Rare Plants of South Florida:

Their History, Conservation, and Restoration

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Cover photos by George D. Gann: Top: mahogany mistletoe (*Phoradendron rubrum*), a tropical species that grows only on Key Largo, and one of South Florida's rarest species. Mahogany poachers and habitat loss in the 1970s brought this species to near extinction in South Florida. Bottom: fuzzywuzzy airplant (*Tillandsia pruinosa*), a tropical epiphyte that grows in several conservation areas in and around the Big Cypress Swamp. This and other rare epiphytes are threatened by poaching, hydrological change, and exotic pest plant invasions.

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Chapter 4
The Extinct, Extirpated, and Historical Plants of South Florida

This chapter provides accounts of 111 species that have been ranked by IRC as extinct, extirpated, or historical in South Florida. These rankings are discussed in Table 1.1 in Chapter 1. Each account provides a detailed history of the plant in South Florida, obtained through the study of herbarium specimens, literature, correspondence with other botanists, and additional sources. Herbarium citations (e.g. USF) are provided (Appendix 11). In some cases we had to make difficult decisions concerning reported but undocumented occurrences. We welcome any additional information on any of these taxa for incorporation into future editions of this manual.

The South Florida conservation status of each plant is indicated at the beginning of its account under "South Florida Status," and includes the IRC ranking as well as when and where the taxon was last documented. Additional data is provided for the convenience of users. "Taxonomy" indicates the group of plants to which the taxon belongs (dicotyledon, monocotyledon, or pteridophyte), and its family, primarily following Wunderlin (1998). "Habit" indicates the form of the taxon (tree, herb, epiphyte, etc.). "Distribution" indicates the global range of the taxon, and "South Florida Distribution" gives the specifics of its range in the region. "South Florida Habitats" indicates from which South Florida habitats the species is known. "Protection Status" indicates if the taxon is listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS), the Florida Department of Consumer Services, Division of Plant Industry (FDACS), or the Florida Natural Areas Inventory (FNAI). "Identification" supplies references to photographs, illustrations, and other tools. "References" are given for additional useful literature. "Synonyms" are from Wunderlin (1998) and other publications cited in the manual.

This chapter is divided into three parts. The first part treats only a single taxon, now believed to be extinct. The second part treats taxa believed to be extirpated in South Florida; generally these are

plants not seen for at least 20 years. The third part treats taxa believed to be historical in South Florida; in general these taxa have not been observed for at least 10 years, but may be found during additional searches.

The history of each taxon was used to make conservation and restoration recommendations. In this chapter, recommendations are primarily concerned with surveys and reintroductions, following guidelines from Chapter 3.

The IRC Website (www.regionalconservation.org) has additional data on the plants covered in this chapter, including photographs of some species.

Part 1. The Extinct Plant

Tephrosia angustissima Shuttlew. ex Chapm.
var. ***angustissima***
Narrowleaf Hoarypea

South Florida Status: Extinct. The last verifiable collection of a native population was made in 1947 in Miami.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to South Florida.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Pine rocklands.
Protection Status: Listed as endangered by FDACS (as *T. angustissima*) and as historical by FNAI.
Identification: The variety can be distinguished from other varieties of *T. angustissima* in being minutely strigose instead of finely villous or canescent, and having leaves 10-20 times longer than wide instead of 2-8 times longer than wide (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Shinners, 1962b; Long & Lakela, 1976; Avery & Loope, 1980a; Isely, 1990; Wunderlin, 1998, Chafin, 2000, Coile, 2000.
Synonyms: *Cracca angustissima* (Shuttlew. ex Chapm.) Kuntze; *Cracca purpurea* L., misapplied.

Historical Context in South Florida: Narrowleaf hoarypea was collected first by Ferdinand Rugel (Chapman, 1860), who collected in South Florida in 1846 (Wunderlin & Hansen, 2001). This specimen was presumably collected in pine rocklands near the Miami River. It was subsequently collected numerous times from near downtown Miami (Garber 4394, NY) south to pinelands near the Silver Palm School (Small 2232, NY; Small & Carter 2575, NY). Carroll E. Wood, Jr. and I.D. Clement made the last verifiable collection of a native population in 1947 in a pineland at Dixie Highway (US 1) and S.W. 31st Street (7492, US). Nearly all of the historical pine rocklands within the range of this species have been destroyed.

Ann Buckley and Ted Hendrickson made an additional collection in 1985 (86, FAU), in a disturbed lot across the street from Greynolds Park in extreme northeastern Miami-Dade County.

This collection is well outside of the known range of narrowleaf hoarypea, and may represent a population that established on railroad fill or was established following road building activities. Bradley surveyed this station in 2000, but no plants were found.

Comments: *This is the only endemic South Florida taxon that now appears to be extinct.*

Preliminary recommendations:

- Continue surveys in pine rocklands in Miami-Dade County.
- Review FNAI rank.

Part 2. The Extirpated Plants

Acacia choriophylla Benth.
Cinnecord

South Florida Status: Extirpated within natural range. Last verifiable native population vouchered in 1968 on North Key Largo.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Tree.
Distribution: Native to South Florida, the Bahamas, and Cuba.
South Florida Distribution: Native to the Monroe County Keys, specifically to North Key Largo. Apparently naturalized from cultivated plants elsewhere in the Florida Keys and on the South Florida mainland.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS.
Identification: Scurlock (1987) has color photos; Nelson (1994) has a color photo; Nelson (1996) has an illustration; the IRC Website has a color photo.
References: Alexander, 1969; Long & Lakela, 1976; Little, 1978; Correll & Correll, 1982; Scurlock, 1987; Isely, 1990; Nelson, 1994; Nelson, 1996; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: Taylor Alexander first collected cinnecord in 1967 in Oak Trail Hammock on North Key Largo (s.n., NY, USF), in what is now Dagny Johnson Key Largo Hammocks Botanical State Park. Alexander (1969) stated that it was found in an undisturbed hammock with no signs of human activity. George N. Avery vouchered this station again in 1968 (449, US). Oak Trail Hammock was heavily impacted by logging, fires, and clearing in the 1970s and early 1980s (Weiner, 1980 as amended), and cinnecord was probably extirpated from North Key Largo during that period. Gann and Florida Park Service biologist Janice A. Duquesnel surveyed this hammock in 2000, but no cinnecord plants were observed.

There have been other reports of cinnecord from the Florida Keys, but none that we have been able to verify as native populations. Cinnecord has been widely cultivated in South Florida since the

1960s and has escaped from cultivation, both in the Florida Keys and on the mainland. It would be difficult to prove that newly discovered stations of cinnecord were not populations naturalized from cultivated plants. As far as we are aware, germplasm from the Florida plants was not conserved.

Preliminary recommendations:

- Consider reintroduction to Oak Trail Hammock in Dagny Johnson Key Largo Hammocks Botanical State Park.
- Review for listing by FNAI.

Amyris balsamifera L.
Balsam Torchwood

South Florida Status: Extirpated. Last observed in 1976 in Matheson Hammock Park in Miami-Dade County. The last plant was probably destroyed around 1980.
Taxonomy: Dicotyledon; Rutaceae.
Habit: Tree.
Distribution: Native to South Florida, the West Indies, Central America, and South America.
South Florida Distribution: Reported for coastal hammocks on the eastern Florida peninsula as far north as the "Halifax River" (Small, 1933a), but verified on the mainland only for Miami-Dade County. Also reported, but unverified, for North Key Largo, based upon a sterile specimen collected by John Kunkel Small and others in 1925 (s.n., FLAS).
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as extirpated by FNAI.
Identification: Two native species of *Amyris* are found in South Florida: *A. balsamifera* and the widespread *A. elemifera*. *A. balsamifera* can be distinguished from *A. elemifera* by its puberulent inflorescence and fruit, instead of glabrous inflorescence and fruit (Tomlinson, 1980; Wunderlin, 1998). *A. balsamifera* also has elongated fruit, 9-14 mm long, whereas *A. elemifera* has rounded fruit, 5-8 mm long (Tomlinson, 1980).
References: Small, 1933a; Long & Lakela, 1976; Little, 1978; Tomlinson, 1980; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Abram P. Garber first collected balsam torchwood in 1877 in Miami (s.n., FLAS, NY), presumably in Brickell Hammock south of the Miami River. Balsam torchwood was not reported again until 1966, when Conrad D. Byrd reported to George N. Avery that he and Fran C. Young had found plants in nearby Matheson Hammock Park (Avery's Notes, 20 August 1966). Avery subsequently observed a single tree there between September 1966 and September 1976 (Avery's Notes, 1966-1976). Avery vouchered this tree in 1969 (592, FLAS, FTG, USF). John Popenoe collected seeds and accessioned them at Fairchild Tropical Garden that same year. Seeds also were collected and distributed to George Allen of Allen's Hammock Nursery in 1976 (Avery's Notes, 13 September 1976). Avery and Popenoe searched for the tree again in 1981, but were unable to locate it (Avery's Notes, 13 October 1981). A new pipeline had been placed in the vicinity of the tree, and it was thought that a trenching machine might have destroyed it. Balsam torchwood was reported for the Little River area in Miami-Dade County based upon a sterile specimen collected by L. Eleanor Scull in 1937 (s.n., FLAS), but this has never been verified.

Balsam torchwood is cultivated at Fairchild Tropical Garden, and germplasm of the Matheson Hammock tree is maintained as cultivated material (Accession #69-522).

Comments: *Balsam torchwood, like torchwood (*A. elemifera*), is probably a larval food plant for the federally listed Schaus swallowtail butterfly* (Papilio aristodemus *subsp.* ponceanus).

Preliminary recommendations:

- Consider reintroduction to Matheson Hammock Park.
- Consider reintroduction to Brickell Hammock at Alice Wainwright Park, Simpson Park, and Vizcaya Museum and Gardens.
- Consider introduction to The Barnacle State Historic Park, which is located in Coconut Grove between the two historical stations.
- Consider restoring rockland hammocks in the Brickell Hammock area and reintroducing balsam torchwood.
- Review for listing by FDACS.

Asclepias connivens Baldwin
Largeflower Milkweed

South Florida Status: Extirpated. Last collected in 1956 at the U.S. Forest Service Caloosa Experimental Range in southeastern Charlotte County.
Taxonomy: Dicotyledon; Asclepiadaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to southern Georgia and Florida. Wunderlin (1998) lists it as occasional in Florida in the central and western panhandle and the northern and central peninsula.
South Florida Distribution: Charlotte and Miami-Dade counties.
South Florida Habitats: Flatwoods and pine rocklands.
Protection Status: Not listed by any agency.
Identification: This is a greenish-yellow-flowered milkweed with leaves opposite or whorled, broadly cuneate at the base (Wunderlin, 1998). Taylor (1998) has a color photo. Tobe et al. (1998) has a photo and illustrations.
References: Chapman, 1883; Small, 1933a; Godfrey & Wooten, 1981; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: *Acerates connivens* (Baldwin) Decne.; *Anantherix connivens* (Baldwin) Feay.

Historical Context in South Florida: Abram P. Garber first collected largeflower milkweed in 1877 in Miami (s.n., NY), presumably in sandy pine rocklands near the Miami River. William P. Adams made the only other collection in 1956 at the now defunct U.S. Forest Service Caloosa Experimental Range in southeastern Charlotte County (172, FSU). It was "rare in wiregrass-palmetto flatwoods." Much of southeastern Charlotte County has been developed for agricultural and mining purposes.

Preliminary recommendations:

- Continue surveys in Charlotte County, including at Fred C. Babcock-Cecil M. Webb Wildlife Management Area.
- Consider restoring pine rocklands near the Miami River and reintroducing largeflower milkweed.

Baccharis dioica Vahl
Hammock Groundsel

South Florida Status: Extirpated. Last collected in 1915 in Brickell Hammock.
Taxonomy: Dicotyledon; Asteraceae.
Habit: Shrub.
Distribution: Native to South Florida and the West Indies.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammock edges.
Protection Status: Listed as endangered by FDACS.
Identification: This is the only species of *Baccharis* in South Florida with entire leaf margins. It has been confused with *B. glomeruliflora* and *B. halimifolia*, which sometimes have only a few obscure teeth.
References: Small, 1933a; Ledin, 1951; Long & Lakela, 1976; Cronquist, 1980; Correll & Correll, 1982; Nelson, 1996; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: Nathaniel L. Britton first collected hammock groundsel in 1904 on "rocks south of Miami" (72, NY), presumably on the margins of Brickell Hammock. It was subsequently collected several times by John Kunkel Small and others at Brickell Hammock beginning in 1904 (1651, NY). Small made the last known collection of hammock groundsel at Brickell Hammock in 1915 (5449, NY). The apparent cause of extirpation was habitat destruction.

Preliminary recommendations:

- Consider reintroduction to the edges of Brickell Hammock remnants at Alice Wainwright Park, Simpson Park, and Vizcaya Museum and Gardens.
- Consider restoring rockland hammocks in the Brickell Hammock area and reintroducing hammock groundsel.
- Review for listing by FNAI.

Bletia patula Hook.
Flor de Pasmo

South Florida Status: Extirpated. Collected once in 1947.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida and the West Indies in Cuba, Hispaniola, and Puerto Rico.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Pine rocklands.
Protection Status: Not listed by any agency.
Identification: Luer (1972) has both color photos and illustrations.
References: Hawkes, 1950d; Luer, 1972; Wunderlin, 1998.
Synonyms: *B. patula* var. *alba* A.D. Hawkes.

Historical Context in South Florida: Flor de pasmo is known from a single collection made by Manly Boss in 1947, from a pine rockland between Black Creek and Goulds in southern Miami-Dade County (Hawkes, 1950d). An unlabeled specimen was deposited at the Buswell herbarium. The apparent cause of extirpation was habitat destruction. There have been a few other reports of flor de pasmo from South Florida, but none that we have been able to verify.

Comments: *The plant collected by Manly Boss was the white-flowered form of this species. Some institutions (e.g. FDACS) consider that the species as not native to South Florida, although there is no significant reason to discount the legitimacy of Boss' collection.*

Preliminary recommendations:
- Continue surveys in pine rocklands in the Goulds area.

Botrychium biternatum (Savigny) Underw.
Southern Grape Fern

South Florida Status: Extirpated. Collected once in 1934 near La Belle.
Taxonomy: Pteridophyte; Ophioglossaceae.

Habit: Perennial terrestrial herb.
Distribution: Native to eastern and central North America; disjunct in Arizona. Wunderlin & Hansen (2000) reports it as occasional in Florida in the central panhandle to the northern and central peninsula.
South Florida Distribution: Hendry County.
South Florida Habitats: Floodplain forests.
Protection Status: Not listed by any agency.
Identification: Nelson (2000) has two color photos, one of *B. biternatum* and one of *B. dissectum* (see "Comments" below).
References: Small, 1933a; Small, 1938; Lakela & Long, 1976; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *B. dissectum* Spreng.; *B. dissectum* var. *tenuifolius* (Underw.) Farw.

Historical Context in South Florida: Gertrude Peterson collected southern grape fern once in 1934 in a cabbage palm hammock near La Belle (s.n., FLAS). The apparent cause of extirpation was habitat destruction.

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida. However, this is one of a suite of species that was apparently extirpated from floodplain forests along the Caloosahatchee River. These forests should be restored along with their constituent rare flora.*

Most authors have separated B. biternatum *from* B. dissectum*, but Wunderlin & Hansen (2000) treat these as conspecific. We follow their treatment here. Any reintroduction efforts should seek to obtain germplasm from individuals with morphology similar to the La Belle specimen collected by Peterson.*

Preliminary recommendations:
- Consider introduction to La Belle Nature Park.
- Consider restoring floodplain forest along the Caloosahatchee River and reintroducing southern grape fern.

Brassia caudata (L.) Lindl.
Spider Orchid

South Florida Status: Extirpated from the wild in 1963. The last known plant, which had been translocated earlier from another location, died in 1977 in Everglades National Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Luer (1972) has both illustrations and color photos; the IRC Website has a color photo.
References: Small, 1933a; Correll, 1950; Craighead, 1963; Luer, 1972; Long & Lakela, 1976; Bell & Taylor, 1982; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: John Kunkel Small and Charles A. Mosier first collected spider orchid in 1915 in Nixon-Lewis Hammock west of Homestead (s.n., FLAS, NY). Small made additional collections there in 1915 (6848, NY) and 1916 (7412, NY). Nixon-Lewis Hammock has subsequently been fragmented by roads and mostly destroyed by agricultural activities.

In 1916 and 1917, Small collected spider orchid in one or more hammocks on Long Pine Key (7348, NY; 8127, NY), in what is now Everglades National Park. George R. Cooley and others collected a specimen from an unnamed hammock on Long Pine Key in 1962 (9224, FTG, USF). In a memorandum to the Chief Ranger of Everglades National Park on November 18, 1966, Frank C. Craighead noted that spider orchid had been known from Paradise Key (now the location of the Royal Palm Visitors Center), but that the last plants had been poached by 1955. Craighead also reported that he discovered a small colony of spider orchid in Osteen Hammock in February 1959.

Because he noticed human disturbance in Osteen Hammock (including poaching), in April 1959, Craighead relocated specimens of spider orchid to three other hammocks on Long Pine Key: Deer Hammock, Turkey Hammock, and Winkley Hammock (Craighead memorandum of 1966; Botanical Notes of Frank C. Craighead). By October 1960 there was only one plant left in Osteen Hammock, in part due to Hurricane Donna, and in part due to poaching and the movement of plants by Craighead. Craighead collected the remains of the last plant in 1963, stating that rodents had eaten it (s.n., FTG). Craighead also made a collection from Deer Hammock in 1961 (s.n., USF), presumably from a translocated specimen. By 1964, only one plant in Deer Hammock remained of all of the translocated individuals. According to Craighead, this plant was gone by 1969 (Botanical notes of Frank C. Craighead), but Mary Ann Bolla, Maxie Simmons, and O.L. "Sonny" Bass found a single plant in Deer Hammock in 1976 (Avery's Notes, 1 May 1976). George N. Avery and Bass found the dead remains of this plant in February 1977 following the freeze of January 19 and 20, 1977 (Avery's Notes, 25 February 1977). Bass took the two remaining seed pods off the plant to be flasked, but this was unsuccessful (Hammer, 2001).

Craighead had also translocated three cultivated spider orchids from unknown germplasm to Pine Island Hammock in 1962, but the last of these plants died following Hurricane Betsy in 1965. Reports of spider orchid from other stations outside of Everglades National Park have been made, but none that we have been able to verify.

Preliminary recommendations:

- Consider reintroduction to the Long Pine Key/Paradise Key area of Everglades National Park.

Bulbophyllum pachyrachis (A. Rich.) Griseb.
Rattail Orchid

South Florida Status: Extirpated. Last reported in 1972 for the Fakahatchee Strand.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial epiphytic herb.

Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Collier County.
South Florida Habitats: Sloughs in strand swamps.
Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Luer (1972) has both illustrations and color photos.
References: Craighead, 1963; Luer, 1972; Long & Lakela, 1976; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: Fred Fuchs, Jr. discovered and collected rattail orchid in 1956 in the Fakahatchee Strand (s.n., AMES; Luer, 1972), in what is now Fakahatchee Strand Preserve State Park. It grew epiphytically on pond-apple trees in deepwater sloughs. By 1962, the original station had been completely wiped out (Luer, 1972). Carlyle Luer reported that some plants were still present in 1972, "secreted away in some inaccessible niche." It has not been reported as extant since, despite ongoing surveys by Florida Park Service staff and others.

Preliminary recommendations:
- Consider reintroduction to Fakahatchee Strand Preserve State Park.

Callisia cordifolia (Sw.) E.S. Anderson & Woodson
Florida Roseling

South Florida Status: Extirpated. Last collected in 1925 at Deep Lake in Collier County.
Taxonomy: Monocotyledon; Commelinaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to Florida, Georgia, the West Indies, South America, and Mexico. Wunderlin (1998) reports it as occasional in Florida in Alachua County and the central peninsula.
South Florida Distribution: Collier, Lee, and Palm Beach counties.
South Florida Habitats: Hammocks.
Protection Status: Not listed by any agency.

Identification: In addition to *C. cordifolia*, there are two exotic species of *Callisia* in South Florida (*C. fragrans*, *C. repens*). *C. cordifolia* has flowers in cymes on lateral branches, rather than sessile or sub-sessile flowers in dense clusters in the upper leaf axils (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Flora of North America Editorial Committee, 1997; Wunderlin, 1998.
Synonyms: *Phyodina cordifolia* (Sw.) Rohweder; *Tradescantella floridana* (S. Watson) Small; *Tradescantia floridana* S. Watson.

Historical Context in South Florida: Allan H. Curtiss collected Florida roseling once in 1895 in "woods near Palm Beach" (5409, FLAS, NY), presumably on the island of Palm Beach. Albert S. Hitchcock also collected it once in 1900 in Fort Myers (361, NY), presumably in a mesic hammock. John Kunkel Small and Walter M. Buswell made the only other collection in 1925 in the Deep Lake area of Collier County (12711, NY). Most of the Deep Lake area now is protected within Big Cypress National Preserve, but the specimen could have been collected in what is now the Fakahatchee Strand Preserve State Park.

Preliminary recommendations:

- Consider introduction to Big Cypress National Preserve and Fakahatchee Strand Preserve State Park.
- Consider restoring maritime hammocks on the island of Palm Beach and reintroducing Florida roseling.

Carex godfreyi Naczi
Godfrey's Sedge

South Florida Status: Extirpated. Collected once in 1917 in the vicinity of Stuart.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as frequent in Florida in the central panhandle to the northern and central peninsula.
South Florida Distribution: Martin County. The Martin County plants are disjunct from the nearest population in Polk County.

South Florida Habitats: Perhaps mesic hammocks. In the rest of Florida it grows in rich, usually calcareous, hammocks (Wunderlin 1998).
Protection Status: Not listed by any agency.
Identification: Very similar to *C. amphibola* which is illustrated in Godfrey & Wooten (1979), but which is absent from Florida. In Florida, it can be distinguished from the similar *C. corrugata* in having purple-red coloration extending 4-7 cm from the base of the plant, versus 1.5-3.5 cm in *C. corrugata,* if the coloration is present (Wunderlin, 1998).
References: Naczi, 1993; Wunderlin, 1998.
Synonyms: *C. amphibola* Steud., misapplied; *C. amphibola* var. *turgida* Fernald, misapplied.

Historical Context in South Florida: "Atwood" collected Godfrey's sedge once in the vicinity of Stuart in 1917 (s.n., NY). No habitat data was given.

Comments: *This is a temperate species known from a single disjunct collection without supporting data. It is possible that this was a waif population, or even a mislabeled specimen. The species was not described until 1993 (Naczi, 1993).*

Preliminary recommendations:
- Continue surveys in the vicinity of Stuart.

Cenchrus brownii Roem. & Schult.
Slimbristle Sandbur

South Florida Status: Extirpated. Last native population vouchered in 1954 on the island of Key West.
Taxonomy: Monocotyledon; Poaceae.
Habit: Annual terrestrial herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America. Introduced and naturalized in the Old World.
South Florida Distribution: Native to the Monroe County Keys. Apparently briefly naturalized in Miami-Dade County.
South Florida Habitats: Native to dry sandy soil on the margins of hammocks, probably on dry, open, coastal berms. Most collections are from dry, disturbed sites.

Protection Status: Not listed by any agency.
Identification: Hitchcock & Chase (1950) has an illustration. The spikelets of *C. brownii* most resemble those of *C. echinatus*. The burs of *C. brownii* are narrower (2.7-4.2 mm wide vs. 4-5.3 mm wide), and shorter (4-5.3 mm long vs. 5.3-8 mm long excluding spines) than those of *C. echinatus* (Wunderlin, 1998).
References: Chase, 1920; Small, 1933a; Hitchcock & Chase, 1950; DeLisle, 1963; Long & Lakela, 1976; Hall, 1978; Correll & Correll, 1982; Wunderlin, 1998.
Synonyms: *C. viridis* Spreng.

Historical Context in South Florida: Ferdinand Rugel first collected slimbristle sandbur in 1846 on the island of Key West (120, US). It was not vouchered there again until 1954, when Ellsworth P. Killip collected it in a lawn along South Street (44292, US). This appears to be the last collection of slimbristle sandbur within its natural range in South Florida. Several other collections are known from the Florida Keys. Charles L. Pollard made one collection in 1898 on Upper Matecumbe Key (145, NY, US). In 1902, Albert S. Hitchcock made the first collection on Key Largo (Chase, 1920). Agnes Chase made another collection in 1907 near the village of Planter (3931, US). Chase's label stated "Erect or nearly in a hole in coral rock, cleared spot in brush land." Harold N. Moldenke collected it a third time on Key Largo in 1930 "in dry sandy soil at edge of hammock" (781, NY).

Olga Lakela collected one additional specimen in 1963, from a disturbed road edge in southern Miami-Dade County (26159, US). This appears to have been a short-lived, probably introduced population. Slimbristle sandbur has been reported for Biscayne National Park (Stalter et al., 1999), but there are no specimens to corroborate this report.

Comments: *Due to the fact that slimbristle sandbur is an introduced weed in the Old World and is mostly known from disturbed sites in South Florida, extreme caution should be exercised before proceeding with any reintroductions.*

Preliminary recommendations:

- Consider reintroduction to Key Largo at Crocodile Lake National Wildlife Refuge, Dagny Johnson Key Largo Hammocks Botanical State Park, and Dove Creek Hammocks**.**
- Review for listing by FDACS and FNAI.

Chasmanthium laxum (L.) Yates
Slender Woodoats

South Florida Status: Extirpated. Collected once in 1932 in Lee County.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Lee County.
South Florida Habitats: Unknown. Wunderlin (1998) reports it for stream banks and moist hammocks in Florida.
Protected Status: Not listed by any agency.
Identification: Godfrey & Wooten (1979) has an illustration.
References: Chapman, 1883; Small, 1933a; Hitchcock & Chase, 1950; Hall, 1978; Godfrey & Wooten, 1979; Wunderlin, 1998.
Synonyms: *Uniola gracilis* Michx.; *Uniola laxa* (L.) Britton et al.

Historical Context in South Florida: Walter M. Buswell collected slender woodoats a single time in Lee County in 1932 (s.n., US). No specific locality or habitat data were recorded.

Comments: *This is a temperate species at the southern end of its range, and it always may have been rare in South Florida*.

Preliminary recommendations:

- Continue surveys in Lee County**.**

Chloris elata Desv.
Tall Windmill Grass

South Florida Status: Extirpated. Last reported in 1979 on North Key Largo.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the West Indies, and South America.
South Florida Distribution: Miami-Dade County and the Monroe County Keys.
South Florida Habitats: Open, dry sand, pine rocklands, and openings in hammocks. Presumably the specific habitat in Miami-Dade was sandy pine rocklands, while the habitat in the Florida Keys was dry, open coastal berms, openings in hammocks, and pine rocklands on Big Pine Key (Swallen 5210, US).
Protection Status: Not listed by any agency.
Identification: Hitchcock & Chase (1950) has an illustration. There are now five species of exotic *Chloris* in Florida including some in Miami-Dade and Monroe counties, so the best key to use is Wunderlin (1998).
References: Small, 1933a; Hitchcock & Chase, 1950; Anderson, 1974; Wunderlin, 1998.
Synonyms: *C. dandyana* C. Adams; *C. polydactyla* Sw.

Historical Context in South Florida: Joseph H. Simpson first collected tall windmill grass in 1892 in "Southern Florida" (s.n., NY). Charles I. Pollard and others collected it in 1898 in the village of Newport on Key Largo (152, NY), in the vicinity of what is now John Pennekamp Coral Reef State Park. It was collected several more times on Key Largo between 1909 (Small & Carter 2883, NY) and 1941 (Dean 61009, UC). It was collected last in 1978 by George N. Avery at a disturbed site on the east end of New Card Sound Road on North Key Largo (1936, FLAS), within what is now Dagny Johnson Key Largo Hammocks Botanical State Park. Ten to twelve plants were observed in July 1978 and again in July 1979. No plants have been observed there since that time. Gann and Florida Park Service biologist Janice A. Duquesnel surveyed this area in July 2000, but failed to locate any plants.

A number of one time collections are known from other sites in the Florida Keys: Upper Matecumbe Key (Chase 3914, US), Vaca Key (Swallen 5189, US), Plantation Key Swallen 5210, US), Long Key (Silveus 5329, TEX), and Big Pine Key (Swallen 14461, US). While some of these collections were from roadsides and disturbed areas, others were from undisturbed natural areas. These collections were made from 1907 through 1954.

In 1903, Albert S. Hitchcock made a collection in Miami (186, NY, US), presumably in the sandy pinelands near the Miami River. Several other collections were made in that area in the early 1900s: Tracy 8857, NY; Hitchcock 724, US; and Chase 3864, US. F.W. Hunnewell made the last collection on the mainland in 1921 along a roadside in Miami (7491, NY).

Comments: *Collections of tall windmill grass appear to be mostly from disturbed areas, so considerable care should be exercised before any reintroductions are attempted.*

Preliminary recommendations:

- Consider reintroduction to Dagny Johnson Key Largo Hammocks Botanical State Park.
- Consider introduction to John Pennekamp Coral Reef State Park.
- Consider restoring pine rocklands near the Miami River and reintroducing tall windmill grass.
- Review for listing by FDACS and FNAI.

Cissampelos pareira L.
Pareira Brava

South Florida Status: Extirpated. The last plants were accidentally destroyed around 1993 at Matheson Hammock Park.
Taxonomy: Dicotyledon; Menispermaceae.
Habit: Woody vine.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, South America, Africa, and Australasia.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS.
Identification: Long & Lakela (1976) has an illustration.

References: Small, 1933a; Long & Lakela, 1976; Correll & Correll, 1982; Nelson, 1996; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: E.C. Marquad first collected pareira brava in 1929 in Matheson Hammock (s.n., NY), in or near what is now Matheson Hammock Park. It was subsequently collected there by B. Christman in 1964 (20, FLAS) and by George N. Avery in 1967 (s.n., FLAS). Avery also found plants in the adjacent Hammock Lakes Subdivision along S.W. 93rd Street in 1967 and 1969 (Avery's Notes), which he vouchered in 1969 (299, FTG). Apparently it remained extant at Matheson Hammock Park until after Hurricane Andrew in 1992, when a restoration crew destroyed it after it was mistaken for an exotic vine (R.L. Hammer, personal communication, 17 August 2000). It was last observed in 1993 by a research team from the University of Miami (C. Horvitz, personal communication, 16 August 2001). John Kunkel Small and Charles A. Mosier also collected it in "Snapper Creek Hammock" in 1929 (s.n., NY), as did Charles Torrey Simpson in 1930 (s.n., US). In 1936, Walter M. Buswell made a collection from "Miami" (s.n., FTG). All of these collections probably refer to Matheson Hammock.

As far as we are aware, no germplasm from South Florida plants was conserved.

Preliminary recommendations:
- Consider reintroduction to Matheson Hammock Park.
- Review for listing by FNAI.

Coelorachis cylindrica (Michx.) Nash
Carolina Jointtail Grass

South Florida Status: Extirpated. Collected once in 1877 in Miami.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as rare in Florida in the central panhandle and the peninsula.

South Florida Distribution: Miami-Dade County.
South Florida Habitats: Uncertain, but probably sandy pine rocklands or moist hammocks. Wunderlin (1998) lists its habitat in Florida as open hammocks, but Godfrey and Wooten (1979) list moist pine flatwoods, prairie, and pond margins. David W. Hall reports that he observes this species most often in sandhills with hardwood trees (personal communication, 9 March 2001), a habitat relatively similar to sandy pine rocklands interspersed with live oak (*Quercus virginiana*).
Protection Status: Not listed by any agency.
Aids to Identifications: Tobe et al. (1998) has an illustration.
References: Chapman, 1883; Small, 1933a; Hitchcock & Chase, 1950; Hall, 1978; Godfrey & Wooten, 1979; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: *Manisuris campestris* (Nutt.) Hitchc.; *Manisuris cylindrica* (Michx.) Kuntze; *Rottboellia cylindrica* (Michx.) Torr.

Historical Context in South Florida: Abram P. Garber collected Carolina jointtail grass once in 1877 in Miami (s.n., FLAS), probably near downtown Miami near the Miami River. No specific habitat data was given, but it was probably growing in sandy pine rocklands near the Miami River, perhaps in an area interspersed with live oak (*Quercus virginiana*).

Comments: *This species is rare in Florida and is known from a total of eight counties including Miami-Dade. The closest stations to Miami-Dade are Manatee and Pasco counties (Wunderlin & Hansen, 2001).*

Preliminary recommendations:
- Consider restoring pine rocklands near the Miami River and reintroducing Carolina jointtail grass.
- Review for listing by FDACS and FNAI.

Cordia bahamensis Urb.
Bahama Manjack

South Florida Status: Extirpated. Collected once in 1979 in a pineland in Florida City.
Taxonomy: Dicotyledon; Boraginaceae.
Habit: Shrub.

Distribution: Native to South Florida, the Bahamas, Cuba, and Anegada.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Pine rocklands.
Protection Status: Not listed by any agency.
Identification: Correll & Correll (1982) has an illustration.
References: Avery, 1979a; Correll & Correll, 1982; Nelson, 1996; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: A.H. Feher discovered Bahama manjack in 1979 in a pineland near the intersection of S.W. 8th Avenue and 1st Street in Florida City (Avery's Notes, 10 March 1979). George N. Avery vouchered it that same day (2083, FLAS, FTG, USF). A single clump of around 15 stems was recorded. Roger L. Hammer and Avery observed it several more times during 1979 (R.L. Hammer, personal communication, 17 August 2000). Hammer searched for Bahama manjack in 1993 or 1994 but could not find any plants. A portion of the site is now Florida City Pineland, a conservation area managed by Miami-Dade County. Another portion of the site was developed as an office complex for a State of Florida governmental agency. Gann surveyed this area in 2001, but no plants were seen. It seems likely that Bahama manjack was destroyed by the construction of the office buildings.

Comments: *No germplasm of the South Florida plant was preserved, although Bahamian germplasm is maintained at Fairchild Tropical Garden (M. Collins, Fairchild Tropical Garden, personal communication, 17 November 2000). Correll & Correll (1982) states that this is an extremely variable plant with several different forms in the Bahamas alone. If a reintroduction is attempted, care should be taken to choose germplasm from plants that most closely resemble the Florida City plants.*

Preliminary recommendations:
- Consider reintroduction to Florida City Pineland.
- Review for listing by FDACS and FNAI.

Cranichis muscosa Sw.
Cypressknee Helmet Orchid

South Florida Status: Extirpated. Last collected in 1905 at Hattie Bauer Hammock.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the West Indies, southern Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County and, presumably, Collier County (Luer, 1972).
South Florida Habitats: Hammocks and cypress swamps.
Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Luer (1972) has both illustrations and color photos.
References: Ames, 1904a; Small, 1933a; Luer, 1972; Long & Lakela, 1976; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: J.E. Layne first collected cypressknee helmet orchid in 1903 (2803, AMES). The plant was growing on a cypress knee, and was probably collected in or near the Fakahatchee Strand. Alvah A. Eaton made another collection in 1903 from Hattie Bauer Hammock in Miami-Dade County (s.n., AMES), most of which is now a Miami-Dade County conservation area. Eaton made another collection in Hattie Bauer Hammock in 1905 (1212, AMES). Although most of Hattie Bauer Hammock is now preserved, a portion of the hammock was cleared for a housing development several decades ago.

A recent collection said to have been from Everglades National Park is treated as a false record, as it cannot be corroborated.

Preliminary recommendations:

- Consider reintroduction to Hattie Bauer Hammock.
- Consider introduction to Fakahatchee Strand Preserve State Park.

Cuscuta obtusiflora Kunth var. *glandulosa* Engelm.
Glandular Dodder

South Florida Status: Extirpated. Last collected in 1926 near Fort Myers.
Taxonomy: Dicotyledon; Convolvulaceae.
Habit: Annual parasitic vine.
Distribution: Native to the southern United States, the West Indies, and Mexico. Wunderlin (1998) reports it as occasional in Florida in the central and southern peninsula.
South Florida Distribution: Lee County. Also collected on *Acalypha wilkesiana* in a garden in Charlotte County in 1968 (E. Lambke s.n., FLAS).
South Florida Habitats: Pinelands, hammocks, and open disturbed sites.
Protection Status: Not listed by any agency.
Identification: Austin (1980) has an illustration.
References: Chapman, 1883; Yuncker, 1932; Small, 1933a; Austin, 1980; Godfrey & Wooten, 1981; Wunderlin, 1998.
Synonyms: *C. glandulosa* (Engelm.) Small.

Historical Context in South Florida: Albert S. Hitchcock first reported glandular dodder in 1902 from Fort Myers (Hitchcock, 1902). John Kunkel Small and Charles A. Mosier made a collection in a pineland near Fort Myers in 1926 (s.n., USF).

Comments: *Frequently parasitic on* Polygonum*, although found on other hosts as well (Austin, 1980).*

Preliminary recommendations:
- Continue surveys in the vicinity of Fort Myers.

Dennstaedtia bipinnata (Cav.) Maxon
Bipinnate Cuplet Fern

South Florida Status: Extirpated. Last collected in 1947 near Belle Glade.
Taxonomy: Pteridophyte; Dennstaedtiaceae.
Habit: Perennial terrestrial herb.

Distribution: Native to peninsular Florida, the West Indies, Mexico, Central America, and South America. In peninsular Florida, native only to Palm Beach and Seminole counties. Erroneously reported from Duval County by Nelson (2000) and Wunderlin and Hansen (2000).
South Florida Distribution: Palm Beach County.
South Florida Habitats: Moist to wet hammocks.
Protection Status: Listed as endangered by FDACS and as critically imperiled by FNAI.
Identification: Chafin (2000) has illustrations and a color photo; Nelson (2000) has a color photo; Wunderlin & Hansen (2000) has an illustration; the IRC Website has a color photo.
References: Small, 1931b; Small, 1938; Tryon, 1960; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Chafin, 2000; Coile, 2000; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *D. adiantoides* T. Moore.

Historical Context in South Florida: John Kunkel Small, Charles A. Mosier, and P.A. Matthaus discovered bipinnate cuplet fern in 1926 in a "Hammock near Indian Mound, Belle Glade" (s.n., NY). E.P. Kearsley collected it one other time in a hammock near Lake Okeechobee in 1947 (s.n., NY). The apparent cause of extirpation was habitat destruction, although collecting or hydrological modifications may have contributed to its demise.

Comments: *Bipinnate cuplet fern is still reported for Seminole County in Central Florida (G. Nelson, personal communication, 17 August 2000). Wunderlin and Hansen (2000) suggest that the Palm Beach County population is probably native while the Seminole population is probably not. If this is true, then the only native population of bipinnate cuplet fern in the continental United States is extirpated.*

Preliminary recommendations:

- Consider restoring hammocks in the vicinity of Belle Glade in Palm Beach County and reintroducing bipinnate cuplet fern.

Eleocharis microcarpa Torr.
Smallfruit Spikerush

South Florida Status: Extirpated. Last collected in 1917 in the vicinity of Fort Myers.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Annual terrestrial herb.
Distribution: Native to the eastern United States, the West Indies, and South America. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Lee County.
South Florida Habitats: Cypress swamps.
Protected Status: Not listed by any agency.
Identification: Godfrey & Wooten (1979) has an illustration.
References: Chapman, 1883; Small, 1933a; Svenson, 1937; Ward & Leigh, 1975; Godfrey & Wooten, 1979; Wunderlin, 1998, Liogier & Martorell, 2000.
Synonyms: *E. torreyana* Boeck.

Historical Context in South Florida: Paul C. Standley collected smallfruit spikerush on two occasions in "Cypress swamps" in the vicinity of Fort Myers, perhaps near what is now Six Mile Cypress Slough Preserve. The first collection was made in 1916 (12553, US) and the second in 1917 (14890, US). It was reported for Sanibel Island (Hitchcock, 1902), but no herbarium specimens have been found to corroborate this report.

Preliminary recommendations:
- Consider introduction to Six Mile Cypress Slough Preserve near Fort Myers.

Eleocharis rostellata (Torr.) Torr.
Beaked Spikerush

South Florida Status: Extirpated. Collected once in 1877 in Miami.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Perennial terrestrial herb.

Distribution: Native to North America and tropical America. Wunderlin (1998) reports it as rare in Florida in Miami-Dade, Taylor, and Wakulla counties. Wunderlin & Hansen (2001) records it for Miami-Dade, Santa Rosa, Taylor, and Wakulla counties.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Brackish or saline marshes.
Protection Status: Listed as endangered by FDACS and critically imperiled by FNAI.
Identification: Godfrey & Wooten (1979) has an illustration. This is a large spikerush with culms to 80 cm long and a viviparous habit.
References: Chapman, 1883; Small, 1933a; Ward & Leigh, 1975; Ward, 1978; Godfrey & Wooten, 1979; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: Abram P. Garber made a single collection of beaked spikerush in Miami in 1877 (1329, FLAS, NY), presumably from a coastal marsh near the mouth of the Miami River.

Comments: *Most of the historical habitat for beaked spikerush has been destroyed, and it may not be possible to reintroduce this species to South Florida.*

Preliminary recommendations:
- Consider restoring coastal marshes along the Miami River and reintroducing beaked spikerush.

Epidendrum blancheanum Urb.
Acuña's Star Orchid

South Florida Status: Extirpated. Last collected in 1974 in the Fakahatchee Strand.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, Cuba, Mexico, and Central America.
South Florida Distribution: Collier County.

South Florida Habitats: Strand swamps; epiphytic on pop ash (*Fraxinus caroliniana*) and other hardwoods.
Protection Status: Listed as endangered by FDACS and as historical by FNAI.
Identification: Luer (1972) has both illustrations and color photos.
References: Hawkes, 1963; Luer, 1972; Long & Lakela, 1976; Wunderlin, 1998; Coile, 2000.
Synonyms: *E. acuñae* Dressler; *E. ramosum* Jacq., misapplied.

Historical Context in South Florida: Raleigh Burney discovered Acuña's star orchid in 1962 in the Fakahatchee Strand (Hawkes, 1963; Luer, 1972), in what is now Fakahatchee Strand Preserve State Park. According to Luer, only a few dozen plants were discovered within a very small area of the swamp. Ruben P. Sauleda last vouchered it in 1974 (942, USF). According to Sauleda's label, the plant was dead when found, following the death of the host plant which had fallen into the water. Numerous botanists have searched for more plants to no avail. It is almost certain that collecting contributed to its demise.

Preliminary recommendations:
- Consider reintroduction to Fakahatchee Strand Preserve State Park.
- Review FNAI rank.

Glandularia tampensis (Nash) Small
Tampa Mock Vervain

South Florida Status: Extirpated. Last collected in 1957 northeast of Fort Myers.
Taxonomy: Dicotyledon; Verbenaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to peninsular Florida. Wunderlin (1998) reports it as occasional in Florida in the central peninsula.
South Florida Distribution: Lee County.
South Florida Habitats: Wet hammocks and cypress swamps.
Protection Status: Listed as endangered by FDACS and as critically imperiled by FNAI.
Identification: Chafin (2000) has illustrations and a photo.

References: Small, 1933a; Long & Lakela, 1976; Taylor, 1992; Wunderlin, 1998; Chafin, 2000; Coile, 2000.
Synonyms: *Verbena tampensis* Nash.

Historical Context in South Florida: Paul C. Standley first collected Tampa mock vervain in 1927 at Pondilla in Lee County (52577, US), an uncertain locality. John Kunkel Small collected it next in 1928 in Punta Rassa, which is located southwest of Fort Myers (s.n., FLAS, FSU, NY, USF). C.L. Dean collected it at three localities, from 1938 to 1941, between 6 and 13 ½ miles northeast of Fort Myers (58711, NY; 58795, NY; 60759, NY), probably in forested wetlands along the Caloosahatchee River. P.O. Schallert collected it near Fort Myers in 1947 (1463, FLAS) and Robert Kral collected it about 10 miles northeast of Fort Myers in 1957 (3923, FSU). One or more of these collections may have been made in or near what is now Caloosahatchee Regional Park.

Preliminary recommendations:

- Consider introduction to Caloosahatchee Regional Park.
- Consider restoring floodplain forests and associated habitats along the Caloosahatchee River and reintroducing Tampa mock vervain.
- Review for listing by USFWS.

Hypolepis repens (L.) C. Presl.
Creeping Bramble Fern

South Florida Status: Extirpated. Collected once in 1964 on Ramrod Key in Monroe County.
Taxonomy: Pteridophyte; Dennstaedtiaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to peninsular Florida, the West Indies, Mexico, Central America, and South America. Wunderlin (1998) reports it as occasional in peninsular Florida.
South Florida Distribution: Monroe County Keys. Reported in error for Miami-Dade County by Lakela & Long (1976).
South Florida Habitats: Limestone sinkholes.
Protection Status: Not listed by any agency.
Identification: Tobe et al. (1998) has color photos and an illustration; Nelson (2000) has color photos; Wunderlin & Hansen (2000) has an illustration; the IRC Website has a color photo.

References: Small, 1931b; Small, 1938; Flora of North America Editorial Committee, 1993; Lakela & Long, 1976; Long & Lakela, 1976; Wunderlin, 1998; Tobe et al., 1998; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: None.

Historical Context in South Florida: Derek Burch and George N. Avery collected creeping bramble fern once in 1964 in a shallow sinkhole on Ramrod Key (558, FLAS). This collection appears to be from within what is now Ramrod Hammocks, Florida Keys Wildlife and Environmental Area. Bradley and Woodmansee surveyed this site in 2000, but no plants were found.

Comments: *There is some confusion as to the exact habitat of creeping bramble fern on Ramrod Key. The herbarium specimen says "Frequent at edge of shallow sinkhole, hammock…" but Avery's notes state that the plants were found in a "pineland area."*

Preliminary recommendations:
- Consider reintroduction to Ramrod Hammocks, Florida Keys Wildlife and Environmental Area.

Leersia monandra Sw.
Bunch Cutgrass

South Florida Status: Extirpated. Last collected in 1903 at Buena Vista, just north of present-day downtown Miami.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to peninsular Florida, the West Indies, Texas, and Mexico. Wunderlin (1998) reports it as rare in Florida in Citrus and Miami-Dade counties.
South Florida Distribution: Miami-Dade and Monroe counties.
South Florida Habitats: Shell mounds, open disturbed sites, and presumably, sandy pine rocklands.
Protection Status: Not listed by any agency.
Identification: Hitchcock & Chase (1950) has an illustration.
References: Chapman, 1883; Small, 1933a; Hitchcock & Chase, 1950; Pyrah, 1969; Long & Lakela, 1976; Hall, 1978; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: *Homalocenchrus monandrus* (Sw.) Kuntze.

Historical Context in South Florida: John Loomis Blodgett first collected bunch cutgrass between 1838 and 1953 on the island of Key West (s.n., NY). Alan H. Curtis made the next collection in 1882 in a cultivated field on Key Largo (3359, F, MO, NY, US). In 1903, Alvah A. Eaton made the last collection in the Florida Keys in the village of Newport on Key Largo (433, F), in the vicinity of what is now John Pennekamp Coral Reef State Park.

In 1891, Joseph H. Simpson made a collection on Lostmans Key (202, US), a shell mound at the mouth of the Lostmans River in what is now Everglades National Park. It has not been reported from this area or from Everglades National Park since that time (cf. Reimus, 1999). Eaton made the last collection in 1903 at Buena Vista (453, US), which was located just north of present day downtown Miami. Bunch cutgrass was presumably collected in sandy pine rocklands.

Comments: *The Citrus County specimen was collected in 1898 by R. Combs at Homosassa (981, NY). This species is apparently extirpated in Florida. Bunch cutgrass flowers in the fall, when surveys should be conducted.*

Preliminary recommendations:

- Consider introduction to John Pennekamp Coral Reef State Park.
- Consider introduction to Little Hamaca Park in Key West.
- Consider restoring rockland hammocks on Key West and reintroducing bunch cutgrass.
- Consider restoring sandy pine rocklands near the Miami River and reintroducing bunch cutgrass.
- Review for listing by FDACS and FNAI.

Liatris graminifolia (Walter) Willd.
Grassleaf Gayfeather

South Florida Status: Extirpated. Last collected in 1961 in Punta Gorda.
Taxonomy: Dicotyledon; Asteraceae.
Habit: Perennial terrestrial herb.

Distribution: Native to the southeastern United States. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Lee and Charlotte counties.
South Florida Habitats: Presumably flatwoods.
Protection Status: Not listed by any agency.
Identification: There are fourteen species of *Liatris* in Florida. Wunderlin (1998) has a key.
References: Chapman, 1883; Small, 1933a; Cronquist, 1980; Wunderlin, 1998.
Synonyms: *Laciniaria graminifolia* (Walter) Kuntze.

Historical Context in South Florida: Walter M. Buswell first collected grassleaf gayfeather in 1933 in Lee County at an unstated locality (s.n., USF). Olga Lakela collected it once in Charlotte County in 1961 within the city of Punta Gorda (24684, USF). Gann and Tiffany Troxler Gann searched for this station in 2000, but it appeared to have been destroyed by development. Grassleaf gayfeather has been reported for Big Cypress National Preserve (Black & Black, 1980), but we have been unable to verify this report.

Comments: *Although this is a temperate species at the southern end of its range, there is a cluster of collections in Sarasota, Charlotte, and Lee counties that indicate that this species was a persistent part of the South Florida flora. Wunderlin (1998) describes the habitat of grassleaf gayfeather as flatwoods and open hammocks. In the central peninsula it has only been collected in Hillsborough, Pinellas, Sarasota and Sumter counties, so it is not particularly common there. Some work would have to be done to determine its exact habitat requirements, if a reintroduction were to be considered.*

Preliminary recommendations:
- Continue surveys in Charlotte and Lee counties.

Lipocarpha maculata (Michx.) Torr.
American Halfchaff Sedge

South Florida Status: Extirpated. Collected once in 1965 near Immokalee.

Taxonomy: Monocotyledon; Cyperaceae.
Habit: Annual terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Collier County.
South Florida Habitats: Moist soils.
Protection Status: Not listed by any agency.
Identification: Godfrey & Wooten (1979) has an illustration; Tobe et al. (1998) has a color photo and illustrations.
References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Godfrey & Wooten, 1979; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Olga Lakela collected American halfchaff sedge once in 1965 in a "swampy ditch and partially disturbed margin of pineland" about two miles south of the intersection of SR 82 and SR 29, north of Immokalee in Collier County (29198, FLAS, USF). It was reported for Sanibel Island (Herwitz & Wunderlin, 1990), but this report was probably in error (R.P. Wunderlin, personal communication, 7 September 2001).

Comments: *This is a temperate species at the southern end of its range, and it may have always been rare in South Florida. It is also possible that this station represents an introduced waif population.*

Preliminary recommendations:
- Continue surveys in the Immokalee area.

Macradenia lutescens R. Br.
Longgland Orchid

South Florida Status: Extirpated. Last reported in 1966 in Everglades National Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, and northern South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.

Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Luer (1972) has both illustrations and color photos.
References: Small, 1933a; Correll, 1950; Luer, 1972; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: Alvah A. Eaton first collected longgland orchid in 1903 at Royal Palm Hammock (s.n., NY), in what is now Everglades National Park (s.n., NY). John Kunkel Small also collected it in Royal Palm Hammock in 1916 (7394, FLAS, NY). Small made another collection of longgland orchid from an unnamed hammock on Long Pine Key in 1916. Plants at Royal Palm Hammock were apparently observed by Frank C. Craighead, who reported to the Chief Ranger of Everglades National Park that the last plants at Royal Palm Hammock had been poached by 1955 (Craighead memorandum of November 18, 1966).

Longgland orchid was not collected again until February 1959 when Craighead rediscovered it in Osteen Hammock on Long Pine Key (s.n., FTG). Forty-two plants were counted (Craighead memorandum of November 18, 1966). In April of that year, Craighead translocated several individuals of longgland orchid and spider orchid (see *Brassia caudata* treatment in this chapter) to three hammocks on Long Pine Key: Deer Hammock, Turkey Hammock, and Winkley Hammock (Botanical Notes of Frank C. Craighead). He made another voucher at Osteen Hammock in 1961 (s.n., FTG). By 1964, each of the four translocated populations was down to one individual and two plants remained in Osteen Hammock. The two plants in Osteen remained when Craighead surveyed the site in 1966. It is not entirely clear when the last plants disappeared. Both Chuck E. Hilsenbeck and O.L. "Sonny" Bass reported to George N. Avery that they had seen plants in Osteen Hammock (Avery's Notes, 26 October 1976, 24 January 1977), but when the three of them attempted to relocate this station in February 1977 it was without success (Avery's Notes, 3 February 1977). Avery was unable to locate plants again in October 1977 (Avery's Notes, 29 October 1977). According to

Craighead, poaching was a major factor in the demise of longgland orchid.

Craighead had also translocated six cultivated longgland orchids from unknown germplasm to Pine Island Hammock, but the last of these plants died following Hurricane Betsy in 1965. Reports of longgland orchid from other stations outside of Everglades National Park have been made, but none that we have been able to verify.

Preliminary recommendations:

- Consider reintroduction to the Long Pine Key/Paradise Key area of Everglades National Park.

Melochia tomentosa L.
Woolly Pyramidflower

South Florida Status: Extirpated. Last collected in 1943 south of Coral Gables.
Taxonomy: Dicotyledon; Sterculiaceae.
Habit: Shrub or sub-shrub.
Distribution: Native to peninsular Florida, the West Indies, Texas, Mexico, Central America, and South America. In Florida, woolly pyramidflower is only known from Miami-Dade and St. Lucie counties.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Pine rocklands and, perhaps, scrubby flatwoods.
Protection Status: Not listed by any agency.
Identification: There are four species of *Melochia* in Florida. *M. tomentosa* can be distinguished by having five winged fruits, and stems and leaves that are densely stellate pubescent.
References: Small, 1933a; Goldberg, 1967; Long & Lakela, 1976; Correll & Correll, 1982; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: *Moluchia tomentosa* (L.) Britton.

Historical Context in South Florida: John Kunkel Small first collected woolly pyramidflower in 1916 in a pineland at Buena Vista, just north of present day downtown Miami (7268, FLAS, NY). Small collected it again in 1931 in Coral Gables (s.n., NY).

Woolly pyramidflower was collected last in 1943 by Walter M. Buswell in a pine rockland three miles south of Coral Gables (s.n., FLAS), possibly in the area of Matheson Hammock and Fairchild Tropical Garden.

Comments: *The St. Lucie County record is based upon a collection by John Beckner in 1978 in a tropical hammock on dunes at the junction of SR 707 and SR 712, 5 miles south of Fort Pierce (1978, FLAS). This station needs to be surveyed. If these plants are gone, then woolly pyramidflower is apparently extirpated in Florida.*

Preliminary recommendations:

- Consider restoring pine rocklands in the Coral Gables area and reintroducing woolly pyramidflower.
- Consider restoring sandy pine rocklands near the Miami River and reintroducing woolly pyramidflower.
- Review for listing by FDACS and FNAI.

Nevrodium lanceolatum (L.) Fée
Ribbon Fern

South Florida Status: Extirpated. Last collected in 1960 on Key Largo.
Taxonomy: Pteridophyte; Polypodiaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, Mexico, and Central America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Mangrove swamps; epiphytic on mangrove trees.
Protection Status: Listed as endangered by FDACS and as critically imperiled by FNAI.
Identification: Nelson (2000) has a color photo; Wunderlin & Hansen (2000) has illustrations.
References: Chapman, 1883; Safford, 1912; Small, 1918a; Small, 1931b; Small, 1938; Lakela & Long, 1976; Long & Lakela, 1976; Correll & Correll, 1982; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *Paltonium lanceolatum* (L.) C. Presl.; *Taenitis lanceolata* (L.) Kaulf.

Historical Context in South Florida: Allan H. Curtiss discovered ribbon fern on the edge of Old Rhodes Key along Caesar's Creek in 1881 (s.n., GH, NY, US), in what is now Biscayne National Park. A single plant was seen (Curtiss, 1904). John Kunkel Small (1918a, 1931, 1938) reported it for Elliott Key, but we have been unable to verify this station. There is no indication that Small observed or collected ribbon fern on Elliott Key.

Apparently a Mr. Pendergrast discovered ribbon fern on Key Largo in 1960 and took it to Fred Fuchs, Jr., a local orchid grower, for identification (Delchamps, 1962; Avery's Notes, 2 February 1973). Later that year, C. Eugene Delchamps and Thomas Darling, Jr. observed ribbon fern on Key Largo (Darling, 1962; Delchamps, 1962), most likely in what is now Crocodile Lake National Wildlife Refuge. According to both authors, the plant or plants were sterile. Delchamps maintained that there was more than one plant, while Darling was very specific that only one individual was present. Delchamps collected what was apparently the last specimen from a red mangrove (*Rhizophora mangle*) tree and took it home for cultivation and vouchering (s.n., FLAS, US). Don Keller reported seeing one large plant around 1960 on North Key Largo, but this was gone by 1970 (personal communication, 8 February 2001). Subsequent surveys by Keller on North Key Largo, Old Rhodes Key, and Totten Key failed to yield any plants. Ribbon fern was apparently extirpated, at least in part, from collecting by botanists.

Preliminary recommendations:

- Consider reintroduction to Old Rhodes Key in Biscayne National Park.
- Consider introduction to North Key Largo in Crocodile Lake National Wildlife Refuge.
- Review FNAI rank.

Oncidium carthagenense (Jacq.) Sw.
Coot Bay Dancinglady Orchid

South Florida Status: Extirpated. Collected once in 1916 in Everglades National Park.
Taxonomy: Monocotyledon; Orchidaceae.

Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Monroe County mainland.
South Florida Habitats: Coastal berms.
Protection Status: Not listed by any agency.
Identification: There are several species of *Oncidium* native to South Florida. Luer (1972) has both illustrations and color photos.
References: Small, 1933a; Correll, 1950; Luer, 1972; Long & Lakela, 1976; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: John Kunkel Small collected Coot Bay dancinglady orchid in 1916 in a hammock south of Coot Bay (s.n., NY), in what is now Everglades National Park. It is unknown whether or not the whole plant was taken.

Comments: *Sauleda (1989) suggested that the Coot Bay specimen was a mislabeled specimen from cultivated plants. However, Luer (1972), Wunderlin (1998), and others consider Coot Bay dancinglady orchid as a historical part of the South Florida flora. This debate has precluded listing by FDACS and FNAI.*

Preliminary recommendations:
- Continue surveys in the Flamingo/Cape Sable area of Everglades National Park.

Peperomia alata Ruiz & Pavón
Winged Peperomia

South Florida Status: Extirpated. Last collected in 1939, probably in Fakahatchee Strand Preserve State Park. Last reported in 1977 from Fakahatchee Strand Preserve State Park.
Taxonomy: Dicotyledon; Piperaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, Central America, and South America.
South Florida Distribution: Collier County.
South Florida Habitats: Strand swamps.
Protection Status: Not listed by any agency.

Identification: Unlike other native and naturalized species of *Peperomia* in Florida, *P. alata* is minutely black glandular punctate (Wunderlin, 1998).
References: Craighead, 1963; Long & Lakela, 1976; Flora of North America Editorial Committee, 1997; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: *P. simplex* Ham., misapplied.

Historical Context in South Florida: "Phillips" apparently first collected winged peperomia in 1938 in the "Big Cypress" (43, FTG), although this and all other collections were probably from what is now Fakahatchee Strand Preserve State Park. It was subsequently collected in 1939 by W.C. & M.W. Muenscher (s.n., NY) and by Edward P. St. John (s.n., FLAS). Two other collections were made without dates, one by Walter M. Buswell (s.n., NY), and one by Roy O. Woodbury (s.n., FTG). These may have preceded the Phillips collection. Frank C. Craighead (1963) reported that the species (as *P. simplex*) was found in the Fakahatchee Strand by Fred Fuchs, Sr., but did not provide a date. More recent collections are unknown, but according to the Botanical Notes of George N. Avery (26 September 1977), it was found by Chuck McCartney in the Fakahatchee Strand in 1977. These plants were growing on a pond-apple (*Annona glabra*) tree. No voucher was collected, so we cannot be positive of the determination.

Preliminary recommendations:
- Consider reintroduction to Fakahatchee Strand Preserve State Park.
- Review for listing by FDACS and FNAI.

Peperomia magnoliifolia (Jacq.) A. Dietr.
Spoonleaf Peperomia

South Florida Status: Extirpated. Last collected in 1922 in Hattie Bauer Hammock.
Taxonomy: Dicotyledon; Piperaceae.
Habit: Perennial epiphytic or terrestrial herb.
Distribution: Native to South Florida, the West Indies, Bermuda, Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County.

South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS.
Identification: Long & Lakela (1976) has an illustration.
References: Chapman, 1883; Small, 1933a; Small, 1933b; Long & Lakela, 1976; Correll & Correll, 1982; Flora of North America Editorial Committee, 1997; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: *P. spathulifolia* Small; *Rhynchophorum spathulifolium* (Small) Small.

Historical Context in South Florida: Abram P. Garber first collected spoonleaf peperomia in 1877 in Miami (10344, NY), presumably in Brickell Hammock. Alvah A. Eaton collected it next in 1905 in Hattie Bauer Hammock (1218, FSU), most of which is now a Miami-Dade County Park. It was collected there again by John Kunkel Small and others in 1915 (6967, NY), and by Small in 1922 (10426, NY).

The Fennell family developed part of Hattie Bauer Hammock as the tourist attraction The Orchid Jungle. This is the portion of the hammock that has been preserved. Other parts of Hattie Bauer Hammock were destroyed for a housing development. It is uncertain which part of the hammock spoonleaf peperomia was in, and the exact cause of its extirpation.

Small (1926b) reported spoonleaf peperomia for Ross Hammock, but we have not been able to find any specimens to corroborate this report. This probably represents a misidentification of *P. obtusifolia*.

Preliminary recommendations:

- Consider reintroduction to Hattie Bauer Hammock.
- Consider reintroduction to Brickell Hammock in Alice Wainwright Park, Simpson Park, and Vizcaya Museum and Gardens.
- Review for listing by FNAI.

Phaseolus polystachios (L.) Britton et al.
var. ***sinuatus*** (Nutt. ex Torr. & A. Gray) Maréchal et al.
Thicket Bean

South Florida Status: Extirpated. Last collected in 1913 in Miami.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to the southeastern coastal plain. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Miami-Dade and Glades counties. The Glades County record may represent an introduced waif population.
South Florida Habitats: Pine rocklands.
Protection Status: Not listed by any agency.
Identification: In addition to *P. polystachios*, there are two exotic species of *Phaseolus* in Florida (*P. lunatus*, *P. vulgaris*). *P. polystachios* has a long, slender flexuous axis of the raceme, rather than a stout axis.
References: Chapman, 1883; Small, 1933a; Isely, 1990; Wunderlin, 1998.
Synonyms: *P. sinuatus* Nutt. ex Torr. & A. Gray.

Historical Context in South Florida: "Hyle" first collected thicket bean in the middle 1800s at Fort Dallas (s.n., NY), now the site of downtown Miami north of the Miami River, presumably in sandy pine rocklands. Abram P. Garber subsequently collected it in Miami in 1877 (s.n., FLAS, NY), as did J.T. Simpson in 1892 (517, NY). In 1901, John Kunkel Small and George V. Nash collected it in Coconut Grove (191, NY), and in 1913, John Kunkel Small and George K. Small made a collection in pinelands south of the Miami River (4821, NY).

W.F. Wight collected thicket bean once without a date on a roadside in Glades County (s.n., US). It is unclear if this collection represented a native population, or an introduced waif population.

Comments: *This is one of many species of sandhill associates that are disjunct in sand deposits in pine rocklands in Miami-Dade*

County. Although this habitat has been completely destroyed within the known range of thicket bean, it may be possible to restore this habitat and reintroduce thicket bean in the vicinity of Coconut Grove or Coral Gables.

Preliminary recommendations:

- Consider restoring pine rocklands near the Miami River and reintroducing thicket bean.
- Consider restoring pine rocklands in Coral Gables and reintroducing thicket bean.

Pleopeltis astrolepis (Liebm.) E. Fourn.
Star-scale Polypody

South Florida Status: Extirpated by 1986 (Nauman, 1986a). Last collected in 1978 in the Parkland area of northern Broward County.
Taxonomy: Pteridophyte; Polypodiaceae.
Habit: Perennial epiphyte.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Broward County.
South Florida Habitats: Pond-apple (*Annona glabra*) swamps.
Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Nelson (2000) has a black and white illustration; Wunderlin & Hansen (2000) has illustrations.
References: Nauman, 1986a, Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Coile, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *P. revoluta* (Spreng. ex Willd.) A.R. Sm.; *Polypodium astrolepis* Liebm.

Historical Context in South Florida: Daniel F. Austin discovered star-scale polypody in 1976 in the Parkland area of northern Broward County (Nauman & Austin 179, FLAS; Nauman, 1986a). P. Adams also collected it there in 1977 (s.n., FTG, US) as did Nauman in 1978 (341, NY). Nauman (1986b) considered it extirpated due to habitat destruction.

Comments: *The Palm Beach record reported in Wunderlin (1998) is an error caused by a mislabeled herbarium specimen (Adams s.n., FTG).*

Preliminary recommendations:

- Consider introducing star-scale polypody to Doris Davis Forman Wilderness Preserve in Parkland.

Polypodium triseriale Sw.
Angle-vein Fern

South Florida Status: Extirpated. Collected once in 1924 south of Naples.
Taxonomy: Pteridophyte; Polypodiaceae.
Habit: Perennial epiphyte.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Collier County.
South Florida Habitats: The original label states "Edge of swamp near Naples," but Small (1931, 1938) reports its habitat as "low hammocks."
Protection Status: Not listed by any agency.
Identification: Nelson (2000) has two color photos; Wunderlin & Hansen (2000) has two illustrations; the IRC Website has a color photo.
References: Small, 1931b; Small, 1938; Lakela & Long, 1976; Long & Lakela, 1976; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *Goniophlebium brasiliense* (Poir.) Farw.; *Goniophlebium triseriale* (Sw.) Wherry.

Historical Context in South Florida: John Kunkel Small, John B. DeWinkeler, and Charles A. Mosier collected angle-vein fern once in 1924 near Naples in southwestern Collier County (s.n., NY). It is unknown whether or not the entire plant was taken or if more than one plant was present.

It has been reported in error on a number of occasions for Everglades National Park (Avery & Loope, 1980b, 1983; Reimus, 1996, 1999).

Preliminary recommendations:

- Review for listing by FDACS and FNAI.

Prescotia oligantha (Sw.) Lindl.
Small Prescott Orchid

South Florida Status: Extirpated within historical range. Last plants translocated from the wild in 1960.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS and critically imperiled by FNAI.
Identification: Luer (1972) has illustrations and color photos.
References: Small, 1933a; Correll, 1950; Luer, 1972; Long & Lakela, 1976; Correll & Correll, 1982; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: Alvah A. Eaton discovered small prescott orchid in 1903 in Hattie Bauer Hammock near Homestead (Correll, 1950). He vouchered this population from cultivated material in 1905 (s.n., GH), and apparently collected specimens at Hattie Bauer Hammock that same year (1211, GH; 1240, GH, NY). In 1953, Ray Garrett collected it again in a hammock without precise locality data in Miami-Dade County (s.n., FLAS), but this was presumably from the same station. According to Luer (1972), the only known station of this orchid was slated for development in 1960, so a few plants were translocated to Everglades National Park. Although most of Hattie Bauer Hammock was preserved by the Fennell family as The Orchid Jungle, the southern portion of the hammock was destroyed for a housing development. It is presumed that the small prescott orchid station was in the southern portion of the hammock.

In 1989, Don Keller re-discovered small prescott orchid in a hammock on Long Pine Key (Hammer, 2001). Roger L. Hammer

and Keller photographed a flowering specimen that same year. About a half dozen plants were discovered by 1992, before Hurricane Andrew struck (Hammer, 2001). Neither Hammer nor Keller has revisited this site since the hurricane, so it is uncertain whether or not the population survived. Hammer spoke with Carlyle Luer about this station, but Luer was unable to recall the exact location where the plants were translocated. Nevertheless, with the evidence at hand, it appears that small prescott orchid was introduced into Everglades National Park and is extirpated within its historical range.

Comments: *The two South Florida specimens were collected in late February and early March, so surveys should be conducted within those two months.*

Preliminary recommendations:

- Survey Keller station to determine if plants are extant.
- Consider reintroduction to Hattie Bauer Hammock.
- Maintain Everglades National Park population until such time as a successful reintroduction can be accomplished.

Pteris quadriaurita Retz.
Striped Brake

South Florida Status: Extirpated. Collected once in 1925 near Belle Glade.
Taxonomy: Pteridophyte; Pteridaceae.
Habit: Perennial terrestrial herb.
Distribution: Native and widespread in both the New World and Old World tropics (Wunderlin & Hansen, 2000).
South Florida Distribution: Palm Beach County.
South Florida Habitats: Cypress swamps.
Protection Status: Not listed by any agency.
Identification: It is described in Wunderlin & Hansen (2000).
References: Wunderlin, 1998; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *Pteris plumula* Desv.

Historical Context in South Florida: Hugh O'Neill collected striped brake once in 1925 in a cypress swamp about two or three miles north of Belle Glade (810, US).

Comments: *Don Keller questions whether this was native (personal communication, 8 February 2001). Apparently, it is a widely cultivated species. However, there is no evidence that this species was cultivated in western Palm Beach County when it was discovered. We consider it an extirpated element of the native flora*.

Preliminary recommendations:
- Review for listing by FDACS and FNAI.

Quercus x***succulenta*** Small
Succulent Oak

South Florida Status: Extirpated. Collected once in 1903 in Fort Lauderdale.
Taxonomy: Dicotyledon; Fagaceae.
Habit: Tree.
Distribution: Endemic to South Florida.
South Florida Distribution: Broward County.
South Florida Habitats: Probably scrubby flatwoods.
Protection Status: Not listed by any agency.
Identification: No modern taxonomic keys including this hybrid are known. Small (1933) has a key of 42 species and hybrids of the southeastern United States.
References: Small, 1933a; Wunderlin, 1998.
Synonyms: *Q. geminata* Small var. *succulenta* (Small) Trel.

Historical Context in South Florida: John Kunkel Small and Joel J. Carter collected succulent oak once in 1903 in a pineland in Fort Lauderdale (1044, NY).

Comments: *This is a purported hybrid between* Q. geminata *and* Q. minima*, both of which are extant and growing in association with each other in South Florida.*

Preliminary recommendations:
- Continue surveys in areas where *Q. geminata* and *Q. minima* are sympatric.
- Review for listing by FNAI.

Ruellia ciliosa Pursh
Ciliate Wild Petunia

South Florida Status: Extirpated. Collected once in 1958 in Cape Coral.
Taxonomy: Dicotyledon; Arecaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to eastern North America. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Lee County.
South Florida Habitats: Flatwoods.
Protection Status: Not listed by any agency.
Identification: There are eight species of native and naturalized *Ruellia* in Florida. Wunderlin (1998) has a key.
References: Chapman, 1883; Small, 1933a; Wunderlin, 1998.
Synonyms: *R. caroliniensis* (J.F. Gmel.) Steud. subsp. *ciliosa* (Pursh) R.W. Long; *R. caroliniensis* subsp. *ciliosa* (Pursh) R.W. Long var. *cinerascens* (Fernald) Kartesz & Gandhi; *R. ciliosa* var. *cinerascens* Fernald.

Historical Context in South Florida: Robert Kral collected ciliate wild petunia once in 1958 ten miles west southwest of Salvista in Lee County (6543, USF). That area is now in the City of Cape Coral.

Comments: *This is a temperate species at the southern end of its range, and it may always have been rare in South Florida.*

Preliminary recommendations:
- Continue surveys in Lee County.

Salvia micrantha Vahl
Yucatan Sage

South Florida Status: Extirpated. Last collected in 1918 in southern Miami-Dade County.
Taxonomy: Dicotyledon; Lamiaceae.
Habit: Perennial terrestrial herb.

Distribution: Native to South Florida, the West Indies, and Central America.
South Florida Distribution: Collier, Miami-Dade, Monroe, and Palm Beach counties.
South Florida Habitats: Hammock edges and pinelands.
Protection Status: Listed as extirpated by FNAI.
Identification: There are ten species of *Salvia* in Florida. Wunderlin (1998) has a key.
References: Chapman, 1883; Small, 1933a; Epling, 1939; Long & Lakela, 1976; Avery & Loope, 1980a; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: *S. blodgettii* Chapm.; *S. micrantha* var. *blodgettii* (Chapm.) Epling.

Historical Context in South Florida: Yucatan sage was collected first on the island of Key West by John Loomis Blodgett between 1838 and 1853 (s.n., US). Since then, it was collected numerous times throughout the Florida Keys from Loggerhead Key (Lansing 2481, F), in what is now Dry Tortugas National Park, to No Name Key in the lower Keys (Simpson 142, F; Pollard et al. 116, NY, US), to Elliott Key in what is now Biscayne National Park (Small and Mosier 5745, NY). John Kunkel Small and Charles A. Mosier collected the last Keys specimens in 1915 on Elliott Key (5745, NY), Key West (5982, NY), and Big Pine Key (6030, NY).

In 1896, Albert S. Hitchcock made the first collection on the Miami-Dade County mainland at Coconut Grove (1514, F). Small and Joel J. Carter also collected Yucatan sage in Miami-Dade County in pinelands and hammocks between Coconut Grove and Homestead. Their first collection was in 1903 in a pineland between Coconut Grove and Cutler (553, NY). Small and Carter also made a collection in what appears to be Brickell Hammock in 1913. Small made the last collection in South Florida in 1918 in the Redland area (8635, NY).

Joseph H. Simpson made a single collection in 1891 on Chokoloskee Island in Collier County (244, US), while Albert S. Hitchcock made a collection in 1899 from the Town of Palm Beach (1513, F). Both of these collections were presumably made in hammocks.

Preliminary recommendations:

- Consider reintroduction to Dry Tortugas National Park and Biscayne National Park.
- Consider restoring rockland hammocks in the Brickell Hammock area and reintroducing Yucatan sage.
- Consider restoring shell mound hammocks on or near Chokoloskee Island and reintroducing Yucatan sage.
- Consider restoring maritime hammocks on the island of Palm Beach and reintroducing Yucatan sage.
- Review for listing by FDACS. Review FNAI rank.

Scirpus californicus (C.A. Mey.) Steud.
Giant Bulrush

South Florida Status: Extirpated. Last collected in 1965 near South Bay in Palm Beach County.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to southern North America and tropical America. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Martin and Palm Beach counties.
South Florida Habitats: Freshwater marshes.
Protection Status: Not listed by any agency.
Identification: Tobe et al. (1998) has an illustration and a photo.
References: Small, 1933a; Godfrey & Wooten, 1979; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: John H. Davis, Jr. first collected giant bulrush in 1951 in a marsh in Lake Okeechobee in Martin County (s.n.; FLAS). He made another collection a few days later in Lake Okeechobee in a marsh near Chancey Bay FLAS). R. Metzer made another collection in 1965 along U.S. 27 between South Bay and Bean City in Palm Beach County (191; USF). This collection was from a drainage ditch and may not represent a native population. However, it seems likely that giant bulrush was native to the southern rim of Lake Okeechobee in Palm Beach County.

Preliminary recommendations:

- Consider reintroduction along the southern rim of Lake Okeechobee.

Spiranthes amesiana Schltr.
Ames' Lady's-tresses

South Florida Status: Extirpated. Last collected in 1976 on the Miami Rock Ridge.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the Bahamas, and Nicaragua.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Pine rocklands.
Protection Status: Not listed by any agency.
Identification: Similar to *S. torta*, but the apex of the lip is acute rather than obtuse, the margin of the lip is lacerate rather than undulate and the basal calli have long trichomes rather than being glabrous (Wunderlin, 1998).
References: Wunderlin, 1998.
Synonyms: *S. torta*, misapplied.

Historical Context in South Florida: Alvah A. Eaton collected the type specimen of Ames' lady's tresses in 1904 in pine rocklands in Coconut Grove (921, GH). It also was collected in 1976 by George N. Avery northwest of Perrine (1254, FLAS), near what is now Tamiami Pineland Complex Addition. Avery found one plant, which was collected from a "low pineland." Avery originally determined this specimen to be *S. torta*, which *S. amesiana* closely resembles. Roger L. Hammer observed this plant with Avery in 1976 (personal communication, 13 March 2001).

Comments: *This species is very similar to* S. torta *and was described in 1920 from Eaton's Coconut Grove material. It has been overlooked as a member of our flora until recently. Hamer (1984) and Wunderlin (1998) are the first modern authors to report this species for Florida.*

Preliminary recommendations:

- Review all herbarium specimens labeled as *S. torta* to determine if any mislabeled specimens of *S. amesiana* exist.
- Survey Tamiami Pineland Complex Addition.
- Review for listing by FDACS and FNAI.

Spiranthes polyantha Rchb. f.
Florida Keys Lady's-tresses

South Florida Status: Extirpated. Last collected in 1978 on Sewell's Point.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to peninsular Florida, the West Indies, Mexico, and Central America. Wunderlin (1998) reports it as rare in Citrus, Martin, and Miami-Dade counties.
South Florida Distribution: Martin and Miami-Dade counties.
South Florida Habitats: Hammocks.
Protection Status: Listed as endangered by FDACS and as imperiled to critically imperiled by FNAI.
Identification: Luer (1972) has illustrations and color photos; Chafin (2000) has illustrations and a color photo.
References: Small, 1933a; Correll, 1950; Luer, 1972; Long & Lakela, 1976; Correll & Correll, 1982; Wunderlin, 1998; Chafin, 2000; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: *Mesadenus lucayanus* (Britton) Schltr.; *Mesadenus polyanthus* (Rchb. f.) Schltr.

Historical Context in South Florida: John Kunkel Small and Charles A. Mosier first collected Florida Keys lady's-tresses in 1915 on Elliott Key (5764, NY), in what is now Biscayne National Park. Bruce E. Tatje also collected it once in 1978 at Sewell's Point in Martin County (10517, FAU). Sewell's Point has been heavily developed since that time and it is unlikely that any plants remain. A recent collection said to have been from Everglades National Park is treated as a false record, as it cannot be corroborated.

Comments: *Florida Keys lady's-tresses flowers in the winter through spring, when surveys should be conducted.*

Preliminary recommendations:

- Review status of the Citrus County occurrence to determine if Florida Keys lady's-tresses is extant in Florida.
- Consider reintroduction to Elliott Key in Biscayne National Park.

Styrax americanus Lam.
American Snowbell

South Florida Status: Extirpated. Last collected in 1965 in Charlotte County.
Taxonomy: Dicotyledon; Styracaceae.
Habit: Shrub.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Charlotte County.
South Florida Habitats: Hammocks.
Protection Status: Not listed by any agency.
Identification: Nelson (1994) has an illustration; Nelson (1996) has an illustration and a photo; Tobe et al. (1998) has an illustration and photos.
References: Chapman, 1883; Small, 1933a; Ginsoulin, 1974; Little, 1978; Godfrey & Wooten, 1981; Godfrey, 1988; Nelson, 1994; Nelson, 1996; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: *S. americanus* Lam. var. *pulverulentus* (Michx.) Rehder; *S. pulverulentus* Michx.

Historical Context in South Florida: John Kunkel Small and others first collected American snowbell in 1923 in a hammock north of Punta Gorda (10910, FLAS). Olga Lakela collected it one other time in Charlotte County in 1965 without indicating the specific locality (28250, USF). It was growing in a hammock on a berm along a creek in white sand scrub.

Comments: *This is a temperate species at the southern end of its range, and it always may have been rare in South Florida.*

Preliminary recommendations:

- Continue surveys in Charlotte County.

Tectaria coriandrifolia (Sw.) Underw.
Hairy Halberd Fern

South Florida Status: Extirpated. Last collected in 1940 on the Miami Rock Ridge.
Taxonomy: Pteridophyte; Dryopteridaceae.
Habit: Perennial lithophytic herb.
Distribution: South Florida, and the West Indies in the Bahamas, Cuba, and Jamaica.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Limestone sinkholes in rockland hammocks.
Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Small (1931, 1938) have line drawings of all four native South Florida *Tectaria* species; Nelson (2000) has a black and white illustration.
References: Small, 1931b; Small, 1938; Lakela & Long, 1976; Long & Lakela, 1976; Correll & Correll, 1982; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Coile, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: None.

Historical Context in South Florida: Alvah A. Eaton first collected hairy halberd fern in 1903 in Hattie Bauer Hammock (563, NY; 683, US), most of which is now a Miami-Dade County conservation area. It was observed in three separate sinkholes (Eaton, 1906). It was collected again in Hattie Bauer Hammock in 1933 by Mary W. Diddell (s.n., FLAS) and in 1935 by Maurice Brown (s.n., FLAS). Brown observed thriving colonies in 1935 (Darling, 1961). The herbarium of Irving Washington contained the last specimen collected from Hattie Bauer Hammock in 1940, but the actual collector is unknown (s.n., US).

The Fennell family developed part of Hattie Bauer Hammock as the tourist attraction The Orchid Jungle. This is the portion of the hammock that has been preserved. Other parts of Hattie Bauer Hammock were destroyed for a housing development. It is uncertain which part of the hammock hairy halberd fern was in, and the exact cause of its extirpation.

Comments: *As with all lithophytic ferns, hairy halberd fern is dependent on a high freshwater table and sufficient moisture and humidity. The lowering of the freshwater table on the Miami Rock Ridge may make it difficult to reintroduce hairy halberd fern.*

Preliminary recommendations:

- Consider reintroduction to Hattie Bauer Hammock.
- Promote a higher regional freshwater table on the Miami Rock Ridge.

Tectaria x***amesiana*** A.A. Eaton
Ames' Halberd Fern

South Florida Status: Extirpated. Last collected in 1940 on the Miami Rock Ridge.
Taxonomy: Pteridophyte; Dryopteridaceae.
Habit: Perennial lithophytic herb.
Distribution: Apparently endemic to South Florida, although both parents occur in the Bahamas.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Limestone sinkholes in rockland hammocks.
Protection Status: Not listed by FDACS because it is a hybrid. Listed as extirpated by FNAI.
Identification: Ames' halberd fern has aborted spores and is intermediate between its two parents. Wunderlin & Hansen (2000) provides other important characters. Small (1931, 1938) have line drawings of all four native South Florida *Tectaria* taxa.
References: Small, 1931b; Small, 1938; Lakela & Long, 1976; Long & Lakela, 1976; Avery & Loope, 1980a; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *Aspidium amesianum* (A.A. Eaton) H. Christ ex C. Chr; *Aspidium trifoliatum* (L.) Sw. var. *amesianum* (A.A. Eaton) Clute.

Historical Context in South Florida: Alvah A. Eaton first discovered Ames' halberd fern in 1903 in a sinkhole in Hattie Bauer Hammock (s.n., NY), most of which is now a Miami-Dade County conservation area. As with *T. coriandrifolia*, it was

observed in three separate sinkholes (Eaton, 1906). Eaton collected it again in Hattie Bauer Hammock in 1905 (1239, NY), and Robert P. St. John collected it in 1934 (170V, NY). The herbarium of Irving Washington contained the last specimen collected from Hattie Bauer Hammock in 1940, but the actual collector is unknown (s.n., US).

The Fennell family developed part of Hattie Bauer Hammock as the tourist attraction The Orchid Jungle. This is the portion of the hammock that has been preserved. Other parts of Hattie Bauer Hammock were destroyed for a housing development. It is uncertain which part of the hammock hairy halberd fern was in, and the exact cause of its extirpation.

Comments: *This was a naturally occurring hybrid between* T. coriandrifolia *and* T. fimbriata*.* T. coriandrifolia *was also historically present in Hattie Bauer Hammock and is now extirpated in South Florida (see* T. coriandrifolia *account above). As with all lithophytic ferns, Ames' halberd fern is dependent on a high freshwater table and sufficient moisture and humidity. The lowering of the freshwater table on the Miami Rock Ridge may make it difficult to reintroduce hairy halberd fern.*

Preliminary recommendations:

- Consider reintroduction to Hattie Bauer Hammock, through the reintroduction of a viable population of *T. coriandrifolia*. *T. fimbriata* is extant there.
- Promote a higher regional freshwater table on the Miami Rock Ridge.

Trichomanes lineolatum (Bosch) Hook.
Lined Bristle Fern

South Florida Status: Extirpated. Last collected in 1954 on the Miami Rock Ridge.
Taxonomy: Pteridophyte; Hymenophyllaceae.
Habit: Perennial lithophytic herb.
Distribution: Native to South Florida, the West Indies, Central America, and South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Limestone sinkholes in rockland hammocks.

Protection Status: Listed as endangered by FDACS.
Identification: Small (1931) and Small (1938) both have line drawings of *T. lineolatum*, *T. krausii*, and *T. punctatum* subsp. *floridanum*, the three bristle ferns from the Miami Rock Ridge.
References: Small, 1931b; Small, 1938; Wessels Boer, 1962; Lakela & Long, 1976; Long & Lakela, 1976; Nauman, 1986b; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Chafin, 2000; Coile, 2000; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: None.

Historical Context in South Florida: John Kunkel Small and Joel J. Carter first collected lined bristle fern in 1906 in Ross Hammock (2379, FLAS, NY), part of which is now protected within Castellow Hammock Park. It was collected again in Castellow Hammock by Mary W. Diddell in 1932 (s.n., FLAS), and by Robert P. St. John in 1934 (s.n., FLAS). Small collected lined bristle fern once at Hattie Bauer Hammock in 1915 (s.n., FLAS). Mary W. Diddell made the last collection of line bristle fern at Meissner Hammock in 1954 (s.n., FLAS). The extirpation of lined bristle fern was most likely caused by the lowering of the freshwater table on the Miami Rock Ridge.

Comments: *As with all lithophytic ferns, lined bristle fern is dependent on a high freshwater table and sufficient moisture and humidity. The artificially low freshwater table on the Miami Rock Ridge may make it difficult to reintroduce lined bristle fern.*

Preliminary recommendations:

- Consider reintroductions to Hattie Bauer Hammock, Meissner Hammock, and Castellow Hammock Park.
- Promote a higher regional freshwater table on the Miami Rock Ridge.
- Review for listing by FNAI.

Tridens eragrostoides (Vasey & Scribn.) Nash
Love Grass Tridens

South Florida Status: Extirpated. Last collected in 1898 on Upper Matecumbe Key.
Taxonomy: Monocotyledon; Poaceae.

Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, Cuba, Texas, and Mexico.
South Florida Distribution: Monroe County Keys.
South Florida Habitats: "Dry ground among shrubs" (Hitchcock & Chase, 1950).
Protection Status: Not listed by any agency.
Identification: Hitchcock & Chase (1950) has an illustration.
References: Small, 1933a; Hitchcock & Chase, 1950; Long & Lakela, 1976; Hall, 1978; Wunderlin, 1998.
Synonyms: *Triodia eragrostoides* Vasey & Scribn.

Historical Context in South Florida: Love grass tridens was collected twice on the island of Key West, once by John Loomis Blodgett between 1838 and 1853 (s.n., NY), and once by Ferdinand Rugel in 1846 (117, USF). Charles L. Pollard and others collected it once on Upper Matecumbe Key in 1898 (147, US). No habitat data was provided for any of these collections.

Preliminary recommendations:

- Consider introduction to Little Hamaca Park in Key West.
- Consider restoring rockland hammocks on Key West and reintroducing love grass tridens.
- Review for listing by FDACS and FNAI.

Utricularia amethystina Salzm. ex A. St.-Hil. & Girard
Florida Purple Bladderwort

South Florida Status: Extirpated. Last collected in 1946 in either Fakahatchee Strand Preserve State Park or Florida Panther National Wildlife Refuge.
Taxonomy: Dicotyledon; Lentibulariaceae.
Habit: Annual or perennial terrestrial herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Collier and Lee counties.
South Florida Habitats: Flatwoods.
Protection Status: Not listed by any agency.
Identification: This is a terrestrial *Utricularia*, of which there are several species in Florida. Wunderlin (1998) has a key for the 14 species of *Utricularia* in Florida.

References: Small, 1933a; Godfrey & Wooten, 1981; Taylor, 1989; Wunderlin, 1998.
Synonyms: *Calpidisca standleyae* Barnhart ex Small.

Historical Context in South Florida: Jeanette P. Standley collected Florida purple bladderwort three times in 1916 in the vicinity of Fort Myers (9, NY; 10, NY; 11, NY). There is an additional collection by Standley for the Fort Myers area without a date (406, FSU), but this was also apparently collected in 1916, based upon other collections by Standley. Leonard J. Brass also collected it once in 1946 in Collier County, six miles west of Miles City (15873, FSU, US). This location could have been either in Fakahatchee Strand Preserve State Park or Florida Panther National Wildlife Refuge. Taylor (1989) attempted to find extant stations of Florida purple bladderwort to no avail.

Preliminary recommendations:

- Consider reintroduction to Fakahatchee Strand Preserve State Park and Florida Panther National Wildlife Refuge.
- Review for listing by FDACS and FNAI.

Part 3. The Historical Plants

Acacia macracantha Humb. & Bonpl. ex Willd.
Porknut

South Florida Status: Historical. Last reported in 1987 for the Florida Keys.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Small tree.
Distribution: Native to South Florida, the West Indies, and South America.
South Florida Distribution: Native to the Monroe County Keys. Escaped from cultivation on the South Florida mainland and in Manatee County in central Florida.
South Florida Habitats: Coastal berms and rockland hammocks.
Protection Status: Not listed by any agency.
Identification: Scurlock (1987) has color photos; Nelson (1994) has a color photo; Nelson (1996) has a photo.
References: Ward, 1967; Isely, 1975; Long & Lakela, 1976; Little, 1978; Correll & Correll, 1982; Scurlock, 1987; Isely, 1990; Nelson, 1994; Nelson, 1996; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: Ellsworth P. Killip first collected porknut in 1952 on Vaca Key (42009, NY). George N. Avery also observed it on Vaca Key in 1966 in a rockland hammock. Only one tree was seen and it was apparently the same tree that was vouchered by Killip (Avery's Notes, 6 March 1966). The Vaca Key tree was located just east of the Crane Point Hammock Museum, likely in what is now the museum property. Avery discovered porknut on Ramrod Key in 1963 (Avery's Notes, 13 March 1963; Ward, 1967). Avery noted 15 plants on a coastal berm on the southwest portion of the island. A portion of this berm is privately owned and a portion is owned by Monroe County, but this site is apparently not designated as a conservation area. Scurlock (1987) reported that porknut was extant in the Florida Keys, but we have been unable to verify this report. Both the Crane Point Hammock and Ramrod Key stations need to be surveyed.

Porknut has been cultivated in Florida and has sparingly naturalized in Miami-Dade (Isely, 1990) and Manatee counties (Wunderlin, 1998). As far as we are aware, germplasm of the South Florida plants was not conserved.

Preliminary recommendations:

- Survey Crane Point Hammock Museum Site and Ramrod Key Coastal Berm Site.
- If plants are found, map and monitor known populations.
- If no plants are found, assess appropriateness and study feasibility of reintroduction to Crane Point Hammock Museum Site and Ramrod Key Coastal Berm Site.
- Acquire privately owned portion of Ramrod Key Coastal Berm Site, designate Monroe County-owned portion of Ramrod Key Coastal Berm Site as a conservation area, and develop conservation agreement with Crane Point Hammock Museum to restore and manage a viable population of porknut.
- Review for listing by FDACS and FNAI.

Acacia tortuosa (L.) Willd.
Poponax

South Florida Status: Historical. Last reported in 1978 from Chokoloskee Island.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Small tree or shrub.
Distribution: Native to South Florida and the West Indies.
South Florida Distribution: Collier County.
South Florida Habitats: Hammocks on shell mounds.
Protection Status: Listed as endangered by FDACS.
Identification: Nelson (1994) has a photo; Nelson (1996) has a photo.
References: Ward, 1968a; Isely, 1975; Long & Lakela, 1976; Correll & Correll, 1982; Isely, 1990; Nelson, 1994; Nelson, 1996; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: L. Eleanor Scull first colleted poponax in 1937 on Chokoloskee Island, just south of Everglades City (s.n., FLAS). Olga Lakela collected it there again in 1966 (29817, USF; 30151, USF), as did Daniel B. Ward (6021,

USF). John Beckner also collected it there around the same period (Ward, 1968a). Daniel F. Austin and Daniel M. McJunkin (1978) last reported poponax as being present on Chokoloskee Island. The station observed by Austin and McJunkin was subsequently destroyed for a housing development (D.F. Austin, personal communication, 17 August 2000). A survey of the island in 1996 by Gann and Bradley failed to locate any plants.

Frank C. Craighead collected poponax on nearby Ferguson's Mound in 1960 (s.n., FLAS), in what is now Everglades National Park. He reported that the plants were "well established" on shell mounds. John Popenoe collected seeds from Ferguson's Mound in 1967 and accessioned them at Fairchild Tropical Garden. William T. Gillis vouchered this collection in 1971 (11181, FTG). Woodmansee conducted a survey of Ferguson's Mound in 2001, but failed to locate any plants. Germplasm of the Ferguson's Mound plants is maintained at Fairchild Tropical Garden (Accession # 67-330).

Preliminary recommendations:

- Continue surveys on Ferguson's Mound in Everglades National Park.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to Ferguson's Mound.
- Consider restoring shell mound hammocks in the Chokoloskee/Everglades City area and reintroducing poponax.
- Review for listing by FDACS.

Amaranthus floridanus (S. Watson) J.D. Sauer
Florida Amaranth

South Florida Status: Historical. Last collected in 1985 at Fort Myers Beach.
Taxonomy: Dicotyledon; Amaranthaceae.
Habit: Annual terrestrial herb.
Distribution: Endemic to peninsular Florida. Wunderlin (1998) reports it as occasional in peninsular Florida. Wunderlin & Hansen (2001) records it for South Florida, and Alachua, Brevard, Duval, Manatee, Pinellas, and Sarasota counties.

South Florida Distribution: Charlotte, Collier and Lee counties, and the Monroe County Keys.
South Florida Habitats: Beach dunes and open disturbed sites.
Protection Status: Not listed by any agency.
Identification: This is a difficult genus with more than a dozen native and naturalized species in South Florida. *A. floridanus* is a dioecious plant, with regularly apparent sepals without strong midveins, bracts 1-2 mm long with the midrib conspicuously excurrent, leaf blade usually linear to 1 cm wide, and the inflorescence unbranched above the leaves (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Sauer, 1955; Long & Lakela, 1976; Wunderlin, 1998.
Synonyms: *Acnida floridana* S. Watson.

Historical Context in South Florida: John Loomis Blodgett collected the type specimen of Florida amaranth between 1838 and 1853 on the island of Key West (Sauer, 1955). It has not been observed or collected in the Florida Keys since the Blodgett collection. Blodgett also made a collection in the Charlotte Harbor area, also between 1838 and 1853 (s.n., NY). Alvan W. Chapman made a single collection in Collier County in 1895 at "Caseys Pass" at Cape Romano (s.n., GH).

Samuel M. Tracy made the first collection in Lee County in 1901 on Sanibel Island (7621, NY). George R. Cooley rediscovered it on Sanibel Island in 1954 (s.n., FLAS). It was collected several times on Sanibel Island by William C. Brumbach beginning in 1966 (5617, FLAS). Brumbach also collected it in 1968 (6134, FLAS; 6502, FLAS) and 1974 (8697, FLAS). It is uncertain whether or not it is extant on Sanibel. Florida amaranth also was collected on North Captiva Island in 1978 by Sandy Morrill and Jud Harvey (s.n., USF) and in 1979 by Morrill (s.n., USF), possibly in Cayo Costa State Park, although about half of the island is privately owned. It was reported for Cayo Costa Island by Herwitz (1977), but was not found on Cayo Costa Island when it was surveyed from 1990 to 1992 (Herwitz et al., 1996). It was reported for Cayo Costa State Park (Florida Park Service District 4, 1994a), which could have been based upon plants either on North Captiva Island or Cayo Costa Island. Gann and Florida Park Service biologist R. "Bobby" Hattaway surveyed North Captiva Island and Cayo Costa Island within Cayo Costa State Park in February 2001. Habitat for

Florida amaranth is present, but no plants were observed. Florida amaranth was collected at Fort Myers Beach twice, once by I.W. Knoblock 1956 (1439, FLAS), and once by Elliott Brown in 1985 (s.n., USF). This was the last known collection. There is also a 1930 collection in Lee County at "Crescent Beach" by Walter M. Buswell (s.n., NY). The location of this station is unknown.

Comments: *Florida amaranth is an annual that flowers spring through fall, so surveys should be conducted during this time period. There is a specimen in the herbarium of the New York Botanical Garden that is labeled as having been collected in Colorado. This could represent a short-lived naturalized population, or perhaps a mislabeled specimen.*

Preliminary recommendations:

- Survey the Cape Romano area, Fort Myers Beach, North Captiva Island, and Sanibel Island.
- If plants are found, map and monitor known populations.
- Review for listing by FDACS and FNAI.

Amorpha herbacea Walter var. ***herbacea***
Lusterspike Indigobush

South Florida Status: Historical. Last collected in 1922 on Marco Island.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Shrub.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the panhandle to the northern and central peninsula.
South Florida Distribution: Collier and Lee counties.
South Florida Habitats: Scrub, scrubby flatwoods, and mesic flatwoods.
Protection Status: Not listed by any agency.
Identification: *Amorpha herbacea* can be distinguished from *A. fruticosa* by having a gland at the tip of the leaflet instead of a non-glandular mucro (Wunderlin, 1998). *A. herbacea* var. *herbacea* can be distinguished from *A. herbacea* var. *crenulata* in having leaflet margins entire or inconspicuously crenulate instead of having leaflet margins conspicuously crenulate.
References: Chapman, 1883; Small, 1933a; Wilbur, 1975; Long & Lakela, 1976; Isely, 1990; Nelson, 1996; Wunderlin, 1998.

Synonyms: *A. cyanostachya* M.A. Curtis; *A. floridana* Rydb.; *A. herbacea* var. *floridana* (Rydb.) Wilbur.

Historical Context in South Florida: Jeanette P. Standley first collected lusterspike indigobush in 1919 in the Mullock Creek District of Lee County (491, NY), in the vicinity of what is now Estero Bay State Buffer Preserve. In 1922, John Kunkel Small made a collection from the same general area at "Estero south of Fort Myers" (10473, FLAS, NY). It also has been reported for Koreshan State Historic Site in Estero (Florida Park Service District 4, 1994d). In 2001, Gann and Florida Park Service biologists R. "Bobby" Hattaway and Sally Braem briefly searched for lusterspike indigobush at Koreshan State Historic Site, but were unable to locate any plants. It appears that lusterspike indigobush may be extirpated in the Estero area, but more thorough surveys should be conducted.

In 1919, Small and John B. DeWinkeler made a collection from near Naples in Collier County (8153, NY; Small, 1921), in the vicinity of what is now Rookery Bay National Estuarine Research Reserve. Small also made a collection at Caxambas on Marco Island in 1922 (10487, NY), and another that same year on Marco Island with DeWinkeler (10615, US).

Comments: *This is a temperate plant at the southern end of its range, and it may have always been rare in South Florida.* Amorpha herbacea *var.* crenulata *is endemic to Miami-Dade County, and listed as endangered by the U.S. Fish and Wildlife Service and the Florida Department of Agriculture and Consumer Services (see Chapter 5).*

Preliminary recommendations:

- Survey Estero Bay State Buffer Preserve, Koreshan State Historic Site, and Rookery Bay National Estuarine Research Reserve.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to the Estero area at Estero Bay State Buffer Preserve and Koreshan State Historic Site.
- Consider restoring scrub habitat on Marco Island and reintroducing lusterspike indigobush.

Andropogon arctatus Chapm.
Pinewoods Bluestem

South Florida Status: Historical. Last collected in 1967 in western Collier County.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to Florida and southern Alabama. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Charlotte and Collier counties.
South Florida Habitats: Presumably flatwoods and scrub. Collected in South Florida only in flatwoods, and flatwoods converted to unimproved pasture.
Protection Status: Listed as threatened by FDACS and as rare by FNAI.
Identification: Hitchcock & Chase (1950) has illustrations of both *A. arctatus* and *A. ternarius*. In *A. arctatus* the stamens are usually 1, the lower glumes somewhat folded, and the awns are less than 1 cm long. In *A. ternarius* the stamens are 3, the lower glumes are flat, and the awns are more than 1 cm long (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Hitchcock & Chase, 1950; Hall, 1978; Campbell, 1983; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: C.E. Lewis collected pinewoods bluestem once in 1963 in the now defunct U.S. Forest Service Caloosa Experimental Range in southeastern Charlotte County (107, US). Olga Lakela also collected it once in 1967 in Collier County just south of the Lee County line along US 41 (31145, DUKE, USF). Pinewoods bluestem has been reported for Jonathan Dickinson State Park in Martin County (Florida Park Service District 5, no date), but this presumably represents a misidentification of *A. ternarius*.

Pinewoods bluestem is presumably extirpated, but perhaps it is just overlooked or misidentified as *A. ternarius* (see "Comments" below). Plants could be present in flatwoods or scrub from Charlotte County south to northern Collier County in Fred C. Babcock-Cecil M. Webb Wildlife Management Area, Charlotte

Harbor State Buffer Preserve, Corkscrew Regional Ecosystem Watershed, Estero Bay State Buffer Reserve, or other conservation areas.

If extirpated, pinewoods bluestem was probably lost due to habitat destruction (Collier County), and habitat disturbance (Charlotte County). On his label, C.E. Lewis mentioned that pinewoods bluestem was uncommon at the Caloosa Experimental Range, but had good forage value. It is possible that cattle grazing had a negative impact upon pinewoods bluestem in South Florida.

Comments: *This species is very similar to* Andropogon ternarius, *and according to some authors may be conspecific with that species (Hall, 1978). No reintroductions should be considered in South Florida without a close review of the two known specimens. It is possible that they are misidentifications of* A. ternarius*. Both specimens from South Florida were collected in October, so surveys should be conducted between September and November.*

Preliminary recommendations:

- Examine the two South Florida specimens to make sure that *A. arctatus* is really a part of the South Florida flora. If the specimens are properly identified, then proceed with additional recommendations.
- Survey Fred C. Babcock-Cecil M. Webb Wildlife Management Area, Charlotte Harbor State Buffer Reserve, Corkscrew Regional Ecosystem Watershed, Estero Bay State Buffer Reserve, and other conservation areas in Charlotte, Lee, and northern Collier counties.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to conservation areas within its historical range.

Asclepias feayi Chapm. ex A. Gray
Florida Milkweed

South Florida Status: Historical. Last collected in 1967 near Immokalee.
Taxonomy: Dicotyledon; Asclepiadaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to peninsular Florida.

South Florida Distribution: Collier, Glades, and Lee counties. Wunderlin (1998) reports it as occasional in Florida in Clay County and the central and southern peninsula.
South Florida Habitats: Mesic flatwoods, scrubby flatwoods, and scrub.
Protection Status: Not listed by any agency.
Identification: There are twenty-two species of *Asclepias* in Florida. Wunderlin (1998) has a key.
References: Small, 1933a; Wunderlin, 1998.
Synonyms: *Asclepiodella feayi* (Chapm. ex A. Gray) Small.

Historical Context in South Florida: Albert S. Hitchcock first collected Florida milkweed in 1900 in Fort Myers (209, NY, US). In 1916, Paul C. Standley made a collection near Fort Myers (13026, US) and Mary Francis Baker made a collection north of the Caloosahatchee River at Alva (s.n., US), in the vicinity of what is now Caloosahatchee Regional Park. In 1917, Jeanette P. Standley made a collection south of Fort Myers in the Mullock Creek district (432, US), in the vicinity of what is now Estero Bay State Buffer Preserve. In 1930, Harold N. Moldenke made two collections on the same day, one to the west of Fort Myers (927, NY), and one on Pine Island (940a, NY). Florida milkweed also has been reported for two conservation areas in Lee County, Cayo Costa State Park (Florida Park Service District 4, 1994a) and Koreshan State Historic Site (Florida Park Service District 4, 1994d), but both of these stations need to be verified.

John Kunkel Small made the first collection outside of Lee County in 1917 near the Okaloacoochee Slough (8301, NY). It is unknown where Small actually made this collection. The slough is located in both Collier and Hendry counties, in Big Cypress National Preserve, Florida Panther National Wildlife Refuge, Okaloacoochee Slough State Forest, Okaloacoochee Slough Wildlife Management Area, and on private property.

In 1919, Small and John B. DeWinkeler collected Florida milkweed north of Marco Island (9165, NY), in the vicinity of Rookery Bay National Estuarine Research Reserve. Olga Lakela made collections farther north in the county in the Immokalee area in 1965 (28963, USF) and in 1967 (30823, USF). No additional reports have been seen for Collier County.

A single collection from Glades County was made in 1960 by Daniel B. Ward and others ½ mile west of Palmdale (3-18, FLAS), possibly within the boundaries of what is now the Fisheating Creek Wildlife Management Area.

Comments: *Florida milkweed flowers spring through fall, when surveys should be conducted.*

Preliminary recommendations:

- Survey Caloosahatchee Regional Park, Cayo Costa State Park, Estero Bay State Buffer Preserve, Fisheating Creek Wildlife Management Area, and Koreshan State Historic Site.
- Survey the Okaloacoochee Slough in Big Cypress National Preserve, the Florida Panther National Wildlife Refuge, Okaloacoochee Slough State Forest, and Okaloacoochee Slough Wildlife Management Area.
- Survey other historical stations in Collier, Glades, and Lee counties.
- If plants are found, map and monitor known populations.
- If no plants are found, consider introductions to conservation areas within its historical range, including Caloosahatchee Regional Park and Estero Bay State Buffer Preserve.

Asclepias humistrata Walter
Pinewoods Milkweed

South Florida Status: Historical. Last collected in 1991 near North Pelican Bay.
Taxonomy: Dicotyledon; Asclepiadaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) lists it as frequent in Florida from the northern counties to the central peninsula.
South Florida Distribution: Collier County. The Collier County plants are disjunct from the nearest population in Highlands County.
South Florida Habitats: Scrub.
Protection Status: Not listed by any agency.
Identification: Bell & Taylor (1982) has a color photo; Taylor (1992) has a color photo.

References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Bell & Taylor, 1982; Taylor, 1992; Wunderlin, 1998.
Synonyms: *Asclepias amplexicaulis* Michx., not Smith.

Historical Context in South Florida: James N. Burch first collected pinewoods milkweed in 1990 in a scrub fragment in Naples (388, Collier County Natural Resources Division herbarium). Burch re-vouchered this station in 1991 (568, Collier County Natural Resources Division herbarium; 570, Collier County Natural Resources Division herbarium). Burch also found pinewoods milkweed in northern Collier County in 1991 in a scrub fragment in North Pelican Bay (433, Collier County Natural Resources Division herbarium). Both of these stations were subsequently destroyed.

Comments: *This is a temperate species at the southern end of its range, and it always may have been rare in South Florida.*

Preliminary recommendations:
- Survey Naples area.
- If plants are found, map and monitor known populations.

Asclepias tomentosa Elliott
Velvetleaf Milkweed

South Florida Status: Historical. Last collected in 1986 on Marco Island.
Taxonomy: Dicotyledon; Asclepiadaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the central panhandle to the peninsula.
South Florida Distribution: Collier and Lee counties.
South Florida Habitats: Scrub and scrubby flatwoods.
Protection Status: Not listed by any agency.
Identification: Taylor (1992) has a color photo. Taylor (1998) has a color photo.
References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Taylor, 1992; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Jeanette P. Standley first collected velvetleaf milkweed in 1917, on a roadside in the Mullock Creek area in Lee County (454, US), in the vicinity of what is now Estero Bay State Buffer Preserve. It has not been collected in Lee County since, but surveys should be conducted in Estero Bay State Buffer Preserve. Harold N. Moldenke first collected it in Collier County in 1930 in Caxambas, near the southern tip of Marco Island (5904, NY). It was collected again on Marco Island by John H. Davis, Jr. in 1947 (s.n., FLAS), and near Caxambas Pass by Olga Lakela in 1970 (s.n., USF). Maria and Mark Minno collected it last on Marco Island in a "weedlot in scrub area" in 1986 (s.n., FLAS). About twenty plants were observed in a circa one-hectare lot.

Comments: *This is a temperate species at the southern end of its range, and it may always have been rare in South Florida. Specimens of* A. tomentosa *in South Florida have been collected from April through September, when surveys should be conducted.*

Preliminary recommendations:

- Survey Marco Island and the Estero area, including Estero Bay State Buffer Preserve.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to the Estero area at Estero Bay State Buffer Preserve.
- Consider restoring scrub and scrubby flatwoods habitats on Marco Island and reintroducing velvetleaf milkweed.

Asimina incana (W. Bartram) Exell
Woolly Pawpaw

South Florida Status: Historical. Last collected in 1980 near Bonita Springs.
Taxonomy: Dicotyledon; Annonaceae.
Habit: Shrub.
Distribution: Native to southeastern Georgia and peninsular Florida. Wunderlin (1998) reports it as occasional in Florida from the central panhandle to the northern and central peninsula.
South Florida Distribution: Lee County.
South Florida Habitats: Flatwoods.

Protection Status: Not listed by any agency.
Identification: Godfrey (1988) has an illustration; Nelson (1996) has an illustration and a photo.
References: Small, 1933a; Kral, 1960a; Godfrey, 1988; Nelson, 1996; Flora of North America Editorial Committee, 1997; Wunderlin, 1998.
Synonyms: *A. speciosa* Nash; *Pityothamnus incanus* (W. Bartram) Small.

Historical Context in South Florida: Walter M. Buswell first collected woolly pawpaw in 1929 in Fort Myers (s.n., FTG). Ruben P. Sauleda collected it again in 1980 in the vicinity of Bonita Springs in southwestern Lee County (3340, USF). Although the locality data on the label is somewhat confusing, it appears that the area where it was collected is now being developed as a residential area (R. Irving, personal communication, 17 August 2000).

Preliminary recommendations:
- Survey Bonita Springs area.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to flatwoods in Lee County.

Asplenium platyneuron (L.) Britton et al.
Ebony Spleenwort

South Florida Status: Historical. Last observed in the late 1980s in Everglades National Park.
Taxonomy: Pteridophyte; Aspleniaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to much of eastern North America as well as southern Africa. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula and Miami-Dade County.
South Florida Distribution: Miami-Dade County. The Miami-Dade County plants are disjunct from the nearest population in Highlands County.
South Florida Habitats: Prairie hammocks and bayheads.
Protection Status: Not listed by any agency.

Identification: Nelson (2000) has color photos; the IRC Website has a color photo.
References: Chapman, 1883; Small, 1931b; Small, 1938; Lakela & Long, 1976; Long & Lakela, 1976; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *A. ebenum* Aiton.

Historical Context in South Florida: George N. Avery collected ebony spleenwort once in 1976 in a hammock west of the west end of Context Road in the East Everglades, within the old boundaries of Everglades National Park (1683, FLAS, Everglades National Park herbarium). Only one plant was seen. Two fertile fronds were collected, leaving several sterile fronds. Volunteer botanist Rick Seavey visited this station once around 1987, and observed a single plant (personal communication, 24 January 2001). Seavey also found an additional station southwest of Mahogany Hammock, in a bayhead on the edge of the Shark River Slough in the late 1980s, but has not revisited the station since (personal communication, 24 January 2001).

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida. If still present, this is one of the species that may be affected by the Everglades restoration*.

Preliminary recommendations:
- Survey prairie hammocks and bayheads in the East Everglades and on the edge of the Shark River Slough in Everglades National Park.
- If plants are found, map and monitor known populations.
- If no plants are found, consider for reintroduction to Everglades National Park.

Aureolaria pedicularia (L.) Raf.
var. ***pectinata*** (Nutt.) Gleason
Fernleaf Yellow False Foxglove

South Florida Status: Historical. Collected once in 1986 northwest of Immokalee.
Taxonomy: Dicotyledon; Scrophulariaceae.

Habit: Annual terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Collier County. The Collier County plants are disjunct from the nearest population in Manatee County.
South Florida Habitats: Scrub.
Protection Status: Not listed by any agency.
Identification: Bell & Taylor (1982) has a color photo.
References: Chapman, 1883; Small, 1933a; Pennell, 1935; Bell & Taylor, 1982; Wunderlin, 1998.
Synonyms: *A. pectinata* (Nutt.) Pennell; *A. pectinata* var. *floridana* Pennell; *Dasistoma pectinata* (Nutt.) Benth.

Historical Context in South Florida: Robin B. Huck collected fernleaf yellow false foxglove once in 1986 in scrubby flatwoods northwest of Immokalee (3294, FLAS). Christman (1988) also reported it for this station, calling the site Immokalee NW RT. 850.

Comments: *This is a temperate species known from a single modern disjunct collection in Collier County. It is possible that this was a waif population. It flowers summer through fall, when surveys should be conducted.*

Preliminary recommendations:
- Survey Immokalee Scrubby Flatwoods Site.
- If plants are found, map and monitor known populations.
- Acquire Immokalee Scrubby Flatwoods Site.

Bucida spinosa Jenn.
Spiny Black Olive

South Florida Status: Historical. Last known plants removed from the wild in 1978 near the Turkey Point Power Plant.
Taxonomy: Dicotyledon; Combretaceae.
Habit: Small tree or shrub.
Distribution: Native to South Florida, the Bahamas, and Cuba.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Hammocks and edges of mangrove swamps along the freshwater marsh ecotone.
Protection Status: Not listed by any agency.

Identification: There are two species of *Bucida* in South Florida, *B. spinosa*, and the exotic *B. buceras*. *B. spinosa* has much smaller leaves, 1-2.5 cm long, versus 3-9 mm long in *B. buceras*. Although Wunderlin (1998) states that only *B. spinosa* is armed, *B. buceras* can, at times, be armed.
References: Long & Lakela, 1976; Nelson, 1996; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Frank C. Craighead first collected spiny black olive in 1962, from a hammock about one mile from the coast and 7.5 miles southeast of Florida City (s.n., FLAS). In later conversations with George N. Avery, Craighead reported that these plants were located near the coast, south of Homestead Bayfront Park (Avery's Notes, 27 August 1965). Donovan S. Correll and John Popenoe collected it again in 1977, on the edge of a mangrove swamp just north of the Turkey Point Power Plant (49008, FTG, NY). Roger L. Hammer observed plants within Florida Power and Light property in 1978, and Pam Krauss and Mark McMahon observed plants, both within and just north of the Turkey Point Power Plant, in that same year (Avery's Notes, 1978). The main population, around 117 plants, was located in the area to the west of where the Turkey Point cooling canals were constructed. Roger L. Hammer translocated these plants to the Florida Power and Light nursery in 1978, immediately before the construction of a perimeter canal would have destroyed them (Avery's Notes, 19 September 1978; R.L. Hammer personal communication, 14 December 2001). No plants have been observed in the wild since that time, but the area around the Turkey Point Power Plant needs to be surveyed, including the recently established Florida Power and Light Mitigation Bank.

Several of the original trees that were translocated are still alive, one at the Turkey Point Power Plant, and several outside of Roger Hammer's former residence in Goulds (R.L. Hammer, personal communication, 17 August 2000).

This attractive tree is widely cultivated in South Florida, but has not been known to naturalize outside of its natural range.

Preliminary recommendations:

- Survey in the vicinity of the Turkey Point Power Plant, including the Florida Power and Light Mitigation Bank.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to the freshwater marsh-mangrove ecotone in the vicinity of the Turkey Point Power Plant.
- Review for listing by FDACS and FNAI.

Calamintha ashei (Weath.) Shinners
Ashe's Calamint

South Florida Status: Historical. Collected once in 1981 near Palmdale.
Taxonomy: Dicotyledon; Lamiaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to peninsular Florida and Georgia. Wunderlin (1998) reports it as occasional in the central peninsula.
South Florida Distribution: Glades County.
South Florida Habitats: Scrub.
Protected Status: Listed as threatened by FDACS and as rare by FNAI.
Identification: Nelson (1996) has a color photo; Taylor (1998) has a color photo.
References: Small, 1933a; Shinners, 1962a; Nelson, 1996; Wunderlin, 1998; Coile, 2000.
Synonyms: *Clinopodium ashei* (Weath.) Small.

Historical Context in South Florida: Ruben P. Sauleda collected Ashe's calamint once in 1981 in "white sand scrub" near Palmdale (4987, FTG). Bradley attempted to locate this station in 2000, but was unable to find scrub at the location specified on the herbarium label. It is possible that this collection was actually from Highlands County to the north of Palmdale.

Preliminary recommendations:

- Survey scrub in the vicinity of Palmdale.
- If plants are found, map and monitor known populations.

Callitriche peploides Nutt.
Matted Waterstarwort

South Florida Status: Historical. Last collected in 1977 along the Caloosahatchee River at Alva.
Taxonomy: Dicotyledon; Callitrichaceae.
Habit: Annual terrestrial herb.
Distribution: Native to the southeastern coastal plain, Mexico, and Central America. Wunderlin (1998) reports it as occasional in Florida in the central and western panhandle to the northern and central peninsula.
South Florida Distribution: Lee and Miami-Dade counties.
South Florida Habitats: Shallow water, and moist banks of rivers and streams.
Protection Status: Not listed by any agency.
Identification: Godfrey & Wooten (1981) has an illustration; Tobe et al. (1998) has an illustration.
References: Chapman, 1883; Small, 1933a; Fassett, 1951; Long & Lakela, 1976; Godfrey & Wooten, 1981; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Abram P. Garber first collected matted waterstarwort in 1877 in Miami (s.n., GH), presumably in freshwater wetlands along the Miami River. Jeanette P. Standley made the next collections in the early 1900s in Lee County. The first collection was from Fort Myers in 1916 (24, US) and the next from the Mullock Creek area in 1917 (s.n., US), in the vicinity of what is now Estero Bay State Buffer Preserve. Matted waterstarwort was not collected again until 1977 when Leland M. Baltzell collected it on the "bottom" of the Caloosahatchee River in Alva at the bridge on State Road 78 (9231, FLAS), in the vicinity of what is now Caloosahatchee Regional Park. Several plants were found in a group. Gann surveyed this area in 2000, but no plants were found. The entire river edge was scoured and eroded, leaving no apparent habitat for matted waterstarwort. It is possible that it is still present at Caloosahatchee Regional Park or other areas along the Caloosahatchee River. Gann surveyed Caloosahatchee Regional Park with Lee County biologists Roger Clark and Rob Irving in

2001. Some habitat was found, but it is severely impacted by wild hogs and exotic pest plants. More survey work needs to be done in this area.

Comments: *Matted waterstarwort is a small annual herb that may be overlooked. It flowers spring through summer, when surveys should be conducted.*

Preliminary recommendations:

- Continue surveys at Caloosahatchee Regional Park
- Survey Estero Bay State Buffer Preserve.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to Lee County at Caloosahatchee Regional Park and Estero Bay State Buffer Preserve.
- Consider restoring floodplain forests and associated habitats along the Caloosahatchee River as habitat for matted waterstarwort.
- Consider restoring freshwater wetlands along the Miami River and reintroducing matted waterstarwort.

Ceratophyllum muricatum Cham. subsp. ***australe*** (Griseb.) Les. **Prickly Hornwort**

South Florida Status: Historical. Last observed in 1978 on Big Pine Key.
Taxonomy: Dicotyledon; Ceratophyllaceae.
Habit: Perennial aquatic herb.
Distribution: Native to eastern North America and Mexico. Wunderlin (1998) reports it as rare in Florida in Brevard, Franklin, and Monroe counties.
South Florida Distribution: Monroe County Keys.
South Florida Habitats: Solution holes and ditches.
Protection Status: Not listed by any agency.
Identification: Fruits are important for proper identification, but this is the only species of *Ceratophyllum* reported for the Florida Keys. Its achene margins are winged, while those of *C. demersum,* which occurs on the South Florida mainland, has achenes with margins that are not winged.
References: Wood, 1959; Lowden, 1978; Flora of North America Editorial Committee, 1997; Wunderlin, 1998.

Synonyms: *C. floridanum* Fassett; *C. submersum* L., misapplied.

Historical Context in South Florida: John Loomis Blodgett first collected prickly hornwort in South Florida between 1838 and 1853 (s.n., NY), probably on Big Pine Key, although the specimen label indicates only "South Florida." Ellsworth P. Killip made the next collection in 1940 at Watson Hammock on Big Pine Key (32868, US), which is now located within National Key Deer Refuge. In 1953, Killip made a second collection at the same locality (43367, US), and a third collection from just north of Watson Hammock (40732, US). George N. Avery made two observations of prickly hornwort at Watson Hammock, in 1974 and 1978, in mosquito control ditches (Avery's Notes, 28 April 1974 and 16 December 1978). During a survey he conducted in 1979, he was unable to find any plants (Avery's Notes, 12 June 1979).

Comments: *This species may be somewhat ephemeral. Les (in Flora of North America Editorial Committee, 1997) states that "the affinity of* C. muricatum *for shallow, ephemeral habitats results in its sporadic and nonpersistent occurrence." Any surveys that are conducted for this species should be done for several seasons over a period of several years. The South Florida occurrence of this species has been described as* C. floridanum *Fassett. See Lowden (1978) and Les (in Flora of North America Editorial Committee, 1997) for discussions of the typification and taxonomy of this species. Wunderlin (1998) reports this as introduced in error.*

Preliminary recommendations:

- Survey Watson Hammock area in the National Key Deer Refuge.
- If plants are found, map and monitor known populations.
- If no plants are found, consider reintroduction to the Watson Hammock area in the National Key Deer Refuge.
- Review for listing by FDACS and FNAI.

Chaerophyllum tainturieri Hook.
Hairyfruit Chervil

South Florida Status: Historical. Collected once in 1967 along Fisheating Creek near Palmdale.

Taxonomy: Dicotyledon; Apiaceae.
Habit: Annual terrestrial herb.
Distribution: Native primarily to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Glades County.
South Florida Habitats: Floodplain forests.
Protection Status: Not listed by any agency.
Identification: *C. tainturieri* has compound leaves, ribbed fruits that are more than twice as long as they are wide, and no sepals (Godfrey & Wooten, 1981; Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Godfrey & Wooten, 1981; Wunderlin, 1998.
Synonyms: *C. floridanum* (J.M. Coult. & Rose) Bush.

Historical Context in South Florida: William G. D'Arcy collected hairyfruit chervil once in 1967 along Fisheating Creek in Palmdale (1347, FLAS), perhaps within what is now the Fisheating Creek Wildlife Management Area. A single plant was seen.

Comments: *This is a temperate species known from a single collection of a single individual on the edge of its range. It is possible that this was a waif population. It is an annual species that flowers in spring, when surveys should be conducted.*

Preliminary recommendations:
- Survey Fisheating Creek area, including Fisheating Creek Wildlife Management Area.
- If plants are found, map and monitor known populations.

Chamaecrista nictitans (L.) Moench var. ***nictitans*** **Sensitive Pea**

South Florida Status: Historical. Last collected in 1977 near El Jobean.
Taxonomy: Dicotyledon; Fabaceae.
Habit: Annual terrestrial herb.
Distribution: Native nearly throughout the southeastern coastal plain. Wunderlin (1998) reports it as occasional nearly throughout Florida.

South Florida Distribution: Charlotte and Collier counties. The Collier County record may represent an introduced waif population.
South Florida Habitats: Flatwoods and disturbed sites.
Protection Status: Not listed by any agency.
Identification: Taylor (1998) has a color photo. There are two varieties of *C. nictitans* in South Florida: var. *nictitans*, and var. *aspera*. The latter is relatively common. *C. nictitans* var. *aspera* is conspicuously pilose, whereas *C. nictitans* var. *nictitans* is incurved-puberulent to glabrate (Wunderlin, 1998).
References: Small, 1933a; Isely, 1990; Taylor, 1998; Wunderlin, 1998.
Synonyms: *C. mohrii* (Pollard) Small ex Britton & Rose; *C. multipinnata* (Pollard) Greene; *C. procumbens* (L.) Greene; *Cassia nictitans* L.; *Cassia nictitans* var. *hebecarpa* Fernald; *Cassia nictitans* var. *mohrii* (Pollard) J.F. Macbr.

Historical Context in South Florida: O.E. Frye first collected sensitive pea in 1946 in "rich flatwoods" in Charlotte County (s.n., FLAS). Alicia Fulton collected it again in Charlotte County in 1977 on the edge of scrub in the vicinity of El Jobean (57, USF). Gann attempted to locate the El Jobean station in 2000, but the locality data was inaccurate and the station could not be located. Potential habitat, however, is present in the area. Daniel B. Ward and others collected sensitive pea once in Collier County in 1965, on a dry marl road-bank west of Miles City (5247, FLAS, NY, USF), probably in what is now Fakahatchee Strand Preserve State Park. It is not clear if sensitive pea is native to that area, or if it was a waif introduced by humans.

Comments: *This is a temperate species at the southern end of its range, but the range of years that specimens were collected suggest that it was a persistent part of the flora.*

Preliminary recommendations:

- Survey El Jobean area, including Charlotte Harbor State Buffer Preserve.
- If plants are found, map and monitor known populations.
- If no plants are found, consider for reintroduction to the El Jobean area at Charlotte Harbor State Buffer Preserve.

Chrysopsis linearifolia Semple subsp. *dressii* Semple
Dress' Goldenaster

South Florida Status: Historical. Last collected in 1985 in Bonita Springs.
Taxonomy: Dicotyledon; Asteraceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to peninsular Florida. Wunderlin (1998) reports it as occasional in peninsular Florida.
South Florida Distribution: Lee and Miami-Dade counties. The Lee County station may represent an introduced waif population.
South Florida Habitats: Scrubby flatwoods and pine rocklands.
Protection Status: Not listed by any agency.
Identification: Taylor (1998) has a color photo of the species. Variety *dressii* can be distinguished from variety *linearifolia* by having the inflorescence loosely corymbose versus compact subumbellate, and leaf margins undulate versus smooth (Wunderlin, 1998).
References: Semple, 1978; Semple, 1981; Taylor, 1998; Wunderlin, 1998.
Synonyms: *C. hyssopifolia* Nutt., in part, misapplied.

Historical Context in South Florida: Edward L. Palmer first collected Dress' goldenaster along Biscayne Bay in Miami-Dade County in 1874 (2984, MO), presumably in pine rocklands near the Miami River. It was not collected again until 1947, when R. Bruce Ledin collected it in a pineland in Miami (s.n., FLAS). Presumably it grew in sandy pine rocklands near the Miami River. In 1985, Elliott Brown made the only collection known from Lee County in Bonita Springs in disturbed soil in front of a school (s.n., USF). It is unclear if this represents a native population.

Preliminary recommendations:
- Survey Bonita Springs area.
- If plants are found, map and monitor known populations.
- Consider restoring pine rocklands near the Miami River and reintroducing Dress' goldenaster.

Chrysopsis subulata Small
Scrubland Goldenaster

South Florida Status: Historical. Collected once in 1964 in northern Collier County.
Taxonomy: Dicotyledon; Asteraceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to peninsular Florida. Wunderlin (1998) reports it as frequent in peninsular Florida.
South Florida Distribution: Collier County. The Collier County population is disjunct from the nearest populations in Highlands and Okeechobee counties.
South Florida Habitats: Flatwoods.
Protection Status: Not listed by any agency.
Identification: Taylor (1992, 1998) has color photos.
References: Small, 1933a; Cronquist, 1980; Taylor, 1992; Wunderlin, 1998.
Synonyms: *Heterotheca hyssopifolia* (Nutt.) R.W. Long var. *subulata* (Small) R.W. Long.

Historical Context in South Florida: Frank C. Craighead collected scrubland goldenaster once in 1964 near "Route 52" [sic] near the Lee County line (s.n., FTG).

Comments: *Scrubland goldenaster flowers in the fall, when surveys should be conducted. The Craighead location of Route 52 is in error. This is probably a typo of Route 82, which exits Collier County near the intersection of Collier County, Hendry County, and Lee County, just north of the northernmost parts of the Corkscrew Regional Ecosystem Watershed in Collier County.*

Preliminary recommendations:
- Survey the vicinity of the Craighead collection, including the northern portions of the Corkscrew Regional Ecosystem Watershed.
- If plants are found, map and monitor known populations.

Cuscuta gronovii Willd. ex Schult.
Scaldweed

South Florida Status: Historical. Last collected in 1945 in the Okaloacoochee Slough in Collier County.
Taxonomy: Dicotyledon; Convolvulaceae.
Habit: Annual parasitic vine.
Distribution: Native to much of North America and the West Indies. Wunderlin (1998) reports it as occasional in Florida in the northern and central peninsula.
South Florida Distribution: Collier and Lee counties.
South Florida Habitats: Flatwoods, swales, depression marshes, and probably hydric hammocks.
Protection Status: Not listed by any agency.
Identification: Austin (1980) has an illustration; Bell & Taylor (1982) has a color photo.
References: Chapman, 1883; Yuncker, 1932; Small, 1933a; Austin, 1980; Godfrey & Wooten, 1981; Bell & Taylor, 1982; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Joseph H. Simpson first collected scaldweed in 1892 in Fort Myers on the margin of a pond (380, US). Albert S. Hitchcock collected it again in Fort Myers in "swamp thickets" in 1900 (232, US). John Kunkel Small and Charles A. Mosier made the last collection near Fort Myers in a pineland in 1926 (s.n.; NY). Mary Francis Baker made a single collection in 1917 in Alva on the north bank of the Caloosahatchee River in Lee County (108, US), in the vicinity of what is now Caloosahatchee Regional Park. Leonard J. Brass made the last collection in Collier County, in 1945, in an open marsh in the Okaloacoochee Slough (15755, US). The Okaloacoochee Slough is located in Collier and Hendry counties in Big Cypress National Preserve, in Florida Panther National Wildlife Refuge, Okaloacoochee Slough State Forest, Okaloacoochee Slough Wildlife Management Area, and on private lands.

Comments: *Scaldweed is parasitic on a wide variety of host plants* (Austin, 1980)*. It flowers from summer to fall, when surveys should be conducted*.

Preliminary recommendations:

- Survey Caloosahatchee Regional Park.
- Survey the Okaloacoochee Slough in Collier County within Big Cypress National Preserve and Florida Panther National Wildlife Refuge.
- If plants are found, map and monitor known populations.

Cuscuta umbellata Kunth
Flatglobe Dodder

South Florida Status: Historical. Last collected in 1997 on Lower Matecumbe Key.
Taxonomy: Dicotyledon; Convolvulaceae.
Habit: Annual parasitic vine.
Distribution: Native to the southern United States, the West Indies, Mexico, Central America, and South America. Wunderlin (1998) reports it as rare in Florida in Flagler County and the central peninsula. Wunderlin & Hansen (2001) records it for South Florida, and Flagler, Sarasota, and Seminole counties.
South Florida Distribution: Lee and Palm Beach counties, and the Monroe County Keys. The Palm Beach County station may have represented an introduced waif population.
South Florida Habitats: Coastal strand.
Protection Status: Not listed by any agency.
Identification: Austin (1980) has an illustration.
References: Yuncker, 1932; Small, 1933a; Austin, 1980; Godfrey & Wooten, 1981; Correll & Correll, 1982; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: Hugh O'Neill first collected flatglobe dodder in 1925 at the Belle Glade Experiment Station in Palm Beach County (s.n., FLAS). No habitat data was given and it is unclear if it was native to that station. It was not recorded again until Sandy Morrill and Jud Harvey collected it in 1978 on North Captiva Island in Lee County (149, USF). Part of this island is now included in Cayo Costa State Park. Gann and Florida Park Service biologist R. "Bobby" Hattaway surveyed this portion of North Captiva Island in January 2001, and habitat for the plant still

exists. No plants were observed, but this may have been due to the time of year the survey was conducted.

Flatglobe dodder was most recently collected in 1997 by Wayne Hoffman on Sea Oats Beach on Lower Matecumbe Key in the Florida Keys (s.n., FTG). Hurricane Georges in 1998 and Hurricane Irene in 1999 extensively disturbed this site. Following each hurricane, the beach was bulldozed, ultimately obliterating almost every trace of native vegetation. Monroe County subsequently revegetated this area with seaoats (*Uniola paniculata*).

Comments: *Flatglobe dodder flowers in the summer and fall, when surveys should be conducted. It is parasitic on hosts in coastal areas (Austin, 1980; Godfrey & Wooten 1981).*

Preliminary recommendations:

- Survey North Captiva Island and Seaoats Beach.
- If plants are found, map and monitor known populations.
- Review for listing by FDACS and FNAI.

Cyperus cuspidatus Kunth
Coastalplain Flatsedge

South Florida Status: Historical. Last collected in 1980 in northwestern Lee County.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Annual terrestrial herb.
Distribution: Native to the southeastern coastal plain and tropical America. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Charlotte, Collier, and Lee counties and the Monroe County Keys.
South Florida Habitats: Moist hammocks and disturbed sandy soils.
Protection Status: Not listed by any agency.
Identification: Coastalplain flatsedge is most similar to *Cyperus squarrosus*. Coastalplain flatsedge differs from *C. squarrosus* in having scales retuse at the base of the awn (versus not retuse), and two lateral nerves on the scales versus six to eight in *C. squarrosus* (Wunderlin, 1998). Godfrey & Wooten (1979) has an

illustration of both *C. cuspidatus* and *C. squarrosus* (as C. *artistatus*); Tobe et al. (1998) has an illustration of *C. cuspidatus*.
References: Small, 1933a; McLaughlin, 1944; Long & Lakela, 1976; Godfrey & Wooten, 1979; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: The earliest known collection of coastalplain flatsedge is from the herbarium of Alvan W. Chapman. The specimen is labeled from Key West in 1843 (s.n., NY), but it is not certain if Chapman was the actual collector. It has not been collected in the Florida Keys since that time.

Mary Francis Baker made the next collections in 1917 near Alva in Lee County (s.n., FLAS; 24, US), in the vicinity of what is now Caloosahatchee Regional Park. Gann surveyed this site with Lee County biologists Roger Clark and Rob Irving in January 2001. Potential habitat exists in the park, but it has been severely impacted by wild hogs and exotic pest plants. Olga Lakela made two collections in Collier County, the first in 1964 off of Lake Trafford Road west of Immokalee (24760, USF), and the other in 1965 in Royal Palm Hammock in Collier-Seminole State Park (29208, USF). R. "Bobby" Hattaway of the Florida Park Service has not seen this species in Collier-Seminole State Park despite numerous botanical surveys (R. Hattaway, personal communication, 12 January 2001). Habitat does exist near Immokalee at Corkscrew Swamp Sanctuary and Corkscrew Regional Ecosystem Watershed, but coastalplain flatsedge has not been observed or reported in that area despite surveys by numerous botanists.

The last station to be collected was in Charlotte County about two miles north of the Lee County line along State Road 765 (Burnt Store Road), where Richard Carter collected it in 1980 (2656, FLAS). The habitat for this station was "bulldozed moist sandy site." Gann observed the area in the vicinity of this station in 2000. The entire area had been cleared and was undergoing development.

Comments: *Coastalplain flatsedge is a small, sporadic, annual, ephemeral species that may be overlooked by botanists, or may*

have always been rare in South Florida. Godfrey and Wooten (1979) state that it prefers moist to wet open places, and is usually a colonizer. Specimens of this species in South Florida have been collected from September through November, when surveys should be conducted.

Preliminary recommendations:

- Survey Caloosahatchee Regional Park.
- Survey appropriate habitats near historical locations in Charlotte, Collier, and Lee counties.
- If plants are found, map and monitor known populations.

Cyperus stenolepis Torr.
Strawcolored Flatsedge

South Florida Status: Historical. Last collected in 1969 north of Indiantown.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Perennial terrestrial herb.
Distribution: Native primarily to the southeastern coastal plain. Wunderlin (1998) reports it as frequent in Florida in Okaloosa County and the peninsula.
South Florida Distribution: Collier, Glades, Hendry, and Martin counties.
South Florida Habitats: Marshes, wet prairies, wet flatwoods, and wet disturbed sites.
Protection Status: Not listed by any agency.
Identification: Godfrey & Wooten (1979) includes *C. stenolepis* within the closely related *C. strigosus* L. Wunderlin (1998) separates the two, *C. stenolepis* differing from *C. strigosus* in that its achenes are honeycombed rather than papillate (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Godfrey & Wooten, 1979; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: William G. Atwater first collected strawcolored flatsedge in 1958 in the Devil's Garden area of Hendry County (65-95, FLAS). Olga Lakela collected it in 1964 in the Lake Trafford area west of Immokalee in Collier County (27466, USF). William L. McCart collected it in 1969

about five miles south of Palmdale in Glades County (11070, FLAS). Bradley surveyed this area in 2000, but could not locate any plants. McCart also collected it in 1969 on State Road 609, about five miles north of Indiantown in Martin County (10996, FLAS, USF). Bradley and Woodmansee collected it in 1998 just outside of South Florida about 1.3 miles north of the Martin County line in western St. Lucie County (1078, FTG). It was growing on the bank of a creek.

Comments: *This is a large, perennial herb that grows to one meter tall or more and should be easily noticed. Nevertheless, all collections in South Florida were made within the eleven-year period from 1958 to 1969. South Florida is the southernmost limit of the range of* C. stenolepis *in the southeastern United States. It seems possible that conditions are not especially favorable here, and its occurrence is sporadic.*

Preliminary recommendations:

- Survey appropriate habitats in Collier, Glades, Hendry, and Martin counties.
- If plants are found, map and monitor known populations.

Dryopteris ludoviciana (Kunze) Small
Southern Wood Fern

South Florida Status: Historical. Collected once in 1937 in Collier County. Reported, but unverified, from Corkscrew Swamp Sanctuary.
Taxonomy: Pteridophyte; Dryopteridaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to southeastern North America. Wunderlin & Hansen (2000) reports it as common nearly throughout Florida.
South Florida Distribution: Collier County.
South Florida Habitats: Hydric hammocks.
Protection Status: Not listed by any agency.
Identification: Tobe et al. (1998) has color photos and an illustration; Nelson (2000) has color photos; Wunderlin & Hansen (2000) has an illustration; the IRC Website has a color photo.
References: Chapman, 1883; Small, 1938; Lakela & Long, 1976; Flora of North America Editorial Committee, 1993; Tobe et al., 1998; Wunderlin, 1998; Nelson, 2000; Wunderlin & Hansen, 2000.

Synonyms: *D. floridana* (Hook.) Kuntze; *Aspidium ludovicianum* Kunze.

Historical Context in South Florida: E.P. St. John collected southern wood fern once in 1937 in "Deep Lake Hammock" (1476, FLAS), in what was almost certainly the Fakahatchee Strand, now in the Fakahatchee Strand Preserve State Park. It has been reported for the Corkscrew Swamp Sanctuary (Judd, 1994), but this station needs to be verified.

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida.*

Preliminary recommendations:

- Survey Corkscrew Swamp Sanctuary and Fakahatchee Strand Preserve State Park.
- If plants are found, map and monitor known populations.

Echinodorus berteroi (Spreng.) Fassett
Upright Burhead

South Florida Status: Historical. Last collected in 1982 in the Pinecrest area of Big Cypress National Preserve.
Taxonomy: Monocotyledon; Alismataceae.
Habit: Perennial terrestrial herb.
Distribution: Native, but local, to North America, the West Indies, South America, and Mexico. Wunderlin (1998) reports it as occasional in Florida in Taylor County south to Levy County, Monroe County, and Escambia County. Wunderlin & Hansen (2001) records it for Monroe, Dixie, Levy, and Taylor counties.
South Florida Distribution: Monroe County.
South Florida Habitats: Shallow fresh water.
Protected Status: Not listed by any agency.
Identification: *E. berteroi* is similar to some *Sagittaria* species, but can be distinguished by having all bisexual flowers instead of upper male flowers and lower female flowers (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Fassett, 1959; Godfrey & Wooten, 1979; Correll & Correll, 1982; Wunderlin, 1998; Flora of North America Editorial Committee, 2000.
Synonyms: *E. cordifolius* (L.) Griseb., misapplied; *E. rostratus* (Nutt.) Engelm.; *Echinocarpus radiatus* of Melville (1882).

Historical Context in South Florida: John Loomis Blodgett first collected upright burhead on the island of Key West between 1838 and 1853 (s.n., NY). It also was reported for Key West by Melville (1884). It was collected on Lower Matecumbe Key in 1892 by Joseph H. Simpson (434, NY) and in 1948 by J.S. Haeger (s.n., FLAS). Both of these collections were probably from the margins of permanent freshwater ponds described by the British surveyor Bernard Romans (1775). David and Sally Black collected upright burhead once in 1982 in the Pinecrest area of Big Cypress National Preserve (s.n., FTG). One plant was observed, which was collected for the FTG specimen (S. Black, personal communication, 2 July 2001). It has not been seen in South Florida since that time.

Comments: *Upright burhead flowers during the spring and summer, when surveys should be conducted.*

Preliminary recommendations:

- Survey Pinecrest area of Big Cypress National Preserve.
- If plants are found, map and monitor known populations.
- Consider restoring freshwater wetlands on Lower Matecumbe Key and reintroducing upright burhead.
- Review for listing by FDACS and FNAI.

Eleocharis montevidensis Kunth
Sand Spikerush

South Florida Status: Historical. Last collected in 1969 on Sanibel Island. Last verifiable native population was collected in the late 1800s.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to much of North America, Mexico, Central America, and South America. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Collier and Lee counties. The South Florida stations are disjunct from the nearest population in Lake County. The Lee County station may represent an introduced waif population.
South Florida Habitats: Brackish or freshwater marshes.

Protected Status: Not listed by any agency.
Identification: Godfrey & Wooten (1979) has an illustration.
References: Chapman, 1883; Small, 1933a; Svenson, 1937; Ward and Hodgson, 1975; Godfrey & Wooten, 1979; Wunderlin, 1998.
Synonyms: *E. arenicola* Torr. ex Engelm. & A. Gray.

Historical Context in South Florida: Allan H. Curtiss collected sand spikerush once in Collier County in the late 1800s, on the margins of "Palm Creek" west of Everglades City (s.n., US). Palm Creek presumably refers to what is now known as Blackwater River, which runs through Collier-Seminole State Park. William C. Brumbach also collected sand spikerush in 1969 in moist soil on a grassy roadside on Sanibel Island in Lee County (6713, FLAS). It is unclear if the Sanibel Island station was native, or if it represented an introduced waif population.

Preliminary recommendations:

- Survey Collier-Seminole State Park and Sanibel Island.
- If plants are found, map and monitor known populations.

Elytraria caroliniensis (J.F. Gmel.) Pers. var. ***caroliniensis*** **Carolina Scalystem**

South Florida Status: Historical. Last collected in 1985 in North Fort Myers.
Taxonomy: Dicotyledon; Acanthaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the central panhandle to the northern and central peninsula.
South Florida Distribution: Charlotte and Lee counties.
South Florida Habitats: Flatwoods and moist areas.
Protection Status: Not listed by any agency.
Identification: Tobe et al. (1998) has both illustrations and color photos.
References: Chapman, 1883; Small, 1933a; Godfrey & Wooten, 1981; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: *E. virgata* Michx.; *Tubiflora caroliniensis* J.F. Gmel.

Historical Context in South Florida: Albert S. Hitchcock first collected Carolina scalystem in 1900 around flatwoods ponds in Fort Myers (16112, NY). Elliott Brown collected it again in Lee County in 1985 in North Fort Myers near Yellow Fever Creek (s.n., USF). Gann and Tiffany Troxler Gann briefly surveyed this site in 2000, but were unable to locate any plants. The site is still undeveloped, but disturbed. Carolina scalystem could still be present. O.E. Frye made a collection in Charlotte County in 1946 in "Cabbage Hammock" (159, FLAS), a site of unknown location.

Comments: *This is a temperate species at the southern end of its range, and it may have always been rare in South Florida. It is replaced in most of South Florida by the endemic variety* E. caroliniensis *var.* angustifolia*. It is a facultative wetland species that grows in areas of moist soils containing abundant calcium (Tobe et al., 1998).*

Preliminary recommendations:
- Survey Yellow Fever Creek Site.
- If plants are found, map and monitor known populations.
- Acquire Yellow Fever Creek Site.

Eriochloa michauxii (Poir.) Hitchc.
var. ***simpsonii*** Hitchc.
Simpson's Cup Grass

South Florida Status: Historical. Last collected in 1966 on Sanibel Island.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to South Florida.
South Florida Distribution: Collier, Lee, and Monroe counties.
South Florida Habitats: Beach dunes and dry disturbed sites.
Protection Status: Not listed by FDACS due to its status as a variety. Listed as critically imperiled by FNAI.
Identification: *E. michauxii* var. *simpsonii* can be distinguished from *E. michauxii* var. *michauxii* in that the lower floret is neutral instead of male (Wunderlin, 1998).
References: Hitchcock & Chase, 1950; Avery & Loope, 1980a; Shaw & Webster, 1987; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Joseph H. Simpson collected the type specimen of this endemic grass on Cape Romano in 1891 (262, NY). No other collections have been made from that area. Simpson collected another specimen, actually a month earlier, at Cape Sable on the Monroe County mainland (165, NY), in what is now Everglades National Park. Alvah A. Eaton made a collection in 1905 at Flamingo (Shaw and Webster, 1987), which is located to the east of Cape Sable in Everglades National Park. It is possible that both of these collections came from the same station, as that entire region was often referred to as Cape Sable.

Eaton made a collection of Simpson's cup grass in "Lee County" in 1905 (1300, NY), but this specimen could have come from either Collier or Lee counties, as what is now Collier County was part of Lee County at the time. However, two specimens were collected from modern Lee County, the first in 1964 by Olga Lakela on a back dune on the Gulf of Mexico near Bonita Springs (27094, USF), and the second by William C. Brumbach from a dry roadside on Sanibel Island in 1966 (5583, USF).

Jason R. Swallen made a collection in 1939 "Keys" (4057, TAES), presumably in the Monroe County Keys. Swallen later made an additional collection on Lower Matecumbe Key (Shaw and Webster, 1987). No additional collections from the Keys have been made.

Comments: *Most collections have been made from March to May, so surveys should be conducted during this time period.*

Preliminary recommendations:

- Survey historical locations, including Everglades National Park.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- Review FNAI rank.

Govenia utriculata (Sw.) Lindl.
Tropical Govenia

South Florida Status: Historical. Last collected in 1964 in Everglades National Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS and as extirpated by FNAI.
Identification: Luer (1972) has illustrations and color photos.
References: Luer, 1972; Long & Lakela, 1976; Correll & Correll, 1982; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: Frank C. Craighead discovered tropical govenia in October 1959 in a hammock on Long Pine Key in Everglades National Park (Luer, 1972). Twenty-five or more plants were observed (letter from Frank C. Craighead to the Chief Ranger of Everglades National Park, 18 November 1966). All collections and observations from Florida have been from this station. Craighead made two collections in 1960, the first in April (s.n., FTG), and the second in the fall (s.n., FLAS). In October 1961, 21 plants were counted, but by December of that year it appeared that many of the plants had died or had been removed by collectors. In October 1962 only four plants were counted and it appeared as if collectors had trampled the area. On November 20, 1962 Craighead again visited the site and those four plants had been removed. By December 15, 1963 only one plant could be found. On November 22, 1964, Daniel B. Ward made the last collection of the species in South Florida with Craighead (4353, FLAS). Only flowers were taken, and eight or nine plants were present (Craighead counted nine and Ward eight). Despite surveys by George N. Avery in 1976 and 1978, and many others subsequently, no verifiable observations have been made.

Paul Martin Brown has observed four sterile plants of what he believes is *Govenia* in Everglades National Park near the Craighead station (Brown, 2000). It is possible that after many years, dormant seeds have sprouted and that tropical govenia is once again part of the South Florida flora. There have been some other reports of tropical govenia in South Florida, but none that we have been able to verify.

Comments: Govenia floridana *P.M. Br. has been published as a new name for the Florida plants of* Govenia *(Brown, 2000). If this treatment is accepted, then the Florida plants are endemic and cannot be reintroduced since no Florida plants are known from cultivation. The taxonomy of Florida plants should be studied further. If the new plants discovered by Brown are indeed tropical govenia, then the National Park Service will need to vigorously protect these plants from poaching.*

Preliminary recommendations:

- Review taxonomic treatment of *Govenia* in Florida.
- Monitor new plants discovered by Paul Martin Brown.
- If plants are found, then map outline of station every year and count individual plants.
- If plants are found, protect from poaching.
- If plants are found, consider establishing an *ex situ* collection of germplasm.

Harrisia fragrans Small ex Britton & Rose
Fragrant Pricklyapples

South Florida Status: Historical. Known only from two collections from Cape Sable and Big Pine Key in 1982.
Taxonomy: Dicotyledon; Cactaceae.
Habit: Shrub.
Distribution: Endemic to peninsular Florida. Wunderlin (1998) reports it as rare in Florida from Volusia County south to St. Lucie County. It is apparently extant only in St. Lucie County.
South Florida Distribution: Monroe County.
South Florida Habitats: Coastal berms and possibly rockland hammocks.
Protection Status: Listed as endangered by USFWS, as endangered by FDACS, and as critically imperiled by FNAI.

Identification: Chafin (2000) has illustrations and a color photo, and a key to the three native *Harrisia* species in South Florida; the IRC Website has a color photo.
References: Small, 1933a; Britton & Rose, 1937; Long & Lakela, 1976; Benson, 1982; Austin, 1984; Wunderlin, 1998; Chafin, 2000; Coile, 2000; USFWS, 2000.
Synonyms: *Cereus eriophorus* Pfeiff. & Otto var. *fragrans* (Small ex Britton & Rose) L.D. Benson.

Historical Context in South Florida: John Kunkel Small described fragrant pricklyapples from plants collected to the north of our area in the vicinity of Fort Pierce (s.n., NY). The first report of fragrant pricklyapples from South Florida was by Small (1932) who attributed plants in Miami-Dade County to this species. Daniel F. Austin (1984) contends that this was in error. The next report from South Florida is by Lyman D. Benson (1982) who reported the species from the "Cape Sable area" of Everglades National Park, but his specimen was actually collected to the east of Flamingo (16578, POM). Benson and others also collected a specimen from Big Pine Key in the lower Florida Keys (16575, POM). We have not seen these specimens. Austin (1984) believed that this species did not occur in South Florida.

Preliminary recommendations:

- Examine Benson specimens at the Rancho Santa Ana Botanic Garden (POM). If the specimens are valid, then proceed with additional recommendations.
- Survey Flamingo/Cape Sable area in Everglades National Park and Big Pine Key.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- Review for listing by USFWS.

Heliotropium fruticosum L.
Key West Heliotrope

South Florida Status: Historical. Last collected in 1978 on Sugarloaf Key.
Taxonomy: Dicotyledon; Boraginaceae.
Habit: Annual terrestrial herb.

Distribution: Native to South Florida, the West Indies, Central America, and South America.
South Florida Distribution: Monroe County Keys.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS.
Identification: There are several species of *Heliotropium* in South Florida. *H. fruticosum* is the only one with flowers subtended by foliaceous bracts.
References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Ward & Fantz, 1977; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: *H. myosotoides* Chapm.; *H. phyllostachyum* Torr.

Historical Context in South Florida: Key West heliotrope was collected first on the island of Key West either by John Loomis Blodgett between 1838 and 1853 (s.n., NY), or by Ferdinand Rugel in 1846 (s.n., US). It was collected several other times on Key West in the late 1800s, including by E. Palmer in 1874 (409, NY) and by Abram P. Garber in 1877 (4406, NY).

George N. Avery rediscovered Key West heliotrope at one small station on Sugarloaf Key in 1964 (Avery's Notes, 25 August 1964). In 1967, Avery found only four plants at this station (Avery's Notes, 16 August 1967). The last record is a collection from Sugarloaf by Avery in 1978 (1959, FLAS, FTG). Bradley and Woodmansee surveyed in the vicinity of the Sugarloaf Key station in 2000, in Sugarloaf Hammocks, Florida Keys Wildlife and Environmental Area, but were unable to find any plants. The actual station is still undeveloped, but is privately owned and was not surveyed.

Comments: *Key West heliotrope flowers all year.*

Preliminary recommendations:
- Survey Sugarloaf Key Heliotropium Site.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- If no plants are found, consider reintroduction to the lower Florida Keys, including Sugarloaf Hammocks, Florida Keys Wildlife and Environmental Area.
- Acquire Sugarloaf Key Heliotropium Site.

- Review for listing by FNAI

Isoetes flaccida Shuttlew. ex A. Braun
Florida Quillwort

South Florida Status: Historical. Last collected in 1999 at Hogan Island in Collier County.
Taxonomy: Pteridophyte; Isoetaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to Florida and Georgia. Wunderlin & Hansen (2000) reports it as occasional in Florida from the central panhandle to the peninsula.
South Florida Distribution: Collier, Glades, Miami-Dade, and Monroe counties.
South Florida Habitats: Margins of streams and sinkholes.
Protection Status: Not listed by any agency.
Identification: Wunderlin & Hansen (2000) has an illustration.
References: Chapman, 1883; Eaton, 1906; Pfeiffer, 1922; Small, 1931b; Small, 1938; Lakela & Long, 1976; Long & Lakela, 1976; Boom, 1982; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *I. flaccida* var. *alata* N. Pfeiff.; *I. flaccida* var. *chapmanii* Engelm.

Historical Context in South Florida: Abram P. Garber first collected Florida quillwort in 1878 in Lake Flirt to the west of Lake Okeechobee in Glades County. Lake Flirt was destroyed by drainage. Leonard J. Brass collected Florida quillwort in 1964 on the edge of Fisheating Creek near Palmdale (33217, USF), in or near what is now the Fisheating Creek Wildlife Management Area. Richard Moyroud collected it later in this same area (s.n., FAU), but this specimen does not have a date.

John Kunkel Small and Joel J. Carter first collected Florida quillwort in Miami-Dade County in 1903 between Coconut Grove and Cutler (1209, NY). Alvah A. Eaton collected it in a "muddy alligator hole at Gossman's" in 1905 (1244, MO), which is now known as Hattie Bauer Hammock, the largest portion of which is a Miami-Dade County conservation area. Eaton also reported observing Florida quillwort at "Orange Glade, border of the Miami [River] at the rapids…" and "in the brook at Snapper hammock"

(Eaton, 1906). The former station is now destroyed. The latter station probably refers to historic Snapper Creek near what is now Matheson Hammock Park, but Snapper Creek is now canalized and salt water intruded. This could represent Small and Carter's 1903 station.

Leonard J. Brass collected Florida quillwort once in Monroe County on the mainland off of Loop Road in 1954 (33217, ARCH), probably in what is now Big Cypress National Preserve. Taylor R. Alexander collected Florida quillwort once in the Fakahatchee Strand in Collier County in 1975 (s.n., FTG). Daniel F. Austin made the most recent collection in 1999 at Hogan Island south of Immokalee in Collier County (s.n., FAU, USF). Unfortunately this was the only plant seen, and it was collected before its identification was known (D.F. Austin, personal communication, 31 January 2001).

Comments*: Florida quillwort appears to be a sensitive species that has fared poorly in South Florida following widespread hydrological modifications and habitat degradation. This species produces spores in the summer, when surveys should be conducted.*

Preliminary recommendations:

- Survey Hogan Island, Fakahatchee Strand Preserve State Park, Fisheating Creek Wildlife Management Area, Hogan Island, and the Loop Road area of Big Cypress National Preserve.
- If plants are found, map and monitor known populations.

Lechea lakelae Wilbur
Lakela's Pinweed

South Florida Status: Historical. Last collected in 1987 on Marco Island.
Taxonomy: Dicotyledon; Cistaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to South Florida.
South Florida Distribution: Collier County.
South Florida Habitats: Scrub and coastal strand.
Protection Status: Listed as endangered by FDACS and as historical by FNAI.

Identification: Similar to *L. torreyi*, except capsules, stem, and leaves are completely glabrous, rather than appressed pilose. The capsules also slightly exceed the inner sepals at maturity, rather than being slightly shorter than or equal to them (Wunderlin, 1998).
References: Wilbur, 1974; Avery & Loope, 1980a; Wunderlin, 1998; Coile, 2000.
Synonyms: None.

Historical Context in South Florida: Olga Lakela first collected Lakela's pinweed in 1964 on Marco Island (27822a, USF). Lakela made collections on Marco a number of times after that: in 1967 (30953, FSU), in 1968 with Frank Almeda (31567, USF), and in 1969 (31879, FSU). The only additional collection seen from Marco Island was made by Donald R. Richardson in 1987 (s.n., USF). This species may be extinct, although Jim Burch has observed what he thinks may be Richardson's station, but has yet to observe plants in fruit (personal communication, 22 May 2001). This station is in a vacant lot that was formerly scrub, with some native species persisting.

Wilbur (1974) also thought that this species might have occurred in Broward County at one time. He cites one specimen from the Buswell Herbarium (now at Fairchild Tropical Garden) collected by Walter M. Buswell in 1936 in scrub above Fort Lauderdale. Wilbur observed this specimen before he thought that it might represent a distinct species. It is discussed by Wilbur and Daoud (1961) and does seem to fit the description of *L. lakelae.* Unfortunately, this specimen may have been lost.

Preliminary recommendations:

- Survey Richardson station and other areas on Marco Island.
- Survey scrub in the vicinity of Fort Lauderdale.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- Acquire Lakela's Pinweed Site.

Lepanthopsis melanantha (Rchb. f.) Ames
Tiny Orchid

South Florida Status: Historical. Last observed around 1990 in Fakahatchee Strand Preserve State Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, Cuba, and Jamaica.
South Florida Distribution: Collier County.
South Florida Habitats: Strand swamps; epiphytic on hardwoods.
Protection Status: Listed as endangered by FDACS and as historical by FNAI.
Identification: Luer (1972) has both illustrations and color photos; the IRC Website has a color photo.
References: Small, 1933a; Correll, 1950; Luer, 1972; Long & Lakela, 1976; Wunderlin, 1998; Coile, 2000.
Synonyms: *Lepanthes harrisii* Fawc. & Rendle.

Historical Context in South Florida: D.T. Thompson discovered tiny orchid in the western part of the Big Cypress Swamp in 1931 (Correll, 1950; Luer, 1972), in what was almost certainly the Fakahatchee Strand. E.P. St. John and others vouchered it in 1939 for Deep Lake (s.n., FLAS), but St. John's Deep Lake collections from both 1937 and 1939 all appear to have come from what is now Fakahatchee Strand Preserve State Park. Roger L. Hammer, George N. Avery, David Black, Sally Black, and Sue Schreiber all observed a single plant growing on a pond apple (*Annona glabra*) tree in 1976 (Avery's Notes, 11 November 1976). Hammer reports that in 28 years of exploring the Fakahatchee Strand he has only encountered tiny orchid on five occasions (Hammer, 2001), the last of which was around 1990 (personal communication, 4 January 2000). Florida Park Service biologist Mike Owen has never seen tiny orchid despite numerous searches (personal communication, 22 January 2001).

Comments: *This is an extremely small orchid (ca. 5 cm or 2 inches tall) that is very difficult to detect in the wild. We are hopeful that tiny orchid is extant and has just escaped observation in the last few years.*

Preliminary recommendations:

- Continue ongoing surveys in Fakahatchee Strand Preserve State Park.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- If no plants are found by 2010, consider reintroduction to Fakahatchee Strand Preserve State Park.

Liquidambar styraciflua L.
Sweetgum

South Florida Status: Historical. Native population vouchered once in 1966 at La Belle.
Taxonomy: Dicotyledon; Hamamelidaceae.
Habit: Tree.
Distribution: Native to the eastern United States, Mexico, and Central America. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Native to Hendry County. Cultivated outside of its historical range in South Florida and sparingly naturalized.
South Florida Habitats: Riverine swamps.
Protection Status: Not listed by any agency.
Identification: Nelson (1994) has an illustration; Tobe et al. (1998) has illustrations and color photos.
References: Chapman, 1883; Small, 1933a; West & Arnold, 1948; Long & Lakela, 1976; Godfrey & Wooten, 1981; Godfrey, 1988; Nelson, 1994; Tobe et al., 1998; Wunderlin, 1998; Flora of North America Editorial Committee, 1999.
Synonyms: None.

Historical Context in South Florida: Olga Lakela collected sweetgum once in 1966 south of the Caloosahatchee River at La Belle in Hendry County, in what appeared to be a remnant of primary vegetation (29999, USF). Bradley briefly surveyed this area in 2000, including the La Belle Nature Park, but did not find any plants. Most of the historical forest along the south side of the Caloosahatchee River has been destroyed.

Lee County biologist Roger Clark also showed a naturalized stand to Gann and Rob Irving in January 2001. This stand was adjacent to an old homestead several miles south of the Caloosahatchee River west of Fort Myers. A specimen was collected in Martin County in 1997 by Gene M. Silberhorn in a vacant lot (s.n., USF). This population is probably naturalized from cultivated plants. The closest historical station to Martin County on the east coast is Brevard County (Little, 1978).

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida.*

Preliminary recommendations:

- Survey hammocks in the La Belle area, including La Belle Nature Park.
- If plants are found, map and monitor known populations.
- If no plants are found, assess appropriateness and study feasibility of reintroduction to the La Belle area at La Belle Nature Park.
- Consider restoring floodplain forest along the Caloosahatchee River and reintroducing sweetgum.

Lobelia homophylla E. Wimm.
Pineland Lobelia

South Florida Status: Historical. Last collected in 1986 in North Fort Myers. Last observed in 1993 in Hendry County.
Taxonomy: Dicotyledon; Campanulaceae.
Habit: Annual terrestrial herb.
Distribution: Endemic to peninsular Florida. Wunderlin (1998) reports it as frequent in peninsular Florida.
South Florida Distribution: Collier, Glades, Hendry, and Lee counties. The Hendry County occurrence was not vouchered.
South Florida Habitats: Moist soils.
Protection Status: Not listed by any agency.
Identification: Taylor (1998) has a color photo; the IRC Website has a color photo.
References: Chapman, 1883; Small, 1933a; Wimmer, 1956; Godfrey & Wooten, 1981; Wunderlin, 1998.
Synonyms: *L. cliffortiana* L., misapplied; *L. cliffortiana* var. *xalapensis* Gray; *L. xalapensis* HBK, misapplied.

Historical Context in South Florida: Abram P. Garber may have first collected pineland lobelia in 1879, but the label on his specimen states only "South Florida" (s.n., NY). It was collected a number of times in and around Fort Myers from 1905 to 1986. The first collection was by Alvah A. Eaton in "East Fort Myers" in 1905 (1414, NY). Subsequent collections in the area were made by Paul C. Standley in 1916 (2829, US) and by Harold Moldenke in 1930 (1010, NY). Elliott Brown made the last collection at Tamiami Village, a trailer park community in North Fort Myers, in 1986 (s.n., USF). Gann briefly surveyed this area in 2000, and a remnant flatwoods site is still present just to the north of Tamiami Village.

Leonard J. Brass made a collection in 1949 along the Fisheating Creek near Fort Center Mound in Glades County (20535, US), in what is now the Fisheating Creek Wildlife Management Area. In 1964, Daniel B. Ward and Robert K. Godfrey collected a solitary plant growing in a moist grassy roadway on the east side of Deep Lake (3994, FLAS), probably in what is now Big Cypress National Preserve. There is also a specimen from the Lemon Bay area, which straddles Charlotte and Sarasota counties, which was collected by Samuel M. Tracy in 1901 (7511, NY). It is uncertain whether this station was in South Florida or in Sarasota County.

In 1993, Chuck McCartney photographed pineland lobelia at a private hunting camp in Hendry County while preparing a plant list (McCartney & Rabenau, 1993). The property was known at the time as Peaceful Palms.

Comments: *Pineland lobelia flowers spring through fall, when surveys should be conducted.*

Preliminary recommendations:

- Survey Deep Lake area of Big Cypress National Preserve and Fisheating Creek Wildlife Management Area
- Survey Lemon Bay area in northern Charlotte County, Peaceful Palms in Hendry County, and the Tamiami Village area.
- If plants are found, map and monitor known populations.
- Acquire Tamiami Village Flatwoods Site.

Ludwigia decurrens Walter
Wingleaf Primrosewillow

South Florida Status: Historical. Last collected in 1964 near Port Salerno in Martin County. Last reported in 1994 for Corkscrew Swamp Sanctuary.
Taxonomy: Dicotyledon; Onagraceae.
Habit: Annual terrestrial herb.
Distribution: Native to the eastern and central United States and tropical America. Wunderlin (1998) reports it as occasional nearly throughout Florida.
South Florida Distribution: Lee, Martin, Miami-Dade, and Palm Beach counties.
South Florida Habitats: Pine flatwoods, depression marshes, and swales.
Protection Status: Not listed by any agency.
Identification: Taylor (1992) has a color photo.
References: Chapman, 1883; Small, 1933a; Godfrey & Wooten, 1981; Taylor, 1992; Wunderlin, 1998; Liogier & Martorell, 2000.
Synonyms: *Jussiaea decurrens* (Walter) DC.

Historical Context in South Florida: Jeanette P. Standley first collected wingleaf primrosewillow in 1916 in the Fort Myers area in Lee County (389, US). It was reported more recently for the Corkscrew Swamp Sanctuary (Judd, 1994) and Corkscrew Regional Ecosystem Watershed (anonymous, no date.d), both of which are located in Lee and Collier counties, but both of these stations need to be verified.

In 1916, John Kunkel Small collected wingleaf primrosewillow in Miami-Dade County in “Everglades west of Peters” (7913, FLAS, NY, US), a station that has been destroyed. Richard A. Howard collected it in 1942 two miles west of Lantana in Palm Beach County (12960, US). It was found in “pine woods on sandy soil, most abundant in wet depressions.” This station was also destroyed. Robert Kral collected wingleaf primrosewillow in 1964 in Martin County (22889, TEX, VDB). This collection was made in Port Salerno in “sandy peat of dune swale.” We are uncertain where this habitat type may have existed in Port Salerno. Kral may also have been referring to a low swale in sand pine scrub.

Comments: *This is a temperate species at the southern end of its range, and it may have been always rare in South Florida.*

Preliminary recommendations:
- Survey Corkscrew Swamp Sanctuary.
- Survey Port Salerno area.
- If plants are found, map and monitor known populations.

Lyonia ferruginea (Walter) Nutt.
Rusty Staggerbush

South Florida Status: Historical. Collected once in 1935 near Palmdale.
Taxonomy: Dicotyledon; Ericaceae.
Habit: Shrub or small tree.
Distribution: Native to peninsular Florida, Georgia, and South Carolina. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Glades County.
South Florida Habitats: Scrub or scrubby flatwoods.
Protection Status: Not listed by any agency.
Identification: Nelson (1994) has a photo; Nelson (1996) has a photo; Taylor (1998) has a color photo. This is very similar to *L. fruticosa*, which has often been misidentified as *L. ferruginea* in South Florida. In *L. ferruginea* the leaves are revolute and not reduced toward the ends of the flowering shoots, whereas in *L. fruticosa* the leaves are not revolute and the leaves are reduced toward the end of the flowering shoots (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Godfrey & Wooten, 1981; Judd, 1981; Godfrey, 1988; Taylor, 1992; Nelson, 1994; Nelson, 1996; Wunderlin, 1998.
Synonyms: *Andromeda ferruginea* Walter; *Xolisma ferruginea* (Walter) A. Heller.

Historical Context in South Florida: Hardrada H. Hume collected rusty staggerbush in 1935 at Palmdale (s.n., FLAS), in or near what is now Fisheating Creek Wildlife Management Area.

Comments. *This is a temperate species at the southern end of its range, and may have always been rare in South Florida.*

Preliminary recommendations:

- Survey Palmdale area, including the Fisheating Creek Wildlife Management Area.
- If plants are found, map and monitor known populations.

Matelea gonocarpos (Walter) Shinners
Angularfruit Milkvine

South Florida Status: Historical. Last collected in 1961 near Lakeport in Glades County. Last reported in 1997 for Corkscrew Regional Ecosystem Watershed.
Taxonomy: Dicotyledon; Asclepiadaceae.
Habit: Perennial vine.
Distribution: Native to the eastern and central United States. Wunderlin (1998) reports it as occasional in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Glades and Lee counties.
South Florida Habitats: Mesic hammocks.
Protection Status: Listed as threatened by FDACS.
Identification: Bell & Taylor (1982) has a color photo.
References: Chapman, 1883; Small, 1933a; Drapalik, 1969; Bell & Taylor, 1982; Wunderlin, 1998; Coile, 2000.
Synonyms: *M. suberosa* (L.) Shinners, misapplied; *Gonolobus suberosus* (L.) R. Br., misapplied; *Vincetoxicum suberosum* (L.) Britton, misapplied.

Historical Context in South Florida: Walter M. Buswell first collected angularfruit milkvine in "woods near Ft. Myers" in Lee County (s.n., NY). Buswell's specimen is undated but he collected in Fort Myers in the 1920s and 1930s. Daniel B. Ward and others made the next collection of angularfruit milkvine in 1961 in a mesic hammock about 8.5 miles northwest of Lakeport in Glades County (2428, FLAS). This station has not been surveyed recently but is most likely extirpated. Angularfruit milkvine also has been reported for Corkscrew Regional Ecosystem Watershed (Hilsenbeck, 1997), but this station needs to be verified. The Corkscrew Ecosystem Watershed is located in both Lee and Collier counties, but it appears that Hilsenbeck's list refers to the Lee County portion of the site.

Comments: *This is a temperate species at the southern end of its range, and it may have been always rare in South Florida.*

Preliminary recommendations:
- Survey Corkscrew Regional Ecosystem Watershed.
- Survey the Lakeport area in Glades County.
- If plants are found, map and monitor known populations.

Maxillaria parviflora (Poepp. & Endl.) Garay
Purple Tiger Orchid

South Florida Status: Historical. Last reported in 1990 from Fakahatchee Strand Preserve State Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Collier County.
South Florida Habitats: Strand swamps.
Protection Status: Listed as endangered by FDACS.
Identification: There are two species of *Maxillaria* native to South Florida. *M. parviflora* has long rhizomatous stems whereas *M. crassifolia* plants are caespitose (Wunderlin, 1998). The IRC Website has a color photo
References: Wunderlin, 1998; Liogier & Martorell, 2000; Coile, 2000.
Synonyms: *Maxillaria conferta* (Griseb.) C. Schweinf. ex Léon.

Historical Context in South Florida: Roger L. Hammer discovered purple tiger orchid in 1975 in Fakahatchee Strand Preserve State Park (Hammer, 1981; McCartney, 1995). Carlyle A. Luer vouchered the station in 1976 (s.n., SEL). The entire population consisted of several large clumps of plants on a single pop ash (*Fraxinus caroliniana*) tree. When Hammer returned with Don Keller around 1990 he found that a large trunk of the host tree had fallen into the water, killing about half of the population (Hammer, 2001). This was the last time purple tiger orchid was observed. Hammer returned in 1996 with Bradley and Florida Park Service biologist Mike Owen, but they were unable to locate the host tree. Subsequent visits by Hammer, Owen, and others have proven unsuccessful.

Comments: *This appears to have been a very small population that was extirpated due to natural causes.*

Preliminary recommendations:

- Continue ongoing surveys in Fakahatchee Strand Preserve State Park on an annual basis.
- If plants are found, map and monitor known populations.
- Review for listing by FNAI.

Pecluma dispersa (A.M. Evans) M.G. Price
Widespread Polypody

South Florida Status: Historical. Last known plants removed from the wild in 1980.
Taxonomy: Pteridophyte; Polypodiaceae.
Habit: Perennial epiphytic, lithophytic, or terrestrial herb.
Distribution: Native to peninsular Florida, the West Indies, Mexico, Central America, and South America. Wunderlin & Hansen (2000) reports it as occasional in Florida in Alachua County and in the central and southern peninsula.
South Florida Distribution: Martin County and the Monroe County Keys.
South Florida Habitats: Rockland and mesic hammocks.
Protection Status: Listed as endangered by FDACS and as imperiled by FNAI.
Identification: Chafin (2000) has illustrations and color photos; Nelson (2000) has a color photo; the IRC Website has a color photo.
References: Evans, 1968; Lakela & Long, 1976; Long & Lakela, 1976; Correll & Correll, 1982; Flora of North America Editorial Committee, 1993; Wunderlin, 1998; Chafin, 2000; Coile, 2000; Liogier & Martorell, 2000; Nelson, 2000; Wunderlin & Hansen, 2000.
Synonyms: *Polypodium dispersum* A.M. Evans.

Historical Context in South Florida: Allan H. Curtiss first collected widespread polypody in 1897 in "dry woods" at Sewell's point in Martin County (5861, FLAS, NY). Clifton E. Nauman and Bruce E. Tatje discovered another Martin County station in 1978 in or near what is now Rocky Point Hammock, a Martin County

conservation area (524, USF). Recent surveys of Rocky Point Hammock by Bradley and Woodmansee failed to locate any plants, but this site needs additional surveys.

John Kunkel Small and Charles A. Mosier first collected widespread polypody in Monroe County in 1915 on Pumpkin Key, a small island off the coast of Key Largo in Biscayne Bay (5686, FLAS, NY). Small vouchered this station again in 1920 (9501, NY), and several observations were made of the Pumpkin Key plants over many years (Avery's Notes, January 1969, 24 February 1970). Mark C. McMahon made the last voucher of this population in 1977 (2001, FAU). Roger L. Hammer removed the last plants on Pumpkin Key in 1980 prior to the development of the island (Avery's Notes, 5 December 1980). These plants were given to John Popenoe at Fairchild Tropical Garden, but apparently they have since perished (R.L. Hammer, personal communication, 7 February 2001).

The only other station to be collected in South Florida was on Key Largo in Monroe County. John Kunkel Small vouchered the Key Largo station once in 1916 (7294, US; 7299, NY). No subsequent collections or observations of the Key Largo plants have been made.

Preliminary recommendations:

- Survey Pumpkin Key and Rocky Point Hammock.
- If plants are found, map and monitor known populations.
- Consider reintroduction to Key Largo at Crocodile Lake National Wildlife Refuge, Dagny Johnson Key Largo Hammocks Botanical State Park, Dove Creek Hammocks, and John Pennekamp Coral Reef State Park.
- Acquire Pumpkin Key.

Pelexia adnata (Sw.) Poit. ex Rich.
Hachuela

South Florida Status: Historical. Last reported in 1983 in Fuchs Hammock Preserve.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.

South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS.
Identification: In Florida, the leaves of this species are covered with conspicuous white spots.
References: Correll & Correll, 1982; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: *Spiranthes adnata* (Sw.) Benth. ex Fawc. & Rendle.

Historical Context in South Florida: Roger L. Hammer discovered hachuela in 1977 in Fuchs Hammock, now a Miami-Dade County conservation area (Hammer, 1981). George N. Avery vouchered this station in 1978 with a flower spike and one leaf (1894, FLAS). A total of three plants were observed, and some herbivory was noted on one of the plants (Avery's Notes, 24 April 1978). By 1981, Avery and Hammer had found a total of five plants in the population (Avery's Notes, 5 February 1981). By 1983, Hammer observed that the population had dwindled to one plant (Avery's Notes, 4 March 1983). The population was being overwhelmed by the exotic pest vine nephthytis (*Syngonium podophyllum*). By 1985, Hammer was unable to locate any plants at that station (Hammer, 2001). Subsequently, the Miami-Dade County Parks Department removed the nephthytis from the area, but no new plants have been found.

A recent (1988) collection said to be from Everglades National Park cannot be verified and is treated as doubtful.

Preliminary recommendations:
- Continue surveys at Fuchs Hammock Preserve.
- Review for listing by FNAI.

Peperomia glabella (Sw.) A. Dietr.
Cypress Peperomia

South Florida Status: Historical. Last collected in 1976 in Fakahatchee Strand Preserve State Park.
Taxonomy: Dicotyledon; Piperaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, and South America.

South Florida Distribution: Collier County.
South Florida Habitats: Strand swamps.
Protection Status: Listed as endangered by FDACS.
Identification: Unlike other native and naturalized species of *Peperomia* in Florida, *P. glabella* is evidently black glandular punctate (Wunderlin, 1998).
References: Craighead, 1963; Long & Lakela, 1976; Correll & Correll, 1982; Flora of North America Editorial Committee, 1997; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: None.

Historical Context in South Florida: Frank C. Craighead (1963) reported that Floyd S. Shuttleworth first collected cypress peperomia in the eastern portion of central Collier County. No date for the discovery was given. Frank C. Craighead collected it in 1960 in Collier County (s.n., USF), without specific locality data. Later in 1960, C. Eugene Delchamps made a collection along Monument Road in Collier County (s.n., NY), which is now within Big Cypress National Preserve. George N. Avery and others later found cypress peperomia in 1970 in the northern portion of what is now Fakahatchee Strand Preserve State Park (Avery's Notes, 25 July 1970). Only one clump of plants was seen. A sample taken by Avery was grown at Fairchild Tropical Garden and John Popenoe made a voucher of the cultivated specimens in 1978 (1232, FTG). This cultivated material was apparently never accessioned by Fairchild Tropical Garden, and it is no longer present at the garden. In 1976, Chuck E. Hilsenbeck made the last known collection in Fakahatchee Strand Preserve State Park (s.n., FTG).

Preliminary recommendations:

- Survey Fakahatchee Strand Preserve State Park and the Monument Road area in Big Cypress National Preserve.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- If no plants are found, consider reintroduction to Fakahatchee Strand Preserve State Park and the Monument Road area in Big Cypress National Preserve.
- Review for listing by FNAI.

Ponthieva brittoniae Ames
Mrs. Britton's Shadow Witch

South Florida Status: Historical. Last observed in 1987 in Everglades National Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to South Florida, the Bahamas, and Cuba. Reported in error for central Florida in Sarasota County (P.M. Brown, personal communication, 21 November 2000).
South Florida Distribution: Miami-Dade County. Reported in error for Collier County (P.M. Brown, personal communication, 21 November 2000).
South Florida Habitats: Pine rocklands.
Protection Status: Listed as endangered by FDACS and as critically imperiled by FNAI.
Identification: Luer (1972) has illustrations and color photos; Chafin (2000) has illustrations and color photos; the IRC Website has a color photo.
References: Small, 1933a; Luer, 1972; Sauleda & Adams, 1980; Correll & Correll, 1982; McCartney, 1992a; McCartney, 1997; Wunderlin, 1998; Chafin, 2000; Coile, 2000.
Synonyms: *P. racemosa* (Walter) C. Mohr var. *brittoniae* (Ames) Luer.

Historical Context in South Florida: John Kunkel Small and Joel J. Carter first collected Mrs. Britton's shadow witch in 1909 in a pineland northwest of Perrine (3106, NY), and on Long Pine Key (3061, NY; 8128, NY), in what is now Everglades National Park. It was never collected again with certainty outside of Everglades National Park. Frank C. Craighead subsequently collected it on Long Pine Key near Osteen Hammock in 1961 (s.n., FTG), but these plants have not been recently seen. Roger L. Hammer discovered another station on Long Pine Key in the vicinity of Wright Hammock in 1979 (Avery's Notes, 24 February 1979). The plants were growing along the edge of a firebreak road. George N. Avery observed this station in 1979 and again in 1981 and 1983 (Avery's Notes, 1979, 1981, 1983). On the last visit, he showed the station to Chuck McCartney. McCartney subsequently found a single plant growing on the edge of a solution hole north

of Wright Hammock in 1987 (McCartney, 1997). Despite several visits to the Wright Hammock area by McCartney, Hammer, and the authors, no additional plants have been observed. The possible extirpation of this species seems to be due, at least in part, to the re-grading of the firebreak road edge by National Park Service personnel (McCartney, 1997).

Comments: *It should be noted that* P. brittoniae *is difficult to distinguish from* P. racemosa *solely on the basis of herbarium specimens. As a result, erroneous records of* P. brittoniae *have been published. Small and others may have collected Britton's shadow witch at the Deering Estate at Cutler in 1924 (s.n., NY) and 1925 (s.n., NY). These two undetermined specimen need to be examined. Surveys should be conducted from January through March.*

Preliminary recommendations:

- Examine *Ponthieva* specimens from Deering Estate at NY.
- Survey Long Pine Key area in Everglades National Park on an annual basis.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- If no plants are found by 2007, assess appropriateness and study feasibility of reintroduction to Long Pine Key in Everglades National Park.

Potamogeton pectinatus L.
Sago Pondweed

South Florida Status: Historical. Last collected in 1988 in Lake Okeechobee.
Taxonomy: Monocotyledon; Potamogetonaceae.
Habit: Perennial aquatic herb.
Distribution: North America, the West Indies, Mexico, Central America, South America, and the Old World. Wunderlin (1998) reports it as occasional in Florida from the central panhandle to the central peninsula.
South Florida Distribution: Broward, Hendry, and Martin counties. The Broward County record may represent an introduced waif population.
South Florida Habitats: Shallow water in lakes and rivers.

Protection Status: Not listed by any agency.
Identification: Godfrey & Wooten (1979) has an illustration.
References: Chapman, 1883; Small, 1933a; Godfrey & Wooten, 1979; Wunderlin, 1998; Flora of North America Editorial Committee, 2000.
Synonyms: *Stuckenia pectinata* (L.) Börner.

Historical Context in South Florida: Don Doggett first collected sago pondweed in 1954 along the margins of the Caloosahatchee River, west of the La Belle Bridge in Hendry County (s.n., FLAS). Charles Wilett made a single collection in 1975 in a canal along Flamingo Road in Broward County (s.n., FAU). It is uncertain if this represented a native population, or an introduced waif population. In 1988, Mike Bodle collected sago pondweed in the Chancey Bay area of Lake Okeechobee, about 2.5 miles south of the Okeechobee County line.

Preliminary recommendations:

- Survey Lake Okeechobee and the Caloosahatchee River area for sago pondweed.
- If plants are found, map and monitor known populations.
- Consider restoring floodplain forests and associated habitats along the Caloosahatchee River as habitat for sago pondweed.

Prunus umbellata Elliott
Flatwoods Plum

South Florida Status: Historical. Collected once in 1969 at Jonathan Dickinson State Park.
Taxonomy: Dicotyledon; Rosaceae.
Habit: Shrub.
Distribution: Native to the southeastern United States. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Martin County.
South Florida Habitats: Probably flatwoods. Reported as “open woodland.”
Protection Status: Not listed by any agency.
Identification: Nelson (1994) has a photo.

References: Chapman, 1883; Small, 1933a; Bell & Taylor, 1982; Godfrey, 1988; Nelson, 1994; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: William L. McCart made a single collection of flatwoods plum in 1969 at Jonathan Dickinson State Park in Martin County (10525, FLAS). No other collections or observations are known from this park despite a great deal of botanical activity (R.E. Roberts, personal communication, 16 May 2001.

Comments: *This is a temperate species at the southern end of its range, and it may have always been rare in South Florida.*

Preliminary recommendations:
- Survey Jonathan Dickinson State Park.
- If plants are found, map and monitor known populations.

Reimarochloa oligostachya (Munro ex Benth.) Hitchc.
Florida Reimar Grass

South Florida Status: Historical. Last collected in 1977.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Endemic to Florida and Cuba. Wunderlin (1998) reports it as occasional in Florida in the northern and central peninsula.
South Florida Distribution: Hendry and Lee counties, and probably Charlotte County. The Hendry County station may represent an introduced waif population.
South Florida Habitats: Moist soils.
Protection Status: Not listed by any agency.
Identification: Hitchcock & Chase (1950) has an illustration; Godfrey & Wooten (1979) has an illustration; Tobe et al. (1998) has an illustration.
References: Chapman, 1883; Small, 1933a; Hitchcock & Chase, 1950; Hall, 1978; Godfrey & Wooten, 1979; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: *Reimaria oligostachya* Munro ex Benth.

Historical Context in South Florida: Samuel M. Tracy may have collected Florida reimar grass first in 1903 at "Lemon City" (7190, NY) and "Lemon Bay" (s.n., US) in Charlotte County, but these specimens could have been collected outside of South Florida in Sarasota County. Both of these specimens were collected on the same day. In 1967, J.R. Orsenigo made a single collection from the edge of a sugarcane field in eastern Hendry County (s.n., NCU), although it is not clear if this represented a native population. William C. Brumbach collected Florida reimar grass in 1970 and 1972 on Sanibel Island in Lee County (7124, FLAS; 8129, FLAS). Brumbach made another collection on lower Captiva Island in 1977 (9248, NY, USF). There is an additional collection by S.W. Leonard from Punta Rassa on the Lee County mainland in 1970 (4451, NCU). An interesting voucher was deposited by Tim Harris from plants grown in cultivation from seed bank cores taken along the littoral zone from the northwest corner of Lake Okeechobee in Glades County (8, FLAS).

Comments: *Although this species has been collected primarily in disturbed areas, there is no indication that it is introduced.*

Preliminary recommendations:

- Survey Sanibel and Captiva Islands, and in the vicinity of Lemon Bay in Charlotte County.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- Determine status in Cuba.

Sabal minor (Jacq.) Pers.
Bluestem Palmetto

South Florida Status: Historical. Last collected in 1983 in southwestern Charlotte County.
Taxonomy: Monocotyledon; Arecaceae.
Habit: Shrub.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Charlotte and Glades counties.
South Florida Habitats: Moist to wet hammocks.
Protection Status: Not listed by any agency.

Identification: Nelson (1996) has a photo; Tobe et al. (1998) has an illustration and photos.
References: Chapman, 1883; Small, 1933a; Long & Lakela, 1976; Godfrey & Wooten, 1979; Godfrey, 1988; Zona 1990; Nelson, 1996; Tobe et al., 1998; Wunderlin, 1998; Flora of North America Editorial Committee, 2000.
Synonyms: None.

Historical Context in South Florida: Hugh O'Neill first collected bluestem palmetto in 1929 in a "high hammock" at Lakeport in Glades County (s.n., FLAS). Bradley searched for this station in 2000, but it has apparently been destroyed. In 1983, A.G. Shuey collected bluestem palmetto in a hardwood swamp in southwestern Charlotte County (2549, USF). Gann searched for this station in 2000. It is still apparently undeveloped, although the site was fenced and posted and therefore not accessed. Shuey described this population as infrequent and very restricted, and while it is possible that it is extant, also it is possible that wild hogs, exotics pest plants, or other disturbances have destroyed this small population.

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida.*

Preliminary recommendations:
- Survey Charlotte County Bluestem Palmetto Site.
- If plants are found, map and monitor known populations.
- Acquire Charlotte County Bluestem Palmetto Site.

Scirpus americanus Pers.
American Bulrush

South Florida Status: Historical. Collected last in 1977 on US Highway 441 in Martin County, just south of the Okeechobee County line.
Taxonomy: Monocotyledon; Cyperaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to North America, the West Indies, and South America. Wunderlin (1998) reports it as occasional in Florida from the central panhandle to the northern and central

peninsula. Wunderlin & Hansen (2001) records it only for Citrus, Lee, St. Johns, Taylor, and Wakulla counties.
South Florida Distribution: Lee County.
South Florida Habitats: Coastal marshes.
Protection Status: Not listed by any agency.
Identification: *Scirpus americanus* and *S. pungens* have been much confused in the literature and many accounts of *S. americanus* actually refer to *S. pungens*. In *S. americanus* the apex of the scales of the spikelet are nearly entire and have a short mucro, and the involucral bract is 1-5 cm long; in *S. pungens* the scales have a prominent awn projecting from the cleft apex, and the involucral bract is 3-12 cm long (Wunderlin, 1998).
References: Chapman, 1883; Small, 1933a; Koyama, 1963; Godfrey & Wooten, 1979; Wunderlin, 1998.
Synonyms: *S. olneyi* A. Gray.

Historical Context in South Florida: George R. Cooley first collected American bulrush in 1954 on Sanibel Island, perhaps within the boundaries of what is now J.N. "Ding" Darling National Wildlife Refuge (s.n., USF). W. Schad and others made a collection in Martin County southeast of Indiantown in 1968 (9754, FAU). Daniel F. Austin and Sandra K. Austin made one other collection in Martin County in 1977. This collection was made along US Highway 441, just south of the Okeechobee County line (4352, FAU), in the vicinity of Chancey Bay. John Popenoe (1981) reported American bulrush for Jonathan Dickinson State Park, but this report probably refers to *S. pungens*. Donald R. Richardson (1977) also reported American bulrush for Yamato Marsh in Palm Beach County, but we have been unable to verify this station. The Yamato Marsh is now mostly destroyed.

Preliminary recommendations:
- Examine specimens from Jonathan Dickinson State Park.
- Survey J.N. "Ding" Darling National Wildlife Refuge.
- If plants are found, map and monitor known populations.
- Review for listing by FDACS and FNAI.

Scutellaria integrifolia L.
Helmet Skullcap

South Florida Status: Historical. Last collected in 1976 near Jensen Beach.
Taxonomy: Dicotyledon; Lamiaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the eastern United States. Wunderlin (1998) reports it as frequent in Florida from the northern counties south to the central peninsula.
South Florida Distribution: Charlotte, Lee, and Martin counties.
South Florida Habitats: Probably flatwoods.
Protection Status: Not listed by any agency.
Identification: Taylor (1992) has a color photo; Tobe et al. (1998) has an illustration and a color photo. Taylor (1998) has a color photo.
References: Chapman, 1883; Small, 1933a; Godfrey & Wooten, 1981; Taylor, 1992; Tobe et al., 1998; Wunderlin, 1998.
Synonyms: *S. integrifolia* var. *major* Chapm.; *S. integrifolia* var. *hispida* Benth.

Historical Context in South Florida: Albert S. Hitchcock first collected helmet skullcap in 1900 in flatwoods in Alva, Lee County (278, NY, US), in the vicinity of what is now Caloosahatchee Regional Park. Paul C. Standley made another collection in that same area in 1927 in pinewoods at Pondilla (52593, US). Olga Lakela made a collection in 1964 in a dry, cleared "prairie" south of Punta Gorda in Charlotte County (27114, USF). Gann attempted to find this station in 2000, but most of the available habitat in that area had been developed. Bruce E. Tatje made the last known collection in 1976 in the vicinity of Jensen Beach in Martin County (s.n., FAU). Helmet skullcap has been reported for Dupuis Reserve (Woodbury, no date), which is located in southwestern Martin and northwestern Palm Beach counties, but this report needs to be verified.

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida.*

Preliminary recommendations:

- Survey Caloosahatchee Regional Park, Dupuis Reserve and the Jensen Beach area.
- If plants are found, map and monitor known populations.
- If no plants are found, consider introduction to Caloosahatchee Regional Park.

Silphium asteriscus L.
Starry Rosinweed

South Florida Status: Historical. Last collected in 1985 in North Fort Myers.
Taxonomy: Dicotyledon; Asteraceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the eastern United States. Wunderlin (1998) reports it as occasional in Florida from the panhandle to the western central peninsula.
South Florida Distribution: Lee County.
South Florida Habitats: Open woods.
Protection Status: Not listed by any agency.
Identification: Taylor (1992) has a color photo; Taylor (1998) has a color photo.
References: Chapman, 1883; Small, 1933a; Cronquist, 1980; Taylor, 1992; Wunderlin, 1998.
Synonyms: *S. asteriscus* var. *dentatum* (Elliott) Chapm.; *S. dentatum* Elliott; *S. gracile* A. Gray; *S. simpsonii* Greene.

Historical Context in South Florida: Albert S. Hitchcock first collected starry rosinweed in 1900 in a hammock at Fort Myers (166, US). Elliott Brown made a second collection in 1985 at the edge of a grove of *Sabal palmetto* in North Fort Myers. Gann attempted to find the latter station in February 2001, but it had been converted into a shopping center.

Comments: *This is a temperate species at the southern end of its range, and may have always been rare in South Florida.*

Preliminary recommendations:

- Survey North Fort Myers area.
- If plants are found, map and monitor known populations.

Spiranthes brevilabris Lindl.
Texas Lady's-tresses

South Florida Status: Historical. Last observed in the early 1980s in Big Cypress National Preserve.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as rare in Florida in the eastern panhandle and the peninsula.
South Florida Distribution: Collier, Hendry, and Lee counties, and either Broward County or Miami-Dade County.
South Florida Habitats: Flatwoods and wet prairies.
Protection Status: Listed as endangered by FDACS.
Identification: Luer (1972) has illustrations and color photos.
References: Correll, 1950; Luer, 1972; Long & Lakela, 1976; Godfrey & Wooten, 1979; Wunderlin, 1998; Coile, 2000.
Synonyms: *S. gracilis* (Bigelow) L.C. Beck var. *brevilabris* (Lindl.) Correll.

Historical Context in South Florida: John Kunkel Small and others made the first collection of Texas lady's-tresses in 1911 between Fort Lauderdale and Miami (3319, AMES). The next collections were from the Fort Myers area beginning in 1916. Paul C. Standley collected plants at Fort Myers in February 1916 (12800, US), and his sister, Jeanette P. Standley, collected it again in November of that year (409, US). Paul Standley made another collection in 1919 (18939, US). The last collection from that region was by C.C. Deam about 6.5 miles northwest of Fort Myers in 1938 (58768, DUKE). Perley Poore Sheehan collected Texas lady's-tresses once in Hendry County at Fort Shackleford in 1919 (s.n., NY), in what is now the Big Cypress Seminole Indian Reservation. It has not been collected in Hendry County since.

Chuck McCartney (1986) also reported Texas Lady's-tresses for the Rabenau Camp area, in what is now in the northeastern portion of Big Cypress National Preserve, but these plants have not been seen since the early 1980s (C. McCartney, personal communication, 21 February 2001). McCartney postulates that the removal of cattle from the area after the National Park Service

acquired the property, together with a lack of fire in the pineland, has caused the grassy area where these plants occurred to become overgrown. This pineland should be burned and subsequent surveys should be conducted for Texas lady's-tresses.

Comments: *Wunderlin (1998) suggests that* S. brevilabris *may be a hybrid between* S. floridana *and* S. vernalis.

Preliminary recommendations:

- Survey Big Cypress Seminole Indian Reservation and Rabenau Camp area within Big Cypress National Preserve.
- Conduct prescribed burns in the Rabenau Camp area and survey area in subsequent years.
- If plants are found, map and monitor known populations.

Spiranthes elata (Sw.) Rich.
Tall Neottia

South Florida Status: Historical. Last observed in 1980 at Big and Little George Hammocks.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to peninsular Florida in Hernando and Miami-Dade counties, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS and as critically imperiled by FNAI.
Identification: Luer (1972) has illustrations and color photos; the IRC Website has a color photo.
References: Small, 1933a; Correll, 1950; Luer, 1972; Long & Lakela, 1976; Correll & Correll, 1982; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: *Beadlea elata* (Sw.) Small; *Cyclopogon elatus* (Sw.) Schltr.

Historical Context in South Florida: J.A. Lassiter and others first collected tall neottia in 1961 in a rockland hammock near Cutler (51, USF). As this hammock was in the process of being destroyed, all three plants were collected (Luer, 1972). Gann

rediscovered tall neottia in Miami-Dade County in 1978 at Big George Hammock, now part of the Miami-Dade County conservation area Big and Little George Hammocks (Gann, 2001a). Fewer than 10 plants were observed. George N. Avery vouchered tall neottia there in 1979 (2087, FTG). Gann observed it in flower again in 1980, but it has not been observed there since that time, despite numerous surveys by Gann and others.

Comments: *Tall neottia was collected once in Hernando County by Allan H. Curtiss in 1881 (Luer, 1972), and is apparently extirpated in Florida and the continental United States.*

Preliminary recommendations:

- Continue surveys at Big George Hammock.
- Consider reintroduction to the Cutler area at Bill Sadowski Park and Deering Estate at Cutler.
- Review FNAI rank.

Spiranthes floridana (Wherry) Cory
Florida Lady's-tresses

South Florida Status: Historical. Last collected in 1916 at Fort Myers. Last reported in 1994 for Corkscrew Swamp Sanctuary.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as occasional in Florida from the central and western panhandle to the northern and central peninsula.
South Florida Distribution: Lee County. Reported for Miami-Dade County (Correll, 1940).
South Florida Habitats: Flatwoods.
Protection Status: Not listed by any agency.
Identification: Luer (1972) has illustrations and color photos.
References: Small, 1933a; Correll, 1950; Luer, 1972; Godfrey & Wooten, 1979; Wunderlin, 1998.
Synonyms: *S. brevilabris* Lindl. var. *floridanum* (Wherry) Luer; *S. gracilis* (Bigelow) L.C. Beck var. *floridanum* (Wherry) Correll; *Ibidium floridanum* Wherry.

Historical Context in South Florida: Paul C. Standley fist collected Florida lady's-tresses in 1916 in a pineland in Fort Myers

(13103, US). His sister, Jeanette P. Standley, collected it in Fort Myers a few weeks later (48, US). Correll (1940) reported Florida lady's-tresses for Miami-Dade County, probably based upon a specimen sent from Walter M. Buswell to the AMES herbarium at Harvard University in 1949. However, the label only states that the specimen was sent from Miami. There is no other locality data, and it is uncertain if this specimen actually represents Miami-Dade County material. Florida lady's-tresses has been reported for Corkscrew Swamp Sanctuary (Judd, 1994), which is located in Collier County, but this report needs to be verified.

Preliminary recommendations:

- Survey Corkscrew Swamp Sanctuary.
- If plants are found, map and monitor plants.

Tillandsia fasciculata Sw. var. ***clavispica*** Mez
Clubspike Cardinal Airplant

South Florida Status: Historical. Last collected in 1958 on Long Pine Key in Everglades National Park.
Taxonomy: Monocotyledon; Bromeliaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to peninsular Florida, Cuba, and Mexico. Wunderlin (1998) reports it as rare in Miami-Dade County. Wunderlin & Hansen (2001) also records it for Brevard County and the Monroe County Keys.
South Florida Distribution: Miami-Dade County and the Monroe County Keys.
South Florida Habitats: Hammocks.
Protection Status: Listed as endangered by FDACS (as *T. fasciculata*).
Identification: Smith & Downs (1977) and Wunderlin (1998) have keys to the varieties of *T. fasciculata*.
References: Smith, 1966; Smith & Downs, 1977; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: Clubspike cardinal airplant was collected first on the island of Key West either by John Loomis Blodgett between 1838 and 1853 (s.n., NY) or by Ferdinand Rugel in 1846 (194, NY). Abram P. Garber collected it

once in Miami in 1877 (1885, NY), presumably in Brickell Hammock south of the Miami River. Frank C. Craighead collected a specimen at Palma Vista Hammock #2 on Long Pine Key in Everglades National Park in 1956 (s.n., US), and another one there in 1958 (s.n., US).

Comments: *All* Tillandsia fasciculata *taxa in South Florida are affected by the exotic weevil* Metamasius callizona, *the larvae of which burrows inside the plant and kills it. In Florida, clubspike cardinal airplant is only known from South Florida and the Indian River area, which is the basis for the Brevard County record in Wunderlin & Hansen (2001). The Indian River collection was made in 1877 by John Donnell Smith (s.n., US), and is apparently extirpated.*

Preliminary recommendations:

- Survey the Long Pine Key area of Everglades National Park.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- Consider reintroduction to Brickell Hammock at Alice Wainwright Park, Simpson Park, and Vizcaya Museum and Gardens.
- Consider restoring rockland hammocks on the island of Key West and reintroducing clubspike cardinal airplant.
- Review for listing by FNAI.

Tillandsia fasciculata Sw. var. ***fasciculata*** **Cardinal Airplant**

South Florida Status: Historical. Last collected in 1970 near Homestead, in the vicinity of Fuchs Hammock and Meissner Hammock.
Taxonomy: Dicotyledon; Bromeliaceae.
Habit: Perennial epiphytic herb.
Distribution: Native to South Florida, the West Indies, Mexico, Central America, and South America.
South Florida Distribution: Miami-Dade County.
South Florida Habitats: Rockland hammocks.
Protection Status: Listed as endangered by FDACS (as *T. fasciculata*).

Identification: Smith & Downs (1977) and Wunderlin (1998) have keys to the varieties of *T. fasciculata*.
References: Smith & Downs, 1977; Wunderlin, 1998.
Synonyms: None.

Historical Context in South Florida: C.F. Dowling collected cardinal airplant once in the vicinity of Fuchs Hammock and Meissner Hammock near Homestead in 1970. The plant was brought into cultivation and a specimen was vouchered from cultivated material by M. Prince in 1992 (s.n., FLAS). Both Fuchs Hammock and Meissner Hammock need to be surveyed.

Comments: *All* Tillandsia fasciculata *taxa in South Florida are affected by the exotic weevil* Metamasius callizona, *the larvae of which burrows inside the plant and kills it.*

Preliminary recommendations:
- Survey Fuchs Hammock Preserve and Meissner Hammock.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- If no plants are found, consider introduction to Fuchs Hammock Preserve and Meissner Hammock.
- Review for listing by FNAI.

Tridens flavus (L.) Hitchc.
var. ***chapmanii*** (Small) Shinners
Chapman's Purpletop Tridens

South Florida Status: Historical. Last collected in 1988. Last collection of a verifiable native population was made in 1954 in Lee County.
Taxonomy: Monocotyledon; Poaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the eastern United States. In Florida, it is known only from Collier, Hernando, and Jackson counties (Wunderlin, 1998).
South Florida Distribution: Collier and Lee counties.
South Florida Habitats: Mesic hammocks and disturbed areas.
Protection Status: Not listed by FDACS due to its status as a variety.

Identification: Hitchcock & Chase (1950) has an illustration.
References: Hitchcock & Chase, 1950; Hall, 1978; Wunderlin, 1998.
Synonyms: *Tridens chapmanii* (Small) Chase.

Historical Context in South Florida: Albert S. Hitchcock first collected Chapman's purpletop tridens in 1900 in a hammock in Alva, Lee County (532, US), in the vicinity of what is now Caloosahatchee Regional Park. Roy O. Woodbury made the only other collection from Lee County in 1954 in the vicinity of Olga (SE-330, US), which is located to the south of the Caloosahatchee River, approximately 6.5 miles east southeast of Alva. The collection was made in a "National Forest" which no longer exists. It was reported to be rare there.

Bruce F. Hansen and Richard P. Wunderlin made one additional collection in 1988 at the Rookery Bay National Estuarine Research Reserve in Collier County (11839, USF). This specimen was collected from the area around the headquarters building, and it is unclear whether or not this represented a native population.

Preliminary recommendations:
- Survey Caloosahatchee Regional Park and Rookery Bay National Estuarine Research Reserve.
- If plants are found, map and monitor known populations.
- If no plants are found, consider introduction to Caloosahatchee Regional Park.
- Review for listing by FNAI.

Vanilla dilloniana Correll
Mrs. Lott's Vanilla

South Florida Status: Historical. Last collected in 1944 in Everglades National Park.
Taxonomy: Monocotyledon; Orchidaceae.
Habit: Perennial vine.
Distribution: Native to South Florida and the West Indies.
South Florida Distribution: Miami-Dade County and the Monroe County mainland.
South Florida Habitats: Rockland hammocks and coastal berms.

Protection Status: Listed as endangered by FDACS.
Identification: Luer (1972) has illustrations and color photos; the IRC Website has a color photo.
References: Correll, 1946; Correll, 1950; Luer, 1972; Long & Lakela, 1976; Wunderlin, 1998; Coile, 2000; Liogier & Martorell, 2000.
Synonyms: *V. eggersii* Rolfe, misapplied.

Historical Context in South Florida: Alvah A. Eaton first collected Mrs. Lott's vanilla in 1903 in Brickell Hammock (s.n., AMES), near present-day downtown Miami, and at Madeira Hammock (Ames, 1904a), near Flamingo in what is now Everglades National Park. Eaton made another collection in 1904 from Brickell Hammock (971, AMES). John Kunkel Small also made a collection in 1904 from Miami (2310, NY), presumably from Brickell Hammock. Mrs. Lott's vanilla was collected again in Brickell Hammock in 1905 by P. & P. St. Rolfs (s.n., NY), in 1906 by Small and Joel J. Carter (2568, NY), in 1911 by Small and others (s.n., NY), and in 1913 by Small and Carter (4636, NY). R.H. Humes made a collection of material from Brickell Hammock (s.n., AMES), which was used by Donovan S. Correll in 1946 as the type specimen for the species (Correll, 1946). According to Luer (1972), the specimen used as the type was material originally collected from Brickell Hammock in 1928.

Eaton's Madeira Hammock collection would have been made to the east of Flamingo in what is now Everglades National Park. Small also made a collection from Madeira Hammock in 1916 (8048, NY), and Humes made a collection in 1944 in "Monroe County, Cape Sable region" (Correll, 1946), which would have been to the west of Madeira Hammock. It has not been collected there since.

Germplasm of plants collected from Brickell Hammock is maintained in cultivation (Hammer, 2001).

Comments: Vanilla dilloniana *closely resembles both* V. barbellata *of South Florida and* V. claviculata *of the West Indies. Both specimens from Everglades National Park are sterile, and may not actually represent* V. dilloniana*. It is possible that some plants remain in Everglades National Park, but flowering material*

would be necessary to make a positive determination. Strangely, Donovan S. Correll (1950) regarded this species as "common" in South Florida.

Preliminary recommendations:

- Survey hammocks along the northern shore of Florida Bay in Everglades National Park.
- If plants are found, map and monitor known populations.
- If plants are found, consider establishing an *ex situ* collection of germplasm.
- Consider reintroduction to Brickell Hammock at Alice Wainwright Park, Simpson Park, and Vizcaya Museum and Gardens.
- Review for listing by FNAI.

Warea carteri Small
Carter's Pinelandcress

South Florida Status: Historical. Last collected in 1942 in Miami.
Taxonomy: Dicotyledon; Brassicaceae.
Habit: Annual terrestrial herb.
Distribution: Endemic to peninsular Florida from Brevard County south to Miami-Dade County. Wunderlin (1998) reports it as occasional in Florida in the central and southern peninsula.
South Florida Distribution: Miami-Dade and Glades counties.
South Florida Habitats: Sandy pine rocklands, and scrub or scrubby flatwoods.
Protection Status: Listed as endangered by USFWS, as endangered by FDACS, and as rare by FNAI.
Identification: Taylor (1998) has a color photo. Chafin (2000) has illustrations and a photo.
References: Small, 1933a; Long & Lakela, 1976; Wunderlin, 1998; Chafin, 2000; Coile, 2000; USFWS, 2000.
Synonyms: None.

Historical Context in South Florida: Abram P. Garber first collected Carter's pinelandcress in 1878 in Miami (s.n., FLAS), presumably in sandy pine rocklands near the Miami River. Subsequently, it was collected numerous times between Miami and Black Point. Collections were made in 1903 by John Kunkel

Small and Joel J. Carter (831, NY), in 1913 by Small (4755, US), in 1930 by Harold N. Moldenke (273, US), in 1933 by F. Duckett (240, US), three times in 1934 by Walter M. Buswell (s.n., FLAS; s.n., FTG; s.n., FTG), and once in 1936 by Buswell (s.n., FTG). Buswell made the two last collections of Carter's pinelandcress in South Florida in 1942 (s.n., FTG; s.n., FTG). Hardrada H. Hume collected it in 1925 in Palmdale in Glades County (s.n., FLAS). It is possible that plants are still present in that area and it should be surveyed.

Roy O. Woodbury (no date) reported it for Dupuis Reserve, but we have been unable to verify this station.

Numerous studies have been conducted on this federally listed species in central Florida. See U.S. Fish and Wildlife Service (2000) for a review of the literature.

Preliminary recommendations:

- Survey Dupuis Reserve and the Palmdale area.
- If plants are found, map and monitor known populations.
- Consider reintroducing Carter's pinelandcress to pine rocklands in Miami-Dade County, including the Burger King World Headquarters Tree Preserve (Appendix 9).
- Consider restoring pine rocklands along the Miami River and reintroducing Carter's pinelandcress.

Zigadenus densus (Desr.) Fernald
Crowpoison

South Florida Status: Historical. Collected once in 1967 near Palmdale in Glades County.
Taxonomy: Monocotyledon; Liliaceae.
Habit: Perennial terrestrial herb.
Distribution: Native to the southeastern coastal plain. Wunderlin (1998) reports it as common in Florida from the northern counties to the central peninsula.
South Florida Distribution: Glades County.
South Florida Habitats: Unknown, but probably wet flatwoods.
Protection Status: Not listed by any agency.
Identification: Bell & Taylor (1982) has a color photo; Taylor (1992) has a color photo; Taylor (1998) has a color photo.

References: Chapman, 1883; Small, 1933a; Preece, 1956; Godfrey & Wooten, 1979; Bell & Taylor, 1982; Taylor, 1992; Wunderlin, 1998.
Synonyms: *Amianthium angustifolium* (Michx.) A. Gray; *Tracyanthus angustifolius* (Michx.) Small.

Historical Context in South Florida: William G. D'Arcy collected crowpoison a single time in 1967 at Fisheating Creek near Palmdale in Glades County (1345, FLAS), in the vicinity of the newly acquired Fisheating Creek Wildlife Management Area.

Comments: *This is a temperate species at the southern end of its range, and it always may have been rare in South Florida.*

Preliminary recommendations:
- Survey the Fisheating Creek area, including Fisheating Creek Wildlife Management Area.
- If plants are found, map and monitor known populations.