

THE VASCULAR FLORA OF GUS ENGELING WILDLIFE MANAGEMENT AREA, ANDERSON COUNTY, TEXAS

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ABSTRACT - Field studies in the Gus Engeling Wildlife Management Area, which consists of approximately 4465.5 ha (11,034.1 acres) of the Post Oak Savannah of Anderson County, have resulted in an annotated checklist of the vascular flora corroborating its remarkable species richness. A total of 930 taxa (excluding family names), belonging to 485 genera and 145 families are recorded. Asteraceae (124 species), Poaceae (114 species), Fabaceae (67 species), and Cyperaceae (61 species) represented the largest families. Six Texas endemic taxa occur on the site: *Brazoria truncata* var. *pulcherrima* (*B. pulcherrima*), *Hymenopappus carrizoanus*, *Palafoxia reverchonii*, *Rhododon ciliatus*, *Tradescantia humilis*, and *T. subcaulis*. Within Texas, *Zigadenus densus* is known only from the study area. The area also has a large number of species that are endemic to the West Gulf Coastal Plain and Carrizo Sands phytogeographic distribution patterns. Eleven vegetation alliances occur on the property, with the most notable being sand post oak-bluejack oak, white oak-southern red oak-post oak, and beakrush-pitcher plant alliances.

INTRODUCTION

The Post Oak Savannah (Gould 1962) comprises about 4,000,000 ha of gently rolling to hilly lands that lie immediately west of the Pineywoods (Timber belt). Some (Allred and Mitchell 1955, Dyksterhuis 1948) consider the vegetation of the area as part of the deciduous forest; i.e., burned out forest that is presently regenerating. Others (Bruner 1931, Rice and Penfound 1959, Weaver and Clements 1938) classify it as a true prairie association, based upon the tall grass understory. The variance of opinion is unquestionably related to the transitional nature of the vegetation from the true prairies to the west and the deciduous forest to the east. Between 1950 and 1960, the State of Texas acquired approximately 4465.5 ha of the region, now known as Gus Engeling Wildlife Management Area (GEWMA), about 29 km (18 miles) northwest of Palestine in

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Anderson County. The GEWMA serves as a land base for a Post Oak Savannah ecological area to develop and manage natural habitats and populations of indigenous plant and wildlife species, provide an area for public hunting and for non-consumptive recreation, all in a manner compatible with the resource. Today, the area is the largest intact state-owned portion of the Post Oak Savannah and probably the most diverse in plant species richness. The latter trait is apparently related to the presence of two very well developed vegetation alliances, the beakrush-pitcher plant bogs and white oak-southern red oak-post oak alliances, that are at the western limits of their distribution. Also, located in the study area is one of the best known examples of sand post oak-bluejack oak uplands in Texas. Compared with much of Texas, the area has had minimal disturbance. This is due primarily to the poor quality of soils that are not supportive of agriculture other than grazing. From the middle to late 1800s, most of the area was used as open range for cattle and hog grazing. Small acreages, more suitable to agriculture, were planted mainly in cotton. By the mid-1900s, the range was severely overgrazed. After acquisition by the state, grazing was discontinued and the remaining timber was left virtually untouched (Haucke and Prochaska 1998). Presently, GEWMA is considered to be one of the most natural examples of pre-European settlement Post Oak Savannah in Texas.

MATERIALS AND METHODS

The checklist is largely based upon examination of specimens that were collected between 1950 and 1997 and the majority of the collections are held in the GEWMA Herbarium (GEWMA). Another large portion of the collections are housed at Baylor University Herbarium (BAYLU). Additional records are based on specimens deposited at S.M. Tracy Herbarium (TAES), Texas A&M University Department of Biology Herbarium (TAMU), and University of Texas Herbarium (TEX-LL). The list was then augmented by collections between 1997 and 2002, of species expected to be present, but not yet vouchered. These specimens are housed at BAYLU.

Sorenson's index [$IS = 2C/(A + B)$] was used to compare floristic similarity between GEWMA and Fort Boggy State Natural Area, an 835 ha (2062.5 acres) Post Oak Savannah located approximately 95 km south of the study area. In the index, C is the number of shared taxa, A is the number of taxa in sample one, while B is the number of taxa in sample two.

DESCRIPTION OF STUDY AREA

GEWMA is located within the subtropical humid region of the Modified Marine Climate type, an area of east Texas characterized by long hot summers and mild winters. Yearly average precipitation is

about 104 cm, with maximum precipitation of about 13 cm in May and minimum of about 5 cm in August. Average annual temperature is approximately 20° C. January is the coldest month with an average low of 8° C, while July and August are the warmest months with average highs of about 36° C. The growing season is about 265 days, with the frost free period extending from March to November. GEWMA is geographically situated along the boundary between the Post Oak Savannah and Pineywoods ecoregions and has a rolling terrain with elevation ranging from 75.2 to 152.4 m. The area is comprised of very fine Queen City Sand on uplands in the western four fifths of the property on the west side of Catfish Creek. Alluvium and fluvial terrace deposits form the bottom lands with primary and secondary levees along Catfish Creek. Carbonaceous clay, silt, and ironstone of the Recklaw Formation form steep slopes on the east side of Catfish Creek in the upper two thirds of the property. The Recklaw Formation also occurs on both sides of Catfish Creek in the southeast corner of the study area (University of Texas Bureau of Economic Geology-Palestine Sheet 1993). Soils are classified in the Darco and Fuquay-Kirvin-Darco Association as deep sandy and loamy on nearly level, gently sloping, to moderately steep slopes on uplands (Coffee 1970).

PLANT ECOLOGY

Based on dominant species, landscape position, and soil water content, 11 vegetational alliances (National Vegetation Classification System 1997) are recognized. The name, location, and a short description of each follow, with emphasis on major characteristic species.

Sand Post Oak-Bluejack Oak

The Sand Post Oak-Bluejack Oak Alliance encompasses xeric, broad leaved forest on very well drained Pleistocene terraces on low, broad ridges and tertiary formations on acidic sandy soils. The fairly open to dense, but stunted *Quercus* canopy is typically greater than 5 m high. This alliance consists of approximately 1852.3 ha (4576.9 acres) and is found mainly in the north half of GEWMA (Fig. 1). Dominant trees include *Quercus falcata*, *Q. incana*, *Q. marilandica*, and *Q. stellata* var. *margaretta*. Other frequently occurring woody plants include *Vaccinium arboreum*, *Cornus florida*, *Rhus copallina*, *Viburnum rufidulum*, *Ilex vomitoria*, *Prunus gracilis*, *Juniperus virginiana*, *Rhus aromatica*, *Toxicodendron radicans*, and *Polygonella americana*. Exposed sands support foliose lichens (*Cladonia* sp.) and a variety of xeric herbs, including *Aristida desmantha*, *Sporobolus junceus*, *Sorghastrum elliottii*, *Opuntia humifusa*, *Cnidioscolus texanus*, *Selaginella arenicola* ssp. *riddellii*, *Talinum rugospermum*, *Coreopsis intermedia*, *Brazoria truncata* var. *pulcherrima*, *Polanisia erosa*, *Loeflingia squarrosa*, *Sene-*

cio ampullaceus, *Rhododon ciliatus*, *Penstemon murrayanus*, *Tetragonotheca ludoviciana*, *Tradescantia reverchonii*, *T. subacaulis*, *Phacelia strictiflora*, *Streptanthus hyacinthoides*, *Paronychia drummondii*, *Cyperus grayioides*, *Bulbostylis capillaris*, *Mirabilis albida*, *Sedum nuttallianum*, and *Matelea cynanchoides*.

Little Bluestem-Indian Grass Alliance

The Little Bluestem-Indian grass alliance, which occurs on open xeric sandhills, is dynamic and early successional in nature, fire depen-

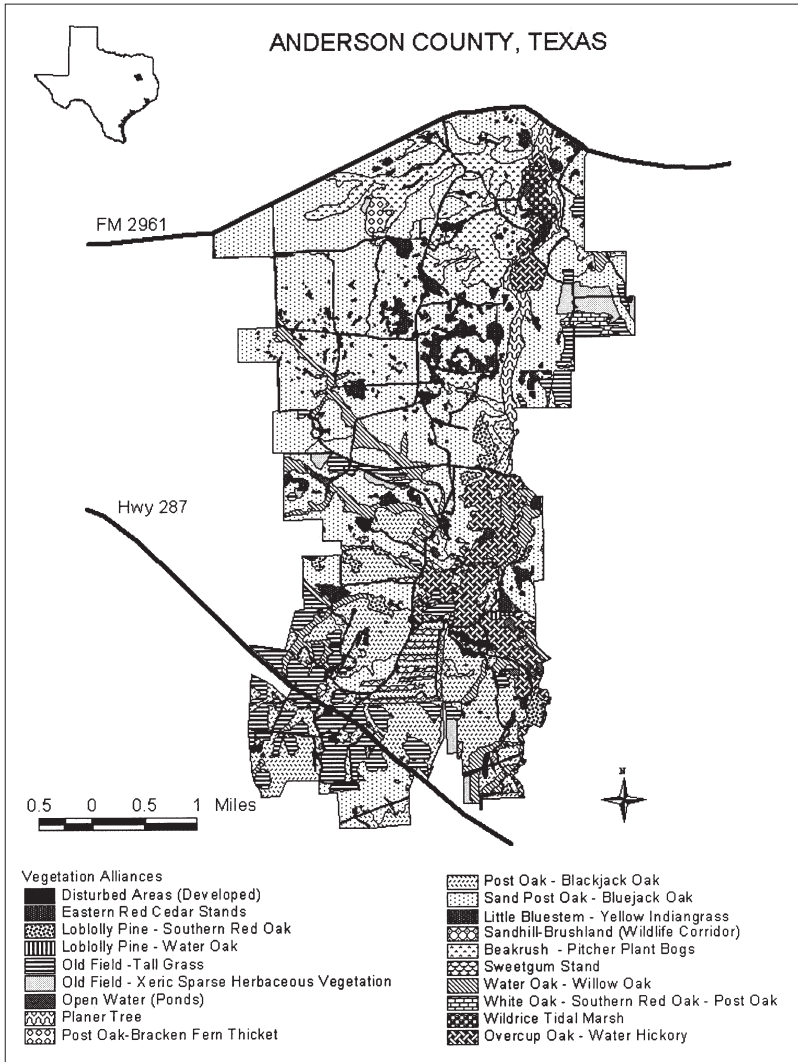


Figure 1. A vicinity map showing Gus Engeling Wildlife Management Area Vegetation Alliances (ESRI Inc. ArcView ver. 3.2).

dent, and, due to lack of disturbance, has been decreasing in size. Currently, these areas occupy approximately 178.3 ha (440.5 acres) and are found on dry xeric sands mainly within the Sand Post Oak -Bluejack Oak Alliance in the northern half of GEWMA (Fig. 1). The most abundant species across the range of this alliance are *Schizachyrium scoparium*, *Sorghastrum nutans*, *Aristida desmantha*, *Sporobolus junceus*, *Bouteloua hirsuta*, *Stenaria nigricans*, *Echinacea pallida*, and other graminoid and herbaceous vegetation commonly associated with the Sand Post Oak-Bluejack Oak Alliance.

Post Oak-Blackjack Oak Alliance

The Post Oak-Blackjack Oak Alliance woodlands are predominately limited to dry ridges, steeper slopes with southern exposure, and flat to gently rolling uplands. These possess a variety of soil types all with the common characteristic of an impermeable substratum. This alliance occupies 655.6 ha (1620 acres) and occurs mainly in the southern half of the property (Fig. 1). Woody plants that comprise this alliance include *Quercus falcata*, *Q. incana*, *Q. marilandica*, *Q. nigra*, *Q. phellos*, *Q. stellata* var. *stellata*, *Carya texana*, *Acer rubrum*, *Nyssa sylvatica*, *Callicarpa americana*, *Cercis canadensis*, *Cornus florida*, *Crataegus crus-galli*, *C. marshallii*, *Diospyros virginiana*, *Fraxinus americana*, *Juniperus virginiana*, *Prunus angustifolia*, *P. mexicana*, *P. serotina*, *Rhus copallina*, *Rubus riograndis*, *Sideroxylon lanuginosum*, *Symphoricarpos orbiculatus*, *Ulmus alata*, *Vaccinium arboreum*, and *Viburnum nudum*. Herbaceous flora includes *Chasmanthium laxum*, *Elymus virginicus*, *Eragrostis secundiflora*, *Commelina erecta*, *Tradescantia hirsutiflora*, *Sanicula canadensis*, *Symphotrichum patens*, *Podophyllum peltatum*, *Arisaema dracontium*, *Erythronium albidum*, *Hypericum drummondii*, *Passiflora lutea*, and *Geum canadense*.

White Oak-Southern Red Oak-Post Oak Alliance

The White Oak-Southern Red Oak-Post Oak Alliance occurs on steep slopes dissected by a perennial spring fed creeks, all underlined by ironstone. The area consists of 16.4 ha (40.6 acres) in the northeast portion of the property (Fig. 1). This is the first report of this alliance in Texas. It is also known from Ft. Boggy State Park in Leon County, which has been sampled (Singhurst and Blair 1996), but never been reported in literature.

The physiognomic feature that defines this alliance is the abundance of exposed ironstone outcrops. These sites typically accumulate thick leaf litter and duff layers and exhibit a diverse display of ferns species such as *Pleopeltis polypodioides* var. *michauxiana*, *Botrychium virginianum*, *Asplenium platyneuron*, and *Woodsia obtusa*. Side slope seeps, which support such plants as *Boehmeria cylindrica* and *Onoclea sensibilis* are common.

Woody plants that dominate include *Quercus alba*, *Q. falcata*, *Q. incana*, *Q. marilandica*, *Q. nigra*, *Q. stellata* var. *stellata*, *Liquidambar styraciflua*, *Nyssa sylvatica*, *Acer rubrum*, *Cornus florida*, *Celtis laevigata* var. *laevigata*, *Carya texana*, *Ilex vomitoria*, *Vaccinium arboreum*, *Viburnum rufidulum*, *Sassafras albidum*, *Callicarpa americana*, and *Ulmus alata*. Less common are *Ampelopsis arborea*, *Aralia spinosa*, *Berchemia scandens*, *Crataegus marshallii*, *Myrica cerifera*, *Prunus mexicana*, and *P. serotina*. Common graminoids include *Bromus pubescens*, *Chasmanthium sessiliflorum*, *C. latifolium*, *Panicum laxiflorum*, *P. sphaerocarpon*, *Oplismenus hirtellus*, *Tridens flavus*, and *Scleria triglomerata*. Forbs include *Antennaria parlinii*, *Corollorhiza wisteriana*, *Geum canadense*, *Luzula bulbosa*, *Lactuca serriola*, *Matalea gonocarpa*, *Oxalis violacea*, *Parietaria pennsylvanica*, *Phryma leptostachya*, *Physalis angulata*, *Polygonum virginianum*, *Pteridium aquilinum* var. *pseudocaudatum*, *Salvia lyrata*, *Solidago caesia*, *S. ulmifolia*, *Tradescantia hirsutiflora*, *Triadenum walteri*, *Verbesina virginica*, and *Vernonia baldwinii*.

Loblolly Pine-Southern Red Oak Alliance

The Loblolly Pine-Southern Red Oak Alliance occurs on nearly flat to moderately sloping uplands that lie at the contact between the Recklaw and Queen City Sand Formations. The area is rich in iron ore and has an impermeable layer that acts as a hard pan. At times these areas hold water and an upland flatwood pine and oak dominated mixture are displayed. This alliance is rather isolated in the central portion of the property (Fig. 1) and occupies 56.1 ha (138.6 acres). Dominant woody plants include *Pinus taeda*, *Quercus falcata*, *Q. nigra*, *Liquidambar styraciflua*, *Acer rubrum*, and *Diospyros virginiana*.

Willow Oak-Water Oak Seasonally Flooded Forest Alliance

This seasonally flooded alliance includes 241.4 ha (569.6 acres) on relatively flat lands bordering perennial waterways that drain into Catfish Creek in the southern two-thirds of the property (Fig. 1). Dominant woody plants include *Quercus nigra*, *Q. phellos*, *Ulmus americana*, *Betula nigra*, *Fraxinus pennsylvanica*, and *Ilex opaca*. *Chasmanthium latifolium*, *Verbesina virginica*, *Boehmeria cylindrica*, and *Commelina virginica* are common herbaceous plants in this alliance.

Overcup Oak Seasonally Flooded Forest Alliance

The Overcup Oak Alliance is characterized by the presence of temporary standing water during and after flood events and consists of approximately 275.4 ha (680.6 acres). It is found on heavy clay soils along Catfish Creek bottom (Fig. 1). This alliance is similar to the preceding one, differing largely in the dominance of *Quercus lyrata* and absence of *Betula nigra*.

Loblolly Pine-Water Oak Temporarily Flooded Forest Alliance

The Loblolly Pine-Water Oak Temporarily Flooded Forest Alliance consists of 10 ha (24.6 acres) that are in the floodplains adjacent to Catfish Creek in the southern portion of the study area (Fig. 1). The area is subject to periodic flooding and is characterized by nearly pure stands of *Pinus taeda* on the higher ridges. The lower, more flood prone areas are characterized by *Quercus nigra*, *Q. phellos*, *Carpinus caroliniana*, *Sabal minor*, *Celtis laevigata* var. *laevigata*, *Nyssa sylvatica*, *Fraxinus pennsylvanica*, and an occasional *Pinus taeda*. Herbaceous vegetation is generally absent.

Planer Tree Seasonally Flooded Forest Alliance

Planer Tree Alliance consists of 47.4 ha (117.2 acres) of back swamps and sloughs mainly on the upper Catfish Creek corridor (Fig. 1). Common woody vegetation includes *Planera aquatica*, *Foresteria acuminata*, *Carya aquatica*, *Cephalanthus occidentalis*, *Fraxinus pennsylvanica*, and *Salix nigra*. Characteristic herbaceous plants are *Saururus cernuus* and *Boehmeria cylindrica*.

Beakrush-Pitcher Plant Alliance

The Beakrush-Pitcher Plant Alliance consists of a variety of herbaceous and woody plant bog assemblages that include hillside seepage bogs, wet prairies, muck bogs, and fens. This alliance occurs mainly in the north portion of the property (Fig. 1) and occupies 320 ha. (790.8 acres). The area is characterized by *Rhynchospora* spp. and *Sarracenia alata*. Prominent woody plants include *Alnus serrulata*, *Viburnum nudum*, *Nyssa sylvatica*, *Acer rubrum*, and *Myrica cerifera*. Typical herbaceous plants are *Eriocaulon* spp., *Pseudolycopodiella caroliniana*, *Osmunda cinnamomea*, *O. regalis*, *Pogonia ophioglossoides*, *Plantanthera ciliaris*, *Habenaria repens*, *Utricularia* spp., *Burmannia capitata*, *Eryngium integrifolium*, *Asclepias rubra*, and *Xyris* spp.

Wild Rice Tidal Alliance

The Wild Rice Alliance generally occurs as marshes bordering the larger waterways and is dominated by *Zizaniopsis miliacea*. Other common species are *Panicum virgatum*, *Rhynchospora corniculata*, and *Peltandra virginica*. This alliance occupies 11.3 ha (27.8 acres) is found mainly in the northeast portion of the property (Fig. 1).

Although not a naturally occurring alliance, there are several artificially damned, impounded waters on the management area. Most notable are Lake 1, Lake 2, Lake 3, and Beaver Pond. All are spring-fed, maintain a relatively constant water level throughout the year, and are less than 5 ha in area. The open waters are characterized by *Nelumbo lutea*, *Nymphaea odorata*, *Nuphur advena*, *Brasenia schreberi*, *Potamogeton* spp., *Eleocharis vivipara*, *Lemna* spp., *Wolffia* spp., and

Utricularia spp.. Marginal areas are dominated by *Typha latifolia*, *Zizaniopsis miliacea*, *Juncus effusus*, *Sagittaria* spp., and *Hydrocotyle ranunculoides*.

RESULTS

The GEWMA flora consists of 930 taxa (excluding family names) in 145 families and 485 genera. The largest families (with numbers of species in parentheses) are Asteraceae (124), Poaceae (114), Fabaceae (67) and Cyperaceae (61). Other families with significant numbers of species include Euphorbiaceae (26), Scrophulariaceae (22), Lamiaceae (20), and Rosaceae (20). Genera with the largest number of species include *Carex* (23), *Panicum* (16), *Juncus* (12), *Quercus* (12), *Cyperus* (10) and *Symphotrichum* (10). Introduced species represent 6.34 % of the flora (59).

The GEWMA flora includes 19.2 % of the species (930 of 4834) reported in the state by Hatch et al. (1990), in an area of about 38.85 square kilometers compared to 696,710 square kilometers for the state. For further comparison, the number of native species reported by Diggs et al. (1999), in an area of 103,600 square kilometers, is 1829, while GEWMA has 871 natives. This is 47.6 % as many species in an area less than 0.04% as large. The low percentage of introduced species (6.34 %), compared to 17.7 % reported by Diggs et al. (1999) for the area treated in their manual, evidences that GEWMA has been subjected to limited disturbance and outside influences.

Nixon (1992) recorded a total of 685 species at Fort Boggy, with 53 species being introduced. GEWMA and Fort Boggy have 470 species in common. The similarity index for the two areas is 0.582 which appears low for areas in the same ecoregion. This low value could, in part, be related to the larger study area at GEWMA, but is better attributed to the presence of the beakrush-pitcher plant alliance at GEWMA, which does not occur at Fort Boggy. It is also indicative of the species richness of the Post Oak Savannah.

DISCUSION

Eight species occurring at GEWMA are listed by Estill and Cruzan (2001) as rare southeastern endemics. These are *Astragalus soxmaniorum*, *Brazoria truncata* var. *pulcherrima*, *Coreopsis intermedia*, *Eriocaulon koernickianum*, *Palafoxia reverchonii*, *Rhododon ciliatus*, *Tradescantia reverchonii* and *Yucca louisianensis*. All are very abundant in the area, with the exception of *Coreopsis intermedia*, which is localized in sparsely vegetated areas, and *Eriocaulon koernickianum*, which is known only from Andrews Bog.

Astragalus soxmaniorum, *Coreopsis intermedia*, *Eriocaulon koernickianum* (also disjunct in Georgia), *Tradescantia reverchonii*, and *Yucca louisianensis* are part of the West Gulf Coastal Plain center of endemism (or phytogeographic pattern, Sorrie and Weakley 2001). Other common to abundant taxa from GEWMA that are part of this phytogeographic pattern are *Amorpha paniculata*, *Echinacea sanguinea*, *Panicum brachyanthum*, *Paronychia drummondii*, *Pediomelum hypogaea* var. *subulata*, *Penstemon murrayanus*, *Phacelia strictiflora*, *Polanisia erosa* var. *erosa*, *Scutellaria cardiophylla*, *Senecio ampullaceus*, *Streptanthus hyacinthoides*, and *Tetragonotheca ludoviciana*. *Brazoria truncata* var. *pulcherrima*, *Hymenopappus carrizoanus*, and *Rhododon ciliatus*, all abundant on the study site, are part of the Carrizo Sands center of endemism (Sorrie and Weakley 2001). These three taxa, plus *Palafoxia reverchonii*, are also endemic to Texas. *Hymenopappus* is designated as a globally imperiled and vulnerable to extinction throughout its range (Poole et al. 2002). *Palafoxia reverchonii* occurs partly in the Carrizo Sands area, but is also known from Houston, Nacogdoches, and Hardin counties, all to the east. *Tradescantia humilis* and *T. subacaulis*, both Texas endemics, are widespread in the eastern third of the state and found throughout the study area.

Other noteworthy taxa include the only documented occurrence of *Zigadensis densus* from the state. This collection constitutes the western limits of its distribution. *Talinum rugospermum* and *Cyperus grayioides* are both former candidates for threatened or endangered listing with a G2S3 ranking, but have been removed from the plants of concern list. Within Texas, *Cladium mariscoides* is known only from GEWMA and surrounding areas of Anderson County and nearby Koon Creek Club in Henderson County, which is immediately north of Anderson County. *Taxodium distichum* is apparently absent or rare in most of the Post Oak Savannah. Other than the GEWMA record, the only additional collection occurs in Caddo National Grassland [Singhurst and White 9112 (BALYU)] in a spring fed creek hardwood site in Fannin County in a portion of the Post Oak Savannah that projects westward along the Red River. *Symphyotrichum puniceum* var. *scabricaulis* is a species of concern currently known from Anderson, Cherokee, Franklin, Henderson, Hopkins, Smith, Van Zandt and Wood counties (also known from Louisiana and Mississippi). *Mentzelia nuda*, which is distributed in sandy areas in north and south central to west Texas (Diggs et al. 1999), is present as a disjunct. The nearest record of this taxa is from Dallas County, approximately 150 km to the northwest. The species also occurs in Henderson County, just north of Anderson County [Holmes and Singhurst 12383 and 12387 (BAYLU)] and Freestone County, which is contiguous with

Anderson County to the west [Orzell and Bridges 17224 (TEX)]. Other than the Anderson County record cited in the checklist, *Cirsium muticum* is presently known to occur in three other counties in the state. These are Gonzales County, ca. 300 km to the southeast, and Smith and Woods counties, both just to the north. *Didiplis diandra* rarely collected in Texas, is currently known from Bowie, Red River, and Robertson counties.

In conclusion, most taxa restricted to acid bogs, such as *Sarracenia alata*, *Rhynchospora* spp., *Eriocaulon* spp., and *Xyris* spp., reach their northwestern most distribution in the state, hence in the southeastern United States, in the bogs of GEWMA. This suggests that GEWMA may represent the western limit of the southeastern flora at this latitude (31° 58' N). West of GEWMA is the Blackland Prairie, which is part of the True Prairie grassland association (Gould and Shaw 1983).

ANNOTATED LIST OF VASCULAR PLANT TAXA

The annotated checklist generally follows the classification of Correll and Johnston (1970). Pteridophyta, Gymnospermae, and Angiospermae are placed in separate groups. The latter is further divided into Monocotyledoneae and Dicotyledoneae. Family, genera, and species are also alphabetized. Nomenclature follows Hatch et al. (1990), or, for names not included in that work, Jones et al. (1997). Voucher specimens documenting the occurrence of the various taxa were collected by a number of field workers, each of which is cited by the following abbreviations: B&S = D.&M. Belk and D. Scurlock, B&K = Edwin Bridges and Kelly Kindscher, B&O = Edwin Bridges and Steve Orzell, CC = Carl Crozier, CMR = Chester M. Rowell, EDM = Earnie Davis Marsh, GV = George Veteto, KL = Keith Lowe, JDC = J. D. Calley, JHR = Julie Hogan Rose, JRM = J. R. Manhardt, JS = Jason Singhurst, KF = Kay Fleming, LP = Lee Powell, MD = Monique Debrule, M&M = Michael MacRoberts and Barbara MacRoberts, O&B = Steve Orzell and Edwin Bridges, RH = Ray Hart, RL = Ruth Loper, SJ = Stanley Jones, and WCH = Walter C. Holmes.

Most voucher specimens are held in the GEWMA Herbarium (GEWMA). All Singhurst, Holmes, and Fleming collections are housed in Baylor University Herbarium (BAYLU), while the remaining collections are in S.M. Tracy Herbarium (TAES), Texas A&M University Department of Biology Herbarium (TAMU), and University of Texas Herbarium (TEX-LL).

Taxa listed by the Texas Parks and Wildlife Departments Wildlife Diversity Program Rare Plants of Texas list are indicated by a bracketed [WDP]. Introduced plants are indicated by an asterisk (*).

VASCULAR PLANT TAXA OF GUS ENGELING WILDLIFE MANAGEMENT AREA

- PTERIDOPHYTA (FERN & FERN ALLIES)
- ASPLENIACEAE
Asplenium platyneuron (L.) B.S.P. - CMR 16989
- AZOLLACEAE
Azolla caroliniana Willd. - JS 7377
- BLECHNACEAE
Woodwardia areolata (L.) T. Moore - CMR 16986
- DENNSTAEDTIACEAE
Pteridium aquilinum (L.) Kuhn var. *pseudocaudatum* (Clute) Heller - MD 1105
- DRYOPTERIDACEAE
Athyrium filix-femina (L.) Roth var. *asplenioides* (Michx.) Farw. - JS 7376
Onoclea sensibilis L. - GV s.n.
Woodsia obtusa (Spreng.) Torr. - JS 7533
- EQUISETACEAE
Equisetum hyemale L. ssp. *affine* (Engelm.) Eat. - JS 7403
- LYCOPODIACEAE
Lycopodiella appressa (Chapman) Cranfill - MD 1327
Pseudolycopodiella caroliniana (L.) Holub - JS 7442
- MARSILEACEAE
Marsilea vestita Hook & Grev. - JS 7443
- OPHIOGLOSSACEAE
Botrychium biternatum (Savign.) Underw. - JS 7381
Botrychium lunarioides (L.) Sw. - JS 7380
Botrychium virginianum (L.) Sw - JS 7378
Ophioglossum crotalophoroides Walt. - JS 7456
Ophioglossum vulgatum L. - WCH & JS 12113
- OSMUNDACEAE
Osmunda cinnamomea L. - MD 1100
Osmunda regalis L. var. *spectabilis* (Willd.) Gray - CMR 16987
- POLYPODIACEAE
Pleopeltis polypodioides (L.) Andrews & Windham var. *michauxiana* (Weath.) Andrews & Windham - JS 7479
- SELAGINELLACEAE
Selaginella apoda (L.) Spring - M&M 3775
Selaginella arenicola L. ssp. *riddellii* (Van Eselt.) Tyrone - JS 7544
- THELYPTERIDACEAE
Thelypteris palustris Schott - O&B 6590
- GYMNOSPERMAE (PINES & RELATIVES)
- CUPRESSACEAE
Juniperus virginiana L. - JS 7181
- PINACEAE
Pinus echinata Mill. - JS 7191
Pinus taeda L. - JS 7190
- TAXODIACEAE
Taxodium distichum (L.) Rich. - JS 7229
- ANGIOSPERMAE (FLOWERING PLANTS)
- MONOCOTYLEDONEAE (MONOCOTS)
- ACORACEAE
Acorus americanus L. - JS 7356
- AGAVACEAE
Manfreda virginica (L.) Pers. - WCH 11811
Yucca louisianensis Trel. - JS 7216
- ALISMACEAE
Echinodorus cordifolius (L.) Griseb. ssp. *fluitans* (Fassett) R. Haynes & L.B. Holm.-Nielsen - JS 7540
Sagittaria latifolia Willd. - EDM s.n.
Sagittaria platyphylla (Engelm.) J. G. Smith - JS 7496
- ARACEAE
Arisaema dracontium (L.) Schott - JS 7274
Arisaema triphyllum (L.) Schott ssp. *triphyllum* - CMR 16985
Peltandra virginica (L.) Schott & Endl. - CMR 16984
- ARECACEAE
Sabal minor (Jacq.) Pers. - JS 7250
- BROMELIACEAE
Tillandsia usneoides (L.) L. - JS 7522
- BURMANNIACEAE
Burmannia capitata (J.F. Gmel.) Mart. - JS 7384
- COMMELINACEAE
Commelina erecta L. - GV s.n
Commelina virginica L. - JS 7394
Tradescantia hirsutiflora Bush - MD 1073
Tradescantia reverchonii Bush - B&K 13738
Tradescantia subacaulis Bush - EDM 267
- CYPERACEAE
Bulbostylis capillaris (L.) Clarke - JS 7542
Bulbostylis ciliatifolia (Ell.) Fern. - M&M 3446
Carex alata Torr. - SJ 13560
Carex albolutescens Schwein. - CMR 17273
Carex atlantica Bailey - M&M 3841
Carex caroliniana Schwein. - EDM 216
Carex cherokeensis Schwein. - EDM 40
Carex complanata T. & G. - B&K 13723
Carex crus-corvi Kunze - JS 7389
Carex davisii Schwein. & Torr. - GV 213
Carex emoryi Dewey - WCH & JS 12115
Carex flaccosperma L. H. Dewey - CMR 17278
Carex frankii Kunth - JRH & CMR 15
Carex intumescens Rudge - JMR 4
Carex jooirii Bailey - GV 210
Carex leavenworthii Dewey - EDM 31
Carex leptalea Wahl. ssp. *harperi* (Fernald) Weatherby & Griseb. - MD 1114
Carex longii Mack. - B&K 13694
Carex louisianica Bailey - GV 215
Carex lurida Wahl. - JRM 217
Carex oklahomensis Mack. - SJ 13559
Carex oxylepis Torr. & Hook. - MD 1116
Carex retroflexa Muhl. ex Willd. - CMR 17272
Carex stricta Lam. - M&M 3813
Carex vulpinoidea Michx. - MD 1009
Cladium mariscoides (Muhl.) Torr. - B&O 7690, M&M 3990; JS 7391

- Cladium mariscus* (L.) Pohl ssp. *jamaicense* (Crantz) Kukenth. - M&M 3993
Cyperus erythrorhizos Muhl. - JS 7397
Cyperus esculentus L. - EDM 220
Cyperus grayioides Mohlenb. - B&O 7981
Cyperus haspan L. - EDM 221
Cyperus hystrixinus Fern. - EDM 314
Cyperus odoratus L. - M&M 3690
Cyperus plukenetii Fern. - MD 1346
Cyperus retroflexus Buckl. - EDM 223
Cyperus retrorsus Chapm. - GV 226
Cyperus virens Michx. - GV 225
Eleocharis equisetoides (Ell.) Torr. - JS 7549
Eleocharis olivacea Torr. - M&M 3708
Eleocharis quadrangulata (Michx.) Roemer & J.A.Schultz - O&B 7958
Eleocharis tortilis (Link) Schult. - B&K 13719
Eleocharis vivipara Link - WCH & JS 12382
Fimbristylis autumnalis (L.) Roem. & Schult. - JS 7408
Fimbristylis vahlii (Lam.) Link - JS 7409
Fuirena squarrosa Michx. - EDM 233
Isolepis carinata Hook & Arn. ex Torr. - JS 7504
Isolepis molesta (Johnston) Smith - SJ 13561
Rhynchospora caduca Ell. - O&B 7971
Rhynchospora cephalantha Gray - M&M 3561
Rhynchospora chalarocephala Fern. & Gale - B&O 7972
Rhynchospora corniculata (Lam.) Gray - EDM 260
Rhynchospora globularis (Chapm.) Small - EDM 257
Rhynchospora glomerata (L.) Vahl - EDM 260
Rhynchospora gracilentia Gray - B&O 7183
Rhynchospora oligantha Gray - B&K 13720
Rhynchospora rariflora (Michx.) Ell. - B&O 7191
Rhynchospora scirpoides (Torr.) Gray - JS 11400
Rhynchospora stenophylla Chapm. ex M. Curtis - B&O 7954
Scirpus cyperinus (L.) Kunth - MD 1277
Scleria reticularis Michx. var. *pubescens* Britt. - B&O 7964
Scleria triglomerata Michx. - JS 7505
- DIOSCOREACEAE**
Dioscorea quaternata (Walt.) J.F. Gmel. - JS 7399
- ERIOCAULACEAE**
Eriocaulon decangulare L. - EDM 230
Eriocaulon koernickianum Van Heurck & Muell. Arg. - B&K 13698
Eriocaulon texense Korn. - B&O 6593
- HYDROCHARITACEAE**
Egeria densa Planch. - JS 7402
- IRIDACEAE**
Alophia drummondii (Graham) Foster - EDM 379
Herbertia lahue (Mol.) Goldblatt ssp. *caerulea* (Herb.) Goldblatt - GV s.n.
Iris hexagona Walt. var. *flexicaulis* (Small) Foster - MD 1070
Iris virginica L. - M&M 3821
Nemastylis geminiflora Nutt. - EDM 44
Sisyrinchium albidum Raf. - EDM 12
- Sisyrinchium campestre* Bicknell - MD 1097
Sisyrinchium langloisii Greene - EDM 44
Sisyrinchium rosulatum Bicknell - JS 7511
Sisyrinchium sagittiferum Bicknell - JS 7512
- JUNCACEAE**
Juncus bufonius L. - EDM 242
Juncus capitatus Weigel - JS 7431
Juncus coriaceous Mack. - MD 1293
Juncus diffusissimus Buckl. - JHR 14
Juncus effusus L. var. *solutus* Fern. & Wieg. - EDM 244
Juncus interior Wieg. - EDM 241
Juncus marginatus Rostk. var. *setosus* Cov. - GV 247
Juncus repens Michx. - GV 246
Juncus scirpoides Lam. - EDM 178
Juncus torreyi Cov. - JHR 23
Juncus trigonocarpus Steud. - MD 1358
Juncus validus Cov. - EDM 179
Lucula bulbosa (Wood) Smyth & Smyth - JS 7434
- LEMNACEAE**
Lemna minuta Kunth - WCH 11323
Lemna obscura (Austin) Daubs - WCH 11804
Spirodela polyrhiza (L.) Schleid. - WCH 11803
Wolffia brasiliensis Wedd. - WCH 11807
Wolffia columbiana H. Karst. - WCH 11824
- LILIACEAE**
Allium canadense L. var. *canadense* - JS 7541
Allium drummondii Regel - EDM 378
Cooperia drummondii Herb. - JS 7395
Crinum americanum L. - JS 7554
Erythronium albidum Nutt. - JS 7405
Hymenocallis eulae Shinnery - WCH & JS 12360
Hymenocallis liriosme (Raf.) Shinnery - JS 7423
Hypoxis hirsuta (L.) Cov. - EDM 40
Melanthium virginicum L. - DJC & EDM 30
**Muscari neglectum* Guss ex Ten. - JS 7447
**Narcissus jonquilla* L. - JS 7451
Nothoscordum bivalve (L.) Britt. - EDM 38, 37
Zigadenus densus (Desr.) Fern. - M&M 3820
- MARANTACEAE**
Thalia dealbata Fraser ex Roscoe - JS 7521
- MAYACACEAE**
Mayaca fluviatilis Aubl. - CMR 17279
- ORCHIDACEAE**
Calopogon tuberosus (L.) B.S.P. - M&M 3974
Corallorhiza wisteriana Conrad - JS 7553
Habenaria repens Nutt. - JS 7552
Plantanthera ciliaris (L.) Lindley - CMR 17966
Pogonia ophioglossoides (L.) Juss. - JS 7537
Spiranthes cernua (L.) Rich. - MD 1331
Spiranthes lacera (Raf.) Raf. var. *gracilis* (Bigel.) Luer. - EDM 50
Spiranthes laciniata (Small.) Ames. - JS 7548
- POACEAE**
Agrostis hyemalis (Walt.) B.S.P. - M&M 3974
Agrostis perennans (Walt.) Tuck. - M&M 3974
Agrostis scabra Willd. - M&M 3697
**Aira caryophyllea* L. var. *capillaris* A. Mutel - GV 1
Alopecurus carolinianus Walt. - JS 7219
Andropogon glomeratus (Walt.) B.S.P. - JS 7223
Andropogon ternarius Michx. - GV s.n.

- Andropogon virginicus* L. - GV 6
Aristida desmantha Trin. & Rupr. - MD 1312
Aristida lanosa Muhl. ex Ell. - O&B 8634
Aristida longespica Poir. - EDM s.n.
Aristida oligantha Michx. - EDM s.n.
Aristida purpureascens Poir. - GV s.n.
Arundinaria gigantea (Walt.) Muhl. - JS 7193
**Avena sativa* L. - WCH & JS 12123
Axonopus compressus (Sw.) Beauv. - EDM 287
**Bothriochloa ischaemum* (L.) Keng var. *songarica* (Fisch. & Mey.) Celariar & Harlan - JS 7220
Bothriochloa laguroides (DC.) Herter - JS 7224
Bouteloua hirsuta Lag. - GV 18
Brachiaria texana (Buckl.) S. T. Blake - EDM 44
**Briza minor* L. - JS 7221
**Bromus catharticus* Vahl - WCH & JS 12133
**Bromus japonicus* Thunb ex Murray - WCH & JS 12138
Bromus pubescens Muhl. ex Willd. - JS 7227
**Bromus tectorum* L. - EDM 20
Cenchrus spinifex Cana. - EDM 134
Chasmanthium latifolium (Michx.) Yates - EDM 17
Chasmanthium laxum (L.) Yates - WCH 11859
Chasmanthium sessiliflorum (Poir.) Yates - GV 24
Chloris verticillata Nutt. - JS 7258
Cinna arundinacea L. - M&M 3583-B
Coelorachis cylindrica (Michx.) Nash - B&K 13736
Coelorachis rugosa (Nutt.) Nash - M&M 3681
**Cynodon dactylon* (L.) Pers. - JS 7222
**Digitaria cognata* (Schult.) Pilger - EDM 73
**Digitaria filiformis* (L.) Koel. - EDM 40
**Digitaria sanguinalis* (L.) Scop. - EDM 42
Echinochloa crusgallii (L.) Beauv. - EDM 44
Echinochloa walteri (Pursh) Heller - JS 7259
**Eleusine indica* (L.) Gaertn. - JS 7260
Elymus canadensis L. - JS s.n.
Elymus virginicus L. - EDM 45
Eragrostis capillaris (L.) Nees - GV 49
Eragrostis cilianensis (All.) Janchen - JS 7261
Eragrostis curtipedicellata Buckl. - EDM 21
Eragrostis hypnoides (Lam.) B.S.P. - GV 48
Eragrostis pilosa (L.) Beauv. - GV 58
Eragrostis secundiflora Presl ssp. *oxylepis* (Torr.) S.D. Koch. - EDM 51
Eragrostis spectabilis (Pursh) Steud. - EDM 63
Eragrostis trichoides (Nutt.) Wood - GV 60
Gymnopogon ambiguus (Michx.) B.S.P. - EDM 70
**Hordeum pusillum* Nutt. - JS 7262
Leersia hexandra Sw. - EDM 91
Leersia lenticularis Michx. - MD 1279
Leersia oryzoides (L.) Sw. - M&M 3693; JS 7263
Leersia virginica Willd. - GV 72
**Lolium perenne* L. - JS 7264
Melica mutica Walt. - JS 7264
Muhlenbergia schreberi Gmel. - GV 74
Oplismenus hirtellus (L.) Beauv. - GV 75
Panicum aciculare Desv. ex Poir. var. *angustifolium* (Elliott) Wipff & Jones - GV 35
Panicum acuminatum Sw. - EDM 203
Panicum anceps Michx. - EDM 104
Panicum brachyanthum Steud. - EDM 93
Panicum dichotomum L. - EDM 96
Panicum gymnocarpon Ell. - EDM 95
Panicum hians Ell. - EDM 97
Panicum hemitomom Schult. - EDM 107
Panicum laxiflorum Lam. - GV 34
Panicum nodatum Hitchc. & Chase - JS 5366
Panicum oligosanthos Schult. - GV 30
Panicum rigidulum Nees - GV 100
Panicum scabriusculum Ell. - M&M 3816, 3711
Panicum scoparium Lam. - EDM 269
Panicum verrucosum Muhl. - M&M 3673
Panicum virgatum L. - JS 7266
**Paspalum dilatatum* Poir. - JS 7267
Paspalum floridanum Michx. - EDM 115
Paspalum laeve Michx. - EDM 113
**Paspalum notatum* Flugge. - JS 7268
Paspalum plicatulum Michx. - M&M 3582
Paspalum praecox Walt. - M&M 3678
Paspalum setaceum Michx. - GV 108
**Paspalum urvillei* Steud. - GV 114
Phalaris caroliniana Walt. - JS 7269
Piptochaetium avenaceum (L.) Parodi - JS 7217
**Poa annua* L. - JS 7218
Saccharum alopecuroides (L.) Nutt. - GV 66
Saccharum giganteum (Walt.) Pers. - EDM 65
Saccharum baldwinii Spreng. - EDM 64
Sacciolepis striata (L.) Nash - MD 1276
Schizachyrium scoparium (Michx.) Nash - JS 7270
Setaria parviflora (Poir.) Kerguelen - EDM 79
Sorghastrum elliottii (Mohr) Nash - JS 7271
Sorghastrum nutans (L.) Nash - EDM 80, 82
**Sorghum halepense* (L.) Pers. - JS 7272
Sphenopholis obtusata (Michx.) Scribn. - EDM 83, 84
Sporobolus compositus (Poir.) Merr. var. *clandestinus* (Biehler) J. Wipff & S. D. Jones - EDM 131
Sporobolus compositus (Poir.) Merr. - GV 126
Sporobolus cryptandrus (Torr.) Gray - EDM 125
**Sporobolus indicus* (L.) R. Br. - EDM 127
Sporobolus junceus (Michx.) Kunth - GVM 124
Sporobolus pyramidalis (Lam.) A.S. Hitchc. - EDM 128
Sporobolus vaginiflorus (T. & G.) Torr. - EDM 129
**Stenotaphrum secundatum* (Walt.) O. Ktze. - JS 7273
Tridens eragrostoides (Vasey & Scribn.) Nash - EDM 85
Tridens flavus (L.) A.S. Hitchc. - EDM 86
Tridens strictus (Nutt.) Nash. - EDM 88
Triplasis purpurea (Walt.) Chapm. - GV 89
Tripsacum dactyloides (L.) L. - JS 7274
Triticum aestivum L. - WCH & JS 12127
Vulpia octoflora (Walt.) Rydb. - EDM 68
Vulpia sciurea (Nutt.) Henr. - EDM 67
Zizaniopsis miliacea (Michx.) Doell & Aschers. - EDM 92

PONTEDERIACEAE

- Heteranthera dubia* (Jacq.) MacM. - JRH 13
Pontederia cordata L. - JS 7480

POTAMOGETONACEAE

- Potamogeton diversifolius* Raf. - JS 7483
Potamogeton foliosus Raf. - WCH & JS 12338
Potamogeton nodosus Poir. - JS 7484

SMILACACEAE

- Smilax bona-nox* L. - EDM 63
Smilax glauca Walt. - EDM 319
Smilax laurifolia L. - JS 7215
Smilax rotundifolia L. - MD 1082
Smilax smallii Morong - JS 7225
Smilax tannoides L. - JS 7253

SPARGAGINACEAE

- Sparganium americanum* Nutt. - EDM 263

TYPHACEAE

- Typha latifolia* L. - JS 7210

XYRIDACEAE

- Xyris ambigua* Kunth - EDM 272
Xyris baldwiniana Schult. - B&O 7187
Xyris diformis Chapm. - M&M 3407
Xyris jupicai Rich. - JS 7535
Xyris torta J. E. Smith - JS 7534

DICOTYLEDONAE (DICOTS)

ACANTHACEAE

- Dicliptera brachiata* (Pursh) Spreng. - JS 7398
Hygrophila lacustris (Schlecht. & Cham.) Nees - JS 7551
Justicia ovata (Walt.) Lindau var. *lanceolata* (Chapm.) Long. - JS 7432
Ruellia caroliniana (J.M.Gmel) Steyd. - DJC & EDM 4
Ruellia humilis Nutt. - EDM 266

ACERACEAE

- Acer negundo* L. - EDM 162
Acer rubrum L. - JS 7178

AMARANTHACEAE

- Amaranthus blitum* L. - JS 7369
 **Amaranthus spinosus* L. - EDM 100
Froelichia drummondii Moq. - EDM 178
Froelichia gracilis (Hook.) Moq. - JS 7410
Iresine rhizomatosa Standl. - JS 7430

ANACARDIACEAE

- Rhus aromatica* Ait. - EDM 66
Rhus copallina L. - EDM 152
Rhus glabra L. - EDM 153
Rhus lanceolata (Gray) Britt. - EDM 297
Rhus trilobata Nutt. - EDM 2
Toxicodendron radicans (L.) O. Ktze. - EDM 67

APIACEAE (UMBELLIFERAE)

- Centella erecta* (L.) Fern. - JS 7390
Chaerophyllum tainturieri Hook. - JS 6169
Cicuta maculata L. - WCH & JS 12354
Cyclospermum leptophyllum Sprague ex Britt. & Wilson - WCH & JS 12140
Daucus pusillus Michx. - EDM 418
Eryngium integrifolium Walt. - EDM 228
Eryngium prostratum Nutt. ex DC. - JS 7404
Eryngium yuccifolium Michx. - EDM s.n.
Hydrocotyle ranunculoides L. f. - JS 7421
Hydrocotyle verticillata Thunb. - JS 4722
Limnoscadium pumilum (Engelm. & Gray) Math. & Const. - JS 7436
Oxypolis rigidior (L.) Raf. - GV s.n.
Polytaenia texana (Coul. & Rose) Math. & Const. - EDM s.n.

- Ptilimum capillaceum* (Michx.) Raf. - EDM 228

- Ptilimum costatum* (Eill.) Raf. - MD 1354
Sanicula canadensis L. - JS 7501
Spermolepis divaricata (Walt.) Raf. ex Ser. - JS 7515
Zizia aurea (L.) Koch - JS 7536

APOCYNACEAE

- Amsonia tabernaemontana* Walt. - JS 7358
Apocynum cannabinum L. - JS 7372
Trachelospermum difforme (Walt.) Gray - JS 7214

AQUIFOLIACEAE

- Ilex decidua* Walt. - MD 1371
Ilex opaca Soland. in Ait. - MD 1339
Ilex vomitoria Soland. in Ait. - EDM 157

ARALIACEAE

- Aralia spinosa* L. - WCH & JS 12114

ARISTOLOCHACEAE

- Aristolochia reticulata* Jacq. - GV 387

ASCLEPIDACEAE

- Asclepias amplexicaulis* Sm. - EDM 392
Asclepias obovata Eill. - CMR 389
Asclepias rubra L. - CMR 388
Asclepias tomentosa Eill. - WCH & JS 12345
Asclepias tuberosa L. ssp. *interior* Woods. - CMR 390
Asclepias verticillata L. - JS 7375
Matelea cynanchoides (Engelm.) Woods. - JS 7444
Matelea decipiens (Alex.) Woods. - DF s.n.
Matelea gonocarpus (Walt.) Shinnery - JS 7445

ASTERACEAE (COMPOSITAE)

- Acmella oppositifolia* (Lam.) Jansen var. *repens* (Walt.) Jansen - JS 6305
Ambrosia artemisiifolia L. - EDM 274
Ambrosia cumanensis Kunth in H.B.K. - JS 7294
Ambrosia trifida L. - JS 7295
Antennaria parlinii Fern. ssp. *fallax* (Greene) Bayer & Stebbins - EDM 276
Anthemis cotula L. - EDM 277
Aphanostephus skirrhobasis (DC.) Trel. - JS 7297
Ageratina rugosa (L.) King & Rob. - JS 7312
Baccharis halimifolia L. - JS s.n.
Berlandiera pumila (Michx.) Nutt. - EDM 285
Berlandiera betonicifolia (Hook.) Small - WCH 11819
Bidens aristosa (Michx.) Britt. - JS 7306
Bidens bipinnata L. - JS 7304
Bidens laevis (L.) B.S.P. - MD 1274
Boltonia diffusa Eill. - EDM s.n.
Brickellia eupatorioides (L.) Shinnery - JS 7305
Calyptocarpus vialis Less. - JS 7302
Chaetopappa asteroides Nutt. ex DC. - EDM 289
Chrysopsis pilosa Nutt. - MD 1321
Cirsium horridulum Michx. - GV 291
Cirsium muticum Michx. - O&B 7974
Conoclinium coelestinum (L.) DC. - JS 3713
Conyza canadensis (L.) Cronq. - EDM 292
Coreopsis basalis (Dietr.) Blake. - RL s.n.
Coreopsis intermedia Sherff - JS 7282
Coreopsis tinctoria Nutt. - JS 7285
Coreopsis tripteris L. - O&B 7970

- Croptilon divaricatum* (Nutt.) Raf. - JS 7289
Doellingeria sericocarpoides Small - O&B 8636
Echinacea pallida (Nutt.) Nutt. - JS 7290
Echinacea sanguinea Nutt. - EDM 95
Eclipta prostrata (L.) L. - JS 7291
Elephantopus carolinianus Raesch. - JS 7292
Elephantopus tomentosus L. - JS 7293
Erechitites hieraciifolia (L.) Raf. ex DC. - JS 7303
Erigeron philadelphicus L. - JS 7307
Erigeron strigosus Willd. - WCH & JS 12372
Erigeron tenuis T. & G. - JS 7308
Eupatorium capillifolium (Lam.) Small - WCH 12427
Eupatorium compositifolium Walt. - JS 7310
Eupatorium glaucescens Ell. - WCH 11809
Eupatorium perfoliatum L. - WCH 11325
Eupatorium rotundifolium L. - JS 7309
Eupatorium serotinum Michx. - JS 7315
Euthamia leptoccephala (T. & G.) Greene - JS 7318
Evax candida (T. & G.) Gray - JS 7316
Evax verna Raf. - JS 7317
**Facelis retusa* (Lam.) Sch. Bip. - JS 7320
Fleischmannia incarnatum (Walt.) King & Rob. - JS 7311
Gaillardia aestivalis (Walt.) Rock - JS 7324
Gaillardia pulchella Foug. - WCH & JS 12380
Gamochaeta falcata (Lam.) Cabrera - EDM 57-63a
Gamochaeta pensylvanica (Willd.) Cabrera - EDM 57-63b
Gamochaeta purpurea (L.) Cabrera - JS 7322
Helenium amarum (Raf.) Rock - JS 7323
Helianthus angustifolius L. - M&M 3548; JS 7327
Helianthus debilis Nutt. - JS 7321
Helianthus hirsutus Raf. - JS 7325
Helianthus mollis Lam. - JS 7328
Heterotheca subaxillaris (Lam.) Britt. & Rusby - JS 7329
Hieracium gronovii L. - JS 7330
Hymenopappus carrizoanus B.L. Turner - JS 10542a
Hymenopappus scabiosaeus L'Her. - JS 7335
Hymenopappus scabiosaeus L'Her. var. *artemisiifolius* (DC.) Gandhi & Thomas - JS 10538a
**Hypochaeris brasiliensis* (Less.) Griseb. - WCH & JS 12143
Iva angustifolia Nutt. ex DC. - EDM 12
Iva annua L. - JS 7332
Krigia cespitosa (Raf.) Chamb. - JS 7281
Krigia dandelion (L.) Nutt. - EDM s.n.
Lactuca canadensis L. - JS 7334
Lactuca floridana (L.) Gaertn. - JS 7331
Lactuca serriola L. - JS 7333
Liatris elegans (Walt.) Michx. - JS 7336
Liatris squarrosa (L.) Michx. - JS 7337
Mikania scandens (L.) Willd. - JS 7340
Packera glabella (Poir.) Jeff. - JS 7350
Packera obovata (Muhl. ex Willd.) Weber & Love - JS 7352
Palafoxia reverchonii (Bush) Cory - WCH 11813
Palafoxia rosea (Bush) Cory - WCH 11852
Parthenium hysterophorus L. - KF 1103
Pityopsis graminifolia (Michx.) Nutt. - DJC & EDM 93
Pluchea camphorata (L.) DC. - JS 7343
Pluchea foetida (L.) DC. - JS 7341
Pluchea odorata (L.) Cass. - JS 7346
Pluchea purpureascens (Sw.) DC. - JS 7346
Pluchea rosea Godfrey - JS 7345
Pseudognaphalium obtusifolium (L.) Hill. & Burt. - JS 7326
Pyrrhopappus carolinianus - WCH 11326
Rudbeckia grandiflora (D. Don) DC. - JS 7348
Rudbeckia hirta L. - JS 7351
Senecio ampullaceus Hook. - JS 7349
Silphium radula Nutt. - WCH & JS 12381
Solidago arguta Ait. - JS 7347
Solidago canadensis L. - EDM s.n.
Solidago nemoralis Ait. - JS 7353
Solidago odora Ait. - MD 1319
Solidago petiolaris Ait. - EDM s.n.
Solidago radula Nutt. - JS 7338
Solidago rugosa Mill. - M&M 3598, 3569
Solidago ulmifolia Muhl. ex Willd. - GV s.n.
**Soliva mutsii* Kunth - JS 7354
Soliva sessilis Lop. & Pav. - JS 7355
**Sonchus oleraceus* L. - WCH 11327
Symphotrichum drummondii Lindl. - JS 7298
Symphotrichum dumosum (L.) G. Nesom. - JS 7299
Symphotrichum ericoides (L.) G. Nesom. - MD 1282; EDM 281
Symphotrichum eulae (Shinners.) G. Nesom. - JS 6308
Symphotrichum lateriflorus (L.) Britt. - M&M 3680
Symphotrichum oolentangiensis Riddell - JS 7301
Symphotrichum patens (Ait.) G. Nesom. - GV 280
Symphotrichum puniceum (L.) Love & Love var. *scabricaulis* (Shinners) G. Nesom - MD 1348
Symphotrichum sericeum (Vent.) G. Nesom - JS 7300
Symphotrichum umbellatus Mill. var. *latifolius* Gray - MD 1352
**Taraxacum officinale* Weber ex Wiggers - JS 7360
Tetragonatheca ludoviciana (T. & G.) Gray - s.n.
Thelesperma filifolium (Hook.) Gray - JS 7361
Verbesina encelioides (Cav.) Benth. & Hook. ex Gray. - MD 1316
Verbesina helianthoides Michx. - WCH & JS 12361
Verbesina virginica L. - JS 7362
Vernonia baldwinii Torr. - JS 7364
Vernonia gigantea (Walt.) Trel. - JS 7363
Vernonia missurica Raf. - JS 7365
Vernonia texana (Gray) Small. - EDM s.n.
Xanthium strumarium L. - JS 7366
BERBERIDACEAE
Podophyllum peltatum L. - EDM 256

BETULACEAE

- Alnus serrulata* (Dryand ex Ait.) Willd. - M&M 4030
Betula nigra L. - EDM 70
Carpinus caroliniana Walt. - JP s.n.
Ostrya virginiana (Mill.) K. Koch - JS 7244

BIGNONIACEAE

- Campsis radicans* (L.) Seem. ex Bureau. - EDM 149
Catalpa speciosa (Barney) Warder ex Engelm. - JS 7179

BORAGINACEAE

- **Buglossoides arvensis* (L.) I.M. Johnst. - JS 7383
Heliotropium indicum L. - JS 7420
Lithospermum carolinense (Gmel.) MacM. - CMR 16573
Lithospermum incisum Lehm. - EDM 252
Myosotis macrosperma Engelm. - EDM s.n.
Myosotis verna Nutt. - EDM 57-82

BRASSICACEAE (CRUCIFERAE)

- Arabis canadensis* L. - EDM 382
 **Capsella bursa-pastoris* (L.) Medic. - EDM 401
Cardamine parviflora L. var. *arenicola* (Britt.) Schulz - MD 1085
Cardamine pensylvanica Muhl. ex Willd. - JS 7387
Descurainia pinnata (Walt.) Britt. - EDM 421
Draba brachycarpa T. & G. - JS 7400
Lepidium austrinum Small - EDM 105
Lepidium virginicum L. - EDM 105
Rorippa palustris (L.) Besser. var. *fernaldiana* (Butters. & Abbe) Stuckey - JS 7490
Rorippa sessiliflora (Nutt. ex T. & G.) A.S. Hitchc. - JS 6304
 **Sisymbrium officinale* (L.) Scopoli - JS 7510
Streptanthus hyacinthoides Hook. - EDM 105

BUDDLEJACEAE

- Polypremum procumbens* L. - EDM 206

CABOMBACEAE

- Brasenia schreberi* Gmel. - WCH 11324

CACTACEAE

- Opuntia humifusa* (Raf.) Raf. - JS 7457
Opuntia stricta (Haw.) Haw. - EDM 62

CALLITRICHACEAE

- Callitriche heterophylla* Pursh - JS 7385

CAMPANULACEAE

- Lobelia appendiculata* A. DC. - EDM 276
Lobelia cardinalis L. - EDM 278
Lobelia puberula Michx. - M&M 3597
Lobelia reverchonii B.L. Turner - M&M 3683
Triodanis perfoliata (L.) Nieuw. - EDM 279

CAPPARIDACEAE

- Polanisia erosa* (Nutt.) Iltis - EDM 411

CAPRIFOLIACEAE

- **Lonicera japonica* Thunb. - JS 7195
Lonicera sempervirens L. - JS 7184
Sambucus nigra L. ssp. *canadensis* (L.) Bolli - EDM 151
Symphoricarpos orbiculatus Moench - JS 7211
Viburnum nudum L. - MD 1110
Viburnum rufidulum Raf. - MD 1080

CARYOPHYLLACEAE

- Arenaria drummondii* Shinners - EDM 28
 **Arenaria serpyllifolia* L. - JS 7373

- Cerastium brachypodum* (Engelm. ex Gray) Robins. - EDM 406

- **Cerastium glomeratum* Thuillier - JHR 405
Loeflingia squarrosa Nutt. - EDM s.n.
Minuartia drummondii (Shinners) McNeill - EDM 383
Minuartia patula (Michx.) Mattf. - EDM 384
Paronychia drummondii T. & G. - MD 1299
Sagina decumbens (Ell.) T. & G. - JS 7497
Silene antirrhina L. - JS 7508
 **Silene gallica* L. - JS 7509
 **Stellaria media* (L.) Vill. - JS 7518

CERATOPHYLLACEAE

- Ceratophyllum demersum* L. - WCH 11852

CHENOPODIACEAE

- Chenopodium album* L. - EDM 404
Chenopodium ambrosioides L. - EDM & JDC 91

CISTACEAE

- Helianthemum carolinianum* (Walt.) Michx. - EDM 193
Helianthemum georgianum Chapm. - JS 7418
Helianthemum rosmarinifolium Pursh - JS 7419
Lechea mucronata Raf. - EDM 193
Lechea tenuifolia Michx. - EDM s.n.

CLUSIACEAE

- Hypericum crux-andreae* (L.) Crantz - JS 7182
Hypericum drummondii (Grev. & Hook.) T. & G. - JS 7424
Hypericum hypericoides (L.) Crantz - MD 1289
Hypericum mutilum L. - EDM 187
Hypericum punctatum Lam. - JS 7425
Triadenum virginicum (L.) Raf. - MD 1106
Triadenum walteri (Gmel.) Gl. - MD 1275

CONVOLVULACEAE

- Dichondra carolinensis* Michx. - CMR 17278
Evolvulus sericeus Sw. - JS 7407
Ipomoea cordat triloba Denn. var. *torreyana* (Gray) Austin - EDM 249
Ipomoea lacunosa L. - JS 7427
Ipomoea pandurata (L.) Mey. - JS 7428
Stylisma pickeringii (Curt.) Gray var. *pattersonii* (Fern. & Schub.) Myint - EHM 399

CORNACEAE

- Cornus drummondii* C. A. Mey. - JS 7233
Cornus florida L. - MD 1326

CRASSULACEAE

- Penthorum sedoides* L. - EDM 115
Sedum nuttallianum Raf. - JS 7506

CUCURBITACEAE

- Melothria pendula* L. - WCH & JS 12376

CUSCUTACEAE

- Cuscuta compacta* Juss. - CC s.n.
Cuscuta cuspidata Engelm. - MD 1332

DROSERACEAE

- Drosera brevifolia* Pursh - EDM 426
Drosera capillaris Poir. - MD 1336

EBENACEAE

- Diospyros virginiana* L. - JS 7275

ERICACEAE

- Rhododendron oblongifolium* (Small) Millais - MD 1335
Vaccinium arboreum Marsh. - EDM 235

EUPHORBIACEAE

- Acalypha gracilens* Gray - MD 1308

- Acalypha monococca* (Engelm. & Gray) Lill. W. Mill. & Gandhi - EDM 190
Acalypha ostryifolia Ridd. - JS 7366
Chamaesyce bombensis (Jacq.) Dugand - EDM 147
Chamaesyce cordifolia (Ell.) Small - WCH 11812
Chamaesyce maculata L. - JS 7462
Chamaesyce missurica Raf. - EDM 147
Chamaesyce prostrata (Ait.) Small - EDM 57
Cnidocolus texanus (Muell. Arg.) Small - EDM 409
Croton argyranthemus Michx. - JS 7234
Croton capitatus Michx. - EDM 415
Croton glandulosus L. - GV 413
Croton lindheimerianus Scheele - GV 416
Croton michauxii Web. - JS 7395
Croton monanthogynus Michx. - EDM 417
Croton willdenowii G.L. Webster - O&B 7980
Euphorbia corollata L. - JS 7406
Euphorbia cyathophora Murray - MD 1308
Euphorbia dentata Michx. - JS 7538
Euphorbia spathulata Lam. - EDM s.n.
Phyllanthus carolinienis Walt. - JS 7463
Sapium sebiferum (L.) Roxb. - JS 7213
Stillingia sylvatica L. - EDM 147
Tragia brevispica Engelm. & Gray. - JS 6685
Tragia ramosa Torr. - EDM 147
Tragia urticaefolia Michx. - WCH & JS 12370
- FABACEAE**
- Amorpha fruticosa* L. - JS 7197
Amorpha paniculata T. & G. - EDM 131
Amphicarpaea bracteata (L.) Fern. - EDM 132
Astragalus distortus T. & G. - EDM 133
Astragalus leptocarpus T. & G. - JS s.n.
Astragalus soxmaniorum Lundell - EDM 135
Baptisia bracteata Muhl. ex Ell. var. *laevicaulis* (Canby) Isely - EDM 140
Baptisia nuttalliana Small. - EDM 139
Centrosema virginianum (L.) Benth. - GV 146
Cercis canadensis L. - JS 7180
Chamaecrista fasciculata (Michx.) Greene - EDM 142
Chamaecrista nictitans (L.) Moench - EDM 145
Clitoria mariana L. - EDM 148
Crotalaria sagittalis L. - GV 151
Dalea phleoides (T. & G.) Shinnars var. *microphylla* (T. & G.) Barneby - EDM 178
Dalea villosa (Nutt.) Spreng. var. *grisea* (T. & G.) Barneby - EDM 183
Desmanthus illinoensis (Michx.) McM. ex Robins. & Fern. - JS 7276
Desmodium ciliare (Muhl. ex Willd.) DC. - GV 776
Desmodium glabellum (Michx.) DC. - MD 1286
Desmodium laevigatum (Nutt.) DC. - EDM 55-10
Desmodium pauciflorum (Nutt.) DC. - EDM 155
Desmodium sessilifolium (Torr.) T. & G. - EDM 152
Desmodium viridiflorum (L.) DC. - GV 158
Erythrina herbacea L. - JS 7235
Galactia regularis (L.) B.S.P. - GV 160
Galactia volubilis (L.) Britt. - WCH 11858
Gleditsia aquatica Marsh. - JS 7236
Gleditsia triacanthos L. - GV s.n.
- Glottidium vesicarium* (Jacq.) Harper - JS 7257
Indigofera miniata Ort. var. *leptosepala* (Nutt. ex T. & G.) B.L. Turner - EDM 163
**Kummerowia striata* (Thunb.) Hook. & Arn. - EDM 164
Lathyrus pusillus Ell. - JS 7278
**Lespedeza cuneata* (Dumont) G. Don - EDM 172
Lespedeza hirta (L.) Hornem. - EDM 171
Lespedeza procumbens Michx. - GV 174
Lespedeza repens (L.) Bart. - GV 172
Lespedeza stuevei Nutt. - GV 166
Lespedeza virginiana (L.) Britt. - WCH 11860
Lupinus texensis Hook. - EDM 176
**Medicago lupulina* L. - JS 7279
**Medicago minima* (L.) Bartalina - JS 7280
**Melilotus albus* Medic. - JS 7287
**Melilotus indicus* (L.) All. - JS 7288
Mimosa nuttallii (DC. ex Britt. & Rose) B.L. Turner - EDM 189
Neptunia lutea (Leavenw.) Benth. - GV 177
Orbexilum pendunculatum (Mill.) Rydb. - JS 7284
Pediometum digitatum (Nutt. ex Torr.) Isley - DJC & EDM 51
Pediometum hypogaeum (T. & G.) Rydb. var. *subulatum* (Bush) J. Grimes - MD 1098
Pediometum rhombifolium (T. & G.) Rydb. - B&K 13707
Prosopis glandulosa Torr. - WCH & JS 12134
**Pisum sativum* L. - WCH & JS 12128
Rhynchosia latifolia Nutt. ex T. & G. - GV 187
Robinia pseudo-acacia L. - JS 7207
Sesbania drummondii (Rydb.) Cory - JS 7255
Sesbania herbacea (Mill.) R. McVaugh - JS 7256
Strophostyles leiosperma (T. & G.) Piper - GV 191
Stylosanthes biflora (L.) B.S.P. - EDM 192
Tephrosia onobrychoides Nutt. - WCH 11821
Tephrosia virginiana (L.) Pers. - MD 1342
Trifolium bejariense Moric. - EDM 196
**Trifolium campestre* Schreb. in Sturm. - JS 7283
Trifolium caroliniana Michx. - EDM 57-71
**Trifolium incarnatum* L. - KL s.n.
**Trifolium repens* L. - JS 7286
Vicia caroliniana Walt. - EDM 774
Vicia ludoviciana Nutt. - MD 1075
Vicia minutiflora Dietr. - EDM 200
- FAGACEAE**
- *Quercus acutissima* Carruthers - WCH & JS 12144
Quercus alba L. - JS 7204
Quercus falcata Michx. - EDM 34
Quercus incana Bartr. - MD 1363
Quercus lyrata Walt. - WCH & JS 12357
Quercus marilandica Muenchh. - GV s.n.
Quercus nigra L. - GV s.n.
Quercus phellos L. - GV 2
Quercus shumardii Buckl. - JS 6689
Quercus stellata Wang. var. *margaretta* (Ashe) Sarg. - JS 7206
Quercus stellata Wang. var. *stellata* - EDM 289
Quercus velutina Lam. - JS 7205

- FUMARIACEAE**
Corydalis micrantha (Engelm.) Gray - EDM 410
- GENTIANIACEAE**
Bartonia paniculata (Michx.) Muhl. - M&M 3679
Sabatia angularis (L.) Pursh - WCH & JS 12364
Sabatia campanulata (L.) Torr. - JS 7495
Sabatia campestris Nutt. - JS 7495
Sabatia gentianoides Eil. - BB&S 01
- GERANIACEAE**
Geranium carolinianum L. - EDM 126
- GROSSULARIACEAE**
Ribes curvatum Small - CMR 16988
- HALORAGRACEAE**
Myriophyllum heterophyllum Michx. - JS 7449
Proserpinaca palustris L. - EDM 224
- HAMAMELIDACEAE**
Liquidambar styraciflua L. - JS s.n.
- HIPPOCASTANACEAE**
Aesculus pavia L. - JS 7185
- HYDROPHYLLACEAE**
Hydrolea ovata Choisy. - M&M 4037
Nama hispidum Gray. - JS 7450
Nemophila phacelioides Nutt. - JS 7453
Phacelia hirsuta Nutt. - JS 7459
Phacelia strictiflora (Engelm. & Gray) Gray - EDM 13
- JUGLANDACEAE**
Carya aquatica (Michx. f.) Nutt. - WCH & JS 12359
Carya tomentosa Nutt. - WCH & JS 12116
Carya texana Buckl. - MD 1095
- KRAMERIACEAE**
Krameria lanceolata Torr. - EDM 79
- LAMIACEAE**
Brazoria truncata (Benth.) Engelm. & Gray var. *pulcherrima* (Lundell) M. W. Turner - EDM 396
Hedeoma hispidum Pursh - RL s.n.
**Lamium amplexicaule* L. - JS 7433
Lycopus rubellus Moench. - JHR 37
Monarda fistulosa L. - EDM 133
Monarda punctata L. - EDM 121
**Perilla frutescens* (L.) Britt. - JS 7458
Physostegia virginiana (L.) Benth. - JS 7464
Prunella vulgaris L. - JS 7486
Pycnanthemum tenuifolium Schrad. - JS 7487
Rhododon ciliatus (Benth.) Epl. - EDM 254
Salvia azurea Lam. - JS 7498
Salvia lyrata L. - JS 7499
Scutellaria cardiophylla Engelm. & Gray. - MD 1343
Scutellaria integrifolia L. - EDM 254
Scutellaria parvula Michx. - EDM 57-101
Stachys crenata Raf. - JS 7517
Teucrium canadense L. - JS 7520
Trichostema dichotomum L. - MD 1305
Trichostema setaceum Houtt. - MD 1329
- LAURACEAE**
Sassafras albidum (Nutt.) Nees - MD 1373
- LENTIBULARIACEAE**
Utricularia cornuta Michx. - M&M 3808
Utricularia gibba L. - JS 7526
Utricularia inflata Walt. - CMR 17275
Utricularia juncea Vahl. - M&M 3988
- Utricularia macrorrhiza* Le Conte - WCH 7189
- LINACEAE**
Linum berlandieri Hook. - JS 7437
Linum medium (Planch.) Britt. - DJC & EDM 50
Linum striatum Walt. - EDM 132
- LOASACEAE**
Mentzelia nuda (Pursh) T. & G. - WCH & JS 12367
- LOGANACEAE**
Mitreola sessilifolia (J.F.Gmel) G. Don - O&B 7952
- LYTHRACEAE**
Ammannia auriculata Willd. - JS 7370
Ammannia coccinea Rottb. - JS 7371
Decodon verticillatus (L.) Ell. - MD 1375
Didiplis diandra (DC.) Wood - WCH 11805
Rotala ramosa (L.) Koehne - JS 7491
- MALVACEAE**
Callirhoe involucrata (Torr.) Gray - EDM 400
Callirhoe papaver (Cav.) Gray - EDM 81
Hibiscus laevis All. - JS 7240
Hibiscus moscheutos L. ssp. *lasiocarpus* (Cav.) Blanch. - M&M 3984; JS 7239
Malvaviscus drummondii T. & G. - JS 7253
Modiola caroliniana (L.) G. Don. - JS 7545
**Sida rhombifolia* L. - GV s.n.
- MELASTOMATACEAE**
Rhexia mariana L. - JS 7489
Rhexia virginica L. - M&M 3421
- MELIACEAE**
**Melia azedarach* L. - JS 7186
- MENISPERMACEAE**
Cocculus carolinus (L.) DC. - EDM s.n.
- MOLLUGINACEAE**
Mollugo verticillata L. - MD 1301
- MORACEAE**
Maclura pomifera (Raf.) Schneid. - JS 7243
Morus rubra L. - JS 7198
- MYRICACEAE**
Myrica cerifera L. - MD 1288
Myrica heterophylla Raf. - WCH & JS 12130
- NELUMBONACEAE**
Nelumbo lutea (Willd.) Pers. - JS 7452
- NYCTAGINACEAE**
Mirabilis albida (Walt.) Heimrl. - EDM 80
- NYMPHAEACEAE**
Nuphar advena (Ait.) Ait. - JS 7539
Nymphaea odorata Ait. - WCH & JS 12574
- NYSSACEAE**
Nyssa sylvatica Marsh. - EDM 316
- OLEACEAE**
Forestiera acuminata (Michx.) Poir. - JS 7237
Forestiera ligustrina (Michx.) Poir. - WCH & JS 12378
Fraxinus americana L. - JS 7194
Fraxinus pennsylvanica Marsh. - JS 7242
**Ligustrum sinense* Lour. - JS 7192
- ONAGRACEAE**
Ludwigia alternifolia L. - MD 1366
Ludwigia decurrens Walt. - MD 1333
Ludwigia glandulosa Walt. - EDM 224
Ludwigia linearis Walt. - EDM 224
Ludwigia peploides (Kunth) Raven. ssp. *glabrescens* Raven - JS 7440
Ludwigia repens Forst. - JS 7441
Ludwigia sphaerocarpa Ell. - O&B 7956

- Oenothera grandis* (Britt.) Smyth - JS 7454
Oenothera heterophylla Spach - EDM 56-26
Oenothera laciniata Hill - EDM 224
Oenothera linifolia Nutt. - RL s.n.
Oenothera rhombipetala T. & G. - JS 7455
Oenothera spachiana T. & G. - EDM 57-70
Oenothera speciosa Nutt. - EDM & JDC s.n.
- OXALIDACEAE
- Oxalis dillenii* Jacq. - EDM 130a
Oxalis lyoni Pursh - EDM 27
Oxalis violacea L. - EDM 130b
- PAPAVERACEAE
- Argemone albiflora* Hornem. ssp. *texana* G. Ownbey - GV 385
- PASSIFLORACEAE
- Passiflora incarnata* L. - WCH 11863
Passiflora lutea L. - EDM s.n.
- PHRYMACEAE
- Phryma leptostachya* L. - JS 7460
- PHYTOLACCACEAE
- Phytolacca americana* L. - MD 1323
- PLANTAGINACEAE
- Plantago aristata* Michx. - EDM s.n.
Plantago hookeriana Fisch. & Mey. - JS 7468
Plantago hybrida Bart. - WCH & JS 12135
Plantago patagonica Jacq. - EDM 85
Plantago rhodosperma Dcne. - JS 7469
Plantago virginica L. - EDM 269
- PLATANACEAE
- Platanus occidentalis* L. - JS 7246
- POLEMONIACEAE
- Ipomopsis rubra* (L.) Wherry - JS 7429
Phlox drummondii Hook. - KL 2
Phlox pilosa L. - MD 1071
- POLYGALACEAE
- Polygala cruciata* L. - JS 7470
Polygala incarnata L. - JS 7471
Polygala leptocaulis T. & G. - EDM 145
Polygala mariana Mill. - EDM 119
Polygala polygama L. var. *obtusata* Chodat. - RL s.n.
Polygala sanguinea L. - M&M 3954
Polygala verticillata L. - JS 7472
- POLYGONACEAE
- Brunnichia ovata* (Walt.) Shinn. - JS 7382
Eriogonum annuum Nutt. - EDM 427
Eriogonum longifolium Nutt. - GV 428
Eriogonum multiflorum Benth. - MD 1318
Polygonella americana (Fisch. & Mey.) Small - JS 7247
 **Polygonum aviculare* L. - JS 7474
Polygonum hydropiperoides Michx. - MD 1284
Polygonum pensylvanicum L. - JS 7477
Polygonum punctatum Ell. - MD 1285
Polygonum sagittatum L. - JS 7475
Polygonum tenue Michx. - JS 7476
Tovara virginianum (L.) Raf. - JS 7478
Rumex chrysocarpus Moris - JS 7493
Rumex crispus L. - JS 7492
Rumex hastatus Baldw. - EDM 77
Rumex pulcher L. - JS 7494
- PORTULACACEAE
- Claytonia virginica* L. - CMR 16989
Portulaca oleracea L. - JS 7483
Portulaca umbraticola Kunth. - JS 7482
- Talinum rugospermum* Holz. - JS 7519
- PRIMULACEAE
- **Anagallis arvensis* L. - JS 7359
 **Anagallis minima* (L.) E.H.L. Krause - WCH & JS 12139
Samolus valerandi L. ssp. *parviflorus* (Raf.) Hulten - JS 7500
- RANUNCULACEAE
- Anemone caroliniana* Walt. - EDM 380
Clematis crispa L. - JS 7241
Clematis reticulata Walt. - JS 7392
Clematis versicolor Small ex Rydb. - JS 7245
Delphinium carolinianum Walt. ssp. *vimineum* (D. Don) Warnock - GV 419
Delphinium carolinianum Walt. ssp. *virescens* (Nutt.) Brooks - EDM 420
Myosurus minimus L. - JS 7448
Ranunculus fascicularis Muhl. ex Bigel. - EDM 90
Ranunculus laxicaulis (T. & G.) Darby - MD 1072
Ranunculus parviflorus L. - JS 7488
Ranunculus pusillus Poir. - EDM 91
Thalictrum revolutum DC. - B&K 13709
- RHAMNACEAE
- Berberis scandens* (Hill) K. Koch. - EDM 64
Ceanothus americanus L. - JS 7187
Frangula caroliniana (Walt.) Gray - EDM s.n.
- ROSACEAE
- Agrimonia rostellata* Wallr. - JS 7357
Crataegus crusgalli L. - EDM 71
Crataegus marshallii Eglston - EDM 321
Crataegus spathulata Michx. - EDM 126
Crataegus uniflora Muench. - JS 7200
Crataegus viridis L. - JS 7201
 **Duchesnea indica* (Andrz.) Focke - JS 7401
Geum canadense Jacq. - JS 7415
Porteranthus stipulata (Willd.) Britt. - JS 7481
Potentilla simplex Michx. - JS 7485
Prunus angustifolia Marsh. - EDM 7
Prunus caroliniana (Mill.) Ait. - JS 7199
Prunus gracilis Engelm. & Gray - JS 7202
Prunus mexicana S. Wats. - GV s.n.
Prunus serotina Ehrhart - JS 7203
Prunus umbellata Ell. - JS 7249
Rosa setigera Michx. - EDM 109
Rubus aboriginum Rydb. - EDM 37
Rubus argutus Link - EDM 19
Rubus riograndis Bailey - MD 1089
- RUBIACEAE
- Cephalanthus occidentalis* L. - EDM 150
Diodia teres Walt. - GV 423
Diodia virginiana L. - MD 1278
Galium aparine L. - JS 7411
Galium circaezans Michx. - JS 7412
Galium obtusum Bigel. - JS 7413
Galium pilosum Ait. - EDM 37
Galium tinctorium L. - JS 7414
Houstonia pusilla J. Schopf. - EDM 270
Mitchella repens L. - JS 7188
Oldenlandia boscii (DC.) Chapm. - JS 7417
Oldenlandia uniflora L. - WCH & JS 12353
 **Sherardia arvensis* L. - JS 7507
Stenaria nigricans (Lam.) Terrell var. *nigricans* - JS 7379

RUTACEAE

Zanthoxylum clava-herculis L. - JS 7212

SALICACEAE

Populus deltoides Bart. ex. Marsh. - JS 7248

Salix nigra Marsh. - EDM 42

SAPINDACEAE

Cardiospermum halicacabum L. - JS 7388

Sapindus saponaria L. var. *drummondii* (Hook. & Arn.) L. Benson. - JS 7251

SAPOTACEAE

Sideroxylon lanuginosum Michx. - GV s.n.

SARRACENIACEAE

Sarracenia alata Wood - EDM 110

SAURURACEAE

Saururus cernuus L. - EDM 52

SAXIFRAGACEAE

Lepuropetalon spathulatum Ell. - JS 7543

Saxifraga texana Buckl. - JS 7502

SCROPHULARIACEAE

Agalinis fasciculata (Ell.) Raf. - M&M 3691

Agalinis heterophylla (Nutt.) Small ex Britt. - JS 7367

Agalinis purpurea (L.) Penn. - JS 7368

Aureolaria grandiflora (Benth.) Penn. - JS s.n.

**Bellardia trixago* (L.) All. - JS 7360

Castilleja indivisa Engelm. - EDM 402

Gratiola brevifolia Raf. - M&M 3976

Gratiola neglecta Torr. - JS 7550

Gratiola pilosa Michx. - JS 11401

Gratiola virginiana L. - MD 1104

Leucospora multifida (Michx.) Nutt. - JS 7435

Lindernia dubia (L.) Pennell - WCH & JS 12336

Mecardonia acuminata (Walt.) Small - WCH & JS 12342

Mimulus alatus Ait. - DJC & EDM 2

Nuttallanthus canadensis (L.) Sutton - EDM 257

Penstemon australis Small - CMR 16575

Penstemon laevigatus Ait. ssp. *digitalis* (Nutt. ex Sims) A. Bennett - EDM s.n.

Penstemon murrayanus Hook. - EDM 257

Verbascum thapsus L. - GV s.n.

**Veronica agrestis* L. - JS 7529

**Veronica arvensis* L. - JS 7530

Veronica peregrina L. - JS s.n.

SOLANACEAE

Physalis cinerascens (Dun.) A.S. Hitchc. - MD 1309

Physalis heterophylla Nees - EDM 83

Physalis mollis Nutt. - O&B 7978

Physalis virginiana Mill. - GV s.n.

Solanum carolinense L. - JS s.n.

Solanum dimidiatum Raf. - EDM 78

Solanum elaeagnifolium Cav. - JS 7513

Solanum rostratum Dun. - JS 7514

TILIACEAE

Tilia americana L. var. *caroliniana* (Mill.) Castiglioni - JS 7196

ULMACEAE

Celtis laevigata Willd. var. *laevigata* - JS 7231

Celtis laevigata Willd. var. *reticulata* Torr. - WCH 11862

Celtis laevigata Willd. var. *smallii* Sarg. - JS 7232

Celtis tenuifolia Nutt. - JS 7232

Planera aquatica (Walt.) J. F. Gmel. - GV s.n.

Ulmus alata Michx. - CMR s.n.

Ulmus americana L. - GV s.n.

Ulmus crassifolia Nutt. - JS 7228

Ulmus rubra Muhl. - JS 7208

URTICACEAE

Boehmeria cylindrica (L.) Sw. - MD 1294

Parietaria pennsylvanica Muhl. ex Willd. - EDM 65

Urtica chamaedryoides Pursh - JS 6686.

VALERIANACEAE

Valerianella radiata (L.) Dufur. - JS 7528

Valerianella woodsiana (T. & G.) Walp. - EDM 273

VERBENACEAE

Callicarpa americana L. - EDM 139

Glandularia canadensis (L.) Nutt. - MD 1092

Glandularia bipinnatifida (Nutt.) Nutt. - JS 7416

Phyla lanceolata (Michx.) Greene - JS 7461

**Verbena brasiliensis* Vell. - JS 7527

Verbena halei Small - EDM 253

VIOLACEAE

Viola langlossii Greene - WCH & JS 12119

Viola primulifolia L. - JS 7531

Viola sagittata Ait. - WCH & JS 12120

Viola sororia Willd. var. *missouriensis* (Greene) McKinney - M&M 3777

Viola villosa - JS 7532

VISCACEAE

Phoradendron tomentosum (DC.) Gray. - JS 7254

VITACEAE

Ampelopsis arborea (L.) Koehne. - EGN 170

Cissus incisa (T. & G.) Des Moulins - JS 7238

Parthenocissus quinquefolia (L.) Planch. - JS 7189

Vitis aestivalis Michx. var. *linceumii* (Buckl.) Kun. - GV s.n.

Vitis cinerea Engelm. - GV s.n.

Vitis mustangensis Buckl. - JS 7226

Vitis palmata Vahl - GV s.n.

Vitis rotundifolia Michx. - MD 1109

ZYGOPHYLLACEAE

Tribulus terrestris L. - JS 7524

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