Rare Plants and Their Locations at Picayune Strand Restoration Area: Task 4a
FINAL REPORT
PSRA Vegetation Monitoring 2005-2006
PC P502173

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Cover Photo: Bulbous adder's tongue (*Ophioglossum crotalophoroides*), a species newly recorded for Collier County, and ranked as Critically Imperiled in South Florida by The Institute for Regional Conservation taken by the primary author.

Introduction

The South Florida Water Management District (SFWMD) plans on restoring the hydrology at Picayune Strand Restoration Area (PSRA) see Figure 1. It was desired to gauge the impact of this restoration by installing permanent sampling plots with Vegetation Monitoring Transects (VMTs) and monitor specific points within PSRA coordinated with monitoring well locations. The fourth task (Task 4) is to map any state or federally listed plants encountered in the vicinity of the monitoring plots. In addition, Picayune Strand State Forest (PSSF) possessed little plant data, and it was deemed appropriate to create a preliminary plant list for the preserve.

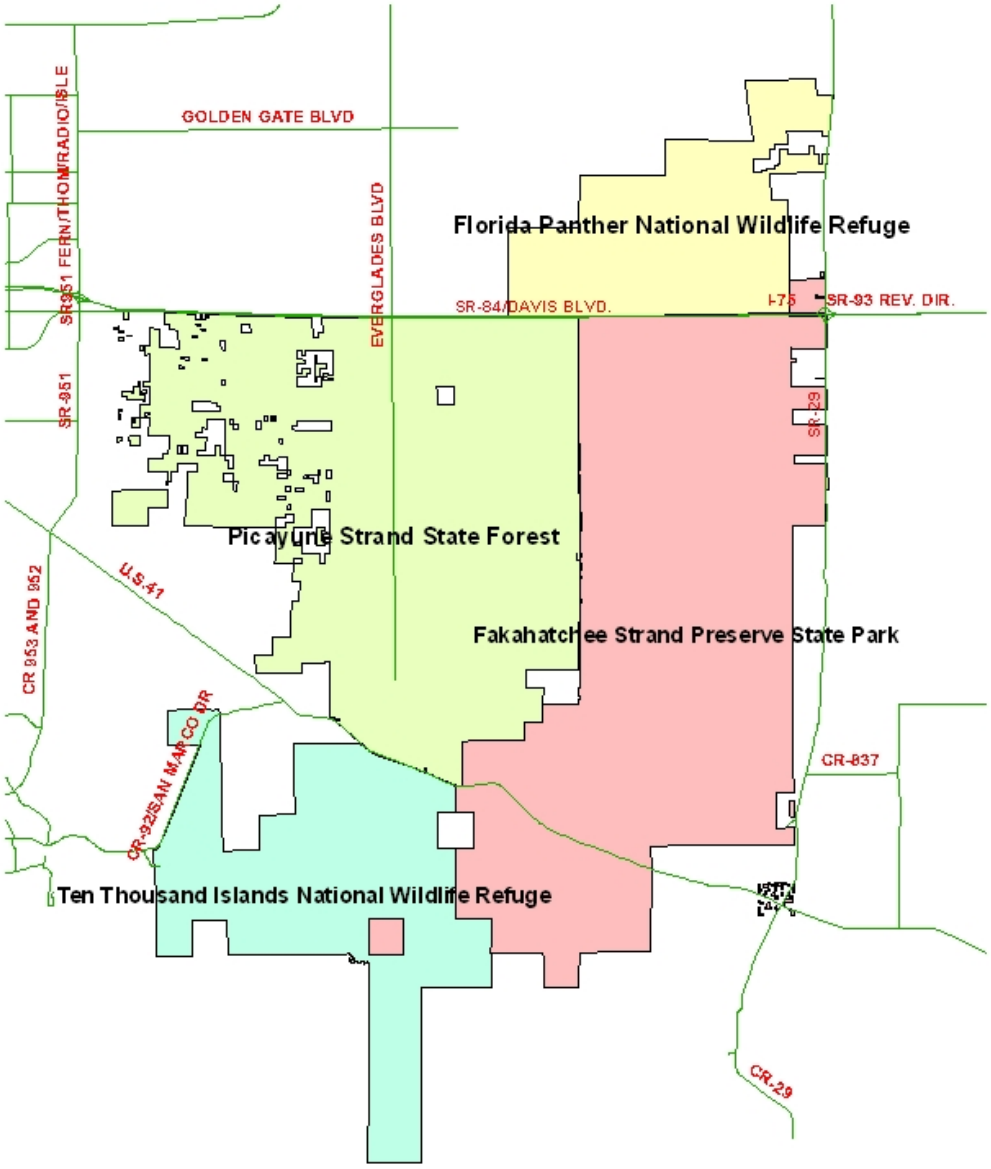
During September through February 2006 staff and volunteers from The Institute for Regional Conservation (IRC) visited PSRA including PSSF, Florida Panther National Wildlife Refuge (FPNWR), Fakahatchee Strand Preserve State Park (FSPSP), and Ten Thousand Islands National Wildlife Refuge (TTINWR) to install VMTs and collect plant data in the vicinity of the SFWMD monitoring wells and at selected control sites. While recording data along the VMTs, observations were made for rare plants in the vicinity. Plants were considered rare if they were listed as threatened or endangered by federal (USFWS, 2006) or state agencies (Coile & Garland, 2003), as well as those listed as Critically Imperiled (S1), Imperiled (S2), and Rare (S3) in Florida by Florida Natural Areas Inventory (FNAI) (FNAI 2006), and those listed as Critically Imperiled in South Florida by The Institute for Regional Conservation (IRC) (Gann et al., 2002).

Methods

During August through February 2006 staff and volunteers from The Institute for Regional Conservation (IRC) visited PSRA including PSSF, Florida Panther National Wildlife Refuge (FPNWR), Fakahatchee Strand Preserve State Park (FSPSP), and Ten Thousand Islands National Wildlife Refuge (TTINWR) to install VMTs and collect plant data in the vicinity of the SFWMD monitoring wells and at selected control sites. At least one experienced botanist was present during the installation of each VMT and recorded data along each VMT. Plants were considered rare if they were listed as threatened or endangered by federal (USFWS, 2006) or state agencies (Coile & Garland, 2003), as well as those listed as Critically Imperiled (S1), Imperiled (S2), and Rare (S3) in Florida by Florida Natural Areas Inventory (FNAI) (FNAI 2006), and those listed as Critically Imperiled in South Florida by The Institute for Regional Conservation (IRC) (Gann et al., 2002). For each species observed, a Geographical Positioning System (GPS) point with accuracy of at least 3-4 meters was recorded. Only rare plants in the vicinity of the Monitoring Wells and VMTs were mapped.

In addition, species occurring outside the VMTs within PSSF were recorded in order to create a much needed vascular plant list. Areas were searched throughout the preserve by biologists while VMTs were visited. Surveys were also conducted in the area known as the Belle Meade, west of the project area, but part of PSSF. This was done in order to familiarize biologists with vascular plants occurring in relatively undisturbed communities at PSSF. An attempt was made to survey all habitats by foot at PSSF that coincided with the study habitats. For a list of habitats monitored refer to Barry and Woodmansee (2006). A checklist of plants was created, and data was entered into a Microsoft Access database.

Figure 1:
Picayune Strand Restoration Area



Map Prepared by Steven W. Woodmansee
The Institute for Regional Conservation, Miami, FL
December 20, 2006

Coordinate System: UTM WGS 84 17N

Results and Discussion

Rare Plants

Fifteen rare plant species were recorded in the vicinity of VMTs. A total of ten state listed plant taxa were recorded in the vicinity of the VMTs, two endangered and seven threatened. Commercially exploited species were not tracked during these surveys. A total of four FNAI listed plant taxa were recorded in the vicinity of the VMTs. An additional taxon identified to the species level, *Sacoila lanceolata*, was not in flower, and it was undetermined whether it was the FNAI ranking of Critically Imperiled in Florida (S1) variety *paludicola*. A total of three additional plant taxa ranked as critically imperiled in South Florida by IRC were recorded (Table 1). No federally listed species were observed. Rare plant descriptions are provided for each species found within the vicinity of the VMTs and contain management recommendations. Rare plant maps (Figures 2-10) are provided at the end of this section. Maps are arranged geographically north to south, and then east to west. In addition, rare plant data is provided in a Microsoft Access database labeled PLANT_RAWDATA in a table named **PICA_RarePlantMaster.**

Table 1: Rare plants recorded in the vicinity of the Vegetation Monitoring Transects

Scientific Name	State Status	FNAI Status	IRC Status	Well Number Within Vicinity	Control	Easting	Northing
Acrostichum aureum	T	S3		SGT5W1		443287	2871386
Carex verrucosa			SF1	SGT3W1		442663	2881859
Chamaecrista nictitans			SF1	SGT1W5		453106	2891726
Elytraria caroliniensis var. *angustifolia*		S2		SGT3W6		453665	2880242
Elytraria caroliniensis var. *angustifolia*		S2		SGT1W3		445415	2891997
Elytraria caroliniensis var. *angustifolia*		S2		FPNWR	x	461621	2897094
Elytraria caroliniensis var. *angustifolia*		S2		SGT2W6		453876	2885897
Elytraria caroliniensis var. *angustifolia*		S2		SGT1W5		453106	2891726
Elytraria caroliniensis var. *angustifolia*		S2		FPNWR	x	454873	2894935
Elytraria caroliniensis var. *angustifolia*		S2		FPNWR	x	452413	288019
Harrisella porrecta	T	S1		SGT3W2		443716	2881933
Melanthera parvifolia	T			SGT1W3		445415	2891997
Myrcianthes fragrans	T			SGT3W4		450153	2881985
Ophioglossum crotalophoroides			SF1	SGT2W4		450153	2888003
Ophioglossum crotalophoroides			SF1	SGT4W5		448825	2878801
Ophioglossum crotalophoroides			SF1	SGT2W3		446167	2887841
Ophioglossum crotalophoroides			SF1	SGT2W2		442796	2888203
Ophioglossum crotalophoroides			SF1	SGT4W2		443426	2878522
Ophioglossum crotalophoroides			SF1	SGT2W1		441403	2888072
Pecluma ptilodon var. caespitosa	E			SGT3W4		450006	2882115
Sacoila lanceolata	T	(S1?)		SGT4W5		448899	2878545
Spermacoce terminalis	T			SGT1W3		445415	2891997
Spermacoce terminalis	T			SGT3W6		453665	2880242
Spermacoce terminalis	T			FSPSP (Far)	x	463644	2873582

Scientific Name	State Status	FNAI Status	IRC Status	Well Number Within Vicinity	Control	Easting	Northing
Tillandsia balbisiana	T			FSPSP (Far)	x	460653	2873590
Tillandsia balbisiana	T			SGT4W1		442662	2878879
Tillandsia balbisiana	T			SGT3W2		443716	2881933
Tillandsia balbisiana	T			SGT4W1		442798	2878941
Tillandsia fasciculata var. *densispica*	E			SGT4W1		442662	2878879
Tillandsia fasciculata var. *densispica*	E			SGT3W2		443746	2881979
Tillandsia fasciculata var. *densispica*	E			SGT3W1		442663	2881859
Tillandsia fasciculata var. *densispica*	E			FPNWR	x	455115	2894779
Tillandsia fasciculata var. *densispica*	E			FSPSP (Far)	x	460653	2873590
Tillandsia variabilis	T			SGT3W7		455740	2881069
Vernonia blodgettii		S3		SGT1W3		445415	2891997
Vernonia blodgettii		S3		FPNWR	x	452413	288019
Vernonia blodgettii		S3		FPNWR	x	461569	2897090
Vernonia blodgettii		S3		SGT1W5		453106	2891726
Vernonia blodgettii		S3		SGT1W5		452956	2891739
Vernonia blodgettii		S3		SGT3W6		453665	2880242
Vernonia blodgettii		S3		FSPSP (Far)	x	463644	2873582
Vernonia blodgettii		S3		SGT3W7		455818	2881016
Vernonia blodgettii		S3		FPNWR	x	461621	2897094

Coordinate System = WGS 84 17N

State Status
T = Threatened
E = Endangered

FNAI Status
S1 = Critically Imperiled in Florida
S2 = Imperiled in Florida
S3 = Rare in Florida

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

Rare Plant Descriptions at Picayune Strand Restoration Area

***Acrostichum aureum* (Golden Leather fern)**

Golden leather fern is listed as threatened in Florida by FDACS (Coile & Garland, 2003) and as rare in Florida (S3) by FNAI (2006). It is a large perennial herb which is easily confused with the more common giant leather fern, which is ubiquitous in cypress swamps and coastal wetland habitats within the PSRA. It differs in having sporangia on the underside of the frond at the distal pinna only (3-5 pairs). In addition, pairs of pinnae of golden leather fern are spaced further apart, and unlike giant leather fern, this species also possesses a venation pattern in which veins on the underside of the pinnae do not intersect the midvein (Tobe et al., 1998). Golden leather fern may be locally common in freshwater, brackish, salt marshes, coastal hammocks, and mangrove swamps in southern Florida (Tobe et al., 1998). Golden leather fern occurs near one well within the TTINWR where it is locally common along the

edges of the salt marsh and tidal swamp (Figure 10). This species could be threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper (*Schinus terebinthifolius*). There are no perceived threats to this species as a result of projected restoration. Plants at PSRA should be monitored every three years.

***Carex verrucosa* (Warty Sedge)**

Warty sedge is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a perennial terrestrial herb and is extremely rare at PSRA as it was only encountered once. Warty sedge was observed off of one monitoring well at PSSF (Figure 8). Twenty to thirty plants were observed in marsh habitat, and the population was documented with an herbarium specimen (Woodmansee, 1760, PSRA herbarium). It is not reported for FPNWR, FSPSP, or TTINWR (Gann et al., 2002). In South Florida, warty sedge is also known from Caloosahatchee Creeks Preserve in Lee County (Woodmansee and Green, 2006), Corkscrew Swamp Sanctuary and Corkscrew Regional Ecosystem Watershed (both of which occur in Collier and Lee counties) and Big Cypress National Preserve (Gann et al., 2001-2006). It is considered historical at J.W. Corbett Wildlife Management area in Palm Beach County. Wunderlin & Hansen (2004) list it mostly throughout elsewhere in Florida. In South Florida, this species is typically found in freshwater swamps and marshes (Gann et al., 2001-2006). It is recommended that more surveys be conducted for this species in similar habitats within the PSRA. It is expected that this species would greatly benefit from hydrological restoration at PSRA. This species could be threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper. Plants at PSRA should be monitored on an annual basis.

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

Sensitive pea is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is an annual terrestrial herb and differs from the more common *C. nictitans* var. *aspera* in that variety *nictitans* is incurved puberulent to glabrata versus conspicuously pilose (Wunderlin, 1998). It is extremely rare at PSRA as it was only encountered once. Sensitive pea was observed off of one monitoring well at PSSF (Figure 4). Ten to twenty plants were observed in hydric to mesic flatwoods. This location is the same area as where Daniel B. Ward collected this species in 1965 when this population was last seen in Collier County and its location was attributed to FSPSP by Gann et al. (2002). Once thought to be possibly extirpated from South Florida (Gann et al., 2002), sensitive pea has also recently been discovered at Wild Turkey Strand Preserve in Lee County (Woodmansee and Bradley, 2005). Wunderlin & Hansen (2004) list it as sporadic in central Florida, being mostly throughout elsewhere in Florida. In South Florida, this species is typically found in flatwoods and disturbance areas (Gann et al., 2002). Although not recorded there, it may also exist in mesic flatwoods at FPNWR and FSPSP; it is unlikely to exist at TTINWR where little habitat exists there for it. It is recommended that more surveys be conducted for this species in similar habitats within the PSRA. Should more sensitive pea be discovered at PSRA it is recommended that this station be documented with an herbarium voucher should the population of this species be able to sustain a collection (< 20 individuals for a single plant voucher (Gann et al., 2002)). It is unknown how this species would respond to hydrological restoration; it most likely prefers areas with shorter hydroperiods based upon its habitat preferences. This species could be threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper. Plants at PSRA should be monitored on an annual basis.

***Elytraria caroliniensis* var. *angustifolia* (Narrowleaf Carolina Scalystem)**
Narrowleaf Carolina scalystem is ranked as Imperiled in Florida by FNAI (2006). It is a perennial terrestrial herb and is common at PSRA as it was encountered at three VMTs at FPNWR, and four VMTs at PSSF. Narrowleaf Carolina scalystem was observed in marl prairies and hydric flatwoods habitats throughout FPNWR and PSSF (Figures 2, 3, 4, & 7). It also is common in similar habitats at FSPSP. It is unlikely to occur at TTINWR where little habitat exists there for it. Wunderlin & Hansen (2004) list it as mostly throughout South Florida, and Gann et al. (2001-2006) list it for 14 conservation areas in South Florida. It is unlikely to occur at TTINWR where little habitat exists there for it. It is expected that this species would greatly benefit from hydrological restoration at PSRA. This species could be threatened by invasion of exotic plants, especially shrubs such as Brazilian-pepper, and lack of fire. Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

***Harrisella porrecta* (Jinglebell Orchid)**
Jinglebell orchid is ranked as threatened by FDACS (Coile & Garland, 2003) and as Imperiled in Florida by FNAI (2006). It is a short-lived perennial twig epiphyte and is rare at PSRA as it has been encountered only once. It often goes unnoticed by botanists as it is a twig epiphyte with its diminutive size and leafless nature. Jinglebell orchid was recorded near one monitoring well in strand swamp at PSSF (Figure 8). It occurs on pond cypress (*Taxodium ascendens*) and other shrubs and trees in strand swamp. It occurs elsewhere at PSSF, and is abundant in similar habitats at FPNWR and FSPSP. It is unlikely to occur at TTINWR where little habitat exists there for it. Wunderlin & Hansen (2004) list it as mostly throughout South Florida, and sporadic in central Florida. Gann et al. (2001-2006) list it for only six conservation areas in South Florida, however, it is also extremely abundant at Big Cypress National Preserve. Although it is still present at the remaining strand habitat at PSSF, it has been negatively impacted by the hydrological modifications and the alterations of the former strand swamp habitat there. It is expected that this species would greatly benefit from hydrological restoration at PSRA. This species could be threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper, and hot fires in strand swamp habitat. Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

***Melanthera parvifolia* (Pineland Black Anthers)**
Pineland black anthers is ranked as threatened by FDACS (Coile & Garland, 2003). It is a perennial terrestrial herb that differs from other species of *Melanthera* by having a prostrate habit and leaves which are auriculata. Pineland black anthers was recorded along the edge of hydric pine flatwoods and marl prairie at one monitoring well site in the northwestern portion of PSSF (Figure 5). In addition to its mapped location, it is occasional along this ecotone where the least amount of disturbance has taken place. It has also been observed in similar habitat, and is more common, at FPNWR and FSPSP, but not in the vicinity of the VMTs. It is unlikely to occur at TTINWR where little habitat exists there for it. Wunderlin & Hansen (2004) do not recognize *M. parvifolia* as a species distinct from *M. nivea*. Gann et al. (2001-2006) report it for 48 conservation areas in South Florida, where it is abundant. It is expected that this species would greatly benefit from hydrological restoration at PSRA. This species could be threatened by invasion of exotic plants, especially shrubs such as

Brazilian-pepper and lack of fire. Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

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

Simpson's stopper is listed as threatened in Florida by FDACS (Coile & Garland, 2003). It is a small tree and is rare at PSRA having only been found in one location. Simpson's stopper was recorded near one monitoring well station in mesic hammock at PSSF (Figure 7). It is expected to be at other hammocks there, which are uncommon at PSSF (attributing to its rarity). This species also is common in similar habitats at FPNWR and FSPSP, and may occur in hammocks at TTINWR. It is throughout elsewhere in South Florida as it is known from at least 25 conservation areas (Gann et al., 2001-2006) Elsewhere in Florida, Simpson's stopper occurs along the East Coast from St. Johns County southward (Wunderlin & Hansen, 2004). It is expected that this species would benefit from hydrological restoration at PSRA as increased moisture would help protect it from freezes. This species is threatened by invasion of exotic plants, especially shrubs such as Brazilian-pepper and Japanese climbing fern (*Lygodium japonicum*). Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

***Ophioglossum crotalophoroides* (Bulbous Adder's Tongue)**

Bulbous adder's tongue is ranked as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006). It is a perennial terrestrial herb and is common at PSSF within PSRA even though it can be easily overlooked, rarely exceeding 2 cm in height, and may also occur in neighboring preserves. Bulbous adder's tongue was recorded off of six monitoring wells at PSSF (Figures 4, 5, 7, & 8). It occurs in hydric flatwoods and hydrologically altered cypress prairie. It is unlikely to occur at TTINWR where little habitat exists there for it. This species is newly recorded for Collier County and South Florida, and its closest recorded population is Manatee County (Wunderlin & Hansen, 2004). Bulbous adder's tongue occurs sporadically elsewhere in peninsular Florida, being most common in the far western panhandle (Wunderlin & Hansen, 2004). Given its relative abundance at the highly altered PSSF and absence at FSPSP and FPNWR, it is expected that bulbous adder's tongue has benefited from the hydrological modifications and the alterations of wetland habitats. It is expected that this species may not benefit from hydrological restoration at PSRA, as increased water levels and decreased disturbance would negatively impact it. This species is threatened by invasion of exotic plants, especially shrubs such as Brazilian-pepper, and lack of fire. Nevertheless, it probably would persist in, or move to, open areas of slightly higher elevation, so it is uncertain whether any other management tools are needed other than monitoring at this stage. Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

***Pecluma ptilodon* var. *caespitosa* (Comb Polypody)**

Comb polypody is ranked as endangered by FDACS (Coile & Garland, 2003). Comb polypody was observed in strand swamp off of one monitoring well at PSSF (Figure 7). Comb polypody is a perennial terrestrial or epiphytic herb. Twenty or so plants were observed together on a rotting log in strand swamp. This species also occurs in similar habitats at FSPSP and FPNWR where it is uncommon to rare. It is unlikely to occur at TTINWR where little habitat exists there for it. Wunderlin & Hansen (2004) list it mostly throughout peninsular Florida and Gann et al. (2001-2006) list it for seven conservation

areas in South Florida. Populations of this species at PSSF have undoubtedly become reduced due to the hydrological modifications and the alterations of the strand swamp habitat there. It is expected that after restoration takes place, that comb polypody will benefit as it is typically associated with wet to moist soils. This species is threatened by invasion of exotic plants, especially shrubs such as Brazilian-pepper and Japanese and Old World climbing ferns (*Lygodium japonicum* and *L. microphyllum*). Plants at PSRA should be monitored on an annual basis.

Sacoila lanceolata **(undetermined variety)** (**Beaked Lady's-tresses)**

Both varieties of Beaked lady's tresses are ranked as threatened in Florida by the FDACS (Coile & Garland, 2003) and *S. lanceolata* var. *paludicola* is ranked as Critically Imperiled in Florida by FNAI (2006). It is a terrestrial perennial herb which flowers in the spring-summer. A few plants were observed at PSSF in cabbage palm hammock in the vicinity of a VMT (Figure 7). Both varieties are reported for FPNWR and FSPSP (Gann et al., 2001-2006). It is unlikely to occur at TTINWR where little habitat exists there for it. Leafless Beaked lady's-tresses (*S. lanceolata* var. *lanceolata*) occurs sporadically throughout Florida whereas Leafy beaked lady's tresses is endemic to Broward, Collier, and Miami-Dade counties (Wunderlin & Hansen, 2004). Further surveys should be conducted for this species in appropriate habitats. Optimally, in Spring 2007 these stations should be visited and plant's varieties should be determined upon blooming. It should then be documented with a photo, and data should be sent to FNAI. At the time of the surveys the population of this species was not sufficient enough for an herbarium collection. Should populations increase in number, it is recommended that upon monitoring, this species be documented with an herbarium voucher and deposited in a registered herbarium in Florida. Beaked lady's-tresses will most likely not benefit from hydrological restoration at PSRA, at least initially. Plants were found in a habitat that may be physically altered as a result (should cabbage palms be removed). It is recommended that plants be relocated to naturally occurring hydric hammock habitats at PSSF before physical restoration takes place. Afterward, beaked lady's tresses may benefit as it is typically associated with wet to moist soils. This species is threatened by invasion of exotic plants, especially shrubs such as Brazilian-pepper. Should plants be relocated, Beaked lady's-tresses ought to then be monitored on a quarterly basis the first year, and then on an annual basis thereafter.

Spermacoce terminalis **(Everglades Keys False Buttonweed)**

Everglades Keys false buttonweed is ranked as threatened in Florida by the FDACS (Coile & Garland, 2003). It is a perennial terrestrial herb. This species was recorded for two stations at PSSF and one station at FSPSP (Figures 5, 7, & 9). It was found in marl prairie and pine flatwoods with limestone outcrops and also occurs at FPNWR. It is unlikely to occur at TTINWR where little habitat exists there for it. It is throughout elsewhere in South Florida as it is known from at least 39 conservation areas (Gann et al., 2001-2006) Everglades Keys false buttonweed is endemic to South Florida and occurs nowhere else (Wunderlin & Hansen, 2004). It is expected that this species would benefit from hydrological restoration at PSRA as increased moisture would help protect it from freezes. This species is threatened by invasion of exotic plants, especially shrubs such as Brazilian-pepper. Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

***Tillandsia balbisiana* (Reflexed Wild-pine, Northern Needleleaf)**
Reflexed wild-pine is ranked as threatened in Florida by FDACS (Coile & Garland, 2003). It is an epiphytic perennial herb which flowers throughout the year. Reflexed wild-pine was recorded for two stations at PSSF, and one station as FSPSP (Figures 8 & 9). There it occurs in strand swamp and cypress prairie habitats, and is common elsewhere in those preserves where it can be also found in hammocks, fire suppressed flatwoods, and coastal areas. Although not recorded in this survey it also occurs at FPNWR where it is also abundant. It likely occurs in appropriate habitats (hammocks) at TTINWR. Reflexed wild-pine occurs throughout South Florida (Gann et al., 2001-2006) and in southern central Florida (Wunderlin & Hansen, 2004). This species ranking is due to the arrival of the non-native weevil *Metamasius callizona*, which preys on adult plants. No signs of this weevil were noticed at PSRA during this project, however, reflexed wild-pine should be monitored for predation by this exotic pest and should it appear that populations of this bromeliad be declining, more frequent monitoring of individual populations should take place. It is expected that this species would benefit from hydrological restoration at PSRA as increased moisture would help protect it from freezes. This species is threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper. In conjunction with monitoring this species for weevil damage, plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

***Tillandsia fasciculata* var. *densispica* (Stiff-leaved Wild-pine, Cardinal Airplant)**
Stiff-leaved wild-pine is ranked as endangered in Florida by FDACS (Coile & Garland, 2003). It is an epiphytic perennial herb which flowers throughout the year. Stiff-leaved wild-pine was observed at one station in FPNWR, one station at FSPSP, and three stations at PSSF (Figures 3, 8, & 9). It is abundant elsewhere at PSSF, FSPSP, and FPNWR where it occurs in strand swamp, cypress prairie, hammocks, and pine flatwoods. It likely occurs in appropriate habitats (hammocks) at TTINWR. Stiff-leaved wild-pine occurs throughout South Florida (Gann et al., 2001-2006) and in southern and coastal central Florida (Wunderlin & Hansen, 2004). This species ranking is due to the arrival of the non-native weevil *Metamasius callizona*, which preys on adult plants. No signs of this weevil were noticed at PSRA during this project, however, stiff-leaved wild-pine should be monitored for predation by this exotic pest and should it appear that populations of this bromeliad be declining, more frequent monitoring of individual populations should take place. It is expected that this species would benefit from hydrological restoration at PSRA as increased moisture would help protect it from freezes. This species is threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper. In conjunction with monitoring this species for weevil damage, plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

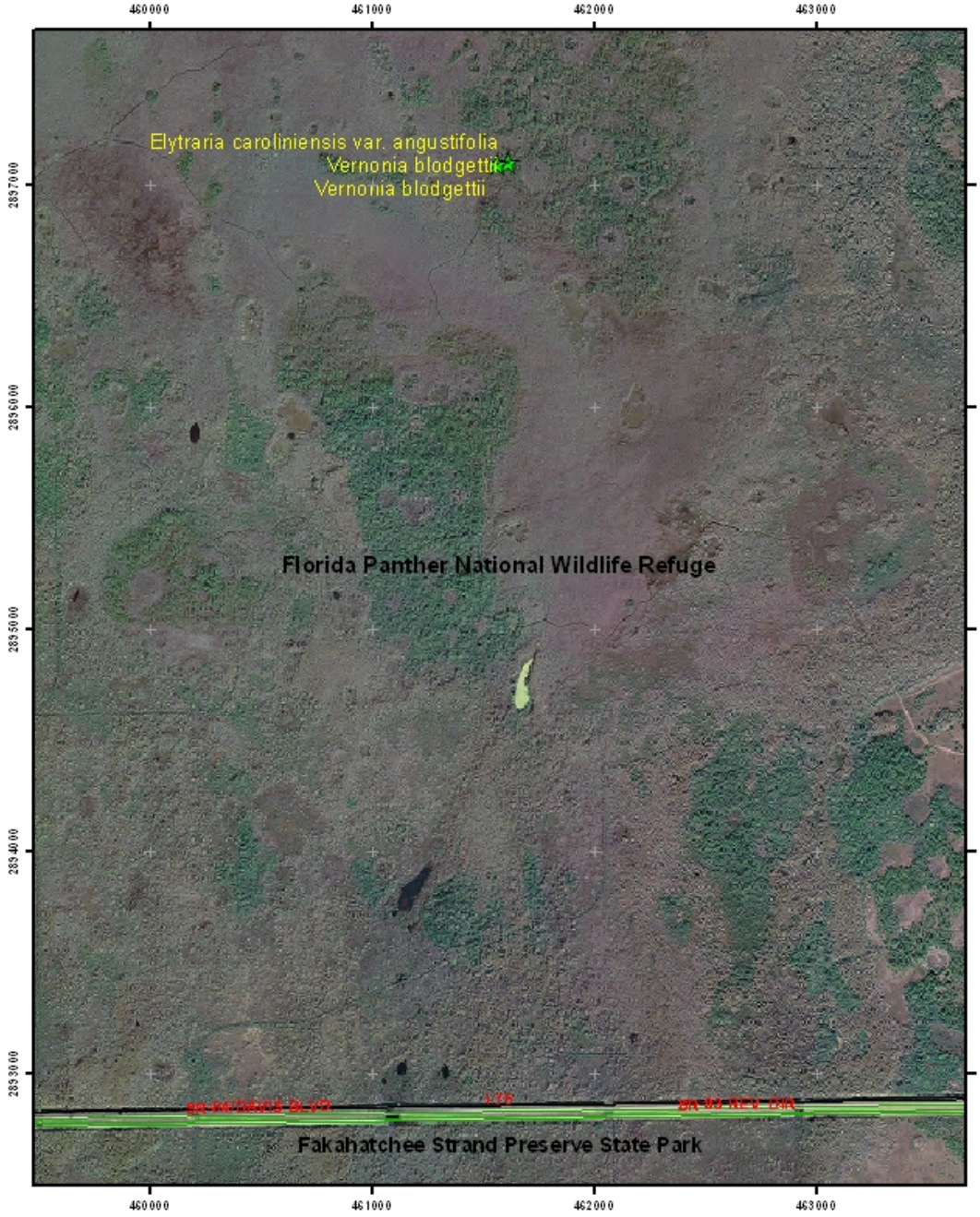
***Tillandsia variabilis* (Soft Leaved Wild-pine)**
Soft leaved wild-pine is ranked as threatened in Florida by FDACS (Coile & Garland, 2003). It is an epiphytic perennial herb which flowers throughout the year. Soft leaved wild-pine was recorded in strand swamp at one station at FSPSP (Figure 6). It is also in strand swamp and mesic hammock habitats elsewhere at PSSF, FPNWR, and other parts of FSPSP. It is unknown whether this species occurs at TTINWR, although it may occur in hammocks there. Soft leaved wild-pine occurs mostly throughout South Florida (Gann et al., 2001-2006) and in Okeechobee County (Wunderlin & Hansen, 2004). This species ranking is due to the arrival of the non-native weevil *Metamasius callizona*, which preys on adult plants. No

signs of this weevil were noticed at PSRA during this project, however, stiff-leaved wild-pine should be monitored for predation by this exotic pest and should it appear that populations of this bromeliad be declining, more frequent monitoring of individual populations should take place. It is expected that populations of this species at PSSF have become reduced due to the hydrological modifications and the alterations of the strand swamp habitat there. It is expected that this species would benefit from hydrological restoration at PSRA as increased moisture would help protect it from freezes. This species is threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper. In conjunction with monitoring this species for weevil damage, plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

Vernonia blodgettii **(Florida Ironweed)**

Florida ironweed is ranked as rare in Florida by Florida Natural Areas Inventory (FNAI) (FNAI, 2006). It is a terrestrial perennial herb which flowers in the fall. Florida ironweed is common at PSRA occurring in the vicinity of nine VMT's (three at FPNWR, 1 at FSPSP, and five at PSSF) (Figures 2, 4, 5, 6, 7, & 9). This species was recorded for marshes, hydric flatwoods, and marl prairie habitats. It is unlikely to occur at TTINWR where little habitat exists there for it. Florida ironweed is common throughout moist pinelands and prairies in most of South Florida (Gann et al., 2001-2006). Outside of South Florida it is known from St. Lucie and Indian River counties (Wunderlin & Hansen, 2004). It is expected that this species would greatly benefit from hydrological restoration at PSRA. This species could be threatened by invasion of exotic plants especially shrubs such as Brazilian-pepper and lack of fire. Plants at PSRA should be monitored upon completion of the restoration of PSRA, and then monitoring needs should be assessed afterwards.

Figure 2:
PSRA Rare Plants
Florida Panther NWR East



Map Prepared by Steven W. Woodmansee
The Institute for Regional Conservation, Miami, FL
December 20, 2006

Coordinate System: UTM WGS 84 17N

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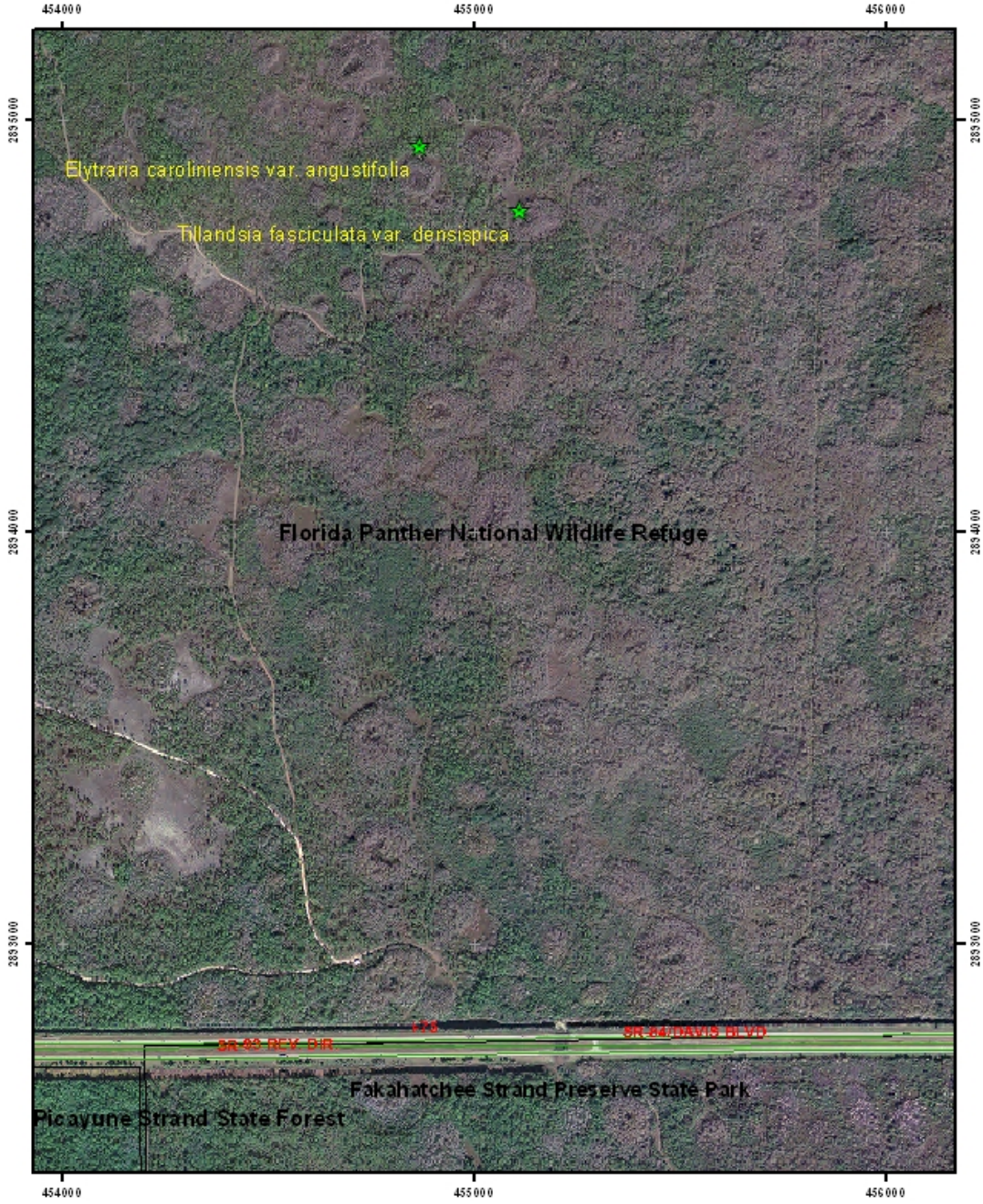
Figure 3:
PSRA Rare Plants
Florida Panther NWR West



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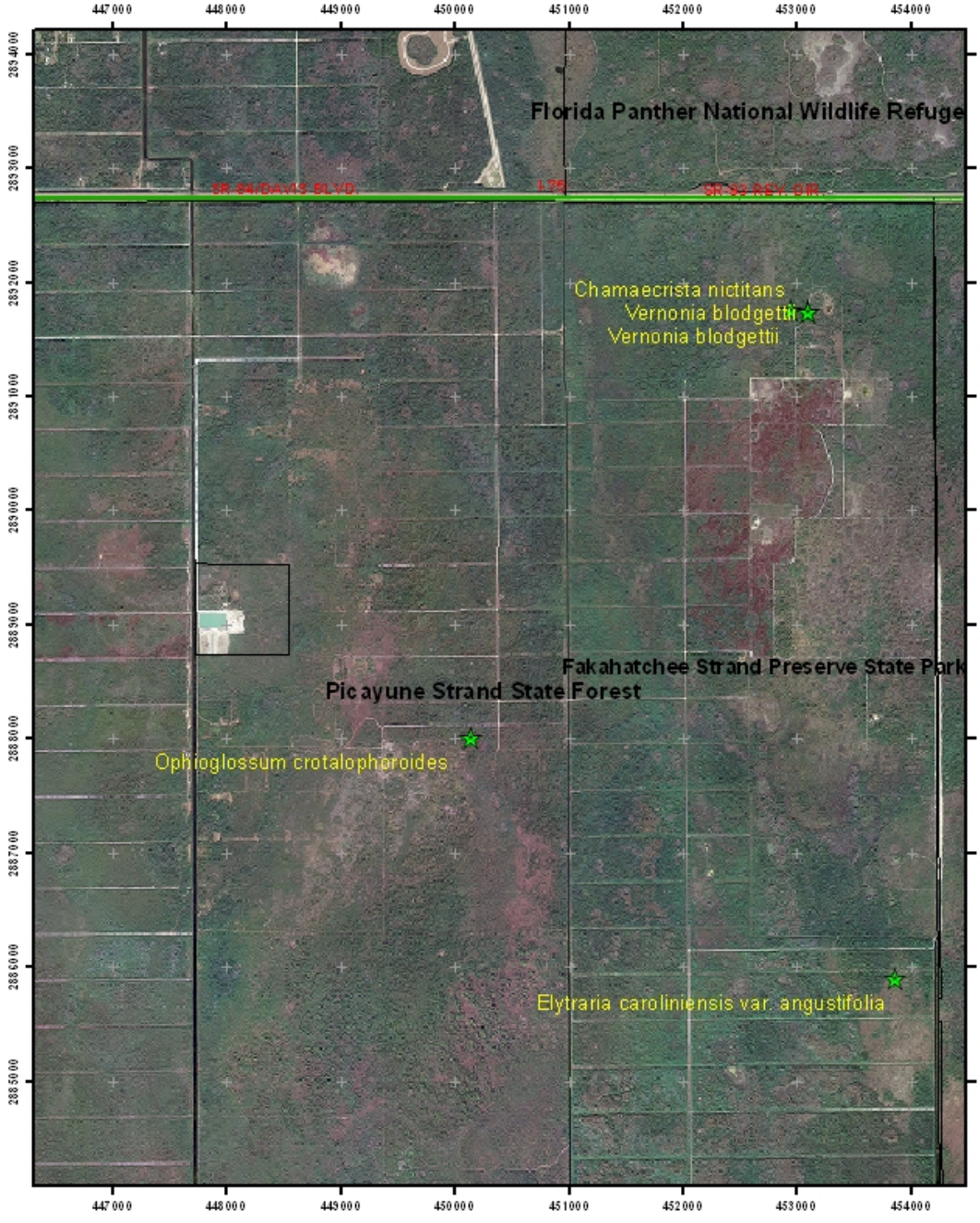
The Institute for Regional Conservation, Miami, FL
December 20, 2006

Coordinate System: UTM WGS 84 17N

Figure 4:
PSRA Rare Plants
PSSF Northeast



Map Prepared by Steven W. Woodmansee
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December 20, 2006

Coordinate System: UTM WGS 84 17N

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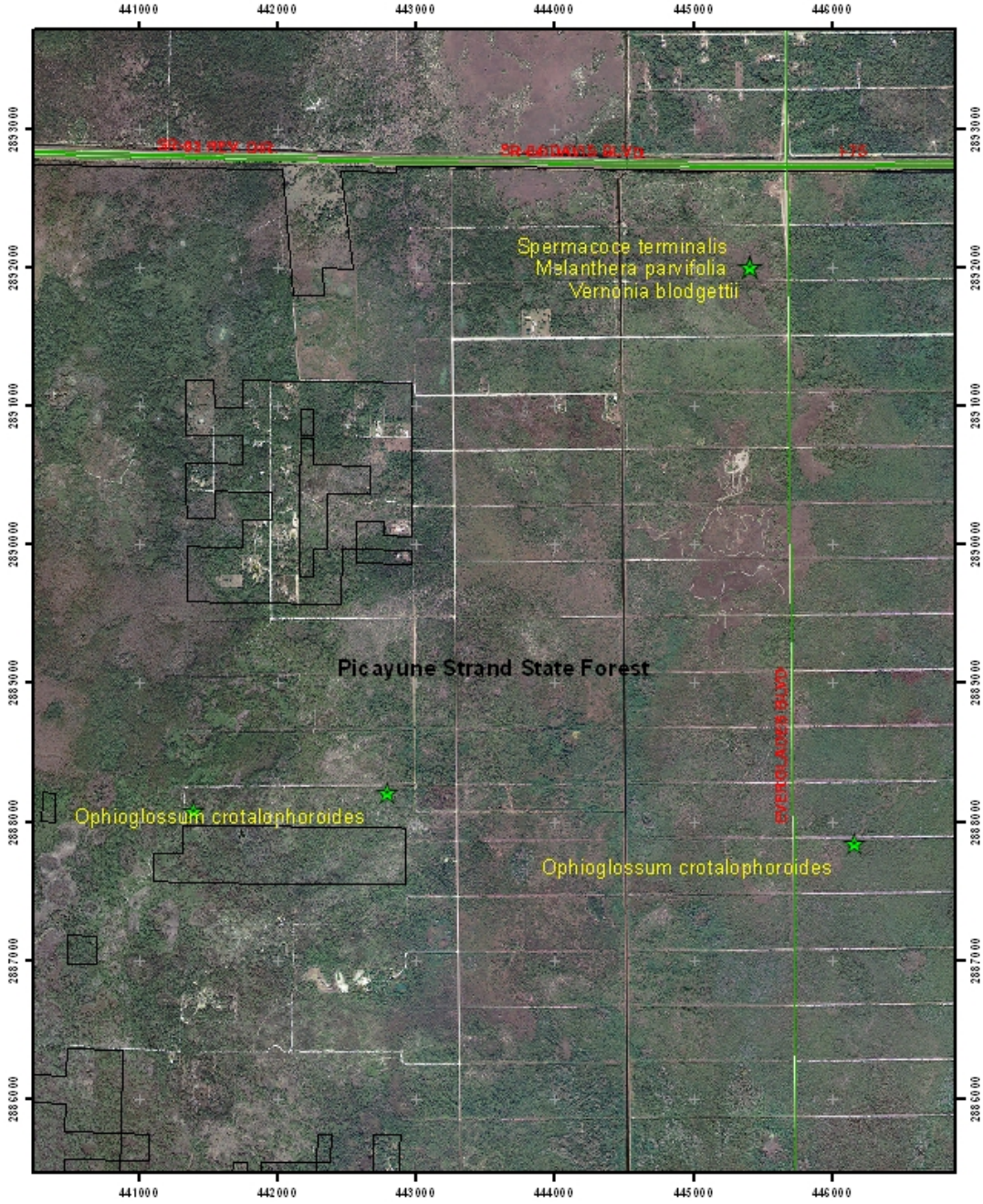
Figure 5:
PSRA Rare Plants
PSSF Northwest



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December 20, 2006

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Figure 6:
PSRA Rare Plants
FSPSP West

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December 20, 2006

Coordinate System: UTM WGS 84 17N

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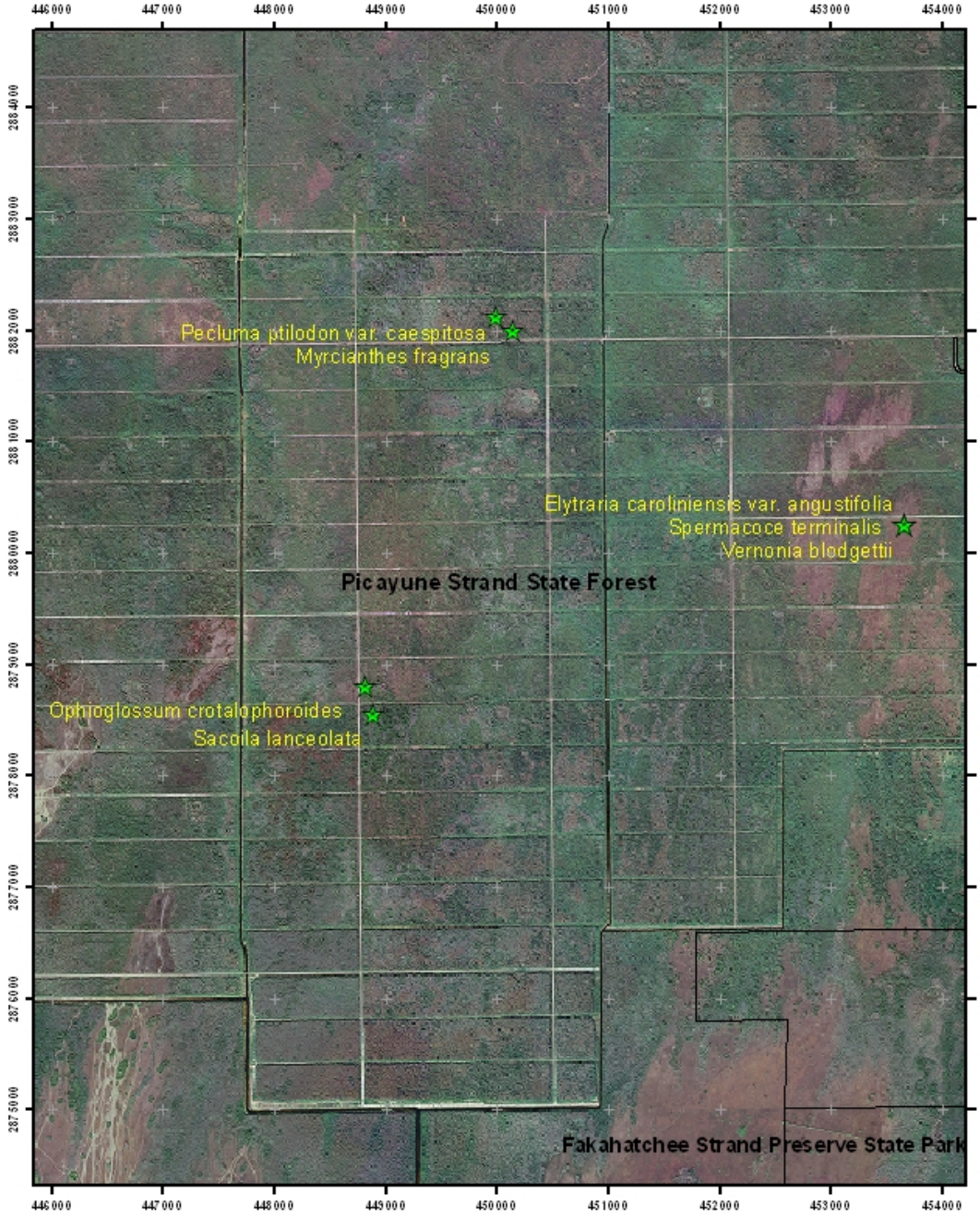
Figure 7:
PSRA Rare Plants
PSSF Southeast



Map Prepared by Steven W. Woodmansee
The Institute for Regional Conservation, Miami, FL
December 20, 2006

Coordinate System: UTM WGS 84 17N

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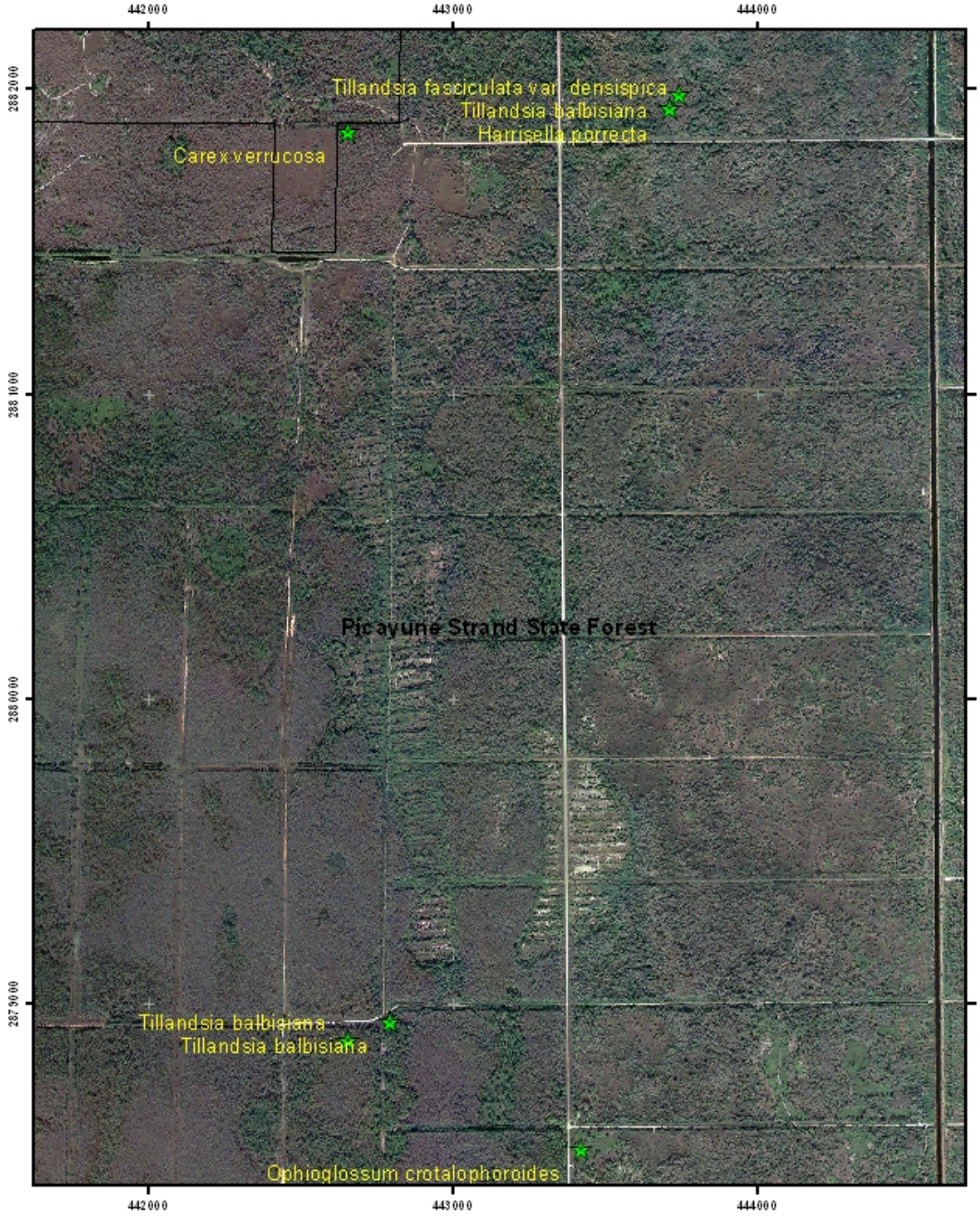
Figure 8:
PSRA Rare Plants
PSSF Southwest



Map Prepared by Steven W. Woodmansee
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Coordinate System: UTM WGS 84 17N

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Figure 9:
PSRA Rare Plants
FSPSP East

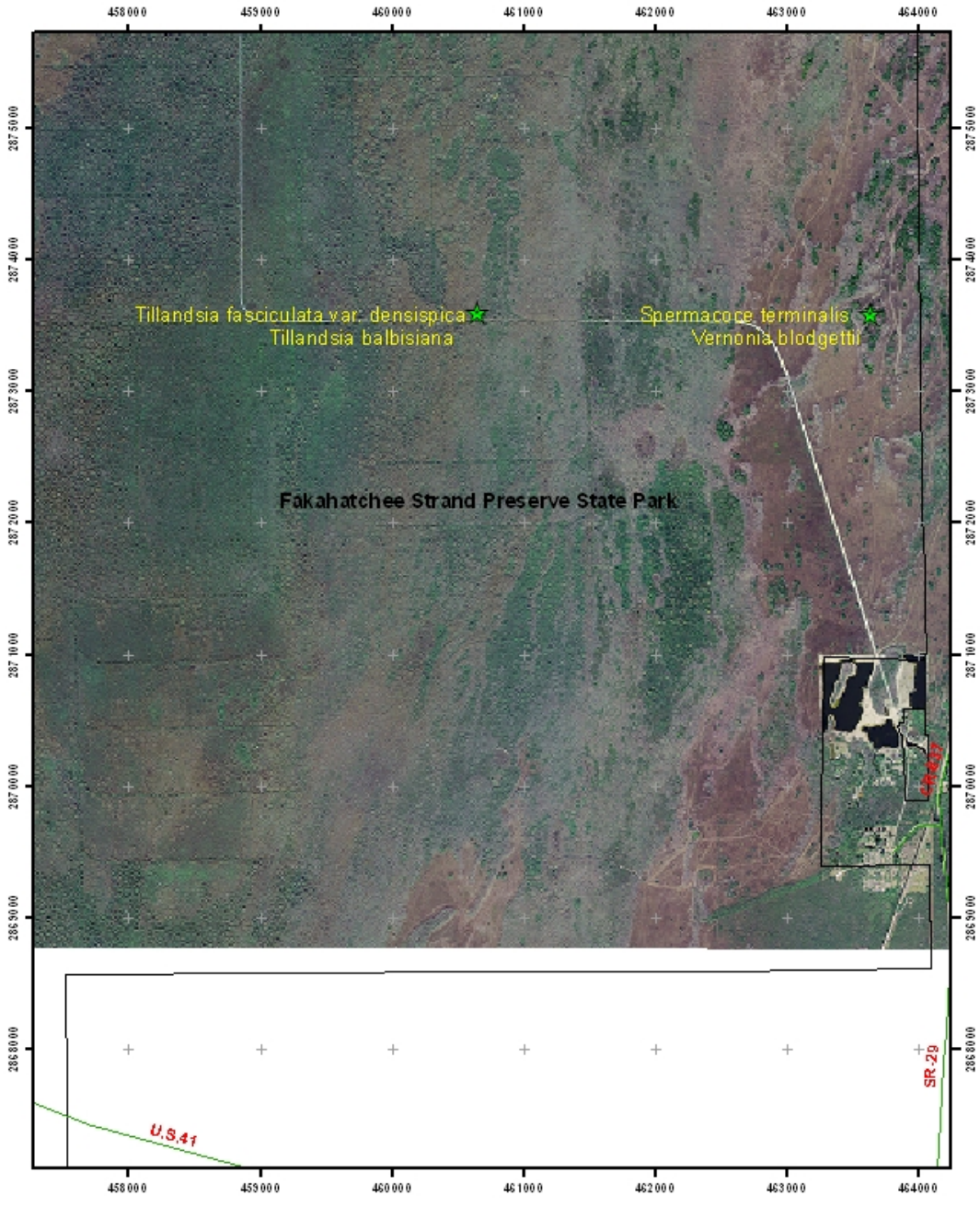

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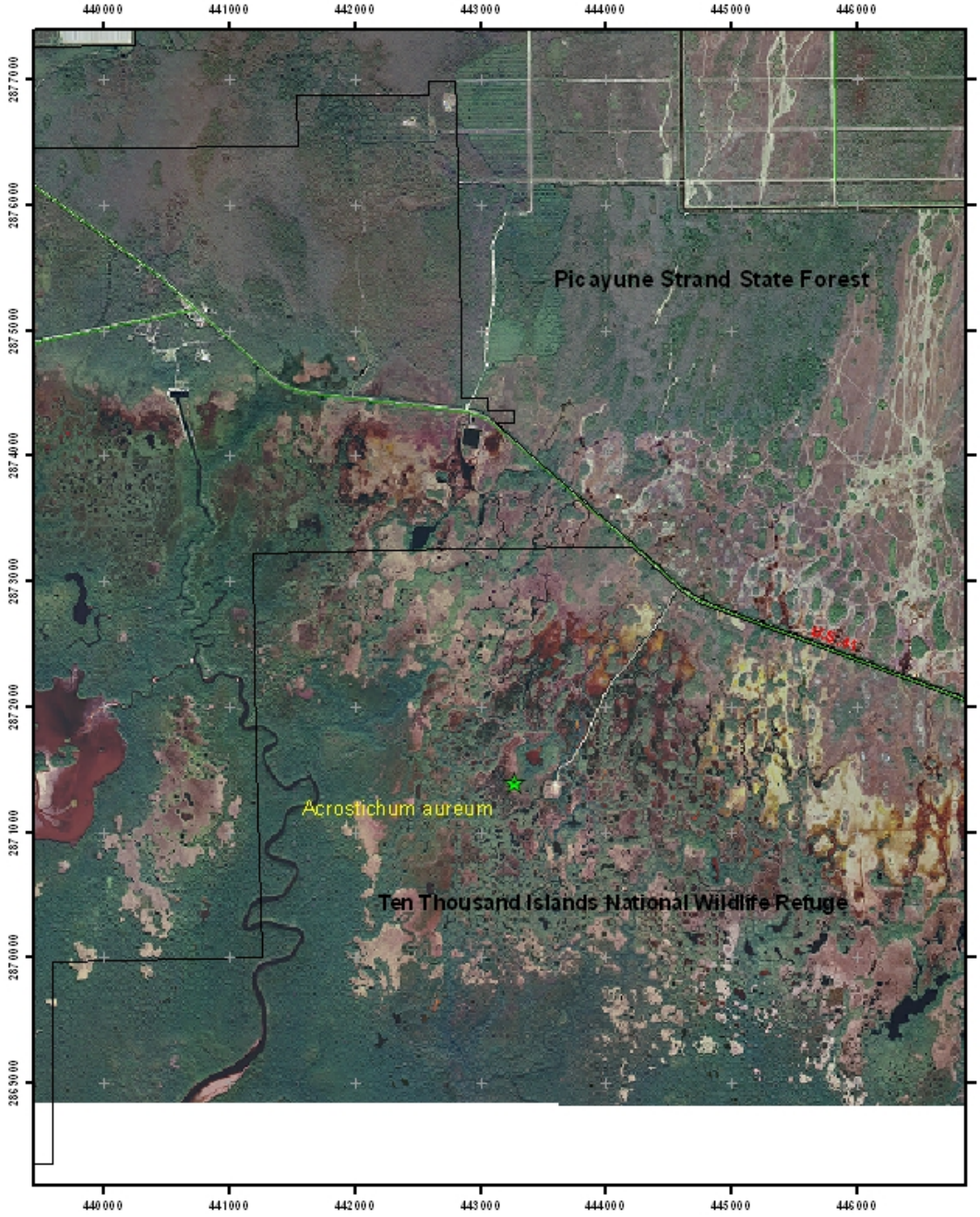
Figure 10:
PSRA Rare Plants
TTINWR



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December 20, 2006

Coordinate System: UTM WGS 84 17N

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Floristic Inventory

With any rare plant survey work being conducted on a preserve, it is essential to have baseline data for all vascular plants occurring there. As further development and ecosystem alteration occur throughout Florida, it is expected that some plant species will become rare, and it may be difficult to predict whether new species will be added to the rare plant tracking lists of various agencies. Plant lists have been published and continue to be revised for FPNWR and FSPSP. TTINWR was little explored during this project, so a plant list was not developed here.

PSSF possessed little data on vascular plants, and no complete plant lists existed at the time of these surveys (Gann et al., 2002). Schultz (2001) conducted some plant surveys for selected areas at PSSF. These data were not yet incorporated into this vascular plant inventory as there were some questions about some of the data sources. In addition, list data occurs as brief accounts for specific areas within PSSF, and not the entire preserve itself. Therefore, a vascular plant inventory was conducted in conjunction with rare plant surveys and VMT installation at PSSF.

In this final report, a preliminary species list for vascular plants occurring at PSSF is provided in Table 2. List data is arranged alphabetically by group (dicot, monocot, gymnosperm, and pteridophyte), plant family, and then scientific name and includes nativity and common names. In addition, list data is provided in a Microsoft Access database labeled PLANT_RAWDATA in a table named **PICA_PSSF_PlantList2006** and includes Plant Group, family, scientific name, common names, TX code, occurrence, native status, invasive status, introduced status, introduced agency, cultivated status, state status, FNAI status, IRC South Florida status, Florida EPPC status, observers and collectors (with collection number), and date of collection or observation. Descriptions for each field can be interpreted using the Design View function in Microsoft Access.

A total of 465 vascular plants are recorded for PSSF, of which 420 are native, 44 are exotic. A single species, dustseed (*Acisanthera quadrata*), is new to Florida and the United States, of which its native status is uncertain. Three species are categorized as H (Possibly extirpated, Historical) to PSSF as they have not been recorded for quite some time. They include: *Asplenium serratum*, *Catopsis berteroniana*, and *Ionopsis utricularioides*. In addition, one species, *Helenium flexuosum*, was recorded in error.

A total of 43 plant species recorded at PSSF are listed either by the State of Florida's Department of Agriculture and Consumer Services (FDACS), FNAI, or IRC. No federally listed plants are recorded for PSSF (USFWS, 2006). Of the native plant species, 20 are listed as endangered, ten are listed as threatened and two are listed as commercially exploited by FDACS (Coile & Garland, 2003). In addition, 17 are listed by FNAI (2006); seven as Critically Imperiled in Florida (S1), nine as Imperiled in Florida (S2), and one as rare in Florida (S3). Thirteen plant species listed as Critically Imperiled in South Florida by IRC (Gann et al., 2001-2006) were also recorded. A list of all rare plants recorded at PSSF is provided in the accompanying database table mentioned above.

Twenty plants recorded at PSSF are listed as Invasive (I) and four are listed as Potentially Invasive (II) by FLEPPC (2005). A list of them is provided in the accompanying database table mentioned above. Electronic copies of these data as Microsoft Access files are provided in an accompanying compact disk.

Table 2:

The Vascular Plants of Picayune Strand State Forest

The Institute for Regional Conservation
Miami, Florida
www.regionalconservation.org
Restoring the Link Between People and Nature

Compiled from field observations made by Keith Bradley (1995), Mike Barry (2002-2004), and by Steven W. Woodmansee, Michael J. Barry, Josh Mahoney, and Eric Fleites between July 2005 and February 2006.

Dicots

Acanthaceae		
	Dyschoriste angusta	Rockland twinflower, Pineland snakeherb
	Elytraria caroliniensis var. angustifolia	Narrowleaf Carolina scalystem
	Justicia angusta	Narrow-leaved waterwillow
	Stenandrium dulce	Pinklet
Aceraceae		
	Acer rubrum	Red maple
Amaranthaceae		
E	*Achyranthes aspera*	Common Devil's-horsewhip
	Amaranthus australis	Southern water-hemp, Southern amaranth
	Iresine diffusa	Bloodleaf, Juba's bush
Anacardiaceae		
	Rhus copallinum	Winged sumac
E	*Schinus terebinthifolius*	Brazilian-pepper
	Toxicodendron radicans	Eastern poison-ivy
Annonaceae		
	Annona glabra	Pond-apple
	Asimina reticulata	Common pawpaw, Netted pawpaw
Apiaceae		
	Centella asiatica	Coinwort, Spadeleaf
	Eryngium baldwinii	Baldwin's eryngo
	Eryngium yuccifolium	Button snakeroot, Button rattlenakemaster
	Hydrocotyle umbellata	Manyflower marshpennywort
	Oxypolis filiformis	Water dropwort, Water cowbane
	Ptilimnium capillaceum	Mock bishopsweed, Herbwilliam
Apocynaceae		
	Angadenia berteroi	Pineland-allamanda, Pineland golden trumpet
	Pentalinon luteum	Wild-allamanda, Hammock viperstail

Aquifoliaceae		
	Ilex cassine	Dahoon holly, Dahoon
	Ilex glabra	Gallberry, Inkberry
Asclepiadaceae		
	Asclepias lanceolata	Fewflower milkweed
	Cynanchum scoparium	Hairnetvine, Leafless swallowwort
	Sarcostemma clausum	Whitevine, White twinevine
Asteraceae		
	Ambrosia artemisiifolia	Common ragweed
	Aster adnatus	Clasping aster, Scaleleaf aster
	Aster bracei	Brace's aster
	Aster carolinianus	Climbing aster
	Aster concolor	Eastern silver aster
	Aster dumosus	Rice button aster
	Aster elliottii	Elliott's aster
	Aster subulatus	Annual saltmarsh aster
	Baccharis glomeruliflora	Silverling
	Baccharis halimifolia	Saltbush, Groundsel tree, Sea-myrtle
	Bidens alba var. radiata	Spanish-needles
	Bigelowia nudata subsp. australis	Southern pineland rayless goldenrod
	Boltonia diffusa	Smallhead Doll's-daisy
	Carphephorus corymbosus	Florida paintbrush, Coastalplain chaffhead
	Chaptalia tomentosa	Woolly sunbonnets, Pineland daisy
	Cirsium horridulum	Purple thistle
	Conoclinium coelestinum	Blue mistflower
	Conyza canadensis var. pusilla	Dwarf Canadian horseweed
	Coreopsis leavenworthii	Leavenworth's tickseed
	Elephantopus elatus	Florida elephant's-foot, Tall elephant's-foot
E	*Emilia sonchifolia*	Lilac tassleflower
	Erechtites hieracifolia	Fireweed, American burnweed
	Erigeron quercifolius	Southern-fleabane, Oakleaf fleabane
	Erigeron vernus	Early whitetop fleabane
	Eupatorium capillifolium	Dog-fennel
	Eupatorium leptophyllum	Falsefennel
	Eupatorium mikanioides	Semaphore eupatorium, Semaphore
	Eupatorium mohrii	Mohr's thoroughwort
	Eupatorium serotinum	Lateflowering thoroughwort
	Euthamia caroliniana	Slender goldenrod
	Flaveria linearis	Narrowleaf yellowtops
	Gnaphalium falcatum	Cudweed, Narrowleaf purple everlasting
	Helenium amarum	Spanish-daisy, Bitterweed
F	*Helenium flexuosum*	Sneezeweed, Purple sneezeweed
	Helenium pinnatifidum	Southeastern sneezeweed
	Helianthus radula	Stiff sunflower
	Iva microcephala	Piedmont marshelder
	Lactuca graminifolia	Grassleaf lettuce
	Liatris garberi	Garber's gayfeather
	Liatris gracilis	Slender gayfeather
	Liatris tenuifolia var. quadriflora	Shortleaf gayfeather
	Melanthera parvifolia	Pineland blackanthers
	Mikania cordifolia	Florida Keys hempvine

	Mikania scandens	Climbing hempweed, Climbing hempvine
	Pectis glaucescens	Tea-blinkum, Sanddune cinchweed
	Pectis prostrata	Spreading cinchweed
	Pityopsis graminifolia	Narrowleaf silkgrass
	Pluchea odorata	Sweetscent
	Pluchea rosea	Rosy camphorweed
	Rudbeckia hirta	Blackeyed susan
	Senecio glabellus	Butterweed
	Solidago fistulosa	Pinebarren goldenrod
	Solidago gigantea	Giant goldenrod
	Solidago sempervirens	Seaside goldenrod
	Solidago stricta	Narrow-leaved goldenrod, Wand goldenrod
	Verbesina virginica	Frostweed, White crownbeard
	Vernonia blodgettii	Florida ironweed
Boraginaceae		
	Heliotropium angiospermum	Scorpionstail
	Heliotropium polyphyllum	Pineland heliotrope
Brassicaceae		
	Rorippa teres	Southern marsh yellowcress
Buddlejaceae		
	Polypremum procumbens	Rustweed, Juniperleaf
Burseraceae		
	Bursera simaruba	Gumbo-limbo
Cactaceae		
CE	*Selenicereus pteranthus*	Snake cactus, Princess-of-the-night
Campanulaceae		
	Lobelia feayana	Bay lobelia
	Lobelia glandulosa	Glade lobelia
	Lobelia paludosa	White lobelia
Caprifoliaceae		
	Sambucus canadensis	Elderberry, American elder
Casuarinaceae		
E	*Casuarina equisetifolia*	Australian-pine, Horsetail casuarina
E	*Casuarina glauca*	Suckering Australian-pine, Gray sheoak
Chrysobalanaceae		
	Chrysobalanus icaco	Coco-plum
	Licania michauxii	Gopher-apple
Clusiaceae		
	Hypericum brachyphyllum	Coastalplain St. John's-wort
	Hypericum cistifolium	Roundpod St. John's-wort
	Hypericum fasciculatum	Sandweed, Peelbark St. John's-wort
	Hypericum hypericoides	St. Andrew's-cross
	Hypericum mutilum	Dwarf St. John's-wort
	Hypericum tetrapetalum	Fourpetal St. John's-wort
Convolvulaceae		
	Cuscuta pentagona	Fiveangled dodder

	Evolvulus sericeus	Silver dwarf morningglory
	Ipomoea cordatotriloba	Tievine
	Ipomoea indica var. acuminata	Ocean-blue morningglory
	Ipomoea sagittata	Everglades morningglory
	Cornaceae	
	Cornus foemina	Stiff cornel, Swamp dogwood, Stiff dogwood
	Cucurbitaceae	
	Melothria pendula	Creeping-cucumber
E	*Momordica charantia*	Wild balsam-apple, Balsampear
	Droseraceae	
	Drosera brevifolia	Dwarf sundew
	Drosera capillaris	Pink sundew
	Ericaceae	
	Lyonia fruticosa	Coastalplain staggerbush
	Vaccinium myrsinites	Shiny blueberry
	Escalloniaceae	
	Itea virginica	Virginia-willow, Virginia sweetspire
	Euphorbiaceae	
	Caperonia castaneifolia	Chestnutleaf Falsecroton
	Chamaesyce blodgettii	Limestone sandmat
	Chamaesyce conferta	Everglades key sandmat
	Chamaesyce hypericifolia	Eyebane, Graceful sandmat
	Croton glandulosus	Vente conmigo
	Euphorbia polyphylla	Pineland euphorbia, Lesser Florida spurge
	Phyllanthus caroliniensis subsp. saxicola	Rock Carolina leafflower
	Stillingia aquatica	Corkwood, Water toothleaf
	Stillingia sylvatica	Queensdelight
	Fabaceae	
	Acacia pinetorum	Pineland acacia
E	*Albizia lebbeck*	Woman's tongue, Rattlepod
	Chamaecrista fasciculata	Partridge pea
	Chamaecrista nictitans	Sensitive-pea
	Chamaecrista nictitans var. aspera	Hairy sensitive-pea, Hairy partridge-pea
	Crotalaria rotundifolia	Rabbitbells
	Dalbergia ecastaphyllum	Coinvine
	Desmodium paniculatum	Panicledleaf ticktrefoil
E	*Desmodium tortuosum*	Dixie ticktrefoil
	Galactia volubilis	Downy milkpea
E	*Leucaena leucocephala*	White leadtree
E	*Macroptilium lathyroides*	Wild-bean, Wild bushbean
	Rhynchosia minima	Least snoutbean
	Senna ligustrina	Privet senna, Privet wild sensitive plant
	Vicia acutifolia	Sand vetch, Fourleaf vetch
	Fagaceae	
	Quercus laurifolia	Laurel oak, Diamond oak
	Quercus pumila	Running oak
	Quercus virginiana	Virginia live oak

Gentianaceae		
	Sabatia calycina	Coastal rosegentian
	Sabatia grandiflora	Largeflower rosegentian
	Sabatia stellaris	Rose-of-Plymouth
Haloraginaceae		
	Proserpinaca palustris	Mermaid weed, Marsh mermaidweed
	Proserpinaca pectinata	Mermaid weed, Combleaf mermaidweed
Hydrophyllaceae		
	Hydrolea corymbosa	Skyflower
Lamiaceae		
	Hyptis alata	Musky mint, Clustered bushmint
	Lycopus rubellus	Taperleaf waterhoarhound
	Physostegia purpurea	False dragonhead, Eastern false dragonhead
	Piloblephis rigida	Wild pennyroyal
	Teucrium canadense	Wood sage, Canadian germander
Lauraceae		
	Cassytha filiformis	Lovevine, Devil's gut
	Ocotea coriacea	Lancewood
	Persea palustris	Swamp bay
Lentibulariaceae		
	Pinguicula pumila	Small butterwort
	Utricularia cornuta	Horned bladderwort
	Utricularia foliosa	Leafy bladderwort
	Utricularia gibba	Cone-spur bladderwort, Humped bladderwort
	Utricularia simulans	Fringed bladderwort
Linaceae		
	Linum carteri var. smallii	Small's flax
	Linum floridanum	Florida yellow flax
	Linum medium var. texanum	Stiff yellow flax
Loganiaceae		
	Mitreola petiolata	Miterwort, Lax hornpod
	Mitreola sessilifolia	Mitrewort, Swamp hornpod
Lythraceae		
E	*Cuphea carthagenensis*	Colombian waxweed
	Lythrum alatum var. lanceolatum	Winged loosestrife
	Rotala ramosior	Toothcup, Lowland rotala
Magnoliaceae		
	Magnolia virginiana	Sweet-bay
Malvaceae		
E	*Hibiscus tiliaceus*	Seaside mahoe, Sea hibiscus, mahoe
	Kosteletzkya virginica	Virginia saltmarsh mallow
	Sida acuta	Common wireweed, Common fanpetals
	Sida rhombifolia	Cuban jute, Indian hemp
E	*Urena lobata*	Caesarweed

Melastomataceae		
U	*Acisanthera quadrata*	Dustseed
	Rhexia mariana	Pale meadowbeauty, Maryland meadowbeauty
Moraceae		
	Ficus aurea	Strangler fig, Golden fig
	Ficus citrifolia	Short-leaf fig, Wild banyan tree
E	*Ficus microcarpa*	Laurel fig, Indian laurel
	Morus rubra	Red mulberry
Myricaceae		
	Myrica cerifera	Wax myrtle, Southern Bayberry
Myrsinaceae		
	Ardisia escallonioides	Marlberry
	Rapanea punctata	Myrsine, Colicwood
Myrtaceae		
	Eugenia axillaris	White stopper
E	*Melaleuca quinquenervia*	Punktree
	Myrcianthes fragrans	Twinberry, Simpson's stopper
E	*Psidium guajava*	Guava
E	*Syzygium cumini*	Jambolan-plum, Java-plum
Nymphaeaceae		
	Nymphaea elegans	Blue waterlily, Tropical royalblue waterlily
Olacaceae		
	Ximenia americana	Hog-plum, Tallowwood
Oleaceae		
	Fraxinus caroliniana	Water ash, Carolina ash, Pop ash
Onagraceae		
	Gaura angustifolia	Southern gaura, Southern beeblossum
	Ludwigia alata	Winged primrosewillow
	Ludwigia curtissii	Curtiss's primrosewillow
	Ludwigia maritima	Seaside primrosewillow
	Ludwigia microcarpa	Smallfruit primrosewillow
	Ludwigia octovalvis	Mexican primrosewillow
E	*Ludwigia peruviana*	Peruvian primrosewillow
	Ludwigia repens	Creeping primrosewillow
Oxalidaceae		
	Oxalis corniculata	Lady's-sorrel, Common yellow woodsorrel
Passifloraceae		
	Passiflora suberosa	Corkystem passionflower
Phytolaccaceae		
	Phytolacca americana	American pokeweed
Polygalaceae		
	Polygala balduinii	Baldwin's milkwort
	Polygala cruciata	Drumheads
	Polygala grandiflora	Candyweed, Showy milkwort

	Polygala incarnata	Procession flower
	Polygala lutea	Orange milkwort
	Polygala nana	Candyroot
	Polygonaceae	
	Polygonum densiflorum	Denseflower knotweed
	Polygonum hydropiperoides	Mild water-pepper, Swamp smartweed
	Primulaceae	
	Anagallis pumila	Florida pimpernel
	Samolus ebracteatus	Water pimpernel, Limewater brookweed
	Ranunculaceae	
	Clematis baldwinii	Pine-hyacinth
	Rhamnaceae	
	Berchemia scandens	Rattan vine, Alabama supplejack
	Rosaceae	
	Rubus trivialis	Southern dewberry
	Rubiaceae	
	Cephalanthus occidentalis	Common buttonbush
	Chiococca parvifolia	Pineland snowberry
	Diodia virginiana	Buttonweed, Virginia buttonweed
	Galium hispidulum	Coastal bedstraw
	Hamelia patens	Firebush
	Hedyotis procumbens	Innocence, Roundleaf bluet
	Hedyotis uniflora	Clustered mille graine
	Psychotria nervosa	Shiny-leaved wild coffee
	Psychotria sulzneri	Shortleaf wild coffee
	Randia aculeata	White indigoberry
E	*Richardia scabra*	Rough Mexican clover
	Spermacoce assurgens	Woodland false buttonweed
	Spermacoce prostrata	Prostrate false buttonweed
	Spermacoce terminalis	Everglades Keys false buttonweed
E	*Spermacoce verticillata*	Shrubby false buttonweed
	Rutaceae	
	Zanthoxylum fagara	Wild-lime, Lime prickly-ash
	Salicaceae	
	Salix caroliniana	Coastal Plain willow
	Sapindaceae	
	Dodonaea angustifolia	Narrow varnishleaf
	Sapotaceae	
	Sideroxylon foetidissimum	Wild mastic, False mastic
	Sideroxylon reclinatum	Recline Florida bully
	Sideroxylon salicifolium	Willow-bustic, White bully
	Saururaceae	
	Saururus cernuus	Lizard's tail

Scrophulariaceae		
	Bacopa caroliniana	Lemon hyssop, Lemon bacopa, Blue
	Bacopa innominata	Tropical waterhyssop
	Bacopa monnieri	Water hyssop, Herb-of-grace
	Buchnera americana	American bluehearts
	Gratiola hispida	Rough hedgehyssop
	Gratiola ramosa	Branched hedgehyssop
	Linaria canadensis	Canada toadflax
	Lindernia dubia var. anagallidea	Yellowseed false-pimpernel
	Lindernia grandiflora	Savannah false-pimpernel
	Mecardonia acuminata subsp. peninsularis	Axilflower
	Micranthemum glomeratum	Manatee mudflower
	Scoparia dulcis	Sweetbroom, Licoriceweed
Solanaceae		
	Physalis walteri	Walter's groundcherry
Sterculiaceae		
	Melochia spicata	Bretonica peluda
Turneraceae		
	Piriqueta caroliniana	Pitted stripeseed
Ulmaceae		
	Celtis laevigata	Sugarberry, Southern Hackberry
	Trema micranthum	Florida trema, Nettletree
Urticaceae		
	Boehmeria cylindrica	Button-hemp, False nettle, Bog hemp
	Parietaria floridana	Florida pellitory
Verbenaceae		
	Callicarpa americana	American beautyberry
E	*Lantana camara*	Shrubverbena
	Lantana depressa var. sanibelensis	West coast lantana, Sanibel shrubverbena
	Phyla nodiflora	Frogfruit, Turkey tangle fogfruit, Capeweed
	Stachytarpheta jamaicensis	Blue porterweed, Joee
Violaceae		
	Viola lanceolata	Bog white violet
	Viola palmata	Early blue violet
	Viola sororia	Common blue violet
Vitaceae		
	Ampelopsis arborea	Peppervine
	Cissus verticillata	Possum-grape, Seasonvine
	Parthenocissus quinquefolia	Virginia-creeper, Woodbine
	Vitis aestivalis	Summer grape
	Vitis cinerea var. floridana	Florida grape
	Vitis rotundifolia	Muscadine, Muscadine grape

Gymnosperms

Cupressaceae		
	Taxodium ascendens	Pond cypress
	Taxodium distichum	Bald cypress
Pinaceae		
	Pinus elliottii var. densa	South Florida slash pine

Monocots

Agavaceae		
C	*Yucca aloifolia*	Spanish-bayonet, Aloe yucca
Alismataceae		
	Sagittaria graminea var. chapmanii	Chapman's arrowhead
	Sagittaria lancifolia	Bulltongue arrowhead, lance-leaved arrowhead
Amaryllidaceae		
	Crinum americanum	Swamp-lily, Seven-sisters, String-lily
	Hymenocallis palmeri	Alligatorlily
Araceae		
E	*Pistia stratiotes*	Water-lettuce
Arecaceae		
	Roystonea regia	Royal palm, Florida royal palm
	Sabal palmetto	Cabbage palm
	Serenoa repens	Saw palmetto
Bromeliaceae		
H	*Catopsis berteroniana*	Powdery strap airplant
	Tillandsia balbisiana	Reflexed wild-pine, Northern needleleaf
	Tillandsia fasciculata var. densispica	Stiff-leaved wild-pine, Cardinal airplant
	Tillandsia paucifolia	Twisted wild-pine, Potbelly airplant
	Tillandsia pruinosa	Hoary wild-pine, Fuzzywuzzy airplant
	Tillandsia recurvata	Ball-moss
	Tillandsia setacea	Thin-leaved wild-pine, Southern needleleaf
	Tillandsia usneoides	Spanish-moss
	Tillandsia utriculata	Giant wild-pine, Giant airplant
	Tillandsia variabilis	Soft-leaved wild-pine, Leatherleaf airplant
Burmanniaceae		
	Burmannia capitata	Southern bluethread
Cannaceae		
	Canna flaccida	Golden canna, Bandana-of-the-everglades
Commelinaceae		
E	*Commelina diffusa*	Common dayflower
Cyperaceae		
	Carex gigantea	Giant sedge
	Carex verrucosa	Warty sedge

	Cladium jamaicense	Saw-grass, Jamaica swamp sawgrass
	Cyperus haspan	Haspan flatsedge
	Cyperus odoratus	Fragrant flatsedge
	Cyperus polystachyos	Manyspike flatsedge
	Cyperus retrorsus	Pinebarren flatsedge
	Cyperus surinamensis	Tropical flatsedge
	Cyperus tetragonus	Fourangle flatsedge
	Eleocharis geniculata	Canada spikerush
E	*Fimbristylis cymosa*	Hurricane sedge, Hurricanegrass
	Fuirena breviseta	Saltmarsh umbrellasedge
	Fuirena scirpoidea	Southern umbrellasedge
	Kyllinga pumila	Low spikesedge
	Rhynchospora colorata	Starrush whitetop
	Rhynchospora corniculata	Shortbristle horned beaksedge
	Rhynchospora divergens	Spreading beaksedge
	Rhynchospora fascicularis	Fascicled Beaksedge
	Rhynchospora globularis	Globe beak-rush
	Rhynchospora inundata	Narrowfruit horned beaksedge
	Rhynchospora microcarpa	Southern beaksedge
	Rhynchospora nitens	Shortbeak beaksedge
	Rhynchospora odorata	Fragrant beaksedge
	Rhynchospora plumosa	Plumed beaksedge
	Rhynchospora tracyi	Tracy's beaksedge
	Schoenus nigricans	Black sedge, Black bogrush
	Scleria ciliata	Fringed nutrush
	Scleria georgiana	Slenderfruit nutrush
	Scleria reticularis	Netted nutrush
	Scleria verticillata	Low nutrush
	Dioscoreaceae	
E	*Dioscorea bulbifera*	Common air-potato
	Eriocaulaceae	
	Eriocaulon decangulare	Tenangle pipewort
	Lachnocaulon anceps	Whitehead bogbutton
	Syngonanthus flavidulus	Yellow hatpins
	Haemodoraceae	
	Lachnanthes caroliana	Bloodroot, Carolina redroot
	Hydrocharitaceae	
E	*Hydrilla verticillata*	Water-thyme
	Hypoxidaceae	
	Hypoxis juncea	Fringed Yellow stargrass
	Hypoxis wrightii	Bristleseed yellow stargrass
	Iridaceae	
	Iris hexagona	Dixie iris, Prairie iris
	Sisyrinchium nashii	Nash's blueeyed-grass
	Juncaceae	
	Juncus effusus var. solutus	Soft rush
	Juncus marginatus	Shore rush, Grassleaf rush
	Juncus megacephalus	Bighead rush

Lemnaceae		
	Lemna obscura	Little duckweed
Liliaceae		
	Aletris lutea	Yellow colicroot
	Lilium catesbaei	Catesby's lily, Pine lily
	Schoenolirion albiflorum	Sunnybells, White sunnybell
Marantaceae		
	Thalia geniculata	Alligatorflag, Fireflag
Najadaceae		
	Najas guadalupensis	Southern waternymph
Orchidaceae		
	Bletia purpurea	Pinepink
	Cyrtopodium punctatum	Cowhorn orchid, Cigar orchid
	Encyclia cochleata	Clamshell orchid, cockleshell orchid
	Encyclia tampensis	Florida butterfly orchid
	Epidendrum anceps	Dingy-flowered star orchid
	Epidendrum floridense	Umbrella star orchid
	Epidendrum nocturnum	Night-blooming epidendrum, Night-scented orchid
	Epidendrum rigidum	Stiff-flower star orchid
	Eulophia alta	Wild-coco
	Habenaria distans	Hammock false rein orchid
	Habenaria floribunda	Rein orchid, Toothpetal false reinorchid
	Habenaria quinqueseta	Longhorn false reinorchid
	Harrisella porrecta	Needleroot airplant orchid
H	*Ionopsis utricularioides*	Delicate violet orchid
E	*Oeceoclades maculata*	African ground orchid, Monk orchid
	Polyradicion lindenii	Ghost orchid, Palmplolly
	Ponthieva racemosa	Hairy shadow witch
Poaceae		
	Amphicarpum muhlenbergianum	Blue-maidencane
	Andropogon glomeratus var. glaucopsis	Purple bluestem
	Andropogon glomeratus var. hirsutior	Hairy bushy bluestem
	Andropogon glomeratus var. pumilus	Common bushy bluestem
	Andropogon virginicus	Broomsedge bluestem
	Andropogon virginicus var. glaucus	Chalky bluestem
	Aristida patula	Tall threeawn
	Aristida purpurascens	Arrowfeather threeawn
	Aristida spiciformis	Bottlebrush threeawn
	Axonopus furcatus	Big carpetgrass
	Cenchrus incertus	Coastal sandbur
	Chrysopogon pauciflorus	Florida false beardgrass
	Coelorachis rugosa	Wrinkled jointtail grass
CE	*Cortaderia selloana*	Pampas grass
	Dactyloctenium aegyptium	Crow's-foot grass, Durban crowfootgrass
	Dichanthelium aciculare	Needleleaf witchgrass
	Dichanthelium commutatum	Variable witchgrass
	Dichanthelium dichotomum	Cypress witchgrass
	Dichanthelium ensifolium	Cypress witchgrass
	Dichanthelium ensifolium var. unciphyllum	Cypress witchgrass
	Dichanthelium erectifolium	Erectleaf witchgrass

	Dichanthelium laxiflorum	Openflower witchgrass
	Dichanthelium ovale	Eggleaf witchgrass
	Dichanthelium portoricense	Hemlock witchgrass
	Dichanthelium strigosum var. glabrescens	Glabrescent roughhair witchgrass
	Digitaria ciliaris	Southern crabgrass
	Elionurus tripsacoides	Pan-American balsamscale
	Eragrostis elliottii	Elliott's love grass
E	*Eremochloa ophiuroides*	Centipede grass
	Eustachys glauca	Prairie fingergrass, Saltmarsh fingergrass
	Eustachys petraea	Common fingergrass, Pinewoods fingergrass
	Heteropogon contortus	Tanglehead
E	*Hymenachne amplexicaulis*	Trompetilla
E	*Imperata cylindrica*	Congongrass, Cogongrass
	Leersia hexandra	Southern cutgrass
	Leptochloa fascicularis	Bearded spangletop, Bearded sprangletop
	Muhlenbergia capillaris	Muhlygrass, Hairawnmuhly
E	*Neyraudia reynaudiana*	Burmareed, Silkreed
	Oplismenus hirtellus	Woodsgrass, Basketgrass
	Panicum hemitomon	Maidencane
	Panicum hians	Gaping panicum
E	*Panicum repens*	Torpedo grass
	Panicum rigidulum	Redtop panicum
	Panicum tenerum	Bluejoint panicum
	Panicum virgatum	Switchgrass
	Paspalum blodgettii	Coral paspalum, Blodgett's crowngrass
	Paspalum monostachyum	Gulfdune paspalum
E	*Paspalum notatum*	Bahia grass
	Paspalum setaceum	Thin paspalum
E	*Paspalum urvillei*	Vasey grass
E	*Pennisetum purpureum*	Napier grass, Elephantgrass
	Phragmites australis	Common reed
E	*Rhynchelytrum repens*	Rose Natalgrass
	Saccharum giganteum	Sugarcane plumegrass
E	*Sacciolepis indica*	Indian cupscale
	Sacciolepis striata	American cupscale
	Schizachyrium rhizomatum	Rhizomatous bluestem
	Setaria magna	Giant bristlegrass
	Setaria parviflora	Knotroot foxtail, Yellow bristlegrass
	Sorghastrum secundum	Lopsided Indian grass
	Spartina bakeri	Sand cordgrass
E	*Sporobolus indicus var. pyramidalis*	West Indian dropseed
	Sporobolus junceus	Pineywoods dropseed
	Tripsacum dactyloides	Eastern gamagrass, Fakahatchee grass
	Zizaniopsis miliacea	Southern wild-rice, Giant cut-grass

Pontederiaceae

	Pontederia cordata	Pickerelweed

Smilacaceae

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

Typhaceae

	Typha domingensis	Southern cat-tail

Xyridaceae

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

Pteridophytes

Aspleniaceae

H	*Asplenium serratum*	Bird's-nest fern, wild birdnest fern

Blechnaceae

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

Dennstaedtiaceae

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

Nephrolepidaceae

	Nephrolepis biserrata	Giant sword fern
	Nephrolepis exaltata	Wild Boston fern

Ophioglossaceae

	Ophioglossum crotalophoroides	Bulbous adder's-tongue
	Ophioglossum palmatum	Hand fern

Osmundaceae

	Osmunda regalis var. spectabilis	Royal fern

Polypodiaceae

	Campyloneurum costatum	Tailed strap fern
	Campyloneurum phyllitidis	Long strap fern
	Pecluma ptilodon var. caespitosa	Comb polypody
	Phlebodium aureum	Golden polypody
	Pleopeltis polypodioides var. michauxiana	Resurrection fern

Psilotaceae

	Psilotum nudum	Whisk-fern

Pteridaceae

E	*Pteris vittata*	China brake

Salviniaceae

E	*Salvinia minima*	Water spangles

Thelypteridaceae

Thelypteris interrupta	Interrupted maiden fern, Hottentot fern
Thelypteris kunthii	Southern shield fern
Thelypteris palustris var. pubescens	Marsh fern

Vittariaceae

Vittaria lineata	Shoestring fern

E = Not Native to the site

CE = Not Native to the site, cultivated only

U = Nativity to the site uncertain

F = Recorded as present in error

H = Possibly extirpated (Historical)

Final Discussion and Recommendations

As restoration proceeds at the PSRA, it is recommended that certain managerial actions take place. The data occurring in Schultz (2001) should be reviewed and verified and then incorporated into the PSRA database. Accounts of plant species should be linked to specific herbarium collections, literature, or definitive sources linking plants with a specific person, time, and place in order to accept them. In addition, care should be maintained to track all rare plants currently recorded for both the areas within the PSRA boundaries and elsewhere at the preserves. As the original hydrology is restored, it is expected that certain rare plants will benefit from its impacts, whereas others may not. It is recommended that if a rare plant is in decline, that it be relocated to a more suitable habitat at its conservation area if its population at this conservation area is so low that it merits this. Once the physical hydrological restoration process is complete, areas of the restoration should be surveyed periodically for recruitment of quality native plants especially those listed by agencies as rare. If such species are not recruiting sufficiently, then augmenting their populations with local germplasm should be considered. For those species which have become historical or extirpated to the PSRA, or specific conservation areas within the PSRA, it is recommended that reintroductions of said species be considered using appropriate germplasm in appropriate habitats. Gann et al. (2002) discuss appropriate methodology for such restoration practices.

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