A FLORISTIC INVENTORY OF THE HOLMES AVENUE TRACT (HIGHLANDS COUNTY), FLORIDA, U.S.A.

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ABSTRACT

Documented presently as growing wild within the Holmes Avenue Tract (Highlands Co., Florida, U.S.A) are individuals of 106 families, 282 genera, 464 species, and 478 infrageneric taxa of vascular plants. Of the 478 infrageneric taxa documented presently, 386 (80.8%) are native and 36 (7.5%) are endemic to Florida. Herein, seven main kinds of habitats are recognized for the study area, and individual taxa inhabit one or more of those habitats. Twenty-four presently reported infrageneric taxa are listed as Endangered (18 taxa) or Threatened (6 taxa) in Florida. Based on Wunderlin et al. (2019), 36 species plus one variety are newly reported for Highlands County.

RESUMEN

Hay ejemplares documentados actualmente que crecen en la Holmes Avenue Tract (Highlands Co., Florida, U.S.A) de 106 familias, 282 géneros, 464 especies, y 478 taxa infragenéricos de plantas vasculares. De los 478 taxa infragenéricos documentados actualmente, 386 (80.8%) son nativos y 36 (7.5%) endémicos de Florida. Se reconocen siete tipos principales de hábitats en el área de estudio, y taxa individuales viven en uno o más de esos hábitats. Veinticuatro taxa infragenéricos de los citados ahora están listados como en Peligro (18 taxa) o Amenazados (6 taxa) en Florida. Basados en Wunderlin et al. (2019), 36 especies y una variedad se citan como nuevas para Highlands County.

INTRODUCTION

This is the seventh of a series of papers focused on the floras of south and central Florida (Wilder & McCombs 2006; Wilder & Roche 2009; Wilder & Barry 2012; Wilder et al. 2014; Wilder & Thomas 2016; Wilder & McCollom 2018). Herein, we present the results of a floristic inventory of the infrageneric taxa of native and exotic vascular plants growing wild at the Holmes Avenue Tract (Fig. 1), a natural area situated east of the town of Lake Placid (Highlands Co.), Florida.

Most of the Tract is situated on the Lake Wales Ridge (LWR), but a small portion, thereof, lies just outside the eastern boundary of the LWR.

The Lake Wales Ridge: its nature and biological significance

The LWR is a sand ridge (a relictual system of sand dunes) that extends ca. southward within central Florida, from north of Orlando to the town of Venus (Weekley et al. 2008; FFWCC 2015). It traverses Highlands, Lake, Orange, Osceola, and Polk Counties. The LWR is ca.113 miles long and ca. 10 or fewer miles wide (based on a map of the LWR [Fig. 1a] in Weekley et al. 2008). Its highest and lowest elevations are 312 and 40 feet, respectively. Its maximum elevation is the highest elevation within peninsular Florida (FFWCC 2015; Gross 2018).

Sea level has fluctuated greatly within Florida (Florea et al. 2007; Bryan et al. 2008; Muhs et al. 2011; Doar III 2014; Doar III & Kendall 2014), apparently, for millions of years (Schmidt 1997; Scott 1997). It was especially high over one million (possibly, two million) years ago, when a series of small, ancient, sand islands was the sole exposed terrain within peninsular Florida. As sea level subsided, those islands became part of the Lake Wales Ridge. Thus, the LWR is the oldest topographic feature within peninsular Florida (FFWCC 2015).

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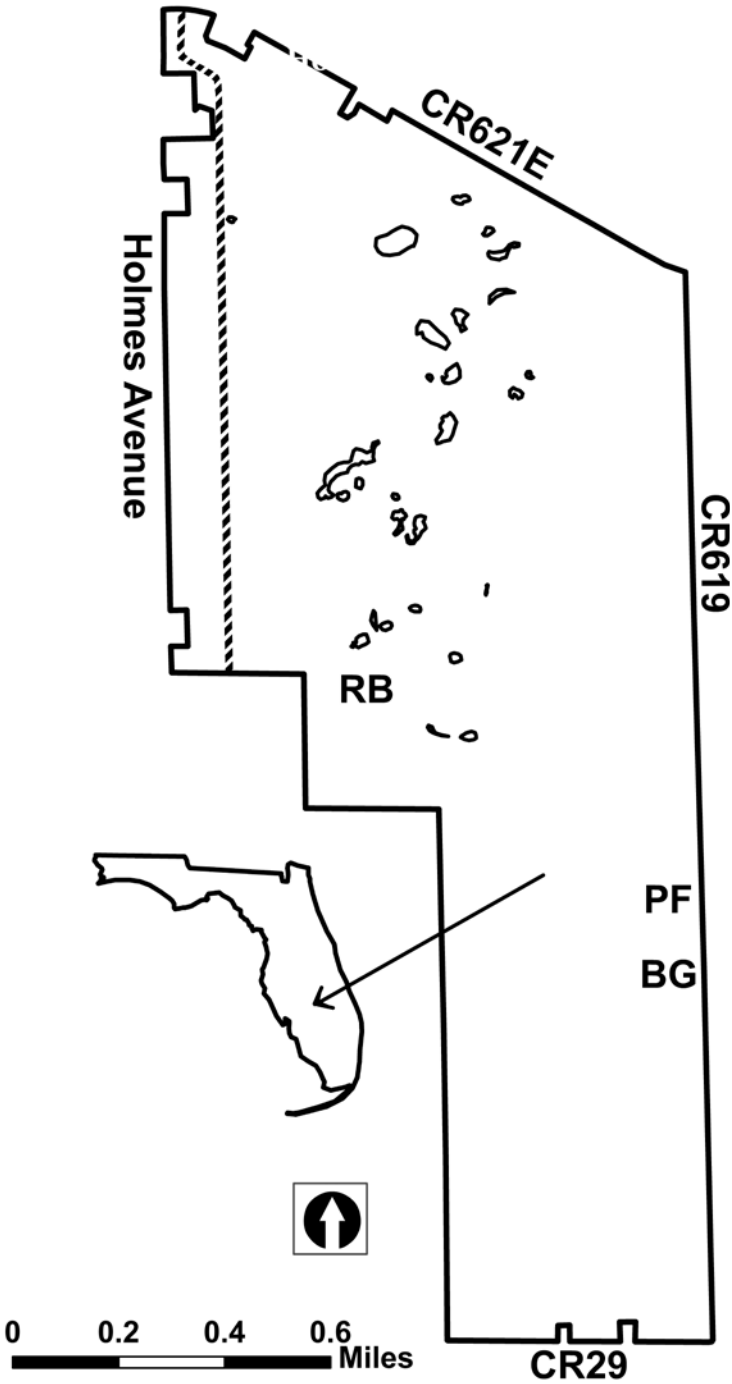

Fig. 1. A map of the Holmes Avenue Tract and a small map of Florida. The oblique arrow indicates the location of the Tract within Florida. **BG** = Baygall. **CR 29, CR 619, CR 621E,** and **Holmes Avenue** = the positions of Highlands County Routes 29, 619, 621E, and of Holmes Avenue, respectively. **PF, RB** = the locations of a major area of pine flatwoods and of a large, stereotypical Rosemary bald, respectively. The irregular figures within the northern half of the large map represent the outlines of depressions, a habitat type described in the text. Also, within the large map the axis of numerous, short, oblique lines represents power lines and the subjacent linear zone of mowed scrubland classified herein as ruderal land.

Today the LWR manifests numerous kinds of habitats, but is best known for its scrubland.

The LWR is a hotspot of biological diversity, harboring over 40 species of vascular plants listed as endangered and threatened in Florida, and containing many species endemic to Florida (Christman 1988; Christman & Judd 1990; FFWCC 2015; FDACS 2018). Two explanations may account for those high levels of diversity and endemism. (**1**) When Florida was largely flooded by seawater, the islands which preceded the LWR likely served as refugia for vascular plants and animals. (**2**) Many rare and endemic species of the LWR require as a habitat the semi-arid scrubland which abounds there. During the Pleistocene and early Holocene epochs such habitat was widespread in Florida and elsewhere, but its geographic range was subsequently reduced (FNAI 2010; Stein et al. 2000; Watts 1975).

Stein et al. (2000) commented eloquently about the LWR, as follows. "Compared to its famous neighbor to the south [i.e., the Everglades] the Lake Wales Ridge is virtually unknown to the public. From a biological perspective, though, these low, scrub-covered sandhills are of perhaps greater interest than the immense wetlands of the Everglades, because the ancient sand dunes that form this ridge are home to some of the most distinctive and highly localized species in the world" (language in brackets is ours).

Humans have, unfortunately, destroyed much natural habitat within the LWR for agriculture and human habitation, including over 85% of the upland plant communities originally located there (Guthrie 2019). As well, habitat destruction continues. Thus, the LWR now ranks among the "… most endangered ecosystems in North America" (FFWCC 2015).

The Lake Wales Ridge Wildlife and Environmental Area

The Holmes Avenue Tract is one of 20 tracts which compose The Lake Wales Ridge Wildlife and Environmental Area (LWRWEA) and which are managed by the Florida Fish and Wildlife Conservation Commission (FFWCC). The LWRWEA totals 23,653 acres, with 19 of the tracts occurring on, or partly on, the Lake Wales Ridge, whereas, the twentieth tract is located nearby (Matt Vance [Lead Area Biologist of the LWRWEA], pers. comm. to George Wilder, 21 Mar 2019). The LWRWEA is situated within Highlands and Polk Counties (FFWCC 2015).

The Holmes Avenue Tract

The Holmes Avenue Tract (hereafter, called the Holmes Tract or the Tract) was established in 1996 on land previously platted as a subdivision. Additional properties were added later. The Tract is partly owned by the State of Florida, but also includes numerous private inholdings, a byproduct of the previous plans for development (Schultz et al. 1999; FFWCC 2015; Matt Vance, pers. comm. to George Wilder and Jean McCollom, 11 Feb 2019). As well, power lines and a subjacent linear zone of mowed scrubland traverse the northwestern sector of the Tract (Fig. 1).

The Tract includes 1,096 acres and is centered at 27°17'02"N and 81°19'33"W (Fig. 1). It borders CR 621E to the north (except where geographically limited commercial land does so), CR 619 to the east, and CR 29 to the south. The western boundary of the Tract manifests northern, middle, and southern sectors. The northern sector faces Holmes Avenue (aside from where it abuts small areas of commercial land and privately-owned land); the middle and southern sectors face privately-owned farmland and Lake Country Elementary School, respectively.

Schultz et al. (1999) stated that the Holmes Tract's "… most outstanding natural features are the large mosaic of high quality scrub … and the concentration of many listed species." They indicated that, compared to other "high quality natural communities" of the Lake Wales Ridge, the Tract is "… one of the few remaining large tracts of scrub lacking a road grid." Christman (1988) characterized land that would later be incorporated into the Holmes Tract as "the best" of the isolated patches of scrub remaining on the eastern scarp of the Lake Wales Ridge, west of Lake Istokpoga.

Climate

The following data are for Sebring, a city in Highlands Co., 14.8 mi north of Lake Placid. There occur a rainy season (from ca. Jun through Sep) and a dry season (from ca. Oct through May), which correspond with the

warmer and cooler months of the year, respectively. During the rainy season, average monthly rainfall varies from 6 to 8.3 in, whereas, during the dry season the corresponding rainfall varies from 1.9 to 3.6 in. The greatest and least rainfall occur in June and December, respectively (Weather Atlas 2019). The area is subject to freezes (Highlands County et al. 2015; FAWN 2019) and hurricanes (Highlands County et al. 2015).

The average annual rainfall in Lake Placid is 48.2 in (Climate-Data.org 2019).

In Lake Placid, the average temperature is 73° F. The highest average monthly high temperatures (89–92°F) occur in May through Sep and the lowest average monthly high temperatures (73–86°F) occur in Oct through Apr. The highest and lowest average monthly low temperatures range between 63–71°F and 48–58°F, respectively (Your Weather Service 2019).

Topography, soils, and geology

The Holmes Tract stands out among the other tracts of the LWRWEA, by manifesting "… relatively steep relict dunes." Eleven soil types occur: Archbold sand, 0 to 5% slopes; Basinger fine sand; Daytona sand, 0 to 5% slopes; Duette sand, 0 to 5% slopes; Orsino sand, 0 to 5% slopes; Paola sand, 0 to 8% slopes; Placid fine sand, depressional; Pomona fine sand; Samsula muck; Satellite sand; and St. Lucie sand, 0 to 8% slopes. Limestone is the uppermost bedrock (FFWCC 2015).

Habitats

We recognize seven main types of habitats within the Holmes Tract: hardwood hammock, pine flatwoods, scrubland, depressions, baygall, miscellaneous wetlands, and ruderal land.

Hardwood hammock.—Small areas of hardwood hammock (together with hardwood hammock–pine flatwoods ecotone) occur by/near the southern boundary of the Tract. *Quercus virginiana* is dominant. Prominent, too, in one or more areas are *Ardisia elliptica*, *Carya floridana*, *Diospyros virginiana*, *Eupatorium capillifolium*, *Oldenlandia uniflora*, *Quercus nigra,* and *Rivina humilis*.

Pine flatwoods.—A major area of pine flatwoods is situated along/near the eastern edge of the Tract, approximately one-quarter of the distance from the Tract's southern boundary to its northern boundary (Fig. 1, PF). Additional pine flatwoods and scrubby pine flatwoods (habitat intermediate between pine flatwoods and scrubland) are interspersed within the northern half of the Tract. *Pinus elliottii* is dominant in both habitats. Prominent, too, in pine flatwoods are *Hypericum edisonianum*, *Ilex glabra, Lyonia fruticosa*, *Lyonia lucida*, *Panicum abscissum*, *Persea palustris*, *Serenoa repens*, *Smilax auriculata*, *Vaccinium myrsinites*, and *Vitis rotundifolia*.

Scrubland.—This is the most widespread natural habitat within the Tract. Much is of high quality (although often long-unburned), occupying considerable acreage and being interrupted solely by trails and depressions (see below). Additional scrubland composes small islands enclosed by ruderal land.

Previous workers recognized two kinds of scrubland on the Lake Wales Ridge: yellow-sand scrubland (having substrate composed, at least partly, of yellow sand) and white-sand scrubland (having substrate composed solely of white sand; FNAI 2010; Menges et al. 2007; Myers 1990). Yellow-sand scrubland occurs at the Holmes Tract, but the yellow sand is situated almost entirely beneath an upper white-sand layer.

We identified yellow-sand scrubland by finding places, therein, where agents (ants, gopher tortoises, humans) had excavated yellow sand to the ground surface (Fig. 2). Other scrubland within the Tract is apparently white-sand scrubland (Fig. 3). There the surface exhibits white sand and lacks excavated yellow sand. We have been unable to rule out, though, that such scrubland has some yellow sand, at least sporadically, at depths below ground that are inaccessible to the agents, aforementioned. Herein, therefore, we identify such scrubland as apparent white-sand scrubland (Appendix).

Species prominent in yellow-sand scrubland include *Carya floridana*, *Lyonia ferruginea*, *Quercus chapmanii*, Quercus *geminata*, *Quercus laevis*, *Quercus myrtifolia*, and *Sabal etonia*. Prominent, in apparent white-sand scrubland (excluding rosemary balds) are *Calamintha ashei, Commelina erecta, Eryngium cuneifolium*, *Geobalanus oblongifolius, Opuntia humifusa*, *Paronychia chartacea*, *Persea borbonia* var. *humilis, Pinus clausa*, *Polygonum nesomii, Quercus chapmanii*, *Quercus geminata*, *Quercus inopina*, and *Sabal etonia*.

Fig. 2. Surface of the ground in yellow-sand scrubland situated within the Holmes Avenue Tract. Visible, is a surficial layer of white sand and four anthills with yellow sand which the ants have excavated from an underlying yellow-sand layer. Photo: Jean McCollom (2018).

Rosemary balds.—They are a kind of scrubland manifesting abundant shrubs of *Ceratiola ericoides* (Florida Rosemary). The shrubs are discrete from one another, often having bare sand between them. Tall trees are uncommon or absent. At places, a Rosemary bald may intergrade with ordinary scrubland.

At the Holmes Tract, Rosemary balds are a minority of the scrubland present. They vary in size and range from stereotypical to poorly-developed. Except for one medium-size bald, they apparently manifest solely white sand.

The largest, most stereotypical Rosemary bald in the Tract (also interpretable as a group of closely associated Rosemary balds) occurs within a western sector of the Tract, ca. midway between the Tract's northern and southern boundaries (Fig. 1, RB). In places, therein, the shrubs of *Ceratiola ericoides* are the sole vascular plants present; elsewhere they are intermingled with additional species of vascular plants. Abundant among the additional species are *Geobalanus oblongifolius*, *Opuntia humifusa, Paronychia chartacea,* and *Polygonum nesomii*. Within the large Rosemary bald we noted few sedges and no grasses.

In addition to *Ceratiola ericoides*, species of woody plants that are prominent on Rosemary balds at the Holmes Tract are *Cartrema floridanum* and *Lyonia ferruginea*.

Previous workers demonstrated that *Ceratiola ericoides* manifests allelopathic effects on particular scrubland species (Hunter & Menges 2002), a circumstance that matches present observations.

Depressions.—They include, approximately, 30 well-defined areas of lowland that largely lack woody vegetation and that are scattered throughout the northern sector of the Tract (Fig. 1). We observed that, with one exception, the depressions lacked standing water throughout the year of our study.

Fig. 3. An area of scrubland (apparently white-sand scrubland). Note two shrubs of *Calamintha ashei* (foreground, at red arrows). Photo: Jean McCollom (2018).

The depressions which lacked standing water (Fig. 4).—Each manifests sand-substrate which is largely bare, or is covered by grasses, or exhibits both conditions. Generally, in depressions with both conditions the grass-covered area is the larger of the two areas. The grass-covered area often consists of two or three of the following zones: (**1**) a zone of virtually pure *Panicum abscissum*, (**2**) a zone primarily of *Andropogon brachystachyus*, and (**3**) a zone of *Panicum abscissum* admixed with *Andropogon brachystachyus* and/or *Andropogon virginicus* var. *glaucus*. A given zone may either be one area or be comprised of discontinuous areas.

Generally, too, in a depression exhibiting sand which is largely bare, as well as grass, the area of sand is situated at a higher elevation and in the outer portion of the depression. Among depressions, the different areas of largely bare sand may differ from one another according to which plant species are prominent; however, prominent in bare sand within the depressions as a whole are *Andropogon brachystachyus, Andropogon virginicus* var. *glaucus*, *Hypericum tenuifolium*, *Lechea deckertii*, *Geobalanus oblongifolius, Polypremum procumbens, Serenoa repens*, *Syngonanthus flavidulus*, and *Vaccinium myrsinites*.

The depression which manifested standing water.—This is among the largest of depressions within the Tract. Its central portion contained standing water during the rainy season and sometimes during the dry season. Prominent within the central portion is one species of sterile Poaceae, *Lachnanthes caroliana*, *Spartina bakeri*, and *Xyris* spp. The peripheral portion of the depression manifests zones of various kinds, e.g., zones of *Panicum abscissum*, of *P. abscissum* intermixed with *Andropogon brachystachyus*, and of *A. brachystachyus* intermixed with *Andropogon virginicus* var. *glaucus*. Prominent, too, within the peripheral portion are *Syngonanthus flavidulus* and *Xyris* spp.

We do not know how the depressions at the Holmes Tract originated. Perhaps, they are areas where the underlying limestone was dissolved away (Michael Duever, pers. comm. to George Wilder, 30 Aug 2018). It is thought, likewise, that within the Central Highlands Region of peninsular Florida, including the Lake Wales Ridge, the depression marshes, "basins", and lakes originated by the dissolution, erosion, and/or collapse of subjacent limestone (FFWCC 2015).

Baygall.—This habitat, characterized by FNAI (2010) as "evergreen forested, wetland," manifests frequent trees of dicotyledonous species commonly called "bays," viz., *Gordonia lasianthus* (Loblolly Bay), *Magnolia virginiana* (Sweet Bay), and *Persea palustris* (Swamp Bay). Only one area of baygall exists at the Holmes Tract and it borders and intergrades with the major area of pine flatwoods (Fig. 1, BG). At the Tract the substrate within baygall varied from emersed to shallowly flooded, both during the dry season and the rainy season. Prominent in baygall at the Tract, in addition to the three species of "bays" aforementioned, are *Hypolepis repens*, *Lygodium microphyllum*, *Nephrolepis cordifolia*, *Osmundastrum cinnamomeum*, *Pinus elliott*ii (near the margins of the baygall), *Smilax laurifolia*, *Telmatoblechnum serrulatum*, *Vitis rotundifolia*, and *Woodwardia virginica*.

Miscellaneous wetlands.—Small wetlands occur by/near the southern boundary of, and the northwestern corner of, the Tract. They include hardwood swamp (situated near the southeastern corner of the Tract) and fresh-water marshes, and they vary in their degrees of disturbance. Some of the wetlands manifested standing water during the dry season. Prominent within the hardwood swamp are *Cephalanthus occidentalis*, *Lygodium microphyllum*, *Magnolia virginiana*, *Morella cerifera*, *Nyssa biflora*, and *Telmatoblechnum serrulatum*. Prominent in one or more of the marshes are *Nekemias arborea*, *Cyperus lecontei*, *Fuirena scirpoidea*, *Lachnanthes caroliana, Nymphaea odorata*, *Panicum repens*, *Persicaria hirsuta*, *Pontederia cordata*, and *Sacciolepis striata*.

Ruderal land.—We define ruderal land broadly, herein. Examples of floristic importance are listed.

1. Disturbed scrubland. This habitat is abundant within the Tract. A primary example is a long, linear, mowed region exhibiting numerous scrubland species that underlies the power lines situated within the northwestern sector of the Tract (Fig. 1).
2. Other cleared areas, including fields. Extensive acreage within the southern third of the Tract was once pasture (FFWCC 2015) or partly so. That acreage manifests a combination of planted grassland (largely of *Digitaria milanjiana*), bare sand, and tree islands of native vegetation. It also constitutes a

Fig. 4. Portion of a depression, a habitat type described in the text, lacking standing water. Photo: Jean McCollom (2018).

matrix of habitats, together with associated islands of intact scrubland. Prominent within the acreage are *Balduina angustifolia*, *Opuntia humifusa*, *Panicum repens*, *Paronychia chartacea*, *Polanisia tenuifolia*, *Polygonum dentoceras*, *Quercus geminata*, *Selaginella arenicola*, *Sideroxylon tenax*, *Smilax auriculata*, *Tillandsia setacea* var. *setacea*, and *Vitis rotundifolia*. Additional clearings are interspersed within the northern half of the Tract and we interpret one of them as a pasture remnant.

3. A narrow strip of weed-infested land not clearly derived from any particular natural habitat, which extends along Lake Country Elementary School by the southwestern corner of the Tract.
4. A small, low forest of aged trees of *Schinus terebinthifolia* which extends for a short distance along the southern boundary of the Tract.
5. A mowed lawn within the maintenance area of the Tract.
6. Trails and non-paved roads that traverse/partially traverse the Tract. Numerous scrubland herbaceous species grew along the edges of many of these trails.

Fire

Because of many years without fire, the pine flatwoods and much scrubland lack maximal diversity of herbaceous species. Since the Holmes Tract was established, FFWCC staff members have undertaken two to three prescribed burns there which were limited to its northwestern portion. Preparations are underway to burn more of the Tract (Matt Vance, pers. comm. to George Wilder & Jean McCollom, 11 Feb 2019).

Previous floristic inventories of the Holmes Tract

Previous workers undertook brief investigations of the Holmes Tract. In 1986, Steven Christman and Robin Huck visited the Tract twice (mostly its northern half) reporting 89 species of vascular plants there (Christman 1988). During 1996 (the same year that the Tract was established) Anonymous (1996) authored an unpublished list of 131 species of vascular plants of the Tract. Then, for five days during 1998, personnel of the Florida Natural Areas Inventory visited the Tract, reporting 29 species of vascular plants (Schultz et al. 1999). Finally, FFWCC (2015) provided limited additional botanical data about the Tract.

Reasons for undertaking the present investigation

We undertook this study for three main reasons. (**1**) We wished to augment botanical knowledge of the LWR, overall, by undertaking detailed study of a limited area, therein. (**2**) We desired to update the preceding floristic accounts of the Holmes Tract. (**3**) We wished to prepare voucher specimens/voucher photographs of all taxa encountered by us. By contrast, previous workers had listed either few, or no, voucher materials from the Tract.

METHODS AND TERMINOLOGY

We undertook field work for this study from/including 4 Jan 2018 through 15 May 2019. During that time period we made 81 trips to the Holmes Tract including multiple visits for each month of the year.

We inventoried the vascular flora within all components of the Tract, including the state-owned property, the private inholdings, and the linear strip of land beneath the power lines. We considered species, subspecies, varieties, formas, and a hybrid that grew wild at the Tract. Included were eight species that we suspect were planted there in previous years.

We vouchered all infrageneric taxa with specimens or photographs and we deposited all voucher materials at the Herbarium of Southwestern Florida (SWF; Appendix). Mostly, we prepared dried herbarium specimens; however, we fixed materials of two species in an aqueous solution of ethanol (50%), formaldehyde (5%), and either acetic acid (5%) or propionic acid (5%): *Lemna aequinoctialis* and *Salvinia minima*. Those fixed materials were rinsed in water and then stored permanently in an aqueous solution of glycerin (5%) and ethanol (50%).

Jean McCollom documented three *Tillandsia* species (*T. balbisiana*, *T. fasciculata*, and *T. utriculata*) and *Syagrus romanzoffiana* solely with numbered photographs.

Mostly, present nomenclature follows Wunderlin et al. (2019); however, Appendix (footnote 1) specifies nomenclatural differences between that source and the present paper. We define **infrageneric taxa** as species,

subspecies, varieties, morphologically defined formas, and hybrids. For example, we count *Paspalum setaceum* as four infrageneric taxa because we found four varieties of that species at the Holmes Tract (Appendix).

RESULTS AND DISCUSSION

Taxonomic analysis of present data

The Holmes Tract exhibited 106 families, 282 genera, 464 species, and 478 infrageneric taxa of vascular plants (herein we count *Citrus* sp. as a species rather than as a hybrid).

Between parentheses, the numbers of families, genera, and infrageneric taxa are indicated, respectively, for each of the following major groups: pteridophytes (10, 14, 20), gymnosperms (2, 2, 3), angiosperms (94, 266, 455), monocotyledons (23, 70, 163), and dicotyledons sensu lato (71, 196, 292).

The seven largest families of monocotyledons, as gauged by the numbers of infrageneric taxa present, are Poaceae (77), Cyperaceae (37), Bromeliaceae (6), Xyridaceae (6), Commelinaceae (5), Arecaceae (4), Smilacaceae (4), Eriocaulaceae (4), and Juncaceae (3) (for each family the number of infrageneric taxa is listed between parentheses). The families Poaceae and Cyperaceae, collectively, exhibited 23.8% of all 478 infrageneric taxa listed (i.e., 114 taxa).

The 13 largest families of dicotyledons sensu lato are Asteraceae (52), Fabaceae (29), Euphorbiaceae (14), Rubiaceae (13), Ericaceae (11), Fagaceae (10), Onagraceae (9), Amaranthaceae (8), Polygonaceae (7), Cistaceae (6), Clusiaceae (6), Convolvulaceae (6), and Lamiaceae (6). The families Asteraceae and Fabaceae, collectively, exhibited 16.9% of all 478 infrageneric taxa listed (i.e., 81 taxa).

Infrageneric taxa and habitats

Habitats are listed for all 478 infrageneric taxa reported here (Appendix). Within the Holmes Tract, ruderal land exhibited the highest percentage of infrageneric taxa. Intermediate percentages of taxa grew in miscellaneous wetlands and scrubland. Lowest percentages occurred within hardwood hammock, depressions, pine flatwoods, and baygall.

Supporting data are presented. Each number below refers solely to the infrageneric taxa that we noted inside of a habitat, not to taxa whose sole association with the habitat was occurrence within ecotone(s) involving that habitat. For each habitat indicated, listed between parentheses are the number of infrageneric taxa observed therein and the percentage which that number represents of all 478 infrageneric taxa reported here: ruderal land (315, 65.9%), miscellaneous wetlands (124, 25.9%), scrubland (117, 24.5%), hardwood hammock (68, 14.2%), depressions (65, 13.6%), pine flatwoods (62, 13.0%), and baygall (45, 9.4%).

We also determined the numbers and percentages of taxa within apparent white-sand scrubland, including Rosemary balds (89, 18.6%), and yellow-sand scrubland (60, 12.6%). The Rosemary balds themselves (excluding one bald at least partly with yellow sand) exhibited 47 taxa (9.8% of taxa).

We did not investigate the relative frequencies of taxa in yellow-sand scrubland vs. in apparent white-sand scrubland; however, Menges et al. (2007) determined soil preferences for federally listed species in Highlands County, including the Holmes Tract. Of the 11 federally listed species found both by Menges et al. and ourselves (omitting *Polygala lewtonii*), we found approximately two-thirds largely in soil types specified by Menges et al., but we did not find *Bonamia grandiflora* or *Prunus geniculata* in yellow sand or *Liatris ohlingerae* in scrubby flatwoods soils.

At the Holmes Tract infrageneric taxa that were not observed in particular habitats sometimes grew in ecotones involving those habitats. For example, 26 taxa were not noted in hardwood hammock but grew in ecotone(s) involving hardwood hammock (e g , hardwood hammock - pine flatwoods ecotone). Similarly, 58 taxa were not noted in pine flatwoods, but grew in ecotone(s) involving pine flatwoods (e.g., pine flatwoods - scrubland ecotone). Twenty-six taxa were not observed in scrubland but grew in ecotones of scrubland and ruderal land.

Native and endemic taxa

Three hundred and eighty-six (80.8%) of the 478 infrageneric taxa recorded were native to Florida (not including *Dichondra* sp., which might have been native or exotic [Wunderlin et al. 2019]; Appendix). Between

parentheses, the number and percentage of native infrageneric taxa within each major group of vascular plants are listed, respectively: pteridophytes (17, 85.0%), gymnosperms (2, 66.7%), angiosperms (367, 80.7%), monocotyledons (132, 81.0%), and dicotyledons sensu lato (235, 80.8%).

Thirty-six infrageneric taxa were endemic to Florida: *Asclepias curtissii, Asimina obovata, Bonamia grandiflora, Callisia ornata, Carex vexans, Cartrema floridanum, Carya floridana, Chapmannia floridana, Clitoria fragrans, Dalea adenopoda, Dichanthelium ensifolium* var. *breve, Eryngium cuneifolium, Garberia heterophylla, Hypericum cumulicola, Hypericum edisonianum, Ilex opaca* var. *arenicola, Lechea cernua, Liatris ohlingerae, Nolina brittoniana, Palafoxia feayi, Panicum abscissum, Pectis linearifolia, Persea borbonia* var. *humilis, Pityopsis tracyi, Polygala lewtonii, Polygala rugelii, Polygonum basiramia, Polygonum dentoceras, Polygonum nesomii, Prunus geniculata, Quercus inopina, Rhynchosia cinerea, Sabal etonia, Schizachyrium niveum, Stylisma abdita,* and *Tephrosia mysteriosa*.

The thirty-six endemic taxa constituted a high percentage (7.5%) of all of the infrageneric taxa documented at the Holmes Tract—a circumstance that parallels the high concentration of various endemics (scrub endemics in particular) on the entire Lake Wales Ridge (Myers 1990; Stein et al. 2000).

By comparison, we list the percentages of endemic taxa noted during five previous floristic studies undertaken in south Florida away from the Lake Wales Ridge: 0.6%, 1.2%, 2.1%, 2.3%, and 2.3%. Those percentages represent Dismal Key and Fakahatchee Island collectively (146 acres; Collier Co.); Dagny Johnson Key Largo Hammock Botanical State Park (2454 acres; Monroe Co.); Marco Island (8374 acres; Collier Co.); Collier-Seminole State Park (7272 acres; Collier Co.); and Corkscrew Swamp Sanctuary (13,400 acres; Collier Co. and Lee Co.), respectively (Wilder & Roche 2009; Wilder & Barry 2012; Wilder et al. 2014; Wilder & Thomas 2016; Wilder & McCollom 2018).

The Holmes Tract, measuring 1096 acres, manifested a mean of 0.0328 endemic species per acre. It had 4.8, 16, 27, 15, and 24 times the mean number of endemic species per acre than had the latter five localities, respectively.

Exotic species

Ninety infrageneric taxa observed within the Holmes Tract are exotic within Florida (not including *Dichondra* sp.; Appendix).

The Florida Exotic Pest Plant Council (FLEPPC 2019) has recognized two categories of plant species exotic within Florida, that pose especial threats to the ecology of the State, overall, i.e., Category I and Category II (those categories indicate decreasing degree of threat; FLEPPC 2019). Noted presently were 18 Category I species (*Abrus precatorius, Ardisia elliptica, Bischofia javanica, Dioscorea bulbifera, Imperata cylindrica, Lantana strigocamara, Ludwigia peruviana, Lygodium microphyllum, Melaleuca quinquenervia, Melinis repens, Nephrolepis cordifolia, Panicum repens, Salvinia minima, Schinus terebinthifolia, Sporobolus jacquemontii, Syzygium cumini, Urena lobata,* and *Urochloa mutica*) and 12 Category II species (*Crassocephalum crepidioides, Dactyloctenium aegyptium, Macroptilium lathyroides, Melia azedarach, Momordica charantia, Praxelis clematidea, Richardia grandiflora, Spermacoce verticillata, Sphagneticola trilobata, Stachytarpheta cayennensis, Syagrus romanzoffiana,* and *Urochloa maxima*). The 18 Category I species and the 12 Category II species comprised 22.0% and 14.1% of all 81 Category I species and 85 Category II species recognized for Florida, respectively.

We rank seven species (six were listed by FLEPPC 2019) as being among the most troublesome exotic species at the Tract: *Digitaria milanjiana, Dioscorea bulbifera, Lygodium microphyllum, Melinis repens, Nephrolepis cordifolia, Panicum repens,* and *Schinus terebinthifolia.*

We suspect that plants, or their antecedents, of eight exotic species were cultivated at the Tract before it was established: *Bambusa vulgaris, Digitaria milanjiana, Enterolobium contortisiliquum, Ilex vomitoria, Juniperus* sp., *Philodendron bipinnatifidum, Rhododendron* sp., and *Syagrus romanzoffiana.* We do so because those taxa, or the genera which some of them represent (*Digitaria, Rhododendron*), are widely cultivated and because of where the plants are located within the Tract (e g , by a gateway, within former pasture, and/or along roads, etc.).

Representatives of the Florida Fish and Wildlife Conservation Commission treat exotics at the Tract by spraying and by mechanical means.

Native taxa deemed rare by the U.S. Fish and Wildlife Service, Florida Department of Agriculture and Consumer Services, Florida Natural Areas Inventory, and Florida Fish and Wildlife Conservation Commission

The U.S. Fish and Wildlife Service ranks 11 presently reported species as Endangered (8 species) and as Threatened (3 species) within the United States. Ten of those species are endemic to Florida (Table 1; USFWS 2019).

The Florida Department of Agriculture and Consumer Services (FDACS 2018) and the Florida Natural Areas Inventory (FNAI 2019) list(ed) infrageneric taxa which they consider(ed) rare in Florida. During the present study we documented 24 and 18 taxa from the two lists, respectively. FDACS (2018) ranked the 24 taxa as Endangered (18 taxa) or as Threatened (6 taxa). FNAI (2019) ranked its 18 taxa as S1 (1 taxon), S2 (3 taxa), S3 (12 taxa), S1S2 (1 taxon), and S2S3 (1 taxon) (Table 1 [symbols are defined, therein]).

The Florida Fish and Wildlife Conservation Commission issued a list entitled "Rare Plant Species of the LWRWEA" (FFWCC 2015). During the present study we documented 21 taxa from that list (Table 1). Those taxa found on the 1096-acre Holmes Tract comprised 48.8% of the 43 infrageneric taxa of vascular plants which FFWCC (2015) listed as Rare for the whole 23,653-acre LWRWEA.

Among the infrageneric taxa at the Holmes Tract, 15 taxa listed for Florida as Endangered and two listed for Florida as Threatened are also endemic within Florida. Of the 18 taxa listed by FNAI, 15 are endemic to Florida. As well, 17 taxa that FFWCC (2015) listed as Rare are endemic (Table 1).

Nine of the taxa considered rare by one or more sources, aforementioned, are abundant and more-or-less widespread within the Tract: *Calamintha ashei, Eryngium cuneifolium, Hypericum cumulicola, Hypericum edisonianum, Panicum abscissum, Paronychia chartacea, Persea borbonia* var. *humilis, Pinus elliottii,* and *Polygonum dentoceras.* (We are surprised by FFWCC's [2015] designation of *Pinus elliottii* as Rare within the LWRWEA, given its known occurrence in all but one of Florida's counties [Seminole County; Wunderlin et al. 2019].) Too, *Persea borbonia* var. *humilis* appears undamaged by laurel wilt, a disease caused by the vascular wilt fungus (*Raffaelea lauricola*). As well, native *Tillandsia* species abound within scrubland at the Tract, and common among them are *T. balbisiana, T. fasciculata,* and *T. utriculata* (species that FDACS [2018] lists as Threatened, Endangered, and Endangered, respectively). Their commonality and apparent vigor at the Tract are impressive, given the decimation of those species elsewhere in Florida by the Mexican bromeliad weevil (*Metamasis callizona*).

Christman (1988) and Christman & Judd (1990) have discussed in detail the geographic ranges, habitats, and other aspects of various of the rare taxa, aforementioned.

Below, we discuss two taxa which are ranked as Endangered in Florida and Rare within the LWRWEA.

Polygala lewtonii.—This species is "… narrowly endemic to yellow sand, xeric upland habitats on the Mount Dora and Lake Wales Ridges of central peninsular Florida …" (Weekley & Brothers 2006). We observed at least 26 plants/clumps of *P. lewtonii,* in three well-separated colonies. Each colony was near a boundary between scrubland and a sand trail. Previously, within the LWRWEA, *P. lewtonii* was known solely from the Carter Creek Tract, which is located north of the Holmes Tract, in Highlands County. (Matt Vance, pers. comm. to George Wilder, 2018).

Schizachyrium niveum.—Different authors have provided disparate accounts of the rarity of this species. Wipff (2003b) stated that *S. niveum* is "… known only from central peninsular Florida …" and he indicated solely "… two recent collections [thereof] …" (language in brackets is ours). Citing Bruner (1987), a source not presently examined, he stated that one of the two collection localities was "… in an area favored by real estate developers." Christman (1988) indicated that *S. niveum* "… appears to be one of the rarer of the Lake Wales Ridge scrub endemics," reporting it from "only 31 sites" (including part of the present-day Holmes Tract) extending from Lake Wales to Venus in Polk and Highlands Counties. Schultz et al. (1999) also listed *S. niveum* for the Tract. FFWCC (2015) reported that *S. niveum* occurs in/by five tracts/groups of tracts managed by the Florida Fish and Wildlife Conservation Commission but didn't attribute it to the Holmes Tract. As well, Anonymous (1996) did not list this species for the Tract. Herein, we report hundreds of clumps of *S. niveum* as being locally abundant there.

Table 1. List of infrageneric taxa of rare plants of the Holmes Avenue Tract. Rankings of rarity are for the United States (U.S. Fish and Wildlife Service [USFWS 2019]), for Florida (Florida Department of Agriculture and Consumer Services [FDACS 2018]; Florida Natural Areas Inventory [FNAI 2019]), and for the Lake Wales Ridge Wildlife and Environmental Area (Florida Fish and Wildlife Conservation Commission [FFWCC 2015]). One ranking of rarity (superscript **s** after the name of a taxon) indicates that the taxon was scarce at the Holmes Avenue Tract. Taxa that are endemic to Florida are also indicated (Endemic after the name of a taxon). **[s]** and Endemic are used here only for taxa that were listed by USFWS (2019), FDACS (2018), FNAI (2019), and FFWCC (2015). See Appendix for an accounting of additional taxa that were scarce or endemic in the study area. **End.** = endangered; **Endemic** = endemic within Florida; **Rare** = rare; **S1** = critically imperiled because of extreme rarity; **S1S2** = rarity is intermediate between S1 and S2; **S2** = imperiled because of rarity; **S2S3** = rarity is intermediate between S2 and S3; **S3 =** either very rare and local or found locally in a restricted range or vulnerable to extinction from other factors; **Threat.** = threatened; **[s]** = a taxon documented during the present study and deemed to be scarce within the study area.

Taxon	USFWS (2019)	FDACS (2018)	FNAI (2019)	FFWCC (2015)
Asclepias curtissii (Endemic)		End.		Rare
Bonamia grandiflora (Endemic)	Threat.	End.	S3	Rare
Calamintha ashei		Threat.	S3	Rare
Clitoria fragrans (Endemic)	Threat.	End.	S3	Rare
Coelorachis tuberculosa [s]		Threat.	S3	
Eryngium cuneifolium (Endemic)	End.	End.	S1	Rare
Garberia heterophylla (Endemic) [s]		Threat.		
Hypericum cumulicola (Endemic)	End.	End.	S2	Rare
Hypericum edisonianum (Endemic)		End.	S2	Rare
Lechea cernua (Endemic)		Threat.	S3	Rare
Liatris ohlingerae (Endemic)	End.	End.	S2	Rare
Lilium catesbaei [s]		Threat.		
Nolina brittoniana (Endemic)	End.	End.	S3	Rare
Nyssa biflora (FFWCC [2015] listed this as *Nyssa sylvatica)* [s]				Rare
Panicum abscissum (Endemic)		End.	S3	Rare
Paronychia chartacea	Threat.	End.	S3	Rare
Persea borbonia var. *humilus* (Endemic)				Rare
Pinus elliottii				Rare
Polygala lewtonii (Endemic)	End.	End.	S2S3	Rare
Polygonum basiramia (Endemic)	End.	End.	S3	Rare
Polygonum dentoceras (Endemic)	End.	End.	S3	Rare
Prunus geniculata (Endemic)	End.	End.	S3	Rare
Schizachyrium niveum (Endemic)		End.	S1S2	Rare
Stylisma abdita (Endemic)		End.	S3	Rare
Tillandsia balbisiana		Threat.		
Tillandsia fasciculata		End.		
Tillandsia utriculata		End.		

Native and exotic infrageneric taxa that are scarce within the Holmes Tract

We judge 226 infrageneric taxa (47.3% of all 478 infrageneric taxa presently reported) to be scarce within the Tract. We deem a taxon to be scarce at the Tract (**1**) if no more than nine individuals, thereof (or nine clumps of individuals, in the case of certain herbaceous species), were observed, or (**2**) if, regardless of the number of individuals observed, the taxon occupied an area approximately the size of or smaller than a housing lot (one-quarter acre).

Hypolepis repens and *Salvinia minima* exemplify species that we consider scarce at the Tract, that manifested more than nine individuals but were confined to a small area (those two species were confined to baygall and miscellaneous wetland, respectively).

Listed below are scarce taxa which were represented by solely one or two individual(s)/clump(s) at the Tract: *Acalypha gracilens, Aeschynomene americana, Amaranthus spinosus, Amaranthus viridis, Baccharis glomeruliflora, Bischofia javanica, Bulbostylis stenophylla, Carica papaya, Celosia trigyna, Citrus* sp., *Coelorachis*

tuberculosa, Cyperus brevifolius, Cyperus distinctus, Digitaria bicornis, Digitaria filiformis, Echinochloa walteri, Eragrostis amabilis, Erythrina herbacea, Euphorbia prostrata, Ficus aurea, Galium hispidulum, Lycopus sp , *Melia azedarach, Oenothera laciniata, Pluchea odorata, Polygala incarnata, Psychotria nervosa, Rhynchospora nitens, Sabatia brevifolia, Scutellaria arenicola, Sesbania herbacea, Sida ulmifolia, Spermacoce remota, Syagrus romanzoffiana, Symphyotrichum subulatum* sensu lato, and *Urochloa plantaginea*.

Of the 27 infrageneric taxa which FDACS (2018), FNAI (2019), and FFWCC (2015), collectively, construed as rare in Florida and on the Lake Wales Ridge, we found that only four (14.8%) of those taxa were scarce at the Holmes Tract: *Coelorachis tuberculosa, Garberia heterophylla, Lilium catesbaei,* and *Nyssa biflora*.

Other noteworthy species

Below, the five-digit numbers listed between parentheses are the collection numbers of specimens from SWF, prepared by George Wilder and others.

***Osmundastrum cinnamomeum.*—**At the Holmes Tract this species was found primarily in baygall habitat.

Most shoots bore solely typical sterile and fertile fronds but some shoots exhibited fronds attributed to two atypical formas: *O. cinnamomeum* f. *frondosa* and O. *cinnamomeum* f. *bipinnatifida* (Fernald 1950). Also, at least sometimes a shoot manifested fronds of more than one forma. One shoot, for example, bore three kinds of fronds: (**1**) typical sterile fronds, (**2**) a fertile frond conforming to *O. cinnamomeum* f. *frondos*a, and (**3**) a sterile frond conforming partly to *O. cinnamomeum* f. *bipinnatifida*.

Fronds of both formas are described. (**A**) *O. cinnamomeum* f. *frondosa*.—Here the fertile frond is "partly leafy" (Fernald 1950), exhibiting both fertile pinnae and sterile pinnae. We observed two manifestations of this forma. i. Two fertile fronds each bore a distal group of fertile pinnae and a basal group of sterile pinnae (*40504*); ii. One fertile frond exhibited a distal group of sterile pinnae, a middle group of pinnae that each bore fertile segments basally and sterile segments distally, and a basal group of sterile pinnae (*40761*). That frond was reminiscent of *Osmunda claytoniana* L., a related species that is absent from Florida, in which fertile fronds exhibit fertile pinnae medially and sterile pinnae both distally and basally. (**B**) *O. cinnamomeum* f. *bipinnatifida*.—Here the segments of the sterile pinnae are obtusely lobed or toothed (Fernald 1950). We observed a sterile frond having a distal group of typical pinnae, a middle group of pinnae that each bore lobed/toothed segments basally and typical segments distally, and a basal-most group of typical pinnae (*40511*).

Previous workers documented fronds of *O. cinnamomeum* f. *frondosa* in additional Florida counties: Hillsborough Co. (*J. Myers 227* [USF]); Lee Co. (*G.J. Wilder 18806* [SWF]); Polk Co. (*J.H. Scudder* [either *s.n.* or the collection number is unclear; USF]), and Putnam Co. (*D. Spence s.n.* [UF]). A frond from Lake Co. combines features of *O. cinnamomeum* f. *frondosa* and *O. cinnamomeum* f. *bipinnatifida* (*R. & J. Daubenmire s.n.* [USF]) (University of Florida Herbarium Collections Catalog 2019; Wunderlin et al. 2019).

***Tradescantia* spp.—**Different specimens of *Tradescantia* from the Holmes Tract are controversial, keying to *T. hirsutiflora*, *T. roseolens*, or appearing intermediate between those species (Faden 2000; Wunderlin & Hansen 2011).

The workers, aforementioned, distinguished between the two species according to calyx pubescence. Faden (2000) indicated that in *T. hirsutiflora* the sepals are "… uniformly eglandular-pilose, [with] rarely a few inconspicuous glandular hairs present," whereas in *T. roseolens,* the sepals have "glandular hairs numerous and conspicuous, often mixed with eglandular hairs." Wunderlin and Hansen (2011) distinguished more sharply between the species: in *T. hirsutiflora* the sepals are "… uniformly covered with eglandular trichomes," whereas in *T. roseolens,* the sepals manifest "… glandular and often eglandular trichomes."

On our specimens from the Holmes Tract the calyces always manifested non-glandular hairs; however, depending on the specimen examined, the calyces either exhibited no intermixed glandular hairs (as in *T. hirsutiflora* [*40520, 40652, 40653*]), or there occurred uncommon or a few intermixed glandular hairs (*40567, 40622, 40623, 40737*), or intermixed glandular hairs were more common (as in *T. roseolens* [*41048*]).

For Florida, Wunderlin et al. (2019) indicated that *T. hirsutiflor*a is confined to 15 counties within the Florida Panhandle and is unknown from Highlands County, whereas *T. roseolens* is limited to nine counties within the northern and central Florida Peninsula, and reaches its southern limit within Highlands County.

Yet, there has been disagreement about the occurrence of *T. hirsutiflora* in Highlands County. Wunderlin et al. (1985) stated without explanation that "Plants from Highlands County previously assigned to *Tradescantia hirsuticaulis* Small are best considered as variants of *T. roseolens* (R. Faden, pers. comm.)" and that "*Tradescantia hirsuticaulis* is found to the north of our area and is excluded from our [the Florida] flora." (*Tradescantia hirsuticaulis* is a name previously applied to *T. hirsutiflora* [Wunderlin & Hansen 2011]). By contrast, Faden (2000) stated that "Some specimens from Highlands County, Florida … key to, and probably are, *T. hirsutiflora*. [There] they represent a range disjunction from the Florida panhandle."

Herein, we follow Faden (2000), listing both *T. hirsutiflora* and *T. roseolens* for the Holmes Tract, but we leave unexplained the existence of intermediates. Perhaps, the present circumscriptions of *T. hirsutiflora* are unduly narrow and should encompass specimens having calyces with more glandular hairs. If that were the case, then all of our specimens might be *T. hirsutiflora*.

That possibility elicits another comment. Before beginning the present study, one of us (G. Wilder) collected in Highlands County, away from the Holmes Tract, material of *Tradescantia* with calyces that manifested abundant, particularly conspicuous, glandular hairs (*26614*). Clearly, that material was stereotypical *T. roseolens*, unlike our material from the Holmes Tract presently attributed to that species.

The living *Tradescantia* plants at the Holmes Tract, collectively, manifested the following variants of corolla color: dark blue, dark pink, white, intermediate between dark blue and white, and intermediate between dark pink and white.

***Xyris elliottii*.—**We documented unusual plants thereof. We first identified them as the closely related *Xyris baldwinii* because the laminae of their foliage leaves were less than 1 mm wide. Indeed, Kral (2000) had described the laminae of *X. baldwinii* as being, typically, "… linear to filiform, often angularly terete, or sulcate, rarely to 1 mm wide," and those of *X. elliott*ii as being, typically, "narrowly linear [and] flattened … [and] 1–2(–2.5) mm wide."

To our surprise, Jay Horn (of Florida Gulf Coast University, Fort Myers, FL) then identified our specimens as atypical *X. elliottii*. He pointed out that Kral (2000) had indicated unusual "narrow-bladed populations" of *X. elliottii* in peninsular Florida "in [which the] … leaf blades may be less than 1 mm wide." As well, Kral (2000) had provided criteria for distinguishing those populations from *X. baldwinii* including features of the spikes, staminodes, and seeds.

We re-examined our material, noting ellipsoidal seeds (characteristic of *X. elliottii*) rather than fusiform to cylindric seeds (characteristic of *X. baldwinii*; Kral 2000). As well, Loran Anderson (of Florida State University, Tallahassee, FL) examined two of our specimens and, utilizing Kral's criteria aforementioned, he identified them as *X. elliottii*.

Comparison with previous floristic inventories

As was stated above, we recognize 478 infrageneric taxa and 464 species of vascular plants for the Holmes Tract. Herein, we report at least 84 (94.4%) of the 89 species listed by Christman (1988), 117 (89.3%) of the 131 species listed by Anonymous (1996), and 28 (96.6%) of the 29 species listed by Schultz et al. (1999). Possibly, we found more of the species listed by Christman (1988), but for one species (listed by him as *Galactia regularis*) we encountered a problem of synonymy, and for a second species he listed solely its genus (*Cassia* sp.).

Herein, 36 species and one variety are newly reported for Highlands County (Wunderlin et al. 2019): *Ardisia elliptica, Aristida purpurascens* var. *virgata, Axonopus fissifolius, Bischofia javanica, Boerhavia erecta, Bothriochloa pertusa, Carica papaya, Chenopodium berlandieri, Crassocephalum crepidioides, Cyanthillium cinereum, Digitaria bicornis, Digitaria milanjiana, Eragrostis amabilis, Euphorbia prostrata, Ipomoea triloba, Kalanchoe delagoensis, Lechea sessiliflora, Lysimachia minima, Oeceoclades maculata, Parthenium hysterophorus, Parthenocissus quinquefolia, Passiflora incarnata, Portulaca amilis, Portulaca oleracea, Praxelis clematidea, Prunus caroliniana, Rhexia cubensis, Sabal palmetto, Sesbania herbacea, Solidago canadensis, Stachytarpheta cayennensis, Stenotaphrum secundatum, Symphyotrichum simmondsii, Teucrium canadense, Triplasis americana, Urochloa distachya,* and *Yucca aloifolia*. According to Wunderlin and Hansen (2011) many of the taxa are occasional, common, or frequent in Florida. The occurrence of so many new taxa within a limited area suggests that Highlands County, overall, warrants additional floristic study.

Key to Symbols/Abreviations in Appendix		
TAXON	**Taxa are listed in the left column.**	
Preceeding Name of Taxon:		
	¤	endemic to Florida
	*	exotic in Florida
	!	a taxon that is not clearly native to, or exotic within, Florida (*Dichondra* sp.)
Following Name of Taxon:		
	[ ]	relevant synonym(s) or name(s) previously used but now considered misapplied
	( )	color formas and other notes
	Scarce	scarce in the Holmes Tract
	apparent remnant of cultivation	the taxon is thought to represent a remnant of cultivation within the Tract
	FLEPPC I or FLEPPC II	alien taxa recognized as Category I or Category II by the Florida Exotic Pest Plant Council (FLEPPC 2019)
		the five-digit Wilder & McCombs collection number of a voucher specimen or of a voucher photograph of that taxon
HABITAT	**Habitats are listed in the seven vertical columns at the right of Appendix.**	
	Bay	Baygall habitat
	Depr	Depression habitat
	Hard	Hardwood hammock
	Pinefl	Pine flatwoods
	Rud	Ruderal land
	Scrub	Scrubland
	Wetl	Wetland habitat
All habitats but Scrubland:		
	X	present within a habitat indicated, away from the habitat boundary
Scrubland:		
	X	present in a habitat away from a habitat boundary and not identified as yellow-sand scrubland or as apparent white-sand scrubland
	Y	present in yellow-sand scrubland
	W	present in apparent white-sand scrubland (exclusive of Rosemary balds)
	W	present in Rosemary balds having, apparently, solely white sand
Ecotones:	**Each ecotone is between the habitat indicated in the associated column and the alternative habitat/ habitat group indicated by the superscript letter(s):**	
	X^{B}	baygall
	X^{D}	depression
	X^{PF}	pine flatwoods
	X^{R}	ruderal land
	X^{S}	scrubby pine flatwoods, i.e., the ecotone between scrubland & pine flatwoods
	X^{W}	wetland
	X^{PF-R}	pine flatwoods & ruderal land
	X^{S-B-R}	scrubby pine flatwoods, baygall, & ruderal land
	X^{S-D}	scrubby pine flatwoods & depression
	X^{S-R}	scrubby pine flatwoods & ruderal land
	W^{D}	depression habitat (in apparent white-sand scrubland)
	W^{R}	ruderal land (in apparent white-sand scrubland)
	Y^{R}	ruderal land (in yellow-sand scrubland)

APPENDIX [1, 2]

Table of infrageneric taxa (species, subspecies, varieties, formas, and a hybrid [*Citrus* sp.]) and of higher-level taxa documented at the Holmes Tract during the present study. Only morphologically defined formas (i.e., the formas of *Osmundastrum*) are listed separately and counted as separate infrageneric taxa; however, color formas are indicated after the names of the species to which they belong. After the name of each family and suprafamilial taxon, between parentheses are indicated the numbers reported presently of genera and infrageneric taxa (excluding color formas) within that family or suprafamilial taxon. Ecotones are either (**1**) at a sharp boundary between habitats and/or (**2**) within an extended area comprised of the habitats.

[1] **We follow the nomenclature of Wunderlin et al. (2019) with the following exceptions. (1) We recognize the family Lemnaceae, which Wunderlin et al. (2019) submerged into Araceae. (2) We recognize solely *Symphyotrichum subulatum* (Michx.) G.L. Nesom rather than either of two segregate taxa, *Symphyotrichum bahamense* (Britton) G.L. Nesom and *Symphyotrichum expansum* (Poeppig ex Spreng.) G.L. Nesom. (3) We recognize subspecies of *Dichanthelium aciculare* (Desv. ex Poir.) Gould & C.A. Clark and of *Dichanthelium portoricense* (Desv. ex Ham.) B.F. Hansen & Wunderlin (as did Freckmann & Lelong 2003); we recognize varieties of *Digitaria ciliaris* (Retz.) Koeler, *Lindernia dubia* (L.) Pennell, and *Paspalum setaceum* Michx. (as did Wipff 2003a; Cooperrider 1995; and Allen & Hall 2003, respectively); we also recognize two "aberrant forms" of *Osmundastrum cinnamomeum* (L.) C. Presl that were listed as such by Fernald (1950). Wunderlin et al. (2019) recognized neither the subspecies, varieties, nor formas, aforementioned. (4) We recognize *Panicum abscissum* Swallen, *Panicum anceps* Michx., and *Panicum verrucosum* Muhl., taxa which Wunderlin et al. (2019) have called *Coleataenia abscissa* (Swallen) LeBlond, *Coleataenia anceps* (Michx.) Soreng, and *Kellochloa verrucosa* (Muhl.) Lizarazu et al., respectively. (5) We recognize *Morella cerifera* (L.) Small var. *pumila* Michx. and *Triplasis intermedia* Nash, as did Small (1933, who referred to *Cerothamnus pumilus* (Michx.) Small) and Hitchcock and Chase (1950), respectively. Wunderlin et al. (2019) did not recognize those taxa. (6) We recognize *Liatris laevigata* Nutt. and *Pityopsis tracyi* (Small) Small, as did Nesom (2006) and Weakley et al. (2018), respectively. Wunderlin et al. (2019) referred to *L. laevigata* Nutt. as *Liatris tenuifolia* Nutt. var. *quadriflora* Chapm. and they included *P. tracyi* within *Pityopsis graminifolia* (Michx.) Nutt. sensu lato. (7) We recognize *Imperata cylindrica* (L.) P. Beauv. sensu lato to include *Imperata brasiliensis* Trin. and *Imperata cylindrica* (L.) P. Beauv. sensu stricto, as did Hall (2019), whereas, Wunderlin et al. (2019) listed the latter two taxa as separate entities. (8) We recognize *Philodendron bipinnatifidum* Schott ex Endlicher (a synonym of *Philodendron selloum* C. Koch) in accordance with Mayo (1991); Wunderlin et al. (2019) did not list this species.**

[2] **Ms. Martha McCombs contributed importantly to SWF; hence, on the label of each herbarium sheet from SWF George Wilder's name and Martha McCombs' name precede the collection number of each specimen, a circumstance not duplicated in this Appendix.**

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
PTERIDOPHYTES							
BLECHNACEAE (2, 3)							
Telmatoblechnum serrulatum (Rich.) Perrie et al. [Blechnum serrulatum Rich.]; 40441	X,X^{W}				X	X	
Woodwardia areolata (L.) T. Moore; 40512	X				X		X
Woodwardia virginica (L.) Sm.; 40443	X,X^{PF}	X^{S}			X,X^{R}	X	X
DENNSTAEDTIACEAE (2, 3)							
Hypolepis repens (L.) C. Presl; **Scarce;** 40675					X		
Pteridium aquilinum (L.) Kuhn var. caudatum (L.) Sadeb.; **Scarce;** 41336	X^{S-R}	X^{S}					
Pteridium aquilinum (L.) Kuhn var. pseudocaudatum (Clute) Clute ex A. Heller; 40505		X^{S}	X^{R}				X
NEPHROLEPIDACEAE (1, 2)							
*Nephrolepis cordifolia (L.) C. Presl; 40503; FLEPPC I					X		
Nephrolepis exaltata (L.) Schott; **Scarce;** 41598						X	
OSMUNDACEAE (2, 4)							
Osmundastrum cinnamomeum (L.) C. Presl (typical) [Osmunda cinnamomea L.]; 40510					X,X^{R}		
Osmundastrum cinnamomeum (L.) C. Presl forma bipinnatifida Clute [Osmunda cinnamomea L. forma bipinnatifida Clute]; **Scarce;** 40511					X		
Osmundastrum cinnamomeum (L.) C. Presl forma frondosa (T. & G.) Britt. [Osmunda cinnamomea L. forma frondosa (T. & G.) Britt.]; **Scarce;** 40504					X		
Osmunda regalis L; **Scarce**						X,X^{R}	
POLYPODIACEAE (2, 2)							
Phlebodium aureum (L.) J. Sm.; **Scarce;** 41068	X	X^{S}				X	
Pleopeltis michauxiana (Weath.) Hickey & Sprunt [Pleopeltis polypodioides (L.) E.G. Andrews & Windham]; 40405	X		W,Y		X	X	
PSILOTACEAE (1, 1)							
Psilotum nudum (L.) P. Beauv.; **Scarce;** 41245	X						

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
SALVINIACEAE (1, 1)							
*Salvinia minima Baker; **Scarce;** 41747; FLEPPC I						X	
SCHIZAEACEAE (1, 1)							
*Lygodium microphyllum (Cav.) R. Br.; 40439; FLEPPC I	X^{W}				X	X	X
SELAGINELLACEAE (1, 1)							
Selaginella arenicola Underw.; 40406			W,W,W^{R}	X			X
THELYPTERIDACEAE (1, 2)							
Thelypteris interrupta (Willd.) K. Iwats.; 40442						X	X
Thelypteris kunthii (Desv.) C.V. Morton; **Scarce;** 40492							X
GYMNOSPERMS							
CUPRESSACEAE (1, 1)							
*Juniperus sp. (sterile); **Scarce; apparent remnant of cultivation;** 41599							X
PINACEAE (1, 2)							
Pinus clausa (Chapm. ex Engelm.) Vasey ex Sarg.; 40645		X^{S}	W,W,W^{R},Y,X^{R}	X			X
Pinus elliottii Engelm.; 40790	X^{PF},X^{PF-R}	X,X^{S}	Y	X	X,X^{R}		X
MONOCOTYLEDONS							
AGAVACEAE (1, 2)							
Yucca aloifolia L.; **Scarce;** 41164							X
Yucca filamentosa L.; 40862	X^{PF}	X^{S},X^{S-R}	W,W,Y,X^{R}				X
ALISMATACEAE (1, 1)							
Sagittaria graminea Michx. var. graminea; 40566						X	
ARACEAE (2, 2)							
Peltandra virginica (L.) Schott; 40770						X	
*Philodendron bipinnatifidum Schott ex Endlicher [Philodendron selloum C. Koch]; **Scarce; apparent remnant of cultivation;** 41619							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
ARECACEAE (3, 4)							
¤Sabal etonia Swingle ex Nash; 40930	X,X^{PF}	X,X^{S}	W,W,W^{R},Y,Y^{R}	X			X
Sabal palmetto (Walter) Lodd. ex Schult. & Schult. f.; **Scarce;** 41081	X,X^{PF}						X
Serenoa repens (W. Bartram) Small; 40386	X,X^{PF}	X,X^{S}	W,W,Y	X	X		X
*Syagrus romanzoffiana (Cham.) Glassman [Arecastrum romanzoffianum (Cham.) Beccari]; **Scarce; apparent remnant of cultivation;** 41709 (photograph); FLEPPC II							X
BROMELIACEAE (1, 6)							
Tillandsia balbisiana Schult. & Schult. f.; (photograph); 41242	X^{PF}		W,Y,Y^{R}		X		
Tillandsia fasciculata Sw.; (photograph); 41243	X		W		X		
Tillandsia recurvata (L.) L.; 40447	X^{PF}	X,X^{S}	W,W,Y,Y^{R}		X,X^{R}		X
Tillandsia setacea Sw.; 40448	X,X^{PF}	X^{S}	W,W,Y,Y^{R}		X		
Tillandsia usneoides (L.) L.; 40387	X,X^{PF}	X,X^{S}	W,W,W^{R},Y,Y^{R}		X,X^{R}	X	X
Tillandsia utriculata L.; (photograph); 41244			W				X
COMMELINACEAE (3, 5)							
¤Callisia ornata (Small) G.C. Tucker; 41165		X^{S}	W,W^{R}				X
*Commelina diffusa Burm. f.; 40449	X						X
Commelina erecta L.; 41080	X^{R}		W,Y				X
Tradescantia hirsutiflora Bush; 40652	X		X^{R}				X
Tradescantia roseolens Small ; 41048			W				
CYPERACEAE (8, 37)							
*Bulbostylis barbata (Rottb.) C.B. Clarke; 41117							X
Bulbostylis ciliatifolia (Elliott) Fernald; 41075			W,W^{R},Y,Y^{R}	X			X
Bulbostylis stenophylla (Elliott) C.B. Clarke; **Scarce;** 41255							X
Bulbostylis warei (Torr.) C.B. Clarke; 40885			W,Y				X
Carex longii Mack.; 40654						X	X
¤Carex vexans F.J. Herm.; **Scarce**							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
*Cyperus brevifolius (Rottb.) Endl. ex Hassk. [Kyllinga brevifolia Rottb.]; **Scarce;** 40596							X
Cyperus compressus L.; **Scarce;** 40886							X
Cyperus croceus Vahl; **Scarce;** 40592							X
Cyperus distinctus Steud.; **Scarce;** 41616						X	
Cyperus haspan L.; 40516						X	
Cyperus lecontei Torr. ex Steud. (typical forma with tan scales and forma with predominantly reddish scales [the latter forma **Scarce**]); 40594	X	X				X	X
Cyperus odoratus L.; **Scarce;** 40768						X	X
Cyperus ovatus Baldwin [Cyperus retrorsus Chapm.]; 41077	X		W,W^R,Y				X
Cyperus polystachyos Rottb.; 40595		X					X
*Cyperus rotundus L.; **Scarce;** 40812							X
Cyperus surinamensis Rottb.; **Scarce;** 40413							X
Cyperus tetragonus Elliott; **Scarce;** 41559							X
Eleocharis baldwinii (Torr.) Chapm.; 40414		X		X		X	X
Eleocharis flavescens (Poir.) Urb.; **Scarce;** 41536						X	
Eleocharis elongata Chapm.; 41530						X	
Eleocharis vivipara Link; 40858						X,X^R	
Fimbristylis autumnalis (L.) Roem. & Schult.; **Scarce;** 40734						X^R	
Fuirena pumila (Torr.) Spreng.; **Scarce;** 40909						X	
Fuirena scirpoidea Michx.; 40517		X		X^R		X	
Rhynchospora fascicularis (Michx.) Vahl; 40507	X,X^{PF}			X	X	X	X
Rhynchospora fernaldii Gale; **Scarce;** 41258				X			X
Rhynchospora filifolia A. Gray; **Scarce;** 40873		X					
Rhynchospora intermedia (Chapm.) Britton; **Scarce;** 40518		X					
Rhynchospora inundata (Oakes) Fernald; **Scarce;** 40889						X	

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Rhynchospora megalocarpa A. Gray; 40860		X,X^{S}	W,Y,Y^{R}	X			X
Rhynchospora microcephala (Britton) Britton ex Small; 41259					X^{R}	X	X
Rhynchospora nitens (Vahl) A. Gray [Psilocarya nitens (Vahl) A.W. Wood]; **Scarce;** 41414							X
Rhynchospora wrightiana Boeck.; **Scarce;** 41345						X	
Scleria ciliata Michx.; 40735		X^{R},X^{S}	W^{R}				
Scleria reticularis Michx.; 41078				X		X	
Scleria triglomerata Michx.; **Scarce;** 40736		X^{R}					
DIOSCOREACEAE (1, 1)							
*Dioscorea bulbifera L.; **Scarce;** 40813; FLEPPC I			X^{R}				
ERIOCAULACEAE (3, 4)							
Eriocaulon decangulare L.; **Scarce;** 40919						X	
Lachnocaulon beyrichianum Sporl. ex Körn.; 41123			W,W^{D}	X			
Lachnocaulon minus (Chapm.) Small; **Scarce;** 40814	X^{W}					X	
Syngonanthus flavidulus (Michx.) Ruhland; 40544		X		X,X^{R}			X
HAEMODORACEAE (1, 1)							
Lachnanthes caroliana (Lam.) Dandy; 40874				X		X	
HYPOXIDACEAE (1, 1)							
Hypoxis juncea Sm.; **Scarce;** 40545			X				
IRIDACEAE (1, 1)							
Sisyrinchium xerophyllum Greene (blue-flowered forma plus nearly-white flowered forma); 40667			W,W,W^{R}				X
JUNCACEAE (1, 3)							
Juncus effusus L.; **Scarce;** 40922	X^{W}						
Juncus marginatus Rostk.; 40521		X				X,X^{R}	X
Juncus scirpoides Lam.; 41348		X,X^{S}		X		X	X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
LEMNACEAE (1, 1)							
Lemna aequinoctialis Welw.; 41748; **Scarce**						X	
LILIACEAE (1, 1)							
Lilium catesbaei Walter; **Scarce;** 41561		X					
ORCHIDACEAE (2, 2)							
Habenaria floribunda Lindl. [Habenaria odontopetala Rchb. f.]; 40522		X,X^{B}			X		
*Oeceoclades maculata (Lindl.) Lindl.; 40624	X,X^{PF}	X^{B}			X		X
POACEAE (33, 77)							
Amphicarpum muehlenbergianum (Schult.) Hitchc.; 41231	X					X	X
Andropogon brachystachyus Chapm.; 40863		X^{S}	W,W^{R}	X			X
Andropogon floridanus Scribn.; 41407			W,W^{R},Y^{R}				X
Andropogon glomeratus (Walter) Britton et al. var. glaucopsis (Elliott) C. Mohr; 41571		X,X^{R},X^{S}				X	X
Andropogon glomeratus (Walter) Britton et al. var. pumilus (Vasey) Vasey ex L.H. Dewey; 41572		X,X^{R}				X^{R}	
Andropogon gyrans Ashe var. gyrans; **Scarce;** 41688			Y				
Andropogon ternarius Michx.; 41573			W^{R},Y,Y^{R}				
Andropogon virginicus L. var. decipiens C.S. Campb.; **Scarce;** 41686			X				
Andropogon virginicus L. var. glaucus Hack.; 41605				X			
Andropogon virginicus L. var. virginicus; 41607		$X^{S},X^{S\text{-}R}$				X	X
Aristida condensata Chapm.; 41694			W^{R},Y				X
Aristida gyrans Chapm.; 41646			W,W^{R}				X
Aristida purpurascens Poir. var. virgata (Trin.) Allred.; **Scarce;** 41339				X			
Aristida spiciformis Elliott; 40535				X			X
Aristida stricta Michx.			X^{R},W	X			
Axonopus fissifolius (Raddi) Kuhlm.; **Scarce;** 41110							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Axonopus furcatus (Flüggé) Hitchc.; **Scarce;** 40904						X	
*Bambusa vulgaris Schrad. ex J.C. Wendl.; **Scarce; apparent remnant of cultivation;** 41474,41484			X				
*Bothriochloa pertusa (L.) A. Camus; **Scarce;** 41522							X
Cenchrus echinatus L.; **Scarce;** 40979							X
Cenchrus spinifex Cav. [Cenchrus incertus M.A. Curtis]; 40407							X
Coelorachis tuberculosa (Nash) Nash; **Scarce;** 41111						X	
*Cynodon dactylon (L.) Pers.; 40806							X
*Dactyloctenium aegyptium (L.) Willd. ex Asch. & Schweinf.; 40506; FLEPPC II							X
Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A. Clark subsp. angustifolium (Elliott) Freckmann & Lelong (some material intergrading with Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A. Clark subsp. fusiforme (Hitchc.) Freckmann & Lelong); **Scarce;** 40763			W,Y,X^{R}				X
Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A. Clark subsp. fusiforme (Hitchc.) Freckmann & Lelong; **Scarce;** 41756		X^{S-R}					
¤Dichanthelium ensifolium (Baldwin ex Elliott) Gould var. breve (Hitchc. & Chase) B.F. Hansen & Wunderlin; **Scarce;** 41233			X^{R}				X
Dichanthelium ensifolium (Baldwin ex Elliott) Gould var. ensifolium; 40537		X^{S},X^{S-D}					X
Dichanthelium portoricense (Desv. ex Ham.) B.F. Hansen & Wunderlin subsp. portoricense; 40908		X,X^{S}		X		X	X
Dichanthelium portoricense (Desv. ex Ham.) B.F. Hansen & Wunderlin subsp. patulum (Scribn. & Merr.) Freckmann & Lelong; **Scarce;** 40864		X^{S-R}	W,X^{R}		X		
*Digitaria bicornis (Lam.) Roem. & Schult.; **Scarce;** 41555		X^{S-R}					
Digitaria ciliaris (Retz.) Koeler var. ciliaris; **Scarce;** 41408							X
Digitaria filiformis (L.) Koeler; **Scarce;** 41647							X
Digitaria insularis (L.) Fedde [Trichachne insularis (L.) Nees]; **Scarce;** 40866							X
*Digitaria longiflora (Retz.) Pers.; **Scarce;** 41341							X
*Digitaria milanjiana (Rendle) Stapf (atypical); 41262; **apparent remnant of cultivation**			W^{R}				X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Echinochloa walteri (Pursh) A. Heller; **Scarce;** 41151							X
*Eleusine indica (L.) Gaertn.; **Scarce;** 41071							X
*Eragrostis amabilis (L.) Wight & Arn. ex Wight; **Scarce;** 40880							X
*Eragrostis ciliaris (L.) R. Br.; 40764			X^{R}				
Eragrostis refracta (Muhl.) Scribn. [Eragrostis virginica (Zuccagni) Steud.]; 40621							X
Eragrostis spectabilis (Pursh) Steud.; **Scarce;** 41736							X
*Eremochloa ophiuroides (Munro) Hack.; 41234							X
Eustachys petraea (Sw.) Desv.; 40444							X
*Heteropogon contortus (L.) P. Beauv. ex Roem. & Schult.; 40379							X
*Imperata cylindrica (L.) P. Beauv. sensu lato (sterile); **Scarce;** 41578; FLEPPC I			X				
Leersia hexandra Sw.; 40515						X	
*Melinis repens (Willd.) Zizka [Rhynchelytrum repens (Willd.) C.E. Hubb.]; 40767; FLEPPC I		X^{S-R}	W,W^{R},Y,				X
¤Panicum abscissum Swallen [Coleataenia abscissa (Swallen) LeBlond]; 41112	X^{PF}	X		X,X^{R}		X	X
Panicum anceps Michx. [Coleataenia anceps (Michx.) Soreng]; **Scarce;** 40982			X^{R}				
Panicum hemitomon Schult.; 40883						X	X
*Panicum repens L.; 41152; FLEPPC I				X		X	X
Panicum verrucosum Muhl. [Kellochloa verrucosa (Muhl.) Lizarazu et al.]; 40543	X		X^{R}		X	X	
Paspalum laeve Michx.; **Scarce;** 41609						X	
*Paspalum notatum Flüggé; 41072							X
Paspalum setaceum Michx. var. ciliatifolium (Michx.) Vasey; **Scarce;** 41250		X^{R}					
Paspalum setaceum Michx. var. longepedunculatum (Leconte) Alph. Wood; **Scarce;** 41251			X^{R}				
Paspalum setaceum Michx.var. stramineum (Nash) D.J. Banks; **Scarce;** 40411							X
Paspalum setaceum Michx. var. supinum (Bosc ex Poir.) Trin.; **Scarce;** 41155							X
*Paspalum urvillei Steud.; **Scarce;** 41083							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Saccharum giganteum (Walter) Pers.; **Scarce;** 41520						X	
*Sacciolepis indica (L.) Chase; **Scarce;** 40913						X	
Sacciolepis striata (L.) Nash; 41074						X	
¤Schizachyrium niveum (Swallen) Gould; 41524			W				X
Schizachyrium stoloniferum Nash [Schizachyrium scoparium (Michx.) Nash var. stoloniferum (Nash) Wipff]; 41581		$X^{S\text{-}B\text{-}R}$					X
Setaria corrugata (Elliott) Schult.; 41412							X
Setaria parviflora (Poir.) Kerguélen; 40590						X	X
Sorghastrum secundum (Elliott) Nash; 41655			W,W^{R},Y,Y^{R}				X
Spartina bakeri Merr.; 40733				X		X	
*Sporobolus jacquemontii Kunth [Sporobolus indicus (L.) R. Br. var. pyramidalis (P. Beauv.) Veldkamp]; 40561; FLEPPC I							X
Stenotaphrum secundatum (Walter) Kuntze; 40996							X
Triplasis americana P. Beauv.; **Scarce;** 41491							X
Triplasis intermedia Nash; 41047							X
*Urochloa distachya (L.) T.Q. Nguyen [Urochloa subquadripara (Trin.) R.D. Webster]; 40591							X
*Urochloa maxima (Jacq.) R.D. Webster [Panicum maximum Jacq.]; 40410; FLEPPC II							X
*Urochloa mutica (Forssk.) T.Q. Nguyen; **Scarce;** 40446; FLEPPC I							X
*Urochloa plantaginea (Link) R.D. Webster; **Scarce;** 41162							X
PONTEDERIACEAE (1, 1)							
Pontederia cordata L.; 40450						X	
POTAMOGETONACEAE (1, 1)							
Potamogeton sp. (sterile); **Scarce;** 40772						X	
RUSCACEAE (1,1)							
¤Nolina brittoniana Nash; 41064		X^{S}	W,Y,X^{R}				X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
SMILACACEAE (1,4)							
Smilax auriculata Walter; 40738	X,X^{PF}	X^{S}	W,W,Y^{R}		X^{R}	X	X
Smilax bona-nox L.; **Scarce;** 40931							X
Smilax laurifolia L.; 40509					X		
Smilax tamnoides L.; **Scarce;** 41848	X						
TYPHACEAE (1, 1)							
Typha latifolia L.; 40714						X	
XYRIDACEAE (1, 6)							
Xyris brevifolia Michx.; 40546		X,X^{S}		X			X
Xyris caroliniana Walter; **Scarce;** 40932		X^{S}					
Xyris elliottii Chapm.; **Scarce;** 40876		X^{R}		X			
Xyris fimbriata Elliott; 41472					X	X	
Xyris jupicai Rich.; 41267				X		X	X
Xyris platylepis Chapm.; **Scarce;** 40923						X	
DICOTYLEDONS SENSU LATO							
ADOXACEAE (1, 1)							
Sambucus nigra L. [Sambucus canadensis L.]; **Scarce;** 40453	X^{W}				X	X	X
AMARANTHACEAE (7, 8)							
*Amaranthus spinosus L.; **Scarce;** 40891							X
*Amaranthus viridis L.; **Scarce;** 41167							X
*Celosia trigyna L.; **Scarce;** 41759							X
Chenopodium berlandieri Moq.; **Scarce;** 41835							X
*Dysphania ambrosioides (L.) Mosyakin & Clemants [Chenopodium ambrosioides L.]; **Scarce;** 41191							X
Froelichia floridana (Nutt.) Moq.; **Scarce;** 41085							X
*Gomphrena serrata L.; **Scarce;** 40892							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Iresine diffusa Humb. & Bonpl. ex Willd.; 40472	X						X
ANACARDIACEAE (3, 3)							
Rhus copallinum L.; 41351	X,X^{PF}	X,X^{S},$X^{S\text{-}R}$	W,W,W^{R},Y,Y^{R}				X
*Schinus terebinthifolia Raddi; 40416; FLEPPC I	X		W^{R}			X	X
Toxicodendron radicans (L.) Kuntze; **Scarce;** 40451	X,X^{PF}				X	X	
ANNONACEAE (1, 2)							
¤Asimina obovata (Willd.) Nash; 40740		X,X^{S}	W,W^{R},Y				X
Asimina reticulata Shuttlew. ex Chapm.; **Scarce;** 40739		X^{R},X^{S}					X
APIACEAE (3, 3)							
Centella asiatica (L.) Urb.; 40629		X^{R}				X	
¤Eryngium cuneifolium Small; 41168			W, W^{R}				X
Ptilimnium capillaceum (Michx.) Raf.; 40850						X	
APOCYNACEAE (2, 4)							
¤Asclepias curtissii A. Gray; 40793			W,W^{R},Y				X
Asclepias pedicellata Walter; **Scarce;** 41207	X^{PF}	X,X^{R}					
Asclepias tuberosa L.; **Scarce;** 40944			Y				X
*Catharanthus roseus (L.) G. Don (pink-flowered forma plus white-flowered forma); **Scarce;** 41206		X^{S}					X
AQUIFOLIACEAE (1, 4)							
Ilex cassine L. var. cassine; **Scarce;** 40417		X			X,X^{R}	X	
Ilex glabra (L.) A. Gray; 40473	X^{PF}	X,X^{W}			X,X^{R}	X	X
¤Ilex opaca Aiton var. arenicola (Ashe) Ashe; 40376	X		W,Y^{R}				
Ilex vomitoria Aiton; **Scarce; apparent remnant of cultivation;** 41623							X
ARALIACEAE (1, 2)							
Hydrocotyle umbellata L.; **Scarce;** 40666						X	
Hydrocotyle verticillata Thunb. var. verticillata; **Scarce;** 41090						X	

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
ASTERACEAE (39, 52)							
Ageratina jucunda (Greene) Clewell & Wooten; **Scarce;** 41562	X						X
Ambrosia artemisiifolia L.; 40631	X	X				X	X
Baccharis glomeruliflora Pers.; **Scarce;** 41537	X						
Baccharis halimifolia L.; 41622			X^{D}			X	
Balduina angustifolia (Pursh) B.L. Rob.; 41538			W,W,W^{R},Y				X
Bidens alba (L.) DC.; 40548			Y				X
Bidens mitis (Michx.) Sherff; **Scarce;** 40665						X	
*Calyptocarpus vialis Less.; **Scarce;** 41416							X
Carphephorus corymbosus (Nutt.) Torr. & A. Gray			X^{R},W	X			
Cirsium nuttallii DC.; 41208	X	X^{S}					X
Conoclinium coelestinum (L.) DC.; **Scarce;** 41086						X	
Conyza canadensis (L.) Cronquist; 40741	X		X				X
*Crassocephalum crepidioides (Benth.) S. Moore; **Scarce;** 40419; FLEPPC II	X						X
*Cyanthillium cinereum (L.) H. Rob. [Vernonia cinerea (L.) Less.]; **Scarce;** 40602							X
Eclipta prostrata (L.) L.; **Scarce;** 41209						X	X
Elephantopus elatus Bertol.; **Scarce;** 40816	X						
*Emilia fosbergii Nicolson; 40452	X	X			X^{R}		X
*Emilia sonchifolia (L.) DC.; **Scarce;** 40603							X
Erechtites hieraciifolius (L.) Raf. ex DC.; 40549	X	X			X	X	X
Eupatorium capillifolium (Lam.) Small ex Porter & Britton; 41564	X,$X^{PF\text{-}R}$	X^{S}				X	X
Eupatorium leptophyllum DC.; **Scarce;** 40795		X		X		X	
Eupatorium mohrii Greene; 40796		X,X^{R}		X			X
Euthamia caroliniana (L.) Greene ex Porter & Britton [Euthamia minor (Michx.) Greene]; 40420		X,X^{S}		X		X	X
Gamochaeta antillana (Urb.) Anderb. [Gamochaeta falcata (Lam.) Cabrera]; **Scarce;** 41211							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
*Gamochaeta pensylvanica (Willd.) Cabrera; **Scarce;** 40604							X
¤Garberia heterophylla (W. Bartram) Merr. & F. Harper; **Scarce;** 41125			X				
Heterotheca subaxillaris (Lam.) Britton & Rusby; 40894							X
Hieracium megacephalon Nash; 40474	X^{W}	X^{R},X^{S}	W				
Lactuca graminifolia Michx.; 40722							X
Liatris laevigata Nutt. [Liatris tenuifolia Nutt. var. quadriflora Chapm.]; 41189			Y	X			X
¤Liatris ohlingerae (S.F. Blake) B.L. Rob.; 40912			W,W^{R}				X
Lygodesmia aphylla (Nutt.) DC. (typical forma with blue flowers plus a pink-flowered forma and a white-flowered forma); 40773		X^{S}	X^{R}				X
Mikania scandens (L.) Willd. (typical forma with white flowers plus a pink-flowered forma); **Scarce;** 41210		X^{W}				X,X^{R}	X
¤Palafoxia feayi A. Gray; 40422	X	X^{S}	W,W,W^{R},Y,Y^{R}	X			X
*Parthenium hysterophorus L.; **Scarce;** 41173							X
¤Pectis linearifolia Urb.; **Scarce;** 41424							X
Pectis prostrata Cav.; 41354							X
¤Pityopsis tracyi (Small) Small; **Scarce;** 40493	X^{R}		W,X^{R}				X
Pluchea baccharis (Mill.) Pruski [Pluchea rosea R.K. Godfrey]; **Scarce;** 41033						X	
Pluchea foetida (L.) DC.; 41088						X	
Pluchea odorata (L.) Cass.; **Scarce;** 41426						X	X
*Praxelis clematidea (Kuntze) R.M. King & H. Rob.; **Scarce;** 41451; FLEPPC II							X
Pseudognaphalium obtusifolium (L.) Hilliard & B.L. Burtt; **Scarce;** 41174	X						X
Pterocaulon pycnostachyum (Michx.) Elliott; 40632		X,X^{S}	W^{R},Y				X
Sericocarpus tortifolius (Michx.) Nees; **Scarce**		X^{S}	X				
Solidago canadensis L.; **Scarce;** 41625						X	
Solidago fistulosa Mill.; 40523		X^{S}				X,X^{R}	
Solidago odora Aiton var. chapmanii (A. Gray) Cronquist; 40947	X		W^{R},Y				X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
*Sphagneticola trilobata (L.) Pruski [Wedelia trilobata (L.) Hitchc.]; **Scarce;** 41089; FLEPPC II							X
Symphyotrichum simmondsii (Small) G.L. Nesom; **Scarce;** 40494						X^R	
Symphyotrichum subulatum (Michx.) G.L. Nesom sensu lato; **Scarce;** 41628						X	
*Tridax procumbens L.; **Scarce;** 40605							X
BRASSICACEAE (3, 3)							
Lepidium virginicum L.; **Scarce;** 40423							X
Polanisia tenuifolia Torr. & A. Gray; 40524			W,W^R				X
*Sieruela rutidosperma (DC.) Roalson & J.C. Hall [Cleome rutidosperma DC.]; **Scarce;** 41014							X
CACTACEAE (1, 1)							
Opuntia humifusa (Raf.) Raf. sensu lato; 40857		X,X^S	W,W,W^R,Y	X			X
CARICACEAE (1, 1)							
Carica papaya L.; **Scarce;** 40965							X
CARYOPHYLLACEAE (4, 5)							
*Drymaria cordata (L.) Willd. ex Schult.; **Scarce;** 40572							X
Paronychia americana (Nutt.) Fenzl ex Walp.; 40855							X
Paronychia chartacea Fernald; 40424			W,W,W^R	X			X
*Polycarpaea corymbosa (L.) Lam.; 41271			X^R				X
Stipulicida setacea Michx. var. setacea; 40475			W,W,W^R	X			X
CHRYSOBALANACEAE (1, 1)							
Geobalanus oblongifolius (Michx.) Small [Licania michauxii Prance]; 40742		X^S	W,W,W^R,Y,Y^R	X			X
CISTACEAE (2, 6)							
Crocanthemum corymbosum (Michx.) Britton [Helianthemum corymbosum Michx.]; 40574			X,X^R				X
Crocanthemum nashii (Britton) Barnhart [Helianthemum nashii Britton]; 40744			X				X
¤Lechea cernua Small; 41355			W,W				X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Lechea deckertii Small; 41192		X^{S}	W,<u>W</u>,W^{R}	X			X
Lechea sessiliflora Raf.; 41567							X
Lechea torreyi (Chapm.) Legg. ex Britton; 41357		X^{S-R}		X			X
CLUSIACEAE (1, 6)							
¤Hypericum cumulicola (Small) W.P. Adams; 40750			W,<u>W</u>,W^{R}				
¤Hypericum edisonianum (Small) W.P. Adams & N. Robson; 40638		X,X^{S}		X		X	X
Hypericum fasciculatum Lam.; **Scarce;** 41037						X	
Hypericum mutilum L.; 40556	X^{W}						
Hypericum tenuifolium Pursh [Hypericum reductum (Svenson) W.P. Adams]; 41217		X,X^{S}	W	X			X
Hypericum tetrapetalum Lam.; 40431		X,X^{S}					X
CONVOLVULACEAE (5, 6)							
¤Bonamia grandiflora (A. Gray) Hallier f.; 41063		X^{S-R}	W				X
!Dichondra sp. (sterile); **Scarce;** 41428							X
Distimake dissectus (Jacq.) A.R. Simões & Staples [Merremia dissecta (Jacq.) Hallier f.]; **Scarce;** 40933			W^{R}				
Ipomoea hederifolia L.; **Scarce**							X
*Ipomoea triloba L.; **Scarce;** 41429							X
¤Stylisma abdita Myint; 40817			W,W^{R}				X
CRASSULACEAE (1, 1)							
*Kalanchoe delagoensis Eckl. & Zeyh.; **Scarce;** 40777			X^{R}				
CUCURBITACEAE (2, 2)							
Melothria pendula L.; **Scarce;** 40818	X^{W}						
*Momordica charantia L.; 40575; FLEPPC II							X
DROSERACEAE (1,1)							
Drosera capillaris Poir.; **Scarce;** 41707				X			X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
EBENACEAE (1, 1)							
Diospyros virginiana L.; 40576	X,X^{PF}	X,X^{W}			X,X^{R}	X	X
ERICACEAE (6, 11)							
Bejaria racemosa Vent.; 40426		X^{S}	W,Y,	X			X
Ceratiola ericoides Michx.; 40496		X^{S}	W,W,W^{R}	X			X
Gaylussacia dumosa (Andrews) A. Gray; **Scarce;** 40723		X	W				
Lyonia ferruginea (Walter) Nutt.; 40551		X^{S}	W,W,Y,X^{R}				X
Lyonia fruticosa (Michx.) G.S. Torr.; 40454	X^{PF}	X,X^{S}	W,W	X	X		X
Lyonia lucida (Lam.) K. Koch; 40709		X,X^{S}	W,X^{R}		X		X
*Rhododendron sp.; **Scarce; apparent remnant of cultivation;** 41708							X
Rhododendron viscosum (L.) Torr.; **Scarce;** 41272					X		
Vaccinium corymbosum L.; 41034	X^{W}				X		
Vaccinium darrowii Camp; 40934	X^{PF}	X,X^{S},X$^{S\text{-}R}$	W,Y	X			X
Vaccinium myrsinites Lam.; 40780	X^{PF}	X,X^{S}	W,W,Y	X			X
EUPHORBIACEAE (5, 14)							
Acalypha gracilens A. Gray; **Scarce;** 41181						X	
Cnidoscolus stimulosus (Michx.) Engelm. & A. Gray; 40554			W,W,W^{R}				X
Croton glandulosus L. var. glandulosus; 40800	X					X	X
Croton michauxii G.L. Webster; 40935				X			X
Euphorbia blodgettii Engelm. ex Hitchc. [Chamaesyce blodgettii (Engelm. ex Hitchc.) Small]; **Scarce;** 40949							X
Euphorbia cyathophora Murray [Poinsettia cyathophora (Murray) Bartl.]; **Scarce;** 40899							X
Euphorbia hirta L. [Chamaesyce hirta (L.) Millsp.]; 41214							X
Euphorbia hypericifolia L.[Chamaesyce hypericifolia (L.) Millsp.] **Scarce;** 40606							X
Euphorbia hyssopifolia L. [Chamaesyce hyssopifolia (L.) Small]; 41194							X
Euphorbia maculata L. [Chamaesyce maculata (L.) Small]; **Scarce;** 40970							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
*Euphorbia mendezii Boiss. [Chamaesyce mendezii (Boiss.) Millsp.]; **Scarce;** 41035							X
Euphorbia ophthalmica Pers. [Chamaesyce ophthalmica (Pers.) D.G. Burch]; **Scarce;** 40819							X
Euphorbia prostrata Aiton [Chamaesyce prostrata (Aiton) Small]; **Scarce;** 41358							X
Tragia urens L. (forma with linear, entire foliage leaves plus forma with oblanceolate, serrate foliage leaves); **Scarce;** 40950							X
FABACEAE (20, 29)							
*Abrus precatorius L.; 41430; FLEPPC I	X,X^{PF-R}						X
Aeschynomene americana L.; **Scarce;** 40607							X
*Alysicarpus ovalifolius (Schumach. & Thonn.) J. Leónard; **Scarce;** 41483		X^{S-R}					X
Chamaecrista fasciculata (Michx.) Greene; 40428		X^{S}	W,W^{R},Y,Y^{R}				
Chamaecrista nictitans (L.) Moench var. aspera (Muhl. ex Elliott) H.S. Irwin & Barneby; 41660							X
¤Chapmannia floridana Torr. & A. Gray; 40952		X^{S-R}	W,W,W^{R},Y				X
¤Clitoria fragrans Small; 41059			Y^{R}				X
*Crotalaria pallida Aiton; **Scarce;** 40954							X
Crotalaria rotundifolia J.F. Gmel.; 40479		X^{S-R}	X^{R}				X
¤Dalea adenopoda (Rydb.) Isely; **Scarce**							X
Dalea feayi (Chapm.) Barneby (white-flowered forma [**Scarce**] plus typical forma with pink flowers); 40456			W,Y,X^{R}				X
*Desmodium incanum (Sw.) DC.; **Scarce;** 41097						X^{R}	
*Desmodium tortuosum (Sw.) DC.; **Scarce;** 41195							X
*Desmodium triflorum (L.) DC.; **Scarce;** 41215							X
*Enterolobium contortisiliquum (Vell.) Morong; **Scarce; apparent remnant of cult.**; 41196							X
Erythrina herbacea L.; **Scarce;** 40802			Y^{R}				X
Galactia elliottii Nutt.; 40608		X,X^{S},X^{S-R}	Y	X			X
Galactia purshii Desv. [Galactia michauxii A.R. Franck]; **Scarce**			X^{R}				X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Indigofera caroliniana Mill.; 41360			Y,Y^{R}				X
*Indigofera hirsuta L.; 40609							X
*Indigofera spicata Forssk.; 41036							X
Lupinus diffusus Nutt.; 40664		$X^{S\text{-}R}$	Y,X^{R}				X
*Macroptilium lathyroides (L.) Urb.; **Scarce;** 41136; FLEPPC II							X
Mimosa quadrivalvis L. var. floridana (Chapm.) Barneby; 41183	X,X^{PF}	X,X^{S}	W,W^{R},Y				X
¤Rhynchosia cinerea Nash; **Scarce;** 40729							X
Rhynchosia minima (L.) DC.; **Scarce;** 41432							X
*Senna occidentalis (L.) Link; **Scarce;** 41098			X^{R}				
Sesbania herbacea (Mill.) McVaugh; **Scarce;** 41458							X
¤Tephrosia mysteriosa DeLaney; 41099			Y,Y^{R}				X
FAGACEAE (1, 10)							
Quercus chapmanii Sarg.; 40747		X^{S}	W,W,W^{R},Y				
Quercus geminata Small; 40781	X	X,X^{S}	W,W,W^{R},Y,Y^{R}	X			X
Quercus incana W. Bartram; **Scarce;** 40663			Y				
¤Quercus inopina Ashe; 40791			W,W,W^{R},Y	X			X
Quercus laevis Walter; 40783		X^{S}	Y,Y^{R}				X
Quercus laurifolia Michx.; **Scarce;** 40481	X,X^{PF},$X^{PF\text{-}R}$						X
Quercus minima (Sarg.) Small; 40856		X,X^{S}	X^{R}				X
Quercus myrtifolia Willd.; 40429	X^{PF}	X,X^{S}	W,W,Y,Y^{R}	X			X
Quercus nigra L.; 40610	X,X^{W},X^{PF}	X					
Quercus virginiana Mill.; 40555	X,X^{PF}	X					X
GENTIANACEAE (2, 2)							
Bartonia verna (Michx.) Raf. ex Barton; **Scarce;** 40430				X			
Sabatia brevifolia Raf.; **Scarce;** 41668				X			

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
HALORAGACEAE (1, 1)							
Proserpinaca pectinata Lam.; **Scarce;** 40748						X	
JUGLANDACEAE (1, 1)							
¤Carya floridana Sarg.; 40973	X		W,Y,X^{R}				X
LAMIACEAE (6, 6)							
Calamintha ashei (Weath.) Shinners (typical forma with purple flowers plus a forma with essentially white flowers); 40661			W,W,X^{R}				
Callicarpa americana L.; 40457	X,X^{PF}	X	W		X		X
Lycopus sp. (sterile); **Scarce;** 41498					X		
Scutellaria arenicola Small; **Scarce;** 40900			X^{R}				
Teucrium canadense L.; 40822	X^{W}					X	
Trichostema dichotomum L.; 41391							X
LAURACEAE (2, 4)							
Cassytha filiformis L.; 40483		X	W,W^{R},Y				X
¤Persea borbonia (L.) Spreng. var. humilis (Nash) L.E. Kopp; 40820	X	X	W,W,W^{R},Y				X
Persea palustris (Raf.) Sarg.; 40936	X^{PF}	X			X,X^{R}	X	X
Persea palustris (Raf.) Sarg. - Persea borbonia (L.) Spreng. var. humilis (Nash) L.E. Kopp intermediate; **Scarce;** 41031							X
LENTIBULARIACEAE (1, 2)							
Utricularia gibba L.; **Scarce;** 40580						X	
Utricularia subulata L.; **Scarce;** 40485				X			
LINDERNIACEAE (2, 2)							
Lindernia dubia (L.) Pennell var. anagallidea (Michx.) Cooperr.; **Scarce;** 40619						X	X
*Torenia crustacea (L.) Cham. & Schltdl. [Lindernia crustacea (L.) F. Muell.]; **Scarce;** 41369							X
LYTHRACEAE (2, 2)							
*Cuphea carthagenensis (Jacq.) J.F. Macbr.; **Scarce;** 40660						X	

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
Rotala ramosior (L.) Koehne; 40939						X	X
MAGNOLIACEAE (1, 1)							
Magnolia virginiana L.; 40433	X,X^{PF}	X^{W}			X,X^{R}	X	
MALVACEAE (3, 5)							
*Melochia corchorifolia L.; **Scarce;** 41434							X
*Sida cordifolia L.; 40398							X
Sida rhombifolia L.; **Scarce;** 40612							X
Sida ulmifolia Mill. [Sida acuta Burm. f., Sida antillensis Urb.]; **Scarce;** 41197							X
*Urena lobata L.; 40459; FLEPPC I	X				X^{R}	X	X
MELASTOMATACEAE (1, 2)							
Rhexia cubensis Griseb.; **Scarce;** 41279							X
Rhexia mariana L.; 41038		X				X	
MELIACEAE (1, 1)							
*Melia azedarach L.; **Scarce;** 40784; FLEPPC II							X
MORACEAE (1, 1)							
Ficus aurea Nutt.; **Scarce;** 41631							X
MYRICACEAE (1, 2)							
Morella cerifera (L.) Small [Myrica cerifera L.]; 40785	X,X^{PF}	X,X^{W}			X,X^{R}	X	X
Morella cerifera (L.) Small var. pumila Michx. [Myrica cerifera L. var. pumila Michx., Cerothamnus pumilus (Michx.) Small]; **Scarce;** 40710			X,X^{R}				
MYRSINACEAE (3, 3)							
*Ardisia elliptica Thunb.; 40460; FLEPPC I	X						
Lysimachia minima (L.) U. Manns & Anderb. [Anagallis minima (L.) E.H.L. Krause]; **Scarce;** 40615						X	
Myrsine cubana A. DC. [Rapanea punctata (Lam.) Lundell]; **Scarce;** 40461	X						
MYRTACEAE (2, 2)							
*Melaleuca quinquenervia (Cav.) S.T. Blake; **Scarce;** 40434; FLEPPC I	X			X		X	

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
*Syzygium cumini (L.) Skeels; **Scarce;** 40463; FLEPPC I	X,X^{PF}				X^{R}		X
NYCTAGINACEAE (1, 1)							
Boerhavia erecta L.; **Scarce;** 41361							X
NYMPHAEACEAE (1, 1)							
Nymphaea odorata Aiton.; 41105						X	
NYSSACEAE (1, 1)							
Nyssa biflora Walter [Nyssa sylvatica Marshall var. biflora (Walter) Sarg.]; **Scarce;** 40754						X	
OLEACEAE (1, 1)							
¤Cartrema floridanum (Chapm.) G.L Nesom [Osmanthus megacarpus (Small) Small ex Little]; 40400			W,W				
ONAGRACEAE (2, 9)							
Ludwigia erecta (L.) H. Hara; **Scarce;** 40614							X
Ludwigia lanceolata Elliott; 41281					X	X	
Ludwigia maritima R.M. Harper; 40901		X,X^{S}					
Ludwigia octovalvis (Jacq.) P.H. Raven; **Scarce;** 40557	X^{W}					X	X
*Ludwigia peruviana (L.) H. Hara; 40464; FLEPPC I						X	X
Ludwigia repens J.R. Forst.; 41139					X	X	
Ludwigia suffruticosa Walter; 40797						X	X
Oenothera laciniata Hill; **Scarce;** 41363							X
Oenothera simulans (Small) W.L. Wagner & Hoch [Gaura angustifolia Michx.]; **Scarce;** 40641							X
OROBANCHACEAE (3, 3)							
Agalinis filifolia (Nutt.) Raf. (atypical); **Scarce;** 41545				X			
Buchnera americana L.; **Scarce;** 40942							X
Seymeria pectinata Pursh; 40756			W,W^{R},Y,Y^{R}				X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
OXALIDACEAE (1, 1)							
Oxalis corniculata L. sensu lato; 40940							X
PASSIFLORACEAE (1, 1)							
Passiflora incarnata L.; 40925							X
PETIVERIACEAE (1, 1)							
Rivina humilis L.; **Scarce;** 41140	X						
PHYLLANTHACEAE (2, 2)							
*Bischofia javanica Blume; **Scarce;** 41455; FLEPPC I						X	
*Phyllanthus tenellus Roxb.; **Scarce;** 40578							X
PHYTOLACCACEAE (1, 1)							
Phytolacca americana L.; 40659							X
PLANTAGINACEAE (3, 4)							
Linaria canadensis (L.) Chaz.; **Scarce;** 40757						X^R	X
Linaria floridana Chapm.; 40437			W				X
Scoparia dulcis L.; 40533		X				X	X
Sophronanthe hispida Benth. ex Lindl. [Gratiola hispida (Benth. ex Lindl.) Pollard]; 40927		X^S	W,X^R	X			X
POLYGALACEAE (1, 5)							
Polygala incarnata L.; **Scarce;** 40488			X^R				X
¤Polygala lewtonii Small; 41224		X^S	X				
Polygala nana (Michx.) DC.; **Scarce;** 40941		X^R					X
¤Polygala rugelii Shuttlew. ex Chapm.; 41225						X	
Polygala setacea Michx.; 40801				X			X
POLYGONACEAE (2, 7)							
Persicaria hirsuta (Walter) Small [Polygonum hirsutum Walter]; 40527						X,X^R	X
Persicaria punctata (Elliott) Small [Polygonum punctatum Elliott]; **Scarce;** 40584						X	

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
¤Polygonum basiramia (Small) T.M.Schust. & Reveal [Polygonella basiramia (Small) G.L. Nesom & V.M. Bates]; 40401			W,W,W^{R}	X			X
¤Polygonum dentoceras T.M. Schust. & Reveal [Polygonella myriophylla (Small) Horton]; 40758			W,W,W^{R}				X
¤Polygonum nesomii T.M. Schust. & Reveal [Polygonella robusta (Small) G.L. Nesom & V.M. Bates] (forma having pink flowers plus white flowers; forma having white flowers); 40402			W,W,W^{R}				X
Polygonum pinicola T.M. Schust. & Reveal [Polygonella gracilis Meisn.]; 41202			W^{R}	X			X
Polygonum polygamum Vent. var. polygamum [Polygonella polygama (Vent.) Engelm. & A. Gray var. polygama]; 41203			W,W^{R}	X			X
PORTULACACEAE (1, 3)							
*Portulaca amilis Speg.; **Scarce;** 41143							X
Portulaca oleracea L.; **Scarce;** 41204							X
Portulaca pilosa L.; **Scarce;** 41144							X
ROSACEAE (2, 3)							
Prunus caroliniana (Mill.) Aiton; 40827	X						
¤Prunus geniculata R.M. Harper; 40529			W				
Rubus pensilvanicus Poir.; 40786					X		
RUBIACEAE (10, 13)							
Cephalanthus occidentalis L.; 40531						X	
Diodia virginiana L.; 40830						X	
Edrastima uniflora (L.) Raf. [Oldenlandia uniflora L.; Hedyotis uniflora (L.) Lam.]; 40558	X	X^{S}		X		X	X
Galium hispidulum Michx.; **Scarce;** 40975	X						
Galium tinctorium L.; 40616	X^{W}						
Hexasepalum teres (Walter) J.H. Kirkbr. [Diodia teres Walter]; 40962							X
Houstonia procumbens (J.F. Gmel.) Standl. [Hedyotis procumbens (J.F. Gmel.) Fosberg]; **Scarce;** 40658		X$^{S\text{-}R}$					

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
*Oldenlandia corymbosa L. [Hedyotis corymbosa (L.) Lam.]; **Scarce;** 40617							X
Psychotria nervosa Sw.; **Scarce;** 41145	X						
*Richardia brasiliensis Gomes; 40730							X
*Richardia grandiflora (Cham. & Schltdl.) Steud. (pink-flowered forma plus white-flowered forma); 40532; FLEPPC II							X
Spermacoce remota Lam. [Spermacoce assurgens Ruiz & Pav.]; **Scarce;** 40926							X
*Spermacoce verticillata L.; 40435; FLEPPC II							X
RUTACEAE (1, 1)							
*Citrus sp. (sterile); **Scarce;** 40467			W				X
SALICACEAE (1, 1)							
Salix caroliniana Michx.; **Scarce;** 40468						X	
SAPINDACEAE (1, 1)							
Acer rubrum L.; **Scarce;** 40787					X	X	
SAPOTACEAE (1, 1)							
Sideroxylon tenax L.; 40436	X		W,W,W^R,Y				X
SOLANACEAE (2, 3)							
Physalis arenicola Kearney; **Scarce;** 41146							X
Physalis walteri Nutt.; 40928	X		W^R				X
Solanum americanum Mill.; 40585							X
TETRACHONDRACEAE (1, 1)							
Polypremum procumbens L.; 41027		X^R,X^S	W^R	X			X
THEACEAE (1, 1)							
Gordonia lasianthus (L.) J. Ellis; 41028	X^{PF}	X			X,X^R		
URTICACEAE (2, 2)							
Boehmeria cylindrica (L.) Sw.; **Scarce;** 40929						X	
Parietaria floridana Nutt.; **Scarce;** 40586							X

	Hardw	Pinefl	Scrub	Depr	Bay	Wetl	Rud
VERBENACEAE (3, 3)							
*Lantana strigocamara R.W. Sanders [Lantana camara L.]; 40620; FLEPPC I	X						X
Phyla nodiflora (L.) Greene; **Scarce;** 40943						X	
*Stachytarpheta cayennensis (Rich.) Vahl [Stachytarpheta urticifolia Sims]; **Scarce;** 41029; FLEPPC II							X
VIOLACEAE (1, 1)							
Viola lanceolata L.; **Scarce;** 41635						X	
VISCACEAE (1, 1)							
Phoradendron leucarpum (Raf.) Reveal & M.C. Johnst.; **Scarce;** 40469			X				
VITACEAE (3, 4)							
Nekemias arborea (L.) J. Wen & Boggan [Ampelopsis arborea (L.) Koehne]; 41229		X^{W}				X	X
Parthenocissus quinquefolia (L.) Planch.; 40470	X,X^{PF}	X	Y		X^{R}	X	X
Vitis cinerea (Engelm.) Engelm. ex Millardet; **Scarce;** 41030							X
Vitis rotundifolia Michx.; 40471	X,X^{PF}	X,X^{S}	W,W,W^{R},Y	X	X,X^{R}	X	X
XIMENIACEAE (1, 1)							
Ximenia americana L.; 40788		X^{S}	W,W,W^{R},Y				X

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