



U.S. Fish and Wildlife Service
Southeast Region Inventory and Monitoring Branch
I&M Branch RFP Final Report

Title: At-Risk Plant Occurrences and Floristic Inventory, Carolina Sandhills National Wildlife Refuge



Photo by Keith A. Bradley (White wicky)

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U.S. Fish and Wildlife Service Southeast Region Inventory and Monitoring Branch I&M RFP Final Report

Title: At-Risk and Rare Plant Occurrences and Vascular Plant Inventory on the Carolina Sandhills National Wildlife Refuge

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ABSTRACT: The status of rare plant species, including Federal At-risk species, is generally unknown in national wildlife refuges in the Southeastern Coastal Plain. The Carolina Sandhills National Wildlife Refuge in Chesterfield County, South Carolina was surveyed. All rare plant species encountered were mapped, and for each population its size, habitat characters, and threats determined. One At-risk plant species was recorded, and the history of a second At-risk species documented. A total of 52 rare plant species were recorded or determined to have once occurred in the refuge. A total of 1,010 total plant species were documented as occurring in the refuge.

INTRODUCTION

The Sandhills is a physiographic and geologic region that covers the innermost section of the South Atlantic Coastal Plain. The region covers an unbroken span from south-central North Carolina, through South Carolina, and into east-central Georgia. The topography of the area is composed of rolling, hilly terrain, dissected by numerous blackwater streams. As its name implies, soils of the Sandhills region are typically sandy, low in nutrients, acidic, and do not hold water. Many of the region's flora is adapted to droughty conditions of the soil substrate. The Sandhills is home to many globally and state rare species, including a few federally listed as endangered or threatened, e.g., Michaux's Sumac, Chaffseed.

The Carolina Sandhills National Wildlife Refuge (NWR) is located within the section of the Sandhills region of Chesterfield County, South Carolina. The refuge totals over 47,850 acres of fee ownership and conservation easements, of which nearly two-thirds is covered by varying condition and productivity classes of upland longleaf pine woodlands. These uplands are maintained by fire, and the ground layer is dominated by native bunch grasses, herbs, and dwarf shrubs, and often includes basal sprouts of oak species that vary in density with site conditions. Loamy soils found in lower slope positions of these uplands support various legume species—these sites are referred to as 'bean dips'. Generally speaking, the upland habitats on the refuge have been received the most botanical research but have not been systematically studied. Dedicated searches throughout the refuge would be expected to reveal new occurrences of rare and native species. Other habitats on the refuge have not been well-inventoried, save for a select few sites including three seepage slopes. The remainder of the refuge is composed of streamhead bogs and pocosins, seepage slopes, Atlantic white- cedar swamps, and bottomland forests. Wetland and seepage communities (including several insectivorous plants), occur in hydrologically appropriate locations. These include narrow areas along drainages and pond

margins, where occasionally prescribed fire visits and creates openings for Atlantic white cedar reproduction. A number of uncommon but unique plants can be found across these different habitats including Sandhills Bog Lily, Well's Pyxie Moss, Sweet Pitcherplant, Pinebarren Gentian, and White-wicky). This diverse flora also supports a variety of native pollinators, especially bees, butterflies, and moths. The refuge Habitat Management Plan (USFWS 2014) identifies the unique flora of its wetland habitats (including bottomland forests, pocosin wetlands) as a resource of concern, and suggests periodically inventorying and mapping unique flora as an assessment method to identify primary habitat response. The table below (Table 1) lists federally listed and at-risk species known to occur (either current or historical reference) or that have the potential to occur based on availability of habitat on the Carolina Sandhills NWR:

Table 1: Potential rare plant species at Carolina Sandhills NWR

Scientific Name	Common Name	Global Status	So. Carolina Status	Occurrence	Habitat
LISTED					
<i>Lysimachia asperulifolia</i>	Pocosin loosestrife	G3	S1	P ₁	Streamheads and Seepage Slopes
<i>Rhus michauxii</i> (E)	Michaux's sumac	G2	SX	P	Dry Longleaf Pineland
<i>Schwalbea americana</i> (E)	Chaffseed	G2	S3	P	Dry Longleaf Pineland
AT-RISK					
<i>Amorpha georgiana</i>	Georgia indigo-bush	G3	SNR	P	Moist Pine Flatwoods and River Terraces
<i>Balduina atropurpurea</i>	Purple honeycombed-head	G2	S1	P	Moist Pine Flatwoods, Seepage Slopes
<i>Carex impressinervia</i>	Impressed-nerve sedge	G2	S1	P	Moist hardwood forests along creeks
<i>Eupatorium paludicola</i>	Swamp justiceweed	G2	SNR	P	Streamheads and Seepage Slopes
<i>Isoetes hyemalis</i>	Wintergreen quillwort	G2	S1	O	Blackwater Rivers and Cypress-Gum Swamps
<i>Lilium pyrophilum</i>	Sandhills bog lily	G2	S1	O	Streamheads and Seepage Slopes
<i>Lindera subcoriacea</i>	Bog spicebush	G3	S3	P	Streamheads and Seepage Slopes
<i>Lobelia boykinii</i>	Boykin's lobelia	G2/ G2G3	S3	P	Carolina Bays, Moist Pine Flatwoods, Cypress-Gum Swamps
<i>Ludwigia brevipes</i>	Long Beach Seedbox	G2/G3	S1	P	Marshes, Seepage Slopes, Blackwater Rivers

¹ O = Occurrence confirmed, P = Potential Occurrence

Scientific Name	Common Name	Global Status	So. Carolina Status	Occurrence	Habitat
<i>Macbridea caroliniana</i>	Carolina's birds-In-A-Nest	G2	S3	P	Blackwater Rivers and Cypress-Gum Swamps
<i>Sporobolus teretifolius</i>	Wireleaf dropseed	G2	S1	P	Moist Pine Flatwoods and River Terraces

The objectives of this project are to:

- 1) Determine population occurrence and density of rare, at-risk, and federally listed vascular plants (see list above) within the Carolina Sandhills National Wildlife Refuge
- 2) Map species occurrence data along with sampling framework
- 3) Describe the specific environmental and vegetation attributes associated with each targeted species
- 4) Identify immediate threats, including locations of invasive species, to rare species populations
- 5) Compile a Vascular Plant Inventory for the Refuge
- 6) Recommend management and conservation measures

STUDY AREA

The Carolina Sandhills NWR covers 47,850 acres in Chesterfield County, South Carolina, just north of the town of McBee. Generally, Black Creek and its floodplain borders much of the eastern boundary of the refuge. The western edge reaches Lynches River in two places. The southernmost portions of the border are along US1. The entire refuge lies within the Fall Line Sandhills ecoregion, which extends from North Carolina, across South Carolina, and into Georgia. It consists of well drained sands, representing ancient sand dunes, and divides the coastal plain from the piedmont.

The sandhills are dominated by xeric longleaf pine dominated savannas, with an understory of scrub oaks and other hardwoods as well as wiregrass and other graminoids and herbs. “Bean dips” in sandhills form important microhabitats. These are upland depression features with fine-textured loamy soil and high species richness (James 2000). The sandhills are crossed by numerous small creeks. These are typically lined with dense pocosin vegetation. Some hillsides above these creeks have persistently wet seepages. These seepage slopes have unique vegetation, often with diverse assemblages of rare plant species. The west boundary along Lynches River is unique. This brownwater river, in contrast to the blackwater creeks in the rest of the refuge, has a distinct bottomland flora in its floodplain, and bluffs above it a more piedmont-like flora than the rest of the refuge. Impoundments, formed by dams along many of the refuge’s creeks, create novel habitats. The open water areas provide habitat for aquatic plant species that would otherwise have very limited habitats on the refuge. The boggy edges of impoundments provide habitat for several rare species, including pitcher plants.

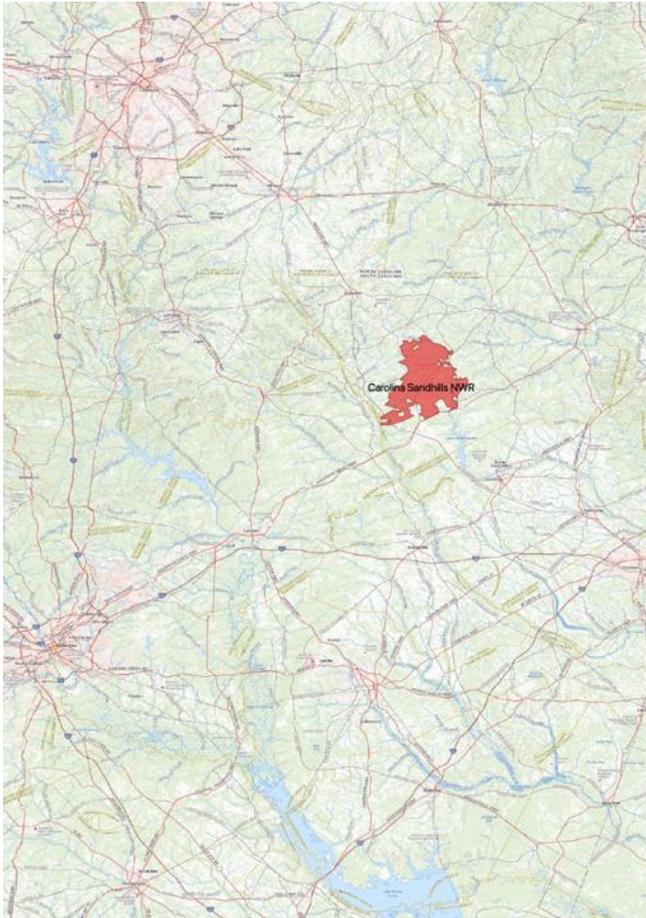


Figure 1: Carolina Sandhills NWR location

Botanical History

The refuge has a history of botanical exploration that started not long after its establishment. The first herbarium specimens known to have been collected in the refuge were made in 1948 by Tom Daggy of Davidson College. Daggy collected in the refuge for forty years, his last specimens being made there in 1988. Al Radford may have collected specimens in the refuge in the 1950s along Black Creek at US1, but his specimen labels do not indicate which side of the road or creek he was on. Another avid collector was John Castrale who collected hundreds of specimens in 1976 and 1977. He was a graduate student from West Virginia University studying mourning doves and made specimens in his spare time (personal communication, 2019). Doug Rayner, with SCDNR, also made observations and collections of rare plant species in 1985, particularly along Roger's Branch and Oxpen seep, and conducted a status survey of *Kalmia cuneata*.

The 1990s saw a flurry of botanical activity in the refuge. Several researchers working at the refuge at the same time, Brian van Eerden, Randy Mejeur, and Mary James, collaborated on mapping rare plants and compiling a preliminary plant inventory, while doing other independent projects. Some of their rare plant observations were submitted to the South Carolina Department of Natural Resources (SCDNR) and incorporated into the Heritage Program database. van

Eerden made significant specimen collections in 1995 and noted rare plant locations on topographic maps. These maps were added to with observations by James and Mejeur around 1998. Mejeur collected hundreds of specimens in the refuge. These three researchers compiled the first draft plant list for the refuge. Mary James, studying bean dips, contributed greatly to the knowledge of rare plants refuge by mapping and collecting several rare plant species that are specialists to this habitat. These three researchers compiled the first draft plant list for the refuge Mejeur et al. (1998). They based their list on their own collections and observations, as well as previously collected specimens, particularly those at Davidson College collected by Tom Daggy. Their list included 708 taxa.

Also, in the 1990s Patrick McMillan and colleagues (including Richard Porcher, Bruce Sorrie, Steve Orzell, Edwin Bridges, and Bob Peet) developed an interest in the flora of seepage slopes in the southeast. They made numerous trips and collected specimens on the seepage slopes at Lake Bee and Oxpen Seep. Significant discoveries were detailed by McMillan et al. (2002).

Significant mapping of some rare plant species was done by David Robinson as a Forester at the refuge. He made detailed maps of *Kalmia cuneata*, *Pyxidantha brevifolia*, *Sarracenia* species.

Other important collectors and additional botanists include Robert Kral, James Matthews, Larry Mellichamp, John Nelson, Bert Pittman, and Richard Porcher.

METHODS

Prior to field surveys data on rare plant species potentially occurring on study sites was compiled from online sources, literature, and knowledgeable individuals. Of particular importance was the SERNEC database (sernecportal.org), containing digitized herbarium specimen records from all major southeastern herbaria. Element Occurrence data from the South Carolina Department of Natural Resources (SCDNR) was acquired. Additional data were searched for in published literature, gray literature, and field trip reports by the South Carolina Association of Naturalists. Randy Mejeur provided several hundred unmounted herbarium specimens collected in the 1990s by himself and by Brian van Eerden. These were studied for rare plant records and for new species for the refuge. Mary James provided scans of topographic maps with rare plant locations recorded by herself, van Eerden, and Mejeur. I georeferenced these maps and their rare plant locations. I also georeferenced scanned images of maps done by David Robinson, and digitized rare plant features on them. All floristic data that was found for the refuge was compiled into a relational database and nomenclature standardized, following Weakley (2015).

Potential habitats to be surveyed were identified by analyzing available data sources to determine landscape features. Important resources included aerial photography, topographic maps, and LIDAR data.

Between October 2017 and September 2019 field surveys were conducted at regular intervals throughout the growing season. All surveys were conducted by the author, sometimes accompanied by Refuge biologists or interns, or other colleagues. As much of the refuge as possible was visited. Emphasis was placed on habitats that could potentially support rare plant species, but all habitats in the refuge were surveyed, including a variety of disturbed areas.

Appropriate habitats were searched opportunistically for rare plant species, including At-risk species, Federally-listed species, and those tracked by SCDNR. Other unusual plant species were also recorded and mapped, including untracked rare species, unusual exotic species, and new distributional records. Some locations with diverse, higher quality habitats were visited multiple times to find species with different flowering periods. Nearly all populations of previously known plant populations were revisited.

All rare species found were mapped with a Garmin GPSMAP 64 GPS unit. Individual plants were counted or population size estimated. For each rare species surrounding habitat characteristics were recorded to allow classification following either United States National Vegetation Classification (USNVC 2017) or the Carolina Vegetation Survey classification (Schafale 2012), and associated species noted. Plants or stems were counted, or, for larger colonies, estimated. Threats to each population were identified.

Herbarium specimens were made for rare plant species when collection did not threaten populations. Specimens are deposited at the A.C. Moore Herbarium, University of South Carolina, in Columbia (USCH). Nomenclature of plant species in this report follows Weakley (2015). Herbarium specimen citations in this report include collector surname, collection number, and herbarium citation following Index Herbariorum (Thiers 2019). Heritage Program rankings follow the most recent data available on the web sites of the South Carolina Department of Natural Resources (SCDNR).

RESULTS

Field surveys were initiated in October 2017 and continued through September 2019. No Federally-listed Endangered or Threatened species were found. One At-risk species was found, *Isoetes hyemalis*. Documentation of a second At-risk species was also found, *Lilium pyrophilum*. Also, 50 additional rare species that are tracked by SCDNR are also reported for the refuge (Table 2). Of these, 41 were observed during this study. Reports of several other rare plant species, including the At-risk *Lobelia boykinii*, were rejected.

The known flora of the refuge consists of 1,010 taxa. This represents an addition of 302 taxa over van Eerden et al. (1998). Forty-eight (48) taxa that have been reported for the refuge are treated here as false or doubtful records. Of the 1010 total taxa, 856 are native and 139 (13.8%) are exotic. This inventory is included as Appendix 1.

All rare plant species that are document to occur or have occurred in the refuge are discussed below. Representative herbarium specimens are cited when available. Maps of all species are included at the end of the document, before the Appendix.

Table 2: Rare plant species of the Carolina Sandhills NWR

Scientific Name	Common Names	SCDNR	USFWS
<i>Andropogon mohrii</i>	Tawny Bluestem	S2	
<i>Andropogon perangustatus</i>	Narrow-leaved Bluestem	S1	
<i>Aristida mohrii</i>	Mohr's Three-awn	S1	
<i>Astragalus michauxii</i>	Sandhills Milkvetch	S3	
<i>Carex cherokeensis</i>	Cherokee Sedge	S2	

Scientific Name	Common Names	SCDNR	USFWS
<i>Carex collinsii</i>	Collins's Sedge	S2	
<i>Carex elliotii</i>	Elliott's Sedge	S1	
<i>Carex turgescens</i>	Pinebarren Sedge	SNR	
<i>Coreopsis gladiata</i>	Swamp Coreopsis	SNR	
<i>Danthonia epilis</i>	Bog Oat-grass	S2	
<i>Eleocharis robbinsii</i>	Robbins's Spikerush	S2	
<i>Eriocaulon texense</i>	Texas Hatpins	S1	
<i>Gentiana autumnalis</i>	Pinebarren Gentian	S2	
<i>Hexastylis sorriei</i>	Sandhill Heartleaf	S1	
<i>Isoetes hyemalis</i>	Wintergreen Quillwort	S1	At-Risk
<i>Juncus pelocarpus</i>	Brown-fruited Rush	S2	
<i>Kalmia cuneata</i>	White Wicky	S2	
<i>Lilium pyrophilum</i>	Sandhills Bog Lily	S1	At-Risk
<i>Lobelia species 1</i>	Batson's Lobelia	SNR	
<i>Lycopus cokeri</i>	Coker's Bugleweed	S2	
<i>Lygodium palmatum</i>	American Climbing Fern	S3	
<i>Lysimachia terrestris</i>	Bog Loosestrife	SNR	
<i>Myriophyllum laxum</i>	Loose Water-milfoil	S2	
<i>Nestronia umbellula</i>	Nestronia	S3	
<i>Orbexilum lupinellus</i>	Lupine Scurfpea	S1	
<i>Oxypolis ternata</i>	Savanna Cowbane	S1	
<i>Paspalum bifidum</i>	Pitchfork Paspalum	S2	
<i>Phaseolus sinuatus</i>	Sandhills Bean	SNR	
<i>Pyxidantha barbulata</i>	Common Pyxie-moss	S2	
<i>Pyxidantha brevifolia</i>	Sandhills Pyxie-moss	S1	
<i>Rhynchospora leptocarpa</i>	Slender-Fruit Beaksedge	S1	
<i>Rhynchospora macra</i>	Southern White Beaksedge	S1	
<i>Rhynchospora oligantha</i>	Feather-bristled Beaksedge	S2	
<i>Rhynchospora pallida</i>	Pale Beaksedge	S1	
<i>Rhynchospora scirpoides</i>	Long-beak Beaksedge	S1	
<i>Rhynchospora stenophylla</i>	Coastal Bog Beaksedge	S2	
<i>Ruellia ciliosa</i>	Sandhills Wild-petunia	S1	
<i>Sagittaria isoetiformis</i>	Quillwort Arrowhead	S3	
<i>Sarracenia flava</i>	Yellow Pitcherplant	S3S4	
<i>Sarracenia minor</i>	Hooded Pitcherplant	S3S4	
<i>Sarracenia purpurea var. venosa</i>	Southern Purple Pitcherplant	S3S4	
<i>Sarracenia rubra</i>	Sweet Pitcherplant	S3S4	
<i>Schoenoplectus etuberculatus</i>	Swamp Bulrush	SNR	
<i>Schoenoplectus subterminalis</i>	Swaying Rush	SNR	
<i>Solidago pinetorum</i>	Pineywoods Goldenrod	SNR	
<i>Solidago pulchra</i>	Beautiful Goldenrod	S1	
<i>Sporobolus brevipilis</i>	Pinebarren Sandreed	S1	
<i>Sporobolus pinetorum</i>	Carolina Dropseed	S2	

Scientific Name	Common Names	SCDNR	USFWS
<i>Tridens carolinianus</i>	Carolina Triodia	S1	
<i>Warea cuneifolia</i>	Carolina Warea	S1	
<i>Xyris chapmanii</i>	Chapman's Yellow-eyed Grass	S1	
<i>Xyris scabrifolia</i>	Roughleaf Yellow-eyed Grass	S1	

Federal At-risk Species

***Isoetes hyemalis* (Wintergreen Quillwort) Federal At-risk, SCDNR: S1**

(Figure 16)

This fern-ally is endemic to the southeastern U.S. from Virginia to the Florida panhandle. It was described as a new species in 1994 (Brunton 1994), and it is rare throughout its range. In South Carolina it is known from scattered localities in the coastal plain to the fall line sandhills. Prior to this study it had not been documented from Chesterfield County. The species was included on Mejeur et al. (1998) and was mapped for a location on Black Creek by van Eerden. From 2016-2019 this species was found to have a wide distribution along Black Creek. It was found mainly in the southeastern corner of the Refuge just south of and north of Wire Road. This is the boundary of Compartments 15 and 16, and the edge of Compartment 17 (the van Eerden record being the northernmost by 0.6 km here). Another population was found at the extreme north end of the Refuge south of Bo Melton Loop in Compartment 2. Four colonies were found. It is to be expected anywhere along Black Creek. Plants were found growing in flowing water in the creek, but most colonies were in small, muddy, mainly unvegetated “sloughs” that drained into the creek. No colonies were found along any other waterway in the Refuge. Identification of specimens was confirmed by Peter Schafran, Old Dominion University. This species is currently being treated as a “complex” of several taxa (Bolin et al. 2018), and may eventually be split up into several species.

Specimens: Bradley 8204, 8221, 8479 (USCH)

***Lilium pyrophilum* (Sandhills bog lily) Federal At-risk, SCDNR: S1**

(Figure 19)

This wildflower was described as a new species in 2002 (Skinner and Sorrie 2002). It is endemic to the fall line sandhills of Virginia, North and South Carolina. It has also been found recently in the coastal plain of Georgia (Steve Bowling, personal communication, 2018). It is very rare in South Carolina and has been extirpated from some sites were previously known. At the refuge it was observed by Patrick McMillan at Oxpen Seep. He reports a “handful, right at the water’s edge at the base of the large seep on the north side” around 2008 (personal communication, 2019). It was filmed and included in a TV episode of “Expeditions with Patrick McMillan” on frogs. Allyne Askins also reports seeing it at Oxpen Seep 2008 (personal communication, 2019). Surveys in 2017, 2018, and detailed surveys in 2019 failed to locate this species there. It is extremely conspicuous when in flower, with large red flowers, and a stem up to 1.6 m tall.

Specimens: None known

Other Rare Species

***Andropogon mohrii* (Tawny bluestem) SCDNR: S2**

(Figure 2)

This grass was reported for Oxpen Seep by McMillan et al. (2002). Vouchers were collected in July 1996 and March 1997 by Patrick McMillan, but the specimens may be lost. The label data is cited as “locally abundant in deep quaking muck of herb-dominated seepage slope.” In 2017 and 2019 it was observed to be frequent at Oxpen Seep, and widespread there in deep mucky soils.

Specimens: Bradley 7623, USCH; McMillan 2095, NCU; McMillan 1566, NCU

***Andropogon perangustatus* (Narrow leaved blustem) SCDNR: S1₂**

(Figure 3)

This grass was reported for Oxpen Seep by McMillan et al. (2002). A voucher was collected in March 1997 by Patrick McMillan, but the specimen may be lost. The label data is cited as “infrequent in deep quaking muck and typic portions of extensive hillside seepage bog.” In 2017 it was observed to be uncommon at Oxpen Seep.

Specimens: Bradley 7625, USCH; McMillan 2096, NCU

***Aristida mohrii* (Mohr’s three-awn) SCDNR: S1**

(Figure 4)

This is one of the rarest grasses in South Carolina. It was first found in the refuge by the author in 2015. In addition to this collection, another colony was found only 0.5 km away in 2018. Both of these collections were along the west side of Wildlife Drive in Compartment 18. Only two other records of this species are known from South Carolina. It was first found in the state in 1939 by R.K. Godfrey (8079, DUKE, MO) one mile west of McBee, Chesterfield Co, a station which has certainly been destroyed. It was later found in Richland County in 2001 (Jenkins and McMillan 2005), where it occurred in sandhills vegetation at the Clemson Sandhills Research and Education Center. It was observed to be extant at that station in 2015 by the author, so the CSNW harbors one of two occurrences in the state. At CSNWR the two locations were both frequently burned sandhill. One population was in higher portions of a bean dip.

Specimens: Bradley 3585, 3763, 9308 USCH

***Astragalus michauxii* (Sandhills Milkvetch, Michaux's Milkvetch) SCDNR: S3**

(Figure 5)

This herb is endemic to sandhills from North Carolina to Georgia and it is rare throughout its range. It has been reported for the CSNWR only a few times. It was first collected there by Tom Daggy in 1969 (5357, CLEMS). It was also collected by John Castrale in 1977 (118, USCH). Castrale’s specimen is without specific locality data, but Daggy’s was probably in Compartment 21 “S.C. Rd. 145 just east of road to Lake 17.” Randy Mejeur (personal communication, 2019), also observed it along S.C. 145, but on the west side, probably between Rt-8 and Rt-5 (Compartment 10). A search of this area in 2019 was unsuccessful. This area has not burned frequently having been burned in 2016 and 2008, and appeared to have poor habitat for this species because of a dense pine canopy and heavy needle accumulation.

² as *Andropogon gyrans* var *stenophyllus*

In 2017 Will Stuart found it after a prescribed burn in Compartment 21, following a prescribed burn. It had also been mapped here by Mary James in 1998. In 2019 I relocated it in the same locality, between S.C. 145 and an unnamed dirt road, just north of RT-5. Plants were then found directly across S.C. 145 (west side) in Compartment 10. This compartment had just been burned and plants were more common than in 21 which has not burned since early 2017.

Mary James also mapped this species in Compartment 13, west of S.C. 145 and just south of RT-8. She also mapped it in the eastern portion of Compartment 1, just west of Wildlife Drive and south of RT-5. These two localities were surveyed in the summer of 2019 when the data became available. No plants were found, but the late survey time and lack of recent burns made the chance of detection low.

In 2019 Will Stuart found a single plant in Compartment 17 in June 2019 in a beat dip, in association with *Orbexilum lupinellus*. Despite many searches in this compartment for rare plants, especially in bean dips, no other plants were found. This is the southeasternmost known occurrence in the refuge, and is disjunct from other populations.

Specimens: Bradley 9613, USCH

***Carex cherokeensis* (Cherokee Sedge) SCDNR: S2**

(Figure 6)

This sedge was found on the bank of Lynches River in 2017. Only a few plants were seen right on the property line on a steep bank in an upland hardwood forest. It is a new record for the refuge and for Chesterfield County.

Specimens: Bradley 8516, USCH; Strong & Kelloff 5499, US

***Carex collinsii* (Collins's Sedge) SCDNR: S2**

(Figure 7)

This small sedge is rare in Atlantic white cedar habitats in the refuge. It was mapped in 1984 by Brian van Eerden in Compartment 16, just east of Black Creek and just north of Wire Road. This population could not be relocated in 2018. In 2018 and 2019 three new populations were found. One was in Compartment 18 in a tributary of Little Alligator Creek. One was in Compartment 15 south of Mays Lake along Longs Branch. The third population was just outside of the Refuge (Compartment 18) along an unnamed tributary of Black Creek just north of Cassidy Cemetery. The plant here was found very late in the season (July), and a survey in the spring would probably show a larger population on both side of this creek which forms the refuge boundary.

Specimens: Bradley 8483, 8698, USCH

***Carex elliotii* (Elliott's Sedge) SCDNR: S1**

(Figure 8)

This sedge inhabits seepage bogs. It is primarily known from the southeastern portion of the refuge, with one report from Lake Bee. It was found along the seepage slope on the east edge of Lake Bee by Randy Mejeur in 1998, but this population was not seen in 2019. It has been found several times in the southeastern portion of the refuge. It was mapped on the east side of Black Creek along the gas line right-of-way by Brian van Eerden, in Compartment 16. A search in 2019 failed to find it here east of the creek, but a large colony was found just west of the creek, also in the right-of-way. In 2019 two new colonies were discovered. One was found 0.6 km

northeast of Black Creek along the gas line right-of-way in a seepage slope above an unnamed creek. Another was found along the west side of Black Creek, south of its confluence with Ham Creek, south of Wire Road.

Specimens: Bradley 9639, 9675, USCH; Mejeur 229, USCH

***Carex turgescens* (Pinebarren Sedge) SCDNR: SNR**

(Figure 9)

This sedge, like *C. elliotii*, is primarily of species of seepage bogs. It was first found at the refuge in 1974 at Lake Bee by Tom Daggy where he reported it to be common along the wet margins on the east side of the lake. It was not seen there in 2017-2019, nor have other reports been seen from Lake Bee. The species is well known from Oxpen Seep. It was collected there in 1985 by John Nelson, and has been collected many times since. In 2017-2019 it was observed to be common just above the lake edge at the bottom of the seep. Two new populations were found in 2019. One was in a lakeside bog on the western edge of Lake 16 in Compartment 9. Another new population was found in Compartment 18 in the gas line right-of-way just northeast of Wildlife Drive in a seep along an unnamed tributary of Little Alligator Creek.

Specimens: Bradley 8694, 9647, USCH

***Coreopsis gladiata* (Swamp Coreopsis) SCDNR: SNR**

(Figure 10)

This herb is known from the Refuge only from Lake Bee. It was collected there by Tom Daggy in 1980. It was relocated by Bruce Sorrie in 2016, and I observed it in 2019. Plants are common along a narrow seepage zone along the eastern side of the lake. They are spread across several sunny canopy gaps both north and south of the small overlook, and a colony exists along the side of the overlook as well. The dense understory of Atlantic white cedar here is limiting the extent of its habitat. Where cedars have been removed by the refuge plants often occur in the sunny gaps.

Specimens: Daggy 8654, CLEMS, UNCC

***Danthonia epilis* (Bog Oat-grass) SCDNR: S2**

(Figure 11)

This grass has only recently been accepted as a species distinct from *D. sericea* McMillan et al. (2002). Both species occur at the refuge, but differ in morphology and habitat preferences. The more common *D. sericea* had distinctively hairy leaf sheaths and occupies drier habitats. *D. epilis* has glabrous sheaths and is restricted to wet seepages. The occurrence at the refuge was first noted by McMillan et al. (2002), citing specimens from Lake Bee and Oxpen seep. It was observed to be abundant at Oxpen seep in 2018 and 2019. It has also been found at 4 other locations at the refuge, including Triple Lakes in 2018 and 2019, Rogers Branch in 1994 (which was not relocated), in 1994 in Compartment 18 in the gas line right-of-way just northeast of Wildlife Drive in a seep along an unnamed tributary of Little Alligator Creek, and in 2018 a seepage in Compartment 5.

Specimens: Bradley 8505, 9648, USCH

***Eleocharis robbinsii* (Robbins's Spikerush) SCDNR: S2**

(Figure 12)

This sedge was found in Compartment 9 in Pool G in 2019. It is a new record for the refuge. It is abundant as an emergent aquatic around the periphery of this pond, with thousands of stems.

Specimens: Bradley 10158, USCH

***Eriocaulon texense* (Texas Hatpins) SCDNR: S1**

(Figure 13)

This herb is known from the Refuge only from Lake Bee, and this is one of only two or three total populations in the state. Its occurrence there was documented by McMillan et al. (2002). It was collected there by Tom Daggy in 1974. It was relocated by Patrick McMillan in 1996 and 1997, and I observed it in 2019. Plants are uncommon along a narrow seepage zone along the eastern side of the lake. Plants are spread across several sunny canopy gaps both north and south of a small overlook. The dense understory of Atlantic white cedar here is limiting the extent of its habitat. Where cedars have been removed by the refuge plants often occur.

Specimens: Daggy 7266, NBYC

***Gentiana autumnalis* (Pinebarren Gentian) SCDNR: S2**

(Figure 14)

This attractive wildflower was documented in the refuge by Tom Daggy in 1948, in the Lake Bee picnic area. He also collected it west of Lake Bee in 1949, and somewhere along the margin of Martin Lake in 1966. Only limited surveys for this species were done in 2017-2019 because of the late blooming time (mainly late October to December). I observed it in 2012 along the west side of RT-9A in Compartment 9. In 2018 I encountered it along the north edge of RT-9 in Compartment 15, and on slopes in the gas line right-of-way on both side of Ham Creek, in Compartment 14. It is expected to be widespread throughout the refuge.

Specimens: Daggy 1917, 8253 DUKE; Daggy 1917, UNCC

***Hexastylis sorriei* (Sandhill Heartleaf) SCDNR: S1**

(Figure 15)

This herb was described as a new species by Gaddy (2011) segregating it from the closely related *H. minor* and *H. virginica*. The species was cited as occurring at Lake 12 by Gaddy, based on a specimen collected by Tom Daggy in 1982. In 2018 an attempt to relocate Daggy's Lake 12 population was unsuccessful (possibly because of a recent prescribed burn). However, continued field work through 2019 revealed that this is one of the more frequently encountered and widespread of the rare species on the refuge. Eighteen new colonies were found, and two collections have also been seen from additional collections by Randy Mejeur. This species it to be expected anywhere in the refuge in the appropriate habitat. It is always found in dense pocosins above streams or impoundments in moist soil. These habitats are generally very dense and hard to access, making populations hard to detect. However, in this study, in most instances where these habitats were searched the species was encountered. Two very interesting colonies were in extremely dense pocosins on steep slopes above Ham Creek, associated with *Galax urceolata* and *Medeola virginiana*, species more common in the mountains than the sandhills.

Specimens: Bradley 7912, 9367 USCH; Daggy 8953 UNCC

***Juncus pelocarpus* (Brown-fruited rush) SCDNR: S2³**

(Figure 17)

This rush was found a single time in the refuge. It was collected by Brian van Eerden on the east edge of Lake Bee in 1995. This is also the only record for Chesterfield County. It was not seen during this study, and no other reports have been seen, despite the great deal of botanical activity at Lake Bee since 1995. Despite its rarity in the refuge, it is actually not that infrequent in parts of the South Carolina Coastal Plain.

Specimens: van Eerden s.n., (8/19/95), USCH

***Kalmia cuneata* (White Wicky) SCDNR: S2**

(Figure 18)

This shrub is one of the rarest shrubs in the southeast, known only from the fall line sandhills of South Carolina, and the sandhills and coastal plain of North Carolina. The type collection was made by André Michaux in 1794 near Camden, South Carolina in Kershaw County (Southall and Hardin n.d.). It was collected in Darlington County several times through the 1930s, and found in Aiken County in the 1990s. Two populations have been documented in the refuge. These are along Ham Creek and Rogers Branch, occurring as linear colonies along these creeks.

The Ham Creek population is well known to the botanical community. The most visited part of this population exists in a gas line right-of-way on a seepage slope on the south side of the creek. Plants are common here, mainly along the edges of the easement, but some plants form a groundcover within it. The colony is much larger than this, extending patchily from here all the way east to Old Wire Road. This area has not burned in many years and is hard to survey. Healthy colonies, though, are found in the some open canopy gaps, mainly associated with a dense hardwood understory (especially *Gaylussacia frondosa*), and a sparse pond pine and hardwood canopy. This is about 370 m of the seepage slope, and contained about 200 plants. Richard Porcher reports that he also found plants many years ago south of Old Wire Road along Ham Creek, but was able to relocate them in later years (personal communication, 2019). I did not encounter plants here. Overall, this population has probably declined due to a lack of frequent burns.

Brian van Eerden had mapped a second colony along Ham Creek, reported to be 900 m west of the intersection of Ham Creek and Old Wire Road. I relocated the same colony, actually 950 m from the Old Wire Road bridge. This had the same rare species associates that he reports, including *Sporobolus brevipilis* and *S. pinetorum*. He reported 30 stems here, while I found only two plants. Like the colony downstream, this ecotone has not burned in many years and has become very dense.

The population along Rogers Branch has declined dramatically. I saw only a single plant at the intersection of Rogers Branch and the Black Creek floodplain, at a site that was flagged by Allyne Askins. This was at one of four colonies that had been mapped with precision by Doug Rayner (when conducting a range wide status survey), Brian van Eerden, Bert Pittman, and David Robinson. I searched the north side of Rogers Branch with Allyn Askins to attempt to locate Robinson's colony (which opposite the creek from another colony) and we were unsuccessful. I searched most of the southern edge of Rogers Branch several times, focusing on

³ As *Juncus abortivus*

3 formerly documented populations, but only a single plant was seen in the easternmost colony. Both sides of the creek were burned in early 2019. This limited the effectiveness of my 2019 surveys, but all former colonies were also surveyed in 2018. The fire burned up to, but did not consume, the single plant that was seen. Surveys starting in 2020 may have better success if plants respond well to the fires.

Specimens: Bradley 9853, USCH; Rayner 1203, USCH

Lobelia species 1 (Batson's Lobelia) SCDNR: SNR

(Figure 20)

This wildflower has not been formally named. It has been thought to be a distinct species by South Carolina botanists for many years. It is under study by Bert Pittman (SCDNR, retired). It is included in Weakley (2015) as *Lobelia* "species", and called Batson's lobelia, or *Lobelia "batsonii"* after the late University of South Carolina botanist Wade Batson. It is thought to be endemic to the Fall line sandhills of North and South Carolina where it prefers wet streamheads and seepage slopes (Weakley, 2015). Tom Daggy collected specimens at the refuge in 1948 at the edge of Lake 16. John Nelson collected it at Pool G in 2011. In 2017 and 2018 I recorded it in the seepage slope on the west side of Ham Creek in the gas line right-of-way, and in 2017 on the southeast short of Honkers Lake.

Specimens: Bradley 7605, 7640, 9067 USCH; Daggy 2511, CLEMS; Nelson 30143, USCH

Lycopus cokeri (Coker's Bugleweed, Carolina Bugleweed) SCDNR: S2

(Figure 21)

This mint is endemic to the sandhills of North and South Carolina, where it inhabits seepages (Sorrie 1997). It was collected at the refuge by Brian van Eerden in 1995 in the seepage along the east side of Lake Bee. In 2017-2019 I have recorded it at six other localities. Plants were found at Oxpen seep, a seepage along Poplar Branch just west of Pool D, an open sunny pocosin in Compartment 15, and in the gas line right-of-way at Ham Creek, Black Creek, and a seepage northeast of Black Creek.

Specimens: Bradley 7620, 9063, 9306, USCH

Lygodium palmatum (American Climbing Fern, Hartford Fern) SCDNR: S3

(no map)

This fern was included on the refuge plant inventory by Mejeur et al. (1998). A specimen is known from the County, but none have been seen from inside the refuge. It was not found in this study, but the report is considered reliable.

Specimens: None known

Lysimachia terrestris (Bog Loosestrife) SCDNR: SNR

(Figure 22)

This attractive wildflower has been overlooked as a rare plant in South Carolina. It was placed on the state tracked list by SCDNR in 2019. It is a widespread species to the north into Canada, but reaches its southern range limit in South Carolina. It was collected at the refuge in 1977 by John Castrale "In moist soil along bank of Black Creek". In 2018 the species was related at the southeastern corner of the refuge, on the east side of Black Creek north of US1, adjacent to the bridge. In 2019 another population was found upstream, in a bog on the west side of Black Creek

in the gas line right-of-way. These two colonies, and another population at Santee National Wildlife Refuge, are the only known to be extant in the state.

Specimens: Bradley 8471, USCH; Castrale 410, USCH

***Myriophyllum laxum* (Loose Water-milfoil) SCDNR: S2**

(Figure 23)

This aquatic has been documented in several of the impoundments in the refuge. It was documented in the refuge in 1971 by Tom Daggy in Lake Bee. It was observed here, as well as downstream in the impoundment between Lake Bee and S.C. 145, by myself and John Nelson. It was collected in Oxpen Lake in 1995 by Doug Rayner, where it was observed in 2019. In 2019 I also recorded it downstream of Oxpen lakes, in a beaver pond just west of Wildlife Drive. I also observed it in the Triple Lakes system, including Lower Triple Lake and Pool H. It is difficult to identify, and sometimes co-occurs with the very similar *M. heterophyllum* (e.g. at Oxpen Lake). Identification is best done during flowering. While *Myriophyllum* species were seen in most of the refuge impoundments, the *Myriophyllum* taxa in them were not all observed when they could be accurately identified. *M. laxum* likely occurs in other impoundments.

Specimens: Bradley 8512, 10141, USCH; Nelson with Bradley 40701, Daggy 6219, NBYC; Rayner 2381b, USCH

***Nestronia umbellula* (Nestronia, Conjuror's-nut, Leechbrush) SCDNR: S3**

(Figure 24)

This hemiparasitic shrub was documented at 3 locations in the refuge by Brian van Eerden from 1993-1995. It typically grows as a groundcover in upland hardwood forests or mixed pine. It was also collected in 1977 by John Castrale (as *Calycanthus floridus*), but his specimen is without specific locality data. In 1989 John Nelson collected it somewhere near the headwaters of Sandy Creek, “between S-111 and S.C. 145”. In 2019 all of van Eerden’s sites were visited. His site in Compartment 3 is along the embankment of RT-1 just south of Angelus Rd. It had burned earlier in the season and no plants were observed during several visits. It is likely to be extant here, but that should be confirmed. A site in Compartment 1 along Rattlesnake Branch could not be relocated in a 2019 survey by myself and Emily Anderson. The orchid *Cypripedium acaule* was also observed here by van Eerden, and we relocated it, an unusual sandhills occurrence of a species more common in the mountains. The third van Eerden site is just to the northwest along a steep bluff above Dismal Spring Branch. Emily Anderson and I relocated a few plants here, but the majority of the site had just been burned. A new population was found by Anderson and I in 2019 along the south side of Oxpen Branch. Plants were found to be widespread here, with thousands of stems. Most of the population was west of Wildlife Drive, including along its edge just above Oxpen Branch, but some plants did occur east of Wildlife Drive.

Specimens: Bradley 9661, USCH; Nelson 8499, USCH

***Orbexilum lupinellus* (Lupine Scurfpea) SCDNR: S1**

(Figure 25)

This herb ranges from the coastal plain of North Carolina and southward to central Florida (Turner 2008). Despite this range, it was not documented in South Carolina until it was found in Jasper County by Bruce Sorrie in 1994, and found in the refuge around the same time (ca. 1994-1999) by Brian van Eerden, Mary James, and Randy Mejeur. James collected a specimen there in 1999, but without specific locality data. The occurrence in South Carolina was reported by

McMillan et al. (2002). Documentation on where the species was found in the refuge was made available in summer 2019, provided on topographic maps by Mary James. These maps included colonies in Compartment 10, 15, and 17. I relocated two of these, by chance, in the spring of 2019 before having their maps. The first was in Compartment 10. This small population is in a bean swale on the west side of S.C. 145 north of RT-5, where *Astragalus michauxii* and *Ruellia ciliosa* also occur. The colony was also found in Compartment 17 while I was surveying with Emily Anderson. Over the spring and early summer I found it in four separate bean dips in Compartment 17. After receiving their data, I relocated the mapped population in Compartment 15, occurring in a bean dip on both sides of RT-3B. Part of this colony was impacted by the placement of a logging deck. I also found a new colony in Compartment 21, east of S.C. 145, and another new colony in Compartment 8, just west of RT-3. This represents a total of 8 colonies in the refuge, and the 3 formerly mapped colonies are all extant. Population sizes varied greatly, with only a few plants in each of the two colonies in Compartment 10, to hundreds of plants forming a dense groundcover in parts of Compartments 15 and 17. Reproduction was variable, with some colonies flowering profusely following recent burns, while other burned colonies had little to no flowering.

Specimens: Bradley 9852 (and others), USCH; James 420, NCU

***Oxypolis ternata* (Savanna Cowbane) SCDNR: S1**

(Figure 26)

This herb is a species of wet pine savannas, seepages, and pocosins edges. It is hard to detect because of the extremely slender stem and leaves. It is known from the Refuge only from Lake Bee. It was collected on the east side of Lake Bee in 1977 by Tom Daggy. It was photographed at Lake Bee by Janie Marlow in October 2016. It was growing at the observation platform in a hillside seepage slope, associated with *Coreopsis gladiata*, and this population was vouchered by Strong and Kelloff in 2018.

Specimens: Daggy 8419, UNCC; Strong & Kelloff 5676, US

***Paspalum bifidum* (Pitchfork Paspalum, Pitchfork Crown Grass) SCDNR: S2**

(Figure 27)

This grass is known from much of the South Carolina coastal plain and fall line sandhills. Within the sandhills region, including the refuge, it is primarily associated with bean dips and bean swales. In this study I observed seven colonies. It was collected somewhere in Compartment 15, Stand 9 by Randy Mejeur in 1998, the only specimen seen for the refuge. It was mapped for 2 bean dips by Mary James. One in Compartment 5, between Skipper Creek and RT-2D, was relocated in 2019. This is a floristic interesting bean dip. James had also mapped *Salvia azurea* here, the first and only record of it seen for the refuge, and it was still present in 2019. It was also relocated. *Phaseolus sinuatus* (see account below), was also mapped by James and found to be frequent in 2019. Mary James also maps it for a bean dip in Compartment 18, but I did not survey her precise locality. I did locate new colonies in Compartment 15, in two nearby bean dips, both along the north side of Old Wire Road. Two new colonies were also found in bean dips in Compartment 17, both associated with *Orbexilum lupinellus*. Two new colonies were also found in Compartment 21. One is in a very large bean dip north of RT-5. The other was not in a bean dip, but instead at the base of a steep east facing hill above the west side of Poplar Branch, in a xeric hardwood forest.

Specimens: Bradley 7590, 9303, 9862, 10107, USCH; Mejeur 28, USCH.

***Phaseolus sinuatus* (Sandhills Bean) SCDNR: SNR**

(Figure 28)

This trailing vine is widespread in the southeastern U.S. but rare throughout its range. In South Carolina it is rare and was added to SCDNRs track species list in 2019. It has been found in 8 counties and collected only about 10 times. John Castrale collected it twice in the refuge in 1977. One of his specimens is without specific locality data, and one is from the Lake Bee area. Maps by Brian van Eerden, Mary James, and Randy Mejeur show six colonies, in Compartments 4 (2 colonies), 8 (three colonies), and 9 (1 colony). I revisited four of their colonies and was able to relocate two of them, both in Compartment 8. Two that could not be found were in the vicinity of Johnson's Rock in Compartment 4, and a colony at the eastern corner of Compartment 9. A new colony was discovered by Will Stuart in 2018 along Wildlife Drive opposite Lake Bee Road. I observed plants to be scattered here in high sand hill. I also found three additional new colonies. One is in Compartment 5, associated with *Paspalum bifidum*. Two others were found in Compartment 15. One of these was in a bean dip, and the other a dry, south facing slope above Long Branch. I observed six colonies in this study.

Specimens: Bradley 8770, 9884, 10110 USCH; Castrale 34, 75 USCH

***Pyxidantha barbulata* (Common pyxie-moss) SCDNR: S2**

(Figure 29)

This is the rarest of the two *Pyxidantha* species at the refuge. Unlike *P. brevifolia*, a species of xeric sand, this species prefers wet habitats, particularly ecotones between pine savannah and pocosins. It has been reported for only a single site along the south side of Rogers Branch. It was vouchered here in 1986, and mapped here by Brian van Eerden around 1995. This area was searched in 2019, but a late season prescribed burn here limited the chance of finding it. The author also made extensive searches along much of the southern edge of Rogers Branch from 2017 to 2019 without encountering it. This locality should be resurveyed.

Specimens: Rayner 2465, USCH

***Pyxidantha brevifolia* (Sandhills Pyxie-moss) SCDNR: S1**

(Figure 30)

This is the more common species of *Pyxidantha* at the refuge. It is widespread there, and occupies higher sand ridges. Populations of this species were carefully mapped by David Robinson. He mapped 24 distinct colonies. These were in Compartments 9, 10, 11, 15, 16, 18, 19, and 20. Because of his efforts, this species was not a priority for mapping in this study. I mapped two colonies in Compartment 15 that did not fall within Robinson's polygons, but were close to one of them. Visits were made to many of his locations. All that were visited were relocated, but in those that had not burned recently, and especially those burned infrequently, had very low population densities because of a heavy accumulation of pine needles. Examples included Compartment 16 along Scotch Road, and compartments 19 and 20 in the southwestern portion of the refuge.

Specimens: Nelson with Bradley & Stuart 38006, USCH

***Rhynchospora leptocarpa* (Slender-Fruit Beaksedge) SCDNR: S1**

(Figure 31)

Of the rare beaksedges in the refuge, this species was encountered the most frequently. Its occurrence in the refuge was documented by McMillan et al. (2002), citing a specimen that Robert Kral collected along S.C. 145 in 1994 (with ambiguous locality data). This species likes a variety of shaded to partly shaded seepage habitats. In 2002 Randy Mejeur collected it at Pool D in Compartment 21. I did not visit this location. I did document it in six new locations, in compartments 4, 5, 6, 9, 10, and 11.

Specimens: Bradley 7560, USCH; Kral 83865, BRIT; Mejeur 337, USCH

***Rhynchospora macra* (Southern white beaksedge) SCDNR: S1**

(Figure 32)

This sedge is known in South Carolina only from Chesterfield, Kershaw, Lexington, and Richland counties in the fall line sandhills. In Chesterfield County it has only been found on the refuge. It was first collected there by Brian van Eerden at Oxpen seep in 1995, without noting abundance. I did not see this species there in searches from 2017-2019, and it was not collected by experts in this genus who studied Oxpen in detail in the 1990, particularly Patrick McMillan, Edwin Bridges, and Steve Orzell. It may no longer occur there. McMillan also collected it at Lake Bee in 2005. I could not relocate it and it may be lost there. There are currently no known populations in the refuge.

Specimens: McMillan 9001, CLEMS (specimen lost?); van Eerden s.n., (8/25/1995), USCH

***Rhynchospora oligantha* (Feather-bristled Beaksedge) SCDNR: S2**

(Figure 33)

This beaksedge was first reported for the refuge, and South Carolina, by Nelson (1989). He collected specimens at Oxpen seep in 1985. It has since been found in several other counties in the outer coastal plain. Oxpen is the only location within the refuge where it has been found, and other botanists collected it there in 1993 and 1996. In 2019 I found it to be locally abundant there.

Specimens: Bradley 10143, USCH; Nelson 4024, USCH

***Rhynchospora pallida* (Pale Beaksedge) SCDNR: S1**

(Figure 34)

This beaksedge is extremely rare in South Carolina. It has been found in Chesterfield and Richland counties (McMillan 2007), and recently in Horry County. In Chesterfield County it has only been found in the refuge in two localities along Roger's Branch. These were both collected in 1981 by Doug Rayner. One of his locations was on the south side of Rogers Branch, just east of S.C. 145. It was in association with *Kalmia cuneata* and *Sarracenia* spp. The other site was also along the south side of Rogers Branch, at its intersection with the Black Creek floodplain, just east of RT-3. This latter site was also included on topographic maps by Brian van Eerden, so it was probably observed there around 1995. I searched both of these stations multiple times, and also searched along pocosin edges nearby. I could not relocate either station. These edges had not been burned recently, but were burned in early 2019. Surveys in 2020 could reveal that the species persists there. Reports of *R. alba* from the Refuge are actually this species, and have been included under that name in the SCDNR database (McMillan 2007).

Specimens: Rayner s.n., 1270, USCH

***Rhynchospora scirpoides* (Long-beak Beaksedge) SCDNR: S1**

(Figure 35)

This annual sedge typically occupies drawdown zones of lakes and ponds, and can become more abundant during drought years (McMillan 2007). It was collected at the refuge in 1979 by Tom Daggy at Lake 12. It was collected by Robert Kral at Lake Bee in 1994, a population I observed in 2019. Randy Mejeur collected it in 1997 at Lake 16, where I observed it in 2015 and 2019. It was found at Pool G in 2011 by John Nelson. In 2017 I also recorded it at Mays Lake. It is to be expected at other lakes within the refuge.

Specimens: Bradley 3638, 7617, 10128 USCH

***Rhynchospora stenophylla* (Coastal Bog Beaksedge) SCDNR: S2**

(Figure 36)

This beaksedge is an indicator of high quality seepage slopes McMillan (2007), in South Carolina found along the fall line sandhills and in the outer coastal plain. It was collected at the refuge in 1995 by Brian van Eerden at Ham Creek. It was found at Oxpen seep in 1993 by Bert Pittman, and in 1996 by McMillan. Maps by van Eerden and his SCDNR records show he also found it in at Lake Bee, in Compartment 18 (just east of Wildlife Drive at a seepage in the gas line right-of-way), and Compartment 9 along Clay Ford Branch. I observed it at Oxpen seep and at the Compartment 18 station. I could not relocate it in Compartment 9, Lake Bee, or Ham Creek. I encountered new populations on the north edge of Mays Lake (Compartment 15), and what appears to be this species in Compartment 16. This latter site, at the headwaters of an impoundment along Pond Branch on the refuge property line, was unusual. The habitat was not typical for the species, where it was growing in extremely dense tussocks in shallow water, on slightly elevated mounds. The morphology of the plants was also unusual. While it keys to *R. stenophylla*, having transversely ridged achenes, filiform leaves, and bristles longer than the achene body, the spikelet clusters are unusually dense, and the achenes have an atypical shape. I have tentatively called this population *R. stenophylla*, but my specimens need further study.

Specimens: Bradley 8489, USCH; van Eerden 1492, USCH

***Ruellia ciliosa* (Sandhills Wild-petunia) SCDNR: S1**

(Figure 37)

This small wildflower was listed for the refuge but no specific locality data has been found. In 2019 it was found by the author and John Nelson on the west side of S.C. 145 in Compartment 10, in a bean swale in association with *Astragalus michauxii* and *Orbexilum lupinellus*. It may be found in other bean dips and swales in the refuge. It has only been collected a few times in South Carolina and overall is very rare in the state. Valid specimens have been seen from Cheraw State Park in 1989, Darlington County in 1941, and a few older specimens are cited by Fernald (1945), including one from Sumter County.

Specimens: Nelson with Bradley 40704 (USCH)

***Sagittaria isoetiformis* (Quillwort arrowhead) SCDNR: S3**

(Figure 38)

This small aquatic was found in Compartment in 16 in 2019. It is a new record for the refuge and for Chesterfield County. The small colony occurred in the gas right-of-way at a tributary of Pond

Branch, between RT-17B and Alexander Road, just west of Scotch Road and the refuge boundary. These plants were in moist sand and shallow water along the small creek in full sun.
Specimens: Bradley 9676, USCH

***Sarracenia flava* (Yellow Pitcherplant, Trumpets) SCDNR: S3S4**

(Figure 39)

This is the most conspicuous pitcher plant in the refuge. It is abundant at Oxpen seep, where at least hundreds of stems are visible across the hillside, from the top of the slope and all the way to the lake shore. Populations also occur on several impoundment edges and heads, including Triple Lakes, Lake Bee, Martin Lake, and Lake 16. It should also be noted that David Robinson's maps show 23 separate polygons for pitcher plants with no indication of species. These are in Compartments 5, 6, 7, and 21. I visited a number of these without success, but did not attempt to locate most of them.

Specimens: Orzell & Bridges 24730, FLAS

***Sarracenia minor* (Hooded pitcher plant) SCDNR: S3S4**

(Figure 40)

This is the rarest pitcher plant in the refuge, recorded only from Lake Bee. It was noted on the label data for a specimen of *Eriocaulon texense* by Patrick McMillan in 1997. A specimen was collected by Mejeur on the edge of Lake Bee in 1998. I did not see the species there, nor have I seen additional reports.

Specimens: Mejeur 478, USCH

***Sarracenia purpurea* var. *venosa* (Southern Purple Pitcherplant) SCDNR: S3S4**

(Figure 41)

This species was first documented in the refuge in 1949 by Tom Daggy. While it has been found at a number of locations in the refuge, populations tend to be very small, and many have declined or disappeared. There are herbarium specimens from Lake Bee, Oxpen seep, and the vicinity of Lake 16. David Robinson maps this species with certainty at Oxpen seep, Lake Bee (on the west shore instead of the east), two places on Martin Lake, Compartment 4 at Pool L, the south edge of Mays Lake, Compartment 8 south of Rogers Branch along the edge of the Black Creek floodplain, and the Pond Branch impoundment in Compartment 16. Maps by van Eerden et al. show additional populations along the south edge of Rogers Branch (associated with *Kalmia cuneata*), the south edge of Ham Creek, and a seep in the gas right-of-way just east of Wildlife Drive. I observed the species at only three locations: Oxpen seep, Lake Bee (east side), and the south edge of Roger's Branch. I could not find plants on the west side of Lake Bee, Compartment 8 south of Rogers Branch along the edge of the Black Creek floodplain, Pond Branch impoundment in Compartment 16, the two reported colonies along Ham Creek, or along the south edge of Martin Lake. These populations appear to have been lost due to lack of frequent fires on pocosin edges. I did not survey the correct part of Lake 16 or Martin Lake, or Pool L. In 1996 and 2007 Larry Mellichamp observed that one of the plants at Lake Bee had yellow petals instead of the typical bright red.

Specimens: Bradley 9928, USCH

***Sarracenia rubra* (Sweet Pitcherplant, Redflower Pitcherplant) SCDNR: S3S4**

(Figure 42)

This pitcher plant species has been reported at more locations in the refuge than any of the other species. It has apparently declined greatly due to a lack of frequent fires along pocosin edges. Stations were mapped by David Robinson, van Eerden, and others. Reported stations include Compartments 1 (Rattlesnake Branch), Compartment 4 (Pool L), Compartment 6 (Oxpen seep and vicinity), Compartment 8 (Roger's Branch and edge of Black Creek floodplain), Compartment 10 (Lake Bee, both east and west edges), Compartment 14 (Martin Lake, north and south shores, and Ham Creek), Compartment 18 (gas line right-of-way), Compartment 19 (South Prong Swift Creek), and Compartment 21 (Pool C). I surveyed, but was not able to relocate, plants in Compartments 1 or 18. Populations were seen on Ham Creek (where rare), Lake Bee (east side), Oxpen seep, and Roger's Branch (2 colonies). I also found two new colonies in the center of Compartment 15, along a Long Branch and a tributary of Long Branch.

Specimens: Bradley 9586 USCH

***Schoenoplectus etuberculatus* (Swamp Bulrush, Canby's Bulrush) SCDNR: SNR**

(Figure 43)

This aquatic sedge is rare across the southeast, where it primarily grows in flowing water of blackwater streams. It is known only from the southern end of the refuge, in Cow Creek, Ham Branch, and Little Alligator Creek, and Black Creek. It was first collected in the refuge in 1973 by Tom Daggy, in "Cow Creek Swamp below dam" presumable on the east side of Wildlife Drive. Populations were later mapped by Brian van Eerden et al. downstream in Ham Creek. In 2017-2019 I observed it at five locations along Ham Branch, from its confluence with Black Creek, upstream about 2.5 km. I also found it at Black Creek and US1, and in Little Alligator Creek west of Pool A. It is probably in many other locations along these waterways, but the dense pocosins which line them make surveys very difficult.

Specimens: Bradley 8472, 9882, USCH

***Schoenoplectus subterminalis* (Water bulrush) SCDNR: SNR**

(Figure 44)

This aquatic sedge was found a single time in the refuge by Brian van Eerden. His specimen was made at Triple Lakes in 1995, without other data. It should be sought along this portion of Ham Creek, but was not seen in surveys in 2018 and 2019.

Specimens: van Eerden s.n. (August 19, 1995), USCH

***Solidago pinetorum* (Pineywoods Goldenrod) SCDNR: SNR?**

(Figure 45)

This wildflower was found in 2019 in xeric sandhill in Compartment 14. The population is along the eastern side of Wildlife Drive adjacent to a small parking area, just southeast of Pool B. It is a new record for the refuge and for Chesterfield County. This species had only been collected about 10 times in South Carolina, in Cherokee, Darlington, Lancaster, Newberry, and York counties, the most recent in 1999. Because of the rarity of this species in the state, SCDNR added it to its tracked species list in 2019.

Specimens: Bradley 10101, USCH

***Solidago pulchra* (Carolina goldenrod) SCDNR: S1**

(Figure 46)

This wildflower was been reported for Oxpen Seep by McMillan et al. (2002). The authors cite a specimen, McMillan 2557 (NCU). This is one of only two reports of the species in South Carolina, which otherwise only occurs in North Carolina where rare. The other report, also by McMillan, is from Horry County. McMillan's specimens have not been found by curators at NCU, CLEMS, or other herbaria and may be lost. The author has not been able to locate this species at Oxpen Seep. A related species was found, *S. gracillima*, but McMillan would not have confused the two. Alan Weakley (personal communication 2019) reports that it may not flower without prescribed fire. Additional searches should be conducted at Oxpen seep following fires. *Specimens*: McMillan 2557 (NCU) – not seen and possibly lost

***Sporobolus brevipilis* (Pinebarren Sandreed) SCDNR: S1⁴**

(Figure 47)

This grass is very rare in South Carolina where it reaches its southern range limit. Only a few populations are known, from Chesterfield, Horry, and Richland counties. It flowers only after burns, like *Sporobolus pinetorum* (treated below) so reproduction and long-term viability is limited to sites which burn frequently. This also makes detection difficult. The species is extremely rare in the refuge where it is limited to Ham Creek and the vicinity of Lake 16. It was first mapped there by Brian van Eerden in 1994. The SCDNR database contains one of his records from the seepage slope on the south side of Ham Creek just east of the gas line right-of-way. However, his maps show an additional colony further west along Ham Creek. In 2019 I relocated both of these populations. Each occurred along moist slopes on the south side of Ham Creek. Two subcolonies were found between the gas line and Old Wire Road, both in the vicinity of *Kalmia cuneata*, and each consisting of only a few sterile clumps. Another colony was found 0.6 km west of the gas line, associated with *S. pinetorum*, and not far from *Kalmia cuneata*. This population also consisted of only a few sterile plants. The colonies along Ham Creek have not burned recently. Mejeur also collected it in 1998 in Compartment 9 in the vicinity of Lake 16, but I did not visit this location. This species was formerly in a different genus, as *Calamovilfa brevipilis*.

Specimens: Bradley 9672, 9812, USCH

***Sporobolus pinetorum* (Carolina Dropseed, Savanna Dropseed) SCDNR: S2**

(Figure 48)

This grass was described as a new species in 1998 (WEAKLEY and Peterson 1998). It ranges only from the coastal plain of North Carolina and into South Carolina in Aiken, Berkeley, Chesterfield, and Kershaw counties, and is disjunct in Georgia. Like *S. brevipilis* it flowers only after fires and will not persist without periodic burns. It is also hard to detect. This species is very rare in the refuge, although more widespread than *S. brevipilis*. Although it had not been named yet, it was known to Brian van Eerden, Mary James, and Randy Mejeur, and was mapped for the refuge on their topographic maps as “*Sporobolus* species 1”. Their maps show populations along Ham Creek, one just north of Mays Lake, and one in Compartment 9. Beet Pittman also collected it in 1995 along the south side of Roger's Branch, in the vicinity of *Kalmia cuneata*, just east of S.C. 145. I visited all of these populations other than that in Compartment 9. I was able to relocate one their stations on Ham Creek and also on the north side of Mays Lake. I could not

⁴ As *Calamovilfa brevipilis*

relocate it along Ham Creek between the gas line right-of way and Old Wire Road (but found their mapped *S. brevipilis*). I was also not able to relocate it along Roger's Branch, despite many searches in 2018 and 2019. I found 4 new populations. One was found in Compartment 10 while surveying with Allyne Askins, southwest of Lake Bee on the north side of Hemp Branch. This population was burned in early 2019 and was starting to flower when last visited in August 2019. One was found in 2019 on the south side of Mays Lake in Compartment 15. This was an especially dense population that had flowered following a burn in 2018. It is 0.4 km SW, across the lake, from a population mapped by van Eerden. Two new colonies were found along Ham Creek. One is 270 m west of a population mapped by van Eerden. The other is on the north side of Ham Creek to the north of the private property along Old Wire Road. A total of six colonies were observed in the refuge.

Specimens: Bradley 6971, 8603, 9564, 9599, USCH; Pittman 07299503, USCH

***Tridens carolinianus* (Carolina Triodia, Carolina Fluffgrass) SCDNR: S1**

(Figure 49)

Like *Paspalum bifidum*, this grass is associated with bean dips in the fall line sandhills. It has only been recorded at one locality in the refuge, in a bean dip along the north side of Old Wire Road in Compartment 18. It was mapped here by Brian van Eerden in 1995. I relocated this colony in 2018. It is the only location I observed in the refuge.

Specimens: Bradley 9301, USCH

***Warea cuneifolia* (Carolina Warea, Carolina Pineland-cress) SNR: S1**

(no map)

Only one record of this wildflower has been seen from the refuge. It was collected in a game field along Wildlife Drive in 1998 by Randy Mejeur. This species has only been found a couple of other times in Chesterfield County, and is more frequent southward in the state.

Specimens: Mejeur 342, USCH

***Xyris chapmanii* (Chapman's Yellow-eyed Grass) SCDNR: S1**

(Figure 50)

This species was named in 1990, and only more recently has been confirmed to be a member of the flora of the Carolinas. In South Carolina it is very rare, known from Chesterfield, Lexington, and Richland counties. It was documented in the refuge by McMillan et al. (2002), citing specimens from Oxpen seep collected in 1993 and 1996. It was also collected at Lake Bee by Patrick McMillan in 1997. These are the only two confirmed locations in the refuge, and I observed them in 2019. The topographic maps by Brian van Eerden show another location in Compartment 9 along Clay Ford Branch. I visited this location in 2019 and did not find this species, or suitable habitat. It is possible that habitat conditions have changed here, but it seems most likely that another *Xyris* species was seen here. Members of this genus are very difficult to identify.

Specimens: Bradley 10075, USCH

***Xyris scabrifolia* (Roughleaf Yellow-eyed Grass) SCDNR: S1**

(Figure 51)

This species was documented in the refuge by McMillan et al. (2002), citing specimens from Oxpen seep and Lake Bee collected in 1993, 1996, and 1997. These are the only locations where

it has been found in South Carolina. I did not observe this species in the refuge, but it is very similar to other *Xyris* species and I probably overlooked it, at least at Oxpen seep. I did not find matching plants at Lake Bee and it may no longer occur there.

Specimens: McMillan 1562, 1996, 2530b, NCU, USCH

Rejected Rare Species

Several rare species have been reported to occur in the refuge, but for which documentation could not be found. They have been rejected here as unlikely to occur in the refuge because they are either out of range, occur in habitats not on refuge, or because specimens have been misidentified. These include *Eutrochium fistulosum*, *Hudsonia ericoides*, *Lachnocaulon minus*, *Lobelia boykinii*, *Quercus georgiana*, *Rhynchospora alba*, *Xyris brevifolia*, and *X. elliottii*.

DISCUSSION

The Carolina Sandhills National Wildlife Refuge has more rare plant species than any of 11 other refuges in South Carolina and coastal Georgia (Bradley 2019). No Federally listed endangered or threatened plant species were found. One federal at-risk species was documented, and records of another at-risk species are included, but the species was not found. The size of the refuge and variety of habitats makes it an fascinating but challenging study area. It is impossible to cover exhaustively, and new species were being recorded for the refuge through the last field day of the project. The flora of exotic plant species is ever changing, and new species are relatively easy to encounter by searching game fields, roadsides, and other disturbed habitats. Of more interest, new native species for the flora are most likely to be encountered in microhabitats habitats such as bean dips, along seepage edges and streamheads, or in the floodplains of Black Creek and Lynches River. The two tracts where the refuge fronts Lynches River, in Compartment 20, was a source for dozens of new species for the flora, from native trees to sedges, and for exotic plant species. For example, a sand berm adjacent to the river has the largest Florida maple (*Acer floridanum*) I have seen in the state, and under it was a growth of painted buckeye, both common native hardwoods but that were new to the refuge.

Overall, the refuge is being managed extremely well, as indicated by the diversity of rare plant species and overall floristic diversity. Below I offer recommendations to improve management of rare plant populations based on observations made during my surveys.

The refuge has a long history of prescribed burning and this has supported the diversity of rare plants and overall species richness there. A large focus has been burning of xeric sandhill dominated by longleaf pine. Burning should also be encouraged along seepage slopes and pocosin edges. Several former hotbeds of rare plant diversity have declined because of a lack of fires, such as along Ham Creek and Rogers Branch. It is easy to write that these habitats should be burned, but it is much harder to put into practice. Nonetheless, a large suite of rare plant species depends on regular fires and have declined. The federal at-risk *Lilium pyrophilum* is dependent on regular fires. While it has only been recorded at Oxpen seep, other streamheads and slopes could support the species if burned regularly. Pitcher plants (*Sarracenia* spp.) as a whole have declined dramatically. Many of the populations mapped by David Robinson could not be relocated. *Kalmia cuneata*, one of the rarest shrubs in the southeast, was mapped across a wide area of Rogers Branch, but I could only locate a single plant there. While not currently in

practice at the refuge, mechanical clearing of hardwoods should be considered to restore seepage slopes and rare plant populations, such as along Ham Creek.

Lake Bee formerly had a much higher diversity of rare species than it does currently. The importance of Lake Bee, and the nearby Oxpen seep, were documented by McMillan et al. (2002). The seepage slope along the east edge of the lake supports a number of rare plant species, including some known only from this single location in the Refuge. One, *Eriocaulon texense*, may be known from only 1 or 2 other places in the state. Other species have apparently been lost, including *Rhynchospora macra*, *R. oligantha*, *R. stenophylla*, *Sarracenia minor*, and *X. scabrifolia*. There has been a decline in the habitat quality here for several reasons. One is the drop in lake level associated with hazards to S.C. 145 and the dam. Some seepage habitat on the western shore seems to have been lost, where there were formerly pitcher plant colonies. The biggest problem now is an abundant growth of Atlantic white-cedar saplings in the seep on the eastern shore. These form an extremely dense, almost impenetrable growth, completely shading the herbaceous layer. Their density is probably also creating a drier habitat because of evapotranspiration. The refuge has opened gaps in the seepage slope and in these gaps some rare plant species persist or thrive, including *Coreopsis gladiata*, *Eriocaulon texense*, and *Oxypolis ternata*. This work should continue and Atlantic white cedar and other hardwoods be thinned as much as possible.

Two other seepage slopes are of critical importance to rare plants in the refuge: Oxpen seep, on the north side of Oxpen Lake, and the south side of Ham Creek, west of Old Wire Road. Each of these seeps contain a diverse assemblage of rare plant species, and also high native diversity. The rare plant flora of Oxpen seep, in part an artifact of land clearing, was highlighted by McMillan et al. (2002). This site is burned every two years and is an outstanding example of this ecosystem. As discussed above, Ham Creek has burned only rarely because the dense pocosin vegetation along Ham Creek makes conducting a prescribed fire very difficult. The diversity of rare species here is persisting despite a lack of fire, and includes the only sizable population of *Kalmia cuneata* known in the refuge. The wettest portion of this slope, and the most diverse, is in the gas line right-of-way that is kept free of hardwoods by the utility company. The difference in soil moisture in this easement is conspicuous, compared to the uncleared sloped adjacent to it. Off of the easement there is a dense subcanopy of understory native hardwoods and sparse to dense tree canopy. The hardwoods density here is likely causing drier soil conditions because of higher evapotranspiration, compared to the shrubless and treeless gas line. Reducing hardwood cover here by regular burning, or via mechanical removal, should result in much wetter conditions along the seepage slope and enhance habitat for rare species and increase species richness.

Pine canopy thinning in longleaf pine sandhill habitats has been used by the refuge as an effective restoration technique. It is recommended that when planning logging operations that rare plant maps are consulted to ensure that logging decks are not places within documented rare plant populations or rare plant habitats such as bean dips. For example, a population of *Orbexilum lupinellum* in a bean dip in Compartment 15 was the site of a logging deck and reduced in size. This population was unknown to the refuge because they were not in possession of data from the 1990s, only made available to me in 2019 and compiled for this study. Long-

term, canopy thinning is beneficial to all rare plant species in sandhill habitats, but minimizing disturbance to rare plant populations as much as possible is desirable.

The refuge is fortunate to have only relatively minor problems with invasive pest plant species. Of the 139 exotic plant species in the refuge, 23 are listed by the South Carolina Exotic Pest Plant Council, but few of these are currently problematic there. Most of the invasive species of the region are not adapted to the xeric sandhills covering most of the refuge, and this habitat is largely free of exotic species. Regular prescribed burns in this ecosystem further keep invasive plant problems to a minimum. Bottomlands and streamside swamp forests along Black Creek and Lynches River have the most problematic invasive species. Black Creek has colonies of *Ligustrum sinense*. While it is currently not common there, the population could spread and become abundant over time. It should be a priority for control. *Microstegium vimineum* is abundant in bottomlands along Lynches River, but it is most likely not practical to treat. *Eragrostis curvula* is a conspicuous grass of roadsides, game fields, and other disturbed areas. It was not observed to be a successful invader of burned, undisturbed sandhill habitat. It posed a potential threat to a small colony of the rare *Orbexilum lupinellus* in Compartment 21, where it grew along the edges of a small road which crossed a bean dip, very close to the rare plant population.

Caution should be exercised in use of wildflower seed mixes in game fields and other sites. Several exotic species are becoming established on the refuge due to seeding of these wildflower mixes into game fields and roadsides. The herb *Oenothera sinuosa*, native further west in the U.S. has become well established around the Oxpen lakes after a wildflower mix was spread there. It had otherwise been found sporadically in the state. The game field along Wildlife Drive at Wire Road has populations of *Monarda citriodora* and *Coreopsis basalis*. And the game field at the intersection of RT-9 and RT-4 in 2017 had a colony of *Bouteloua curtipendula*.

Rare plant reintroductions should be considered where populations are thought to have been lost. For example, *Sarracenia minor* was historically known from Lake Bee. Following habitat restoration there, including thinning of Atlantic white cedar, the species could be reintroduced if it does not reappear naturally. The federal at-risk *Lilium pyrophilum* should be prioritized for continued surveys at Oxpen seep. If it is not detected a reintroduction should be considered.

ACKNOWLEDGMENTS

I thank M. Forbes Boyle and the USFWS for the opportunity to do this project. This project was funded through the U.S. Fish and Wildlife Service Region 4, Inventory and Monitoring Branch. In particular Refuge manager Allyne Askins has been a gracious host and always willing to share her knowledge of the refuge. Dr. John Nelson accompanied me on many field days, and his botanical expertise has been invaluable. Photographer and naturalist Will Stuart kindly shared his observations of rare plants and led me to many new populations. Bruce Sorrie provided botanical advice throughout the project and reviewed the draft floristic inventory. The 1990s team of Mary James, Randy Mejeur, and Brian van Eerden were kind enough to offer memories, old data and maps, and specimens. Emily Anderson, forestry intern, helped with field surveys. I also thank Kathy Boyle, Herrick Brown, David Campbell, Dixie Damrel, Chick Gaddy, Nancy Jordan, Charity Lake, Joe Lemeris, Dr. James Matthews, Carol Ann McCormick, Patrick McMillan, Bert

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LITERATURE CITED

- Bolin, J. F., Hartwig, C. L., Schafran, P., & Komarnytsky, S. (2018). Application of DNA Flow Cytometry to Aid Species Delimitation in *Isoetes*. *Castanea* 83(1): 38-47.
- Bradley, K.A. (2019). Floristic Inventories of National Wildlife Refuges within the South Carolina Lowcountry and Savannah Complexes. Report submitted to the U.S. Fish & Wildlife Service, Southeast Region Inventory and Monitoring Branch.
- Brunton, D. F., D. M. Britton, and C. Taylor. (1994). *Isoetes hyemalis* sp. nov. (Isoetaceae): A New Quillwort from the Southeastern United States. *Castanea* 59(1): 12-21.
- Fernald, M. L. (1945). *Ruellia* in the eastern United States. *Contributions from the Gray Herbarium of Harvard University* 153:1-38.
- Gaddy, L. L. (2011). A new species of *Hexastylis* (Aristolochiaceae) from the Sandhills of North and South Carolina. *Phytoneuron* 47: 1-5.
- James, M. M. (2000). Legumes in loamy soil communities of the Carolina sandhills: their natural distributions and performance of seeds and seedlings along complex ecological gradients. Master's Thesis, University of North Carolina at Chapel Hill.
- Jenkins, R. A., & McMillan, P. C. (2005). Noteworthy Collections from South Carolina. *Castanea* 70: 76-77.
- McMillan, P. D. (2007). *Rhynchospora* (Cyperaceae) of South Carolina and the eastern United States (Vol. 5). Clemson University Public Service Publishing.
- McMillan, P. D., Peet, R. K., Porcher, R. D., & Sorrie, B. A. (2002). Noteworthy botanical collections from the fire-maintained pineland and wetland communities of the coastal plain of the Carolinas and Georgia. *Castanea* 67(1): 61-83.
- Mejeur, R. S., B. van Eerden, M. M. James, J. Walker. (2000). Vascular flora of the Carolina Sandhills National Wildlife Refuge, Chesterfield County, South Carolina. Unpublished.
- Nelson, J. B. (1989). Noteworthy collections: South Carolina. *Castanea* 54:50-53.
- Schafale, M. P. (2012). Guide to the natural communities of North Carolina, fourth approximation. North Carolina Natural Heritage Program, Department of Cultural Resources, Raleigh, NC.
- Skinner, M. W., & Sorrie, B. A. (2002). Conservation and Ecology of *Lilium pyrophilum*, a New Species of Liliaceae from the Sandhills Region of the Carolinas and Virginia, U.S.A. *Novon* 12(1): 94-105
- Sorrie, B. A. (1997). Notes on *Lycopus cokeri* (Lamiaceae). *Castanea*, 119-126.
- Southall, R. M., & Hardin, J. W. (1974). A Taxonomic Revision of *Kalmia* (Ericaceae). *Journal of the Elisha Mitchell Scientific Society*. North Carolina Academy of Sciences, Inc. <https://doi.org/10.2307/24334622>
- Thiers, B. [continuously updated]. Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/science/ih/>.
- Turner, B. L. (2008). Revision of the genus *Orbexilum* (Fabaceae: Psoraleeae). *Lundellia* 11: 1-7.
- USFWS. (2014). Habitat Management Plan for Carolina Sandhills National Wildlife Refuge. U.S. Department of the Interior, Fish and Wildlife Service, Southeast Region.

- USNVC. (2017). United States National Vegetation Classification Database, V2.01. Federal Geographic Data Committee, Vegetation Subcommittee, Washington DC. [usnvc.org]
- Weakley, A. S. (2015). Flora of the Southern and Mid-Atlantic states. Working draft of 2015. University of North Carolina Herbarium (NCU), Chapel Hill, USA. 1320 pp.
- Weakley, A. S., & Peterson, P. M. (1998). Taxonomy of the *Sporobolus floridanus* complex (Poaceae: Sporobolinae). SIDA, Contributions to Botany, 18(1), 247–270.

DATA APPENDIX OR SUPPLEMENTAL INFORMATION

An excel file (CSNWROccurrenceData.xlsx) provides point data. An excel file of all plant species is provided (CSNWRflora.xlsx). USDA taxon codes are provided (“USDA”). The “Occurrence” field includes a categorization of the validity of each taxon record (P=Present, H=Historical, i.e a reliable record but not seen recently, D = Doubtful, F = False). The “Nativity” field includes a categorization of native status. N = Native to the Refuge, E = Exotic, and C = Exotics in cultivation. “SCDNR” represent classification of conservation status by state heritage programs. “SCEPPC” represent classifications by the South Carolina Exotic Pest Plant Council of invasive status of exotic plant species.



U.S. Fish and Wildlife Service

Southeast Region Inventory and Monitoring Branch

I&M Branch RFP Final Report

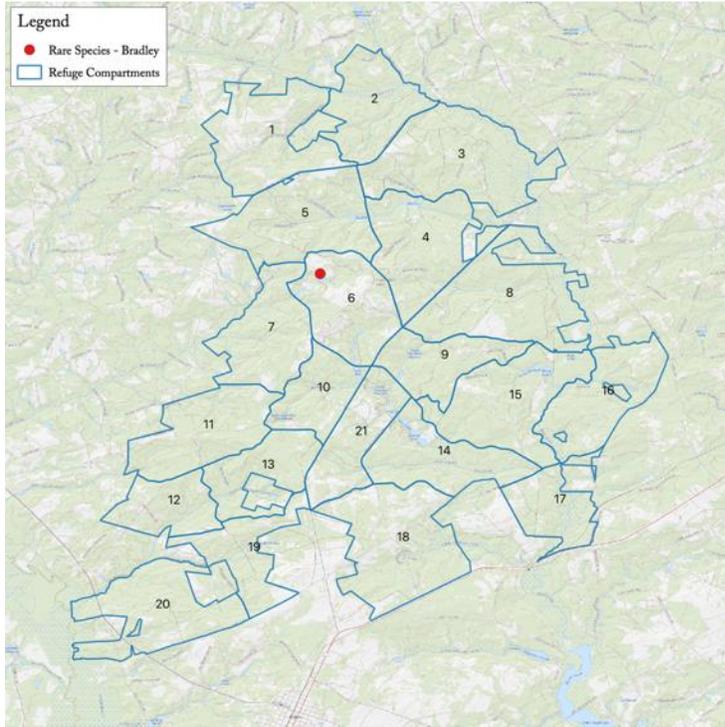


Figure 2: *Andropogon mohrii* (Tawny bluestem)

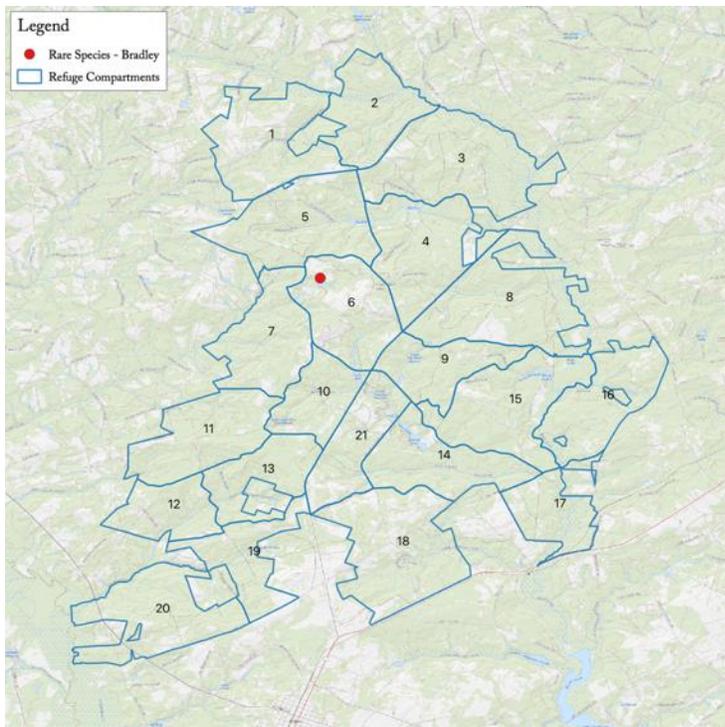


Figure 3: *Andropogon perangustatus* (Narrow-leaved bluestem)

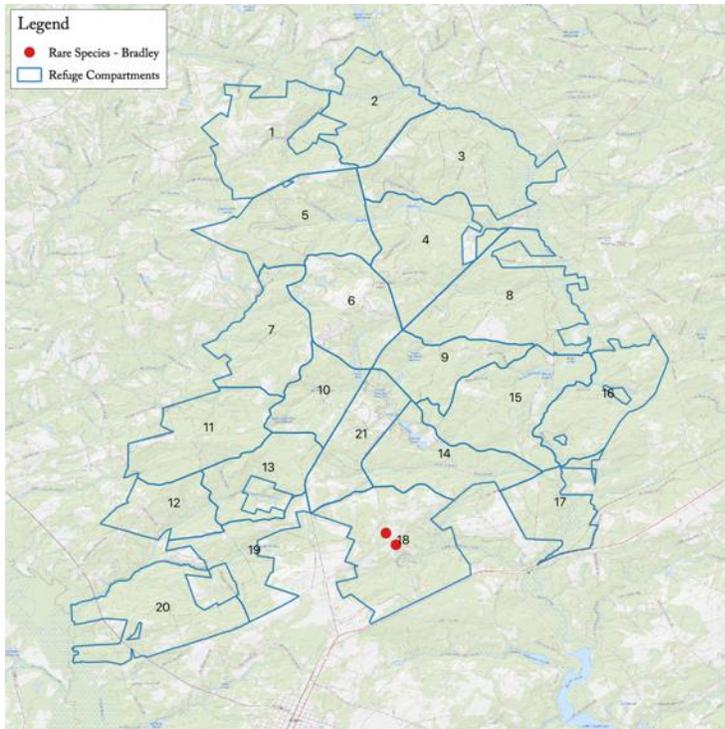


Figure 4: *Aristida mohrii* (Mohr's three-awn)

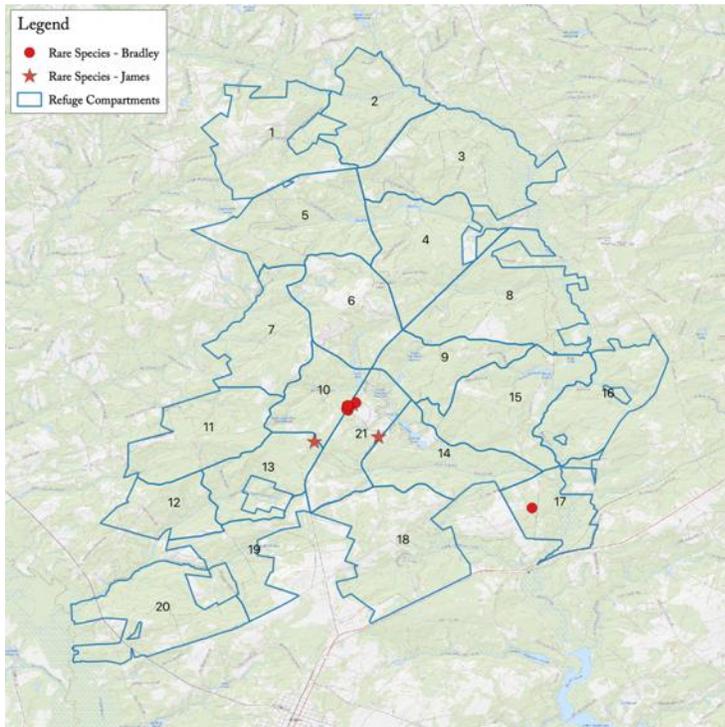


Figure 5: *Astragalus michauxii* (Sandhills Milkvetch)

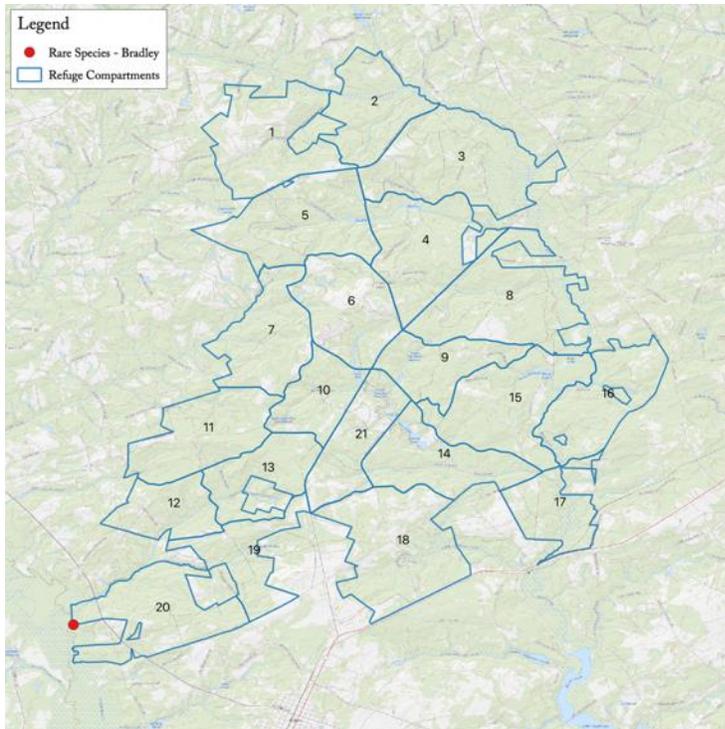


Figure 6: *Carex cherokeensis* (Cherokee sedge)

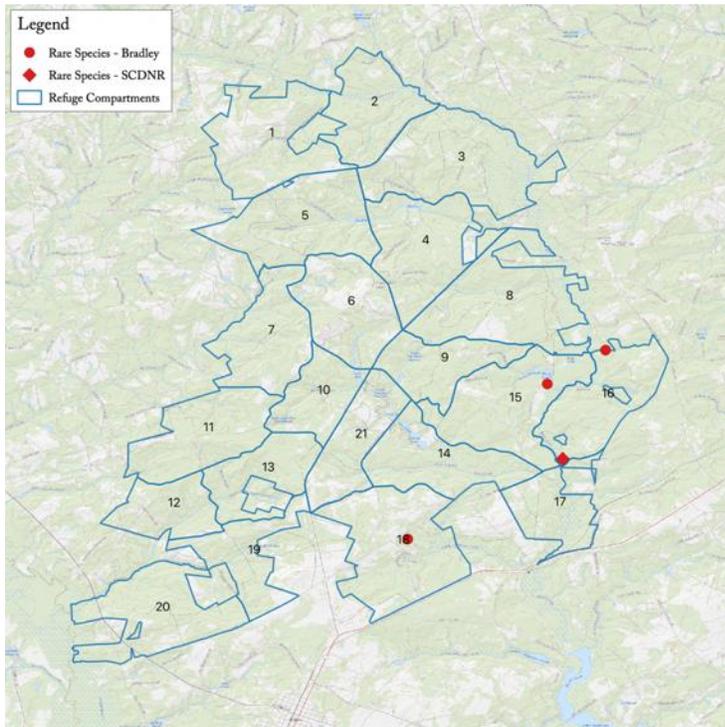


Figure 7: *Carex collinsii* (Collins's sedge)

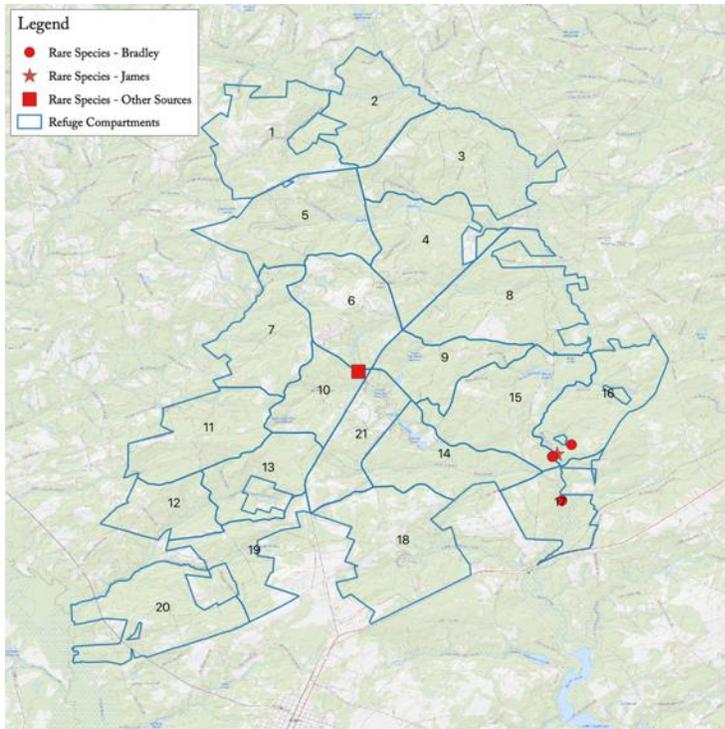


Figure 8: *Carex elliotii* (Elliott's sedge)

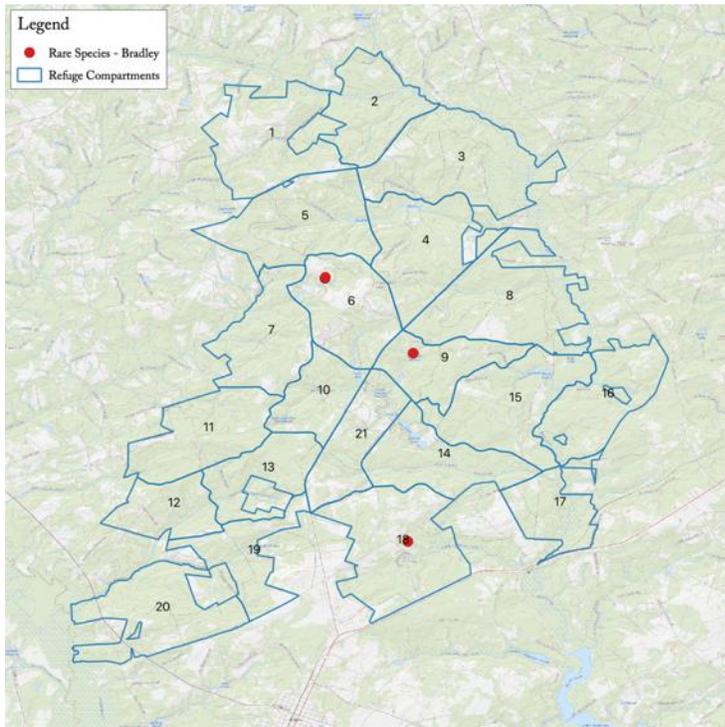


Figure 9: *Carex turgescens* (Pinebarren sedge)

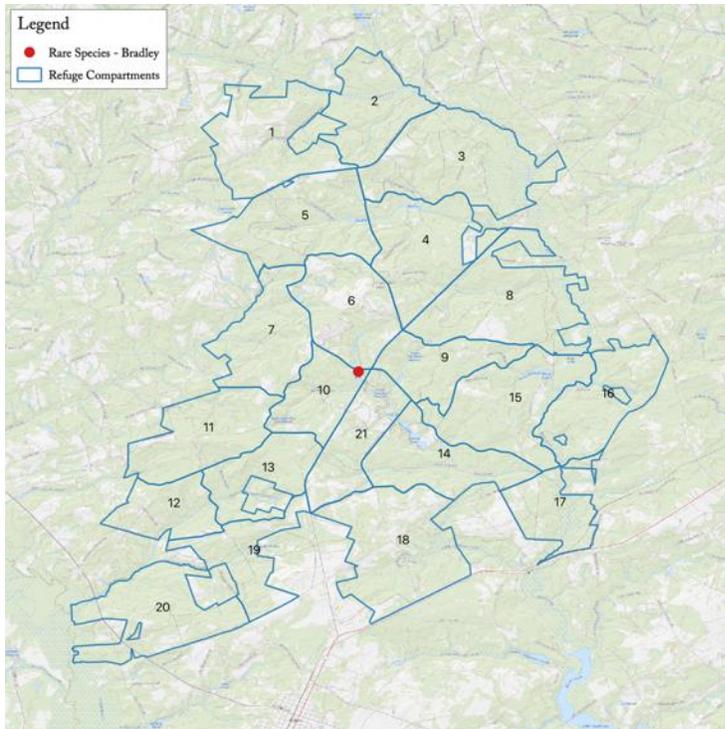


Figure 10: *Coreopsis gladiata* (Swamp coreopsis)

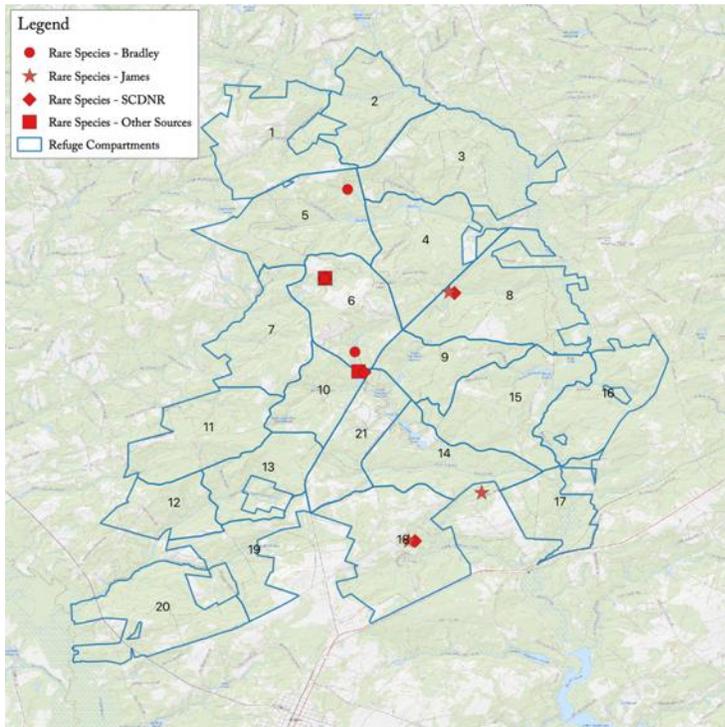


Figure 11: *Danthonia epilis* (Bog oat-grass)

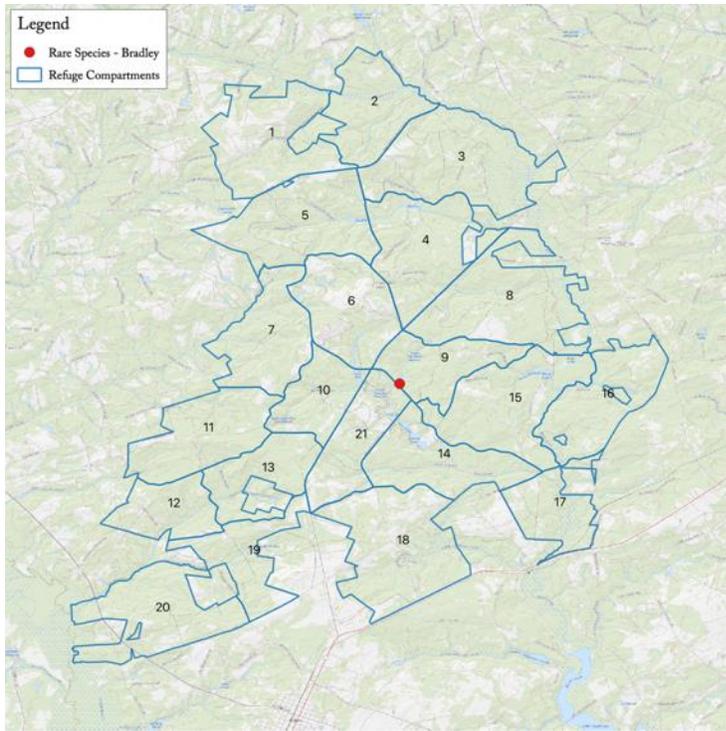


Figure 12: *Eleocharis robbinsii* (Robbins's Spikerush)

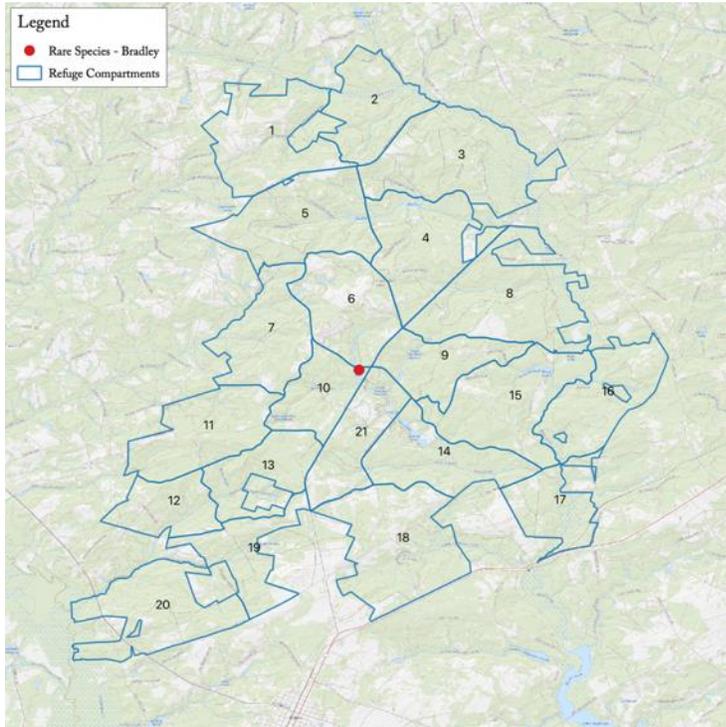


Figure 13: *Eriocaulon texense* (Texas hatpins)

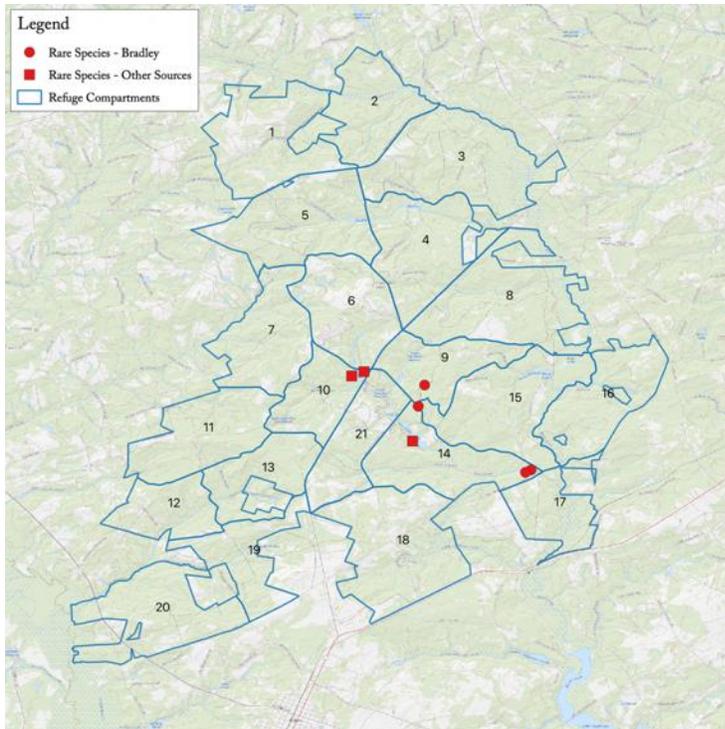


Figure 14: *Gentiana autumnalis* (Pinebarren gentian)

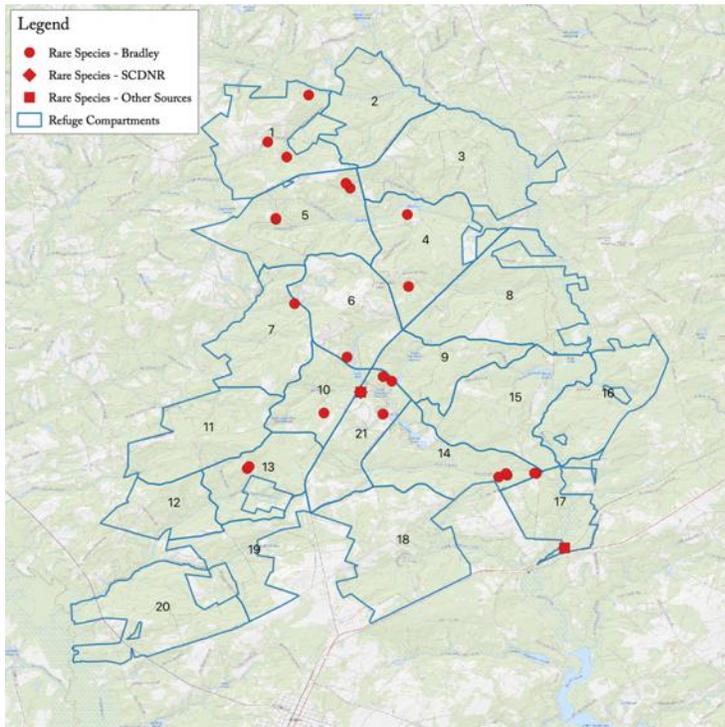


Figure 15: *Hexastylis sorriei* (Sandhill heartleaf)

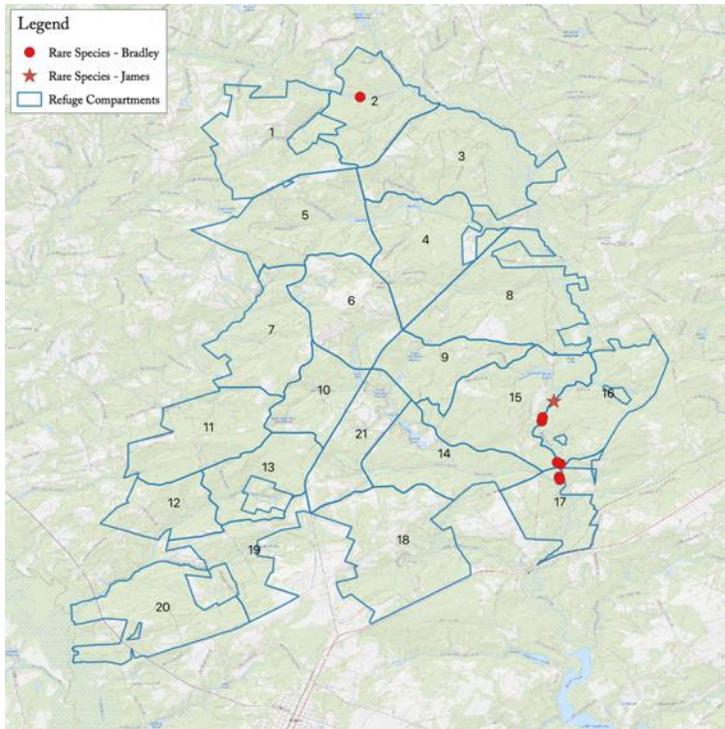


Figure 16: *Isoetes hyemalis* (Wintergreen quillwort)

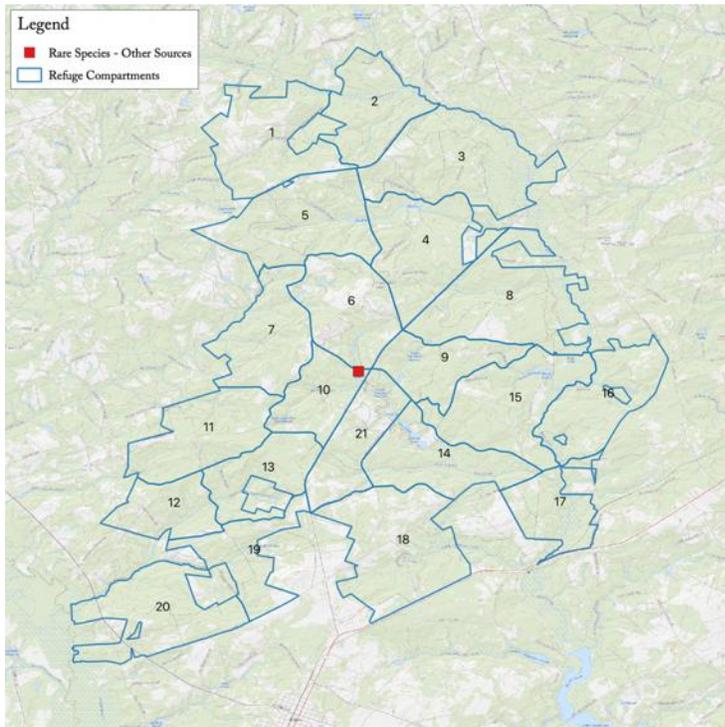


Figure 17: *Juncus pelocarpus* (Brown-fruited rush)

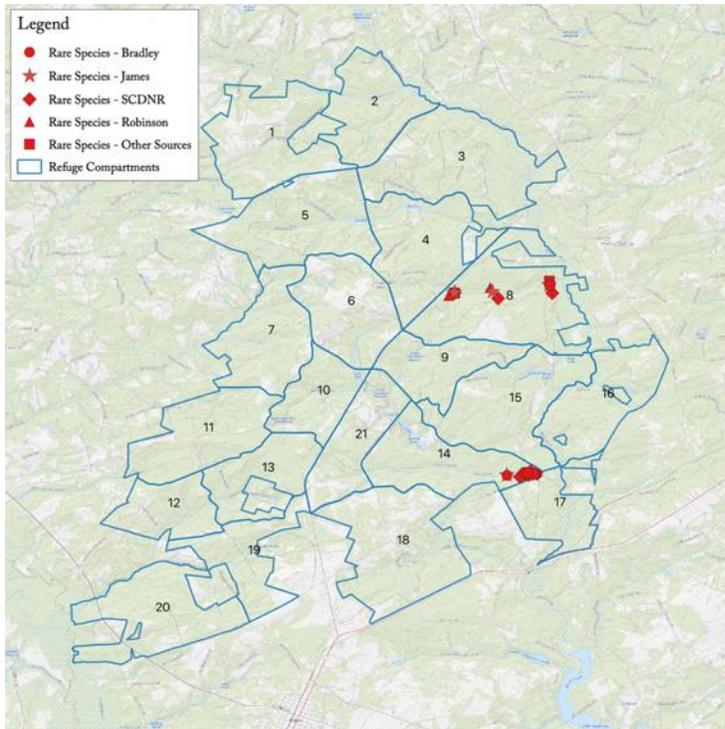


Figure 18: *Kalmia cuneata* (White wicky)

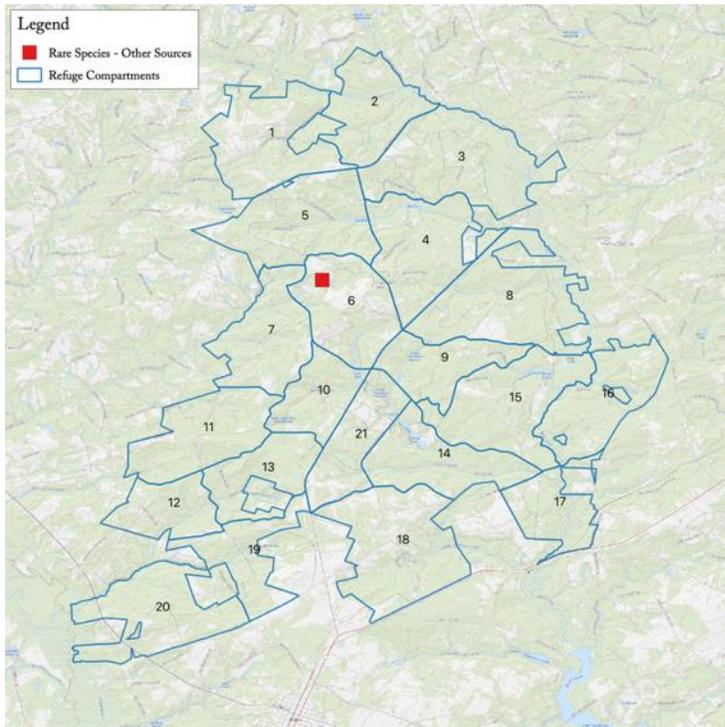


Figure 19: *Lilium pyrophilum* (Sandhills bog lily)

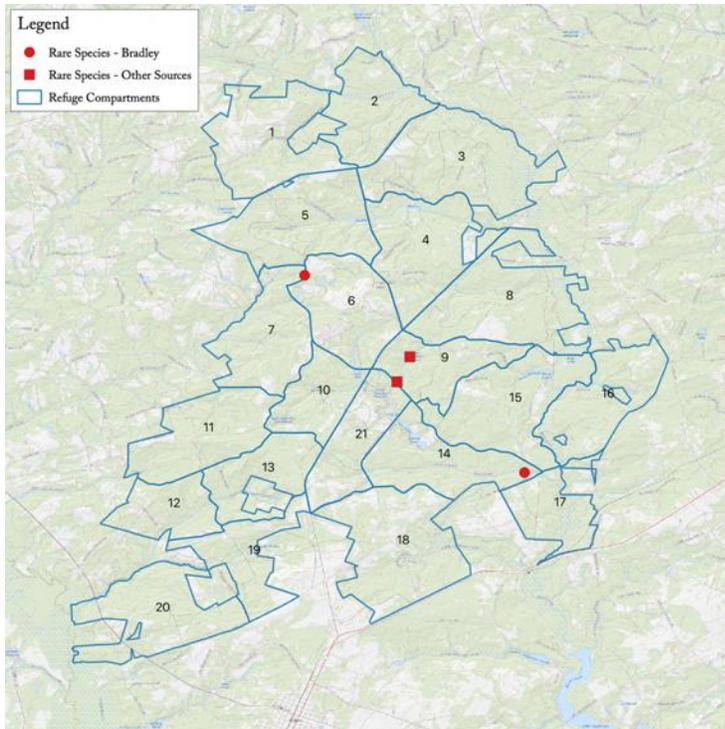


Figure 20: *Lobelia species 1* (Batson's lobelia)

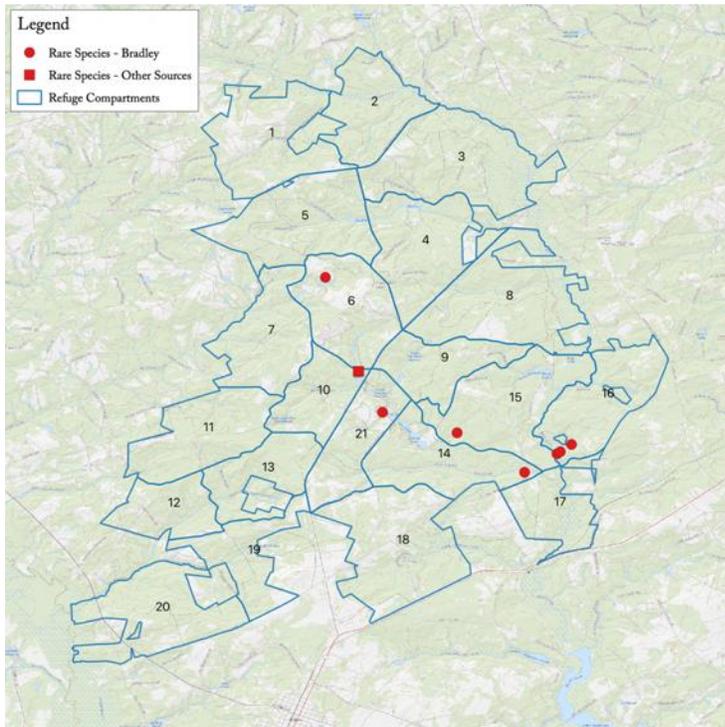


Figure 21: *Lycopus cokeri* (Coker's bugleweed)

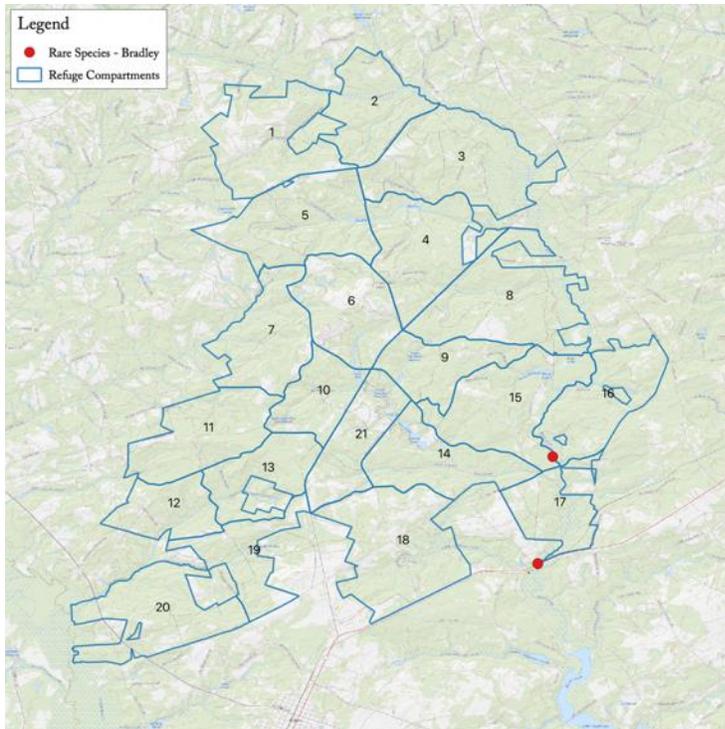


Figure 22: *Lysimachia terrestris* (Bog loosestrife)

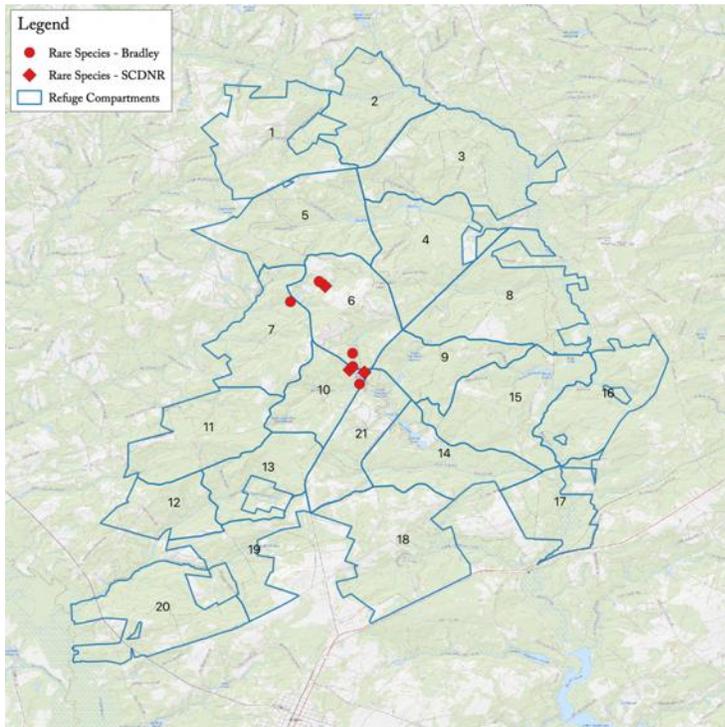


Figure 23: *Myriophyllum laxum* (Loose water-milfoil)

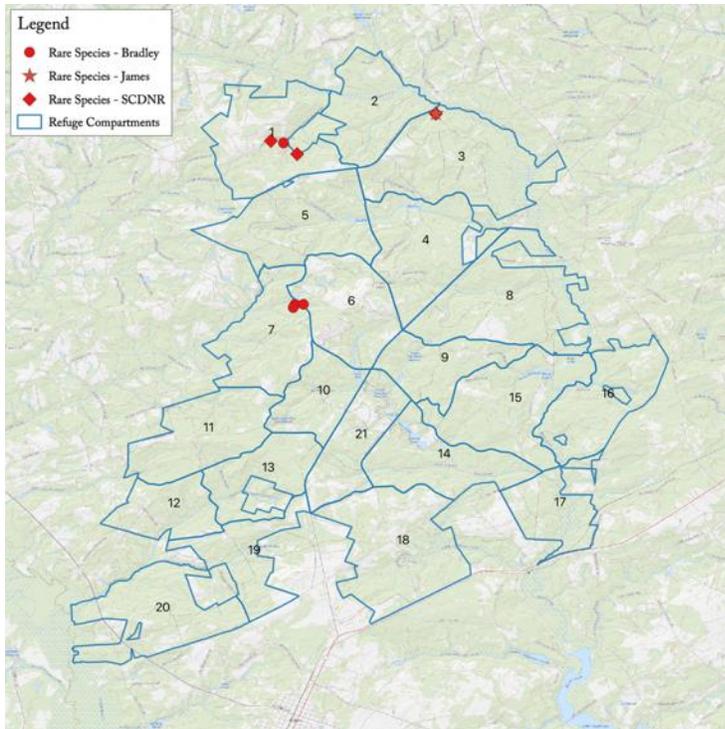


Figure 24: *Nestronia umbellula* (*Nestronia*)

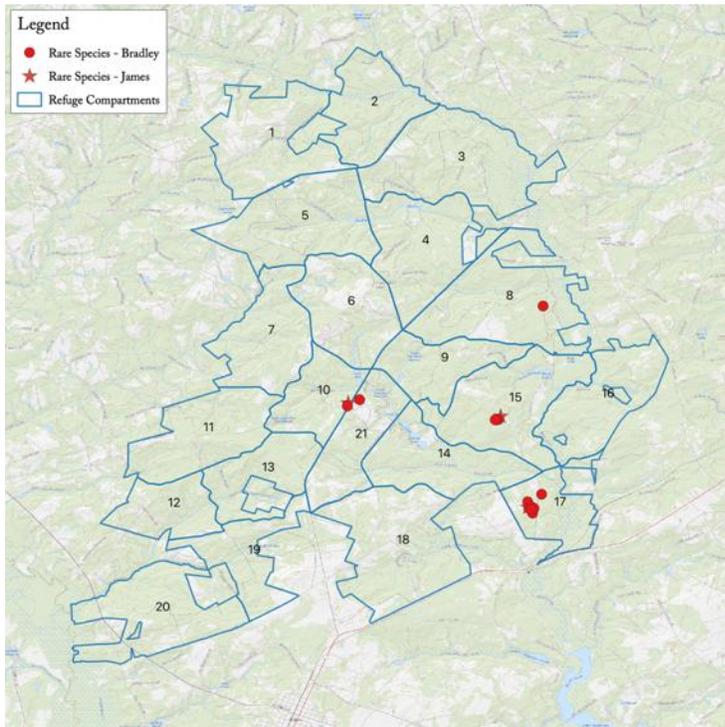


Figure 25: *Orbexilum lupinellus* (*Lupine scurfpea*)

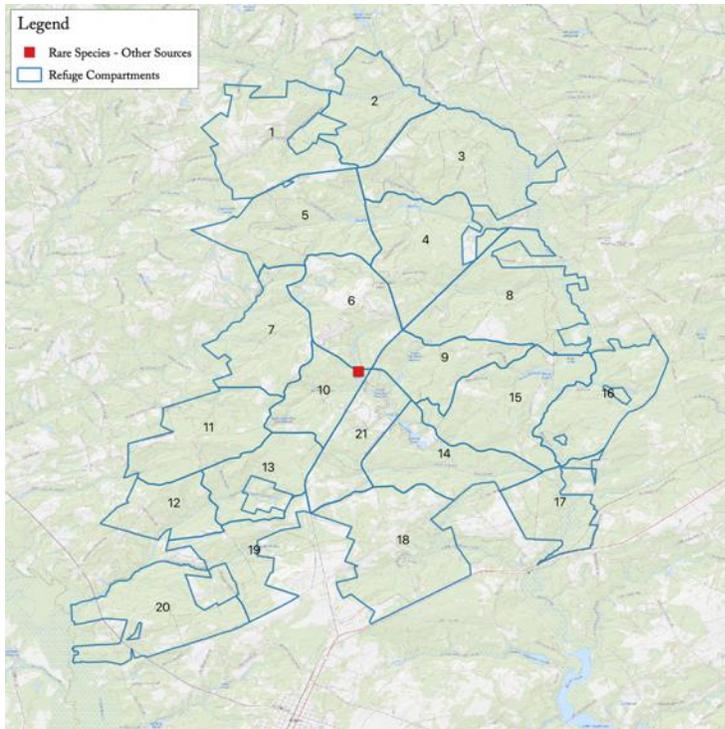


Figure 26: *Oxypolis ternata* (Savanna cowbane)

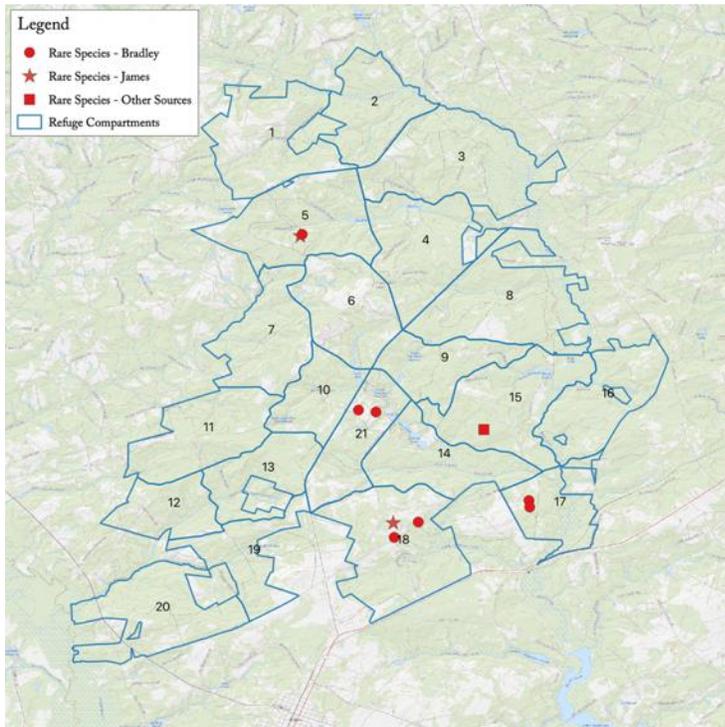


Figure 27: *Paspalum bifidum* (Pitchfork paspalum)

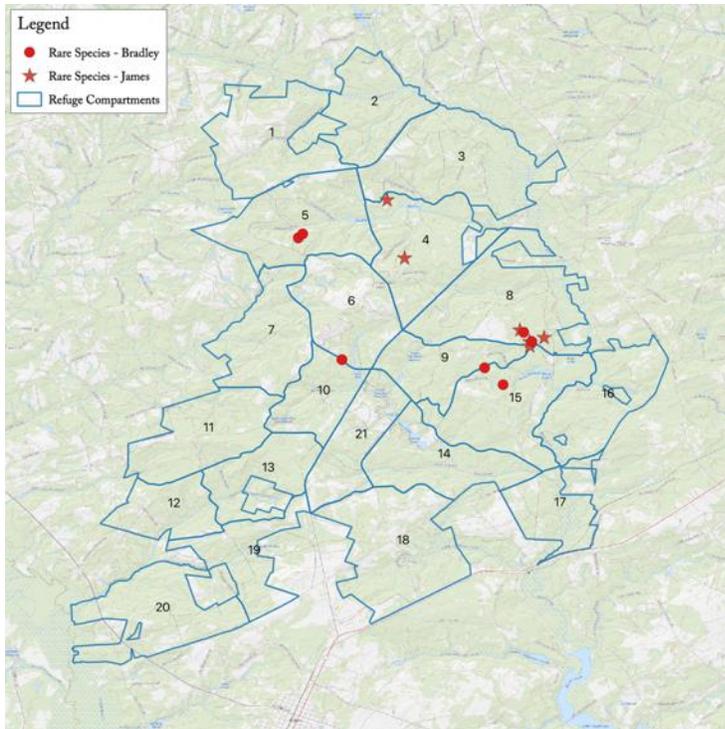


Figure 28: *Phaseolus sinuatus* (Sandhills bean)

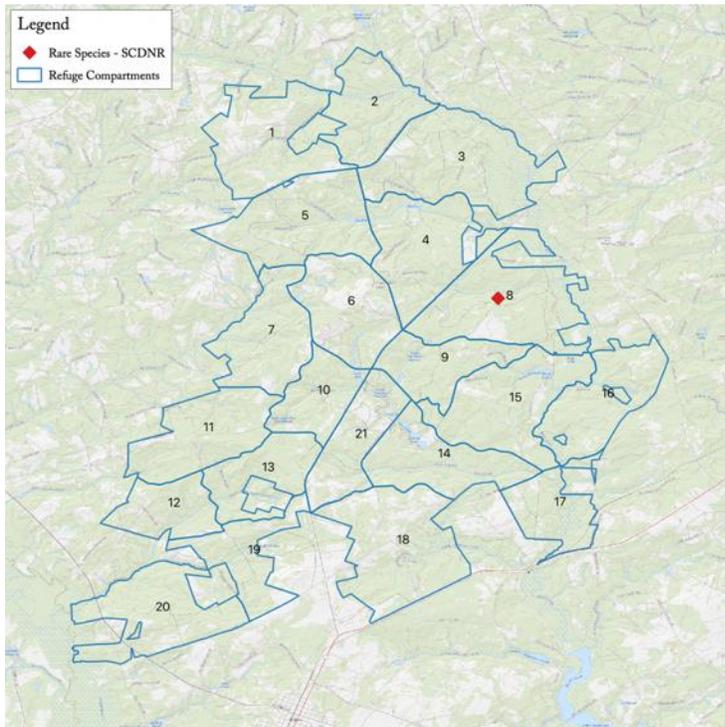


Figure 29: *Pyxidanthera barbulate* (Common pyxie-moss)

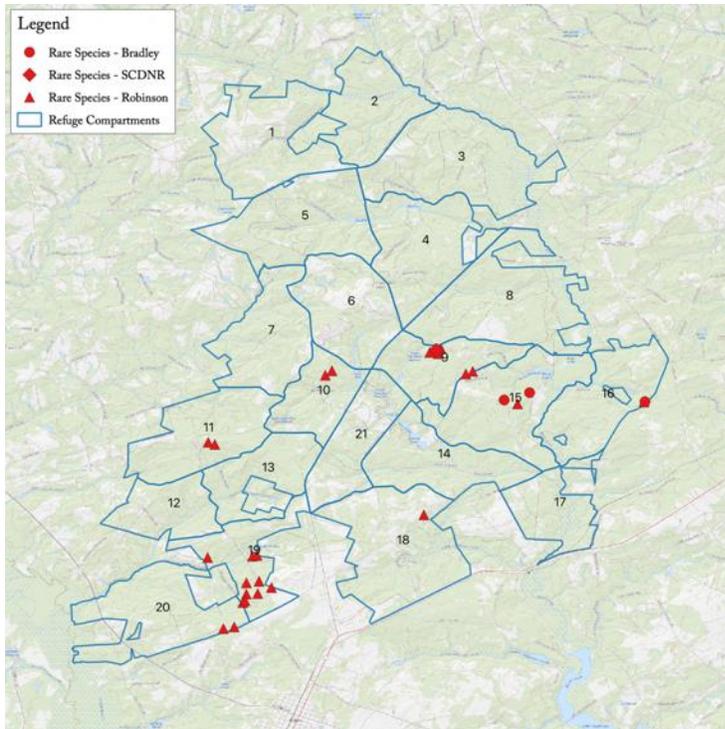


Figure 30: *Pyxidanthera brevifolia* (Sandhills pyxie-moss)

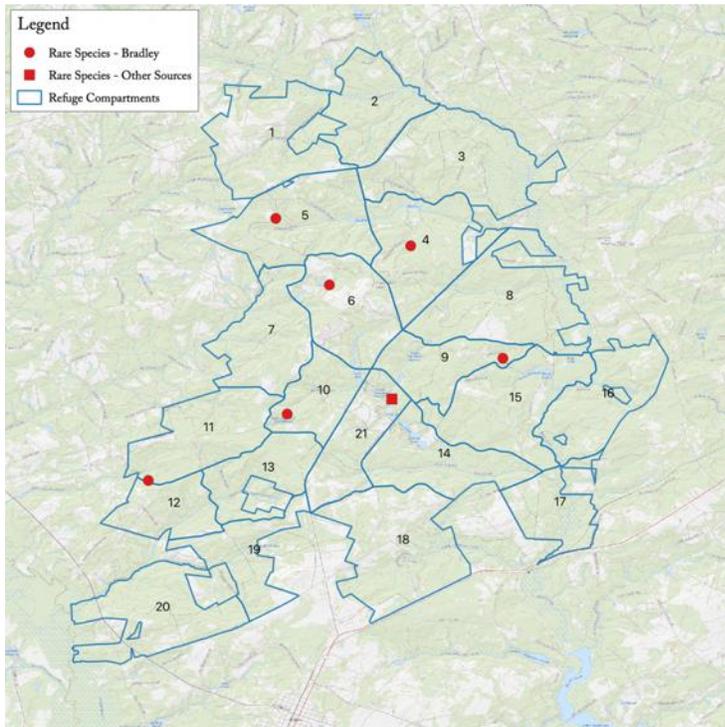


Figure 31: *Rhynchospora leptocarpa* (Slender-fruit beaksedge)

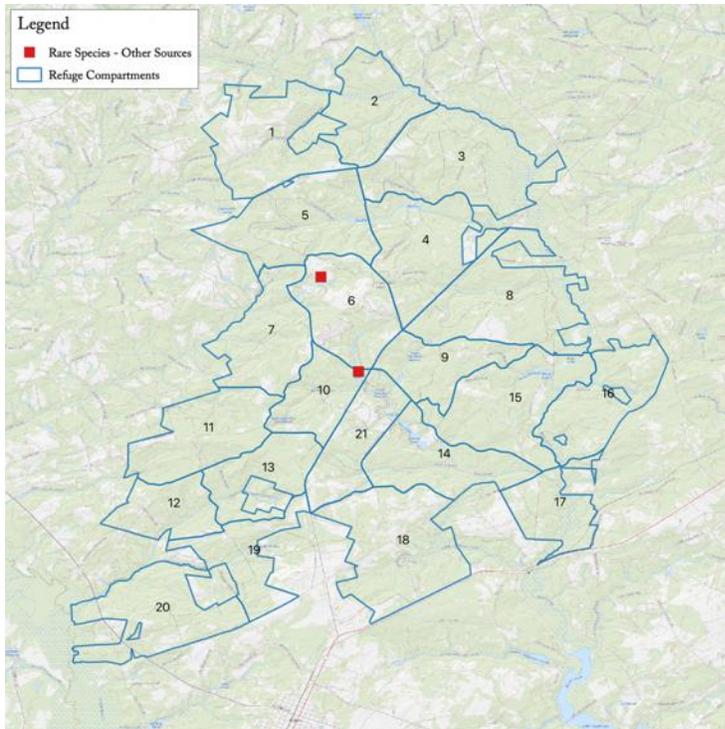


Figure 32: *Rhynchospora macra* (Southern white beaksedge)

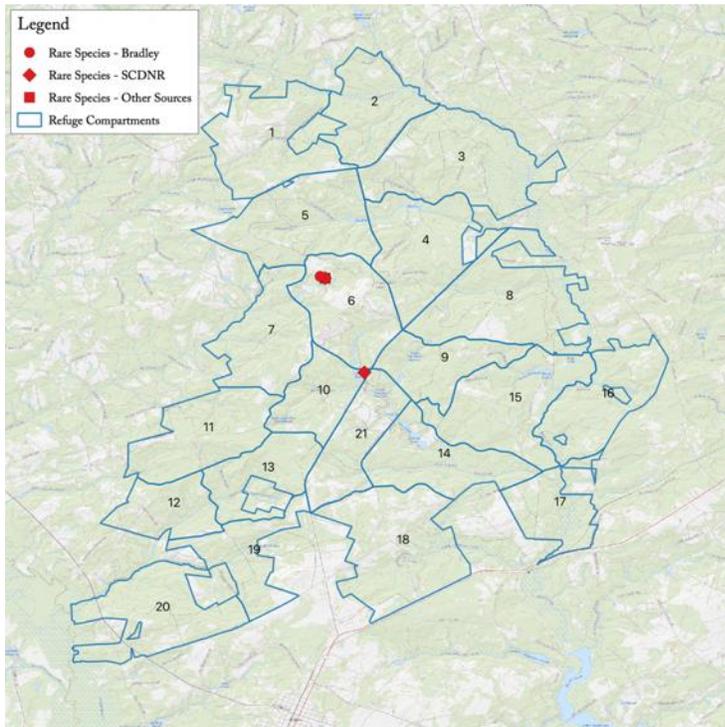


Figure 33: *Rhynchospora oligantha* (Feather-bristled beaksedge)

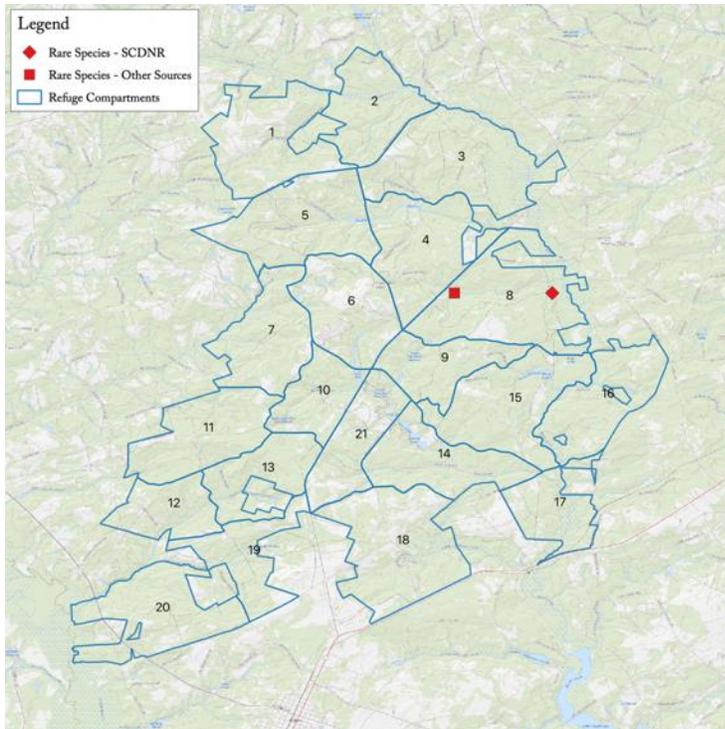


Figure 34: *Rhynchospora pallida* (Pale beaksedge)

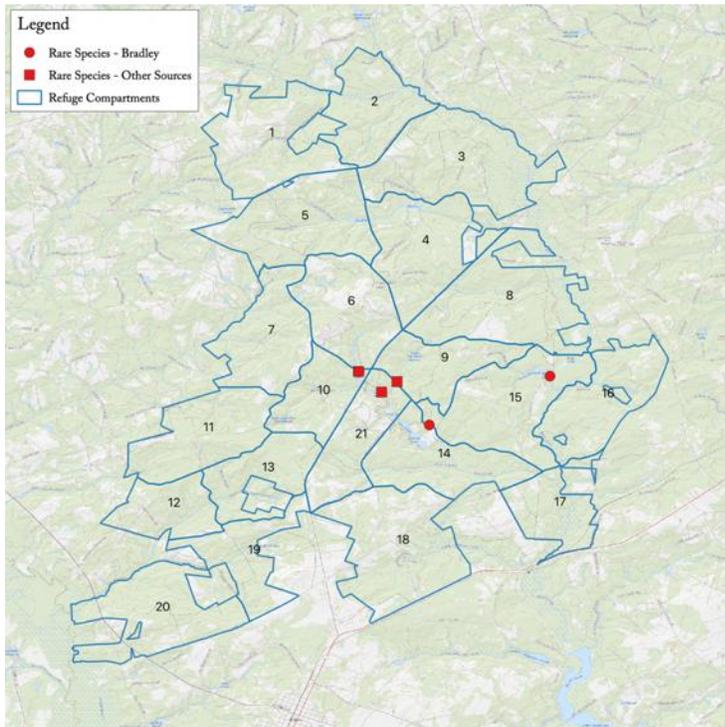


Figure 35: *Rhynchospora scirpodes* (Long-beakbeaksedge)

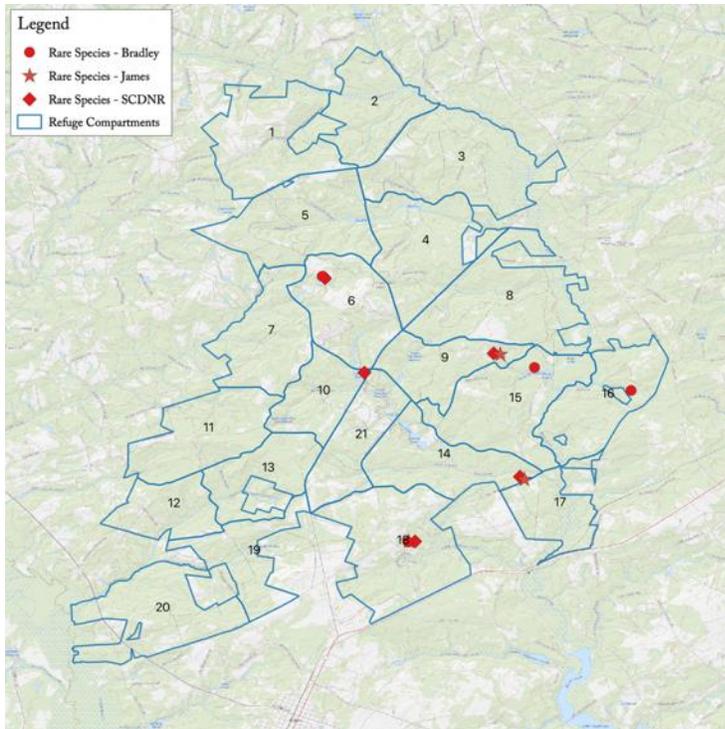


Figure 36: *Rhynchospora stenophylla* (Coastal-bog beaksedge)

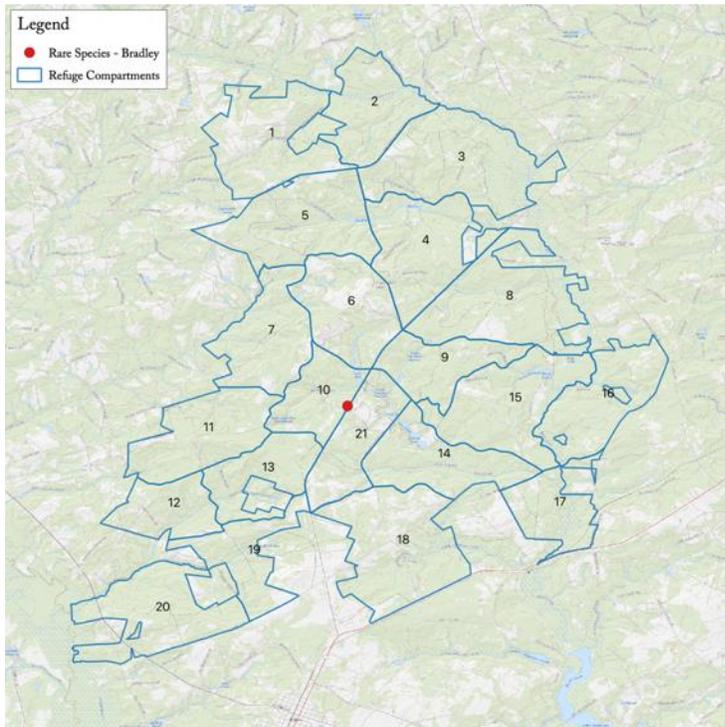


Figure 37: *Ruellia ciliosa* (Sandhills Wild-petunia)

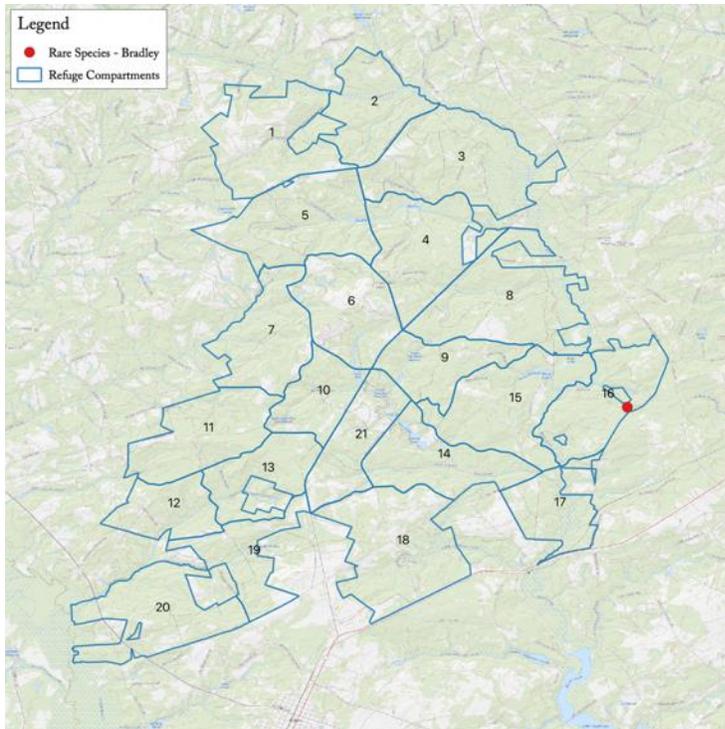


Figure 38: *Sagittaria isoetiformis* (Quillwort arrowhead)

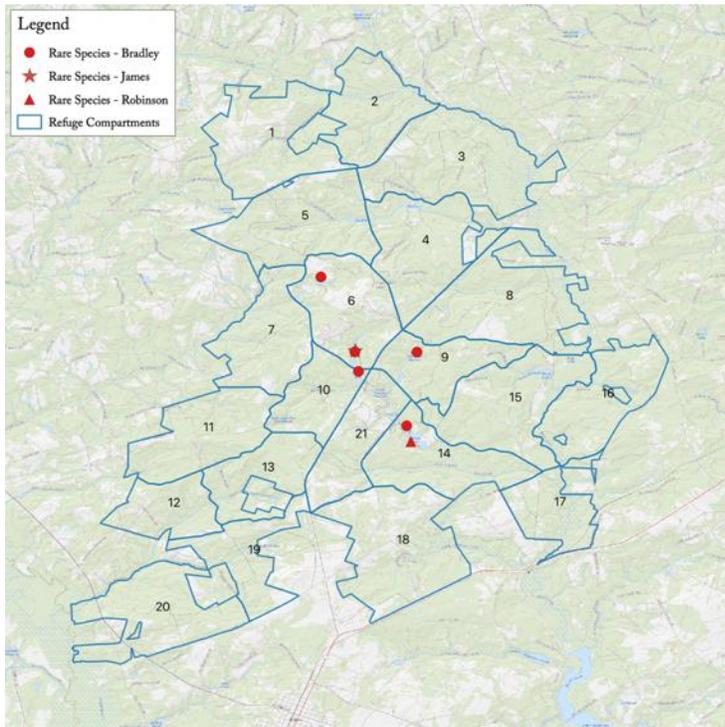


Figure 39: *Sarracenia flava* (Yellow pitcherplant)

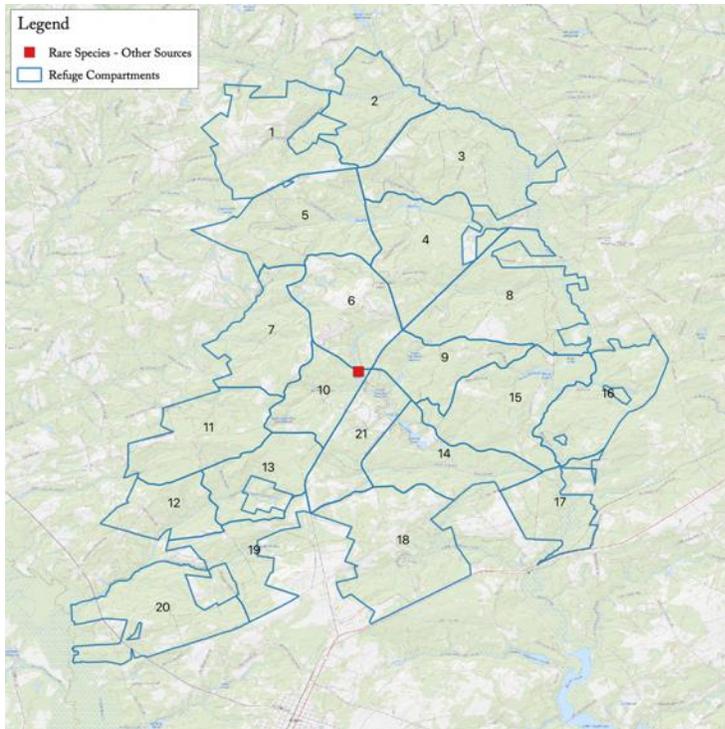


Figure 40: *Sarracenia minor* (Hooded pitcherplant)

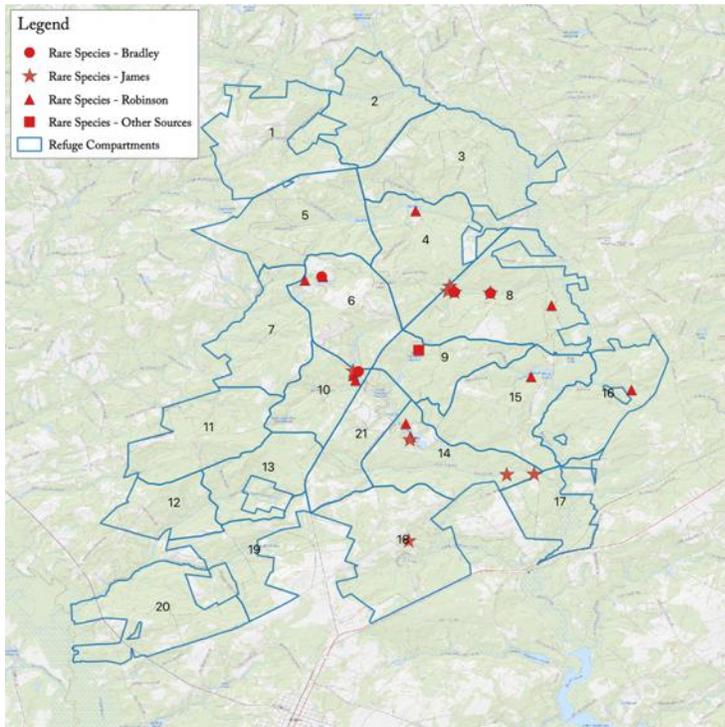


Figure 41: *Sarracenia purpurea* var. *venosa* (Southern purple pitcherplant)

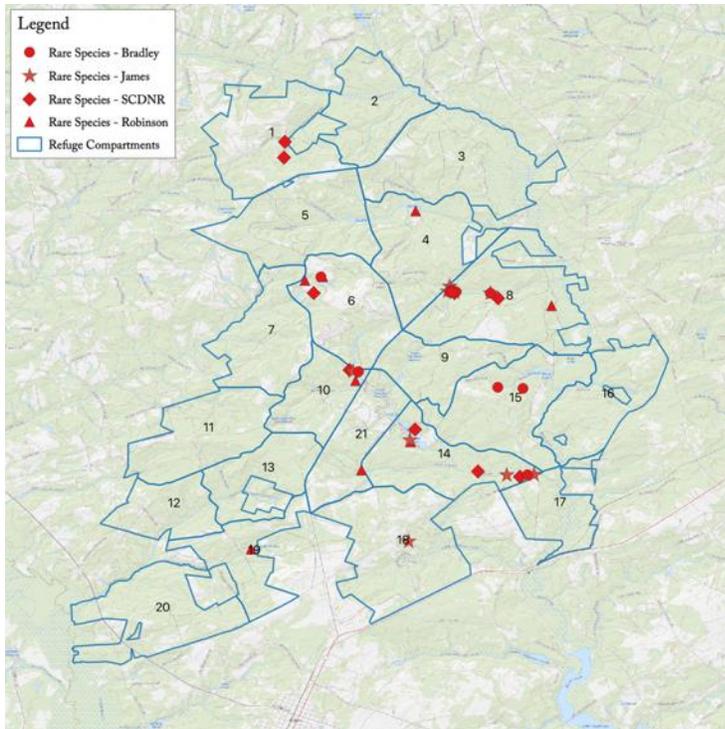


Figure 42: *Sarracenia rubra* (Sweet pitcherplant)

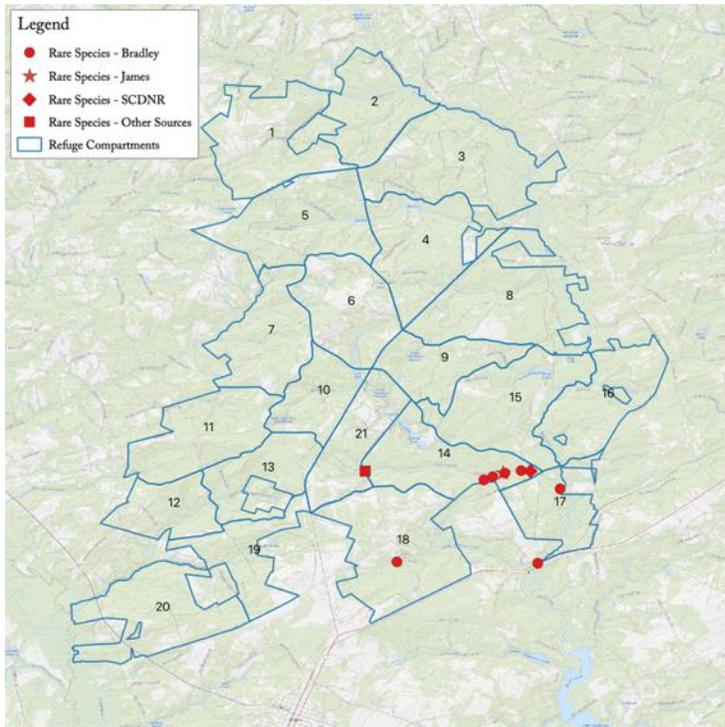


Figure 43: *Schoenoplectus etuberculatus* (Swamp bulrush)

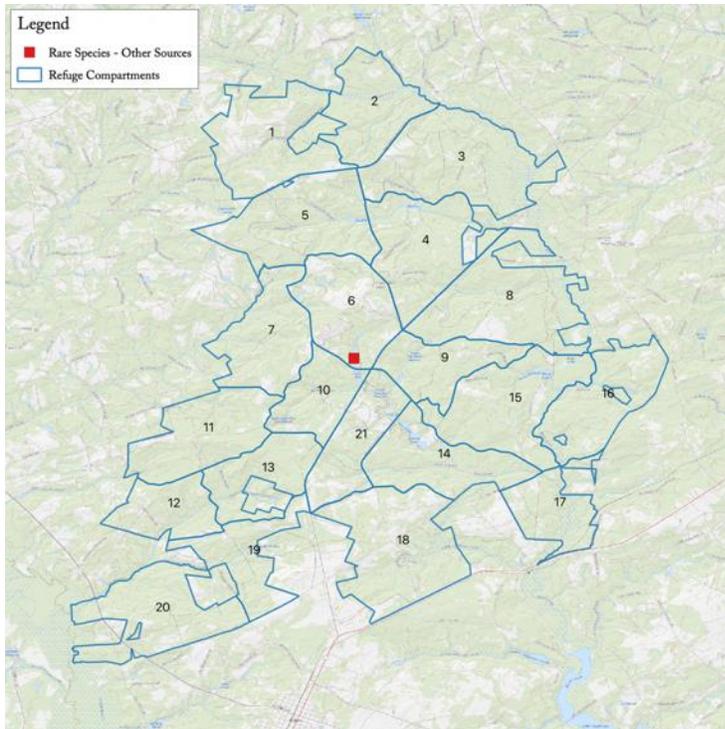


Figure 44: *Schoenoplectus subterminalis* (Swaying bulrush)

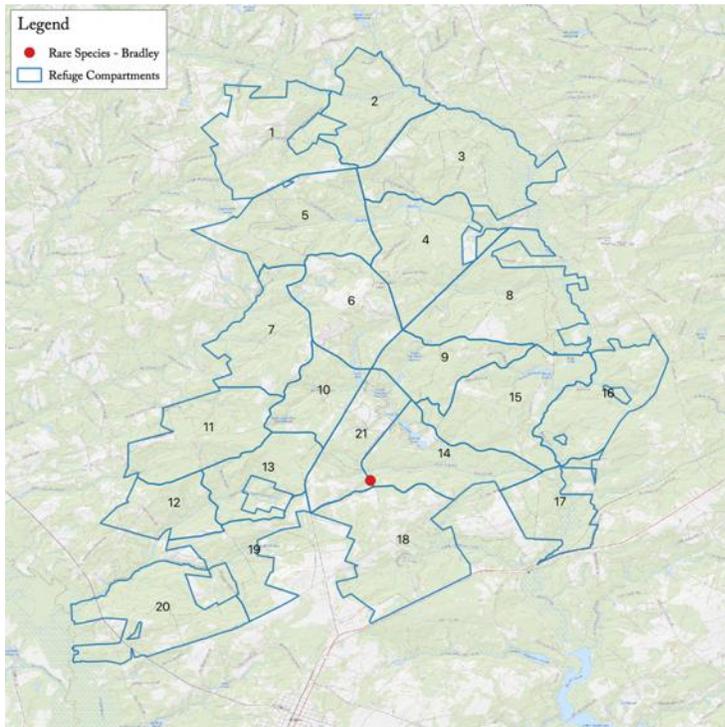


Figure 45: *Solidago pinetorum* (Pineywoods goldenrod)

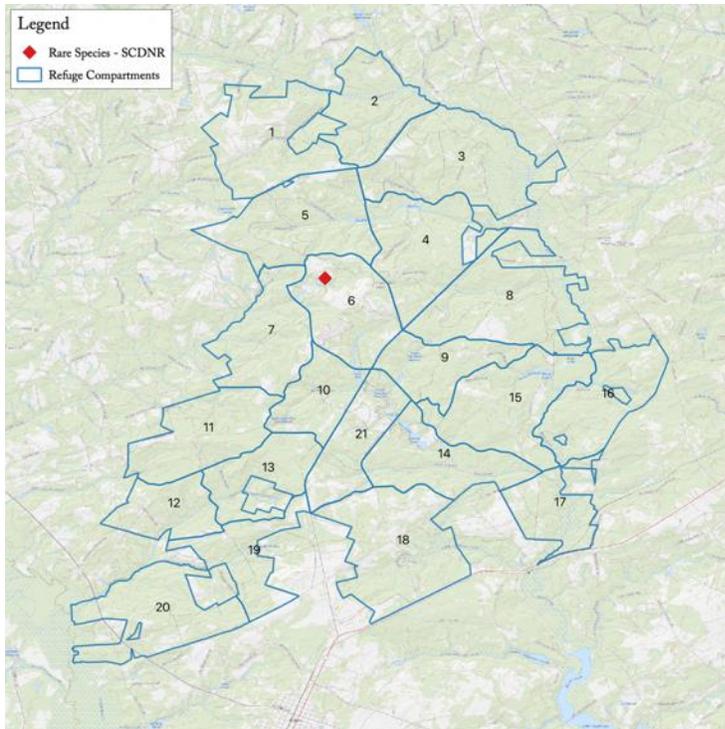


Figure 46: *Solidago pulchra* (Beautiful goldenrod)

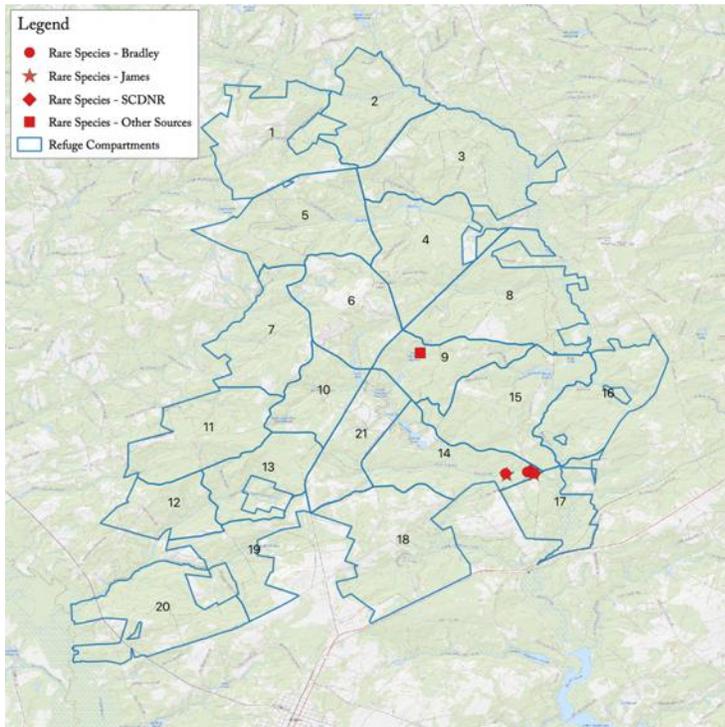


Figure 47: *Sporobolus brevipilis* (Pinebarren sandreed)

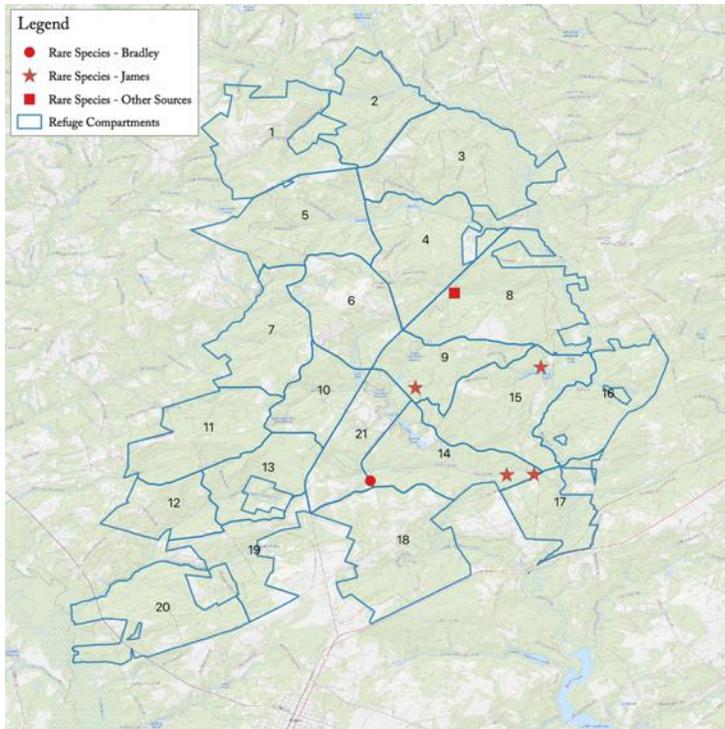


Figure 48: *Sporobolus pinetorum* (Carolina dropseed)

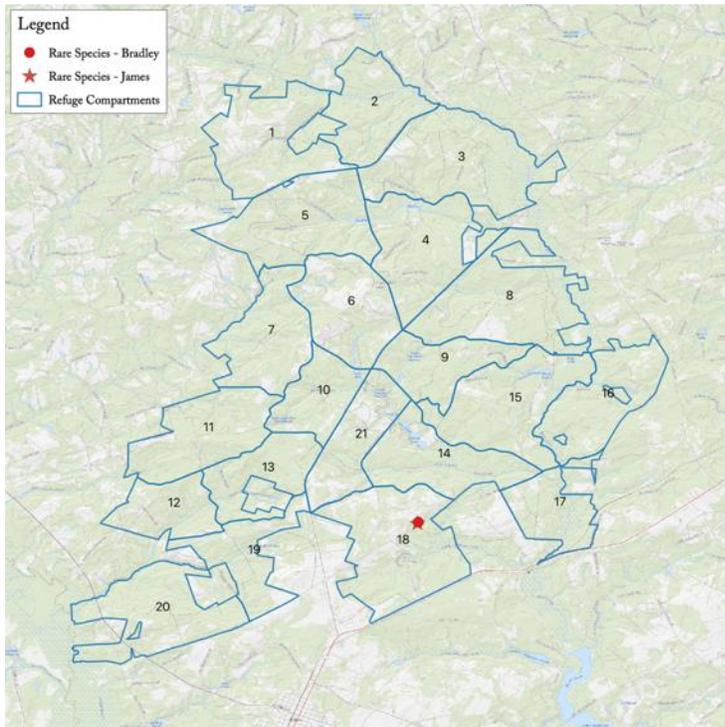


Figure 49: *Tridens carolinianus* (Carolina triodia)

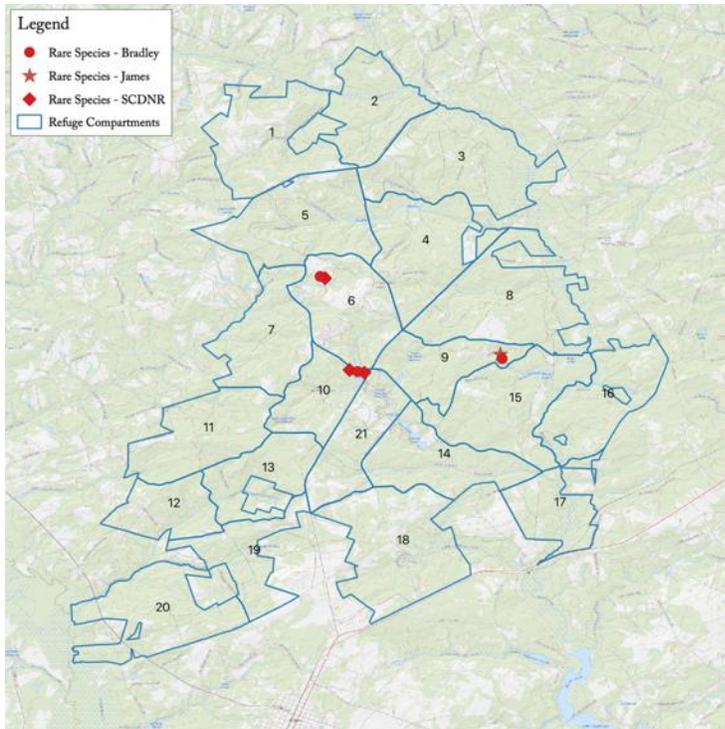


Figure 50: *Xyris chapmanii* (Chapman's yellow-eyed grass)

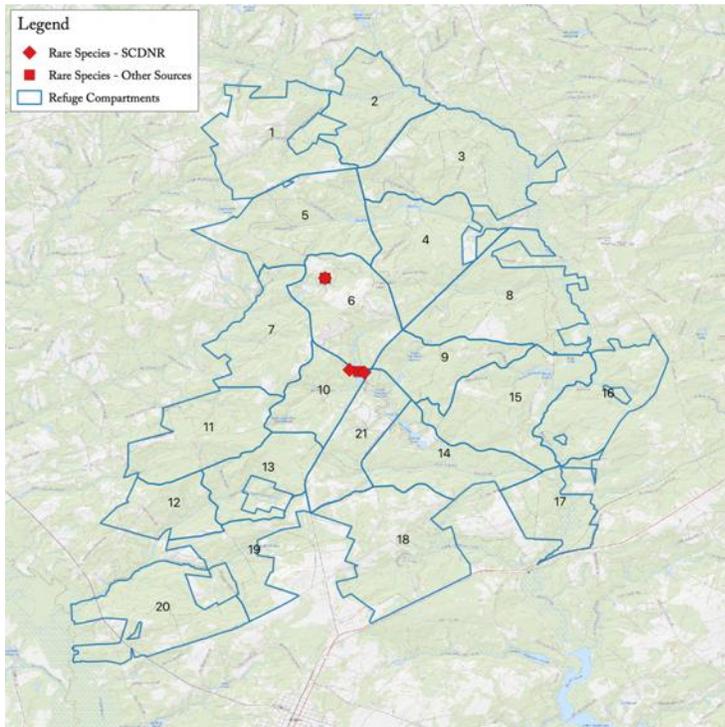


Figure 51: *Xyris scabrifolia* (Roughleaf yellow-eyed grass)



U.S. Fish and Wildlife Service

Southeast Region Inventory and Monitoring Branch

I&M Branch RFP Final Report

Appendix 1: Flora of the Carolina Sandhills National Wildlife Refuge

Occurrence field codes: P = Present, H = Historic, D = Doubtful, F = False

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Acalypha gracilens</i>	Shortstalk Copperleaf			
H	<i>Acalypha virginica</i>	Virginia Copperleaf			
P	<i>Acanthospermum australe</i>	Paraguay Bur, Sheep Bur			
P	<i>Acer floridanum</i>	Southern Sugar Maple, Florida Maple			
P	<i>Acer leucoderme</i>	Chalk Maple			
P	<i>Acer negundo</i>	Eastern Box Elder, Ash-leaved Maple			
P	<i>Acer rubrum var. rubrum</i>	Eastern Red Maple			
P	<i>Acer rubrum var. trilobum</i>	Carolina Red Maple			
H	<i>Achillea borealis</i>	American Yarrow, American Thousandleaf			
P	<i>Aesculus sylvatica</i>	Painted Buckeye			
P	<i>Agalinis fasciculata</i>	Beach False Foxglove			
P	<i>Agalinis purpurea</i>	Purple False Foxglove			
P	<i>Agalinis setacea</i>	Threadleaf False Foxglove			
P	<i>Ageratina aromatica</i>	Small-leaved White Snakeroot, Wild-hoarhound			
P	<i>Agrostis hyemalis</i>	Ticklegrass, Small Bentgrass, Hairgrass			
P	<i>Agrostis perennans</i>	Upland Bent, Autumn Bentgrass			
P	<i>Ailanthus altissima</i>	Tree-of-Heaven, Copal Tree, Stink-tree			Severe
P	<i>Aira caryophyllea</i>	Silver Hair Grass			
P	<i>Albizia julibrissin</i>	Mimosa, Silktree			Significant
P	<i>Aletris aurea</i>	Golden Colic-root			
P	<i>Aletris farinosa</i>	Northern White Colic-root, Mealy Colic-root, Stargrass			
P	<i>Aletris x stuartii</i>	Stuart's Colic-root			
H	<i>Alisma subcordatum</i>	Southern Water-plantain			
P	<i>Allium canadense</i>	Wild Onion			
P	<i>Allium vineale</i>	Field Garlic, Onion-grass, Wild Onion			
P	<i>Alnus serrulata</i>	Tag Alder, Smooth Alder, Hazel Alder			
H	<i>Amaranthus hybridus</i>	Smooth Amaranth, Green Amaranth			
P	<i>Ambrosia artemisiifolia</i>	Common Ragweed			
P	<i>Amelanchier canadensis</i>	Eastern Serviceberry			
P	<i>Amelanchier obovalis</i>	Coastal Plain Serviceberry			
P	<i>Amelanchier spicata</i>	Dwarf Serviceberry			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Amianthium muscitoxicum</i>	Fly-poison			
P	<i>Amorpha herbacea</i>	Dwarf Indigo-bush			
P	<i>Amphicarpaea bracteata</i> var. <i>bracteata</i>	Hog-peanut			
P	<i>Amsonia ciliata</i>	Sandhills Bluestar			
P	<i>Anchistea virginica</i>	Virginia Chain Fern			
P	<i>Andropogon gerardii</i>	Big Bluestem, Turkeyfoot			
P	<i>Andropogon glomeratus</i>	Common Bushy Bluestem			
P	<i>Andropogon gyrans</i>	Elliott's Bluestem			
P	<i>Andropogon hirsutior</i>	Hairy Bluestem			
P	<i>Andropogon mohrii</i>	Tawny Bluestem, Bog Bluestem	S2		
P	<i>Andropogon perangustatus</i>	Narrow-leaved Bluestem	S1		
P	<i>Andropogon tenuispatheus</i>	Maritime Bushy Bluestem			
P	<i>Andropogon ternarius</i>	Splitbeard Bluestem			
P	<i>Andropogon tracyi</i>	Tracy's Bluestem			
P	<i>Andropogon virginicus</i> var. <i>virginicus</i>	Old-field Broomstraw, Broomsedge			
P	<i>Antennaria parlinii</i> ssp. <i>fallax</i>	Big-head Pussytoes			
P	<i>Anthaenantia villosa</i>	Green silkyscale			
H	<i>Anthemis cotula</i>	Mayweed, Stinking Chamomille			
P	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass			
P	<i>Aphanes australis</i>	Parsley-piert			
P	<i>Apios americana</i>	Common Groundnut			
P	<i>Apocynum cannabinum</i>	Hemp Dogbane, Indian-hemp			
P	<i>Arabidopsis thaliana</i>	Mouse-ear Cress			
P	<i>Aralia spinosa</i>	Devil's-walking-stick, Hercules's-club, Prickly-ash			
P	<i>Arisaema dracontium</i>	Green Dragon			
P	<i>Arisaema triphyllum</i>	Common Jack-in-the-pulpit			
P	<i>Aristida curtissii</i>	Curtiss's Three-awn			
P	<i>Aristida dichotoma</i>	Fork-tip Three-awn			
P	<i>Aristida lanosa</i>	Woollysheath Three-awn			
P	<i>Aristida mohrii</i>	Mohr's Three-awn	S1		
P	<i>Aristida purpurascens</i>	Arrowfeather			
P	<i>Aristida stricta</i>	Carolina Wiregrass, Pineland Three-awn			
P	<i>Aristida tenuispica</i>	Southern Arrowfeather			
P	<i>Aristida tuberculosa</i>	Seabeach Needlegrass			
P	<i>Aristida virgata</i>	Wandlike Three-awn Grass			
P	<i>Aronia arbutifolia</i>	Red Chokeberry			
P	<i>Artemisia ludoviciana</i>	White Sage, Prairie Sage, Western Mugwort			
P	<i>Arundinaria tecta</i>	Switch Cane, Small Cane			
P	<i>Asarum canadense</i>	Common Wild Ginger			
P	<i>Asarum reflexum</i>	Common Wild Ginger			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Asclepias amplexicaulis</i>	Clasping Milkweed, Sand Milkweed			
P	<i>Asclepias humistrata</i>	Fleshy Milkweed			
H	<i>Asclepias incarnata</i> var. <i>pulchra</i>	Western Swamp Milkweed			
H	<i>Asclepias rubra</i>	Purple Savanna Milkweed, "Red Milkweed"			
P	<i>Asclepias tomentosa</i>	Sandhills Milkweed			
P	<i>Asclepias tuberosa</i> var. <i>rolfsii</i>	Sandhills Butterfly-weed			
P	<i>Asclepias verticillata</i>	Whorled Milkweed			
P	<i>Asimina parviflora</i>	Small-flowered Pawpaw, Small-fruited Pawpaw			
P	<i>Asimina triloba</i>	Common Pawpaw, Indian-banana			
P	<i>Asplenium platyneuron</i>	Ebony spleenwort			
P	<i>Astragalus michauxii</i>	Sandhills Milkvetch, Michaux's Milkvetch	S3		
P	<i>Athyrium asplenioides</i>	Southern Lady Fern			
P	<i>Aureolaria pectinata</i>	Southern Oak-leech			
H	<i>Aureolaria pedicularia</i>	Annual Oak-leech			
H	<i>Aureolaria virginica</i>	Downy Oak-leech, Virginia Oak-leech			
P	<i>Axonopus fissifolius</i>	Common Carpetgrass			
P	<i>Baccharis halimifolia</i>	Silverling, High-tide Bush, Mullet Bush, Groundsel Tree			
P	<i>Baptisia cinerea</i>	Carolina Wild Indigo			
P	<i>Baptisia tinctoria</i>	Honesty-weed, Rattleweed			
P	<i>Berlandiera pumila</i>	Eastern Green-eyes			
P	<i>Betula nigra</i>	River Birch, Red Birch			
H	<i>Bidens aristosa</i>	Midwestern Tickseed-sunflower			
P	<i>Bidens bipinnata</i>	Spanish Needles			
H	<i>Bigelovia nudata</i>	Rayless-goldenrod			
P	<i>Bignonia capreolata</i>	Cross-vine			
P	<i>Boehmeria cylindrica</i>	False-nettle			
P	<i>Bouteloua curtipendula</i>	Side-oats Grama			
P	<i>Brasenia schreberi</i>	Water-shield, Purple Wen-dock			
P	<i>Brickellia eupatorioides</i>	Eastern False-boneset			
P	<i>Briza minor</i>	Lesser Quaking Grass			
P	<i>Bromus catharticus</i>	Rescue Grass			
P	<i>Bromus commutatus</i>	Hairy Chess, Meadow Brome			
P	<i>Bromus hordeaceus</i>	Soft Chess, Lopgrass			
P	<i>Buchnera floridana</i>	Savanna Bluehearts, Florida Bluehearts			
P	<i>Bulbostylis barbata</i>	Old World Hairsedge			
H	<i>Bulbostylis ciliatifolia</i>	Savanna Hairsedge			
P	<i>Bulbostylis coarctata</i>	Elliott's Hairsedge			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Burmannia capitata</i>	White Burmannia			
P	<i>Calamagrostis coarctata</i>	Nuttall's Reedgrass			
P	<i>Callicarpa americana</i>	Beautyberry, American Beautyberry, French-mulberry			
P	<i>Callitriche heterophylla</i>	Common Water-starwort			
H	<i>Calopogon tuberosus</i>	Common Grass-pink			
P	<i>Campsis radicans</i>	Trumpet-creeper			
P	<i>Cardamine hirsuta</i>	Hairy Bittercress			
P	<i>Cardamine pensylvanica</i>	Quaker Bittercress			
P	<i>Carex abscondita</i>	Thicket Sedge			
P	<i>Carex albolutescens</i>	Greenish-white Sedge			
P	<i>Carex annectens</i>	Yellow-fruited Sedge			
P	<i>Carex annectens</i>	Yellow-fruited Sedge			
P	<i>Carex atlantica</i>	Prickly Bog Sedge			
P	<i>Carex austrina</i>	Southern Sedge			
P	<i>Carex austrodeflexa</i>	Canebrake Sedge			
P	<i>Carex blanda</i>	Eastern Woodland Sedge			
P	<i>Carex bromoides ssp. bromoides</i>	Common Brome Sedge			
P	<i>Carex cherokeensis</i>	Cherokee Sedge	S2		
P	<i>Carex collinsii</i>	Collins's Sedge	S2		
P	<i>Carex comosa</i>	Bottlebrush Sedge, Bristly Sedge			
P	<i>Carex complanata</i>	Hirsute Sedge			
P	<i>Carex corrugata</i>	Prune-fruited Sedge			
P	<i>Carex crinita var. crinita</i>	Long-fringed Sedge			
P	<i>Carex debilis</i>	White Edged Sedge			
P	<i>Carex digitalis var. floridana</i>	Southern Slender Woodland Sedge			
P	<i>Carex elliotii</i>	Elliott's Sedge	S1		
H	<i>Carex festucacea</i>	Fescue Sedge			
P	<i>Carex flaccosperma</i>	Meadow Sedge			
P	<i>Carex floridana</i>	Florida Sedge			
P	<i>Carex glaucescens</i>	Blue Sedge, Southern Waxy Sedge			
P	<i>Carex grayi</i>	Asa Gray's Sedge			
P	<i>Carex howei</i>	Howe's Sedge			
P	<i>Carex intumescens</i>	Bladder Sedge			
P	<i>Carex laevivaginata</i>	Smooth-sheathed Sedge			
P	<i>Carex lonchocarpa</i>	Southern Long Sedge			
P	<i>Carex longii</i>	Long's Sedge			
H	<i>Carex lupulina</i>	Hop Sedge			
P	<i>Carex lurida</i>	Sallow Sedge			
P	<i>Carex oxylepis</i>	Sharp-scaled Sedge			
P	<i>Carex physorhyncha</i>	Southern White-tinged Sedge, Bellow's-beak Sedge			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Carex radiata</i>	Eastern Star Sedge			
P	<i>Carex stipata</i> var. <i>stipata</i>	Stalk-grain Sedge, Awl-fruit Sedge			
P	<i>Carex striata</i> var. <i>striata</i>	Walter's Sedge, Pocosin Sedge			
P	<i>Carex striatula</i>	Lined Sedge			
P	<i>Carex turgescens</i>	Pinebarren Sedge	SNR		
P	<i>Carex typhina</i>	Cattail Sedge			
H	<i>Carex vulpinoidea</i>	Fox Sedge			
P	<i>Carphephorus bellidifolius</i>	Sandhill Chaffhead			
P	<i>Carpinus caroliniana</i> var. <i>caroliniana</i>	Coastal American Hornbeam			
H	<i>Carya carolinae-septentrionalis</i>	Carolina Shagbark Hickory, Carolina Hickory			
H	<i>Carya cordiformis</i>	Bitternut Hickory			
P	<i>Carya glabra</i>	Pignut Hickory			
P	<i>Carya pallida</i>	Sand Hickory, Pale Hickory			
P	<i>Carya tomentosa</i>	Mockernut Hickory, White Hickory			
P	<i>Castanea mollissima</i>	Chinese Chestnut			
P	<i>Castanea pumila</i>	Common Chinquapin			
P	<i>Catalpa bignonioides</i>	Southern Catalpa			
P	<i>Catalpa speciosa</i>	Northern Catalpa			
H	<i>Ceanothus americanus</i> var. <i>americanus</i>	Common New Jersey Tea			
P	<i>Celtis laevigata</i>	Southern Hackberry, Sugarberry			
P	<i>Cenchrus echinatus</i>	Southern Sandspur, Bristly Sandspur, Hedgehog Grass			
P	<i>Cenchrus incertus</i>	Coastal Sandspur			
H	<i>Cenchrus longispinus</i>	Northern Sandspur, Common Sandspur			
P	<i>Centella asiatica</i>	Centella, Coinleaf			
P	<i>Centrosema virginianum</i>	Spurred Butterfly Pea			
P	<i>Cephalanthus occidentalis</i>	Buttonbush			
P	<i>Cerastium glomeratum</i>	Sticky Mouse-ear			
P	<i>Cercis canadensis</i>	Eastern Redbud			
H	<i>Chamaecrista fasciculata</i>	Common Partridge-pea			
P	<i>Chamaecrista nictitans</i> var. <i>nictitans</i>	Common Sensitive-plant			
P	<i>Chamaecyparis thyoides</i>	Atlantic White Cedar, Juniper			
H	<i>Chaptalia tomentosa</i>	Sunbonnets, Pineland Daisy			
P	<i>Chasmanthium latifolium</i>	River Oats, Fish-on-a-pole			
P	<i>Chasmanthium laxum</i>	Slender Spikegrass			
H	<i>Chenopodium album</i>	Lamb's-quarters, Pigweed			
P	<i>Chimaphila maculata</i>	Pipsissewa, Striped Wintergreen			
P	<i>Chrysopsis gossypina</i>	Cottonleaf Golden-aster			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Chrysopsis mariana</i>	Maryland Golden-aster			
P	<i>Cinna arundinacea</i>	Common Woodreed, Sweet Woodreed			
P	<i>Cirsium horridulum</i> var. <i>horridulum</i>	Common Yellow Thistle			
P	<i>Cirsium nuttallii</i>	Coastal Tall Thistle			
P	<i>Cirsium repandum</i>	Sandhill Thistle			
H	<i>Citrullus lanatus</i>	Watermelon			
P	<i>Claytonia virginica</i> var. <i>virginica</i>	Eastern Spring-beauty			
H	<i>Cleistesiospis divaricata</i>	Large Spreading Pogonia			
P	<i>Clematis crispa</i>	Marsh Clematis, Southern Leatherflower, Blue Jasmine			
P	<i>Clethra alnifolia</i>	Coastal Sweet-pepperbush, Coastal White-alder			
P	<i>Clitoria mariana</i>	Butterfly Pea, She-pea			
P	<i>Cnidioscolus stimulosus</i>	Spurge-nettle, Tread-softly, Finger-rot, Bull-nettle			
P	<i>Coleataenia anceps</i> ssp. <i>anceps</i>	Beaked Panic Grass			
P	<i>Coleataenia anceps</i> ssp. <i>rhizomata</i>	Small Beaked Panic Grass			
P	<i>Coleataenia longifolia</i> ssp. <i>longifolia</i>	Long-leaved Panic Grass			
H	<i>Coleataenia rigidula</i> ssp. <i>rigidula</i>	Redtop Panic Grass			
H	<i>Comandra umbellata</i>	Eastern Bastard-toadflax			
P	<i>Commelina communis</i>	Common Dayflower			
P	<i>Commelina erecta</i> var. <i>angustifolia</i>	Sand Dayflower			
P	<i>Conyza canadensis</i> var. <i>pusilla</i>	Southern Horseweed			
P	<i>Coreopsis basalis</i>	Lobed Coreopsis			
P	<i>Coreopsis gladiata</i>	Swamp Coreopsis	SNR		
P	<i>Coreopsis lanceolata</i>	Longstalk Coreopsis			
P	<i>Coreopsis major</i> var. <i>rigida</i>	Stiffleaf Coreopsis			
P	<i>Cornus florida</i>	Flowering Dogwood			
P	<i>Corydalis flavula</i>	Short-spurred Corydalis, Yellow Fumewort			
H	<i>Crataegus flava</i>	Yellow Hawthorn			
P	<i>Crataegus lassa</i> var. <i>lanata</i>	Lanate Hawthorn			
P	<i>Crataegus munda</i>	Batesburg hawthorn			
P	<i>Crataegus senta</i>	Rough Hawthorn			
P	<i>Crataegus spathulata</i>	Littlehip Hawthorn			
P	<i>Crataegus uniflora</i>	Oneflower Hawthorn			
P	<i>Crocanthemum canadense</i>	Canada Frostweed, Canada Sunrose			
H	<i>Crocanthemum carolinianum</i>	Carolina Sunrose			
P	<i>Croptilon divaricatum</i>	Scratch-daisy			
P	<i>Crotalaria pallida</i> var. <i>obovata</i>	Smooth Rattlebox			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Crotalaria purshii</i>	Coastal Plain Rattlebox, Pursh's Rattlebox			
P	<i>Crotalaria rotundifolia</i>	Low Rattlebox, Rabbitbells			
P	<i>Crotalaria spectabilis</i>	Showy Rattlebox			Significant
P	<i>Croton glandulosus var. septentrionalis</i>	Doveweed, Tooth-leaved Croton, Sand Croton			
P	<i>Ctenium aromaticum</i>	Toothache Grass, Orange Grass			
P	<i>Cuscuta campestris</i>	Field Dodder, Prairie Dodder			
P	<i>Cuscuta compacta</i>	Compact Dodder			
H	<i>Cuscuta gronovii</i>	Swamp Dodder, Common Dodder			
H	<i>Cuscuta pentagona</i>	Fiveangled Dodder			
P	<i>Cuthbertia graminea</i>	Grassleaf Roseling			
P	<i>Cynodon dactylon</i>	Bermuda Grass, Scutch Grass			
P	<i>Cyperus compressus</i>	Poorland Flatsedge			
P	<i>Cyperus croceus</i>	Baldwin's Flatsedge			
P	<i>Cyperus echinatus</i>	Globe Flatsedge			
H	<i>Cyperus erythrorhizos</i>	Redroot Flatsedge			
P	<i>Cyperus esculentus var. macrostachyus</i>	Yellow Nutsedge, Yellow Nutgrass, Wild Chufa			
P	<i>Cyperus filiculmis</i>	Southeastern Flatsedge			
P	<i>Cyperus grayi</i>	Gray's Flatsedge			
H	<i>Cyperus hortensis</i>	Annual Greenhead Sedge			
P	<i>Cyperus plukenetii</i>	Starburst Flatsedge, Plukenet's Flatsedge			
H	<i>Cyperus polystachyos</i>	Coast Flatsedge			
P	<i>Cyperus retrorsus</i>	Pineland Flatsedge			
P	<i>Cyperus rotundus</i>	Purple Nutsedge, Nutgrass, Cocograss			
H	<i>Cyperus strigosus</i>	False Nutsedge			
P	<i>Cypripedium acaule</i>	Pink Lady's-slipper, Moccasin-flower			
P	<i>Cyrilla racemiflora</i>	Titi, Swamp Titi			
H	<i>Dactylis glomerata</i>	Orchard Grass, Cock's-foot			
P	<i>Dactyloctenium aegyptium</i>	Crowfoot Grass			
P	<i>Dalea pinnata</i>	Summer Farewell, Eastern Prairie-clover			
P	<i>Danthonia epilis</i>	Bog Oat-grass	S2		
P	<i>Danthonia sericea</i>	Silky Oat-grass			
P	<i>Danthonia spicata</i>	Poverty Oat-grass, Moonshine Grass			
H	<i>Datura stramonium</i>	Jimsonweed			
P	<i>Decodon verticillatus</i>	Water-oleander, Water-willow, Swamp Loosestrife			
P	<i>Decumaria barbara</i>	Climbing Hydrangea, Woodvamp, Decumary			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Dendrolycopodium obscurum</i>	Common Ground-pine, Flat-branched Tree-clubmoss			
P	<i>Desmodium ciliare</i>	Hairy Smallleaf Ticktrefoil			
H	<i>Desmodium glabellum</i>	Tall Tick-trefoil			
H	<i>Desmodium laevigatum</i>	Smooth Tick-trefoil			
P	<i>Desmodium lineatum</i>	Matted Tick-trefoil			
P	<i>Desmodium nuttallii</i>	Nuttall's Tick-trefoil			
P	<i>Desmodium paniculatum</i> var. <i>paniculatum</i>	Panicledleaf Ticktrefoil, Paniced Ticktrefoil			
P	<i>Desmodium strictum</i>	Pineland Tick-trefoil, Pinebarren Tick-trefoil			
P	<i>Desmodium tenuifolium</i>	Slimleaf Tick-trefoil			
P	<i>Desmodium viridiflorum</i>	Velvety Tick-trefoil			
P	<i>Dichantheium aciculare</i>	Needle-leaf Witchgrass			
P	<i>Dichantheium acuminatum</i> var. <i>acuminatum</i>	Woolly Witchgrass			
P	<i>Dichantheium acuminatum</i> var. <i>fasciculatum</i>	Slender-stemmed Witchgrass			
P	<i>Dichantheium angustifolium</i>	Narrow-leaved Witchgrass			
P	<i>Dichantheium clandestinum</i>	Deer-tongue Witchgrass			
P	<i>Dichantheium commutatum</i> var. <i>ashei</i>	Ashe's Witchgrass			
P	<i>Dichantheium commutatum</i> var. <i>commutatum</i>	Variable Witchgrass			
P	<i>Dichantheium consanguineum</i>	Kunth's Witchgrass			
P	<i>Dichantheium depauperatum</i>	Starved Witchgrass			
P	<i>Dichantheium dichotomum</i> var. <i>dichotomum</i>	Forked Witchgrass			
P	<i>Dichantheium dichotomum</i> var. <i>nitidum</i>	Shining Witchgrass			
P	<i>Dichantheium dichotomum</i> var. <i>ramulosum</i>	Branched Witchgrass			
P	<i>Dichantheium dichotomum</i> var. <i>roanokense</i>	Roanoke Witchgrass			
P	<i>Dichantheium ensifolium</i>	Small-leaved Witchgrass			
P	<i>Dichantheium fusiforme</i>	Spindle-fruited Witchgrass			
P	<i>Dichantheium laxiflorum</i>	Open-flower Witchgrass			
P	<i>Dichantheium lucidum</i>	Bog Witchgrass			
P	<i>Dichantheium malacon</i>	Dehiscent Witch Grass			
P	<i>Dichantheium mattamuskeetense</i>	Mattamuskeet Witchgrass			
H	<i>Dichantheium meridionale</i>	Matting Witchgrass			
P	<i>Dichantheium oligosanthes</i> var. <i>oligosanthes</i>	Few-flowered Witchgrass			
P	<i>Dichantheium ovale</i> var. <i>addisonii</i>	Low Stiff Witchgrass			
H	<i>Dichantheium polyanthes</i>	Small-fruited Witchgrass			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Dichantheium portoricense ssp. patulum</i>	Nash's Witchgrass			
P	<i>Dichantheium ravenelii</i>	Ravenel's Witchgrass			
P	<i>Dichantheium scabriusculum</i>	Tall Swamp Witchgrass			
P	<i>Dichantheium scoparium</i>	Velvet Witchgrass			
P	<i>Dichantheium sphaerocarpon</i>	Round-fruited Witchgrass			
P	<i>Dichantheium strigosum var. strigosum</i>	Rough-hairy Witchgrass			
P	<i>Dichantheium tenue</i>	White-edged Witchgrass			
P	<i>Digitaria bicornis</i>	Asian crabgrass			
P	<i>Digitaria ciliaris</i>	Southern Crab Grass			
P	<i>Digitaria cognata</i>	Fall Witchgrass			
P	<i>Digitaria filiformis</i>	Slender Crabgrass			
P	<i>Digitaria ischaemum</i>	Smooth Crab Grass			
H	<i>Digitaria sanguinalis</i>	Northern Crab Grass			
P	<i>Digitaria villosa</i>	Shaggy Crabgrass			
P	<i>Digitaria violascens</i>	Violet Crabgrass			
P	<i>Diodella teres</i>	Poorjoe			
P	<i>Dioscorea villosa</i>	Wild Yam			
P	<i>Diospyros virginiana</i>	American Persimmon, Possumwood			
P	<i>Diphasiastrum digitatum</i>	Common Running-cedar, Fan Ground-pine			
H	<i>Doellingeria sericocarpoides</i>	Pocosin Flat-topped Aster			
P	<i>Drosera brevifolia</i>	Dwarf Sundew			
P	<i>Drosera capillaris</i>	Pink Sundew			
P	<i>Drosera intermedia</i>	Water Sundew, Spoonleaf Sundew			
P	<i>Dulichium arundinaceum</i>	Threeway Sedge			
P	<i>Dysphania ambrosioides</i>	Mexican-tea, Epazote			
H	<i>Echinochloa crusgalli</i>	Barnyard-grass			
P	<i>Eleocharis acicularis</i>	Needle Spikerush			
P	<i>Eleocharis baldwinii</i>	Baldwin's Spikerush			
P	<i>Eleocharis equisetoides</i>	Horsetail Spikerush			
H	<i>Eleocharis flavescens</i>	Pale Spikerush, Yellow Spikerush			
H	<i>Eleocharis microcarpa var. filiculmis</i>	Smallfruit Spikerush			
P	<i>Eleocharis microcarpa var. microcarpa</i>	-			
H	<i>Eleocharis obtusa</i>	Blunt Spikerush			
P	<i>Eleocharis olivacea</i>	Olive Spikerush			
P	<i>Eleocharis robbinsii</i>	Robbins's Spikerush	S2		
P	<i>Eleocharis tenuis</i>	Slender Spikerush, Kill-cow			
H	<i>Eleocharis tortilis</i>	Twisted Spikerush			
P	<i>Eleocharis tuberculosa</i>	Large-tubercled Spikerush			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Elephantopus nudatus</i>	Coastal Plain Elephant's-foot			
H	<i>Elephantopus tomentosus</i>	Common Elephant's-foot			
P	<i>Eleusine indica</i>	Yard Grass, Goose Grass			
P	<i>Endodeca serpentaria</i>	Turpentine-root, Virginia Snakeroot, Serpent Birthwort			
P	<i>Epigaea repens</i>	Trailing Arbutus, Mayflower, Ground Laurel			
P	<i>Eragrostis capillaris</i>	Lacegrass			
P	<i>Eragrostis curvula</i>	Weeping Lovegrass			Significant
P	<i>Eragrostis hirsuta</i>	Bigtop Lovegrass			
P	<i>Eragrostis refracta</i>	Coastal Lovegrass			
P	<i>Eragrostis spectabilis</i>	Purple Lovegrass, Tumblegrass			
P	<i>Erechtites hieracifolius</i>	Fireweed			
P	<i>Eremochloa ophiuroides</i>	Centipede Grass			
P	<i>Erianthus contortus</i>	Bent-awn Plume Grass			
P	<i>Erianthus giganteus</i>	Sugarcane Plume Grass, Giant Plume Grass			
P	<i>Erianthus strictus</i>	Narrow Plume Grass			
H	<i>Erigeron philadelphicus</i>	Philadelphia-daisy			
P	<i>Erigeron strigosus</i>	Common Rough Fleabane			
H	<i>Erigeron vernus</i>	Whitetop Fleabane			
P	<i>Eriocaulon compressum</i>	Flattened Pipewort			
P	<i>Eriocaulon decangulare</i>	Common Ten-angled Pipewort			
P	<i>Eriocaulon texense</i>	Texas Hatpins	S1		
P	<i>Eriogonum tomentosum</i>	Sandhill Wild-buckwheat, Southern Wild-buckwheat			
P	<i>Eryngium integrifolium</i>	Savanna Eryngo			
P	<i>Eryngium prostratum</i>	Creeping Eryngo, Spreading Eryngo			
P	<i>Eryngium yuccifolium</i> var. <i>yuccifolium</i>	Northern Rattlesnake-master			
P	<i>Erythronium umbilicatum</i>	Dimpled Trout Lily			
P	<i>Eubotrys racemosa</i>	Coastal Fetterbush			
P	<i>Euonymus americanus</i>	Strawberry-bush, Heart's-a-bustin'-(with-love)			
P	<i>Eupatorium album</i>	White-bracted Thoroughwort			
P	<i>Eupatorium capillifolium</i>	Common Dog-fennel, Yankeeweed			
P	<i>Eupatorium compositifolium</i>	Coastal Dog-fennel, Yankeeweed			
P	<i>Eupatorium hyssopifolium</i>	Hyssopleaf Eupatorium			
P	<i>Eupatorium leucolepis</i>	Savanna Eupatorium, Justiceweed			
P	<i>Eupatorium mohrii</i>	Mohr's Eupatorium			
P	<i>Eupatorium pilosum</i>	Ragged Eupatorium			
P	<i>Eupatorium rotundifolium</i>	Common Roundleaf Eupatorium			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Eupatorium semiserratum</i>	Smallflower Thoroughwort			
P	<i>Eupatorium serotinum</i>	Late Eupatorium			
H	<i>Euphorbia corollata</i>	Eastern Flowering Spurge			
P	<i>Euphorbia curtisii</i>	White Sandhills Spurge, Curtis's Spurge			
P	<i>Euphorbia exserta</i>	Maroon Sandhills Spurge, Coastal Sand Spurge			
P	<i>Euphorbia ipecacuanhae</i>	Carolina Ipecac			
P	<i>Euphorbia maculata</i>	Milk-purslane, Spotted Spurge			
H	<i>Euphorbia nutans</i>	Eyebane			
H	<i>Eurybia mirabilis</i>	Piedmont Aster			
P	<i>Eurybia paludosa</i>	Savannah Grass-leaved Aster			
P	<i>Euthamia caroliniana</i>	Slender Flattop Goldenrod			
P	<i>Eutrochium dubium</i>	Three-nerved Joe-pye-weed			
P	<i>Facelis retusa</i>	Trampweed			
P	<i>Fagus grandifolia</i> var. <i>caroliniana</i>	White Beech, American Beech			
P	<i>Festuca octoflora</i> var. <i>octoflora</i>	Southern Six-weeks Fescue			
P	<i>Festuca sciurea</i>	Squirrel-tail Fescue			
P	<i>Festuca subverticillata</i>	Nodding Fescue			
P	<i>Fimbristylis autumnalis</i>	Slender Fimbry			
P	<i>Fothergilla gardenii</i>	Coastal Witch-alder			
H	<i>Frangula caroliniana</i>	Carolina Buckthorn			
P	<i>Fraxinus americana</i>	White Ash, American Ash			
P	<i>Fraxinus pennsylvanica</i>	Green Ash, Red Ash			
P	<i>Froelichia floridana</i>	Florida Cottonseed, Common Cottonweed			
P	<i>Froelichia gracilis</i>	Slender Cottonweed			
P	<i>Fuirena pumila</i>	Dwarf Umbrella-sedge			
P	<i>Fuirena squarrosa</i>	Hairy Umbrella-sedge			
P	<i>Galactia erecta</i>	Erect Milkpea			
P	<i>Galactia minor</i>	Little Milkpea			
H	<i>Galactia regularis</i>	Downy Milkpea			
H	<i>Galactia volubilis</i>	Eastern Milkpea			
P	<i>Galax urceolata</i>	Galax			
P	<i>Galium aparine</i>	Cleavers			
P	<i>Galium obtusum</i> var. <i>filifolium</i>	Carolina Bedstraw			
P	<i>Galium pilosum</i>	Hairy Bedstraw			
P	<i>Galium tinctorium</i> var. <i>floridanum</i>	Florida Three-lobed Bedstraw			
P	<i>Galium uniflorum</i>	One-flowered Bedstraw			
P	<i>Gamochoaeta antillana</i>	Caribbean Everlasting			
P	<i>Gamochoaeta argyrinea</i>	-			
P	<i>Gamochoaeta coarctata</i>	-			
P	<i>Gamochoaeta pensylvanica</i>	Pennsylvania Everlasting			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Gaylussacia dumosa</i>	Northern Dwarf Huckleberry			
P	<i>Gaylussacia frondosa</i>	Dangleberry			
P	<i>Gelsemium sempervirens</i>	Carolina Jessamine			
P	<i>Gentiana autumnalis</i>	Pinebarren Gentian	S2		
H	<i>Gentiana catesbaei</i>	Coastal Plain Gentian			
P	<i>Gentiana villosa</i>	Striped Gentian			
P	<i>Geranium carolinianum</i>	Carolina Crane's-bill			
P	<i>Geranium maculatum</i>	Wild Geranium			
P	<i>Gleditsia triacanthos</i>	Honey Locust			
p	<i>Gratiola virginiana</i>	Virginia Hedge-hyssop, Round-fruit Hedge-hyssop			
p	<i>Gymnopogon ambiguus</i>	Eastern Skeleton Grass, Eastern Beard Grass			
p	<i>Habenaria repens</i>	Water-spider Orchid, Floating Orchid			
P	<i>Hamamelis virginiana</i> var. <i>virginiana</i>	Northern Witch-haze			
P	<i>Helenium amarum</i> var. <i>amarum</i>	Bitterweed			
P	<i>Helianthus angustifolius</i>	Narrowleaf Sunflower			
H	<i>Helianthus atrorubens</i>	Appalachian Sunflower			
H	<i>Helianthus microcephalus</i>	Small-headed Sunflower			
H	<i>Heliotropium amplexicaule</i>	Clasping Heliotrope			
P	<i>Heterotheca latifolia</i>	Common Camphorweed			
p	<i>Hexastylis arifolia</i> var. <i>arifolia</i>	Little Brown Jug, Arrowleaf Heartleaf			
P	<i>Hexastylis sorriei</i>	Sandhill Heartleaf	S1		
P	<i>Hieracium gronovii</i>	Beaked Hawkweed			
P	<i>Hieracium marianum</i>	Maryland Hawkweed			
P	<i>Hordeum pusillum</i>	Little Barley			
H	<i>Houstonia caerulea</i>	Quaker Ladies, Innocence, Common Bluet			
P	<i>Houstonia longifolia</i> var. <i>compacta</i>	Eastern Longleaf Bluet			
H	<i>Houstonia purpurea</i>	Summer Bluet			
P	<i>Houstonia pusilla</i>	Tiny Bluet			
P	<i>Hydrocotyle umbellata</i>	Marsh Water-pennywort			
H	<i>Hydrocotyle verticillata</i>	Whorled marshpennywort			
P	<i>Hylodesmum nudiflorum</i>	Naked Tick-trefoil			
P	<i>Hymenachne hemitomon</i>	Maidencane			
P	<i>Hypericum canadense</i>	Canada St. John's-wort			
p	<i>Hypericum crux-andreae</i>	St. Andrew's Cross, St. Peter's-wort			
P	<i>Hypericum galioides</i>	Bedstraw St. Johnswort			
P	<i>Hypericum gentianoides</i>	Pinweed, Orange-grass			
P	<i>Hypericum hypericoides</i>	St. Andrew's Cross			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Hypericum mutilum</i> var. <i>mutilum</i>	Common Dwarf St. John's-wort			
H	<i>Hypericum setosum</i>	Hairy St. John's-wort			
P	<i>Hypericum stragulum</i>	Low St. John's-wort, Straggling St. John's-wort			
P	<i>Hypericum tenuifolium</i>	Sandhill St. John's-wort			
P	<i>Hypericum virginicum</i>	Common Marsh St. John's-wort			
H	<i>Hypericum walteri</i>	Walter's Marsh St. John's-wort			
P	<i>Hypochaeris chillensis</i>	Brazilian Cat's-ear			
P	<i>Hypochaeris radicata</i>	Spotted Cat's-ear			
H	<i>Hypopitys monotropa</i>	Pinesap			
P	<i>Hypoxis hirsuta</i>	Common Stargrass, Eastern Stargrass			
P	<i>Ilex ambigua</i>	Carolina Holly			
P	<i>Ilex coriacea</i>	Big Gallberry, Sweet Gallberry			
P	<i>Ilex cornuta</i>	Chinese Holly, Burford Holly			
P	<i>Ilex glabra</i>	Little Gallberry, Inkberry			
H	<i>Ilex laevigata</i>	Smooth Winterberry			
P	<i>Ilex opaca</i>	American Holly, Christmas Holly			
H	<i>Ilex vomitoria</i>	Yaupon			
P	<i>Impatiens capensis</i>	Orange Jewelweed, Orange Touch-me-not			
P	<i>Indigofera caroliniana</i>	Wild Indigo, Carolina Indigo			
P	<i>Ionactis linariifolia</i>	Stiff-leaved Aster			
P	<i>Ipomoea coccinea</i>	Scarlet Creeper, Red Morning-glory			
H	<i>Ipomoea hederacea</i>	Ivyleaf Morning-glory			
P	<i>Ipomoea pandurata</i>	Wild Sweet Potato, Manroot, Man-of-the-earth			
H	<i>Ipomoea purpurea</i>	Common Morning-glory			
P	<i>Iris verna</i> var. <i>verna</i>	Coastal Plain Dwarf Iris, Sandhill Iris			
P	<i>Iris virginica</i> var. <i>virginica</i>	Southern Blue Flag			
P	<i>Isoetes hyemalis</i>	Wintergreen Quillwort	S1	AR	
P	<i>Itea virginica</i>	Virginia-willow, Sweetspire, Tassel-white			
P	<i>Jacquemontia tamnifolia</i>	Jacquemontia			
P	<i>Juglans nigra</i>	Black Walnut			
H	<i>Juncus biflorus</i>	Large Grass-leaved Rush			
P	<i>Juncus canadensis</i>	Canadian Rush			
P	<i>Juncus coriaceus</i>	Leathery Rush			
P	<i>Juncus debilis</i>	Weak Rush			
P	<i>Juncus dichotomus</i>	Forked Rush			
P	<i>Juncus effusus</i> ssp. <i>solutus</i>	Common Rush, Soft Rush			
H	<i>Juncus longii</i>	Long's Rush			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Juncus pelocarpus</i>	Brown-fruited Rush	S2		
P	<i>Juncus repens</i>	Creeping Rush			
P	<i>Juncus scirpoides</i> var. <i>scirpoides</i>	Needlepod Rush			
P	<i>Juncus trigonocarpus</i>	Redpod Rush			
P	<i>Juniperus virginiana</i> var. <i>virginiana</i>	Eastern Red Cedar			
P	<i>Kalmia cuneata</i>	White Wicky	S2		
P	<i>Kalmia latifolia</i>	Mountain Laurel, Ivy, Calico-bush			
P	<i>Krigia cespitosa</i>	Opposite-leaf Dwarf-dandelion			
P	<i>Krigia virginica</i>	Virginia Dwarf-dandelion			
P	<i>Kummerowia striata</i>	Japanese-clover, Common Lespedeza			
P	<i>Lachnanthes caroliniana</i>	Redroot			
P	<i>Lachnocaulon anceps</i>	Common Bogbuttons			
H	<i>Lactuca canadensis</i>	American Wild Lettuce			
P	<i>Lactuca graminifolia</i>	Coastal Plain Lettuce			
P	<i>Lagerstroemia indica</i>	Crape-myrtle			
P	<i>Lamium amplexicaule</i>	Henbit, Henbit Dead-nettle			
P	<i>Laportea canadensis</i>	Wood-nettle			
P	<i>Lechea minor</i>	Thymeleaf Pinweed			
P	<i>Lechea mucronata</i>	Hairy Pinweed			
H	<i>Lechea pulchella</i> var. <i>ramosissima</i>	-			
P	<i>Leersia oryzoides</i>	Rice Cutgrass			
P	<i>Lepidium virginicum</i>	Poor Man's Pepper			
P	<i>Lespedeza bicolor</i>	Bicolor Lespedeza, Shrubby Lespedeza			Severe
P	<i>Lespedeza capitata</i>	Bush-clover			
P	<i>Lespedeza cuneata</i>	Sericea Lespedeza, Chinese Lespedeza			Severe
P	<i>Lespedeza hirta</i> var. <i>hirta</i>	Hairy Lespedeza			
P	<i>Lespedeza procumbens</i>	Downy Trailing Lespedeza			
H	<i>Lespedeza repens</i>	Smooth Trailing Lespedeza			
H	<i>Lespedeza stuevei</i>	Velvety Lespedeza			
P	<i>Lespedeza thunbergii</i>	Thunberg's Lespedeza			
P	<i>Lespedeza virginica</i>	Virginia Lespedeza			
P	<i>Leucothoe axillaris</i>	Coastal Doghobble			
H	<i>Liatris cokeri</i>	Sandhills Blazing-star			
P	<i>Liatris secunda</i>	Sandhill Blazing-star			
P	<i>Liatris spicata</i> var. <i>resinosa</i>	-			
P	<i>Liatris squarrosa</i>	Scaly Gayfeather			
P	<i>Liatris squarrulosa</i>	Appalachian Gayfeather			
P	<i>Liatris tenuifolia</i>	Shortleaf Gayfeather			
P	<i>Liatris virgata</i>	Wand Blazing Star			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Ligustrum sinense</i>	Chinese Privet			Severe
H	<i>Lilium pyrophilum</i>	Sandhills Bog Lily	S1	AR	
H	<i>Lindernia dubia</i>	Yellowseed False-pimpernel			
P	<i>Linum striatum</i>	Ridgestem Yellow Flax			
P	<i>Liquidambar styraciflua</i>	Sweet Gum, Red Gum			
P	<i>Liriodendron tulipifera</i>	Tulip-tree, Yellow Poplar, Whitewood			
H	<i>Lithospermum virginianum</i>	Virginia Marbleseed			
H	<i>Lobelia canbyi</i>	Canby's Lobelia			
P	<i>Lobelia cardinalis</i>	Cardinal Flower			
P	<i>Lobelia elongata</i>	Longleaf Lobelia			
P	<i>Lobelia nuttallii</i>	Nuttall's Lobelia			
P	<i>Lobelia species 1</i>	Batson's Lobelia	SNR		
P	<i>Lolium arundinaceum</i>	Tall Fescue, Alta Fescue			Significant
P	<i>Lolium perenne var. aristatum</i>	Italian Rye-grass, Annual Rye-grass			
P	<i>Lonicera japonica</i>	Japanese Honeysuckle			Severe
P	<i>Lonicera sempervirens</i>	Coral Honeysuckle			
P	<i>Lorinseria areolata</i>	Netted Chain Fern			
P	<i>Ludwigia alternifolia</i>	Alternate-leaf Seedbox			
H	<i>Ludwigia decurrens</i>	Wingstem Water-primrose			
P	<i>Ludwigia glandulosa</i>	Small-flowered Seedbox			
H	<i>Ludwigia hirtella</i>	Rafinesque's Seedbox			
H	<i>Ludwigia leptocarpa</i>	Water-willow			
P	<i>Ludwigia palustris</i>	Common Water-purslane			
P	<i>Ludwigia pilosa</i>	Hairy Seedbox			
P	<i>Ludwigia repens</i>	Creeping Seedbox			
H	<i>Ludwigia virgata</i>	Savanna Seedbox			
P	<i>Lupinus diffusus</i>	Blue Sandhill Lupine			
P	<i>Lupinus perennis</i>	Northern Sundial Lupine			
P	<i>Luziola fluitans</i>	Southern Water Grass			
P	<i>Luzula bulbosa</i>	Bulbous Wood-rush			
P	<i>Luzula echinata</i>	Spreading Wood-rush			
P	<i>Lycopodiella alopecuroides</i>	Foxtail Clubmoss			
P	<i>Lycopodiella appressa</i>	Southern Bog Clubmoss			
P	<i>Lycopus cokeri</i>	Coker's Bugleweed, Carolina Bugleweed	S2		
P	<i>Lycopus virginicus</i>	Virginia Bugleweed			
H	<i>Lygodium palmatum</i>	American Climbing Fern, Hartford Fern	S3		
P	<i>Lyonia ligustrina var. foliosiflora</i>	Southern Maleberry, He-huckleberry			
P	<i>Lyonia lucida</i>	Shining Fetterbush			
P	<i>Lyonia mariana</i>	Staggerbush			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Lysimachia quadrifolia</i>	Smooth Loosestrife, Four-flowered Loosestrife			
P	<i>Lysimachia terrestris</i>	Bog Loosestrife, Bog-candles, Swamp-candles	SNR		
P	<i>Magnolia grandiflora</i>	Southern Magnolia, Bull Bay			
P	<i>Magnolia virginiana</i> var. <i>virginiana</i>	Northern Sweet Bay			
H	<i>Maianthemum racemosum</i>	Eastern Solomon's-plume, False Solomon's-seal			
P	<i>Malaxis unifolia</i>	Green Adder's-mouth			
P	<i>Malus angustifolia</i>	Wild Crabapple			
P	<i>Marshallia graminifolia</i>	Grassleaf Barbara's-buttons			
P	<i>Marshallia obovata</i> var. <i>scaposa</i>	-			
P	<i>Mayaca fluviatilis</i>	Bogmoss			
P	<i>Mazus pumilus</i>	Mazus			
P	<i>Medeola virginiana</i>	Indian Cucumber-root			
P	<i>Melia azedarach</i>	Chinaberry, Carolina Mahogany, Umbrella-tree			Severe
P	<i>Melica mutica</i>	Two-flower Melic			
P	<i>Micranthes virginiensis</i>	Early Saxifrage			
P	<i>Microstegium vimineum</i>	Japanese Stilt-grass, Flexible Sasa-grass, Japanese-grass			Severe
H	<i>Mikania scandens</i>	Climbing Hempweed			
P	<i>Mimosa microphylla</i>	Eastern Sensitive-briar			
H	<i>Mimulus alatus</i>	Winged Monkey-flower			
P	<i>Mitchella repens</i>	Partridge-berry			
P	<i>Mitreola sessilifolia</i>	Small-leaved Miterwort			
P	<i>Mollugo verticillata</i>	Carpetweed, Indian-chickweed			
P	<i>Monarda citriodora</i>	Lemon Bergamot			
H	<i>Monotropa uniflora</i>	Indian Pipes			
P	<i>Morella caroliniensis</i>	Pocosin Bayberry, Evergreen Bayberry			
P	<i>Morella cerifera</i>	Common Wax-myrtle, Southern Bayberry			
P	<i>Morus rubra</i>	Red Mulberry			
P	<i>Muhlenbergia expansa</i>	Savanna Hairgrass			
P	<i>Muhlenbergia schreberi</i>	Nimblewill, Dropseed			
P	<i>Murdannia keisak</i>	Mud-Annie, Marsh Dewflower			Severe
P	<i>Muscadinia rotundifolia</i>	Muscadine, Scuppernong			
P	<i>Myriophyllum heterophyllum</i>	Southern Water-milfoil			
P	<i>Myriophyllum laxum</i>	Loose Water-milfoil	S2		
P	<i>Nabalus altissimus</i>	Tall Rattlesnake-root			
H	<i>Nabalus autumnalis</i>	Slender Rattlesnake-root			
P	<i>Nabalus serpentarius</i>	Lion's-foot, Gall-of-the-earth			
P	<i>Nemophila aphylla</i>	Smallflower Baby Blue Eyes			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Nestronia umbellula</i>	Nestronia, Conjuror's-nut, Leechbrush	S3		
P	<i>Nuttallanthus canadensis</i>	Common Toadflax			
P	<i>Nymphaea odorata</i>	White Waterlily			
P	<i>Nymphoides cordata</i>	Little Floating Heart			
P	<i>Nyssa biflora</i>	Swamp Tupelo, Water Gum, Swamp Black Gum			
P	<i>Nyssa sylvatica</i>	Sour Gum, Black Gum, Pepperidge			
P	<i>Oenothera biennis</i>	Common Evening-primrose			
P	<i>Oenothera fruticosa</i> var. <i>fruticosa</i>	Southern Sundrops			
P	<i>Oenothera laciniata</i>	Cutleaf Evening-primrose			
P	<i>Oenothera sinuosa</i>	Texas Gaura			
P	<i>Oldenlandia uniflora</i>	Oldenlandia			
H	<i>Onoclea sensibilis</i>	Sensitive Fern, Bead Fern			
P	<i>Opuntia mesacantha</i> ssp. <i>mesacantha</i>	Prickly-pear			
P	<i>Orbexilum lupinellus</i>	Lupine Scurfpea	S1		
P	<i>Orbexilum psoralioides</i>	Western Sampson's-snakeroot			
P	<i>Orontium aquaticum</i>	Golden Club, Bog Torches, Never-wet			
P	<i>Osmunda spectabilis</i>	American Royal Fern			
P	<i>Osmundastrum cinnamomeum</i>	Cinnamon Fern			
P	<i>Oxalis corniculata</i>	Creeping Lady's-sorrel			
P	<i>Oxalis dillenii</i>	Southern Yellow Wood-sorrel			
H	<i>Oxalis stricta</i>	Common Yellow Wood-sorrel			
P	<i>Oxalis violacea</i>	Violet Wood-sorrel			
P	<i>Oxydendrum arboreum</i>	Sourwood, Sorrel-tree			
P	<i>Oxypolis ternata</i>	Savanna Cowbane	S1		
P	<i>Packera anonyma</i>	Appalachian Ragwort, Small's Ragwort			
P	<i>Packera glabella</i>	Butterweed, Smooth Ragwort, Yellowtop			
P	<i>Panicum amarum</i> var. <i>amarulum</i>	Southern Seabeach Grass			
P	<i>Panicum miliaceum</i>	Broomcorn Millet, Proso Millet, Hog Millet			
P	<i>Panicum verrucosum</i>	Warty Panic Grass			
H	<i>Panicum virgatum</i> var. <i>cubeense</i>	Blunt Panic Grass			
P	<i>Panicum virgatum</i> var. <i>virgatum</i>	Switchgrass			
P	<i>Parathelypteris noveboracensis</i>	New York Fern			
P	<i>Parthenocissus quinquefolia</i>	Virginia-creeper			
P	<i>Paspalum bifidum</i>	Pitchfork Paspalum, Pitchfork Crown Grass	S2		
P	<i>Paspalum boscianum</i>	Bull Paspalum			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Paspalum dilatatum</i>	Dallis Grass			Significant
H	<i>Paspalum floridanum</i>	Florida Paspalum			
P	<i>Paspalum laeve</i>	Field Paspalum			
P	<i>Paspalum notatum</i>	Bahia Grass			Significant
P	<i>Paspalum praecox var. praecox</i>	Early Crown Grass			
P	<i>Paspalum setaceum var. ciliatifolium</i>	-			
P	<i>Paspalum setaceum var. muhlenbergii</i>	-			
H	<i>Paspalum setaceum var. setaceum</i>	Thin Paspalum			
P	<i>Paspalum urvillei</i>	Vasey Grass			Significant
P	<i>Passiflora incarnata</i>	Maypops, Purple Passionflower			
P	<i>Passiflora lutea</i>	Eastern Yellow Passionflower			
P	<i>Paulownia tomentosa</i>	Princess Tree, Empress Tree, Paulownia			Severe
P	<i>Peltandra virginica</i>	Green Arrow-arum, Tuckahoe			
P	<i>Penstemon australis</i>	Southern Beardtongue, Sandhill Beardtongue			
H	<i>Penthorum sedoides</i>	Ditch-stonecrop, American Penthorum			
P	<i>Persea palustris</i>	Swamp Bay			
H	<i>Persicaria hydropiperoides</i>	Waterpepper			
P	<i>Persicaria longiseta</i>	Longbristle Smartweed, Bristly Lady's-thumb			
H	<i>Persicaria pensylvanica</i>	Pinkweed, Common Smartweed, Pennsylvania Smartweed			
P	<i>Persicaria sagittata</i>	Arrowleaf Tearthumb, Arrowvine, Scratch-grass			
H	<i>Persicaria setacea</i>	Swamp Smartweed			
P	<i>Persicaria virginiana</i>	Jumpseed			
P	<i>Phanopyrum gymnocarpon</i>	Swamp Phanopyrum, Savanna Phanopyrum			
P	<i>Phaseolus sinuatus</i>	Sandhills Bean	SNR		
H	<i>Philadelphus inodorus</i>	Appalachian Mock-orange			
H	<i>Phlox drummondii</i>	Annual Phlox, Drummond Phlox			
P	<i>Phlox nivalis var. nivalis</i>	Pineland Phlox			
P	<i>Phoradendron leucarpum</i>	American Mistletoe, Christmas Mistletoe			
P	<i>Phyllanthus urinaria</i>	Chamber Bitter			
P	<i>Phyllostachys aurea</i>	Golden Bamboo, Fishpole Bamboo			Significant
P	<i>Physalis lanceolata</i>	Sandhills Ground-cherry			
P	<i>Phytolacca americana</i>	Common Pokeweed			
P	<i>Pilea pumila</i>	Greenfruit Clearweed, Coolwort, Richweed			
H	<i>Pinguicula caerulea</i>	Blue Butterwort			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Pinus echinata</i>	Shortleaf Pine, Rosemary Pine, Yellow Pine			
P	<i>Pinus elliotii</i>	Slash Pine			
P	<i>Pinus palustris</i>	Longleaf Pine, Southern Pine			
P	<i>Pinus serotina</i>	Pocosin Pine, Pond Pine, Marsh Pine			
P	<i>Pinus taeda</i>	Loblolly Pine, Old Field Pine			
P	<i>Pinus virginiana</i>	Virginia Pine, Scrub Pine, Jersey Pine			
P	<i>Pityopsis adenolepis</i>	Carolina Silkgrass			
H	<i>Pityopsis graminifolia</i> var. <i>latifolia</i>	Narrowleaf silkgrass			
P	<i>Planera aquatica</i>	Planer-tree, Water-elm			
P	<i>Plantago aristata</i>	Buckhorn Plantain			
P	<i>Plantago lanceolata</i>	English Plantain, Rib-grass			
P	<i>Plantago virginica</i>	Virginia Plantain, Hoary Plantain			
P	<i>Plantago wrightiana</i>	Wright's Plantain			
P	<i>Platanthera ciliaris</i>	Yellow Fringed Orchid			
P	<i>Platanthera clavellata</i>	Small Green Wood Orchid			
P	<i>Platanus occidentalis</i>	Sycamore, Plane-tree			
P	<i>Pleopeltis michauxiana</i>	Resurrection Fern, Scaly Polypody			
H	<i>Pluchea camphorata</i>	Camphorweed, Camphor Pluchea			
P	<i>Pluchea foetida</i> var. <i>foetida</i>	Stinking Fleabane			
P	<i>Poa annua</i>	Speargrass, Six-weeks Grass, Annual Bluegrass			
P	<i>Poa autumnalis</i>	Autumn Bluegrass			
P	<i>Podophyllum peltatum</i>	May-apple, American Mandrake			
P	<i>Pogonia ophioglossoides</i>	Rose Pogonia, Snakemouth, Beardflower, Ettercap, Addermouth			
P	<i>Polygala cruciata</i>	Drumheads			
P	<i>Polygala lutea</i>	Orange Milkwort, Red-hot-poker			
H	<i>Polygala polygama</i>	Racemed Milkwort			
P	<i>Polygala ramosa</i>	Short Pinebarren Milkwort, Low Pinebarren Milkwort			
P	<i>Polygonum polygamum</i> var. <i>polygamum</i>	Common October-flower			
P	<i>Polypremum procumbens</i>	Polypremum, Rustweed, Juniperleaf			
P	<i>Polystichum acrostichoides</i>	Christmas Fern			
H	<i>Populus alba</i>	Silver Poplar, White Poplar			Significant
H	<i>Portulaca pilosa</i>	Kiss-me-quick			
P	<i>Potamogeton diversifolius</i>	Common Snailseed Pondweed			
P	<i>Potamogeton pusillus</i> var. <i>pusillus</i>	Small Pondweed			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Potentilla canadensis</i>	Running Five-fingers			
P	<i>Proserpinaca palustris</i> var. <i>palustris</i>	Coastal Mermaid-weed			
H	<i>Prunella vulgaris</i> var. <i>lanceolata</i>	American Self-heal			
P	<i>Prunus angustifolia</i>	Chickasaw Plum			
P	<i>Prunus caroliniana</i>	Carolina Laurel Cherry			
P	<i>Prunus serotina</i>	Wild Black Cherry			
P	<i>Prunus umbellata</i>	Hog Plum, Flatwoods Plum			
P	<i>Pseudognaphalium obtusifolium</i>	Fragrant Rabbit Tobacco			
H	<i>Pseudognaphalium stramineum</i>	Cottonbatting Plant			
P	<i>Pseudolycopodiella caroliniana</i>	Carolina Bog Clubmoss, Slender Clubmoss			
P	<i>Pteridium latiusculum</i> var. <i>pseudocaudatum</i>	Southern Bracken			
P	<i>Ptilimnium capillaceum</i>	Eastern Bishopweed, Atlantic Bishopweed			
H	<i>Pueraria montana</i> var. <i>lobata</i>	Kudzu			Severe
P	<i>Pycnanthemum flexuosum</i>	Savanna Mountain-mint			
P	<i>Pyrrhopappus carolinianus</i>	False-dandelion			
H	<i>Pyxidantha barbulata</i>	Common Pyxie-moss, Big Pyxie	S2		
P	<i>Pyxidantha brevifolia</i>	Sandhills Pyxie-moss, Wells's Pyxie-moss, Little Pyxie	S1		
P	<i>Quercus alba</i>	White Oak			
H	<i>Quercus coccinea</i>	Scarlet Oak			
P	<i>Quercus falcata</i>	Spanish Oak, Southern Red Oak			
P	<i>Quercus hemisphaerica</i>	Sand Laurel Oak, Darlington Oak			
P	<i>Quercus incana</i>	Bluejack Oak			
P	<i>Quercus laevis</i>	Turkey Oak			
H	<i>Quercus laurifolia</i>	Laurel Oak			
P	<i>Quercus lyrata</i>	Overcup Oak			
P	<i>Quercus margarettae</i>	Sand Post Oak			
P	<i>Quercus marilandica</i>	Blackjack Oak			
P	<i>Quercus michauxii</i>	Basket Oak, Swamp Chestnut Oak			
P	<i>Quercus nigra</i>	Water Oak, Paddle Oak			
P	<i>Quercus pagoda</i>	Cherrybark Oak, Swamp Spanish Oak			
P	<i>Quercus phellos</i>	Willow Oak			
P	<i>Quercus rubra</i> var. <i>rubra</i>	Red Oak			
P	<i>Quercus shumardii</i>	Shumard Oak			
P	<i>Quercus stellata</i>	Post Oak			
P	<i>Quercus velutina</i>	Black Oak			
P	<i>Quercus virginiana</i>	Live Oak			
P	<i>Ranunculus abortivus</i>	Kidneyleaf Buttercup			
H	<i>Ranunculus pusillus</i>	Low Spearwort			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Ranunculus sardous</i>	Sardinian Buttercup, Hairy Buttercup			
P	<i>Raphanus raphanistrum</i>	Wild Radish, Jainted Charlock, White Charlock			
P	<i>Rhexia alifanus</i>	Smooth Meadow-beauty			
H	<i>Rhexia lutea</i>	Yellow Meadow-beauty, Golden Meadow-beauty			
P	<i>Rhexia mariana var. exalbida</i>	White Meadow-beauty			
H	<i>Rhexia mariana var. mariana</i>	Maryland Meadow-beauty, Dull Meadow-beauty			
H	<i>Rhexia nashii</i>	Hairy Meadow-beauty, Maid Marian			
P	<i>Rhexia petiolata</i>	Ciliate Meadow-beauty, Short-stemmed Meadow-beauty			
P	<i>Rhexia virginica</i>	Virginia Meadow-beauty, Deergrass, Handsome Harry			
P	<i>Rhododendron atlanticum</i>	Dwarf Azalea			
P	<i>Rhododendron canescens</i>	Piedmont Azalea, Southern Pinxter Azalea, Wild Azalea			
P	<i>Rhododendron minus</i>	Gorge Rhododendron, Punctatum			
H	<i>Rhododendron periclymenoides</i>	Wild Azalea, Pinxterflower, Pinxterbloom Azalea, Election Pink			
H	<i>Rhododendron viscosum var. serrulatum</i>	Swamp Azalea, Clammy Azalea			
P	<i>Rhus copallinum var. copallinum</i>	Winged Sumac, Flameleaf Sumac			
H	<i>Rhus glabra</i>	Smooth Sumac			
P	<i>Rhynchosia reniformis</i>	Dollarweed			
H	<i>Rhynchosia tomentosa</i>	Twining Snoutbean			
P	<i>Rhynchospora chalarocephala</i>	Loose-headed Beaksedge			
P	<i>Rhynchospora chapmanii</i>	Chapman's Beaksedge			
P	<i>Rhynchospora ciliaris</i>	Fringed Beaksedge			
P	<i>Rhynchospora corniculata</i>	Short-bristled Horned Beaksedge			
H	<i>Rhynchospora globularis</i>	Globe Beaksedge			
P	<i>Rhynchospora glomerata</i>	Clustered Beaksedge			
P	<i>Rhynchospora gracilentia</i>	Slender Beaksedge			
P	<i>Rhynchospora grayi</i>	Gray's Beaksedge			
H	<i>Rhynchospora harveyi</i>	Harvey's Beaksedge			
P	<i>Rhynchospora inexpansa</i>	Nodding Beaksedge			
P	<i>Rhynchospora leptocarpa</i>	Slender-Fruit Beaksedge	S1		
H	<i>Rhynchospora macra</i>	Southern White Beaksedge	S1		
P	<i>Rhynchospora macrostachya</i>	Tall Horned Beaksedge			
P	<i>Rhynchospora microcephala</i>	Small-headed Beaksedge			
P	<i>Rhynchospora oligantha</i>	Feather-bristled Beaksedge	S2		

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Rhynchospora pallida</i>	Pale Beaksedge	S1		
P	<i>Rhynchospora perplexa</i>	Pineland Beaksedge			
P	<i>Rhynchospora plumosa</i>	Plumed Beaksedge			
P	<i>Rhynchospora rariflora</i>	Few-flower Beaksedge			
P	<i>Rhynchospora scirpoides</i>	Long-beak Beaksedge	S1		
P	<i>Rhynchospora stenophylla</i>	Coastal Bog Beaksedge	S2		
H	<i>Rhynchospora torreyana</i>	Torrey's Beaksedge			
H	<i>Rhynchospora wrightiana</i>	Wright's Beaksedge			
P	<i>Richardia brasiliensis</i>	Tropical Mexican Clover			
H	<i>Richardia scabra</i>	Rough Mexican Clover			
P	<i>Robinia nana</i>	Dwarf Bristly Locust			
P	<i>Robinia pseudoacacia</i>	Black Locust			
P	<i>Rosa luciae</i>	Memorial Rose, Dorothy Perkins Rose, Lucie Rose			
P	<i>Rosa multiflora</i>	Multiflora Rose			Significant
H	<i>Rotala ramosior</i>	Toothcup			
H	<i>Rubus bifrons</i>	European Blackberry			
P	<i>Rubus cuneifolius</i>	Sand Blackberry			
P	<i>Rubus flagellaris</i>	Common Dewberry			
P	<i>Rubus pensilvanicus</i>	Pennsylvania Blackberry, Eastern Blackberry			
P	<i>Rubus trivialis</i>	Southern Dewberry, Coastal Plain Dewberry			
P	<i>Rudbeckia laciniata</i> var. <i>laciniata</i>	Common Cutleaf Coneflower, Goldenglow			
P	<i>Ruellia ciliosa</i>	Sandhills Wild-petunia	S1		
H	<i>Rumex acetosella</i>	Red Dock, Sheep Sorrel, Sourgrass			
H	<i>Rumex conglomeratus</i>	Clustered Green Dock			
P	<i>Rumex crispus</i>	Curly Dock			
P	<i>Rumex hastatulus</i>	Wild Dock, Heartwing Dock			
P	<i>Sabatia brachiata</i>	Narrowleaf Rose-pink			
P	<i>Sabatia difformis</i>	Lanceleaf Rose-gentian, White Sabatia			
P	<i>Sabatia quadrangula</i>	Four-angle Sabatia			
P	<i>Sabulina caroliniana</i>	Carolina Sandwort, Longroot			
H	<i>Sacciolepis striata</i>	American Cupscale			
H	<i>Sagina decumbens</i>	Eastern Pearlwort			
H	<i>Sagittaria australis</i>	Appalachian Arrowhead			
P	<i>Sagittaria engelmanniana</i>	Engelmann's Arrowhead			
P	<i>Sagittaria isoetiformis</i>	Quillwort Arrowhead	S3		
P	<i>Sagittaria latifolia</i> var. <i>latifolia</i>	Broadleaf Arrowhead			
P	<i>Salix nigra</i>	Black Willow			
P	<i>Salvia azurea</i>	Azure Sage			
P	<i>Salvia lyrata</i>	Lyreleaf Sage			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Sambucus canadensis</i>	Common Elderberry			
H	<i>Sanguinaria canadensis</i>	Bloodroot, Red Puccoon			
P	<i>Sanicula canadensis</i> var. <i>canadensis</i>	Canada Sanicle, Black Snakeroot			
H	<i>Sanicula canadensis</i> var. <i>floridana</i>	Florida Sanicle, Florida Snakeroot			
P	<i>Sanicula smallii</i>	Southern Sanicle, Small's Sanicle			
H	<i>Saponaria officinalis</i>	Soapwort, Bouncing Bet			
P	<i>Sarracenia flava</i>	Yellow Pitcherplant, Trumpets	S3S4		
H	<i>Sarracenia minor</i>	Hooded Pitcherplant	S3S4		
P	<i>Sarracenia purpurea</i> var. <i>venosa</i>	Southern Purple Pitcherplant	S3S4		
P	<i>Sarracenia rubra</i>	Sweet Pitcherplant, Redflower Pitcherplant	S3S4		
P	<i>Sassafras albidum</i>	Sassafras			
P	<i>Sceptridium biternatum</i>	Southern Grapefern			
P	<i>Schizachyrium scoparium</i> var. <i>scoparium</i>	Common Little Bluestem			
P	<i>Schizachyrium scoparium</i> var. <i>stoloniferum</i>	Creeping Little Bluestem			
P	<i>Schoenoplectus etuberculatus</i>	Swamp Bulrush, Canby's Bulrush	SNR		
H	<i>Schoenoplectus subterminalis</i>	Swaying Rush, Water Bulrush	SNR		
P	<i>Scirpus cyperinus</i>	Woolgrass Bulrush			
P	<i>Scleranthus annuus</i>	Annual Knawel			
H	<i>Scleria ciliata</i> var. <i>ciliata</i>	Hairy Nutrush			
P	<i>Scleria ciliata</i> var. <i>elliottii</i>	Broad-leaved Hairy Nutrush			
P	<i>Scleria muehlenbergii</i>	Pitted Nutrush			
P	<i>Scleria nitida</i>	Shining Nutrush			
H	<i>Scleria pauciflora</i> var. <i>pauciflora</i>	Papillose Nutrush			
P	<i>Scleria triglomerata</i>	Tall Nutrush			
P	<i>Scutellaria integrifolia</i>	Helmet Skullcap			
H	<i>Secale cereale</i>	Rye			
P	<i>Senna obtusifolia</i>	Sicklepod, Coffeeweed			
P	<i>Sericocarpus asteroides</i>	Toothed White-topped Aster			
H	<i>Sericocarpus linifolius</i>	Narrow-leaf White-topped Aster			
P	<i>Sericocarpus tortifolius</i>	Twisted-leaf White-topped Aster			
H	<i>Setaria faberi</i>	Nodding Foxtail Grass, Giant Foxtail-grass			
P	<i>Setaria italica</i>	Foxtail-millet, Italian-millet			
H	<i>Setaria pumila</i>	Yellow Foxtail			
P	<i>Setaria viridis</i>	Green Bristlegrass			
P	<i>Seymeria cassioides</i>	Senna Seymeria			
P	<i>Sida spinosa</i>	Prickly Sida, Prickly-mallow, False-mallow			
P	<i>Silene antirrhina</i>	Sleepy Catchfly, Garter-pink			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
H	<i>Silene caroliniana</i> var. <i>caroliniana</i>	South Carolina Wild-pink, Rock Catchfly			
P	<i>Silphium compositum</i> var. <i>compositum</i>	-			
H	<i>Sisyrinchium capillare</i>	Glade Blue-eyed-grass			
H	<i>Sisyrinchium mucronatum</i>	Needle-tip Blue-eyed-grass			
P	<i>Sisyrinchium rufipes</i>	Red Based Blue-eyed-grass			
H	<i>Smilax bona-nox</i> var. <i>bona-nox</i>	Catbriar			
P	<i>Smilax glauca</i>	Whiteleaf Greenbriar, Wild Sarsaparilla			
P	<i>Smilax herbacea</i>	Common Carrionflower			
P	<i>Smilax hugeri</i>	Huger's Carrionflower			
P	<i>Smilax laurifolia</i>	Blaspheme-vine, Bamboo-vine			
P	<i>Smilax rotundifolia</i>	Common Greenbriar, Bullbriar, Horsebriar			
P	<i>Smilax walteri</i>	Coral Greenbriar, Red-berried Swamp Smilax			
P	<i>Solanum carolinense</i>	Horse-nettle, Ball-nettle			
H	<i>Solanum ptychanthum</i>	American Black Nightshade			
P	<i>Solidago altissima</i> var. <i>altissima</i>	Tall Goldenrod			
H	<i>Solidago arguta</i> var. <i>caroliniana</i>	Vasey's Goldenrod			
H	<i>Solidago austrina</i>	Southern Bog Goldenrod			
P	<i>Solidago caesia</i>	Axillary Goldenrod			
P	<i>Solidago gracillima</i>	Southern Bog Goldenrod, Graceful Goldenrod			
P	<i>Solidago nemoralis</i>	Eastern Gray Goldenrod			
P	<i>Solidago odora</i>	Licorice Goldenrod			
P	<i>Solidago pinetorum</i>	Pineywoods Goldenrod	SNR		
H	<i>Solidago pulchra</i>	Beautiful Goldenrod, Carolina Goldenrod	S1		
P	<i>Solidago pulverulenta</i>	Downy Goldenrod			
P	<i>Solidago rugosa</i> var. <i>aspera</i>	-			
P	<i>Solidago rugosa</i> var. <i>celandifolia</i>	Hackberry-leaf Goldenrod			
P	<i>Solidago salicina</i>	Southern Roughleaf Goldenrod			
P	<i>Sophronanthe pilosa</i>	Shaggy Hedge-hyssop			
P	<i>Sorghastrum eliottii</i>	Slender Indiangrass			
P	<i>Sorghastrum nutans</i>	Yellow Indiangrass			
H	<i>Sorghum bicolor</i> var. <i>drummondii</i>	Shattercane			
P	<i>Sorghum halepense</i>	Johnson Grass			Severe
P	<i>Sparganium americanum</i>	American Bur-reed			
P	<i>Spermolepis divaricata</i>	Southern Spermolepis, Roughfruit Spermolepis			
P	<i>Spermolepis echinata</i>	Bristlefruit Spermolepis, Hooked Spermolepis			
P	<i>Sphenopholis filiformis</i>	Longleaf Wedgescale			

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P	<i>Sphenopholis nitida</i>	Shiny Wedgescale			
P	<i>Sphenopholis obtusata</i>	Prairie Wedgegrass			
P	<i>Spiraea thunbergii</i>	Thunberg's meadowsweet			
P	<i>Spiranthes cernua</i>	Nodding Ladies'-tresses			
p	<i>Spiranthes odorata</i>	Fragrant Ladies'-tresses, Marsh Ladies'-tresses			
P	<i>Sporobolus brevipilis</i>	Pinebarren Sandreed	S1		
P	<i>Sporobolus clandestinus</i>	Rough Dropseed			
H	<i>Sporobolus indicus</i>	Smut Grass, Blackseed			
P	<i>Sporobolus junceus</i>	Sandhills Dropseed			
p	<i>Sporobolus pinetorum</i>	Carolina Dropseed, Savanna Dropseed	S2		
p	<i>Stachys floridana</i>	Florida Betony, Rattlesnake-weed			
P	<i>Stellaria media</i>	Common Chickweed			
P	<i>Stenanthium densum</i>	Crow-poison			
P	<i>Stillingia sylvatica</i>	Queen's-delight			
P	<i>Stipulicida setacea</i>	Coastal Plain Wireplant			
H	<i>Strophostyles helvola</i>	Annual Sand Bean			
P	<i>Stylisma patens</i>	Common Dawnflower			
P	<i>Stylosanthes biflora</i>	Pencil-flower			
P	<i>Styrax americanus</i> var. <i>americanus</i>	American Snowbell, American Storax			
P	<i>Symphotrichum concinnum</i>	Narrow-leaved Smooth Aster			
P	<i>Symphotrichum concolor</i> var. <i>concolor</i>	Eastern Silvery Aster			
P	<i>Symphotrichum dumosum</i> var. <i>dumosum</i>	Long-stalked Aster			
P	<i>Symphotrichum lanceolatum</i>	-			
p	<i>Symphotrichum lateriflorum</i> var. <i>lateriflorum</i>	Starved Aster			
P	<i>Symphotrichum novi-belgii</i> var. <i>elodes</i>	New York Aster			
P	<i>Symphotrichum patens</i>	Common Clasping Aster			
P	<i>Symphotrichum pilosum</i>	Hairy White Oldfield Aster			
H	<i>Symphotrichum puniceum</i>	Purple-stem Aster, Swamp Aster			
P	<i>Symphotrichum walteri</i>	Walter's Aster			
P	<i>Symplocos tinctoria</i>	Sweetleaf, Horsesugar			
P	<i>Taraxacum officinale</i>	Common Dandelion			
P	<i>Taxodium ascendens</i>	Pond-cypress			
H	<i>Taxodium distichum</i>	Bald-cypress			
p	<i>Teesdalia nudicaulis</i>	Shepherd's Cress, Hedge Mustard, Bank Cress			
P	<i>Tephrosia florida</i>	Florida Goat's-rue			
P	<i>Tephrosia spicata</i>	Spiked Hoarypea			
P	<i>Tephrosia virginiana</i>	Virginia Goat's-rue			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Thaspium trifoliatum</i> var. <i>aureum</i>	Purple Meadowparsnip			
H	<i>Tilia americana</i> var. <i>heterophylla</i>	Mountain Basswood, White Basswood, Linn			
H	<i>Tillandsia usneoides</i>	Spanish-moss			
P	<i>Tipularia discolor</i>	Crane-fly Orchid			
P	<i>Toxicodendron pubescens</i>	Poison Oak			
P	<i>Toxicodendron radicans</i> var. <i>radicans</i>	Eastern Poison Ivy			
P	<i>Toxicodendron vernix</i>	Poison Sumac, Thunderwood			
P	<i>Tragia urens</i>	Southeastern Noseburn, Wavyleaf Noseburn			
H	<i>Triadica sebifera</i>	Chinese Tallow-tree, Popcorn Tree			Severe
P	<i>Triantha racemosa</i>	Carolina Bog Asphodel, White Asphodel			
P	<i>Trichostema dichotomum</i>	Common Blue Curls			
P	<i>Trichostema setaceum</i>	Narrowleaf Blue Curls			
P	<i>Tridens carolinianus</i>	Carolina Triodia, Carolina Fluffgrass	S1		
P	<i>Tridens flavus</i>	Redtop, Tall Redtop, Purpletop Tridens, Greasy Grass			
P	<i>Trifolium arvense</i>	Rabbitfoot Clover			
P	<i>Trifolium campestre</i>	Hop Clover			
P	<i>Trifolium dubium</i>	Low Hop Clover, Little Hop Clover			
H	<i>Trifolium repens</i>	White Clover, Dutch Clover, Ladino Clover			
P	<i>Trillium catesbaei</i>	Catesby's Trillium, Bashful Trillium, Rosy Wake-robin			
H	<i>Triodanis biflora</i>	Small Venus' Looking-glass			
P	<i>Triodanis perfoliata</i>	Clasping Venus' Looking-glass			
P	<i>Triplasis americana</i>	Southern Sandgrass			
P	<i>Triplasis purpurea</i>	Purple Sandgrass			
P	<i>Triticum aestivum</i>	Bread Wheat			
P	<i>Ulmus alata</i>	Winged Elm			
P	<i>Ulmus americana</i> var. <i>americana</i>	American Elm, White Elm			
P	<i>Urochloa platyphylla</i>	Broadleaf Signal-grass			
P	<i>Urochloa ramosa</i>	Browntop Millet, Dixie Signalgrass			
P	<i>Urochloa texana</i>	Texas Millet, Texas Signalgrass			
P	<i>Utricularia gibba</i>	Shortspur Creeping Bladderwort			
P	<i>Utricularia inflata</i>	Swollen Bladderwort, Inflated Bladderwort			
P	<i>Utricularia juncea</i>	Southern Bladderwort			
P	<i>Utricularia purpurea</i>	Purple Bladderwort			

Occurrence	Scientific Name	Common Names	SCDNR	USFWS	SCEPPC
P	<i>Utricularia striata</i>	Fibrous Bladderwort			
P	<i>Utricularia subulata</i>	Slender Bladderwort, Zigzag Bladderwort			
P	<i>Uvularia puberula</i>	Carolina Bellwort, Appalachian Bellwort, Coastal Bellwort			
P	<i>Vaccinium arboreum</i>	Farkleberry, Sparkleberry			
P	<i>Vaccinium crassifolium</i>	Creeping Blueberry			
P	<i>Vaccinium elliotii</i>	Mayberry			
P	<i>Vaccinium formosum</i>	Southern Highbush Blueberry, Swamp Highbush Blueberry			
P	<i>Vaccinium fuscatum</i>	Hairy Highbush Blueberry, Black Highbush Blueberry			
P	<i>Vaccinium stamineum</i> var. <i>stamineum</i>	Common Deerberry			
P	<i>Vaccinium tenellum</i>	Southern Blueberry, Small Cluster Blueberry			
P	<i>Valerianella locusta</i>	European Corn-salad			
P	<i>Valerianella radiata</i>	Beaked Cornsalad			
H	<i>Verbascum blattaria</i>	Moth Mullein			
P	<i>Verbascum thapsus</i>	Woolly Mullein, Common Mullein, Flannel-plant, Velvet-plant			
H	<i>Verbena brasiliensis</i>	Brazilian Vervain			
P	<i>Verbena carnea</i>	Carolina-vervain			
P	<i>Verbena rigida</i>	Tuberous Vervain			
P	<i>Verbesina occidentalis</i>	Southern Crownbeard			
P	<i>Verbesina virginica</i> var. <i>virginica</i>	Common Frostweed			
P	<i>Vernonia acaulis</i>	Stemless Ironweed			
P	<i>Vernonia angustifolia</i> var. <i>angustifolia</i>	Tall Ironweed			
P	<i>Veronica arvensis</i>	Corn Speedwell, Wall Speedwell			
P	<i>Veronica peregrina</i> var. <i>peregrina</i>	Common Purslane Speedwell, Neckweed			
P	<i>Viburnum dentatum</i>	Arrow-wood			
P	<i>Viburnum nudum</i>	Southern Wild Raisin, Possumhaw			
H	<i>Vicia grandiflora</i>	Large Yellow Vetch			
P	<i>Vicia lathyroides</i>	Spring Vetch			
P	<i>Vicia sativa</i> ssp. <i>nigra</i>	Narrowleaf Vetch			
P?	<i>Vicia villosa</i> ssp. <i>varia</i>	Winter Vetch			
P	<i>Vicia villosa</i> ssp. <i>villosa</i>	Hairy Vetch, Fodder Vetch			
H	<i>Vigna unguiculata</i>	Black-eyed Pea, Field Pea, Cow Pea			
H	<i>Viola affinis</i>	LeConte's Violet, Sand Violet			
P	<i>Viola bicolor</i>	Wild Pansy, Field Pansy			
P	<i>Viola edulis</i>	Salad Violet			

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P	<i>Viola pedata</i> var. <i>flabellata</i>	Sandhills Bird's-foot Violet			
P	<i>Viola pedata</i> var. <i>pedata</i>	Bird's-foot Violet			
P	<i>Viola primulifolia</i>	Primrose-leaf Violet			
P	<i>Viola septemloba</i>	Sandy pinelands			
P	<i>Viola sororia</i>	Dooryard Violet, Confederate Violet, Common Blue Violet			
P	<i>Viola villosa</i>	Southern Woolly Violet			
P	<i>Vitis cinerea</i> var. <i>floridana</i>	Florida Grape			
P	<i>Wahlenbergia marginata</i>	Southern Rockbell			
H	<i>Warea cuneifolia</i>	Carolina Warea, Carolina Pineland-cress	S1		
H	<i>Wisteria frutescens</i>	American Wisteria, Swamp Wisteria, Atlantic Wisteria			
P	<i>Wisteria sinensis</i>	Chinese Wisteria			Severe
H	<i>Xanthium strumarium</i>	Cocklebur			
P	<i>Xanthorhiza simplicissima</i>	Yellowroot, Brook-feather			
P	<i>Xyris ambigua</i>	Coastal Plain Yellow-eyed Grass			
P	<i>Xyris baldwiniana</i>	Grassleaf Yellow-eyed Grass			
P	<i>Xyris caroliniana</i>	Pineland Yellow-eyed Grass			
P	<i>Xyris chapmanii</i>	Chapman's Yellow-eyed Grass	S1		
P	<i>Xyris difformis</i>	Bog Yellow-eyed Grass			
P	<i>Xyris fimbriata</i>	Giant Yellow-eyed Grass			
P	<i>Xyris jupicai</i>	Richard's Yellow-eyed-grass			
H	<i>Xyris platylepis</i>	Tall Yelloweyed Grass			
H	<i>Xyris scabrifolia</i>	Roughleaf Yellow-eyed Grass	S1		
P	<i>Xyris smalliana</i>	Small's Yellow-eyed Grass			
P?	<i>Xyris species 1</i>	-			
P	<i>Yucca filamentosa</i>	Curlyleaf Yucca, Spoonleaf Yucca			
H	<i>Zea mays</i>	Corn, Maize			
P	<i>Zephyranthes atamasco</i>	Common Atamasco-lily			
H	<i>Zizia aptera</i>	Heartleaf Golden-Alexanders			