

THE VASCULAR FLORA OF THE LAKE THOREAU ENVIRONMENTAL CENTER,
FORREST AND LAMAR COUNTIES, MISSISSIPPI, WITH COMMENTS ON
COMPOSITIONAL CHANGE AFTER A DECADE OF PRESCRIBED FIRE

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ABSTRACT

Longleaf pine (*Pinus palustris* Mill.) ecosystems exhibit high species diversity and are major contributors to the extraordinary levels of regional biodiversity and endemism found in the North American Coastal Plain Province. These forests require frequent fire return intervals (every 2–3 years) to maintain this rich diversity. In 2009, a floristic inventory was conducted at the Lake Thoreau Environmental Center owned by the University of Southern Mississippi in Hattiesburg, Mississippi. The Center is located on 106 ha with approximately half covered by a 100+ year old longleaf pine forest. When the 2009 survey was conducted, fire had been excluded for over 20 years resulting in a dense understory dominated by woody species throughout most of the forest. The 2009 survey recorded 282 vascular plant species. Prescribed fire was reintroduced in 2009 and reapplied again in 2010, 2012, 2014, 2016, and 2018. A new survey was conducted in 2019 to assess the effects of prescribed fire on floristic diversity. The new survey found an additional 268 species bringing the total number of plants species to 550. This study highlights the changes in species diversity that occurs when fire is reintroduced into a previously fire-suppressed system and the need to monitor sensitive areas for changes in species composition.

RESUMEN

Los ecosistemas de pinos, en particular ecosistemas de *Pinus palustris*, son muy diversos y son una gran razón para la alta diversidad y endemismo que se encuentra en la llanura costera de América del Norte. Estos bosques requieren incendios frecuentes (cada 2–3 años) para mantener esta rica diversidad. En 2009, se realizó un inventario florístico en el Centro Ambiental 'Lake Thoreau,' propiedad de la Universidad del Sur de Misisipi en Hattiesburg, Misisipi. El Centro está ubicado en 106 hectáreas, aproximadamente la mitad de las cuales está cubierta por un bosque de *Pinus palustris* de más de 100 años. Cuando se realizó la investigación de 2009, el fuego había estado excluido durante más de 20 años, lo que resultó en un sotobosque denso dominado por especies leñosas que cubrían la mayor parte del bosque. La investigación de 2009 encontró 282 especies de plantas vasculares. El fuego prescrito se reintrodujo en 2009 y se volvió a aplicar en 2010, 2012, 2014, 2016 y 2018. Se realizó una nueva investigación en 2019 para evaluar los efectos del fuego prescrito en la diversidad florística. La nueva investigación encontró 268 especies adicionales, lo que eleva el número total de especies de plantas vasculares a 550. Este estudio destaca los cambios en la diversidad de especies que ocurren cuando el fuego previamente suprimido se reintroduce en un sistema y la necesidad de monitorear áreas sensibles para detectar cambios en la composición de las especies.

INTRODUCTION

Floristic inventories are important for conservation biology and can support both local and regional land management decisions. Unfortunately, Mississippi (MS) remains an under-collected state, meaning that only a few comprehensive surveys of natural and civil geographic areas exist. To date, only 40 botanical surveys/floras/checklists (will henceforth refer to all as floras) exist for MS accompanied by verifiable specimens and collection data (Table 1). Of these, there are floras for 14 counties (12 complete, 2 partial), 3 MS state parks, 2 national forests, and 3 wildlife management areas (WMAs). These floras represent 17% of counties, 17% of state parks, 33% of national forests, and 4% of WMAs within MS (Table 2). An additional 13 floras exist for other various natural areas (Table 1).

Most of southeastern Mississippi lies within the Upland Longleaf Pine Woodland EPA Level IV Ecoregion (Fig. 1; Omernik 1987), and both Forrest and Lamar counties are included in this ecoregion. This area in Mississippi is referred to as southern pine belt, pine hills, piney woods, or southern pine plains and hills, but is most commonly called the Pine Belt (Fenneman 1938; Foster 1941; Chapman et al. 2004). The earliest published flora for the Pine Belt region of Mississippi included 154 species of vascular plants characteristic of the

TABLE 1. List of published checklists, flora, and inventories of vascular plants in Mississippi. NF = United States National Forest, NP = United States National Park, SP = Mississippi State Park, WMA = Mississippi Wildlife Management Areas. Natural Area designation includes subunits of larger areas (e.g., Gopher Farm Sandhill is nested within both Chickasawhay National Forest and Wayne County, MS), nature centers, creek drainages, nature trails, and geographically defined habitats (e.g., Ragland Hills, MS).

| Flora Citation | Type | Area |
|-----------------------|--------------|--|
| Alford 2001 | County | Amite County |
| Bryson & Skojac 2011 | County | Washington County |
| Carraway 1976 | WMA | Tallahalla WMA |
| Carter 1978 | NF | Delta NF |
| Carter & Jones 1968 | SP | Johnson State Park |
| Coleman 1975 | Natural Area | Yellow Creek and Mackeys Creek drainage area |
| Cotton 2010 | Natural Area | Lake Thoreau Environmental Center |
| Denley et al. 2002 | County | Yalobusha County |
| Eleuterius 1979 | NP | Horn and Petit Bois Islands |
| Ferrari 1970 | County | DeSoto County |
| Gunn et al. 1980 | County | Washington County |
| Havran 2004 | NF | Homochitto NF |
| Johnson & Little 1967 | Natural Area | Bluff Experimental Forest |
| Lassetter 1968 | SP | Wall Doxey SP |
| Leidolf et al. 2002 | County | Oktibbeha County |
| Lloyd & Tracy 1901 | State | general flora of MS and LA |
| Lowe 1921 | State | general flora of MS |
| MacDonald 1996 | County | Monroe County |
| Majure 2007 | Natural Area | Chunky River drainage area |
| Majure et al. 2011 | County | Lauderdale County |
| McCook 1982 | SP | Clark Creek Natural Area |
| McDaniel et al. 1984 | WMA | Tallahalla WMA |
| McNair 2015 | County | Wayne County |
| McNair et al. 2016 | Natural Area | Gopher Farm Sandhill |
| Meeks 1984 | County | Tippah County (partial, north) |
| Miller & Jones 1967 | NP | Ship Island |
| Miller 2016 | Natural Area | Possum Walk Trail |
| Moore 1976 | Natural Area | USM Arboretum, Gulf Park Campus |
| Moore 1993 | Natural Area | Noxubee Crest |
| Morgan 1979 | County | Jones County (partial, northeast) |
| Morris 1987 | County | Grenada County |
| Phillely 2019 | County | Choctaw County |
| Ratledge et al. 1974 | Natural Area | Yellow Creek Embayment |
| Richmond 1962 | NP | Horn Island |
| Rogers 1977 | Natural Area | Ragland Hills |
| Searcy 1977 | SP | Tishomingo State Park |
| Simmons 1968 | Natural Area | Kilgore Hills |
| Webster 1978 | Natural Area | Diamond Point Island |
| Winstead 1990 | County | Attala County |

TABLE 2. Number of published checklists, flora, and inventories of vascular plants in counties, national forests, state parks, and wildlife management areas. NF = United States National Forest, SP = Mississippi State Park, WMA = Mississippi Wildlife Management Areas.

| Type of Flora | Total Potential Floras | Actual Floras | % Total |
|---------------|------------------------|---------------|---------|
| Counties | 82 | 14 | 17.1 |
| NF | 6 | 2 | 33.3 |
| SP | 24 | 4 | 16.7 |
| WMA | 54 | 2 | 3.7 |

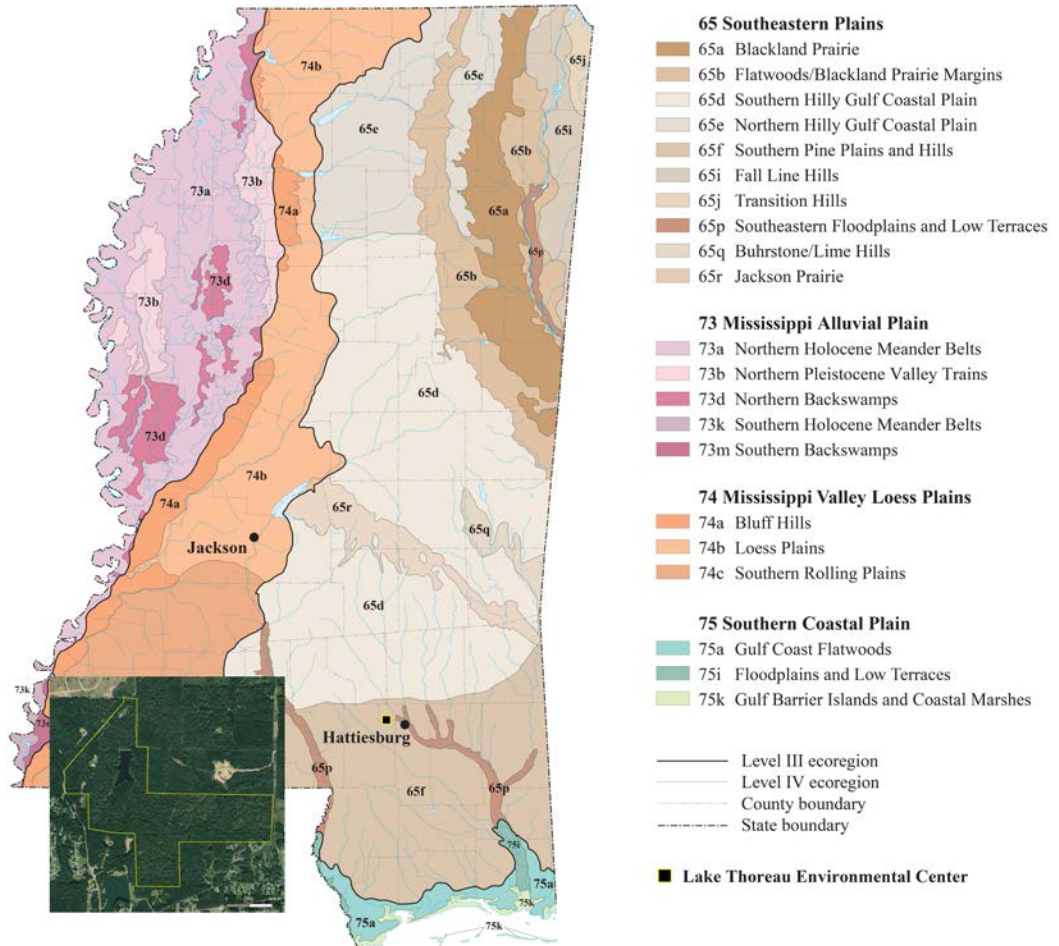


Fig. 1. Map of Mississippi indicating EPA Level IV Ecoregions (adapted from Chapman et al. 2004). Map inset indicates location and boundaries of the Lake Thoreau Environmental Center in Hattiesburg, MS (adapted from Google Earth).

longleaf pine belt region of Mississippi (Lowe 1921). There are three additional floras specifically associated with the Pine Belt region of Mississippi. Carter and Jones (1968) published a list of 351 species in Paul B. Johnson State Park (326 ha; approximately twelve miles south of Hattiesburg in Forrest County) distributed among 239 genera in 97 families. Rogers (1977) published a list of 1,019 species in an area known as Ragland Hills (121 ha; approximately 19.3 km (twelve miles) south-southeast of Hattiesburg in Forrest and Perry counties) distributed among 452 genera in 130 families. In 2015, McNair et al. published the only flora that specifically describes a sandhill in Mississippi.

The recently designated North American Coastal Plain (NACP) Biodiversity Hotspot contains all but the extreme northeast corner of Mississippi (Noss et al. 2015). The 1.13 million km² NACP encompasses portions of all coastal states from southern New Jersey to southeastern Texas and stretches northward through the Mississippi Embayment to the southern tip of Illinois. It also includes portions of northeastern Mexico. The NACP is characterized by high levels of endemism and contains 1625 endemic vascular plant species representing 29.7% of its total flora (Noss et al. 2015).

The Southeast Regional Network of Expertise and Collections (SERNEC) became available in 2015 and

has been a valuable tool for researching plant distributions throughout the southeastern United States and can generate approximate flora checklists at the state and county levels (e.g., SERNEC lists 1,064 taxa for Lamar County and 2,243 for Forrest County; SERNEC accessed 05/24/2020), although these numbers are inflated in terms of species due to the counting of infraspecific taxa. SERNEC checklists provide good floristic guidance; however, smaller scale floras and checklists are valuable for linking species occurrences with habitat specific management activities. Another limitation of SERNEC and other published floras is that they provide either a complete historical list (SERNEC) or a snapshot list for a particular time (most other floras). Although these floras are extremely valuable, they generally do not reflect the effects of habitat management on floristic composition. This flora describes the changes in floristic composition of a 106 ha forest preserve in south Mississippi after 10 years of intensive management.

The University of Southern Mississippi (USM) created the Lake Thoreau Environmental Center (LTEC) in 2011 using properties that were donated in 1916 and 1999. LTEC is located approximately 9.7 km (six miles) west of Hattiesburg in Forrest and Lamar counties (Fig. 1). The two sites that constitute LTEC total 106 ha (291 acres) and include the Leon Eubanks Nature Preserve (ENP) and the Longleaf Nature Preserve (LNP). The ENP property, donated in 1999, comprises 53 ha (131 acres), and the LNP site covers 55 ha (160 acres). The ENP was formerly used as a recreational area during the 1970s and has a small man-made reservoir (Lake Thoreau) that covers 4.5 ha (11 acres). Lake Thoreau and the surrounding area provide an interesting assortment of wetland habitats including lake margins, beaver ponds, gum ponds, headwater streams, and spring-seeps. The upland portions of the ENP are covered mostly by mixed pine-hardwood forest with some longleaf pine forest. The LLP contains a second growth longleaf pine forest that has regenerated from a clear-cut that occurred in the early 1910s. The property was donated to Mississippi Normal College (the predecessor to USM) in 1916 by the J.J. Newman Lumber Company. Other than a few streams and seeps that dissect the property, all other vegetation on the LLP is upland longleaf pine forest with trees ranging from 1–105 years old.

Historical management of the two preserves comprising LTEC has differed greatly. From the late 1960s to the mid-1980s, the ENP was managed primarily for recreation and much of the understory was periodically mowed. Several clusters of ornamental species were planted throughout the site, including a small nut orchard. The site was closed for public recreational access during the late 1980s at which time management activities mostly ceased except for mowing of a few pathways around Lake Thoreau. The resulting successional growth resulted in an upland forest cover of primarily early successional tree species such as *Pinus taeda*, *Liquidambar styraciflua*, and *Quercus nigra*. Wetter forested areas are dominated by *Liquidambar styraciflua*, *Magnolia virginiana*, *Acer rubrum*, and *Liriodendron tulipifera*. Remnants of the horticultural plantings are interspersed throughout the site and include both native species such as *Carya illinoensis*, *Magnolia grandiflora*, *Juglans nigra*, and *Quercus virginiana* as well as exotic species such as *Lagerstroemia indica* and *Castanea mollissima*. Large areas of formerly open spaces became vegetated by an array of invasive species including *Melia azedarach*, *Ligustrum sinensis*, and *Triadica sebifera*.

Management of the LLP has been more consistent throughout its history. As the forest recovered from the clearcutting activities and natural regeneration occurred, the Mississippi Forestry Commission (MFC) began to manage the forest. From the late 1920s to the late 1980s, the MFC would apply occasional prescribed fires and thinning to create an uneven-aged stand of *Pinus palustris* with occasional xeric Fagaceae species such as *Quercus marilandica*, *Q. stellata*, *Q. incana*, *Q. falcata*, and *Castanea pumila*. State budget cuts resulted in the cessation of MFC management activities in the late 1980s (personal communication, Mike Lee, MFC South Regional Forester). This cessation of fire resulted in a thick growth of woody understory species including *Ilex glabra*, *I. vomitoria*, *Rhus copallina*, *Vaccinium arboreum*, *V. elliotii*, and *Cartrema americanum*. *Pinus taeda*, *Liquidambar styraciflua*, and *Quercus nigra* also began to appear in the upland forests.

In 2009, the Department of Biological Sciences at USM assumed management of the two preserves. Prescribed fire was reintroduced after a 20+ year absence to begin restoration of the understory structure and species composition. At this time a floristic inventory was initiated, and 282 plant taxa were identified representing 178 genera and 74 families (Cotton 2010). After several years of prescribed fire (6 total applications),

several areas that had understories dominated by woody shrubs began to transition into herbaceous understories. It became clear during this transition that many species were missed in the original survey either by absence or oversight. In 2019 we surveyed both the LLP and ENP again to document the change in floristic composition after 10 years of prescribed fire.

MATERIALS AND METHODS

Sampling surveys began in February 2019 and continued every 2–3 weeks until October 2019. Sampling protocols used a modified relevé in which particular habitats were identified and surveyed intensively to try to identify all species present. Habitats at LTEC include xeric upland pine forests, mesic mixed oak-pine forests, seepage slopes, bottomlands, ephemeral drainage streams, lake margins, floodplain swamps, gum ponds, and anthropogenically disturbed areas (e.g., lawns, roadsides, utility right of ways). The original survey (Cotton 2010) was reviewed to identify common species that were missing from the checklist, but were likely present (e.g., *Rhododendron canescens*, *Rumex crispus*) and targeted efforts were made to find these species. Additional species were identified from long-term vegetation monitoring plots that were established throughout the preserves in 2012.

Taxonomic determinations and native status follow Weakley (2015). Non-native species are marked with an asterisk (*). Species (native or non-native) that were historically planted at the site for horticultural purposes are marked with a plus symbol (+). Coastal Plain endemism classifications primarily follow Sorrie and Weakley (2001) supplemented by McNair (2015) and Weakley (2015) and are marked with a cross (†). Collections are noted by collector name and number and all collections were deposited at USMS. Specimens from the 2010 survey were reviewed and taxonomic revisions were made if necessary, usually to add varietal designations if applicable (e.g., updating *Acer rubrum* to *A. rubrum* var. *triloba*). All species cited as Cotton, are from the original survey.

RESULTS AND DISCUSSION

The 2019 survey documented an additional 268 species, almost doubling the 2009 survey, resulting in a 92% increase in identified taxa for a final total of 550 species. The combined surveys yielded 296 genera and 114 families (Table 3). The plant families represented by the greatest number of taxa were Asteraceae (75 species, 41 genera), Poaceae (70 species, 29 genera), Cyperaceae (43 species, 9 genera), and Fabaceae (43 species, 22 genera) (Table 4). Eleven families were represented by at least 10 species including Asteraceae, Poaceae, Cyperaceae, Fabaceae, Rosaceae (14 species), Fagaceae (13 species), Euphorbiaceae (12), Hypericaceae (12 species), Lamiaceae (11 species), Ericaceae (10 species), Rubiaceae (10 species) (Table 4). Seventeen genera were represented by at least five species, the largest of these being *Rhynchospora* (16 species), *Dichanthelium* (14 species), *Carex* (13 species), *Hypericum* (12 species), *Quercus* (10 species), and *Eupatorium* (8 species) (Table 5).

We found 127 NACP endemic species representing 23% of the LTEC flora. This is similar to the percentage of endemic species found in the overall NACP flora (29.7%, Noss et al. 2015). There are 1625 endemic vascular plant species in the NACP, and 127 of these species are found at LTEC. Thus, even though the 106 ha of LTEC represent only 9.4×10^{-7} % of the overall 113 million ha of the NACP, 7.8% of the endemic flora of the NACP occurs at LTEC.

The original survey found two species that were on the Mississippi Natural Heritage Program's Special Plants Lists. The current survey found an additional 12 species (Table 6, from Watch and Tracking lists; Mississippi Natural Heritage Program 2018 a, b). Of particular note is a new record of *Gentiana catesbei*, which is listed as S1, or critically imperiled. This emphasizes the need to revisit potential habitats of sensitive species if beneficial management activities are known to have occurred.

Land management practices can have dramatic effects on the species composition of an area. Prescribed fire is known to increase understory diversity in longleaf pine forests at both large forest tracts (Brockway & Lewis 1997; Mitchell et al. 2006) and smaller longleaf pine patches in wildland urban interfaces (Heuberger & Putz 2003). It is interesting to note the dramatic increase in the number of species found over the 10-year span

TABLE 3. Number of species, genera, and families within larger clades.

| Clade | Species | Genera | Families |
|--------------------------------------|---------|--------|----------|
| Monilophyta | 12 | 12 | 10 |
| Acrogymnospermae | 5 | 2 | 2 |
| Magnoliids and Primitive Angiosperms | 10 | 9 | 6 |
| Monocotyledonae | 162 | 64 | 20 |
| Eudicotyledonae | 361 | 209 | 76 |
| Total | 550 | 296 | 114 |

TABLE 4. List of families with ≥ 10 species represented.

| Family | # of Species | # of Genera |
|---------------|--------------|-------------|
| Asteraceae | 75 | 41 |
| Poaceae | 69 | 29 |
| Cyperaceae | 43 | 9 |
| Fabaceae | 43 | 22 |
| Rosaceae | 14 | 11 |
| Fagaceae | 13 | 3 |
| Euphorbiaceae | 12 | 6 |
| Hypericaceae | 12 | 1 |
| Lamiaceae | 11 | 7 |
| Ericaceae | 10 | 5 |
| Rubiaceae | 10 | 7 |

TABLE 5. List of genera with ≥ 5 more species represented.

| Genus | # of Species |
|----------------------|--------------|
| <i>Rhynchospora</i> | 16 |
| <i>Dichanthelium</i> | 14 |
| <i>Carex</i> | 13 |
| <i>Hypericum</i> | 12 |
| <i>Quercus</i> | 10 |
| <i>Eupatorium</i> | 8 |
| <i>Juncus</i> | 7 |
| <i>Paspalum</i> | 7 |
| <i>Xyris</i> | 7 |
| <i>Ilex</i> | 6 |
| <i>Smilax</i> | 6 |
| <i>Desmodium</i> | 5 |
| <i>Eleocharis</i> | 5 |
| <i>Lespedeza</i> | 5 |
| <i>Ludwigia</i> | 5 |
| <i>Trifolium</i> | 5 |
| <i>Vaccinium</i> | 5 |

between surveys. This increase is due primarily to the reintroduction of prescribed fire (7 fires since 2009) and the subsequent reduction of cover by woody species. Longleaf pine savannas are considered to be one of the most diverse ecosystems in the Northern Hemisphere (Peet & Allard 1993), and this diversity is maintained by frequent low intensity fire disturbance every 2–3 years (Frost 2006; White & Harley 2016). The absence of fire allows woody understory and midstory species to encroach, thus altering the light regime of the understory (Frost 2006). This study highlights the changes in species diversity that occurs when fire is reintroduced into a previously fire-suppressed system and the need to monitor sensitive areas for changes in species composition.

TABLE 6. Species with state or global rarity ranks.

| Global/State Rank | Species |
|-------------------|---------------------------------|
| G3 S3 | <i>Xyris scabrifolia</i> |
| G4 S2 | <i>Desmodium tenuifolium</i> |
| G4 S2 | <i>Rhynchospora harveyi</i> |
| G4 S3S4 | <i>Rhynchospora oligantha</i> |
| G4 S3S4 | <i>Rhynchospora scirpoides</i> |
| G5 S1 | <i>Gentiana catesbaei</i> |
| G5 S2 | <i>Carex scoparia</i> |
| G5 S2S3 | <i>Eleocharis tortilis</i> |
| G5 S2S3 | <i>Ruellia pinetorum</i> |
| G5 S3 | <i>Rhynchospora cephalantha</i> |
| G5 S3 | <i>Scleria muehlenbergii</i> |
| G5 S3S4 | <i>Hypericum nudiflorum</i> |
| G5 S3S4 | <i>Rhynchospora mixta</i> |
| GNR S2 | <i>Xyris chapmanii</i> |

ANNOTATED CHECKLIST

Weakley (2015) was used for family, species, and varietal determinations as well as determination of the native status of each species. Sorrie and Weakley (2001) were used for assigning endemic status where possible. Common names were assigned following Weakley (2015) and USDA PLANTS database when applicable. Collections are noted by collector name (Alford, Cotton, Davis, McFarland, and McNair) and number. Note that collection numbers for Cotton and Davis reflect the year that the specimen was collected (e.g., Cotton 08-054 was collected in 2008; Davis 19-081 was collected in 2019).

MONILOPHYTA

ASPLENIACEAE

Asplenium platyneuron (L.) B.S.P. (Ebony Spleenwort)
Cotton 08-054, 08-099.

ATHYRIACEAE

Athyrium asplenoides (Michx.) A.A. Eaton (Southern Lady Fern)
Alford 4672, Cotton 09-107.

BLECHNACEAE

Anchistea virginica (L.) C. Presl (Virginia Chain Fern)
Cotton 09-049.

Lorinseria areolata (L.) C. Presl (Netted Chain Fern)
Cotton 09-056, 09-057.

DENNSTAEDTIACEAE

Pteridium latiusculum (Desv.) Hieron. ex Fries var. *pseudocaudatum*
(Clute) Maxon (Southern Bracken)
Cotton 08-069.

DRYOPTERIDACEAE

Polystichum acrostichoides (Michx.) Schott (Christmas Fern)
Davis 19-081.

CUPRESSACEAE

Juniperus virginiana L. var. *virginiana* (Eastern Red Cedar)
Cotton 08-110.

PINACEAE

Pinus echinata Mill. (Shortleaf Pine)
Cotton 08-022, 08-023, 08-197, 08-198.

LYGODIACEAE

**Lygodium japonicum* (Thunb.) Sw. (Japanese Climbing Fern)
Cotton 08-112, 08-113.

LYCOPODIACEAE

†*Lycopodiella prostrata* (R.M. Harper) Cranfill (Featherstem Clubmoss)
Davis 19-061, 19-109.

OSMUNDACEAE

Osmunda spectabilis Willd. (Royal Fern)
Cotton 09-058.

Osmundastrum cinnamomeum (L.) C. Presl (Cinnamon Fern)
Cotton 09-045.

POLYPODIACEAE

Pleopeltis michauxiana (Weatherby) Hickey & Sprunt (Resurrection Fern)
Davis 19-080.

THELYPTERIDACEAE

Thelypteris kunthii (Desv.) Morton (Kunth's Maiden Fern)
Alford 4652.

ACROGYMNOSPERMAE

†*Pinus glabra* Walter (Spruce Pine)
Davis 19-035.

†*Pinus palustris* Mill. (Longleaf Pine)
Cotton 08-237.

Pinus taeda L. (Loblolly Pine)
Cotton 08-271, 08-272.

MAGNOLIIDS AND PRIMITIVE ANGIOSPERMS

ANNONACEAE

Asimina parviflora (Michx.) Dunal (Small-flowered Pawpaw)
Davis 19-050.

ARISTOLOCHIACEAE

Endodeca serpentaria (L.) Raf. (Virginia Snakeroot)
Davis 19-077.
Hexastylis arifolia (Michx.) Small var. *arifolia* (Little Brown Jug)
Cotton 09-090.

CABOMBACEAE

Brasenia schreberi J.F.Gmel. (Water-shield)
McNair 1958

LAURACEAE

†*Persea palustris* (Raf.) Sarg. (Swamp Bay)
Cotton 08-163, 09-017.

Sassafras albidum (Nutt.) Nees (Sassafras)
Cotton 08-044, 08-098.

MAGNOLIACEAE

Liriodendron tulipifera L. var. *tulipifera* (Tulip Poplar)
Cotton 08-039, 08-062.
†*Magnolia grandiflora* L. (Southern magnolia)
Cotton 08-014.
†*Magnolia virginiana* L. var. *australis* (Sweetbay)
Cotton 08-012, 08-013, 08-128, 09-067.

SAURURACEAE

Saururus cernuus L. (Lizard's tail)
Cotton 09-065.

MONOCOTYLEDONAE

AGAVACEAE

Manfreda virginica (L.) Salisb. ex Rose (Eastern False-aloe)
Davis 19-078.
Yucca filamentosa L. (Curlyleaf Yucca)
Cotton 09-070.

ALISMATACEAE

Sagittaria latifolia Willd. var. *latifolia* (Broadleaf Arrowhead)
Davis 19-113.

ALLIACEAE

†*Allium canadense* L. var. *mobile* (Regel) Ownby (Meadow Garlic)
Cotton 09-098.
Nothoscordum bivalve (L.) Britton (False Garlic)
Cotton 08-050.

ARACEAE

Arisaema pusillum (Peck) Nash (Small Jack-in-the-pulpit)
Davis 19-021.

BURMANNIACEAE

Burmannia capitata (Walter ex J.F.Gmel.) Martius (White Burmannia)
Davis 19-174.

COMMELINACEAE

Tradescantia hirsuticaulis Small (Hairy Spiderwort)
Cotton 09-028, 09-029.
Tradescantia ohiensis Raf. (Smooth Spiderwort)
Cotton 09-027.
Tradescantia virginiana L. (Virginia Spiderwort)
Cotton 08-211.

CYPERACEAE

Carex abscondita Mackenzie (Thicket Sedge)
McFarland 146.
Carex amphibola Steud. (Eastern Narrow-leaved Sedge)
Cotton 09-054.
Carex complanata Torr. & Hook. (Hirsute Sedge)
Cotton 08-135.
Carex crebriflora Wiegand (Coastal Plain Sedge)
McFarland 142
Carex debilis Michx. (White Edge Sedge)
Cotton 09-005.

Carex hyalinolepis Steudel (Shoreline Sedge)
Alford 4399, McNair 1954.
Carex intumescens Rudge (Greater Bladder Sedge)
Cotton 09-050.
Carex leavenworthii Dewey (Leavenworth's Sedge)
Cotton 09-094.
Carex leptalea Wahlenb. var. *harperi* (Fernald) Weath. & Griscom
(Harper's Sedge)
Davis 19-092.
†*Carex lonchocarpa* Willd. (Southern Long Sedge)
Cotton 09-055, Davis 19-093.
Carex lurida Wahlenb. (Sallow Sedge)
Cotton 08-070, 08-071.
Carex oblita Steud. (Southern Dark Green Sedge)
McFarland 147.
Carex scoparia Schkuhr ex Willd. (Broom Sedge)
Alford 4407, Cotton 08-076.
Cyperus haspan L. (Sheathed Flatsedge)
Cotton 08-233.
**Cyperus iria* L. (Rice-field Flatsedge)
Cotton 08-247.
Cyperus retrorsus Chapman. (Pineland Flatsedge)
Cotton 08-207.
Eleocharis microcarpa Torr. var. *filiculmis* Torr. (Smallfruit Spikerush)
Davis 19-173.
†*Eleocharis tortilis* (Link) Schult. (Twisted Spikerush)
Davis 19-094.
†*Eleocharis tuberculosa* (Michx.) Roem. & Schult. (Large-tubercled
Spikerush)
Cotton 09-084.
†*Eleocharis vivipara* Link (Viviparous Spikerush)
Cotton 09-093.
Fimbristylis autumnalis (L.) Roem. & Schult. (Slender Fimbry)
Alford 4687.
**Fimbristylis littoralis* Gaudich. (Fimbry)
Cotton 08-241.
Fuirena squarrosa Michx. (Hairy Umbrella Sedge)
Cotton 08-193.
Isolepis carinata Hook. & Arn. ex Torr. (Keeled Bulrush)
Cotton 09-079.

Rhynchospora caduca Elliott (Angle-stem Beaksedge)
Cotton 08-073.

†*Rhynchospora cephalantha* A. Gray var. *attenuata* Gale (Small Bunched Beaksedge)
Davis 19-162.

Rhynchospora corniculata (Lam.) A. Gray (Short-bristled Horned Beaksedge)
Davis 19-140.

†*Rhynchospora debilis* Gale (Savanna Beaksedge)
Cotton 08-124.

†*Rhynchospora elliottii* A. Dietrich (Elliott's Beaksedge)
Davis 19-172.

Rhynchospora globularis (Chapm.) Small (Globe Beaksedge)
McFarland 143.

Rhynchospora glomerata (L.) Vahl var. *glomerata* (Clustered Beaksedge)
Cotton 08-181.

Rhynchospora gracilentia A. Gray (Slender Beaksedge)
Davis 19-139.

Rhynchospora harveyi W. Boott (Harvey's Beaksedge)
Alford 4388, Davis 19-161.

†*Rhynchospora inexpansa* (Michx.) Vahl (Nodding Beaksedge)
Cotton 09-085.

Rhynchospora macrostachya Torr. ex A. Gray (Tall Horned Beaksedge)
Alford 4429.

†*Rhynchospora mixta* Britton (Mingled Beaksedge)
Davis 19-175.

†*Rhynchospora oligantha* A. Gray (Feather-bristled Beaksedge)
McFarland 148.

Rhynchospora pusilla Chapm. ex M.A. Curtis (Dwarf Beaksedge)
Davis 19-176.

Rhynchospora recognita (Gale) Kral (Cymose Beakrush)
Davis 19-171.

†*Rhynchospora scirpoides* (Torr.) Griseb. (Long-beak Beaksedge)
Davis 19-177.

†*Scleria ciliata* Michx. var. *elliottii* (Chapman) Fernald (Broad-leaved Hairy Nutrush)
Davis 19-119.

Scleria muehlenbergii Steud. (Pitted Nutrush)
Alford 4410.

Scleria oligantha Michx. (Few-flowered Nutrush)
Cotton 09-096, 09-097.

DIOSCOREACEAE

Dioscorea villosa L. (Wild Yam)
Davis 019-024, 19-036.

ERIOCAULACEAE

Eriocaulon decangulare L. var. *decangulare* (Common Ten-angled Pipewort)
Davis 19-083.

†*Lachnocaulon anceps* (Walter) Morong (Common Bogbuttons)
Davis 19-046, 19-082.

HYPOXIDACEAE

Hypoxis wrightii (Baker) Brackett (Bristle-seed Stargrass)
Cotton 09-020.

IRIDACEAE

**Iris pseudacorus* L. (Yellow Flag)
Cotton 09-019.

Sisyrinchium mucronatum Michx. (Needle-tip Blue-eyed Grass)
Cotton 08-081, 09-062, 09-063.

†*Sisyrinchium rosulatum* E. P. Bicknell (Annual Blue-eyed Grass)
Cotton 09-064, Davis 19-011

JUNCACEAE

Juncus acuminatus Michx. (Sharp-fruited Rush)
Cotton 08-072.

Juncus bufonius L. (Toad Rush)
Cotton 09-007, 09-081.

Juncus dichotomus Elliot (Forked Rush)
Cotton 09-077.

Juncus diffusissimus Buckley (Slim-pod Rush)
Cotton 08-123, 09-083.

Juncus effusus L. ssp. *solutus* (Fernald & Wiegand) (Common Rush)
Cotton 08-077.

Juncus marginatus Rostk. (Grass-leaved Rush)
Cotton 09-086.

Juncus tenuis Willd. (Slender Rush)
McFarland 111.

LILIACEAE

Lilium michauxii Poirlet (Carolina Lily)
Davis 19-053.

MELANTHIACEAE

Veratrum virginicum (L.) W. T. Aiton (Virginia Bunchflower)
Cotton 09-126, McNair 1956, Davis 19-121.

NARTHECIACEAE

Aletris farinosa L. (White Colic-root)
Cotton 09-100, 09-101.

†*Aletris lutea* Small (Yellow Colic-root)
Cotton 08-170.

ORCHIDACEAE

Calopogon tuberosus (L.) B.S.P. var. *tuberosus* (Common Grass-pink)
Davis 19-152.

Habenaria repens Nutt. (Water-spider Orchid)
Davis 19-101.

Malaxis unifolia Michx. (Green Adder's-mouth)
Davis 19-073.

Platanthera ciliaris (L.) Lindl. (Yellow Fringed Orchid)
Alford 4673, Cotton 09-124.

†*Spiranthes praecox* (Walter) S. Watson (Grass-leaved Ladies' Tresses)
Cotton 09-113.

POACEAE

Andropogon gerardi Vitman
Davis 19-178.

Andropogon gyrans W.W. Ashe (Elliott's Bluestem)
Davis 19-170.

Andropogon ternarius Michx. (Splitbeard Bluestem)
Alford 4661, 4676, 4677, 4678, 4681

Andropogon virginicus L. var. *virginicus* (Broomsedge)
Davis 19-179.

†*Anthaenantia rufa* (Nutt.) Schult.
Davis 19-180.

†*Anthaenantia villosa* (Michx.) P.Beauv. (Green Silkscale)
Alford 4391.

- Aristida longespica* Poir. (Southeastern Slim-spike Threeawn)
Alford 4651.
- Aristida oligantha* Michx. (Prairie Three-awn)
Alford 4419.
- Aristida purpurascens* Poir. (Arrowfeather)
Alford 4659, 4675.
- Aristida virgata* Trin. (Arrowfeather Threeawn)
Alford 4662.
- †*Arundinaria tecta* (Walter) Muhl. (Switch Cane)
Cotton 08-159.
- **Briza minor* L. (Lesser Quaking Grass)
Cotton 08-052, 08-078.
- Chasmanthium laxum* (L.) Yates (Slender Spikegrass)
Alford 4421, Davis 19-104.
- Coleataenia anceps* (Michx.) Soreng ssp. *anceps* (Beaked Panic Grass)
Cotton 08-218.
- Coleataenia longifolia* (Torr.) ssp. *longifolia* (Long-leaved Panic Grass)
Davis 19-181.
- Coleataenia rigidula* (Bosc ex Nees) LeBlond ssp. *rigidula* (Redtop Panic Grass)
Davis 19-182.
- †*Ctenium aromaticum* (Walter) Alph. Wood (Toothache Grass)
Cotton 09-129.
- Danthonia sericea* Nutt. (Silky Oat-grass)
Cotton 09-102.
- Dichantherium aciculare* (Desv. ex Poir.) Gould & Clark (Needle-leaf Witchgrass)
Davis 19-120.
- Dichantherium acuminatum* (Swartz) Gould & Clark var. *acuminatum* (Woolly Witchgrass)
Cotton 08-228.
- Dichantherium angustifolium* (Elliott) Gould (Narrow-leaved Witchgrass)
Davis 19-183.
- †*Dichantherium consanguineum* (Kunth) Gould & Clark (Kunth's Witchgrass)
Davis 19-184.
- Dichantherium dichotomum* (L.) Gould var. *dichotomum* (Forked Witchgrass)
Cotton 08-184, 08-221.
- Dichantherium dichotomum* (L.) Gould var. *ramulosum* (Torr.) LeBlond (Branched Witchgrass)
Davis 19-084.
- Dichantherium laxiflorum* (Lam.) Gould (Open-flower Witchgrass)
Cotton 08-145.
- Dichantherium ovale* (Elliott) Gould & Clark var. *addisonii* (Nash) Gould & Clark (Low Stiff Witchgrass)
Cotton 09-008, 09-009.
- Dichantherium polyanthes* (Schult.) Mohlenbr. (Small-fruited Witchgrass)
McFarland 141.
- †*Dichantherium portoricense* (Desv. ex Hamilton) B.F. Hansen & Wunderlin ssp. *patulum* (Scribner & Merrill) Freckmann & Lelong (Nash's Witchgrass)
Cotton 08-083.
- †*Dichantherium scabriusculum* (Elliot) Gould & C.A. Clark (Tall Swamp Witchgrass)
Cotton 09-010.
- Dichantherium sphaerocarpon* (Elliott) Gould (Round-fruited Witchgrass)
Davis 19-185.
- Dichantherium tenue* (Muhl.) Freckmann & Lelong (White-edged Witchgrass)
Davis 19-095
- †*Dichantherium wrightianum* (Scribn.) Freckmann (Wright's Witchgrass)
Cotton 09-014.
- Digitaria bicornis* (Lam.) Roem. & Schult. (Asian Crab Grass)
Cotton 08-127.
- Digitaria ciliaris* (Retz.) Koeler (Southern Crab Grass)
Cotton 08-183.
- Digitaria ischaemum* (Schreb.) Muhl. (Smooth Crab Grass)
Alford 4688.
- **Echinochloa colonum* (L.) Link (Jungle Rice)
Cotton 08-182, 08-201, 08-202, 08-204.
- Eragrostis eliottii* S. Watson (Elliott's Lovegrass)
McNair 1957.
- †*Eragrostis refracta* (Muhl.) Scribn. (Coastal Lovegrass)
Alford 4692.
- †*Erianthus baldwinii* Elliott (Narrow Plume Grass)
Cotton 09-155.
- Erianthus giganteus* (Walter) P.Beauv. (Sugarcane Plume Grass)
Alford 4658, Cotton 09-144.
- Gymnopogon ambiguus* (Michx.) B.S.P. (Eastern Skeleton Grass)
Davis 19-103.
- †*Gymnopogon brevifolius* Trin. (Pineland Skeleton Grass)
Davis 19-186.
- **Imperata cylindrica* (L.) P.Beauv. (Cogongrass)
Davis 19-111.
- Leersia oryzoides* (L.) Sw. (Rice Cutgrass)
McNair 1955.
- Leersia virginica* Willd. (White Cutgrass)
Davis 19-1960.
- **Lolium perenne* L. var. *aristatum* (Annual Rye Grass)
Cotton 08-074, 08-121, 08-075, 08-120.
- †*Muhlenbergia expansa* (Poir.) Trin. (Savanna Hairgrass)
Davis 19-076.
- Oplismenus setarius* (Lam.) Roem. & Schult. (Woods Grass)
Davis 19-187.
- †*Panicum brachyanthum* Steud. (Prairie Panic Grass)
Alford 4408.
- Panicum dichotomiflorum* Michx. var. *dichotomiflorum* (Spreading Panic Grass)
Davis 19-188.
- **Panicum repens* L. (Torpedo Grass)
Davis 19-100.
- Panicum verrucosum* Muhl. (Warty Panic Grass)
Alford 4431.
- Paspalum boscianum* Flügge (Bull Paspalum)
Cotton 08-208.
- Paspalum floridanum* Michx. (Florida Paspalum)
Alford 4398, 4405, 4411

- **Paspalum notatum* Flügge (Bahia Grass)
Cotton 08-122.
- Paspalum plicatulum* Michx. (Brownseed Paspalum)
Cotton 08-119.
- †*Paspalum praecox* Walter var. *praecox* (Early Crown Grass)
Davis 19-130.
- Paspalum setaceum* Michx. var. *muhlenbergii* (Nash) Fernald (Thin Paspalum)
Alford 4385.
- **Paspalum urvillei* Steud. (Vasey Grass)
Cotton 08-206.
- Phalaris caroliniana* Walter (Maygrass)
Cotton 08-118.
- Schizachyrium scoparium* (Michx.) Nash var. *scoparium* (Common Little Bluestem)
Cotton 09-140, 09-141.
- †*Schizachyrium tenerum* Nees (Slender Bluestem)
Cotton 09-145.
- Setaria parviflora* (Poir.) Kerguélen (Knotroot Bristlegrass)
Davis 19-124.
- **Setaria pumila* (Poir.) Roem. & Schult. var. *pumila* (Yellow Foxtail)
Cotton 09-078.
- Sorghastrum nutans* (L.) Nash (Yellow Indiangrass)
Alford 4426.
- **Sorghum halepense* (L.) Pers. (Johnson Grass)
Davis, 19-143.
- Sporobolus clandestinus* (Biehler) Hitchc. (Rough Dropseed)
Cotton 08-176.
- †*Sporobolus junceus* (P. Beauv.) Kunth (Pineywoods dropseed)
Cotton 08-265.
- †*Tridens ambiguus* (Elliott) Schult. (Flatwoods Fluffgrass)
Alford 4669.
- Tridens flavus* (L.) Hitchc. (Purpletop Tridens)
Cotton 08-222, 08-258.
- Tridens strictus* (Nutt.) Nash (Spike Triodia)
Alford 4654.

ACANTHACEAE

- Ruellia caroliniensis* (J.F.Gmel.) Steud. (Carolina Wild Petunia)
Alford 4404.
- †*Ruellia ciliosa* Pursh (Sandhills Wild-petunia)
Davis 19-108.
- †*Ruellia pinetorum* Fernald (Pineland Wild-petunia)
Davis 19-115.

ADOXACEAE

- Sambucus canadensis* L. (Common Elderberry)
Davis 19-158.
- Viburnum nudum* L. (Possumhaw)
Davis 19-026.
- †*Viburnum scabellum* (Torr. & A. Gray) Chapm. (Southern Arrow-wood)
Davis 19-122.

ALTINGIACEAE

- Liquidambar styraciflua* L. (Sweetgum)
Cotton 08-020, 08-021.

- Urochloa platyphylla* (Munro ex Wright) R. Webster (Broadleaf Signal-grass)
Davis 19-154

SMILACACEAE

- Smilax bona-nox* L. var. *bona-nox* (Catbriar)
Cotton 09-147.
- Smilax glauca* Walter (Whiteleaf Greenbriar)
Cotton 09-143.
- Smilax laurifolia* L. (Blaspheme-vine)
Davis 19-149.
- †*Smilax pumila* Walter (Sarsparilla Vine)
Cotton 09-136.
- Smilax rotundifolia* L. (Common Greenbriar)
Cotton 09-149.
- †*Smilax smallii* Morong (Jackson-briar)
Cotton 08-007, 09-142, 09-148.

TOFIELDIACEAE

- †*Triantha racemosa* (Walter) Small (Southern Bog Asphodel)
Davis 19-105.

XYRIDACEAE

- Xyris ambigua* Beyrich ex Kunth (Coastal Plain Yellow-eyed Grass)
Davis 19-189.
- †*Xyris chapmanii* E.L. Bridges & Orzell (Chapman's Yellow-eyed Grass)
Davis 19-136.
- Xyris difformis* Chapm. (Bog Yellow-eyed Grass)
Davis 19-147.
- †*Xyris platylepis* Chapm. (Tall Yellow-eyed Grass)
Cotton 08-016.
- Xyris scabrifolia* Harper (Roughleaf Yellow-eyed Grass)
Cotton 08-240.
- Xyris smalliana* (Small's Yellow-eyed Grass)
Cotton 08-015.
- Xyris torta* Sm. (Mountain Yellow-eyed Grass)
Cotton 08-239.

EUDICOTYLEDONAE**AMARANTHACEAE**

- **Amaranthus viridis* L. (Slender Amaranth)
Davis 19-110.

ANACARDIACEAE

- Rhus copallinum* L. (Winged Sumac)
Cotton 08-200.
- Rhus glabra* L. (Smooth Sumac)
McFarland 112.
- Toxicodendron pubescens* Mill. (Poison Oak)
Cotton 09-119.
- Toxicodendron radicans* (L.) Kuntze var. *radicans* (Poison Ivy)
Cotton 09-117, 09-118.
- Toxicodendron vernix* (L.) Kuntze (Poison Sumac)
Cotton 09-120.

APIACEAE

- Chaerophyllum tainturieri* Hook. (Southern Chervil)
Davis 19-002
- Cyclosporum leptophyllum* (Pers.) Sprague ex Britton & P. Wilson (Marsh Parsley)
Cotton 08-154, 08-155.

Eryngium integrifolium Walter (Savanna Eryngo)
Davis 19-163.

Eryngium yuccifolium Michx. var. *yuccifolium* (Northern Rattlesnake-master)
Alford 4395.

Oxypolis rigidior (L.) Raf. (Cowbane)
McNair 1953.

†*Sanicula canadensis* L. var. *floridana* (Florida Sanicle)
Alford 4383, Cotton 08-189.

APOCYNACEAE

†*Asclepias lanceolata* Walter (Few-flower Milkweed)
Davis 19-059.

†*Asclepias michauxii* Decne. (Michaux's Milkweed)
Cotton 09-111.

†*Asclepias obovata* Elliot (Pineland Milkweed)
Cotton 08-229.

AQUIFOLIACEAE

†*Ilex ambigua* (Michx.) Torr. (Carolina Holly)
Alford 4684

†*Ilex coriacea* (Pursh) Chapm. (Large Gallberry)
Cotton 09-013.

†*Ilex glabra* (L.) A. Gray (Inkberry)
Cotton 08-005, 08-006, 09-071.

Ilex opaca Aiton (American Holly)
Cotton 08-001, 09-012.

+*Ilex verticillata* (L.) A. Gray (Winterberry)
Davis 19-190.

†*Ilex vomitoria* Aiton (Yaupon)
Cotton 08-011, 08-029, 08-067.

ARALIACEAE

Aralia spinosa L. (Devil's walking stick)
08-093, 08-223.

Hydrocotyle verticillata Thunb. (Whorled Marsh Pennywort)
Cotton 08-131, 08-141.

ASTERACEAE

Ageratina aromatica (L.) Spach
Davis 19-191.

Ambrosia trifida L. (Giant Ragweed)
Alford 4667.

Arnoglossum ovatum (Walter) H.E. Robinson var. *ovatum* (Broad-leaf Indian-plantain)
Alford 4414, McNair 1952.

Baccharis halimifolia L. (Groundsel Tree)
Cotton 09-150.

Bidens frondosa L. (Devil's Beggar Ticks)
Alford 4653

†*Bigelovia nudata* (Michx.) DC. var. *nudata* (Pineland Rayless Goldenrod)
Cotton 08-246, 08-267, Davis 19-070, 19-131.

Boltonia diffusa Elliott var. *diffusa* (Southern Doll's Daisy)
Cotton 08-217.

†*Chaptalia tomentosa* Vent. (Woolly Sunbonnet)
Cotton 09-114.

†*Chrysopsis gossypina* (Michx.) Elliott (Cottonleaf Golden-aster)
Cotton 08-264.

Chrysopsis mariana (L.) Elliott (Maryland Golden-aster)
Davis 19-192.

Cirsium horridulum Michx. var. *horridulum* (Common Yellow Thistle)

Cotton 09-032.

Cirsium vulgare (Savi) Tenore (Bull Thistle)
Davis 19-138.

Conoclinium coelestinum (L.) DC. (Mistflower)
Cotton 08-263.

†*Coreopsis linifolia* Nutt. (Savanna Coreopsis)
Davis 19-168.

Coreopsis major Walter (Woodland Coreopsis)
Cotton 08-137, 08-173.

Coreopsis tinctoria Nutt. var. *tinctoria* (Plains Coreopsis)
Cotton 08-151.

Coreopsis tripteris L. (Tall Coreopsis)
Cotton 08-225.

†*Doellingeria sericocarpoides* Small (Pocosin Flat-topped Aster)
Davis 19-193.

Elephantopus carolinianus Rauschel (Leafy Elephant's-foot)
Alford 4671

†*Elephantopus elatus* Bertoloni (Southern Elephant's-foot)
Alford 4403, 4418, 4381, 4668

Erechtites hieracifolius (L.) Raf. ex DC. (Fireweed)
Alford 4406.

Erigeron annuus (L.) Pers. (Annual Fleabane)
Cotton 08-117, 08-138, 08-148.

Erigeron strigosus Muhl. ex Willd. var. *strigosus* (Common Rough Fleabane)
Cotton 08-102.

Eupatorium album L. (White Thoroughwort)
Alford 3746.

Eupatorium capillifolium (Lam.) Small (Dog-fennel)
Cotton 08-268.

†*Eupatorium leucolepis* (DC.) Torr. & A. Gray (Justiceweed)
Alford 3750.

†*Eupatorium mohrii* Greene (Mohr's Eupatorium)
Davis 19-153.

Eupatorium perfoliatum L. (Boneset)
Cotton 09-137.

Eupatorium rotundifolium L. (Roundleaf Thoroughwort)
Cotton 08-177.

†*Eupatorium semiserratum* DC. (Smallflower Thoroughwort)
Davis 19-072.

Eupatorium serotinum Michx. (Late Thoroughwort)
Cotton 08-245, 09-152.

Eurybia hemispherica (Alexander) G.L. Nesom (Prairie Grass-leaved Aster)
Alford 4397

†*Euthamia caroliniana* (L.) Greene ex Porter & Britton (Common Goldentop)
Cotton 09-154,

†*Euthamia leptocepala* (Torr. & A. Gray) Greene (Bushy Goldentop)
Alford 4650, Cotton 09-048, 09-053, 09-128.

**Facelis retusa* (Lam.) Sch.Bip. (Trampweed)
Davis 19-012.

†*Gaillardia aestivalis* (Walter) H. Rock var. *aestivalis* (Sandhills Gaillardia)
Alford 4396.

- **Gamochaeta coarctata* (Willd.) Kerguelen (Grey Everlasting)
Cotton 09-030.
- Gamochaeta pennsylvanica* (Willd.) Cabrera (Pennsylvania Everlasting)
Cotton 09-021.
- Helenium amarum* (Raf.) H. Rock (Bitterweed)
Cotton 08-186, 08-187, 08-219.
- Helenium autumnale* L. (Common Sneezeweed)
Davis 19-064
- Helenium flexuosum* Raf. (Southern Sneezeweed)
Davis 19-058.
- Helianthus angustifolius* L. (Narrowleaf Sunflower)
Alford 4664.
- Helianthus atrorubens* L. (Appalachian Sunflower)
Alford 4416.
- Helianthus microcephalus* Torr. & A. Gray (Small-headed Sunflower)
Alford 4415.
- †*Helianthus radula* (Pursh) Torr. & A. Gray (Rayless Sunflower)
Davis 19-069.
- Hieracium gronovii* L. (Beaked Hawkweed)
Alford 4389.
- Ionactus linariifolia* (L.) Greene (Stiff-leaved Aster)
Alford 4670.
- Krigia cespitosa* (Raf.) K. L. Chambers (Opposite-leaf Dwarf Dandelion)
Cotton 09-025.
- Krigia dandelion* (L.) Nutt. (Colonial Dwarf Dandelion)
Cotton 09-023.
- Liatris aspera* Michx. (Rough Blazing-star)
Davis 19-166.
- †*Liatris spicata* (L.) Willd. var. *spicata* (Florist's Gayfeather)
Alford 4402.
- Liatris squarrosa* (L.) Michx. (Scaly Blazing Star)
Alford 3748, Cotton 08-175.
- Liatris squarrolosa* Michx. (Appalachian Blazing Star)
Alford 3744.
- Mikania scandens* (L.) Willd. (Climbing Hempvine)
Cotton 08-251.
- Packera anonyma* (Alph. Wood) W.A. Weber & A. Löve (Appalachian Ragwort)
Cotton 09-073
- Pityopsis adenolepis* (Fernald) Semple (Narrowleaf Silkgrass)
Davis 19-079.
- †*Pityopsis graminifolia* (Michx.) Nutt. var. *graminifolia* (Pineland Silkgrass)
Cotton 08-230, 08-238.
- Pluchea camphorata* (L.) DC. (Camphorweed)
Cotton 08-250.
- †*Pluchea foetida* (L.) DC. var. *foetida* (Stinking Fleabane)
Alford 4430.
- Pseudognaphalium obtusifolium* (L.) Hilliard & Burt (Fragrant Rabbit Tobacco)
Alford 4432, Cotton 08-231.
- Pyrrophappus carolinianus* (Walter) DC. (False Dandelion)
Cotton 08-147, 08-150.
- Rudbeckia hirta* L. var. *hirta* (Woodland Black-eyed Susan)
Cotton 08-142, 09-087, 09-095.
- Sericocarpus linifolius* (L.) B.S.P. (Narrow-leaf White-topped Aster)
Davis 19-062.
- †*Sericocarpus tortifolius* (Michx.) Nees (Twisted-leaf White-topped Aster)
Alford 4387.
- Solidago gigantea* Aiton (Smooth Goldenrod)
Alford 4680.
- Solidago odora* Aiton (Licorice Goldenrod)
Cotton 08-255.
- Solidago rugosa* Mill. var. *aspera* (Wrinkleleaf Goldenrod)
Alford 4649, Cotton 09-151, 09-153.
- †*Solidago salicina* Elliott (Southern Roughleaf Goldenrod)
Davis 19-194.
- **Soliva sessilis* Ruiz & Pav. (Field Burweed)
Cotton 09-061.
- †*Symphotrichum adnatum* (Nutt.) G. L. Nesom (Scaleleaf Aster)
Cotton 09-133.
- Symphotrichum concolor* (L.) G.L. Nesom var. *concolor* (Eastern Silvery Aster)
Alford 4666.
- Symphotrichum dumosum* (L.) G.L. Nesom var. *dumosum* (Rice Button Aster)
Cotton 09-156.
- Symphotrichum patens* (Aiton) G.L. Nesom var. *patens* (Common Clasping Aster)
Davis 19-195.
- †*Trilisa odoratissima* (J. F. Gmel.) Cassini (Vanilla-leaf)
Cotton 09-127.
- Vernonia gigantea* (Walter) Trelease (Common Ironweed)
Alford 4424.
- BERBERIDACEAE**
**Nandina domestica* Thunb. (Sacred Bamboo)
Cotton 09-134, 09-135.
- BETULACEAE**
Alnus serrulata (Aiton) Willd. (Hazel Alder)
Cotton 09-018.
+*Corylus americana* Walter (American Hazelnut)
Alford 4413.
- BIGNONIACEAE**
Bignonia capreolata L. (Crossvine)
Cotton 09-157.
Campsis radicans (L.) Seem. ex Bureau (Trumpet Creeper)
Cotton 08-164.
- BORAGINACEAE**
Myosotis macrosperma Engelm. (Largeseed Forget-me-not)
Cotton 08-051.
- BRASSICACEAE**
Cardamine pennsylvanica Muhl. ex Willd. (Quaker Bittercress)
Davis 19-004.
Lepidium virginicum L. (Virginia Pepperweed)
Cotton 08-156, 08-157.
- CAMPANULACEAE**
†*Lobelia brevifolia* Nutt. ex DC. (Shortleaf Lobelia)
Davis 19-164.
†*Lobelia spicata* Lam. (Pale Spiked Lobelia)
Cotton 09-131.

†*Lobelia puberula* Michx. (Downy Lobelia)
Davis 19-167.

†*Lobelia rogersii* Bowden (pro sp.) (McVaugh's Lobelia)
Alford 4433, 4665.

Triodanis biflora (Ruiz & Pav.) Greene (Small Venus's Looking Glass)
Cotton 08-100, 08-133, 08-134.

**Wahlenbergia marginata* (Thunb.) A. DC. (Southern Rockbell)
Cotton 08-049, 08-129, Davis 19-008, 19-009.

CANNABACEAE

Celtis laevigata Willd. (Sugarberry)
Davis 19-156.

CAPRIFOLIACEAE

**Lonicera japonica* Thunb. (Japanese Honeysuckle)
Cotton 08-091, 08-116, 09-024.

CARYOPHYLLACEAE

Cerastium glomeratum Thuillier (Sticky Mouse-ear)
Davis 19-003.

CISTACEAE

Lechea minor L. (Thymeleaf Pinweed)
Davis 19-196.

CONVOLVULACEAE

Cuscuta compacta Juss. ex Choisy (Compact Dodder)
Davis 19-114.

†*Dichondra carolinensis* Michx. (Carolina Ponyfoot)
Davis 19-007.

Ipomoea cordatotriloba Dennst. var. *cordatotriloba* (Coastal Morning Glory)
Davis 19-208.

Ipomoea pandurata (L.) G.F.W. Meyer (Wild Sweet Potato)
Davis 19-209.

Jacquemontia tamnifolia (L.) Griseb. (Hairy Clustervine)
Cotton 08-205, 08-243.

CORNACEAE

Cornus drummondii C. A. Meyer (Roughleaf Dogwood)
Cotton 09-066.

Cornus florida L. (Flowering Dogwood)
Cotton 08-037, 08-106.

CUCURBITACEAE

Cucumis melo L. var. *texasus* (Gulf Coast Melon)
Davis 19-197.

CYRILLACEAE

Cyrilla racemiflora L. (Swamp Titi)
Cotton 09-068, 09-069.

DROSERACEAE

Drosera brevifolia Pursh (Dwarf Sundew)
Cotton 08-032, 09-115.

Drosera capillaris Poir. (Pink Sundew)
Cotton 09-116.

EBENACEAE

Diospyros virginiana L. (Common Persimmon)
Cotton 08-269, 09-033, 09-034.

ERICACEAE

Gaylussacia dumosa (Andrews) Torr. & A. Gray (Southern Dwarf Huckleberry)
Davis 19-159.

†*Gaylussacia mosieri* Small (Mosier's Huckleberry)
Davis 19-045.

†*Lyonia lucida* (Lam.) K. Koch (Shining Fetterbush)
Davis 19-032.

Oxydendrum arboreum (L.) DC. (Sourwood)
Cotton 08-090, 08-165, 08-166.

Rhododendron canescens (Michx.) Sweet (Piedmont Azalea)
Davis 19-020.

Vaccinium arboreum Marsh. (Sparkleberry)
Cotton 08-003, 08-004, 08-008, 08-087, 08-162, 08-192.

†*Vaccinium darrowii* Camp (Darrow's Blueberry)
Alford 4657.

Vaccinium elliotii Champ. (Elliott's Blueberry)
Cotton 08-002, 09-088.

Vaccinium fuscatum Aiton (Hairy Highbush Blueberry)
Davis 19-098.

Vaccinium stamineum L. var. *stamineum* (Deerberry)
Cotton 08-266.

EUPHORBIACEAE

Acalypha gracilens A. Gray (Shortstalk Copperleaf)
Davis 19-129

Acalypha rhomboidea Raf. (Rhombic Copperleaf)
Alford 4423.

Cnidocolus stimulosus (Michx.) Engelm. & A. Gray (Finger Rot)
Cotton 09-099.

**Croton capitatus* Michx. (Hogwort)
Cotton 08-188, 08-234.

**Croton glandulosus* L. (Sand Croton)
Davis 19-169.

Croton willdenowii G.L. Webster (Glade Rushfoil)
Alford 4400.

Euphorbia corollata L. (Eastern Flowering Spurge)
Cotton 09-047, 09-052.

Euphorbia hyssopifolia L. (Hyssopleaf Sandmat)
Davis 19-099.

Euphorbia maculata L. (Spotted Spurge)
Davis 19-118.

Euphorbia pubentissima Michx. (Southeastern Flowering Spurge)
Cotton 08-203, McNair 1951.

†*Tragia smallii* Shinners (Gulf Coast Noseburn)
Cotton 09-092.

**Triadica sebifera* (L.) Small (Chinese Tallow Tree)
Cotton 08-185, 09-121.

FABACEAE

**Albizia julibrissin* Durazz. (Mimosa)
Cotton 08-167.

Apios americana Medik. (Groundnut)
Alford 3745.

Centrosema virginianum (L.) Benth. (Spurred Butterfly Pea)
Cotton 08-174, 08-215.

Cercis canadensis L. var. *canadensis* (Eastern Redbud)
Cotton 08-042.

- Chamaecrista fasciculata* (Michx.) Greene var. *fasciculata*
(Common Partridge Pea)
Cotton 08-224, 08-242.
- Chamaecrista nictitans* (L.) Moench var. *nictitans* (Common Sensitive Plant)
Davis 19-198.
- †*Crotalaria purshii* DC. (Coastal Plain Rattlebox)
Davis 19-068.
- Crotalaria sagittalis* L. (Common Rattlebox)
Davis 19-071.
- Desmodium ciliare* (Muhl. ex Willd.) DC. (Hairy small-leaved tick-trefoil)
Davis 19-199.
- †*Desmodium lineatum* DC. (Matted Tick-trefoil)
Davis 19-200.
- †*Desmodium strictum* (Pursh) DC. (Pineland Tick-trefoil)
Davis 19-047.
- Desmodium rotundifolium* DC. (Roundleaf Tick-trefoil)
McFarland 145.
- †*Desmodium tenuifolium* Torr. & A. Gray (Slimleaf Tick-trefoil)
Alford 4394.
- Desmodium viridiflorum* (L.) DC. (Velvety Tick-trefoil)
Alford 4385, 4417.
- †*Galactia erecta* (Walter) Vail (Erect Milkpea)
Davis 19-137.
- Galactia regularis* (L.) B.S.P. (Eastern Milkpea)
Davis 19-142.
- **Kummerowia striata* (Thunb.) Schindl. (Common Lespedeza)
Davis 19-112/
- **Lespedeza bicolor* Turcz. (Shrub Lespedeza)
Alford 3751, Cotton 08-115, 08-209.
- Lespedeza capitata* Michx. (Bush Clover)
Cotton 08-262.
- Lespedeza cuneata* (Dum.Cours.) G. Don (Sericea Lespedeza)
Alford 4380.
- Lespedeza repens* (L.) W. Bartram (Smooth Trailing Lespedeza)
Alford 4379, Cotton 08-260.
- Lespedeza virginica* (L.) Britton (Virginia Lespedeza)
Alford 4380-B.
- Mimosa microphylla* Dryand. (Eastern Sensitive Briar)
Cotton 09-103.
- †*Orbexilum simplex* (Nutt. ex Torr. & A. Gray) Rydb. (Singlestem Leather-root)
Davis 19-056.
- **Pueraria montana* (Lour.) Merr. var. *lobata* (Willd.) Maesen & S. Almeida (Kudzu)
Cotton 09-139.
- †*Rhynchosia reniformis* DC. (Dollarweed)
Cotton 09-072, 09-089.
- Rhynchosia tomentosa* (L.) Hook. & Arnott (Twining Snoutbean)
Davis 19-090.
- **Senna obtusifolia* (L.) Irwin & Barneby (Coffeeweed)
Cotton 08-212.
- Sesbania herbacea* (Mill.) McVaugh (Peatree)
Cotton 08-244.
- Sesbania vesicaria* (Jacq.) Elliott (Bladderpod)
Davis 19-201.
- Strophostyles umbellata* (Muhl. ex Willd.) Britton (Perennial Sand Bean)
Davis 19-128.
- Stylosanthes biflora* (L.) B.S.P. (Pencil Flower)
Cotton 08-172, 08-179, 09-105.
- †*Tephrosia florida* (F.G. Dietrich) C.E. Wood (Florida Goat's-rue)
Davis 19-067.
- Tephrosia spicata* (Walter) Torr. & A. Gray (Spiked Hoarypea)
Davis 19-066.
- Tephrosia virginiana* (L.) Pers. (Virginia Goat's-rue)
Cotton 08-143.
- **Trifolium campestre* Schreb. (Hop Clover)
Cotton 08-053, Davis 19-018.
- **Trifolium dubium* Sibth. (Low Hop Clover)
Davis 19-019
- **Trifolium incarnatum* L. (Crimson Clover)
Cotton 08-101.
- **Trifolium repens* L. (White Clover)
Cotton 08-139.
- **Trifolium vesiculosum* Savi (Arrowleaf Clover)
Davis 19-102
- **Vicia sativa* L. ssp. *nigra* (Common Vetch)
Cotton 08-136, Davis 19-015.
- **Vicia tetrasperma* (L.) Schreber (Slender Vetch)
Davis 19-016.
- **Wisteria sinensis* (Sims) DC. (Chinese Wisteria)
Cotton 08-038.

FAGACEAE

- +**Castanea mollissima* Blume (Chinese Chestnut)
Davis 19-030.
- Castanea pumila* (L.) Mill. (Chinkapin)
Cotton 08-152, 08-153, 09-075, 09-076.
- Fagus grandifolia* Ehrh. var. *caroliniana* (Loudon) Fernald & Rehder (American Beech)
Davis 19-038.
- Quercus alba* L. (White Oak)
Alford 4420
- Quercus falcata* Michx. (Southern Red Oak)
Cotton 08-060.
- †*Quercus incana* Bartram (Bluejack Oak)
Davis 19-089.
- †*Quercus laurifolia* Michx. (Laurel Oak)
Davis 19-086
- Quercus marilandica* Münchh. (Blackjack Oak)
Cotton 08-086, 08-105.
- Quercus nigra* L. (Water Oak)
Cotton 08-056, 08-059, 08-085.
- Quercus phellos* L. (Willow Oak)
Cotton 08-132.
- Quercus stellata* Wangneh. (Post Oak)
Cotton 08-084, 08-104.
- Quercus velutina* Lam. (Black Oak)
Davis 19- Davis 19-202.
- †*Quercus virginiana* Mill. (Live oak)
Cotton 08-027, 08-028.

GELSEMIACEAE

- †*Gelsemium rankinii* Small (Swamp Jessamine)
Davis 19-033.
Gelsemium sempervirens (L.) W. T. Aiton (Carolina Jessamine)
Croton 08-033.

GENTIANACEAE

- †*Gentiana catesbaei* Walter (Coastal Plain Gentian)
Davis 19-203.
†*Sabatia brachiata* Elliot (Narrowleaf Rose Pink)
Cotton 08-171, 08-195, 09-123.

GERANIACEAE

- Geranium carolinianum* L. (Carolina Geranium)
Davis 19-001.

HALORAGACEAE

- Proserpinaca palustris* L. var. *palustris* (Coastal Mermaid-weed)
Davis 19-088.

HAMAMELIDACEAE

- Hamamelis virginiana* L. var. *virginiana* (Northern Witch-hazel)
Davis 19-027.

HYDRANGACEAE

- Decumaria barbara* L. (Climbing Hydrangea)
Davis 19-028.

HYPERICACEAE

- †*Hypericum crux-andreae* (L.) Crantz (St. Andrew's Cross)
Cotton 08-196, 08-216.
Hypericum drummondii (Grev. & Hook.) Torr. & A. Gray (Nits and Lice)
Cotton 08-210, 09-091.
†*Hypericum galioides* Lam. (Bedstraw St. John's Wort)
Alford 4427, Davis 019-025.
Hypericum gentianoides (L.) B.S.P. (Orange-grass)
Cotton 08-220, 08-235.
Hypericum gymnanthum Engelm. & A. Gray (Clasping-leaf St. John's Wort)
Davis 19-134.
Hypericum hypericoides (L.) Crantz (St. Andrew's Cross)
Alford 4434.
Hypericum mutilum L. var. *mutilum* (Common Dwarf St. John's Wort)
Davis 19-133.
Hypericum nudiflorum Michx. ex Willd. (Early St. John's Wort)
Davis 19-049.
†*Hypericum setosum* L. (Hairy St. John's Wort)
Davis 19-132.
†*Hypericum suffruticosum* W.P. Adams & Robson (Pineland St. John's Wort)
Davis 19-055.
Hypericum virginicum L. (Common Marsh St. John's Wort)
Davis 19-051.
Hypericum walteri (J. G. Gmel.) Gleason (Greater Marsh St. John's Wort)
Alford 3747.
- ITEACEAE**
Itea virginica L. (Virginia Sweetspire)
Cotton 09-015.

JUGLANDACEAE

- Carya tomentosa* (L.) Nutt. (Mockernut Hickory)
Cotton 08-199.
+*Carya illinoensis* (Wangenh.) K. Koch (Pecan)
Cotton 08-094.
+*Juglans nigra* L. (Black Walnut)
Davis 19-157.

LAMIACEAE

- †*Hyptis alata* (Raf.) Shinners (Cluster Bushmint)
Cotton 09-082.
Lycopus rubellus Moench (Stalked Bugleweed)
Davis 19-141.
Lycopus virginicus L. (Virginia Bugleweed)
Alford 4685
**Perilla frutescens* (L.) Britton (Beefsteak-plant)
Davis 19-037, 19-146.
Pycnanthemum albescens Torr. & A. Gray (White Mountain-mint)
Davis 19-074.
Salvia azurea Michx. ex Lam. var. *grandiflora* Benth (pitcher sage)
Alford 4674.
Salvia lyrata L. (Lyreleaf Sage)
Davis 19-041.
Scutellaria elliptica Muhl. ex Spreng. var. *elliptica* (Hairy Skullcap)
Cotton 09-109.
Scutellaria integrifolia L. (Helmet Flower)
Cotton 09-108.
Scutellaria racemosa Persoon (South American Skullcap)
Davis 19-005.
Trichostema dichotomum L. (Common Blue Curls)
Alford 3749.

LENTIBULARIACEAE

- Utricularia gibba* L. (Shortspur Creeping Bladderwort)
Davis 19-085
Utricularia juncea M. Vahl (Southern Bladderwort)
Davis 19-150.
Utricularia radiata Small (Floating Bladderwort)
Alford 4689, 4690, 4691.
Utricularia subulata L. (Slender Bladderwort)
Davis 19-151.

LINACEAE

- †*Linum floridanum* (Planch.) Trel. var. *floridanum*, (Florida Yellow Flax)
Davis 19-117.
Linum medium (Planch.) Britton var. *texanum* (Planch.) Fernald (Texas Yellow Flax)
Davis 19-060.
Linum striatum Walter (Ridgestem Yellow Flax)
Davis 19-136.

LOGANIACEAE

- Mitreola petiolata* (J.F.Gmel.) Torr. & A. Gray (Caribbean Miterwort)
Alford 4382
†*Mitreola sessilifolia* (J.F. Gmel.) G. Don (Small-leaved Miterwort)
Alford 4392, Cotton 08-194.
Spigelia marilandica (L.) L. (Pinkroot)
Cotton 09-104.

LYTHRACEAE

**Cuphea carthagenensis* (Jacq.) J.F. Macbr. (Colombian Waxweed)
Alford 4682.

*+*Lagerstroemia indica* L. (Crapemyrtle)
Cotton 08-111, 08-190, 08-191.

MALVACEAE

†*Hibiscus aculeatus* Walter (Comfort-root)
Cotton 08-227.

Sida rhombifolia L. var. *rhombifolia* (Arrowleaf Sida)
Davis 19-145.

MELASTOMATACEAE

†*Rhexia alifanus* Walter (Smooth Meadow Beauty)
Cotton 09-122, 09-130.

Rhexia mariana L. var. *mariana* (Maryland Meadow Beauty)
Cotton 08-149.

†*Rhexia petiolata* Walter (Ciliate Meadow Beauty)
Davis 19-116.

Rhexia virginica L. (Meadow-beauty)
Alford 4655, Davis 19-107.

MELIACEAE

**Melia azedarach* L. (Chinaberry tree)
Cotton 08-066, 09-041, 09-042, 09-043, 09-044.

MORACEAE

Fatoua villosa (Thunb.) Nakai (Crabweed, Mulberry-weed)
Davis 19-127.

Morus rubra L. (Red Mulberry)
Davis 19-031.

MYRICACEAE

†*Morella caroliniensis* (Mill.) Small (Pocosin Bayberry)
Cotton 09-016.

Morella cerifera (L.) Small (Wax Myrtle)
Cotton 08-009, 08-010, 08-036, 08-253.

†*Morella pumila* (Michx.) Small (Dwarf Bayberry)
Davis 19-043.

NYSSACEAE

†*Nyssa aquatica* L. (Water Tupelo)
Davis 19-029.

†*Nyssa biflora* Walter (Swamp Tupelo)
Davis 19-039.

Nyssa sylvatica Marshall (Black Gum)
Davis 19-042.

OLEACEAE

†*Cartrema americanum* (L.) Benth. & Hook. f. ex A. Gray
(Devilwood)
Cotton 08-040, 08-041, Davis 19-034.

Chionanthus virginicus L. (Fringe-tree)
Cotton 08-058.

*+*Ligustrum japonicum* Thunb. (Japanese Privet)
Cotton 08-095.

**Ligustrum sinense* Lour. (Chinese Privet)
Cotton 08-018, 08-019, 08-096.

ONAGRACEAE

Ludwigia alternifolia L. (Alternate-leaf Seedbox)
Alford 4422.

†*Ludwigia hirtella* Raf. (Rafinesque's Seedbox)
Davis 19-148.

†*Ludwigia linearis* Walter var. *puberula* Engelm. & A. Gray
(Narrowleaf Primrose-willow)
Alford 4412.

Ludwigia peploides (Kunth) Raven (Floating Primrose-willow)
Alford 4409.

†*Ludwigia pilosa* Walter (Hairy Seedbox)
Alford 4679.

Oenothera laciniata Hill (Cutleaf Evening-primrose)
Davis 19-014

OROBANCHACEAE

Pedicularis canadensis L. (Wood Betony)
Davis 19-075.

†*Seymeria cassioides* (J.F.Gmel.) Blake (Senna Seymeria)
Alford 4390.

OXALIDACEAE

Oxalis corniculata L. (Creeping Lady's Sorrel)
Cotton 09-106.

Oxalis stricta L. (Common Yellow Wood Sorrel)
Cotton 09-026.

PASSIFLORACEAE

Passiflora incarnata L. (Maypops)
Davis 19-095

Passiflora lutea L. (Eastern Yellow Passionflower)
Davis 19-057.

PHYLLANTHACEAE

Phyllanthus urinaria L. ssp. *urinaria* (Chamber Bitter)
Davis 19-155.

PHYTOLACCACEAE

Phytolacca americana L. (American Pokeweed)
Cotton 08-213.

PLANTAGINACEAE

Gratiola virginiana L. (Virginia Hedge-hyssop)
McFarland 113.

Mecardonia acuminata (Walter) Small var. *acuminata* (Axillflower)
Alford 4683.

**Nuttallanthus canadensis* (L.) D.A. Sutton (Common Toadflax)
Davis 19-010.

Plantago aristata Michx. (Buckhorn Plantain)
Cotton 08-126, 08-140, 08-158.

Plantago virginica L. (Virginia Plantain)
Cotton 08-048, 08-092, 08-125, 09-080.

Sophronanthe pilosa (Michx.) Small (Shaggy Hedge-hyssop)
Davis 19-065, 19-106.

**Veronica arvensis* L. (Corn Speedwell)
Davis 19-006.

**Veronica persica* Poir. (Birdeye speedwell)
Davis 19-204.

POLEMONIACEAE

Phlox pilosa L. ssp. *pilosa* (Downy Phlox)
Davis 19-210.

POLYGALACEAE

†*Asemeia grandiflora* (Walter) Small (Showy Milkwort)
Davis 19-052.

Polygala incarnata L. (Pink Milkwort)
Cotton 08-178, 09-110.

†*Polygala mariana* Mill. (Maryland Milkwort)
Cotton 09-112.

†*Polygala nana* (Michx.) DC. (Candyroot)
Cotton 08-047.

POLYGONACEAE

Persicaria hydropiperoides (Michx.) Small (Waterpepper)
Davis 19-125.

Persicaria punctata (Elliott) Small (Dotted Smartweed)
Alford 4656.

**Rumex crispus* L. ssp. *crispus* (Curly Dock)
Davis 19-097.

Rumex hastatulus Baldw. (Wild Dock)
Cotton 09-035, Davis 19-013.

PRIMULACEAE

**Ardisia crenata* Sims (Coral Ardisia)
Davis 19-091

RANUNCULACEAE

**Ranunculus platensis* Sprengel (Prairie Buttercup)
Davis 19-063.

RHAMNACEAE

Berchemia scandens (Hill) K. Koch (Supplejack)
Cotton 09-146.

Ceanothus americanus L. var. *intermedius* (Pursh) Torrey & A. Gray
(New Jersey Tea)
Cotton 09-074.

ROSACEAE

Aronia arbutifolia (L.) Persoon (Red chokeberry)
Cotton 09-051.

*+*Chaenomeles speciosa* (Sweet) Nakai (Flowering Quince)
Cotton 08-024, 08-025, 08-057, 08-068.

†*Crataegus marshallii* Eggleston (Parsley Hawthorn)
Alford 4393

Malus angustifolia (Aiton) Michx. (Wild Crabapple)
Davis 19-087

*+*Photinia serratifolia* (Desf.) Kalkman (Taiwanese Redtip)
Cotton 09-037, 09-038.

Prunus mexicana S. Watson (Mexican Plum)
Davis 19-123.

Prunus serotina Ehrh. var. *serotina* (Black Cherry)
Cotton 08-043, 08-088.

**Pyracantha coccinea* M. Roem. (Scarlet Firethorn)
Cotton 08-261, 09-138.

**Pyrus calleryana* Decaisne (Callery Pear)
Davis 19-205.

**Rosa luciae* Franchet & Rocheburn ex Crépin (Memorial Rose)
Cotton 08-097, 09-060.

**Rosa multiflora* Thunb. ex Murray (Multiflora Rose)
Cotton 08-097.

Rubus pensilvanicus Poir. (Eastern Blackberry)
Cotton 08-045, 09-031, 09-040.

Rubus trivialis Michx. (Southern Dewberry)
Cotton 09-039.

**Spiraea prunifolia* Siebold & Zucc. (Bridal Wreath Spiraea)
Cotton 08-030, 08-031, 08-034.

RUBIACEAE

Cephalanthus occidentalis L. (Buttonbush)
Cotton 08-226, 08-252, 08-254.

Diodella teres Walter (Poorjoe)
Cotton 08-236.

†*Diodia harperi* Small (Harper's Buttonweed)
Davis 19-206.

Diodia virginiana L. (Virginia Buttonweed)
Davis 19-165.

Galium pilosum Aiton (Hairy Bedstraw)
Alford 4660.

Galium tinctorium L. var. *floridanum* Wiegand (Florida Three-lobed Bedstraw)
Davis 19-017.

*+*Gardenia jasminoides* Ellis (Gardenia)
Cotton 08-168, 08-169.

†*Houstonia procumbens* (Walter ex J.F. Gmel.) Standl. (Creeping Bluet)
Cotton 09-003.

Houstonia pusilla Schoepf (Tiny Bluet)
Cotton 09-002.

Mitchella repens L. (Partridge-berry)
Davis 19-023.

SALICACEAE

Salix nigra Marsh. (Black Willow)
Cotton 08-046, 08-109, 08-248.

SAPINDACEAE

†*Acer drummondii* Hook. & Arnott ex Nutt. (Swamp Red Maple)
Davis 19-044.

Acer rubrum L. var. *trilobum* Torr. & A. Gray ex K. Koch (Carolina Red Maple)
Cotton 08-017, 08-026, 08-035, 08-061, 08-249.

+*Acer saccharinum* L. (Silver Maple)
Cotton 08-055, 08-064, 08-065.

SCROPHULARIACEAE

Agalinis fasciculata (Elliot) Raf. (Beach false foxglove)
Cotton 09-132.

Agalinis purpurea (L.) Pennell
Davis 19-207.

**Veronica persica* Poir. (Birdeye speedwell)
Cotton 09-022.

SOLANACEAE

Physalis angulata L. var. *angulata* (Smooth Ground Cherry)
Davis 19-144.

Solanum carolinense L. var. *carolinense* (Horse Nettle)
Cotton 08-108, 08-130.

Solanum ptychanthum Dunal (American Black Nightshade)
Davis 19-054.

SYMPLOCACEAE

Symplocos tinctoria (L.) L'Hér. (Sweetleaf)
Cotton 08-160, 08-259, 09-004.

TETRACHONDRAEAE

Polypremum procumbens L. (Rustweed)
Cotton 08-180, 08-214.

URTICACEAE

Boehmeria cylindrica (L.) Swartz (False-nettle)
19-126.

Urtica chamaedryoides Pursh (Dwarf Stinging Nettle)
Davis 19-096.

VERBENACEAE

Callicarpa americana L. (American Beautyberry)
Cotton 08-103, 08-232.

**Verbena brasiliensis* Vell. (Brazilian Verbena)
Cotton 08-107.

VIOLACEAE

Viola pedata L. var. *pedata* (Bird's Foot Violet)
Cotton 09-001, 09-046.

Viola primulifolia L. (Primrose-leaf Violet)
Cotton 09-011.

†*Viola septemloba* Le Conte (Southern Coastal Violet)
Davis 19-040.

Viola sororia Willd. (Common Blue Violet)
Davis 19-022.

VITACEAE

Muscadinia rotundifolia (Michx.) Small var. *rotundifolia*
(Muscadine)
Cotton 08-063.

Parthenocissus quinquefolia (L.) Planch. (Virginia Creeper)
Cotton 08-114.

Vitis aestivalis Michx. var. *aestivalis* (Summer Grape)
Cotton 08-144.

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REFERENCES

- ALFORD, M.H. 2001. The vascular flora of Amite County, Mississippi. *Sida* 19:645–699. jstor.org/stable/41967896
- BROCKWAY, D.G., & C.E. LEWIS. 1997. Long-term effects of dormant-season prescribed fire on plant community diversity, structure and productivity in longleaf pine wiregrass ecosystem. *Forest Ecol. and Manage.* 96:167–183. doi: [10.1016/S0378-1127\(96\)03939-4](https://doi.org/10.1016/S0378-1127(96)03939-4)
- BRYSON, C.T. & D.A. SKOJAC, JR. 2011. An annotated checklist of the vascular flora of Washington County, Mississippi. *J. Bot. Res. Inst. Texas* 5:855–866. jstor.org/stable/41972345
- CARRAWAY, D.T. 1990. A floristic study of the Tallahalla Wildlife Management Area of Bienville National Forest, Mississippi. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- CARTER, J. R. 1978. A floristic study of the Delta National Forest and adjacent areas. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- CHAPMAN S.S., G.E. GRIFFITH, J.M. OMERNIK, J.A. COMSTOCK, M.C. BEISER, & D. JOHNSON. 2004. Ecoregions of Mississippi. *U.S. Geol. Surv. Scale 1:1,000,000*, Reston, Virginia, U.S.A.
- COLEMAN, J. M. 1975. Vegetation and floristic analysis of the Yellow Creek and Mackeys Creek drainage basin, Tishomingo County, Mississippi. M.S. Thesis, University of Tennessee, Knoxville, U.S.A.
- COTTON, D.R. 2010. A vascular floristic inventory of the Lake Thoreau Center for Environmental Education and Research in Lamar and Forrest counties, Mississippi. M.S. Thesis, University of Southern Mississippi, Hattiesburg, U.S.A.
- DENLEY, K.K., C.T. BRYSON, & R.A. STEWART. 2002. Vascular flora of Yalobusha County, Mississippi, *Castanea* 67:402–415. jstor.org/stable/4034134
- ELEUTERIUS, L.N. 1979. A phytosociological study of Horn and Petit Bois Islands, Mississippi. Final Report submitted to the National Park Service, funded by NPS Contract #CX500060993. Copy available at Gulf Islands National Seashore, Florida Library, U.S.A.
- FENNEMAN, N.M. 1938. *Physiography of the Eastern United States*. McGraw-Hill Book Company, New York, U.S.A.
- FERRARI, R.V. 1970. A survey of the vascular flora of DeSoto County, Mississippi. M.S. Thesis, Memphis State University (now University of Memphis), Memphis, Tennessee, U.S.A.
- FOSTER V.M. 1941. Geology. In: *Mississippi State Geological Survey Bulletin* 44. Forrest County mineral resources.

- FROST, C.C. 2006. History and future of the longleaf pine ecosystem. In: Jose, S., Jokela, E., Miller, D.L. (Eds.), *The longleaf pine ecosystem: Ecology, silviculture, and restoration*. Springer Science + Business Media, LLC, New York, U.S.A. Pp. 271–295.
- GUNN, C.R., T.M. PULLEN, E.A. STADELBACKER, J.M. CHANDLER, & J. BARNES. 1980. *Vascular flora of Washington County Mississippi, and Environs*. USDA Science and Education Administration. New Orleans, Louisiana, U.S.A.
- HAVRAN, J.C. 2004. *A preliminary checklist of the vascular flora of the Homochitto National Forest, Mississippi*. M.S. Thesis, University of Louisiana at Monroe, Monroe, Louisiana, U.S.A.
- JOHNSON, R.L. & E.L. LITTLE. 1967. *Trees, shrubs, and woody vines of the Bluff Experimental Forest, Warren County, Mississippi*. United States Forest Service Research paper SO-26 Southern Forest Experiment Station, New Orleans, Louisiana, U.S.A.
- KARTESZ, J.T. *The Biota of North America Program (BONAP)*. 2015. Taxonomic Data Center. (bonap.net/tdc). Chapel Hill, North Carolina, U.S.A. [maps generated from KARTESZ, J.T. 2015. *Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP)*. (in press)]
- LASSETER, J.S. 1968. *A floristic study of Wall Doxey State Park*. M.S. Thesis, University of Mississippi, Oxford, Mississippi, U.S.A.
- LEIDOLF, A., S. MCDANIEL, & T. NUTTLE. 2002. The flora of Oktibbeha County, Mississippi. *Sida* 20:691–765. jstor.org/stable/41968086
- LLOYD, F.E. & S.M. TRACY. 1901. The insular flora of Mississippi and Louisiana. *Bull. Torrey Bot. Club* 28:61–101.
- LOWE, E. 1921. *Plants of Mississippi*. Mississippi State Geol. Surv. Bull. 17. p. 49–55.
- MACDONALD, J. 1996. *A floristic survey of Monroe County, Mississippi*. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- MAJURE, L.C. 2007. *The vascular flora of the Chunky River (Mississippi)*. *J. Bot. Res. Inst. Texas*. 1:1179–1202. jstor.org/stable/41971547
- MAJURE, L.C., J. HILL, C. DOFFITT, & T.C. MAJURE. 2011. The vascular flora of Lauderdale County, Mississippi. *Rhodora* 113:365–418. doi.org/10.3119/0035-4902-113.956.365
- MCCOOK, L. M. 1982. *The vascular flora of the Clark Creek Natural Area, Wilkinson County, Mississippi*. M.S. Thesis, University of New Orleans, New Orleans, Louisiana, U.S.A.
- MCDANIEL, S. & D.T. CARRAWAY. 1994. *Guide to the Vegetation of the Tallahalla Wildlife Management Area, Bienville National Forest*. Institute for Botanical Exploration, Mississippi State, Starkville, Mississippi, U.S.A.
- MCNAIR, D.M. 2015. *The vascular flora of Wayne County, Mississippi*. M.S. Thesis, University of Southern Mississippi, Hattiesburg, Mississippi, U.S.A.
- MCNAIR, D.M., S.B.N. SINGLEY, & M.H. ALFORD. 2016. Checklist of the vascular flora of the Gopher Farm Sandhill, Wayne County, Mississippi. *Castanea* 81:138–147. <https://doi.org/10.2179/15-078>
- MEEKS, D.N. 1984. *A floristic study of northern Tippah County, Mississippi*. M.S. Thesis, Mississippi State University.
- MILLER, G.J. & S.B. JONES. 1967. The vascular flora of Ship Island, Mississippi. *Castanea* 32:84–99. jstor.org/stable/4032269
- MILLER, H.M. 2016. *Vascular flora of the Possum Walk Trail at the Infinity Science Center, Hancock County, Mississippi*. Undergraduate Honors Thesis, University of Southern Mississippi, Hattiesburg, Mississippi, U.S.A. [Aquila.usm.edu/honors_theses/389](http://aquila.usm.edu/honors_theses/389).
- MISSISSIPPI NATURAL HERITAGE PROGRAM. 2018A. *Special Plants Tracking List*. Museum of Natural Science, Mississippi Department of Wildlife, Fisheries, and Parks, Jackson, MS. U.S.A.
- MISSISSIPPI NATURAL HERITAGE PROGRAM. 2018B. *Special Plants Watch List*. Museum of Natural Science, Mississippi Department of Wildlife, Fisheries, and Parks, Jackson, MS. U.S.A.
- MITCHELL, R.J., J.K. HIERS, J.J. O'BRIEN, S.B. JACK, & R.T. ENGSTROM. 2006. Silviculture that sustains: The nexus between silviculture, frequent prescribed fire, and conservation of biodiversity in longleaf pine forests of the southeastern United States. *Canad. J. Forest Res.* 36:2724–2736. doi.org/10.1139/x06-100
- MOORE, A. 1993. *A floristic survey of the Noxubee Crest Natural Area of the Tombigbee National Forest*. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- MOORE, J.R. 1976. *Vascular flora of the Arboretum of the University of Southern Mississippi, Harrison County, Mississippi*. Ph.D. Dissertation, University of Southern Mississippi, Hattiesburg, Mississippi, U.S.A.
- MORGAN, D. R. 1979. *A floristic study of northeast Jones County, Mississippi*. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- MORRIS, W. 1987. *A floristic study of Grenada County, Mississippi*. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.

- OMERNIK, J.M., & G.E. GRIFFITH. 2014. Ecoregions of the conterminous United States: Evolution of a hierarchical spatial framework. *Environm. Managem.* 54:1249–1266. doi.org /0.1007/s00267-014-0364-1
- PEET, R.K., & D.J. ALLARD. 1993. Longleaf pine-dominated vegetation of the southern Atlantic and eastern Gulf Coast region, USA. *Proc. of the Tall Timbers Fire Ecol. Conf.*, vol. 18, Pp. 45-81
- PHILLEY, K.D. 2019. The vascular flora of Choctaw County, Mississippi, U.S.A. *J. Bot. Res. Inst. Texas* 13(1):319–348. journals.brit.org/jbrit/article/view/854
- RATLEDGE, D., R. BONER, & H. DESELM. 1974. Flora and vegetation of the proposed Yellow Creek Embayment nuclear power site, Tishomingo County, Mississippi. University of Tennessee, Knoxville, Tennessee, U.S.A.
- RICHMOND, E.A. 1962. The flora and fauna of Horn Island, Mississippi. *Gulf Res. Rep.* 1:59–106. doi.org/10.18785/grr.0102.01
- ROGERS, K.E. 1977. Vascular flora of the Ragland Hills area, Forrest and Perry counties, Mississippi. *Sida* 7:51–79. jstor.org/stable/41966516
- SEARCY, J.T. 1977. A floristic study of Tishomingo State Park. M.S. Thesis, University of Mississippi, Oxford, Mississippi, U.S.A.
- SERNECPORTAL.ORG, DATA PORTAL. 2020. <http://serneportal.org/index.php>. Accessed May 24, 2020.
- SIMMONS, T.R. 1968. The vascular plants of the Kilgore Hills, Clay County, Mississippi. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- SORRIE, B.A. & A.S. WEAKLEY. 2001. Coastal Plain vascular plant endemics: Phytogeographic patterns. *Castanea* 66:50–82. jstor.org/stable/4033882
- WEBSTER, R.D. 1978. A floristic study of Diamond Point Island in Warren County, Mississippi. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.
- WHITE, C.R. & G.L. HARLEY. 2016. Historical fire in longleaf pine (*Pinus palustris*) forests of south Mississippi and its relation to land use and climate. *Ecosphere* 7:e01458. doi.org/10.1002/ecs2.1458.
- WINSTEAD, R. 1990. A taxonomic and ecological survey of Attala County, Mississippi. M.S. Thesis, Mississippi State University, Starkville, Mississippi, U.S.A.