	Blechnum serrulatum	Swamp fern, Toothed midsorus fern
	Woodwardia virginica	Virginia chain fern

Dennstaedtiaceae

	Pteridium aquilinum var. caudatum	Lacy bracken fern
	Pteridium aquilinum var. pseudocaudatum	Tailed bracken fern

Nephrolepidaceae

E	*Nephrolepis cordifolia*	Tuberous sword fern
	Nephrolepis exaltata	Wild Boston fern
E	*Nephrolepis multiflora*	Asian sword fern

Osmundaceae

	Osmunda cinnamomea	Cinnamon fern
	Osmunda regalis var. spectabilis	Royal fern

Parkeriaceae

E	*Ceratopteris thalictroides*	Watersprite

Polypodiaceae

	Phlebodium aureum	Golden polypody
	Pleopeltis polypodioides var. michauxiana	Resurrection fern

Psilotaceae

	Psilotum nudum	Whisk-fern

Pteridaceae

	Acrostichum aureum	Golden leather fern
	Acrostichum danaeifolium	Giant leather fern
E	*Pteris vittata*	China brake

Salviniaceae		
E	*Salvinia minima*	Water spangles
Thelypteridaceae		
E	*Thelypteris dentata*	Downy maiden fern
	Thelypteris kunthii	Southern shield fern
	Thelypteris ovata	Ovate maiden fern
	Thelypteris palustris var. pubescens	Marsh fern
Vittariaceae		
	Vittaria lineata	Shoestring fern

E = Not Native to the site

EC = Not Native to the site, cultivated

DN = Doubtfully Native to the site

Table 2
The Vascular Plants of Caloosahatchee Creeks Preserve, by genus

											Habitats													
Scientific Name	**Common Names**	**Occurrence**	**Native Status**	**Cultivated Status**	**State Status**	**FNAI state status**	**FNAI global status**	**IRC status**	**FLEPPC**	**Estimated Population Size**	**Coastal Berm**	**Depression Marsh**	**Disturbed Dry**	**Disturbed Wet**	**Floodplain Swamp**	**Freshwater Tidal Swamp**	**Hydric Hammock**	**Mesic Flatwoods**	**Mesic Hammock**	**Scrubby Flatwoods**	**Shell Mound**	**Strand Swamp**	**Tidal Marsh**	**SW collector number**
Abrus precatorius	Rosary-pea, Crab-eyes	P	E	A					I	1,001-10,000			x						x					
Acacia auriculiformis	Earleaf acacia	P	E	A					I	11-100	x													
Acalypha gracilens	Slender threeseed mercury	P	N	A						11-100								x						1975
Acer rubrum	Red maple	P	N	A						101-1,000			x	x	x		x							
Achyranthes aspera	Common Devil's-horsewhip	P	E	A						11-100									x					1790
Acrostichum aureum	Golden leather fern	S	N	A	T	S3	G5																	
Acrostichum danaeifolium	Giant leather fern	P	N	A						100,001-1,000,000					x	x	x		x			x	x	
Aeschynomene americana	Shyleaf	P	N	A						101-1,000			x											1956
Ageratina jucunda	Hammock snakeroot	P	N	A						101-1,000			x				x	x						
Albizia lebbeck	Woman's tongue, Rattlepod	P	E	A					I	11-100			x					x						
Alternanthera philoxeroides	Alligatorweed	P	E	A					II	101-1,000		x		x										
Amaranthus australis	Southern water-hemp, Southern amaranth	P	N	A						1,001-10,000		x		x									x	
Amaranthus blitum	Purple amaranth	P	E	A						2-10			x											1892
Ambrosia artemisiifolia	Common ragweed	P	N	A						100,001-1,000,000			x						x					
Ammannia coccinea	Scarlet ammannia, Valley redstem	P	N	A						11-100													x	
Ammannia latifolia	Pink redstem, Toothcup	P	N	A						11-100			x	x			x							1972

Amorpha fruticosa	Bastard indigobush, False indigobush	P	N	A						11-100							x	x	x		x			
Ampelopsis arborea	Peppervine	P	N	A						1,001-10,000			x		x		x		x			x		
Anagallis pumila	Florida pimpernel	P	N	A				SF1		2-10			x					x						
Ananas comosus	Pineapple	P	E	C						0			x											
Andropogon glomeratus var. glaucopsis	Purple bluestem	P	N	A						1,001-10,000			x					x		x				
Andropogon glomeratus var. hirsutior	Hairy bushy bluestem	P	N	A						101-1,000										x				
Andropogon glomeratus var. pumilus	Common bushy bluestem	P	N	A						1,001-10,000	x		x				x		x					
Andropogon longiberbis	Hairy bluestem	P	N	A						101-1,000			x											
Andropogon ternarius	Splitbeard bluestem	P	N	A						11-100			x											
Andropogon virginicus	Broomsedge bluestem	P	N	A						101-1,000			x					x		x				
Andropogon virginicus var. decipiens		P	N	A						1,001-10,000								x						1905
Andropogon virginicus var. glaucus	Chalky bluestem	P	N	A						101-1,000										x				
Annona glabra	Pond-apple	P	N	A						1,001-10,000	x		x	x	x	x	x						x	
Apios americana	Groundnut	P	N	A						101-1,000					x		x	x						
Ardisia elliptica	Shoe-button ardisia	P	E	A					I	1,001-10,000			x		x		x		x					1780
Ardisia escallonioides	Marlberry	P	N	A						11-100	x													
Aristida beyrichiana	Southern wiregrass	P	N	A						101-1,000				x				x		x				
Aristida patula	Tall threeawn	P	N	A						11-100			x											
Aristida spiciformis	Bottlebrush threeawn	P	N	A						101-1,000			x					x						
Arisaema triphyllum	Jack-in-the-pulpit	P	N	A				SF1		101-1,000					x		x							1781
Asclepias curassavica	Scarlet milkweed, Bloodflower	P	E	A						2-10			x											
Asclepias pedicellata	Savannah milkweed	P	N	A						2-10								x						
Asimina reticulata	Common pawpaw, Netted pawpaw	P	N	A						101-1,000			x					x		x				
Aster carolinianus	Climbing aster	P	N	A						101-1,000			x	x			x		x			x	x	
Aster subulatus	Annual saltmarsh aster	P	N	A						101-1,000		x	x	x									x	
Avicennia germinans	Black mangrove	P	N	A						101-1,000						x								
Axonopus compressus	Tropical carpetgrass, Broadleaf carpetgrass	P	N	A						11-100			x											
Axonopus fissifolius	Common carpetgrass	P	N	A						101-1,000			x											
Axonopus furcatus	Big carpetgrass	P	N	A						101-1,000			x											
Azolla caroliniana	Carolina Mosquito Fern	P	N	A						1,001-10,000				x										
Baccharis angustifolia	Narrowleaved groundsel, Saltwater Falsewillow	P	N	A						10,001-100,000	x			x			x	x					x	

Baccharis glomeruliflora	Silverling	P	N	A						10,001-100,000	x		x	x	x		x		x				x	
Baccharis halimifolia	Saltbush, Groundsel tree, Sea-myrtle	P	N	A						101-1,000							x	x	x					
Bacopa monnieri	Water hyssop, Herb-of-grace	P	N	A						100,001-1,000,000				x		x	x					x	x	
Balduina angustifolia	Yellow-buttons, Coastalplain Honeycombhead	P	N	A						11-100										x				1911
Bejaria racemosa	Tarflower	P	N	A						1,001-10,000										x				
Bidens alba var. radiata	Spanish-needles	P	N	A						1,001-10,000			x				x							
Bischofia javanica	Javanese bishopwood	P	E	A					I	11-100							x					x		1776
Blechum pyramidatum	Green shrimpplant, Browne's blechum	P	E	A					II	100,001-1,000,000			x		x		x							
Blechnum serrulatum	Swamp fern, Toothed midsorus fern	P	N	A						100,001-1,000,000	x		x		x		x	x	x			x		
Boehmeria cylindrica	Button-hemp, False nettle, Bog hemp	P	N	A						101-1,000					x	x						x		
Buchnera americana	American bluehearts	P	N	A						101-1,000			x											
Bulbostylis ciliatifolia	Densetuft hairsedge	P	N	A						11-100										x				1899, 1917
Bursera simaruba	Gumbo-limbo	P	N	A						2-10	x		x											
Caesalpinia bonduc	Gray nicker-bean	P	N	A						11-100	x		x											
Callicarpa americana	American beautyberry	P	N	A						10,001-100,000	x		x		x		x	x	x	x				
Callisia repens	Basket plant, Creeping inchplant	P	E	A						11-100			x											
Campsis radicans	Trumpet vine, Trumpet creeper	P	N	A				SF1		101-1,000			x		x		x				x			1891
Canavalia rosea	Beach-bean, Baybean, Seaside jackbean	P	N	A						101-1,000	x		x			x								
Canna flaccida	Golden canna, Bandana-of-the-everglades	P	N	A						11-100					x		x					x		
Carex longii	Long's sedge	P	N	A						101-1,000			x				x							
Carex lupuliformis	Hop sedge	P	N	A						11-100							x					x		
Carex verrucosa	Warty sedge	P	N	A				SF1		2-10							x							
Carex vexans	Florida hammock sedge	P	N	A						101-1,000			x				x							
Carphephorus corymbosus	Florida paintbrush, Coastalplain chaffhead	P	N	A						101-1,000								x						

Carphephorus odoratissimus var. subtropicanus	Pineland purple, False vanillaleaf	P	N	A						11-100			x											
Carya aquatica	Water hickory	P	N	A						11-100					x		x				x			
Casuarina equisetifolia	Australian-pine, Horsetail casuarina	P	E	A					I	101-1,000	x		x	x										
Celtis laevigata	Sugarberry, Southern Hackberry	P	N	A						11-100									x		x			1966
Cenchrus echinatus	Southern sandbur	P	N	A						11-100			x											
Cenchrus gracillimus	Slender sandbur	D	D																					
Cenchrus incertus	Coastal sandbur	P	N	A						11-100			x											
Centella asiatica	Coinwort, Spadeleaf	P	N	A						100,001-1,000,000			x	x			x					x		
Centrosema virginianum	Spurred butterfly-pea	P	N	A						101-1,000			x					x						1970
Cephalanthus occidentalis	Common buttonbush	P	N	A						1,001-10,000		x		x	x		x							
Ceratopteris thalictroides	Watersprite	P	E	A						101-1,000													x	
Chamaecrista fasciculata	Partridge pea	P	N	A						1,001-10,000								x		x				
Chamaesyce hirta	Hairy spurge, Pillpod sandmat	P	N	A						11-100			x											
Chamaesyce hypericifolia	Eyebane, Graceful sandmat	P	N	A						2-10			x											
Chamaesyce hyssopifolia	Eyebane, Hyssopleaf sandmat	P	N	A						11-100			x											
Chamaecrista nictitans var. aspera	Hairy sensitive-pea, Hairy partridge-pea	P	N	A						101-1,000			x					x						
Chamaesyce thymifolia	Gulf sandmat	P	N	A						2-10			x											
Chasmanthium nitidum	Shiny woodoats	P	N	A				SF1		101-1,000					x		x							1918
Chiococca parvifolia	Pineland snowberry	P	N	A						1									x					1974
Chromolaena odorata	Jack-in-the-bush	P	N	A						11-100									x					
Chrysopogon pauciflorus	Florida false beardgrass	P	N	A						11-100			x					x						
Cicuta maculata	Spotted water-hemlock	P	N	A						11-100				x										
Cirsium nuttallii	Nuttall's thistle	P	N	A						11-100							x							
Cissus verticillata	Possum-grape, Seasonvine	P	N	A						101-1,000			x				x							
Citrus aurantium	Sour orange	P	E	A						2-10									x					
Cladium jamaicense	Saw-grass, Jamaica swamp sawgrass	P	N	A						101-1,000		x					x						x	
Cnidoscolus stimulosus	Tread-softly, Finger-rot, 7-minute-itch	P	N	A						11-100			x					x		x				
Coccoloba uvifera	Seagrape	P	N	A						11-100	x													
Colocasia esculenta	Wild taro, Dasheen, Coco-yam	P	E	A					I	1,001-10,000						x								

Commelina diffusa	Common dayflower	P	E	A						1,001-10,000			x	x			x		x			x		
Commelina erecta	Whitemouth dayflower	P	N	A						1,001-10,000		x	x					x	x					
Commelina gambiae	Gambian dayflower	P	E	A						101-1,000			x											1949
Conyza canadensis var. pusilla	Dwarf Canadian horseweed	P	N	A						1,001-10,000			x											
Coreopsis floridana	Florida tickseed	P	N	A						101-1,000			x											1957
Coreopsis leavenworthii	Leavenworth's tickseed	P	N	A						11-100			x											
Cornus foemina	Stiff cornel, Swamp dogwood, Stiff dogwood	P	N	A						1,001-10,000			x		x		x					x		
Crinum americanum	Swamp-lily, Seven-sisters, String-lily	P	N	A						10,001-100,000				x	x	x	x					x	x	
Crinum asiaticum	Poison bulb	P	E	A						2-10			x											
Crotalaria pallida var. obovata	Smooth rattlebox	P	E	A						11-100			x											
Crotalaria rotundifolia	Rabbitbells	P	N	A						101-1,000			x					x						
Crotalaria spectabilis	Showy rattlebox	S	E	A																				
Cupaniopsis anacardioides	Carrotwood	P	E	A					I	0	x						x							
Cuphea carthagenensis	Colombian waxweed	P	E	A						11-100			x											
Cynanchum scoparium	Hairnetvine, Leafless swallowwort	P	N	A						101-1,000					x									
Cynodon dactylon	Bermuda grass	P	E	A						100,001-1,000,000			x	x										
Cyperus articulatus	Jointed flatsedge	P	N	A						11-100		x												
Cyperus croceus	Baldwin's flatsedge	P	N	A						1,001-10,000			x		x									
Cyperus flavescens	Yellow flatsedge	P	N	A						11-100			x											
Cyperus haspan	Haspan flatsedge	P	N	A						1,001-10,000			x				x		x					
Cyperus involucratus	Umbrella plant	P	E	A					II	11-100		x												
Cyperus ligularis	Swamp flatsedge	P	N	A						101-1,000			x	x				x	x					
Cyperus odoratus	Fragrant flatsedge	P	N	A						101-1,000			x	x			x		x					
Cyperus polystachyos	Manyspike flatsedge	P	N	A						1,001-10,000			x					x	x					1903
Cyperus pumilus	Low flatsedge	P	E	A						101-1,000			x											1953
Cyperus retrorsus	Pinebarren flatsedge	P	N	A						1,001-10,000	x		x											
Cyperus rotundus	Nut-grass	P	N	A						11-100			x											
Cyperus surinamensis	Tropical flatsedge	P	N	A						1,001-10,000			x	x										
Cyperus tetragonus	Fourangle flatsedge	P	N	A						11-100			x											1901
Dactyloctenium aegyptium	Crow's-foot grass, Durban crowfootgrass	P	E	A						101-1,000			x							x				
Dalbergia brownii	Brown's Indian rosewood	F	F		E					0														
Dalbergia ecastaphyllum	Coinvine	P	N	A						101-1,000	x		x	x		x								
Desmodium incanum	Beggar's-ticks	P	N	A						10,001-100,000							x		x			x		

Desmodium paniculatum	Panicledleaf ticktrefoil	P	N	A						101-1,000			x				x							
Desmodium triflorum	Threeflower ticktrefoil	P	E	A						1,001-10,000			x					x						
Dichanthelium aciculare	Needleleaf witchgrass	P	N	A						11-100										x				1854
Dichondra carolinensis	Pony-foot, Carolina ponysfoot	P	N	A						101-1,000							x							
Dichanthelium commutatum	Variable witchgrass	P	N	A						1,001-10,000					x		x		x		x	x		
Dichanthelium dichotomum	Cypress witchgrass	P	N	A						101-1,000							x		x			x		
Dichanthelium ensifolium	Cypress witchgrass	P	N	A						10,001-100,000			x					x						
Dichanthelium laxiflorum	Openflower witchgrass	P	N	A						10,001-100,000					x		x	x	x					
Dichanthelium portoricense	Hemlock witchgrass	P	N	A						10,001-100,000			x					x	x	x				
Dichanthelium strigosum var. glabrescens	Glabrescent roughhair witchgrass	P	N	A						10,001-100,000								x						
Digitaria ciliaris	Southern crabgrass	P	N	A						101-1,000			x											
Diodia teres	Poor joe, Rough buttonweed	P	N	A						11-100			x											
Diodia virginiana	Buttonweed, Virginia buttonweed	P	N	A						11-100				x										
Dioscorea bulbifera	Common air-potato	P	E	A					I	101-1,000			x						x					
Diospyros virginiana	Persimmon, Common persimmon	P	N	A						1,001-10,000			x					x	x					
Drymaria cordata	West Indian chickweed, Drymary	P	N	A						1,001-10,000			x				x	x						
Echinochloa colona	Jungle-rice	P	E	A						101-1,000			x											1898
Echinochloa walteri	Coast cockspur	P	N	A						101-1,000		x												1825
Eclipta prostrata	False-daisy	P	N	A						101-1,000	x			x			x		x			x		
Eichhornia crassipes	Common water-hyacinth	P	E	A					I	11-100						x								
Eleocharis baldwinii	Baldwin's spikerush, roadgrass	P	N	A						101-1,000			x											1952
Eleocharis cellulosa	Gulf Coast spikerush	P	N	A						1,001-10,000				x										
Eleocharis interstincta	Knotted spikerush	P	N	A						1,001-10,000		x												
Elephantopus elatus	Florida elephant's-foot, Tall elephant's-foot	P	N	A						10,001-100,000			x					x		x				
Eleusine indica	Indian goose grass	P	E	A						11-100			x											
Emilia fosbergii	Florida tasselflower	P	E	A						11-100			x				x	x	x					
Emilia sonchifolia	Lilac tassleflower	P	E	A						11-100			x						x					
Encyclia tampensis	Florida butterfly orchid	P	N	A	C					11-100			x	x	x				x		x			
Enterolobium contortisiliquum	Earpod tree	S	E	A																				

Epipremnum pinnatum cv. Aureum	Golden pothos	P	E	A					II	2-10			x											
Eragrostis amabilis	Feather love grass	P	E	A						11-100			x											
Eragrostis atrovirens	Thalia love grass	P	E	A						11-100			x											
Eragrostis elliottii	Elliott's love grass	P	N	A						11-100			x											
Eragrostis virginica	Coastal love grass	P	N	A						11-100								x						1965
Erechtites hieracifolia	Fireweed, American burnweed	P	N	A						1,001-10,000			x				x	x	x					
Eremochloa ophiuroides	Centipede grass	P	E	A						101-1,000			x											
Erigeron quercifolius	Southern-fleabane, Oakleaf fleabane	P	N	A						1,001-10,000			x	x										
Erigeron vernus	Early whitetop fleabane	P	N	A						11-100								x						
Eryngium aromaticum	Fragrant eryngium, Fragrant Eryngo	P	N	A						2-10										x				
Eryngium baldwinii	Baldwin's eryngo	P	N	A						11-100				x										
Eryngium yuccifolium	Button snakeroot, Button rattlenakemaster	P	N	A						11-100			x					x						
Erythrina herbacea	Coralbean, Cherokee bean	P	N	A						101-1,000			x		x		x	x	x		x			
Eugenia axillaris	White stopper	P	N	A						101-1,000	x				x		x				x			
Eugenia foetida	Spanish stopper, Boxleaf stopper	P	N	A						2-10											x			
Eugenia uniflora	Surinam-cherry	P	E	A					I	2-10	x						x							
Eulophia alta	Wild-coco	P	N	A						2-10			x	x										
Eupatorium capillifolium	Dog-fennel	P	N	A						1,001-10,000			x											
Eupatorium leptophyllum	Falsefennel	P	N	A						101-1,000								x						
Eupatorium mikanioides	Semaphore eupatorium, Semaphore thoroughwort	P	N	A						11-100			x											
Eupatorium rotundifolium	Roundleaf thoroughwort, False horehound	P	N	A						101-1,000			x					x						1904
Eupatorium serotinum	Lateflowering thoroughwort	P	N	A						10,001-100,000			x	x			x	x	x				x	
Euphorbia polyphylla	Pineland euphorbia, Lesser Florida spurge	P	N	A						2-10										x				
Eustachys glauca	Prairie fingergrass, Saltmarsh fingergrass	P	N	A						11-100				x			x							
Eustachys petraea	Common fingergrass, Pinewoods fingergrass	P	N	A						101-1,000			x											
Euthamia caroliniana	Slender goldenrod	P	N	A						101-1,000			x											
Euthamia graminifolia var. hirtipes	Flattop goldenrod	P	N	A				SF1		101-1,000			x					x						1971

Ficus altissima	Council tree	P	E	A					II	0	x													
Ficus aurea	Strangler fig, Golden fig	P	N	A						11-100	x						x	x	x					
Ficus microcarpa	Laurel fig, Indian laurel	P	E	A					I	2-10	x				x		x	x	x			x		1774
Fimbristylis autumnalis	Slender fimbry	P	N	A						101-1,000			x											
Fimbristylis cymosa	Hurricane sedge, Hurricanegrass	P	E	A						101-1,000			x					x						
Fimbristylis puberula	Hairy fimbry	P	N	A						2-10										x				1907
Fimbristylis schoenoides	Ditch fimbry	P	E	A						1,001-10,000			x											1951
Fimbristylis spadicea	Marsh fimbry	P	N	A						11-100			x				x		x					1896
Flaveria linearis	Narrowleaf yellowtops	S	N	A																				
Flaveria trinervia	Annual yellowtops, Clustered yellowtops	P	N	A						11-100				x										
Forestiera segregata	Florida privet, Florida swampprivet	P	N	A						11-100	x		x				x		x					
Fraxinus caroliniana	Water ash, Carolina ash, Pop ash	P	N	A						11-100					x							x		
Galactia elliottii	Elliott's milkpea	P	N	A						100,001-1,000,000			x					x		x				
Galactia regularis	Eastern milkpea	P	N	A						101-1,000			x					x		x				
Galactia volubilis	Downy milkpea	P	N	A						101-1,000			x				x	x						
Galium hispidulum	Coastal bedstraw	P	N	A						11-100			x	x			x					x		1855
Galium pilosum		F	F							0														
Gaura angustifolia	Southern gaura, Southern beeblossum	P	N	A						11-100			x											
Gaylussacia dumosa	Dwarf black-huckleberry, Dwarf huckleberry	P	N	A						11-100								x						
Geranium carolinianum	Carolina cranesbill	P	N	A						11-100		x												
Gnaphalium falcatum	Cudweed, Narrowleaf purple everlasting	P	N	A						1,001-10,000							x							
Gnaphalium obtusifolium	Rabbit's tobacco, Sweet everlasting	P	N	A						11-100								x						1969
Gomphrena serrata	Globe-amaranth	P	E	A						2-10			x											
Gratiola hispida	Rough hedgehyssop	P	N	A						1,001-10,000			x							x				1913
Habenaria floribunda	Rein orchid, Toothpetal false reinorchid	P	N	A						11-100			x				x	x				x		
Habenaria quinqueseta	Longhorn false reinorchid	P	N	A						2-10								x						
Hedyotis procumbens	Innocence, Roundleaf bluet	P	N	A						1,001-10,000								x	x					
Hedyotis uniflora	Clustered mille graine	P	N	A						10,001-			x					x						

										100,000														
Helianthus angustifolius	Narroleaf sunflower, Swamp sunflower	P	N	A						101-1,000			x											1958
Helianthemum corymbosum	Pinebarren frostweed	P	N	A						11-100			x											
Heterotheca subaxillaris	Camphorweed	P	N	A						101-1,000			x											
Hibiscus furcellatus	Lindenleaf rosemallow	P	N	A						11-100	x													
Hibiscus grandiflorus	Swamp hibiscus, Swamp rosemallow	P	N	A						11-100				x										
Hibiscus rosa-sinensis var. schizopetalus	Fringed rosemallow	P	E	C						0			x											
Hydrocotyle umbellata	Manyflower marshpennywort	P	N	A						1,001-10,000			x											
Hydrocotyle verticillata	Whorled marshpennywort	P	N	A						10,001-100,000			x	x	x		x					x	x	
Hymenocallis palmeri	Alligatorlily	P	N	A						2-10				x										
Hypericum cistifolium	Roundpod St. John's-wort	P	N	A						11-100			x											
Hypericum crux-andreae	St. Peter's-wort	P	N	A				SF1		11-100			x					x						1906
Hypericum hypericoides	St. Andrew's-cross	P	N	A						1,001-10,000			x				x	x	x	x				
Hypericum mutilum	Dwarf St. John's-wort	P	N	A						101-1,000				x										
Hypericum reductum	Atlantic St. John's-wort	P	N	A						101-1,000								x						
Hypericum tetrapetalum	Fourpetal St. John's-wort	P	N	A						101-1,000			x											
Hypoxis wrightii	Bristleseed yellow stargrass	P	N	A						11-100			x											
Hyptis alata	Musky mint, Clustered bushmint	P	N	A						101-1,000			x					x						
Hyptis pectinata	Comb bushmint	P	E	A						2-10								x						
Hyptis spicigera	Marubio	P	E	A						2-10			x											1964
Hyptis verticillata	John Charles	P	E	A						11-100			x									x		1950
Ilex cassine	Dahoon holly, Dahoon	P	N	A						1,001-10,000					x		x	x						
Ilex glabra	Gallberry, Inkberry	P	N	A						101-1,000								x						
Imperata brasiliensis	Brazilian satintail	P	N	A						11-100								x						
Imperata cylindrica	Congongrass, Cogongrass	P	E	A					I	11-100			x						x					
Indigofera hirsuta	Hairy indigo	P	E	A						11-100			x							x				
Indigofera spicata	Creeping indigo, Trailing indigo	P	E	A						2-10			x											
Ipomoea alba	Common moonflowers, Moonflowers	P	N	A						1,001-10,000			x	x		x	x							
Ipomoea indica var. acuminata	Ocean-blue morningglory	P	N	A						11-100			x					x						
Ipomoea sagittata	Everglades morningglory	P	N	A						101-1,000		x			x									
Iresine diffusa	Bloodleaf, Juba's bush	P	N	A						1			x		x		x		x					

Iris hexagona	Dixie iris, Prairie iris	P	N	A						11-100		x		x			x		x			x		
Juncus effusus var. solutus	Soft rush	P	N	A						11-100				x										
Juncus marginatus	Shore rush, Grassleaf rush	P	N	A						101-1,000			x											
Juncus roemerianus	Black needle rush, Needle rush, Black rush	P	N	A						1,001-10,000						x		x				x		
Juncus scirpoides	Needlepod rush	P	N	A						101-1,000			x											1897
Juniperus virginiana	Red cedar	P	D	A						2-10			x						x					1976
Kalanchoe pinnata	Common liveleaf, Cathedral bells, Life plant	S	E	A					II															
Kosteletzkya virginica	Virginia saltmarsh mallow	P	N	A						1,001-10,000				x			x						x	
Krameria lanceolata		F	F							0														
Kyllinga brevifolia	Shortleaf spikesedge	P	E	A						1,001-10,000				x										
Lachnocaulon anceps	Whitehead bogbutton	P	N	A						1,001-10,000			x											1833
Lachnanthes caroliana	Bloodroot, Carolina redroot	P	N	A						101-1,000			x						x		x			
Laguncularia racemosa	White mangrove	P	N	A						1,001-10,000				x		x							x	
Lantana camara	Shrubverbena	P	E	A					I	11-100			x											
Lechea sessiliflora	Pineland pinweed	P	N	A						11-100			x											
Lechea torreyi	Piedmont pinweed	P	N	A						11-100			x											1912
Lemna obscura	Little duckweed	P	N	A						100,001-1,000,000		x		x	x									
Lemna valdiviana	Valdivia duckweed	P	N	A						100,001-1,000,000				x										1820
Leucaena leucocephala	White leadtree	P	E	A					II	1,001-10,000	x		x			x								
Liatris tenuifolia var. quadriflora	Shortleaf gayfeather	P	N	A						11-100			x											1914
Linaria canadensis	Canada toadflax	P	N	A						101-1,000							x							
Lindernia crustacea	Malaysian false-pimpernel	P	E	A						1,001-10,000			x					x	x					
Lindernia grandiflora	Savannah false-pimpernel	P	N	A						101-1,000				x										1859
Lipocarpha aristulata	Awned halfchaff sedge	P	E	A						101-1,000			x											1954
Lobelia glandulosa	Glade lobelia	P	N	A						2-10			x											1959
Ludwigia alata	Winged primrosewillow	P	N	A						2-10							x							
Ludwigia maritima	Seaside primrosewillow	P	N	A						10,001-100,000								x						
Ludwigia octovalvis	Mexican primrosewillow	P	N	A						101-1,000			x	x			x					x	x	
Ludwigia peruviana	Peruvian primrosewillow	P	E	A						1,001-10,000			x	x	x		x							
Ludwigia repens	Creeping primrosewillow	P	N	A						101-1,000				x			x					x	x	1973
Lycopersicon esculentum	Tomato, Garden tomato	P	E	A						1								x						
Lygodesmia aphylla	Roserush	P	N	A						11-100								x						
Lygodium microphyllum	Small-leaf climbing fern	P	E	A					I	11-100							x							
Lyonia fruticosa	Coastalplain staggerbush	P	N	A						10,001-			x					x		x				

										100,000														
Lyonia lucida	Fetterbush	P	N	A						101-1,000			x					x						
Lythrum alatum var. lanceolatum	Winged loosestrife	P	N	A						1,001-10,000			x										x	x	
Lythrum flagellare	Florida loosestrife	P	N	A	E	S2	G2	SF1		101-1,000		x		x										1824, 1857
Lythrum lineare	Wand loosestrife	P	N	A						11-100				x									x	1908
Macroptilium lathyroides	Wild-bean, Wild bushbean	P	E	A						10,001-100,000				x			x							
Magnolia virginiana	Sweet-bay	P	N	A						101-1,000			x		x		x		x					
Malachra urens	Roadside leafbract	P	N	A				SF1		11-100							x							1961
Mangifera indica	Mango	P	E	C						0			x											
Manihot esculenta	Tapioca	P	E	A						2-10			x											
Melanthera angustifolia	Prairie blackanthers	P	N	A						11-100			x											1909
Melaleuca quinquenervia	Punktree	P	E	A					I	101-1,000				x		x		x		x				
Melia azedarach	Chinaberrytree	P	E	A					II	1			x											
Melothria pendula	Creeping-cucumber	P	N	A						2-10								x						
Melochia spicata	Bretonica peluda	P	N	A						100,001-1,000,000			x					x						
Micranthemum glomeratum	Manatee mudflower	P	N	A						11-100			x										x	
Mikania cordifolia	Florida Keys hempvine	P	N	A						101-1,000	x		x		x		x	x	x	x		x		
Mikania scandens	Climbing hempweed, Climbing hempvine	P	N	A						1,001-10,000		x		x	x	x	x		x			x	x	
Mitreola petiolata	Miterwort, Lax hornpod	P	N	A						11-100							x							
Momordica charantia	Wild balsam-apple, Balsampear	S	E	A																				
Morus rubra	Red mulberry	P	N	A						11-100	x				x				x		x	x		
Murdannia spirata	Asiatic dewflower	P	E	A						2-10			x											
Myrcianthes fragrans	Twinberry, Simpson's stopper	P	N	A	T					1											x			
Myrica cerifera	Wax myrtle, Southern Bayberry	P	N	A						10,001-100,000	x		x		x		x	x	x	x		x	x	
Nephrolepis cordifolia	Tuberous sword fern	P	E	A					I	11-100			x					x							
Nephrolepis exaltata	Wild Boston fern	S	N	A																				
Nephrolepis multiflora	Asian sword fern	P	E	A					I	1,001-10,000			x		x		x			x				
Neyraudia reynaudiana	Burmareed, Silkreed	P	E	A					I	2-10			x											
Nymphaea elegans	Blue waterlily, Tropical royalblue waterlily	P	N	A						11-100				x								x		
Oplismenus hirtellus	Woodsgrass, Basketgrass	P	N	A						1,001-10,000			x		x		x	x	x					
Opuntia humifusa	Pricklypear	P	N	A						2-10			x											

Osmunda cinnamomea	Cinnamon fern	P	N	A	C					101-1,000					x		x	x	x						
Osmunda regalis var. spectabilis	Royal fern	P	N	A	C					11-100					x		x								
Oxalis corniculata	Lady's-sorrel, Common yellow woodsorrel	P	N	A						101-1,000			x				x								
Palafoxia feayi	Feay's palafox	P	N	A						11-100			x							x				1948
Panicum dichotomiflorum var. bartowense	Hairy fall panic grass	P	N	A						11-100		x												
Panicum hemitomon	Maidencane	P	N	A						1,001-10,000							x							
Panicum hians	Gaping panicum	P	N	A						1,001-10,000			x											
Panicum maximum	Guineagrass	P	E	A					II	11-100			x											
Panicum repens	Torpedo grass	P	E	A					I	1,001-10,000		x	x											
Panicum rigidulum	Redtop panicum	P	N	A						101-1,000			x		x		x							
Panicum virgatum	Switchgrass	P	N	A						11-100			x	x					x					1910
Parietaria floridana	Florida pellitory	P	N	A						11-100				x			x							
Parthenocissus quinquefolia	Virginia-creeper, Woodbine	P	N	A						1,001-10,000	x		x		x		x	x	x	x	x	x		
Paspalum conjugatum	Sour paspalum, Hilograss	P	N	A						10,001-100,000			x						x					
Paspalum dissectum	Mudbank crowngrass	P	N	A						101-1,000			x											1893
Paspalum floridanum	Florida paspalum	P	N	A						11-100			x											1894
Paspalidium geminatum	Egyptian paspalidium	P	N	A						101-1,000		x												
Paspalum monostachyum	Gulfdune paspalum	P	N	A						11-100			x											
Paspalum notatum	Bahia grass	P	E	A						100,001-1,000,000			x											
Paspalum setaceum	Thin paspalum	P	N	A						10,001-100,000			x					x						
Paspalum urvillei	Vasey grass	P	E	A						101-1,000			x	x										
Passiflora suberosa	Corkystem passionflower	P	N	A						2-10			x				x							
Pectis prostrata	Spreading cinchweed	P	N	A						11-100			x											
Pedilanthus tithymaloides subsp. smallii	Jacob's ladder, Devil's backbone	P	E	A						2-10	x													1775
Peltandra virginica	Green arum, Green arrow arum	P	N	A						11-100			x				x							
Pennisetum purpureum	Napier grass, Elephantgrass	P	E	A					I	11-100			x											
Persea palustris	Swamp bay	P	N	A						101-1,000	x				x	x	x		x		x	x		
Phlebodium aureum	Golden polypody	P	N	A						1,001-10,000	x	x	x		x		x	x	x		x	x		
Phoenix reclinata	Senegal date palm	P	E	A					II	2-10			x			x			x					
Phragmites australis	Common reed	P	N	A						101-1,000			x			x								
Phyla nodiflora	Frogfruit, Turkey tangle fogfruit, Capeweed	P	N	A						10,001-100,000		x		x										

Phyllanthus urinaria	Chamber bitter	P	E	A						11-100			x		x			x						
Physalis pubescens	Husk tomato	P	N	A						11-100			x											
Phytolacca americana	American pokeweed	P	N	A						2-10			x											
Piloblephis rigida	Wild pennyroyal	P	N	A						101-1,000								x		x				
Pinguicula pumila	Small butterwort	P	N	A						11-100								x						
Pinus clausa	Sand pine	F	F							0														
Pinus elliottii var. densa	South Florida slash pine	P	N	A						101-1,000	x		x				x	x	x	x				
Pistia stratiotes	Water-lettuce	P	E	A					I	101-1,000													x	
Pityopsis graminifolia	Narrowleaf silkgrass	P	N	A						101-1,000								x	x	x				
Plantago virginica	Southern plantain, Virginia plantain	P	N	A						11-100			x											
Pleopeltis polypodioides var. michauxiana	Resurrection fern	P	N	A						101-1,000	x			x	x		x	x	x		x	x		
Pluchea carolinensis	Cure-for-all	P	N	A						11-100			x											1777
Pluchea foetida	Stinking camphorweed	P	N	A						2-10								x						1963
Pluchea odorata	Sweetscent	P	N	A						1,001-10,000						x	x	x	x			x	x	
Pluchea rosea	Rosy camphorweed	P	N	A						1,001-10,000			x					x					x	1827
Polygonum densiflorum	Denseflower knotweed	P	N	A						101-1,000		x				x								
Polygala grandiflora	Candyweed, Showy milkwort	P	N	A						101-1,000			x	x				x						
Polygonum hydropiperoides	Mild water-pepper, Swamp smartweed	P	N	A						1,001-10,000		x					x					x	x	
Polygala lutea	Orange milkwort	P	N	A						11-100			x											
Polygala nana	Candyroot	P	N	A						11-100			x							x				
Polygala polygama	Racemed milkwort	P	N	A				SF1		1									x					1830
Polygonella polygama	Wideleaf October flower	P	N	A						11-100			x							x				1916
Polypremum procumbens	Rustweed, Juniperleaf	P	N	A						10,001-100,000			x					x						
Polygonum punctatum	Dotted smartweed	P	N	A						11-100				x			x						x	
Pongamia pinnata	Karum tree, Poonga-oil tree	P	E	A						2-10	x		x											1773
Pontederia cordata	Pickerelweed	P	N	A						101-1,000		x										x		
Psidium cattleianum	Strawberry guava	P	E	A					I	101-1,000	x				x		x	x			x			1823
Psidium guajava	Guava	P	E	A					I	2-10							x							
Psilotum nudum	Whisk-fern	P	N	A						11-100			x		x		x							
Psychotria nervosa	Shiny-leaved wild coffee	P	N	A						101-1,000					x		x		x		x	x		
Psychotria sulzneri	Shortleaf wild coffee	P	N	A						101-1,000			x		x		x		x					
Pteridium aquilinum var. caudatum	Lacy bracken fern	P	N	A						2-10			x											

Pteridium aquilinum var. pseudocaudatum	Tailed bracken fern	P	N	A						1,001-10,000							x	x	x					
Pterocaulon pycnostachyum	Blackroot	P	N	A						1,001-10,000			x					x		x				
Pteris vittata	China brake	P	E	A					II	2-10			x											
Ptilimnium capillaceum	Mock bishopsweed, Herbwilliam	P	N	A						11-100				x			x						x	
Quercus chapmanii	Chapman's oak	P	N	A						101-1,000								x		x				
Quercus geminata	Sand live oak	P	N	A						11-100			x					x		x				
Quercus laurifolia	Laurel oak, Diamond oak	P	N	A						1,001-10,000			x		x		x	x	x	x		x		
Quercus minima	Dwarf live oak	P	N	A						1,001-10,000			x				x	x						
Quercus myrtifolia	Myrtle oak	P	N	A						101-1,000			x					x		x				
Quercus pumila	Running oak	P	N	A						101-1,000			x					x		x				
Quercus virginiana	Virginia live oak	P	N	A						1,001-10,000	x		x		x		x	x	x		x			
Randia aculeata	White indigoberry	P	N	A						11-100	x						x		x		x			
Rapanea punctata	Myrsine, Colicwood	P	N	A						101-1,000	x		x		x		x	x	x		x	x		
Rhabdadenia biflora	Mangrove rubbervine, Mangrovevine	P	N	A						10,001-100,000	x			x		x	x							
Rhexia cubensis	West Indian meadowbeauty	S	N	A																				
Rhexia mariana	Pale meadowbeauty, Maryland meadowbeauty	P	N	A						101-1,000			x											
Rhexia nuttallii	Nuttall's meadowbeauty	P	N	A						101-1,000			x					x						
Rhizophora mangle	Red mangrove	P	N	A						10,001-100,000						x							x	
Rhus copallinum	Winged sumac	P	N	A						1,001-10,000			x					x		x				
Rhynchospora colorata	Starrush whitetop	P	N	A						1,001-10,000			x	x	x		x		x			x		
Rhynchospora divergens	Spreading beaksedge	P	N	A						101-1,000			x					x						
Rhynchospora fascicularis	Fascicled Beaksedge	P	N	A						1,001-10,000			x					x						1832
Rhynchospora globularis	Globe beak-rush	P	N	A						11-100							x	x						1826
Rhynchospora inundata	Narrowfruit horned beaksedge	P	N	A						11-100									x					
Rhynchospora megalocarpa	Sandyfield beaksedge	P	N	A						11-100			x							x				1915
Rhynchospora microcarpa	Southern beaksedge	P	N	A						101-1,000			x											
Rhynchospora miliacea	Millet beaksedge	P	N	A						101-1,000					x		x					x		
Rhynchospora odorata	Fragrant beaksedge	P	N	A						11-100			x											
Rhynchospora plumosa	Plumed beaksedge	P	N	A						101-1,000			x					x		x				1831
Rhynchelytrum repens	Rose Natalgrass	P	E	A					I	101-1,000			x											
Richardia brasiliensis	Tropical Mexican clover	P	E	A						11-100			x											
Ricinus communis	Castor-bean	S	E	A					II															

Rorippa teres	Southern marsh yellowcress	P	N	A						11-100									x					
Rotala ramosior	Toothcup, Lowland rotala	P	N	A						2-10				x										
Roystonea regia	Royal palm, Florida royal palm	P	E	A						2-10			x									x		
Rubus cuneifolius	Sand blackberry	P	N	A						2-10			x											1834
Rubus trivialis	Southern dewberry	P	N	A						11-100							x							
Rudbeckia hirta	Blackeyed susan	P	N	A						101-1,000			x											
Ruellia succulenta	Thickleaf wild petunia	P	N	A						11-100			x											
Ruellia tweediana	Britton's wild petunia, Mexican bluebell	P	E	A					I	2-10				x					x					1900
Rumex verticillatus	Swamp dock	P	N	A						11-100				x									x	
Sabatia brevifolia	Shortleaf rosegentian	P	N	A						101-1,000			x							x				
Sabatia calycina	Coastal rosegentian	P	N	A						101-1,000							x							
Sabal palmetto	Cabbage palm	P	N	A						10,001-100,000	x	x	x		x		x	x	x	x	x	x	x	
Saccharum giganteum	Sugarcane plumegrass	P	N	A						1			x					x						
Sacciolepis indica	Indian cupscale	P	E	A						1,001-10,000			x											
Sacciolepis striata	American cupscale	P	N	A						101-1,000		x												
Salix caroliniana	Coastal Plain willow	P	N	A						1,001-10,000		x		x	x		x							
Salvinia minima	Water spangles	P	E	A						101-1,000		x		x	x									
Sambucus canadensis	Elderberry, American elder	P	N	A						1,001-10,000			x	x	x	x	x							
Samolus ebracteatus	Water pimpernel, Limewater brookweed	P	N	A						11-100				x										
Samolus valerandi subsp. parviflorus	Pineland pimpernel, Seaside brookweed	P	N	A						10,001-100,000				x	x		x		x				x	
Sansevieria hyacinthoides	Bowstring-hemp, Mother-in-laws tongue	P	E	A					II	11-100			x											
Sapium sebiferum	Popcorntree, Chinese tallowtree	P	E	A					I	11-100			x				x		x			x		1822
Sarcostemma clausum	Whitevine, White twinevine	P	N	A						1,001-10,000		x			x	x	x			x			x	
Saururus cernuus	Lizard's tail	P	N	A						101-1,000			x	x	x		x							
Schefflera actinophylla	Australian umbrellatree	P	E	A					I	1	x		x											
Schizachyrium sanguineum	Crimson bluestem	P	N	A						11-100								x						1968
Schinus terebinthifolius	Brazilian-pepper	P	E	A					I	10,001-100,000	x				x	x	x	x	x		x	x	x	
Scirpus robustus	Saltmarsh bulrush	P	N	A				SF1		1,001-10,000				x									x	1778
Scirpus tabernaemontani	Softstem bulrush	P	N	A						11-100		x		x									x	1779

Scleria georgiana	Slenderfruit nutrush	P	N	A						11-100			x					x						
Scleria triglomerata	Whip nutrush	P	N	A						101-1,000			x					x	x	x				
Scleria verticillata	Low nutrush	P	N	A						11-100							x							
Scoparia dulcis	Sweetbroom, Licoriceweed	P	N	A						10,001-100,000			x					x	x					
Scutellaria integrifolia	Rough skullcap, Helmet skullcap	P	N	A				SF1		11-100			x					x						1860, 1902
Senecio glabellus	Butterweed	P	N	A						11-100		x							x					1829
Senna alata	Candlestick plant	P	E	A						101-1,000			x											
Senna pendula var. glabrata	Valamuerto	P	E	A					I	101-1,000			x	x	x		x		x					
Serenoa repens	Saw palmetto	P	N	A						10,001-100,000	x		x		x		x	x	x	x	x	x		
Sesbania herbacea	Danglepod	P	N	A						11-100				x										
Sesbania punicea	False-rattlebox	S	E	A					II															
Sesuvium portulacastrum	Perennial sea-purslane, Shoreline seapurslane	P	N	A						101-1,000						x								
Setaria parviflora	Knotroot foxtail, Yellow bristlegrass	P	N	A						1,001-10,000			x	x				x						
Seymeria pectinata	Piedmont blacksenna	P	N	A						11-100										x				
Sida acuta	Common wireweed, Common fanpetals	P	N	A						1,001-10,000			x											
Sida cordifolia	Lima	P	E	A						2-10			x											
Sida rhombifolia	Cuban jute, Indian hemp	P	E	A						1,001-10,000			x	x			x							
Sideroxylon foetidissimum	Wild mastic, False mastic	P	N	A						1	x													
Sideroxylon reclinatum	Recline Florida bully	P	N	A						11-100							x							
Sisyrinchium rosulatum	Annual blueeyed-grass	P	E	A						101-1,000				x										1858
Smilax auriculata	Earleaf greenbrier	P	N	A						10,001-100,000	x		x		x			x	x	x	x			
Smilax bona-nox	Saw greenbrier	P	N	A						101-1,000			x		x		x	x	x					
Smilax laurifolia	Catbrier, Laurel greenbrier, Bamboo vine	S	N	A																				
Smilax tamnoides	Catbrier, Bristly greenbrier, Hogbrier	P	N	A						101-1,000					x		x					x		
Solanum americanum	Common nightshade, American black nightshade	P	N	A						11-100			x				x							
Solanum tampicense	Aquatic soda-apple	P	E	A					I	11-100		x					x							
Solanum torvum	Turkeyberry	P	E	A					II	2-10			x											
Solanum viarum	Tropical soda-apple	S	E	A					I															
Solidago fistulosa	Pinebarren goldenrod	P	N	A						1,001-10,000			x					x						1960
Solidago gigantea	Giant goldenrod	P	N	A						11-100			x											

Solidago odora var. chapmanii	Chapman's goldenrod	P	N	A						1,001-10,000			x					x		x				
Solidago sempervirens	Seaside goldenrod	P	N	A						1,001-10,000			x	x			x						x	
Solidago stricta	Narrow-leaved goldenrod, Wand goldenrod	P	N	A						101-1,000			x					x						
Solidago tortifolia	Twistedleaf goldenrod	P	N	A						11-100							x			x				
Sonchus asper	Spiny sowthistle	P	E	A						2-10			x				x							
Sorghastrum secundum	Lopsided Indian grass	P	N	A						11-100										x				
Spartina bakeri	Sand cordgrass	P	N	A						1,001-10,000		x	x	x		x							x	
Spermacoce assurgens	Woodland false buttonweed	P	N	A						101-1,000			x					x						
Spermacoce verticillata	Shrubby false buttonweed	P	E	A						11-100			x											
Spiranthes praecox	Greenvein lady's-tresses	P	N	A				SF1		11-100			x											
Sporobolus domingensis	Coral dropseed	P	N	A						11-100			x											
Sporobolus indicus var. pyramidalis	West Indian dropseed	P	E	A						10,001-100,000			x											
Sporobolus junceus	Pineywoods dropseed	P	N	A						11-100								x						
Stenotaphrum secundatum	St. Augustine grass	P	E	A						101-1,000			x							x				
Swietenia mahagoni	West Indian mahogany	P	E	A						0			x				x							1962
Syagrus romanzoffiana	Queen palm	P	E	A					II	0			x					x						
Syngonanthus flavidulus	Yellow hatpins	P	N	A						1,001-10,000			x							x				
Syngonium podophyllum	Nephthytis, American evergreen	P	E	A					I	11-100			x											
Syzygium cumini	Jambolan-plum, Java-plum	P	E	A					I	101-1,000	x			x		x	x		x				x	
Syzygium jambos	Rose-apple, Malabar-plum	P	E	A					II	11-100								x						
Taxodium ascendens	Pond cypress	P	N	A						2-10					x							x		
Taxodium distichum	Bald cypress	F	F							0														
Thelypteris dentata	Downy maiden fern	P	E	A						11-100					x		x							
Thelypteris kunthii	Southern shield fern	P	N	A						11-100			x				x		x		x			
Thelypteris ovata	Ovate maiden fern	P	N	A						11-100					x									1919
Thelypteris palustris var. pubescens	Marsh fern	P	N	A						11-100					x									
Tillandsia balbisiana	Reflexed wild-pine, Northern needleleaf	P	N	A	T					101-1,000	x					x	x			x	x			
Tillandsia fasciculata var. densispica	Stiff-leaved wild-pine, Cardinal airplant	P	N	A	E					101-1,000	x		x		x	x		x	x					
Tillandsia recurvata	Ball-moss	P	N	A						101-1,000	x				x	x	x	x	x	x		x		
Tillandsia setacea	Thin-leaved wild-pine, Southern needleleaf	P	N	A						101-1,000	x				x	x	x	x	x	x	x	x		
Tillandsia usneoides	Spanish-moss	P	N	A						101-1,000	x		x		x	x	x	x	x	x	x	x		
Tillandsia utriculata	Giant wild-pine, Giant airplant	P	N	A	E					11-100	x		x		x	x	x		x	x				
Toxicodendron radicans	Eastern poison-ivy	P	N	A						1,001-10,000	x		x		x		x		x		x	x		

Trichostema dichotomum	Forked bluecurls	P	N	A						11-100			x							x				
Triglochin striata	Arrowgrass	P	N	A						11-100				x			x							1821
Tripsacum dactyloides	Eastern gamagrass, Fakahatchee grass	P	N	A						101-1,000			x	x			x		x					
Typha domingensis	Southern cat-tail	P	N	A						1,001-10,000				x		x							x	
Urena lobata	Caesarweed	P	E	A					II	100,001-1,000,000			x		x		x	x	x					
Urochloa mutica	Paragrass	P	E	A					I	1,001-10,000			x											1955
Utricularia gibba	Cone-spur bladderwort, Humped bladderwort	P	N	A						101-1,000		x												
Utricularia subulata	Zigzag bladderwort	P	N	A						11-100			x											
Vaccinium myrsinites	Shiny blueberry	P	N	A						1,001-10,000								x		x				
Vaccinium stamineum	Deerberry	P	N	A						11-100			x					x	x	x				1828
Verbena brasiliensis	Brazilian vervain	P	E	A						11-100			x											
Verbena scabra	Harsh verbena, Sandpaper vervain	P	N	A						11-100			x	x										1895
Verbesina virginica	Frostweed, White crownbeard	P	N	A						101-1,000			x		x		x	x	x					
Vernonia blodgettii	Florida ironweed	P	N	A		S3	G3			11-100									x					
Vernonia cinerea	Little ironweed	P	E	A						11-100									x					
Viburnum obovatum	Small viburnum, Walter's viburnum	P	N	A						1			x											
Vicia acutifolia	Sand vetch, Fourleaf vetch	P	N	A						101-1,000		x		x			x							
Vigna luteola	Cow-pea, Hairypod cowpea	P	N	A						1,001-10,000		x	x	x	x		x		x			x	x	
Viola sororia	Common blue violet	P	N	A						2-10							x							
Vitis cinerea var. floridana	Florida grape	P	N	A						101-1,000					x		x					x		
Vitis rotundifolia	Muscadine, Muscadine grape	P	N	A						10,001-100,000	x		x		x		x	x	x	x				
Vitis shuttleworthii	Calusa grape	P	N	A						11-100							x							
Vittaria lineata	Shoestring fern	P	N	A						1,001-10,000	x		x		x		x				x	x		
Washingtonia robusta	Desert palm, Washington fan palm	P	E	A					II	2-10			x											
Wedelia trilobata	Creeping wedelia, Creeping oxeye	P	E	A					II	101-1,000			x											
Wolffia columbiana	Columbian water meal	P	D	A						10,001-100,000		x												1967
Woodwardia virginica	Virginia chain fern	P	N	A						1,001-10,000			x				x	x						
Xanthosoma sagittifolium	Arrowleaf elephantear	P	E	A					II	2-10			x											
Ximenia americana	Hog-plum, Tallowwood	P	N	A						101-1,000	x		x		x		x	x	x			x		

Xyris brevifolia	Shortleaf yelloweyed grass	P	N	A						101-1,000			x					x		x				
Xyris caroliniana	Carolina yelloweyed grass	P	N	A						101-1,000			x					x		x				
Xyris difformis var. floridana	Florida yelloweyed grass	P	N	A						11-100			x											
Xyris elliottii	Elliott's yelloweyed grass	P	N	A						101-1,000								x						
Xyris smalliana	Small's yelloweyed grass	P	N	A						11-100			x											
Youngia japonica	Rocketweed, Oriental false hawksbeard	P	E	A						11-100									x					
Yucca aloifolia	Spanish-bayonet, Aloe yucca	P	N	A						2-10			x					x	x		x			
Zanthoxylum fagara	Wild-lime, Lime prickly-ash	P	N	A						11-100									x					
Zizaniopsis miliacea	Southern wild-rice, Giant cut-grass	P	N	A						2-10				x			x							

Occurrence
P = Present
S = Assumed present
F = Recorded as present in error
D = Doubtfully present
X = Extirpated

Native Status
N = Native
E = Exotic (non native)
F = Recorded as present in error
D = Doubtfully native

Cultivated Status
A = not cultivated
C = cultivated

State Status
T = Threatened
E = Endangered
C = Commercially Exploited

FNAI State Status
S2 = Imperiled in Florida
S3 = Very rare or local throughout its range in Florida

FNAI Global Status
G2 = Imperiled globally
G3 =Either very rare and local throughout its range or found locally in a restricted range or vulnerable to extinction from other factors.
G5 = demostrably secure globally

IRC status
SF1 = Critically Imperiled in South Florida (SF)

FL EPPC Status
I = species that are invading and disrupting native plant communities
II = species that have shown a potential to disrupt native plant communities

Table 3
The Rare Plants of Caloosahatchee Creeks Preserve

Scientific Name	Common Names	State Status	FNAI State Status	FNAI Global Status	IRC Status	Estimated Population Size
Acrostichum aureum	Golden leather fern	T	S3	G5		?
Anagallis pumila	Florida pimpernel				SF1	2-10
Arisaema triphyllum	Jack-in-the-pulpit				SF1	101-1,000
Campsis radicans	Trumpet vine, Trumpet creeper				SF1	101-1,000
Carex verrucosa	Warty sedge				SF1	2-10
Chasmanthium nitidum	Shiny woodoats				SF1	101-1,000
Encyclia tampensis	Florida butterfly orchid	C				11-100
Euthamia graminifolia var. hirtipes	Flattop goldenrod				SF1	101-1,000
Hypericum crux-andreae	St. Peter's-wort				SF1	11-100
Lythrum flagellare	Florida loosestrife	E	S2	G2	SF1	1001-10,000
Malachra urens	Roadside leafbract				SF1	11-100
Myrcianthes fragrans	Twinberry, Simpson's stopper	T				2-10
Osmunda cinnamomea	Cinnamon fern	C				101-1,000
Osmunda regalis var. spectabilis	Royal fern	C				11-100
Polygala polygama	Racemed milkwort				SF1	1
Scirpus robustus	Saltmarsh bulrush				SF1	1,001-10,000
Scutellaria integrifolia	Rough skullcap, Helmet skullcap				SF1	11-100
Spiranthes praecox	Greenvein lady's-tresses				SF1	11-100
Tillandsia balbisiana	Reflexed wild-pine, Northern needleleaf	T				101-1,000
Tillandsia fasciculata var. densispica	Stiff-leaved wild-pine, Cardinal airplant	E				101-1,000
Tillandsia utriculata	Giant wild-pine, Giant airplant	E				11-100
Vernonia blodgettii	Florida ironweed		S3	G3		11-100

State Status
T = Threatened
E = Endangered
C = Commercially Exploited

IRC status
SF1 = Critically Imperiled in South Florida (SF)

FNAI State Status
S2 = Imperiled in Florida
S3 = Very rare or local throughout its range in Florida

FNAI Global Status
G2 = Imperiled globally
G3 =Either very rare and local throughout its range or found locally in a restricted range or vulnerable to extinction from other factors.
G5 = demostrably secure globally

Table 5

The Florida Exotic Pest Plant Council (FLEPPC) Plants of Caloosahatchee Creeks Preserve

Scientific Name	Common Names	FLEPPC Status	Estimated Population Size	Occurrence	Invasive Status
Abrus precatorius	Rosary-pea, Crab-eyes	I	1,001-10,000	P	I
Acacia auriculiformis	Earleaf acacia	I	11-100	P	I
Albizia lebbeck	Woman's tongue, Rattlepod	I	11-100	P	I
Alternanthera philoxeroides	Alligatorweed	II	101-1,000	P	I
Ardisia elliptica	Shoe-button ardisia	I	1,001-10,000	P	I
Bischofia javanica	Javanese bishopwood	I	11-100	P	I
Blechum pyramidatum	Green shrimpplant, Browne's blechum	II	100,001-1,000,000	P	I
Casuarina equisetifolia	Australian-pine, Horsetail casuarina	I	101-1,000	P	I
Colocasia esculenta	Wild taro, Dasheen, Coco-yam	I	1,001-10,000	P	I
Cupaniopsis anacardioides	Carrotwood	I	0*	P	I
Cyperus involucratus	Umbrella plant	II	11-100	P	I
Dioscorea bulbifera	Common air-potato	I	101-1,000	P	I
Eichhornia crassipes	Common water-hyacinth	I	11-100	P	I
Epipremnum pinnatum cv. Aureum	Golden pothos	II	2-10	P	PI
Eugenia uniflora	Surinam-cherry	I	2-10	P	I
Ficus altissima	Council tree	II	0*	P	I
Ficus microcarpa	Laurel fig, Indian laurel	I	2-10	P	I
Imperata cylindrica	Congongrass, Cogongrass	I	11-100	P	I
Kalanchoe pinnata	Common liveleaf, Cathedral bells, Life plant	II	-	S	PI
Lantana camara	Shrubverbena	I	11-100	P	PI
Leucaena leucocephala	White leadtree	II	1,001-10,000	P	I
Lygodium microphyllum	Small-leaf climbing fern	I	11-100	P	I
Melaleuca quinquenervia	Punktree	I	101-1,000	P	I
Melia azedarach	Chinaberrytree	II	1	P	PI
Nephrolepis cordifolia	Tuberous sword fern	I	11-100	P	I

Nephrolepis multiflora	Asian sword fern	I	1,001-10,000	P	I
Neyraudia reynaudiana	Burmareed, Silkreed	I	2-10	P	PI
Panicum maximum	Guineagrass	II	11-100	P	R
Panicum repens	Torpedo grass	I	1,001-10,000	P	I
Pennisetum purpureum	Napier grass, Elephantgrass	I	11-100	P	PI
Phoenix reclinata	Senegal date palm	II	2-10	P	I
Pistia stratiotes	Water-lettuce	I	101-1,000	P	I
Psidium cattleianum	Strawberry guava	I	101-1,000	P	I
Psidium guajava	Guava	I	2-10	P	I
Pteris vittata	China brake	II	2-10	P	PI
Rhynchelytrum repens	Rose Natalgrass	I	101-1,000	P	PI
Ricinus communis	Castor-bean	II	-	S	R
Ruellia tweediana	Britton's wild petunia, Mexican bluebell	I	2-10	P	I
Sansevieria hyacinthoides	Bowstring-hemp, Mother-in-laws tongue	II	11-100	P	PI
Sapium sebiferum	Popcorntree, Chinese tallowtree	I	11-100	P	I
Schefflera actinophylla	Australian umbrellatree	I	1	P	I
Schinus terebinthifolius	Brazilian-pepper	I	10,001-100,000	P	I
Senna pendula var. glabrata	Valamuerto	I	101-1,000	P	I
Sesbania punicea	False-rattlebox	II		S	R
Solanum tampicense	Aquatic soda-apple	I	11-100	P	I
Solanum torvum	Turkeyberry	II	2-10	P	PI
Solanum viarum	Tropical soda-apple	I	-	S	R
Syagrus romanzoffiana	Queen palm	II	0*	P	I
Syngonium podophyllum	Nephthytis, American evergreen	I	11-100	P	PI
Syzygium cumini	Jambolan-plum, Java-plum	I	101-1,000	P	I
Syzygium jambos	Rose-apple, Malabar-plum	II	11-100	P	I
Urena lobata	Caesarweed	II	100,001-1,000,000	P	I
Urochloa mutica	Paragrass	I	1,001-10,000	P	PI
Washingtonia robusta	Desert palm, Washington fan palm	II	2-10	P	PI
Wedelia trilobata	Creeping wedelia, Creeping oxeye	II	101-1,000	P	PI
Xanthosoma sagittifolium	Arrowleaf elephantear	II	2-10	P	PI

* *sapling*

Appendix 1
The Rare Plants of Caloosahatchee Creeks Preserve

The following species accounts may be geo-referenced in Table 4 and Figures 1-5.

***Acrostichum aureum* (Golden leatherfern)**
Golden leatherfern is listed as threatened in Florida by the Florida Department of Agriculture and Consumer Services (FDACS) (Coile & Garland, 2004) and as rare in Florida (S3) by FNAI (2006). It is a large perennial shrub which is easily confused with the more common giant leatherfern, which is ubiquitous at Caloosahatchee Creeks Preserve (CCP). It differs in having sporangia on the underside of the frond at the distal pinna only (3-5 pairs). In addition, pairs of pinnae of golden leatherfern are spaced further apart, and unlike giant leatherfern, this species also possesses a venation pattern in which veins on the underside of the pinnae do not intersect the midvein (Tobe et al., 1998). Golden leatherfern may be locally common in freshwater, brackish, salt marshes, coastal hammocks, and mangrove swamps in southern Florida (Tobe et al., 1998). This species was reported on an anonymous plant list (2005), and despite searches through appropriate habitats at CCP, it was never encountered by IRC staff. It may occur in freshwater tidal swamp or tidal marsh plant communities at CCP. Due to the presence of large areas of these plant communities at CCP it is assumed present despite searches by the authors. Further searches for golden leatherfern should be conducted on an annual basis. If plants are found, they should be mapped and monitored on a regular basis whose intervals would be determined by rarity at CCP.

***Anagallis pumila* (Florida pimpernel)**
Florida pimpernel is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2002). This small member of the Primulaceae often goes unnoticed due to its diminutive size. It is an annual and is very rare at CCP as it was encountered only once. On February 1, 2006 a handful of plants were found in an animal trail running through mesic flatwoods. (Figure 3). In South Florida it has only been documented from Collier and Lee counties and elsewhere in Florida, Highlands County. Within Lee County, it is also known from Prairie Pines Preserve (Woodmansee & Sadle, 2004) and Yellow Fever Creek Preserve (Woodmansee & Green, report in progress). This species is typically found in mesic flatwoods, pond margins, and river banks all of which occur at CCP and may be found elsewhere at CCP with additional surveys, especially after fires, during its reproductive period in March, April or May. In addition to conducting further surveys for this species, this population should be monitored on an annual basis during its reproductive period. Should more Florida pimpernel be discovered at CCP it is recommended that this station be documented with an herbarium voucher should the population of this species be able to sustain a collection (< 20 individuals for a single plant voucher (Gann et al, 2002)). If no additional plants are found, augmenting this species to appropriate undisturbed habitats should be considered.

***Arisaema triphyllum* (Jack-in-the-pulpit)**
Jack-in-the-pulpit is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2002). This member of the Aroid family (Araceae) is easy to identify, however it is above ground seasonally. It is a perennial and is locally common at CCP. On February 1, 2006 two populations together numbering 100-1,000 plants were found in hydric hammock and floodplain swamp habitats (Figure 4). This station was documented with an herbarium voucher by Woodmansee and Green (Woodmansee, 1781, FTG). In South Florida it has been documented at a handful of conservation

areas in Palm Beach and Martin counties however it hasn't been documented from Collier and Lee counties in 15 years (Gann et al, 2002; Gann et al., 2001-2006) and currently, this is the only station from where it is known in Lee County. Jack-in-the-pulpit is common throughout the remainder of Florida (Wunderlin & Hansen, 2004). In South Florida, this species is typically found in baygall, floodplain forest, floodplain swamp and freshwater tidal swamp habitats, of which all but baygall (and floodplain forest) occur at CCP; it may be found elsewhere at CCP with additional surveys during late winter through summer. In addition to conducting further surveys for this species, this population should be monitored on an annual basis during its above ground period.

***Campsis radicans* (Trumpet vine)**

Trumpet vine is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial climbing vine and is locally common at CCP having been found in several areas throughout most of the preserve. Although three distinct locations are listed in this report (Figures 2-4), plants were observed throughout appropriate habitats at CCP. In South Florida, this species is reported for mesic hammock habitat (Gann et al., 2002), however at CCP it was recorded in disturbed upland, floodplain swamp, hydric hammock, and shell mound habitats. Between 101 and 1,000 plants were observed by Woodmansee, Green, and Stephen Hodges throughout 2006. One of these stations was documented with an herbarium voucher by Woodmansee and Green (Woodmansee, 1891, FTG). This collection is a first for trumpet vine in Lee County. In Lee County, it is also known from Caloosahatchee Regional Park (Gann et al., 2002) and has also been recorded for Collier County at Big Cypress National Preserve and Hendry County at LaBelle Nature Park (Gann et al., 2001-2006). It has been reported for Corkscrew Swamp Sanctuary and Koreshan Historic State Park (Gann et al., 2001-2006). Trumpet vine should be monitored at CCP on a biennial basis.

***Carex verrucosa* (Warty sedge)**

Warty sedge is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a perennial terrestrial herb and is extremely rare at CCP as it was only encountered twice. On February 1, 2006 a single plant was observed by Woodmansee and Green on the bank of a ditched creek in hydric hammock and on August 2, 2006 the same observers discovered an additional plant nearby in the same hammock (Figure 4). In South Florida, warty sedge is also known from Corkscrew Swamp Sanctuary and Corkscrew Regional Ecosystem Watershed (both of which occur in Collier and Lee counties) and Big Cypress National Preserve and Picayune Strand State Forest in Collier County (Gann et al., 2001-2006). It is considered historical at J.W. Corbett Wildlife Management area in Palm Beach County. Wunderlin & Hansen (2004) list it mostly throughout elsewhere in Florida. In South Florida, this species is typically found in freshwater swamps and marshes (Gann et al., 2001-2006). Warty sedge may be found elsewhere at CCP with additional surveys during its reproductive period in spring through summer. In addition to conducting further surveys for this species, these plants should be monitored on an annual basis during its reproductive period. Should more warty sedge be discovered at CCP it is recommended that this station be documented with an herbarium voucher should the population of this species be able to sustain a collection (< 20 individuals for a single plant voucher (Gann et al, 2002)). If no additional plants are found, augmenting this species to appropriate undisturbed habitats should be considered.

***Chasmanthium nitidum* (Shiny woodoats)**

Shiny woodoats is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a perennial terrestrial herb and is locally common in floodplain swamp and hydric hammock at

CCP. On August 3, 2006, 101-1,000 plants were observed by Woodmansee and Green (Figure 4). That same day, this station was documented with an herbarium voucher (Woodmansee, 1918, FTG). Previous to this study, shiny woodoats was reported for CCP on an anonymous plant list (2005), and is newly recorded for South Florida and Lee County. A collection of Shiny woodoats was recently reported by Wilder & McCombs (2006) who listed it as occasional in Hammock, Lee (County). This record was confirmed to be the same population as the one at CCP (personal communication with George Wilder, December 7, 2006). Otherwise, the closest record of this species to this population is DeSoto County to the north (Wunderlin & Hansen, 2004). Wunderlin & Hansen (2003; 2004) list it for swamps and floodplain forests and report its distribution as DeSoto County northward and westward in the panhandle. This occurrence is the only population known for South Florida. Shiny woodoats should be monitored on an annual basis.

***Encyclia tampensis* (Florida butterfly orchid)**

Florida butterfly orchid is listed as commercially exploited in Florida by FDACS (Coile & Garland, 2004). It is a perennial and epiphytic herb and is occasional to common at CCP. Woodmansee and Green observed 11-100 plants throughout mesic hammocks and 11-100 plants on shell mound at CCP. This species is one of the most common epiphytic orchids in South Florida and merits no special management other than monitoring for and discouraging poaching at CCP.

***Euthamia graminifolia* var. *hirtipes* (Flattop goldenrod)**

Flattop goldenrod is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial suffrutescent herb and is occasional throughout CCP. Six colonies containing a combined 101-1,000 plants were observed by Woodmansee, Green, and Stephen Hodges throughout 2006 (Figures 3 & 5). One of these stations was documented with an herbarium voucher by Woodmansee and Hodges (Woodmansee, 1971, FTG). This species was first documented in South Florida by William Buswell (s.n., FTG) in 1930 when he collected it in Fort Myers. Since then, it hadn't been observed in South Florida until 2003 when Woodmansee & Sadle (2004) collected it at Prairie Pines Preserve (Woodmansee, 1353, FTG) the only other known South Florida population. Flattop goldenrod may exist in mesic flatwoods elsewhere at CCP, and further surveys should be conducted in open grassy areas of mesic flatwoods, especially after fire. In October 2006, Woodmansee and Hodges observed that one of the stations was destroyed during the expansion of a fire break on the north side of CCP, west of I-75. It is unknown whether these plants will return to this area, they may even further recruit the newly created fire break since many of the populations were in trails. This area should be monitored to see if more flattop goldenrod reoccurs. Depending on the results of these surveys, before further fire break expansions, areas should be surveyed for rare plants, and if found, plants should be relocated. The remaining colonies of flattop goldenrod should be monitored on an annual basis.

***Hypericum crux-andreae* (St. Peter's-wort)**

St. Peter's-wort is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial shrub and is rare at CCP having only been found in two locations. Two colonies of plants were observed by Woodmansee and Green on August 2, 2006. A small colony of 2-10 plants was observed on the edge of mesic flatwoods and a second colony of 11-100 plants was observed within fire suppressed mesic flatwoods (Figure 3). The latter station was documented with an herbarium voucher by Woodmansee and Green (Woodmansee, 1906, FTG). This species was also discovered at Yellow Fever Creek Preserve by the authors on the previous day. In Lee County it is also present at Corkscrew Regional Ecosystem Watershed (Gann et al., 2001-2006). Elsewhere in South Florida it is known from two conservation areas in Collier and Hendry counties (Gann et

al, 2001-2006. It occurs sporadically in central Florida and becomes more frequent northward in Florida (Wunderlin & Hansen, 2004). St. Peter's-wort may occur elsewhere at CCP and special attention should be made towards open grassy areas of mesic flatwoods or after fires in mesic flatwoods. These stations should be monitored on an annual basis during the flowering and fruiting period summer-fall, or after fires.

***Lythrum flagellare* (Florida loosestrife)**

Florida loosestrife is listed as endangered in Florida by FDACS (Coile & Garland, 2004), is ranked as Imperiled in Florida by FNAI (2006) and as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial herb and is rare (locally common) at CCP having only been found in two locations. Two colonies of plants were observed by Woodmansee and Green on April 25-27, 2006. A colony of 100-200 plants was observed in two adjacent depression marshes and a second colony of 1,000-2,000 plants was observed in disturbed wetland beneath a powerline easement in a water reclamation field (Figures 2-3). Both stations were documented with an herbarium voucher by Woodmansee and Green (Woodmansee, 1824 & 1857, FTG). Florida loosestrife is endemic to central and SouthFlorida (Coile & Garland, 2004). In Lee County it is also present at a private property near Tamiami Village (Gann et al., 2002). Elsewhere in South Florida it is known from a Fred C. Babcock-Cecil M. Webb Wildlife Management Area in Charlotte County (Gann et al, 2002) and is documented for Hendry and Glades counties (Wunderlin & Hansen, 2004). Elsewhere in Florida it occurs in Sarasota, Manatee, DeSoto, Okeechobee, Hernando, and Orange counties (Wunderlin & Hansen, 2004). Florida loosestrife may occur elsewhere at CCP and special attention should be made towards dry downs in depression marshes and wet disturbed areas. These stations should be monitored on an annual basis during the flowering and fruiting period in the spring.

***Malachra urens* (Roadside leafbract)**

Roadside leafbract is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial shrub and is rare at CCP having only been found in one location. A single colony of 10-20 plants was observed in coastal hydric hammock by Woodmansee and Hodges on October 18, 2006 (Figure 4). This station was documented with a partial herbarium voucher by Woodmansee and Hodges (Woodmansee, 1961, FTG). In Lee County it is also present at Manatee Park (Gann et al., 2002). Elsewhere in South Florida it is known from Big Cypress National Preserve in Monroe and Collier counties (Gann et al., 2001-2006) and Everglades National Park in Collier, Miami-Dade, and Monroe counties (Gann et al, 2002). Roadside leafbract has not been documented elsewhere in Florida (Wunderlin & Hansen, 2004). This population is the northernmost known to occur for this species. Roadside leafbract may occur elsewhere at CCP and special attention should be made towards moist coastal hammocks and coastal marshes where it has also been reported (Gann et al, 2002). This station should be monitored on an annual basis during the flowering and fruiting period in the spring.

***Myrcianthes fragrans* (Twinberry stopper, Simpson's stopper)**

Simpson's stopper is listed as threatened in Florida by FDACS (Coile & Garland, 2004). It is a tree and is rare at CCP having only been found in one location. A single colony of 2-10 plants were observed on a small shell mound by Woodmansee and Green on April 25, 2006 (Figure 4). It is throughout elsewhere in South Florida as it is known from at least 25 conservation areas (Gann et al., 2001-2006) Elsewhere in Florida, Simpson's stopper occurs along the East Coast from St. Johns County southward (Wunderlin & Hansen, 2004). Simpson's stopper may occur elsewhere at CCP

and special attention should be made towards hammocks. This station should be monitored on an annual basis.

***Osmunda cinnamomea* (Cinnamon fern)**
Cinnamon fern is listed as commercially exploited in Florida by FDACS (Coile & Garland, 2004). It is a perennial terrestrial herb and is common at CCP. Woodmansee, Green, and Hodges observed 101-1,000 plants throughout floodplain swamp, hydric hammock, mesic flatwoods, and mesic hammock plant communities at CCP. Cinnamon fern is widespread in Florida (Wunderlin & Hansen, 2004). This species merits no special management other than monitoring for and discouraging poaching at CCP.

***Osmunda regalis* var. *spectabilis* (Royal fern)**
Royal fern is listed as commercially exploited by FDACS (Coile & Garland, 2004). It is a perennial terrestrial herb and is occasional at CCP. Woodmansee, Green, and Hodges observed 11-100 plants throughout floodplain swamp and hydric hammock habitats at CCP. Royal fern is widespread in Florida (Wunderlin & Hansen, 2004). This species merits no special management other than monitoring for and discouraging poaching at CCP.

***Polygala polygama* (Racemed milkwort)**
Racemed milkwort is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial herb and is extremely rare at CCP in a mesic hammock. It may go unnoticed since it resembles the more ubiquitous *Polygala grandiflora* (now *P. violacea*)(Wunderlin & Hansen, 2004), however, this species differs in having underground cleistogamous flowers in addition to above ground flowers. A single plant was observed by Woodmansee and Green on April 25, 2006 (Figure 3). Portions of this plant were accidentally removed, and were then documented with a partial herbarium voucher by Woodmansee and Green (Woodmansee, 1830, FTG). This species was thought to be extirpated in Lee County, as it had not been reported since 1969 (Gann et al, 2002). Coincidentally, the authors discovered this species at Yellow Fever Creek Preserve the subsequent day. Elsewhere in South Florida it is known from three conservation areas in Collier, Palm Beach, and Martin counties (Gann et al, 2001-2006). It is sporadically throughout elsewhere in Florida (Wunderlin & Hansen, 2004). Racemed milkwort may occur elsewhere at CCP and special attention should be made towards mesic flatwoods and mesic hammock areas with animal disturbance. In addition to conducting more surveys for Racemed milkwort, this station should be monitored annually. If no additional plants are found, augmenting this species to appropriate habitats should be considered.

***Scirpus robustus* (Saltmarsh bulrush)**
Saltmarsh bulrush is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial herb and is locally abundant at CCP having been found in one large area of disturbed wetland. A single expansive colony of 1,000-10,000 plants was observed by Woodmansee and Green on February 1, 2006 in a recently cleared area of Brazilian-pepper and tidal marsh adjacent to the Caloosahatchee River (Figure 4). This station was documented with an herbarium voucher by Woodmansee and Green (Woodmansee, 1778, FTG). It is not known from any other conservation areas in Lee County (Gann et al., 2002). Elsewhere in South Florida it is known from Collier Seminole State Park Collier County and Everglades National Park in Collier and Monroe counties (Gann et al, 2002). Gann et al. (2001-2006) also report it as present in Charlotte and Martin counties and possibly extirpated from Palm Beach County. Saltmarsh bulrush has been documented throughout the rest of the coastal areas of Florida (Wunderlin & Hansen, 2004). As this

large area of disturbance is subject to dramatic change due to the recent clearing event, this station should be monitored on an annual basis during the flowering and fruiting period in the spring.

Scutellaria integrifolia (Rough skullcap)
Rough skullcap is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial herb and is rare at CCP in disturbed upland and mesic flatwoods. Seven colonies totaling 11-100 plants were observed by Woodmansee and Green throughout 2006 (Figures 3 & 5). Two colonies were documented with an herbarium voucher each by Woodmansee and Green (Woodmansee, 1860 & 1902, FTG). Before this study, Rough skullcap was thought to be possibly extirpated in South Florida, as it had not been reported since 1976 (Gann et al, 2002). The last time this species was documented in Lee County was when Paul Standley collected it in 1927 (Gann et al., 2002). It is also reported from Charlotte County, where it is presumed extirpated (Gann et al, 2001-2006). This is the only conservation area in South Florida where rough skullcap is known to exist. It is throughout elsewhere in Florida (Wunderlin & Hansen, 2004). Rough skullcap may exist in mesic flatwoods elsewhere at CCP, and further surveys should be conducted in open grassy areas of mesic flatwoods, especially after fire. In October 2006, Woodmansee and Hodges observed that two of the stations were destroyed during the expansion of a fire break on the north side of CCP, west of I-75. It is unknown whether these plants will return to this area, they may even further recruit the newly created fire break since many of the populations were in trails. This area should be monitored to see if rough skullcap reoccurs. Depending on the results of these surveys, before further fire break expansions, areas should be surveyed for rare plants, and if found, plants should be relocated. The remaining colonies of rough skullcap should be monitored on an annual basis.

***Spiranthes praecox* (Greenvein lady's-tresses)**
Greenvein lady's-tresses is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a terrestrial perennial herb. Greenvein lady's tresses is extremely rare at CCP as only a single colony of 13 plants was observed in an open bahia pasture on April 25, 2006 by Woodmansee and Green (Figure 4). In Lee County, Greenvein lady's-tresses had not been definitively observed since 1930 when Harold Moldenke collected it in a moist grassy ditch near Coconut (Gann et al., 2002). Coincidentally, the authors discovered a smaller population of this species at Yellow Fever Creek Preserve the subsequent day. Elsewhere in South Florida it is at Corkscrew Swamp Sanctuary in Collier County and in four conservation areas in Martin and Palm Beach counties (Gann et al., 2001-2006). It has also been reported for Corkscrew Regional Ecosystem Wetland in either Collier or Lee counties (Anderson, 1997). It is mostly throughout Florida (Wunderlin & Hansen, 2004). More individuals may be encountered in open areas of mesic flatwoods and other moist areas at CCP during the appropriate reproductive season between April and June as well as after fires. If sufficient individuals are found, it is recommended that Greenvein Lady's-tresses be documented with an herbarium voucher and deposited in a registered herbarium in Florida. This station should be monitored on an annual basis during the flowering and fruiting period. If no additional plants are found, moving some existing plants or augmenting Greenvein lady's tresses to appropriate habitats should be considered.

***Tillandsia balbisiana* (Reflexed wild-pine, Northern needleleaf)**
Reflexed wild-pine is ranked as threatened in Florida by FDACS (Coile & Garland, 2003). It is an epiphytic perennial herb which flowers throughout the year. Reflexed wild-pine is relatively common in coastal berm, freshwater tidal swamp, hydric hammock, scrubby flatwoods, and shell mound habitats at CCP. Between 101 and 1,000 adults were observed throughout 2006 by

Woodmansee, Green, and Hodges. Reflexed wild-pine occurs throughout South Florida (Gann et al., 2001-2006) and in southern central Florida (Wunderlin & Hansen, 2004). This species ranking is due to the arrival of the non-native weevil *Metamasius callizona*, which preys on adult plants. No signs of this weevil were noticed at CCP, however, reflexed wild-pine should be monitored for predation by this exotic pest and should it appear that populations of this bromeliad be declining, more frequent monitoring of individual populations should take place.

***Tillandsia fasciculata* var. *densispica* (Stiff-leaved wild-pine, Cardinal airplant)**

Stiff-leaved wild-pine is ranked as endangered in Florida by FDACS (Coile & Garland, 2003). It is an epiphytic perennial herb which flowers throughout the year. Stiff-leaved wild-pine is relatively common in coastal berm, disturbed upland, floodplain swamp, mesic flatwoods and mesic hammock habitats at CCP. Between 101 and 1,000 adults were observed throughout 2006 by Woodmansee, Green, and Hodges. Stiff-leaved wild-pine occurs throughout South Florida (Gann et al., 2001-2006) and in southern and coastal central Florida (Wunderlin & Hansen, 2004). This species ranking is due to the arrival of the non-native weevil *Metamasius callizona*, which preys on adult plants. No signs of this weevil were noticed at CCP, however, stiff-leaved wild-pine should be monitored for predation by this exotic pest and should it appear that populations of this bromeliad be declining, it is recommended that more frequent monitoring of individual populations take place.

***Tillandsia utriculata* (Giant wild-pine, Giant airplant)**

Giant wild-pine is ranked as endangered in Florida by FDACS (Coile & Garland, 2003). It is an epiphytic monocarpic perennial herb which flowers throughout the year. Giant wild-pine is occasional in disturbed upland and mesic flatwoods habitats at CCP. Five colonies totaling 11-100 adult plants were observed throughout 2006 by Woodmansee, Green, and Hodges (Figures 2-5). Giant wild-pine occurs throughout South Florida (Gann et al., 2001-2006) and in central Florida (Wunderlin & Hansen, 2004). This species ranking is due to the arrival of the non-native weevil *Metamasius callizona*, which preys on adult plants. No signs of this weevil were noticed at CCP, however, giant wild-pine should be monitored for predation by this exotic pest and should it appear that populations of this bromeliad be declining, it is recommended that more frequent monitoring of individual populations take place.

***Vernonia blodgettii* (Florida ironweed)**

Florida ironweed is ranked as rare in Florida (S3) by FNAI (2006). It is a terrestrial perennial herb which flowers in the fall. Florida ironweed is rare at CCP. Two colonies of 11-100 plants were observed along edges of mesic flatwoods on August 2, 2006 by Woodmansee and Green (Figure 3). Florida ironweed is common throughout moist pinelands and prairies in most of South Florida (Gann et al., 2001-2006). Outside of South Florida it is known from St. Lucie and Indian River counties (Wunderlin & Hansen, 2004). With more surveys in the fall or after fires, it may be found elsewhere in flatwoods and prairies at CCP. These stations should be monitored on an annual basis in the fall when it flowers.

Appendix 2
The Habitats at Caloosahatchee Creeks Preserve*

Coastal Berm

Coastal berm applies to a variety of plant associations that develop on ridges of storm deposited sand, shells, and debris FNAI & DNR (1990). These associations include dense thickets of large shrubs and small trees, hammocks, or sparse shrubby vegetation with spiny xerophytic plants FNAI & DNR (1990). Typical plants include cabbage palm, cocoplum (*Chrysobalanus icaco*), sea grape, elder berry, beach orach (*Atriplex pentandra*), greenbrier, prickly pear cactus, evening primrose (*Oenothera biennis*), dropseed, poison ivy, marshhay (*Spartina patens*), Spanish bayonet, bay cedar (*Suriana maritima*), wax myrtle, live oak, muhly grass (*Muhlenbergia capillaris*), sea purslane, tall threeawn, saltbush, sea oats (*Uniola paniculata*), beach morning glory (*Ipomoea imperati*), sea oxeye (*Borrichia* spp.), tread-softly (*Cnidoscolus stimulosus*), love vine, prickly apple (*Harrisia spp.*), snowberry (*Chiococca alba*), varnish leaf (*Dodonaea viscosa*), stoppers, coral bean, privet, strangler fig, and wild coffee FNAI & DNR (1990).

Coastal berm is generally a ridge of storm-deposited marine debris that is parallel to the shore, occasionally occurring in a series with alternating swales FNAI & DNR (1990). Such storm ridges are usually found along low-energy coastlines, and are often surrounded by mangrove or salt marsh communities FNAI & DNR (1990). Coastal berm may be difficult to differentiate from Indian-constructed shell mound or wind- deposited coastal strand or maritime hammock FNAI & DNR (1990). It is often associated with and may grade into tidal swamp (mangroves) or overwash plain, and may also be confused with dredge spoil FNAI & DNR (1990). Its coastal location subjects coastal berm to maritime influences FNAI & DNR (1990). Coastal berm is listed as G3 and S2 respectively, meaning that it is either very rare or local throughout its range globally or is found locally in a restricted range, or is vulnerable to extinction from other factors. Coastal berm is imperiled in Florida due to its rarity or because of its vulnerability to extinction due to some natural or man-made factor (FNAI, 2006).

There are several examples of coastal berm habitat at Caloosahatchee Creeks Preserve (CCP), only one of which is well developed and not entirely disturbed. All of these habitats are located along the shores of the Caloosahatchee River. The well developed coastal berm is typified by a closed canopy composed of cabbage palm, gumbo-limbo, seagrape and Virginia live oak. Hog-plum, myrsine and marlberry are the dominant shrubs found in this habitat while the herbaceous layer is sparse, composed mainly of seedlings of canopy and sub-canopy species and several vines including coin vine, poison-ivy and Virginia creeper. Coastal berm habitat at CCP grades into freshwater tidal swamp. Fifty-seven plant species were recorded growing in coastal berm habitat at CCP. See Table 2 for a complete list of plant species in coastal berm at CCP.

Three state listed species of wild-pine were recorded growing in coastal berm habitat at CCP. These species include the state threatened reflexed wild-pine, along with the state endangered giant wild-pine and stiff-leaved wild-pine.

* Scientific names in the text are provided for those species not occurring at CCP.

Thirteen exotic plant species were found to be invading the coastal berm habitat at CCP. Of these species, nine are listed as category I invasive species, while two are listed as category II invasive species. The category I invasive species include earleaf acacia, carrotwood, Surinam-cherry, laurel fig, Australian-pine, Jambolan-plum, Brazilian-pepper, Australian umbrellatree, and strawberry guava. The category II invasive species include white leadtree and council tree. In addition, two species not listed by FLEPPC were also found invading coastal berm habitat. These species are Jacob's-ladder and karumtree.

Depression Marsh

Depression marsh is characterized as a shallow, usually rounded depression in sand substrate with herbaceous vegetation, often in concentric bands FNAI & DNR (1990). Typical vegetation includes such plants as St. John's-worts, spikerushes, yellow-eyed-grasses, chain ferns, willows, maidencane, wax myrtle, swamp-primrose (*Ludwigia palustris*), bloodroot, buttonbush, fire flag, pickerelweed, arrowheads, and bladderworts FNAI & DNR (1990).

Depression marshes are typical of karst regions where sand has slumped around or over a sinkhole, and thereby created a conical depression; they are smaller than basin marshes, which are situated in relatively large and irregular-shaped basins FNAI & DNR (1990). They are filled by direct rainfall, runoff, or seepage from surrounding uplands, and may be maintained by a subsurface hardpan FNAI & DNR (1990). Hydroperiods are highly variable, and range from as few as 50 days to more than 200 days per year FNAI & DNR (1990). Fire is important in maintaining this community by limiting peat build-up and preventing the invasion of trees and shrubs (Craighead 1971, in Kushlan 1990). No typical fire frequency for depression marshes is given by FNAI and DNR (1990), but they state that the normal fire interval for basin marshes is one to ten years; (Wade et al. 1980, in Kushlan 1990) state that fire periodicity is about three to five years in most deep water marshes, while shallow water marshes burn on one to three-year cycles, provided plant growth is sufficient to carry a fire. FNAI (2006) lists depression marsh as G4 and S4 respectively, meaning that it is apparently secure globally and in Florida, but may be rare in parts of its range.

Depression marshes at CCP are generally small in diameter and relatively shallow. Vegetation in depression marsh habitat at CCP is dominated by grasses, sedges and forbs such as denseflower knotweed, Dixie iris, frogfruit, hairy fall panic grass, knotted spikerush, sand cordgrass, and softstem bulrush. In addition, the non-native torpedo grass is abundant in this habitat. Some woody species found growing in depression marsh habitat include Coastal Plain willow, and common buttonbush. Depression marsh habitat at CCP grades primarily into mesic hammock and mesic flatwoods. Thirty-seven species were recorded growing in depression marsh habitat at CCP. See table 2 for a complete list of species in depression marsh at CCP.

One rare plant species was recorded growing in depression marsh habitat at CCP. Florida loosestrife, listed as Critically Imperiled by The Institute for Regional Conservation (IRC), imperiled by Florida Natural Areas Inventory (FNAI), and endangered by the State of Florida, was found to be fairly abundant along the upper margins of two depression marshes in the preserve.

Four exotic plant species were found to be invading depression marsh habitat at CCP. Three of these species are listed as invasive by the Florida Exotic Pest Plant Council (FLEPPC). Aquatic soda-apple, and torpedo grass are listed as category I invasive species, and alligatorweed, is listed as a category II invasive species. Water spangles was also recorded invading this habitat, however, it is not listed by any agency.

Disturbed Upland

Disturbed upland includes areas such as roadsides, agricultural fields, or thickets (Gann et al., 2001-2006). Disturbed upland can be characterized by a multitude of different strata and species depending on its context. In general, in addition to the above, disturbed upland can be applied to habitats which were formerly native, but are now dominated by exotics, with 50% or greater coverage. Although exotics do tend toward occupying areas of disturbance, in some cases natives will often persist in areas cleared. Often, rare plant species can occur in these habitats since many disturbance areas occur along former ecotones between key habitats where rare plants often occur. In addition, some rare native species are ruderals, and occur in disturbance dominated areas. Although not often recognized as an official habitat, it nevertheless occurs throughout CCP and hosts a significant component of the flora there.

At CCP disturbed upland includes fire breaks, powerline easements, and areas dominated by non-native plant species. Fire breaks and powerline easements are often dominated by native vegetation and include trees such as southern slash pine, laurel oak, Virginia live oak, and cabbage palm. Shrubs such as St. John's worts, cabbage palm, myrtle oak, running oak, wax myrtle and winged sumac also occur here. Most of the fire breaks and easements are dominated by herbs and grasses however, and include: blue-maidencane, three awns, sandmats, dog-fennel, flat sedges, witch grasses, beak sedges, nut-rushes, hempweed, greenbrier, grapes, and goldenrods. Disturbed upland habitat grades into disturbed wetland, mesic flatwoods, mesic hammock, and scrubby flatwoods habitats. A total of 228 native species were observed growing in disturbed upland habitat. See Table 2 for a complete list of native species found in CCP.

Nine rare plants were recorded for disturbed upland. Three species listed by the state of Florida were also recorded growing in disturbed upland habitat at CCP. Among these species are the endangered stiff-leaved wild-pine and giant wild-pine and the commercially exploited Florida butterfly orchid. In addition, six other species listed as Critically Imperiled in South Florida by IRC are also found in the disturbed upland of CCP. These plant species include Florida pimpernel, trumpet vine, flattop goldenrod, St. Peter's-wort, rough skullcap, and greenvein lady's tresses, the latter of which is only known from disturbed areas.

Eighty-two exotic plant species were recorded growing in disturbed upland, three of which are cultivated only, 32 of which are listed by FLEPPC. For a list of non-native species in this habitat, see Table 2.

Disturbed Wetland

Disturbed wetland includes disturbed wet areas such as ditches, canals, and borrow pits (Gann et al., 2001-2006). In general, in addition to the above, disturbed wetland can be applied to habitats which were formerly native, but are now dominated by exotics, with 50% or greater coverage. Although exotics do tend toward occupying areas of disturbance, in some cases natives will often persist in areas cleared. Often times rare plant species can occur in these habitats since many disturbance

areas occur along former ecotones between key habitats where rare plants often occur. In addition, some rare native species are ruderals, and occur in disturbance dominated areas. Although not often recognized as an official habitat, it nevertheless occurs throughout CCP and hosts a significant component of the flora there.

At CCP disturbed wetland is characterized by fire breaks and powerline easements in low areas, ditches, and large areas of intact and cleared Brazilian-pepper forest (former hydric hammock and tidal marsh habitats). Nonetheless, some areas are dominated by natives including arrowgrass, duckweeds, finger grass, yellowtops, St. John's worts, primrosewillows, panicums, smartweed, rushes, swamp sunflower, bladderworts, and yellow-eyed grass. Disturbed wetland habitat grades into disturbed upland, tidal marsh, freshwater tidal swamp, depression marsh, hydric hammock, strand swamp, and floodplain swamp habitats. A total of 77 native species were observed growing in disturbed wetland habitat. See Table 2 for a complete list of native species found in disturbed wetland at CCP.

Three rare plants were recorded for disturbed wetland. Two species listed by the state of Florida were recorded growing in disturbed wetland habitat at CCP. Among these species are the commercially exploited Florida butterfly orchid and endangered Florida loosestrife. The latter of which is also ranked as Critically Imperiled in South Florida by IRC along with saltmarsh bulrush which is also found in this habitat.

Fifteen exotic plants were observed in disturbed wetland. Five are listed as Invasive by FLEPPC and include punktree, Australian-pine, valamuerto, Jambolan-plum, and Britton's wild petunia. Alligatorweed, listed as Potentially Invasive by FLEPPC, was also recorded for this habitat. For a list of all non-native species in this habitat, see Table 2.

Floodplain Swamp

Floodplain swamps occur on flooded soils along stream channels and in low spots and oxbows within river floodplains FNAI & DNR (1990). Dominant trees are usually buttressed hydrophytic trees such as cypress and tupelo (*Nyssa* spp.); the understory and ground cover are generally very sparse FNAI & DNR (1990). Other typical plants include ogeechee tupelo (*Nyssa ogeche*), water tupelo (*Nyssa aquatica*), swamp titi (*Cyrilla racemiflora*), wax myrtle, dahoon holly, myrtle-leaved holly (*Ilex myrtifolia*), large gallberry (*Ilex coriacea*), possumhaw (*Ilex decidua*), hurrah-bush (*Leucothoe racemosa*), white alder (*Clethra* spp.), lizard's tail, leather fern, royal fern, marsh fern, soft rush, laurel greenbrier, hazel alder (*Alnus serrulata*), hawthorn (*Crataegus* spp.), and swamp privet (*Forestiera acuminata*) FNAI & DNR (1990).

Soils of floodplain swamps are highly variable mixtures of sand, organic, and alluvial materials, although some sites, especially within sloughs or on smaller streams, may have considerable peat accumulation FNAI & DNR (1990). Floodplain swamps are flooded for most of the year, with sites along channels inundated by aerobic flowing water while those of sloughs and backswamps are flooded with anaerobic water for extensive periods of time FNAI & DNR (1990). Soils and hydroperiods determine species composition and community structure FNAI & DNR (1990). Seasonal and often prolonged inundations restrict the growth of most shrubs and herbs, leaving most of the ground surface open or thinly mantled with leaf litter FNAI & DNR (1990). Floods redistribute detrital accumulations to other portions of the floodplain or into the main river channel FNAI & DNR (1990). This rich organic debris is essential to the functional integrity of

downriver ecosystems such as estuaries FNAI & DNR (1990). These swamps are usually too wet to support fire.

Floodplain Swamps are often associated with and grade into floodplain forest or hydric hammock, and occasionally baygall FNAI & DNR (1990). The species composition of floodplain swamps is frequently similar to the slough, strand swamp, dome swamp, and basin swamp communities FNAI & DNR (1990). Alteration of the hydroperiod by impoundments or river diversions and the disruption of floodplain communities by forestry or agriculture have devastating consequences to the entire river and bay systems FNAI & DNR (1990). Many plant and animal species, both onsite and down river, depend upon the presence and natural fluctuations of these swamps for survival and reproduction FNAI & DNR (1990). FNAI (2006) lists floodplain swamp as G4 and S4 respectively, meaning that it is apparently secure globally and in Florida, but may be rare in parts of its range.

Two areas at CCP are composed of floodplain swamp habitat. Both areas are represented by fairly sizeable bands several hundred meters inland from the Caloosahatchee River. Floodplain swamp habitat at this preserve appears to be altered by a modified hydrological scheme, which has resulted in shorter hydroperiods, although the eastern area is wetter. This is indicated by the abundance and diversity of sub-canopy species. The canopy of floodplain swamp habitat at this preserve is closed with few light gaps, and is composed of primarily temperate species such as dahoon holly, oaks, pond cypress, red maple, red mulberry, swamp dogwood, sweet-bay, and water hickory. A diverse shrub and herb layer composed of ferns, grasses, and shrubs includes species such as American beautyberry, common buttonbush, coralbean, giant leather fern, Jack-in-the-pulpit, lizard's tail, marsh fern, myrsine, shiny-leaved wild coffee, wax myrtle, and woodsgrass. Floodplain swamp once abundant along the historical Caloosahatchee River, is now quite rare in Lee County since its canalization and subsequent land modifications. Floodplain swamp habitat at CCP grades into freshwater tidal swamp, hydric hammock, and shell mound. A total of 86 plant species were recorded for floodplain swamp habitat. See table 2 for a complete list of plant species in floodplain swamp at CCP.

A total of eight rare plant species were recorded growing in floodplain swamp habitat at CCP. Three of these species are listed as Critically Imperiled by IRC. These species are Jack-in-the-pulpit, shiny woodoats, and, trumpet creeper. Five species listed by the state of Florida were also recorded growing in floodplain swamp habitat at CCP. Among these species are the commercially exploited cinnamon fern, Florida butterfly orchid, and royal fern. In addition, the state endangered giant wild-pine, and stiff-leaved wild-pine were also recorded for this habitat.

Twelve exotic plant species were recorded growing in floodplain swamp habitat at CCP. Eight of these species are listed as invasive by FLEPPC and include the category I invasive species Asian sword fern, Brazilian-pepper, laurel fig, shoe-button ardisia, strawberry guava, and valamuerto. In addition, two category II invasive species Caesarweed and green shrimpplant were recorded. Four additional exotic plant species not listed by FLEPPC were also found to be invading this habitat. These species are chamber bitter, downy maiden fern, Peruvian primrosewillow, and water spangles.

Freshwater Tidal Swamp

Freshwater tidal swamp occurs on floodplains near the mouths of rivers just inland from mangroves or saltmarshes FNAI & DNR (1990). They are swamp forests with well-developed trees inland and increasingly dwarfed trees towards the coast, often with an extensive mat of convoluted surface roots FNAI & DNR (1990). The dominant trees are usually cabbage palm, black gum (*Nyssa biflora*), bald cypress, southern magnolia (*Magnolia grandiflora*), and red cedar FNAI & DNR (1990). Other typical plants include water tupelo (*Nyssa aquatica*), pumpkin ash (*Fraxinus profunda*), swamp bay, white cedar (*Chamaecyparis thyoides*), titi (*Cyrilla racemiflora*), wax myrtle, cocoplum, dahoon holly, myrtle leaved holly (*Ilex myrtifolia*), saltbush, asters, and leather fern FNAI & DNR (1990).

Freshwater tidal swamps occur near the mouths of rivers, often between anastomosing channels, on soils that are highly organic FNAI & DNR (1990). These swamps are flooded by freshwater at least twice daily in response to tidal cycles. They are extremely vulnerable to hydrological modifications, saltwater intrusion, and clearcut logging FNAI & DNR (1990). Although this natural community is widespread around the southeastern U.S., cabbage palm is a conspicuous element only in Florida FNAI & DNR (1990). Because they are found only near river mouths, their distribution is inherently limited in Florida FNAI & DNR (1990). FNAI (2006) lists freshwater tidal swamp as G3 and S3 respectively, meaning that it is either very rare or local throughout its range globally and in Florida, or found locally in a restricted range, or vulnerable to extinction from other factors.

Freshwater tidal swamp habitat at CCP has suffered immensely from hydrological modifications and exotic pest plant infestations. The primary constituents of this community at CCP include dwarfed woody trees such as Brazilian-pepper, pond-apple, red mangrove and white mangrove. Giant leather fern is especially abundant in this habitat. Several vine species are also common in this habitat. These species include: climbing hempweed, coinvine, common moonflowers, mangrove rubbervine, and whitevine. Abundant herb species include sea purslane, southern amaranth, creeping primrose willow, and wand loosestrife. It is highly variable at CCP, and can be areas with very little canopy or areas dominated by freshwater trees such as pond-apple. Freshwater tidal swamp at CCP grades into coastal berm, disturbed wetland, mesic hammock, hydric hammock, mesic flatwoods, tidal marsh and floodplain swamp. A total of 36 plant species were recorded growing in freshwater tidal swamp habitat at CCP. See table 2 for a complete list of plant species recorded in freshwater tidal swamp at CCP.

Four state listed species and one FNAI listed species were recorded growing in freshwater tidal swamp habitat at CCP. These species include the state threatened reflexed wild-pine and the state endangered giant wild-pine and stiff-leaved weld-pine. Although no additional rare plant species were recorded by IRC staff for this habitat, the report of golden leather fern may have come from this habitat. Golden leather fern is listed as threatened by FDACS (Coile & Garland, 2003), and as rare in Florida by FNAI (2006)

Seven exotic plant species were recorded invading freshwater tidal swamp habitat at CCP, all of which are listed by FLEPPC. Five of these species are category I invasive species, including Brazilian-pepper, common water-hyacinth, Jambolan-plum, punktree, and wild-taro. Senegal

date palm and white leadtree were also recorded invading this habitat, and are FLEPPC category II invasive species.

Hydric Hammock

Hydric hammock is characterized as a well developed hardwood and cabbage palm forest with a variable understory often dominated by palms and ferns FNAI & DNR (1990). Typical plants include cabbage palm, diamond-leaf oak, red cedar, red maple, swamp bay, sweetbay, water oak (*Quercus nigra*), southern magnolia (*Magnolia grandiflora*), wax myrtle, saw palmetto, bluestem palmetto (*Sabal minor*), needle palm (*Rhapidophyllum hystrix*), poison ivy, dahoon holly, myrsine, hackberry, sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), Florida elm (*Ulmus americana var. floridana*), swamp chestnut oak (*Quercus michauxii*), American hornbeam (*Carpinus caroliniana*), Walter's viburnum, royal fern, peppervine, rattanvine, yellow jessamine (*Gelsemium* spp.), and Virginia creeper FNAI & DNR (1990).

Hydric hammock occurs on low, flat, wet sites where limestone may be near the surface and frequently outcrops FNAI & DNR (1990). Soils are sands with considerable organic material that, although generally saturated, are inundated only for short periods following heavy rains FNAI & DNR (1990). The normal hydroperiod is seldom over 60 days per year FNAI & DNR (1990). Because of their generally saturated soils and the sparseness of herbaceous ground cover, hydric hammocks rarely burn FNAI & DNR (1990).

Hydric hammock occurs as patches in a variety of lowland situations, often in association with springs or karst seepage, and in extensive forests covering lowlands just inland of coastal communities FNAI & DNR (1990). Hydric hammock generally grades into floodplain swamp, strand swamp, basin swamp, baygall, wet flatwoods, coastal berm, maritime hammock, slope forest, upland mixed forest, or upland hardwood forest FNAI & DNR (1990). Hydric hammock is often difficult to differentiate from bottomland forest, prairie hammock, and floodplain forest FNAI & DNR (1990). The normal hydrological regime must be maintained in Hydric Hammock FNAI & DNR (1990). If the water table is lowered, hydric hammock will gradually change to mesic conditions. If the hammock is flooded, many trees will die and eventually be replaced by more hydrophilic species FNAI & DNR (1990). FNAI (2006) lists hydric hammock as G4 and S4 respectively, meaning that it is apparently secure globally and in Florida, but may be rare in parts of its range.

Hydric hammock habitat at CCP occurs in widely scattered patches in substrate depressions, or along inland remnant stream and creek banks that once emptied into the Caloosahatchee River. Hydric hammock habitat at this preserve suffers hydrological modifications, a high degree of exotic pest plant infestations and disturbance from wild hogs. The canopy is closed and primarily composed of cabbage palm, oaks, sweetbay and, water hickory. Some areas of this habitat, especially along ecotones with depression marsh, are completely dominated by a Brazillian-pepper canopy. Otherwise, shrubs are moderate to sparse in hydric hammock habitat at CCP. Some common shrub species found in this habitat are American beautyberry, common buttonbush, hog-plum, marlberry, myrsine, saw palmetto, and wax-myrtle. A species rich understory of grasses, sedges and ferns is also characteristic of hydric hammock habitat at this preserve. Some typical species include basketgrass, beak sedges, cinnamon fern, coinwort, royal fern, smartweeds, Virginia-creeper and witchgrasses. Hydric hammock habitat at CCP grades

into depression marsh, disturbed wetland, freshwater tidal swamp, mesic flatwoods, mesic hammock, and strand swamp. A total of 161 plant species were recorded growing in hydric hammock habitat at CCP. See table 2 for a complete list of plant species found in hydric hammock at CCP.

A total of nine rare plant species were recorded growing in hydric hammock habitat at CCP. IRC lists five of these species as Critically Imperiled in South Florida. These species include Jack-in-the-pulpit, roadside leafbract, shiny woodoats, warty sedge, and trumpet-creeper. Four state listed species also occur in this habitat. Among these species are the commercially exploited cinnamon fern and royal fern, the state threatened reflexed wild-pine and the state endangered giant wild-pine.

Twenty-three exotic plant species were recorded growing in hydric hammock habitat at CCP. Fourteen of these species are listed as category I invasive species by FLEPPC. These species are: aquatic soda-apple, Asian sword fern, Brazilian-pepper, carrotwood, guava, Jambolan-plum, Javanese bishopwood, laurel fig, popcorntree, shoe-button ardisia, small-leaf climbing fern, strawberry guava, Surinam-cherry, and Valamuerto. Two FLEPPC category II invasive species were also recorded invading this habitat. These species are Caesarweed and green shrimpplant. In addition, seven plant species not listed by FLEPPC were found to be invading hydric hammock habitat at this preserve. These species are common dayflower, downy maiden fern, Florida tassel flower, Peruvian primrosewillow, spiny sowthistle, Wild-bean, and West Indian mahogany[*].

Mesic Flatwoods

Typical mesic flatwoods communities are characterized by a low, flat topography, and moderately- to poorly-drained, acidic, sandy soils often overlying an organic or clay hardpan (Abrahamson and Hartnett 1990, FNAI and DNR 1990). Generally, an overstory of pines is present, which may consist of longleaf pine (*Pinus palustris*), slash pine, or pond pine (*Pinus serotina*). The understory is quite variable, but generally includes species such as saw palmetto, gallberry, and wiregrass. Other typical taxa include St. John's-worts, dwarf huckleberry, wax myrtle, staggerbush, blueberries, gopher-apple, tarflower, bog-buttons, blackroot, false foxgloves (*Agalinis* spp.), white-topped aster (*Aster paternis*), yellow-eyed-grasses, and cutthroat grass (*Panicum abscissum*) FNAI & DNR (1990).

Due to the presence of the hardpan, mesic flatwoods usually flood for brief periods each year; this is contrasted with the dry season, when groundwater is unattainable for many plant species FNAI & DNR (1990). Fire frequency in mesic flatwoods has been estimated at 1 to 8 years FNAI & DNR (1990). In the absence of fire, mesic flatwoods may develop towards hardwood-dominated forests with a closed canopy that can eliminate the ground cover herbs and shrubs; very frequent or hot fires can eliminate pine recruitment and eventually transform mesic flatwoods into dry prairie FNAI & DNR (1990). FNAI (2006) lists mesic flatwoods as G4 and S4 respectively, meaning that it is apparently secure globally and in Florida, but may be rare in parts of its range.

[*] Despite being FNAI (S3) and state listed (Threatened) species, West Indian Mahogany is native to extreme southern Florida and has escaped from cultivation outside of its range.

Mesic flatwoods habitat at CCP is altered due to fire suppression. The canopy is composed of a sparse to non existent, uniformly aged stand of South Florida slash pine, and scattered oak species, indicating a history of fire suppression and resulting hot fires that top kill pines. Saw palmetto has formed dense, nearly impenetrable walls and is by far the dominant sub-canopy species. Few areas possess the open grassy patches that are typical of healthy mesic flatwoods. Despite the effects of fire suppression, many native species still persist in this habitat. Shrubs such as staggerbush, blueberries and wax myrtle are abundant among the dense stands of saw palmetto. Where ever there is an opening among the saw palmetto thickets, a notable array of graminoid and herbaceous vegetation endures. Species such as beak sedges, bluestems, pennyroyal, clustered mille graine, St. John's-worts, partridge peas, and milk peas are all common in openings where the forest floor is exposed. However, much of the graminoid layer typical of open mesic flatwoods persists along the edges of trails. Mesic flatwoods habitat at CCP grades in to a variety of other habitats including depression marsh, disturbed upland, hydric hammock, mesic hammock, and scrubby flatwoods. A total of 143 plant species were recorded growing in mesic flatwoods habitat at CCP. See Table 2 for a complete list of plant species recorded in mesic flatwoods at CCP.

Six rare plant species were recorded growing in mesic flatwoods habitat at CCP. Four of these species are listed as Critically Imperiled by IRC. These species are flattop golden-rod, Florida pimpernel, rough skullcap, and St. Peter's-wort. In addition, two state listed species were also recorded growing in this habitat. These species are the commercially exploited cinnamon fern, and the state endangered stiff-leaved wild-pine.

A total of 16 exotic plant species were recorded invading mesic flatwoods habitat at CCP. Six of these species are listed as category I invasive species by FLEPPC, and include Brazilian-pepper, laurel fig, punktree, strawberry guava, tuberous sword fern, and woman's tongue. Three species listed as category II invasive species by FLEPPC were also found invading mesic flatwoods habitat at this preserve. These species are Caesarweed, queen palm, and rose-apple. An additional seven plant species not listed by FLEPPC were also found invading this habitat. These species include chamber bitter, comb bushmint, Florida tassel flower, hurricane sedge, malaysian false-pimpernel, threeflower ticktrefoil, and tomato.

Mesic Hammock

Mesic hammock occurs on slight rises in relatively flat terrain (Gann et al 2006.) Mesic hammock is a hardwood forest community of open or closed canopy dominated by live oak, with cabbage palm often present in the canopy and subcanopy (FNAI & DNR, 1990). Epiphytes (ferns orchids and bromeliads) are often found and may become abundant in undisturbed stands (FNAI & DNR, 1990). Shrubby understory may be dense or open, tall or short and is composed of saw palmetto, beautyberry, and wax myrtle, with the addition of tropical shrubs, such as Simpson's stopper and wild coffee, in the south. The herb layer is often sparse or patchy and consists of various grasses, including witchgrasses and basket grass, and sedges (FNAI & DNR, 1990).

FNAI & DNR (1990) report that mesic hammock usually occurs as fringes or small patches on the borders of, or in higher parts of, rivers, swamps, marshes, and large lakes, and ranges from central and South Florida (Polk to Dade and Collier counties) northward along the Atlantic and

Gulf coasts to North Carolina and Texas, however it is the authors' experience that in South Florida, mesic hammock may also occur as fire shadows within mesic flatwoods, or along mesic flatwoods ecotones with lowlands. Soils generally consist of sands overlying calcareous marls but may be a more complex association of marl, peat, and sand over limestone. FNAI & DNR (1990) report that soils are sand mixed with organic matter and are normally dry underfoot. FNAI (2006) lists mesic hammock as G3 and S2 respectively, meaning that it is either very rare or local throughout its range globally or is found locally in a restricted range, or is vulnerable to extinction from other factors. Mesic hammock is imperiled in Florida due to its rarity or because of its vulnerability to extinction due to some natural or man-made factor (FNAI, 2006).

Mesic hammock habitat is fairly common at CCP and is mostly found along the edges of depression marshes, as ecotones between swamp habitat and mesic flatwoods, or as fire shadows, scattered throughout the mesic flatwoods. A clear successional pattern from mesic flatwoods to mesic hammock can be observed on this preserve, as the two blend into one another depending on the successional stage. The typical canopy composition of this habitat is dominated by laurel oak and Virginia live oak with scattered cabbage palm and myrsine. Shrubby species are common in this habitat and can include bastard indigobush, coralbean, Florida privet, hog-plum, and saw palmetto. The forest floor vegetation is sparse, but diverse. Species such as whitemouth dayflower, flatsedges, witchgrasses, basketgrass, and pineland pimpernel are all common. Mesic hammock habitat at CCP grades into depression marsh, freshwater tidal swamp, hydric hammock, mesic flatwoods, scrubby flatwoods, and strand swamp. A total of 106 plant species were recorded growing in mesic hammock habitat at this preserve. See Table 2 for a complete list of plant species recorded in mesic hammock at CCP.

A total of six rare plant species were recorded growing in mesic hammock habitat at CCP. Four species listed by the state of Florida, including the commercially exploited cinnamon fern and butterfly orchid, and the state endangered giant wild-pine and stiff-leaved wild-pine, were recorded growing in this habitat. In addition, the FNAI listed Florida ironweed, and the IRC Critically Imperiled racemed milkwort were also recorded for this habitat.

A total of 20 exotic plant species were recorded invading mesic hammock habitat at CCP. Ten of these species are listed by FLEPPC as category I invasive species. These species are Brazilian-pepper, Britton's wild petunia, common air-potato, congongrass, Jambolan-plum, laurel fig, popcorntree, rosary-pea, shoe-button ardisia and valamuerto. Two species listed by FLEPPC as category II invasive species; Caesarweed, and Senegal date palm, were also recorded invading mesic hammock habitat. In addition, eight species not listed by any agency were found to be invading mesic hammock habitat at CCP. These species are common dayflower, common Devil's-horsewhip, Florida tasselflower, lilac tassleflower, little ironweed, Malaysian false-pimpernel, rocketweed, and sour orange.

Scrubby Flatwoods

Scrubby flatwoods communities generally occur in transitional areas between mesic flatwoods and scrub. While some consider scrubby flatwoods as an ecotonal or even an artificial community, others classify it as a discrete community or association (Abrahamson and Hartnett, 1990; FNAI & DNR, 1990). The canopy is usually composed of scattered pines, which may include slash pine or longleaf pine (*Pinus palustris*). The understory is usually dominated by scrub oaks, saw palmetto or scrub palmetto (*Sabal etonia*), or a combination of these taxa. Other typical taxa include staggerbush,

wiregrass, shiny blueberry, gopher-apple, rusty lyonia (*Lyonia ferruginea*), tarflower, golden-asters (*Chrysopsis* spp.), ground lichens (*Cladonia* spp.), scrub-bay (*Persea borbonia var. humilis*), garberia (*Garberia heterophylla*), huckleberries, goldenrods, running oak, pinweeds, and frostweeds (FNAI & DNR, 1990).

Scrubby flatwoods differ from other the types of flatwoods in that they occur at slightly higher elevations, on more well-drained soils. Even under extremely wet conditions, scrubby flatwoods will not flood (Abrahamson et al., 1984). The structure and species composition of scrubby flatwoods is more closely aligned with scrub than with other types of flatwoods. Due to the relatively sparse ground cover, the presence of scrub oaks, and the presence of open, sandy areas, fire frequency in scrubby flatwoods is lower than in other flatwoods communities, and has been estimated at 8 to 25 years (FNAI & DNR, 1990). In the absence of regular fire, scrubby flatwoods may develop towards scrub on drier sites, or xeric live oak hammock on less well-drained sites (Laessle, 1942). A successional pathway from xeric live oak hammock to mesic hammock also has been proposed (Laessle, 1942). FNAI (2006) lists scrubby flatwoods as G3 and S3 respectively, meaning that it is either very rare or local throughout its range globally and in Florida, or found locally in a restricted range, or vulnerable to extinction from other factors.

Scrubby flatwoods habitat at CCP is mostly confined to two out-parcels on the eastern and western boundaries of the preserve, however sections of the canopyless mesic flatwoods in the center possess some flora characteristic of scrubby flatwoods. The canopy is composed of widely scattered South Florida slash pine. Various scrub oaks, saw palmetto and staggerbush are abundant in the sub-canopy layer. Typical herbaceous and graminoid vegetation found in this habitat include bluestems, common pawpaw, densetuft hairsedge, Florida elephant's-foot, golden-rods, piedmont black-senna, witchgrasses, yellow-buttons, and yelloweyed grasses. Scrubby flatwoods at CCP grades into disturbed upland, mesic flatwoods, and mesic hammock. A total of 68 plant species were recorded growing in scrubby flatwoods habitat at CCP. See Table 2 for a complete list of plant species recorded in scrubby flatwoods at CCP.

Two species of wild-pine listed by the state of Florida were recorded growing in Scrubby Flatwoods Habitat at CCP. These species are the state threatened reflexed wild-pine and the state endangered giant wild-pine.

A total of five exotic plant species were recorded invading scrubby flatwoods habitat at CCP. Two of these species; Asian sword fern and punktree are listed as category I invasive species by FLEPPC. In addition, crow's-foot grass, hairy indigo, and St. Augustine grass were also recorded invading this habitat.

Shell Mound

Shell mound is unusual among the biological communities in that it is largely a result of the activities of Indians, instead of natural physical factors FNAI & DNR (1990). Shell mound is generally characterized as an elevated mound of mollusk shells and aboriginal garbage on which a hardwood, closed-canopy forest develops FNAI & DNR (1990). In some cases, a sparse shrubby community, sometimes with cactus, may develop in lieu of hammock vegetation FNAI & DNR (1990). Typical plants include gumbo-limbo, cabbage palm, mastic, red cedar, hackberry, live oak, forestiera, coral bean, marlberry, saffron plum, sagaretia (*Sageretia minutiflora*), coontie (*Zamia integrifolia*), and others FNAI & DNR (1990). Shell mound soils

are composed of shells and shell fragments with an organic component derived from forest litter FNAI & DNR (1990). The soil generally is circumneutral to slightly alkaline (pH = 7-8) and contains 1-20% organic materials FNAI & DNR (1990). The loose collection of shells allows water to drain extremely rapidly FNAI & DNR (1990). The calcareous substrate, in combination with their coastal location, often permits tropical or subtropical species of plants to grow much further north on shell mounds than their normal ranges on other substrates FNAI & DNR (1990).

Their coastal, usually insular, location generally protects shell mounds from fire, but subjects them to marine influences, including high winds, salt spray, high insulation, and storm surge FNAI & DNR (1990). Shell mound is often associated with and grades into rockland hammock, coastal berm, or maritime hammock FNAI & DNR (1990). It is often so similar in species composition to these communities that it may be difficult to differentiate FNAI & DNR (1990). Some shell mounds may also be very similar to coastal rock barren communities FNAI & DNR (1990).

Because they are constructed of archaeological remains, shell mounds are vulnerable to damage by artifact-seekers and archaeological excavations FNAI & DNR (1990). Sites where visitor use is not monitored should not be publicized FNAI & DNR (1990). Archaeological investigations should be conducted with care to protect important botanical features FNAI & DNR (1990). FNAI (2006) lists shell mound as G2 and S2 respectively, meaning that it is imperiled globally and in Florida because of rarity or because of vulnerability to extinction due to some natural or man-made factor

Shell mound habitat at CCP is restricted to a single station in the central part of the preserve east of I-75. This habitat covers a small area, and from a distance, is nearly indistinguishable from the other surrounding habitats. Due to its proximity to the headwaters of a small tidal creek which joins the Caloosahatchee River, and its proximity to upland habitat nearby, it may have once represented a canoe launch by the aboriginal people. The vegetation on this mound is primarily tropical and includes trees such as cabbage palm, Virginia live oak, sugarberry, Simpson's stopper, Spanish stopper, white stopper, swamp bay, and water hickory. Epiphytes in the canopy include Florida butterfly orchid, resurrection fern, Spanish-moss, reflexed wild-pine, thin-leaved wild-pine, golden polypody, and shoestring fern. Shrubs such as bastard indigobush, coral bean, Spanish bayonet, white indigo berry, and shiny-leaved wild coffee are also present. The floor of the mound is sparse, but contains vines and herbaceous species such as Eastern poison-ivy, earleaf greenbrier, trumpet-creeper, variable witchgrass, and Virginia-creeper. Shell mound habitat at CCP grades into a floodplain swamp, hydric hammock, and tidal marsh. A total of 31 plant species were recorded growing in shell mound habitat at CCP. See Table 2 for a complete list of plant species recorded in shell mound at CCP.

Four rare species were recorded growing in shell mound habitat at CCP. Among these species are the state threatened reflexed wild-pine and Simpson's stopper, and the commercially exploited Florida butterfly orchid. In addition, trumpet creeper, listed as Critically Imperiled in South Florida by IRC, was also recorded growing in this habitat.

Only two exotic plant species were recoded invading shell mound habitat at CCP. These species are Brazilian-pepper and strawberry guava. Both of these species are listed as category I invasive species by FLEPPC.

Strand Swamp

Strand swamps are shallow, forested, usually elongated depressions or channels dominated by bald cypress (*Taxodium distichum*) (FNAI & DNR, 1990). They are generally situated in troughs in a flat limestone plain (FNAI & DNR, 1990). Typical plants include red maple (*Acer rubrum*), laurel oak, cabbage palm, strangler fig, red bay (*Persea borbonia*), sweet bay (*Magnolia virginiana*), coastal plain willow, wax myrtle, myrsine, buttonbush, royal palm (*Roystonea regia*), poison ivy, swamp lily (*Crinum americanum*), leather fern (*Acrostichum danaeifolium*), royal fern (*Osmunda regalis* var. *spectabilis*), saw-grass, swamp primrose (*Ludwigia palustris*), water hyssop, floating heart (*Nymphoides aquatica*), dotted smartweed, and arum (*Peltandra* spp.) (FNAI & DNR, 1990). Canopy plants are mainly temperate, while understory and epiphytic plants are mainly tropical (FNAI & DNR, 1990). Small young trees at the outer edge of strand swamps grade into large old ones in the interior, giving a strand a distinctly rounded cross-sectional profile (FNAI & DNR, 1990). Strand swamp soils are peat and sand over limestone and the best developed forests are on deep peat that acts as a wick to draw moisture from groundwater up into the root zone during droughts (FNAI & DNR, 1990).

The normal hydroperiod is 200-300 days with a maximum water depth of 18 to 30 inches (FNAI & DNR, 1990). Water is deepest and remains longest near the center where the trees are biggest (FNAI & DNR, 1990). Fire occurs in strand swamps on a cycle of perhaps 30 to 200 years, with the largest trees on the deepest peat towards the center of the strand burning least frequently (FNAI & DNR, 1990). Fire is essential for maintenance of this natural community; without fire, hardwood invasion and peat accumulation would convert the strand to bottomland forest in a few hundred years (FNAI & DNR, 1990). Cypress is very tolerant of light surface fires, but muck fires burning into the peat can kill the trees, lower the ground surface, and transform a strand into a slough (FNAI & DNR, 1990). FNAI (2006) lists strand swamp as G4 and S4 respectively, meaning that it is apparently secure globally and in Florida, but may be rare in parts of its range.

Strand swamp habitat at CCP is restricted to an isolated remnant fragment on the north central part of the preserve, east of I-75. The northern flow of water through this habitat has been cut off completely, and the supply of water is reduced to seepage from adjacent habitats. The canopy is closed and is composed of scattered pond cypress, swamp dogwood, and water ash, with additional hardwoods such as laurel oak and red mulberry, which seem to have become established after the habitat was hydrologically modified. The understory is sparse with few shrubs such as hog-plum, myrsine, and shiny-leaved wild coffee. Typical herbaceous and graminoid vegetation includes creeping primrosewillow, water hyssop, button-hemp, Virginia-creeper, and various witch grasses. Strand swamp habitat at CCP grades into disturbed wetland, fire suppressed mesic flatwoods, mesic hammock, and hydric hammock. A total of 59 plant species were recorded growing in strand swamp habitat at CCP. See Table 2 for a complete list of plant species recorded in strand swamp at CCP.

No rare species were recorded growing in strand swamp habitat at CCP.

A total of seven exotic plant species were recorded invading strand swamp habitat at CCP. Four of these species are listed as category I invasive species by FLEPPC. These species are

Brazilian-pepper, Javanese bishopwood, laurel fig, and popcorntree. In addition, three species not listed by FLEPPC were also found to be invading this habitat. These species are common dayflower, John Charles, and royal palm[*].

Tidal Marsh

Marine and estuarine tidal marshes are Floral Based Natural Communities generally characterized as expanses of grasses, rushes and sedges along coastlines of low wave energy and river mouths FNAI & DNR (1990). They are most abundant and most extensive in Florida north of the normal freeze line, being largely displaced by and interspersed among tidal swamps below this line FNAI & DNR (1990). Black needlerush and smooth cordgrass (*Spartina alterniflora*) are indicator species which usually form dense, uniform stands FNAI & DNR (1990). The stands may be arranged in well-defined zones according to tide levels or may grade subtly over a broad area, with elevation as the primary determining factor FNAI & DNR (1990). In the upper reaches of river mouths, where estuarine tidal marsh begins to blend with freshwater tidal swamp and marsh, sawgrass may occur in dense stands FNAI & DNR (1990). Sawgrass is the least salt tolerant of these tidal marsh species FNAI & DNR (1990). Other typical plants include saltgrass (*Distichlis spicata*), saltmeadow cordgrass (*Leptochloa fascicularis*), gulf cordgrass (*Spartina spartinae*), soft rush and other rushes, salt myrtle, marsh elder, saltwort (*Batis maritima*), sea oxeye (*Borrichia frutescens*), cattail, big cordgrass (*Spartina cynosuroides*), bulrushes, seashore dropseed (*Sporobolus virginicus*), seashore paspalum (*Paspalum distichum*), shoregrass (*Monanthochloe littoralis*), glassworts (*Salicornia* spp.), seablight (*Suaeda* spp.), seaside heliotrope (*Heliotropium curassavicum*), saltmarsh boltonia, and marsh fleabane FNAI & DNR (1990).

Tidal marsh soils are generally very poorly drained muck or sandy clay loams with substantial organic components and often a high sulfur content FNAI & DNR (1990). The elevation of tidal marshes range from just below sea level to slightly above sea level with vegetation occupying the intertidal and supratidal zones FNAI & DNR (1990). The frequently high density of plant stems and roots effectively traps sediments derived from upland runoff or from littoral and storm currents FNAI & DNR (1990). The decaying, dead marsh plants and the transported detritus which the living plants trap, accumulate to form peat deposits FNAI & DNR (1990). Together, these accretion processes may build land FNAI & DNR (1990). Tidal fluctuation is the most important ecological factor in tidal marsh communities, cycling nutrients and allowing marine and estuarine fauna access to the marsh. This exchange helps to make tidal marsh one of the most biologically productive natural communities in the world FNAI & DNR (1990).

Tidal marsh plants live under conditions which would stress most plants FNAI & DNR (1990). High salt content in the soil, poor soil aeration, frequent submersion and exposure, intense sunlight, and occasional fires make the tidal marsh community inhospitable to most plants and require a wide tolerance limit for its inhabitants FNAI & DNR (1990). The landward extent of tidal marsh along the shoreline is directly related to the degree of bottom slope; the more gradual the slope the broader the community band FNAI & DNR (1990). Typical zonation in this community includes smooth cordgrass (*Spartina alterniflora*) in the deeper edges, grading to salt tolerant plants such as black needlerush that withstand less inundation FNAI & DNR (1990).

[*] Despite being FNAI (S2) and state listed (Endangered) species, royal palm is not native to the Caloosahatchee Creek area and has escaped from cultivation outside of its range.

FNAI (2006) lists tidal marsh as G5 and S4 respectively, meaning that demonstrably secure globally and apparently secure in Florida, but may be rare in parts of its range.

Tidal marsh habitat at CCP has a fairly broad distribution and varies species composition from site to site. At CCP, this habitat is typified by broad areas of open grassland with species such as black needle rush, sand cordgrass and saw-grass, grading into freshwater tidal swamp. Small shrubs such as silverling and Virginia saltmarsh mallow can be found interspersed among the grasses and sedges. As the habitat grades into freshwater tidal swamp, woody hydrophilic species such as pond-apple, red mangrove, and white mangrove become more abundant. Tidal marsh at CCP also grades into disturbed upland, disturbed wetland, and hydric hammock plant communities. A total of 38 species were recorded growing in tidal marsh habitat at CCP. See Table 2 for a complete list of plant species recorded in tidal marsh at CCP.

One rare plant species was observed growing in tidal marsh habitat at CCP. Saltmarsh bulrush, listed as Critically Imperiled in South Florida by IRC, was found to be quite abundant in this habitat.

Three exotic plant species were found to be invading tidal marsh habitat at CCP. Two of these species as are listed as category I invasive species by FLEPPC. These species are Jambolan-plum and water-lettuce. In addition, watersprite was also found invading this habitat.

Citations:

Abrahamson, W.G., and D.C. Hartnett. 1990. Pine flatwoods and dry prairies. *In* Ecosystems of Florida (R.L. Myers and J.J. Ewel, eds.), pp. 103-149. University of Central Florida Press, Orlando, Florida.

Abrahamson, W. G., Johnson, A.F., Layne, J.N., and Peroni, P.A. 1984. Vegetation of the Archbold Biological Station, Florida: an example of the southern Lake Wales Ridge. *Fla. Sci.* 47, 209-250.

Anderson, L.C. 1997. Final summary report contract C-7944 inventory of vascular plants for the Isolated Wetland Monitoring Program (Surveys June 1997). Report submitted to the South Florida Water Management District, West Palm Beach, FL.

Anonymous. 2005. Plant sightings at Caloosahatchee Creeks. Unpublished plant list in the files of The Institute for Regional Conservation, Miami, FL.

Coile, N.C & M.A. Garland. 2003. Notes on Florida's endangered and threatened plants. Gainesville: Florida Department of Agriculture and Consumer Services: Division of Plant Industry.

Florida Natural Areas Inventory (FNAI) and Florida Department of Natural Resources (DNR). 1990. Guide to the natural communities of Florida. Amended version located at http://www.fnai.org/naturalcommguide.cfm. Tallahassee, Florida.

Florida Natural Areas Inventory (FNAI). 2006. FNAI Element Tracking Summary. October 14, 2006 from http://www.fnai.org/trackinglist.cfm. Tallahassee, Florida.

Gann, G.D., K.A. Bradley, & S.W. Woodmansee. 2002. Rare Plants of South Florida: Their History, Conservation, and Restoration. The Institute for Regional Conservation: Miami, Florida.

Gann, G.D., K.A. Bradley and S.W. Woodmansee. 2001-2006. The Floristic Inventory of South Florida Database Online. The Institute for Regional Conservation, Miami.

Godfrey, R.K., and J.W. Wooten. 1979. Aquatic and Wetland Plants of the Southeastern United States: Monocotyledons. Athens: University of Georgia Press.

Kushlan, J.A. 1990. Freshwater marshes. *In* Ecosystems of Florida (R.L. Myers and J.J. Ewel, eds.), pp. 324-363. University of Central Florida Press, Orlando, Florida.

Laessle, A.M. 1942. The plant communities of the Welaka area. Univ. of Florida Publ. Biol. Sci. Ser. (1). Gainesville, Florida.

Tobe, J.D., et al. 1998. Florida Wetland Plants: An Identification Manual. Tallahassee: Florida Department of Environmental Protection.

Wilder, G.J. and M.R. McCombs. 2006. New and significant record of vascular plants for Florida and for Collier County and Lee County, Florida Sida 22(1): 787-799.

Woodmansee, S.W. and J.L. Sadle. 2004. A Floristic Survey and Rare Species Assessment of Prairie Pines Preserve, Lee County, Florida, Final Report, Contract #2645 Task 2. October 4th, 2005. Submitted to Lee County Parks and Recreation, Fort Myers, FL.

Wunderlin, R.P. 1998. Guide to the Vascular Plants of Florida. Gainesville: University Presses of Florida.

Wunderlin, R. P., and B. F. Hansen. 2004. *Atlas of Florida Vascular Plants* (http://www.plantatlas.usf.edu/).[S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.