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The Vascular Flora of Prentice Cooper State Forest and Wildlife Management Area, Tennessee

JOHN T. BECK* and GENE S. VAN HORN

Department of Biological and Environmental Sciences, University of Tennessee, Chattanooga, Tennessee 37403-2598

ABSTRACT

The vascular plants of Tennessee's Prentice Cooper State Forest and Wildlife Management Area (PCSFWMA) were gathered from the growing seasons of 1998 through 1999 and the summer of 2005. The ca. 10,300 ha tract of eastern deciduous forest comprises 137 families, 536 genera, and 1,070 species or lesser taxa. Five hundred and eighteen new county records were documented as well as two notable state records, *Galium uniflorum* and *Macrothelypteris torresiana*. Nineteen taxa of either state or federal listing were documented or examined. PCSFWMA has 192 introduced species, comprising 17.9% of the total flora and constituting 56.6% of Tennessee's listed invasive exotic pest species. Association coefficients of seven southeastern Appalachian floras were compared to elucidate several floristic similarities and dissimilarities.

INTRODUCTION

Prentice Cooper State Forest and Wildlife Management Area (hereafter referred to as PCSFWMA or the Forest) is a large secondary growth, eastern deciduous forested region, located in three Tennessee counties on the Cumberland Plateau, approximately 18 km northwest of Chattanooga (Figure 1). Previous ecological studies of the Cumberland Plateau in Tennessee, including Braun (1950), have classified and mapped the vegetation as mixed mesophytic. According to Hinkle (1989) the Plateau is best characterized by broad upland expanses of Oak-Hickory-Pine Forest with elements of mesophytic taxa confined to the rich escarpment slopes, ravines, and terraces. PCSFWMA exhibits this vegetation characterization as proposed by Hinkle.

PCSFWMA is located at the southernmost extremity of Walden Ridge, residing between the Sequatchie Valley and the Ridge and Valley Province (Figure 1). The general location of PCSFWMA in the Cumberland Plateau is provided in the topographical composite (Figure 2).

PCSFWMA is the second largest state forest in Tennessee. It is owned and administrated by the Tennessee Department of Environment and Conservation (TDEC), Division of Forestry. The Tennessee Wildlife Resources Agency (TWRA) operates and maintains PCSFWMA. Current uses of PCSFWMA include, but are not limited to, wildlife resources and public recreation.

The Forest is rich with diverse plant habitats. These include Tennessee River floodplains, rich mesophytic slopes and ravines, a rolling upland Cumberland Plateau surface, seasonal mountain ponds, and xeric sandstone cliff bluffs and ridges. The Cumberland Plateau uplands of PCSFWMA are chiefly described as poorly drained, capped with persistent sandstone, with broad flats, gentle slopes, and a perimeter of dry ridges and sandstone cliff edges. The geologically rugged and topographically dissected eastern and western escarpments as well as the unusually horizontal positioned Tennessee River Gorge areas of the Forest portray a unique landscape. This escarpment landscape is described as eroding sandstones that drain well, forming many receding valleys, gorges, and deep ravines of rich humus. The lowest elevations of

* Present address: Department of Ecology and Evolutionary Biology, The University of Tennessee, Knoxville, Tennessee 37996-1610. email address: jbeck1@utk.edu

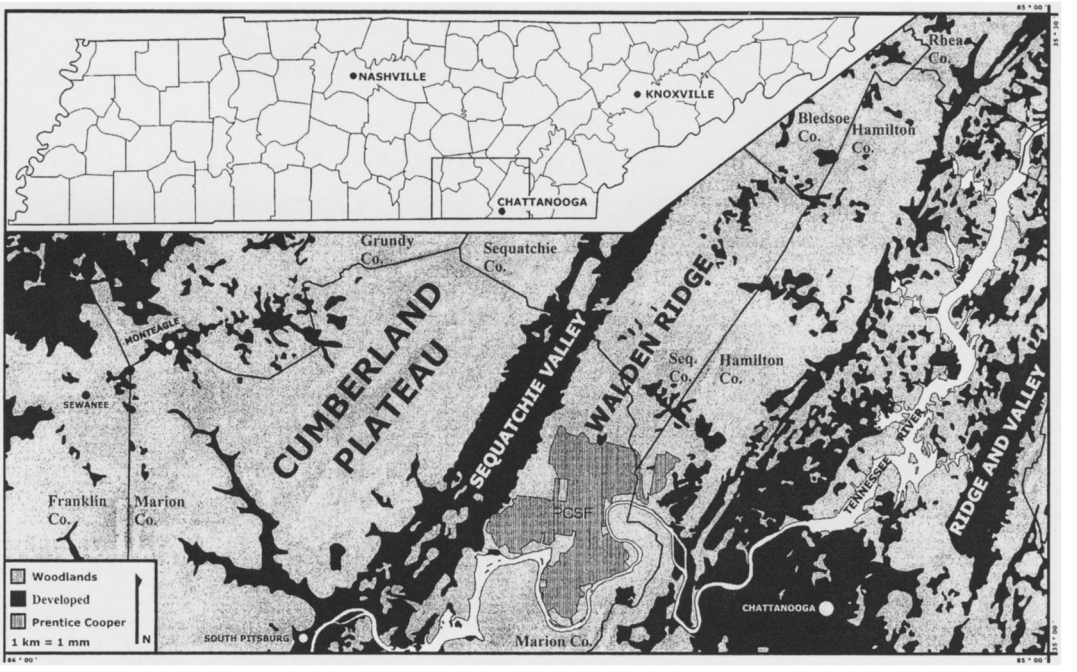

Figure 1. Location of PCSFWMA in Hamilton, Marion, and Sequatchie Counties, Tennessee.

PCSFWMA are the bottomlands of the Tennessee River floodplains. The bottomlands are generally perturbed throughout the Tennessee River's convoluted path through the Tennessee River Gorge. Collectively, the moderate to acute elevation changes compounded by the large study area provide for astounding variation in plant habitat in PCSFWMA.

The Tennessee Heritage Program in conjunction with the Tennessee River Gorge Trust surveyed portions of the Tennessee River Gorge area included in PCSFWMA for vascular plants in 1983. Most voucher specimens collected by the 1983 survey were deposited in the Tennessee River Gorge Trust herbarium with a few specimens deposited in the herbarium of the University of Tennessee at Knoxville (TENN).

The five objectives of the current study were to: 1) inventory the vascular plant flora of PCSFWMA; 2) document the presence of any rare, threatened, or endangered species; 3) determine the relative number of native and non-native species; 4) document Tennessee's new county records for Hamilton, Marion and Sequatchie Counties; and 5) compare seven southeastern Appalachian floras to PCSFWMA using two association coefficients, elucidating levels of communal and floral similarities.

THE STUDY AREA

PCSFWMA is located in the south-central part of Tennessee's Cumberland Plateau province (Fenneman 1938) between 35°01′47″ and 35°10′38″ north latitudes and between 85°21′19″ and 85°32′05″ west longitudes (Figure 1). The study area's ca. 10,300 ha are composed of two wholly distinct units located at the southernmost portions of Walden Ridge (Figure 3).

The largest unit (Unit 1), comprising mainly Marion County and a very small section of Sequatchie County, collectively contains ca. 9,900 ha and has an elevation range of 189 m to 647 m above sea level (Figure 3). Unit 1 contains an assortment of mountainous ridges and cliff bluffs, dry rolling plateau surfaces, gorges and ravines, deciduous slopes, creek systems, moderate to acute elevation changes, and all slope exposures. The western portions face the Sequatchie Valley and exhibit the characteristic high rugged rims of the Cumberland

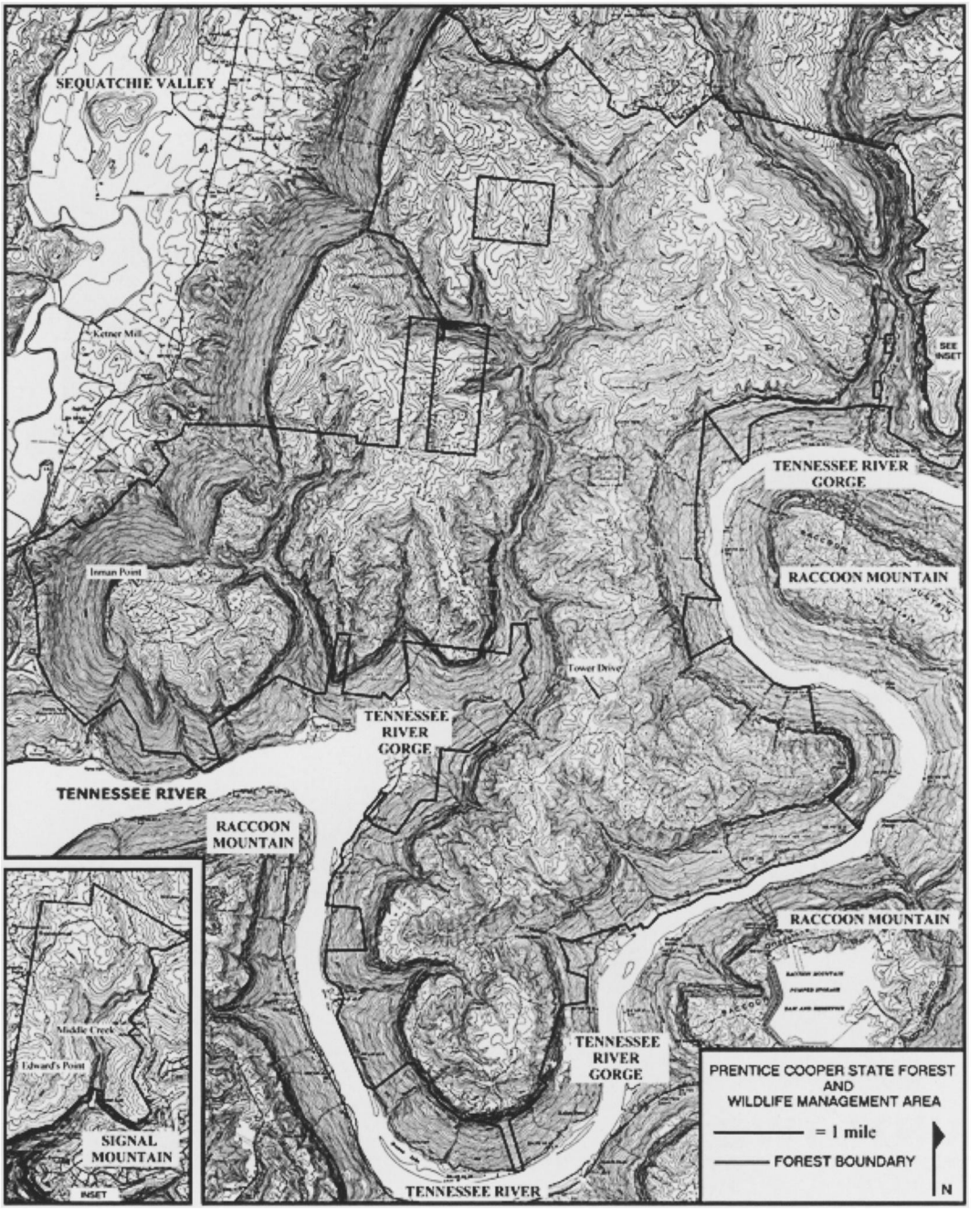

Figure 2. General local of PCSFWMA on the Cumberland Plateau with contiguous areas.

Escarpment. The southern portions are outlined by the Tennessee River Gorge. The eastern portions are marked by both North Suck and South Suck Creeks, of which a smaller southeastern section wraps west to east around the base of Edward's Point Bluff that overlooks the Tennessee River.

The smaller unit (Unit 2), located entirely in Hamilton County, is located within 3.2 km northeast of the larger unit and is separated by Edward's Point (inset of Figure 2). Unit 2

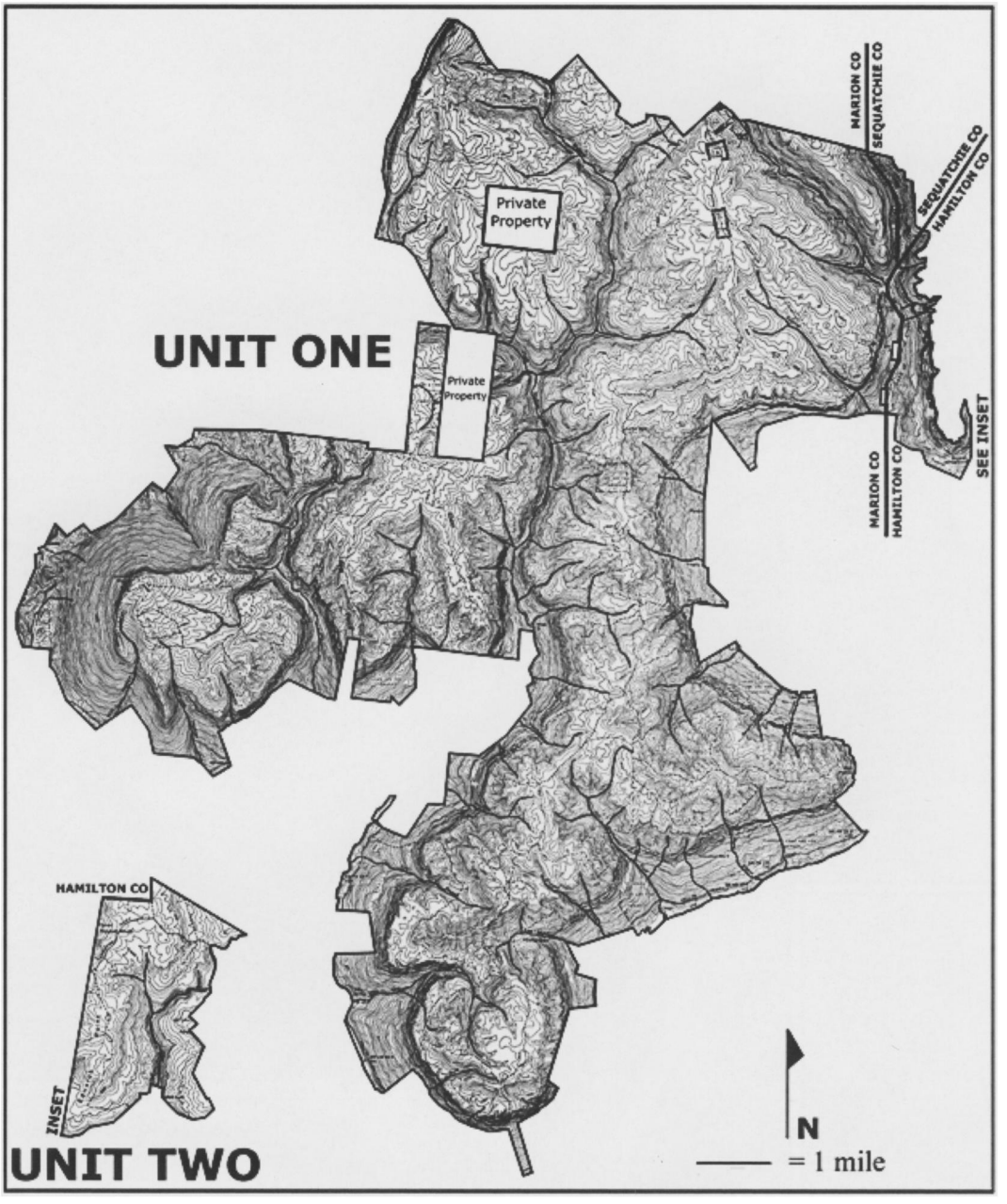

Figure 3. The two units of the PCSFWMA study area.

contains ca. 400 ha and has an elevation range of 433 m to 573 m above sea level (Figure 3). This unit is similar in physical structures to the Unit 1 but of a smaller scale, basically encompassing a creek gorge system (Middle Creek) surrounded westerly by Edward's Point, northerly by moderate slopes, and easterly by portions of Signal Mountain. The drainage systems of both units, with the exception of drainage into Sequatchie River by the largest unit, flow directly into the Tennessee River.

Disturbance

PCSFWMA is susceptible to both anthropogenic and natural disturbances. Two-thirds of the Forest are dissected with road systems designated for vehicular and recreational travel, most of which are above 517 m (roads below 517 m are usually restricted to ATV). PCSFWMA contains one state highway (Hwy. 27), two county highways (Kelly's Ferry Road and Edward's Point Road), five gravel roads, and thirty-eight woodland roads or various other smaller undesignated road types. Most of the interforest roads are used throughout the year for recreational purposes — especially during the midsummer and fall hunting seasons. Certain roadsides and fields are mowed at least once in a growing season and several of these fields are used to establish forage foods for local fauna. PCSFWMA contains approximately 65 fields or openings throughout the study area.

Soils

Soils of PCSFWMA are mostly well drained, loamy, predominately light in color, moderately deep, and cover a sandstone, shale or limestone bedrock (Elder et al. 1958, Jackson 1982). Generally, the soils of the Cumberland Plateau surfaces are underlain with sandstone whereas the lower portions of the Cumberland Escarpment are underlain with limestone. According to Elder et al. (1958), the upland soils and high stream terraces are severely leached and low in both fertility and organic matter because of the underlying sandstone parent material. In contrast, the bottomlands and low stream terraces are young, high in fertility, slightly acidic, and supplied with lots of organic matter.

Soil Associations. PCSFWMA represents two inclusive soil associations: the Muskingum-Hartsells-Jefferson Association occurring on the uplands of Walden Ridge and the Rockland, limestone-Bouldery colluvium-Rockland, sandstone Association of the lower Cumberland Escarpment. The soil associations of the portions of PCSFWMA occurring in Hamilton County (Unit 2) and Sequatchie County (Unit 1) will here be considered synonymous, given the proximity of the two units and their location on Walden Ridge.

The delineation of the soils occurring in the Muskingum-Hartsells-Jefferson and the Rockland, limestone-Bouldery colluvium-Rockland, sandstone Associations described below are derived from Elder et al. (1958). The Muskingum-Hartsells-Jefferson Association occupies approximately 12% of the ca. 129,792 ha in Marion County. These predominately fine, loamy, sandy and shallow soils occur on the tops of the rolling slopes of the dry plateau surfaces. The Hartsells soils, generally found above the Muskingum soils, occur on the tops of the rolling tops of the upland slopes. The shallow, somewhat stony, and most common, Muskingum soils occur on the hilly and steep slopes. The lowermost soils of the association, the Jefferson soils, occupy the upland terraces, foot slopes, or mountainsides. The Rockland, limestone-Bouldery colluvium-Rockland, sandstone Association accounts for 33% of the total acreage of Marion County. This association characterizes the moderately steep to very steep, stony or even rockland of the much dissected portions of Walden Ridge. The Rockland, sandstone persists on slopes greater than 60% followed by the lower Bouldery colluvium of 40% slope. The soils below the Bouldery colluvium consist of Rockland, limestone ranging from areas of stony, hilly or even rolling land, limestone, or even steeps.

Geology

Layers of shale, sandstone, and limestone underlie PCSFWMA. The geomorphic layers roughly ascend from a lower Ordovician limestone to the Mississippian Devonian shale and limestones and the plateau surfaces are capped with nearly horizontal soft to very hard Pennsylvanian sandstones (Walden and Lookout), shales, and conglomerate (Elder et al. 1958, Tennessee Division of Geology 1979).

Climate

The climate of PCSFWMA is best represented by climatological data from two weather stations in Tennessee: Lovell Field Airport weather station (35°02′N/85°12′W), located in Hamilton County northeast of Chattanooga and 18 km southeast of PCSFWMA; and the Sewanee weather station (35°12′N/85°55′W), located in Franklin County on the Cumberland Plateau approximately 37 km northwest from PCSFWMA. The Lovell Field station (elevation 203 m above sea level) represents the conditions of the lower elevation of PCSFWMA whereas the Sewanee station (elevation 582 m above sea level) represents the conditions of the higher Cumberland Plateau areas. Climatological data from the two weather stations were compiled from NOAA (1974) records with additional information from the United States Weather Bureau in Elder et al. (1958). The data are summarized in the following three paragraphs.

Temperature. PCSFWMA experiences a climate of warm humid summers and cool winters. The mean annual temperature ranges from 15.7°C in the lower elevations to 14.2°C in the higher, with July being the warmest month (25.7°C) and January being the coldest (3.8°C).

Precipitation. Precipitation at both stations consists of two distinct rainfall peak periods. The greatest peak occurs during the months of December, January, February, and March. A second peak period occurs in midsummer (July) and is related to thundershower activity, which is occasionally severe. The mean annual precipitation at the Sewanee station is 144.8 cm with a monthly low of 7.4 cm in October and a monthly high of 16.0 cm in March; the Lovell Field station averages 136.1 cm annually with a monthly low of 6.8 cm in September and a high of 15.4 cm in March.

Frosts and the Growing Season. The first freezing temperatures at the Lovell Field station normally occur between October 27 and November 9; the last freezing temperatures normally occur between April 3 and April 25. Similarly, the earliest frost at the Sewanee station is approximately October 29 and the last is April 12. The growing season for Tennessee ranges from 180 to 220 days (NOAA 1974).

MATERIALS AND METHODS

One hundred and twelve collection trips were conducted during the months of January through November 1998 and February through December 1999, using standard field techniques. Collection trips were primarily made during the growing seasons of 1998 and 1999; twelve additional trips were made in the summer of 2005. Both Unit 1 and Unit 2 were sampled with Unit 1 sampled the most intensively because of its greater area and number of habitats. Several collection trips were conducted during the fall and winter months to collect any species that might not have been apparent during the growing season. No attempt was made to collect cultivated specimens, but many cultivated specimens were inadvertently collected. Several old home sites, cemeteries, and remnants of cultivation are scattered throughout PCSFWMA, especially in the Tennessee River Gorge.

Herbaria Visitation

The herbaria of the University of Tennessee at Knoxville (TENN) and Chattanooga (UCHT) and the Tennessee River Gorge Trust herbarium were visited in attempts to examine previously documented specimens as well as aiding in identification problems. All known herbarium specimens within the Tennessee River Gorge Trust herbarium and UCHT were examined for PCSFWMA records. One hundred and ten other herbarium specimens were examined. These 110 voucher specimens include 60 from the Tennessee River Gorge Trust herbarium, 7 from TENN, and 43 from UCHT. State distribution maps (Chester et al. 1993, 1997) and the University of Tennessee databases (TENN 2003) were used to verify county records (as accessed June 22, 2005).

Exotic, Native, and Protected Taxa Identification Resources

Determinations of native and non-native species for the vascular plant list of PCSFWMA was by comparison with Wofford and Kral (1993) and the listing of taxa protected at the state or federal level in Tennessee by TDEC (2004). Exotic invasive pest taxa were determined by information from the Research Committee of the Tennessee Exotic Pest Plant Council (1996).

Standard References and Resources

Standard references used extensively in identification are: Bailey (1949), Fernald (1950), Radford et al. (1968), Mahler (1970), Hitchcock (1971), Godfrey and Wooten (1979, 1981), Cronquist (1980), Isely (1990), Gleason and Cronquist (1991), and Flora of North America Editorial Committee (1993, 1997, 2000, 2003a, 2003b, 2004, 2005). Nomenclature of all taxa reported here for the most part follows Flora of North America Editorial Committee (1993, 1997, 2000, 2003a, 2003b, 2004, 2005) and United States Department of Agriculture, Natural Resources Conservation Services (2004). Nomenclatural source exceptions follow Wunderlin (1998) and authorships of botanical names were standardized using Brummit and Powell (1992). Current taxonomic revisions were referred to when applicable.

Selected Southeastern Appalachian Floras for Comparison

Comparisons of seven southeastern Appalachian floras were made to PCSFWMA in hopes of elucidating levels of floristic similarity. PCSFWMA was compared to several areas: in the Blue Ridge province is James River Gorge in Virginia (Ramsey et al. 1993) and Big Frog Mountain in Tennessee (Murrell and Wofford 1987); in the Cumberland Plateau and parts of the Ridge and Valley province is Chickamauga and Chattanooga National Military Park (Van Horn 1981); and in the Cumberland Plateau province is the Obed Wild and Scenic River (Schmalzer et al. 1985), Fall Creek Falls State Park (Fleming and Wofford 2004), Savage Gulf (Wofford et al. 1979), and Wolf Cove (Clements and Wofford 1991). The last four sites are within Tennessee.

Assemblage, Equations, and Symbolism for the Two Association Coefficients

Floristic comparisons were assembled using the following two association coefficients: Sørensens's Coefficient of Community and the Simple Matching Coefficient. The formula for Sørensen's Coefficient of Community (*CC*) following Smith (1992) is $CC = [2C / (S1 + S2)] \times 100$, where C is the number of species in common to both communities (1/1); $S1$ is the total number of species occurring in the PCSFWMA community; and $S2$ is the total number of species occurring in the community being compared. Coefficient of Community values (%) similar to those of the PCSFWMA value are denoted as similar communities based on the flora. The formula for the Simple Matching Coefficient (*Ssm*) following Sneath and Sokal (1973) is $Ssm = m / (m + u)$, where m is the number of matches (1/1 and 0/0), u is the number of mismatches (0/1 and 1/0). Figure 4 depicts the method and symbolism of comparing taxa (j) from PCSFWMA site (*OTU*) to the taxa (k) of another site (*OTU*): 1 = present from site, 0 = absent from site.

Sites with a *Ssm* value [0–1] similar to the PCSFWMA value are denoted as floristically similar; albeit only comparisons were made with PCSFWMA to all seven remaining sites. The data matrixes (available upon email request to the first author) including both *Ssm* and *CC* were constructed by conglomerating all taxa from the eight floras listed above and standardizing taxonomy. Hybrids, subspecies, and varieties were all given character status in the data matrixes. The sum total number of *taxa* (characters, i.e., j and k) at each comparative site (*OTU*), as stated by the author(s) of such work, may be less than the total number of *species* incorporated into the data matrix because of synonymy or omissions. Omissions of taxa were based on the inability to establish positive determination, i.e., to the genus only. Calculations of

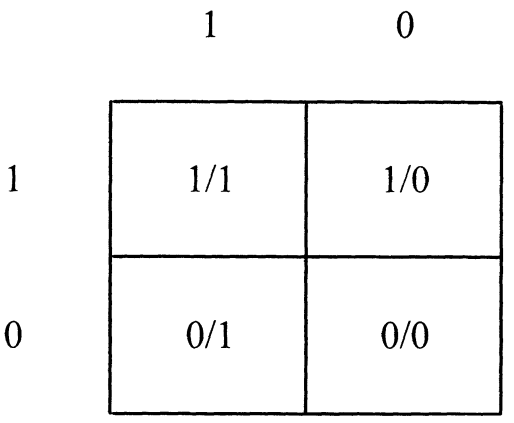

Figure 4. Simple Matching Coefficient (*Ssm*) method and symbolism for comparing taxa (*j*) from PCSFWMA (OTU) to taxa (*k*) from another OTU; where 1 = present from site, 0 = absent from site.

CC and *Ssm* values did not attempt to incorporate physical parameters such as physiographic province, total area, and the length of the major river within a gorge area when applicable.

Plant Habitats

The eighteen basic habitat types in PCSFWMA with a brief description of the habitat and species compositions are as follows:

Artificial Plateau Pond. Scattered artificial plateau ponds occur throughout the study area and appear either diked or otherwise manipulated, possibly providing suitable habitat for local fauna. The four artificial ponds known and visited range from small ponds, clear with minimal herbaceous growth to medium to large ponds with a large herbaceous or woody interior and considerable turbidity. Several smaller artificial ponds appear diked throughout the study area but are ephemeral in nature and usually very turbid with large amounts of detritus on the bottoms. Collectively, these artificial ponds usually provide the sourcing areas of several upland seepage slope areas. Several species unusual in the PCSFWMA flora occur only at these artificial ponds, e.g., *Rhynchospora corniculata* and *Vallisneria americana*. Common species include *Cephalanthus occidentalis, Juncus acuminatus, J. repens, Liquidambar styraciflua, Nyssa sylvatica, Pinus virginiana, Salix nigra*, and *Sparganium americanum*.

Cemeteries. Two known and visited cemeteries occur within the study area: Lusk Cemetery on the Cumberland Plateau surface and Bill McNabb Cemetery near the Tennessee River. Although these are sites of disturbance, several native taxa occur. Common species include *Juniperus virginiana, Quercus alba*, and *Salvia lyrata*.

Cliff Bases. These areas lack a forest canopy and are usually drier than most other habitats. Several taxa occur throughout the crevices and vertical cliffs (epipetric species) generally from 340 m to 500 m in elevation. Commonly encountered structures include shale or sandstone outcrops, waterfalls, grottoes, rock houses, and sheer cliff bases with minimal substrate. Common to more scarce species of this habitat include *Asplenium* spp., *Symphyotrichum dumosum, Corylus americana, Deschampsia flexuosa, Ilex montana, Saxifraga virginiensis, Silene virginica*, and *Solidago roanensis*. Species occurring in this xeric habitat are quite diverse and rare in the PCSFWMA flora, such as *Silene rotundifolia* and *Vittaria appalachiana*.

Cumberland Escarpment. This habitat includes the west-facing slopes of the study area, characteristic of exposed sandstone type and minimal soil. The slopes facing the Sequatchie

Valley from Ketner Mill south to Inman Point are good examples of this habitat. Topography steadily declines from the cliff bases and at times the area is quite broad, consisting of extensive talus slopes. Common species include *Carya glabra, Juniperus virginiana, Pellaea atropurpurea*, and *Quercus* spp.

Cumberland Plateau Surface. These areas are generally above 300 m in elevation and have characteristically dry surfaces, few subshrubs, and mostly rolling, broad stretches of oak-hickory or dry mixed-oak. The most commonly encountered habitat type within the study area varies widely because of differences in soils and slope aspect. Common species include *Acer saccharum, Carya cordiformis, C. glabra, C. tomentosa, Chimaphila maculata, Cornus florida, Desmodium* spp., *Oxydendrum arboreum, Pinus echinata, P. virginiana, Quercus alba, Q. coccinea, Q. montana, Q. rubra, Q. stellata, Q. velutina*, and *Vaccinium* spp.

Deciduous Slopes. These slopes are below the sandstone cliff bases, usually below 480 m in elevation, and exhibit drier conditions than mesophytic slopes. This habitat includes the lower bouldery terraces, rolling foothills, and mountainsides of the study area. These slopes include all exposures and are commonly intermittent with mesophytic ravines and gorges. Common species include *Acer saccharum, Carya cordiformis, C. ovata, C. tomentosa, Cornus florida, Oxydendrum arboreum, Pinus virginiana, Quercus falcata, Q. montana, Q. muehlenbergii, Q. rubra, Q. stellata, Smilax* spp., *Vitis rotundifolia*, and various legumes.

Disturbed Areas. These areas are characteristic of invasive pest species including areas of disturbance such as roadsides, tornado paths, controlled burns, pipeline clearings, and ditches. Common species include early successional species such as *Ailanthus altissima, Ambrosia* spp., *Eupatorium* spp., *Lespedeza* spp., *Lonicera japonica, Microstegium viminiem, Paulownia tomentosa, Pueraria montana* var. *lobata, Solidago* spp., and *Symphyotrichum* spp.

Floodplains. Several areas of the study site are bottomland forest typically consisting of inlets, riverbanks, and backwashes. Collectively, these structures are here referred to as the floodplain habitat. Several large backwashes to rather intricate river inlets and sandbars support many submersed and emersed aquatic taxa in the study area. Common woody species include *Acer negundo, A. saccharinum, Betula nigra, Celtis laevigata, Fraxinus ameriana, Juglans nigra, Ligustrum sinense, Nyssa sylvatica, Pinus taeda, Salix nigra*, and *Ulmus alata*.

Managed Fields. Sixty-five fields are present in the study area, mostly above 500 m in elevation. Most fields are managed and apparently used to plant forage grasses for the local fauna. Common species, excluding planted forage grasses, include *Andropogon virginicus, Digitaria* spp., *Lespedeza* spp., *Lolium perenne* ssp. *multiflorum, Panicum* spp., *Paspalum* spp., *Poa* spp., *Pycnanthemum* spp., *Robina hispida, Solidago* spp., and *Tridens flavus* var. *flavus*.

Mesophytic Slopes. The mesophytic slopes of the study area include but are not restricted to northern and southern exposures, high terraces, ravines, and gorges. Typically more alluvial than deciduous slopes, the mesophytic slopes in the study area are protected sites, species rich, well drained, rich in acidic humus, and are heavily dissected. Common species include *Acer pensylvanica, Betula lenta, Dennstaedtia punctilobula, Ilex opaca, Kalmia latifolia, Magnolia macrophylla, M. tripetala, Polystichium acrostichoides, Rhododendron* spp., *Tilia americana* var. *heterophylla, Tsuga canadensis*, and various spring flowering herbs.

Natural Plateau Ponds. The natural plateau ponds of PCSFWMA contain dominant interiors of *Cephalanthus occidentalis*. These ponds (generally less than 0.4 ha) are larger than the upland depressions of the Forest. The ponds margins as well as the woody interiors are usually covered with *Sphagnum* spp. Two known and visited natural depression ponds exist in the study area. Common species also include a perimeter of oaks and hickories.

Old Home Sites. Old home sites are found mainly in the Tennessee River Gorge area below 250 m in elevation. These sites are generally near the Tennessee River and support many cultivated species. Commonly encountered cultivated species include *Celastrus orbiculatus, Chaenomeles speciosa, Forsythia suspensa, Hemerocallis fulva, Narcissus pseudonarcissus, Spiraea prunifolia*, and *S. thunbergii*.

Riparian. The study area contains numerous intermittent riparian habitats, including woodland streams, riparian islands, large creeks, and their minor tributaries. These habitats

Table 1. Taxonomic and Floristic Summary of PCSFWMA: Hamilton, Marion, and Sequatchie Counties, Tennessee

Division	Families	Genera	Species and Lesser Taxa		
			Native	Non-native	Total
Lycopodiophyta	3	4	5	0	5
Pteridophyta	11	23	35	1	36
Pinophyta	2	4	7	0	7
Magnoliophyta	(121)	(505)	(831)	(191)	(1,022)
Liliopsida	21	114	222	49	271
Magnoliopsida	100	391	609	142	751
Total	137	536	878	192	1,070

are always adjacent to a water source, excluding the floodplain habitat. The three largest creeks in the study area are Mullen's Creek, North Suck Creek and South Suck Creek. Common species include *Acer pensylvanicum, A. rubrum, Alnus serrulata, Betula lenta, Hamamelis virginiana, Itea virginica, Liquidambar styraciflua, Magnolia macrophylla, Nyssa sylvatica, Rhododendron* spp., *Thelypteris noveboracensis, Tsuga canadensis*, and *Xanthorhiza simplicissima*.

Rock Outcrops. The rock outcrop habitat includes the entire study area because of the extensive erosional nature of the sandstone caps. Rock outcrop provides habitat for many plants that only thrive in minimal substrate. Common species include *Cardamine* spp., *Phacelia bipinnatifida, Polymnia laevigata, Toxicodendron radicans, Sedum ternatum, Vitis rotundifolia*, and various epilithic ferns.

Sandstone Outcrops / Cliff Bluffs. These areas of exposed rock typically have minimal soil depths and generally occur at 500 m in elevation. This xeric habitat occurs towards the escarpment edges of the Cumberland Plateau surface and contains several unique species such as *Vulpia bromoides* and *Daucus pusillus*. Common species include *Pinus virginiana, Quercus marilandica, Smilax* spp., *Solidago* spp., *Symphyotrichum* spp., *Vaccinium arboreum*, and *Ulmus alata*.

Seepage Slopes. These are areas of wide or narrow drainage (excluding riparian) on the Cumberland Plateau surface, characterized by extensive populations of ferns and *Sphagnum* spp. in flowing or stagnant water. Common species include *Acer saccharum, Nyssa sylvatica, Osmunda regalis* var. *spectabilis*, and *Thelypteris noveboracensis*.

Upland Depressions. Several portions of the study area include natural ephemeral upland depressions or isolated Cumberland Plateau wetlands. These depressions are contiguous with seepage slopes or other waterways and vary from small to large in size (generally less than 5 m^2). Most depressions support a mixture of herbs and *Sphagnum* spp. with occasional woody taxa. Common species include *Carex* spp., *Eleocharis obtusa, Isoetes valida, Juncus effusus, Lycopus virginicus*, and *Rhexia mariana*.

Woodland Border. The woodland border includes any type of border from a field to a woodland opening or clearing. Invasive exotic pest species commonly occur here. Characteristic of this type of habitat are several opportunistic species such as *Eupatorium* spp., *Solidago* spp., and various adventive shrubs.

RESULTS AND DISCUSSION

Survey of the Flora

A total of 2,313 specimens were collected in the PCSFWMA study area and 110 herbarium specimens were examined from various collectors. The flora comprises 1,070 species and lesser taxa, 536 genera, and 137 families (Table 1). The four largest families are Asteraceae (sunflowers-130 taxa), Poaceae (grasses-107 taxa), Cyperaceae (sedges-71 taxa), and Fabaceae (legumes-56 taxa). Collectively, these four families represent 34.0% of the total PCSFWMA

flora. The largest genera and their number of taxa are: *Carex* (45), *Viola* (15), *Quercus* (14), *Solidago* (13), *Dichanthelium* (11), *Eupatorium* (11), *Symphyotrichum* (11), *Hypericum* (10), and *Juncus* (10).

County Records

Five hundred and eighteen county records were documented (Marion = 405, Hamilton = 83, Sequatchie = 30) based on state distribution data base records (TENN 2003), increasing the number of known and documented taxa in Marion County from 895 to 1,300 taxa; Hamilton County from 742 to 825; and Sequatchie County from 421 to 451. The flora of PCSFWMA presently contains representatives of 38.3% of Tennessee's vascular plant flora.

Exotic Taxa

PCSFWMA contains 192 introduced taxa, accounting for 17.9% of the total vascular plant flora and 56.6% of Tennessee's listed invasive exotic plant pest species. Taxa occurring in PCSFWMA and designated by the Research Committee of the Tennessee Exotic Plant Council (1996) as invasive exotic pests are provided in Table 2. The large number of non-native taxa suggest that the Forest experiences a significant level of human interaction.

Protected Taxa

The Forest contains nineteen taxa afforded state or federal conservation status (Table 3). The federally listed threatened (LT) large-flowered skullcap, *Scutellaria montana*, and the federal Candidate (C) white fringeless Orchid, *Platanthera integrilabia*, represent the most significant documentations. Three taxa, including *Platanthera integrilabia*, have a state status of endangered. *Cardamine flagellifera* and *Galium uniflorum* represent the first records for the Cumberland Plateau physiographic province in Tennessee. More information concerning these protected taxa and state records presented below may be found in Beck (2000, 2005).

State Records

The PCSFWMA flora contains two notable state records, both of which are typically southeastern Coastal Plain elements. The native oneflower bedstraw, *Galium uniflorum*, is a perennial herb found on the lower portions of the Forest's western Cumberland Escarpment. The taxon is currently tracked by TDEC (2004). The fern, *Macrothelypteris toressiana*, was found growing in the Tennessee River Gorge area. Although an introduced species, the record is significant because the locale represents its northernmost range in the eastern United States. Considerable attention should be afforded to this taxon because of its potential as an invasive.

Several other taxa within PCSFWMA either are documented hybrids or occur in areas of obvious cultivation or remnants thereof. These specimens are treated not as state records, but merely taxa assumed present in other Tennessee counties. These taxa include: *Allium fistulosum, Asplenium* × *trudellii, Berberis bealei, Chaenomeles speciosa, Euonymus alatus, Forsythia suspensa, Glycine max, Narcissus* × *medioluteus, Phlox nivalis, Prunus cerasus, Quercus acutissima, Solanum lycopersicum* var. *lycopersicum, Spiraea thunbergii, Vicia sativa* ssp. *sativa*, and *Zea mays*.

Association Coefficients

The flora of PCSFWMA was compared to seven other southeastern Appalachian floras (Table 4). Considering the Coefficient of Community (*CC*), the four sites most similar in

Table 2. Listing and Rank of Invasive Exotic Plant Taxa Occurring in PCSFWMA[1]

Rank 1[a]	Rank 2[b]	Rank 3[c]
Ailanthus altissima	*Alternanthera philoxeroides*	*Allium vineale*
Albizia julibrissin	*Arthraxon hispidus*	*Bromus inermis*
Celastrus orbiculatus	*Berberis bealei*	*Buglossoides arvensis*
Dioscorea oppositifolia	*Bromus commutatus*	*Cichorium intybus*
Elaeagnus pungens	*Bromus tectorum*	*Glechoma hederacea*
Elaeagnus umbellata	*Carduus nutans*	*Kummerowia stipulacea*
Fallopia japonica	*Cirsium vulgare*	*Leucanthemum vulgare*
Hedera helix	*Clematis terniflora*	*Ornithogalum umbellatum*
Lespedeza cuneata	*Coronilla varia*	*Persicaria maculosa*
Ligustrum sinense	*Daucus carota*	*Rubus phoenicolasius*
Lonicera fragrantissima	*Euonymus alatus*	*Senna obtusifolia*
Lonicera japonica	*Hydrilla verticillata*	*Tragopogon dubius*
Lonicera maackii	*Lespedeza bicolor*	
Microstegium vimineum	*Lolium pratense*	
Paulownia tomentosa	*Lysimachia nummularia*	
Pueraria montana var. *lobata*	*Melilotus alba*	
Rosa multiflora	*Melilotus officinalis*	
Sorghum halepense	*Murdannia keisak*	
Spiraea japonica	*Myriophyllum aquaticum*	
	Potamogeton crispus	
	Rorippa nasturtium-aquaticum	
	Setaria faberi	
	Setaria pumila	
	Torilis arvensis	
	Verbascum thapsus	
	Vicia sativa ssp. *sativa*	
	Vinca minor	
	Wisteria sinensis	
	Xanthium strumarium	

[1] Research Committee of the Tennessee Exotic Plant Council (1996)
[a] Rank 1 = severe threat exotic plant species in Tennessee
[b] Rank 2 = significant treat exotic plant species in Tennessee
[c] Rank 3 = lesser threat exotic plant species in Tennessee

combined native and non-native community to PCSFWMA are Fall Creek Falls State Park (68.1), Obed Wild and Scenic River (61.4), James River Gorge and Savage Gulf (60.2), whereas the most dissimilar are Chickamauga and Chattanooga National Military Park (54.8) and Big Frog Mountain (44.7). The combined native and non-native (*CC*) values for the Fall Creek Falls State Park, Obed Wild and Scenic River, James River Gorge, and Savage Gulf sites suggest that their floristic community, or more precisely the taxa they have in common, are more similar to the PCSFWMA floral community. Native taxa (*CC*) comparisons of the four inclusive Cumberland Plateau Tennessee sites yielded in each case increased percentages of floristic community to PCSFWMA, most notably a five percent gain at the Wolf Cove site (60.1).

The four most floristically similar sites using Sørenson's Simple Matching Coefficient (*Ssm*) with combined native and non-native taxa include: Fall Creek Falls State Park (0.65), Savage Gulf, the Obed Wild and Scenic River (0.61), and Wolf Cove (0.59). The two lowest combined Sørenson's values are represented by the Blue Ridge floras, James River Gorge (0.55) and Big Frog Mountain (0.52). The combined native and non-native (*Ssm*) values for the Fall Creek Falls State Park, Savage Gulf, Obed Wild and Scenic River, and Wolf Cove sites suggest that their floras, or more precisely the taxa they have in common (matches) and not in common (mismatches), are most similar to the PCSFWMA flora. Native taxa (*Ssm*) comparisons of the five inclusive Cumberland Plateau Tennessee sites yielded in each case decreased percentages of floristic similarity to PCSFWMA, most notably a five percent loss at the Wolf Cove (0.54) and

Table 3. Listing, Status, and Rank of Protected Taxa in PCSFWMA[1]

Scientific Name	Status[a]		Rank[b]
	State	Federal	State
Acer leucoderme	S		S3
Amelanchier sanguinea	T		S2
Aureolaria patula	T		S3
Cardamine flagellifera	T		S2
Cypripedium acaule	E-CE		S4
Diervilla lonicera	T		S2
Fothergilla major	T		S2
Galium uniflorum	S		S1
Gelsemium sempervirens	S		S1S2
Glyceria acutiflora	S		S2
Hydrastis canadensis	S-CE		S3
Juglans cinerea	T		S3
Lysimachia fraseri	E		S2
Panax quinquefolius	S-CE		S3S4
Phemeranthus mengesii	T		S2
Platanthera integrilabia	E	C	S2S3
Sabatia capitata	E		S2
Scutellaria montana	T	LT	S2
Viola tripartita var. *tripartita*	S		S2S3

[1] TDEC (2004)

[a] Status — Candidate (C), Commercially Exploited (CE), Endangered (E), Listed Threatened (LT), Special Concern (S), Threatened (T)

[b] Rank — Extremely rare and critically imperiled (S1), very rare and imperiled (S2), rare and uncommon (S3), long-term concern (S4)

Obed Wild and Scenic River (0.56) sites. The decreased native (*Ssm*) values of the Cumberland Plateau sites should be interpreted as a more robust indicator of overall similarity whereas matches and mismatches are not non-native taxa.

The James River Gorge, located in the Blue Ridge province of Virginia, has a more similar floristic native and non-native community ($CC = 60.2$) perhaps due to a river system tantamount to parts of PCSFWMA. However, many of the taxa from both venues were not common at each site, suggesting a rather distant overall floristic similarity as seen in the combined simple matching value ($Ssm = 0.55$).

In summary, considering both (*CC*) and (*Ssm*) association coefficients, the flora most similar to the PCSFWMA flora is Fall Creek Falls State Park. Further evidence supporting floristic similarities between Fall Creek Falls and PCSFWMA is demonstrated in species area curves and predicted richness values in Fleming and Wofford (2004).

Biogeogeograhical Implications

Floristic comparisons are powerful tools in conferring hypothesized biogeographical affinities. The association coefficient indexes used in this study offer insight into the predictableness of this approach in comparing at least spatially similar floras, i.e., Appalachian floras. The data support the intuitive idea that out of the seven floras, the Cumberland floras would share similar floristic affinities. However, this approach offers insight into important elements of the PCSFWMA not shared by the six other floras, particularly in terms of native taxa. The Forest lay at the extreme southernmost portion of Walden Ridge and spans the Tennessee River Gorge. Walden Ridge is bound westerly by the Sequatchie Valley and easterly by the Ridge and Valley (Figure 1). Both valleys are potential conduits for southeastern native Coastal Plain taxa found in PCSFWMA, e.g., *Galium uniflorum*, and *Gelsemium sempervirens*.

Table 4. Floristic Comparisons of PCSFWMA to Seven Southeastern Appalachian Sites Including: Physiographic Province, Total Number of Native and Non-native Taxa, and Values for the Coefficient of Community (*CC*) and Simple Matching Coefficient (*Ssm*)

Site	Physiographic Province	Combined Native and Non-native			Native Only		
		Taxa	CC (%)	Ssm	Taxa	CC (%)	Ssm
PCSFWMA	Cumberland Plateau	1074[1]	100	1.0	874	100	1.0
Fall Creek Falls State Park[2]	Cumberland Plateau	879	68.1	0.65	768	70.6	0.61
Savage Gulf[3]	Cumberland Plateau	670	60.2	0.61	627	64.9	0.57
Obed Wild and Scenic River[4]	Cumberland Plateau	724	61.4	0.61	660	64.7	0.56
Wolf Cove[5]	Cumberland Plateau	562	55.1	0.59	531	60.1	0.54
Chickamauga and Chattanooga National Military Park[6]	Valley and Ridge; Cumberland Plateau	581	54.8	0.58	N/A	N/A	N/A
James River Gorge[7]	Blue Ridge	951	60.2	0.55	N/A	N/A	N/A
Big Frog Mountain[8]	Blue Ridge	473	44.7	0.52	N/A	N/A	N/A

[1] Includes four site records
[2] Fleming and Wofford (2004) — ca. 8,900 ha; Van Buren and Bledsoe Counties, Tennessee
[3] Wofford et al. (1979) — ca. 4,000 ha; Grundy County, Tennessee
[4] Schmalzer et al. (1985). — ca. 4,000 ha; Morgan and Cumberland Counties, Tennessee
[5] Clements and Wofford (1991) — ca. 1,000 ha; Franklin County, Tennessee
[6] Van Horn (1981) — ca. 3,400 ha: Walker, Dade, and Catoosa Counties, Georgia; Hamilton County, Tennessee
[7] Ramsey et al. (1993) — ca. 3,580 ha.; Bedford and Amherst Counties, Virginia
[8] Murrell and Wofford (1987) — ca. 2,840 ha; Polk County, Tennessee

Additionally, the southern portions of Walden Ridge contain the northernmost elements of the regional endemics *Sabatia capitata* and *Scutellaria montana*. The results presented call for more floristics of the Cumberland Plateau in Tennessee in hopes of recovering more rare Coastal Plain and Appalachian taxa.

Summary

The extent of this project has provided significant additions to the flora of Tennessee. The results include 518 county records, two state records, and novel information concerning locations of federally and state listed plants as well as other notable taxa. In addition, the numbers of exotic plant species in PCSFWMA are better understood as well as its floristic similarities with other southeastern Appalachian floras, particularly Fall Creek Falls State Park.

ANNOTATED LIST

The list of taxa is grouped into four major divisions: LYCOPODIOPHYTA, PTERIDOPHYTA, PINOPHYTA, MAGNOLIOPHYTA (subdivisions: Liliopsida and Magnoliopsida). Family, genus, species, and lesser taxa arrange the list alphabetically. Nomenclature for all taxa follows either the Flora of North America Editorial Committee (1993, 1997, 2000, 2003a, 2003b, 2004, 2005) or United States Department of Agriculture, Natural Resources Conservation Service (2004) Nomenclatural source exceptions follow Wunderlin (1998) for *Arisaema quinatum, Pennisetum glaucum*, and *Setaria pumila*. A single (*) asterisk preceding the binomial indicates a non-native species while the lack of an asterisk indicates a native species. A double asterisk (**) before the collector number indicates a state record and the lack of an asterisk indicates a taxon previously documented at TENN.

Any binomial preceded by an explanation symbol (!) is a taxon not vouchered in this study but examined in the field (four taxa). The binomial of each taxon and its author is followed by a relative abundance categorization. The categories and respective abbreviations of relative abundance designated in this list follow that of Murrell and Wofford (1987): Very Rare (VR) —

a single locality, few individuals; Rare (R) — one or two localities, generally small populations; Scarce (S) — several localities, or scattered small populations; Infrequent (I) — scattered localities throughout; Occasional (O) — well distributed, but not anywhere abundant; Common (C) — characteristic and dominant.

Proceeding relative abundance is a code for the general habitat type. The coding scheme is as follows: APP = Artificial Plateau Ponds, CB = Cliff Bases, CE = Cumberland Escarpment, CM = Cemeteries, CPS = Cumberland Plateau Surface, DI = Disturbed Areas, DS = Deciduous Slopes, FL = Flood Plains, MF = Managed Fields, MS = Mesophytic Slopes, NPP = Natural Plateau Ponds, OHS = Old Home Sites, RI = Riparian, RO = Rock Outcrops, SO/CB = Sandstone Outcrops/Cliff Bluffs, SS = Seepage Slopes, UD = Upland Depressions, WB = Woodland Borders. Note that the habitat descriptions given for each taxon is merely based on subjective field observations by the researcher and should be used with discretion because several species occur in multiple habitats. All multiple habitat type taxa in this list were vouchered or examined and a complete checklist of the PCSFWMA flora may be found in Beck (2000).

County records are denoted with the symbol (Δ) and are preceded by the collector number and where applicable are followed by the herbarium specimen voucher location (TENN, UCHT, or Tennessee River Gorge Trust herbarium) of a specimen not collected by the author or deposited at UCHT by the author. The author's collections are abbreviated JTB, and all specimens other than the author is delimited prior to collection number(s). Lastly, following the collector accession numbers are the codes for exotic and protected taxa and follows Tables 2 and 3, respectively. The binomial of conservation status taxa is in bold.

LYCOPODIOPHYTA
ISOETACEAE

Isoetes valida (Engelm.) Clute; S. SS, UD. Δ*JTB-2153*.

LYCOPODIACEAE

Diphasiastrum digitatum (Dill. ex A.Braun) Holub; S. CPS, MS, SS. Δ*JTB-1929*.
Diphasiastrum tristachyum (Pursh) Holub; VR. MS. Δ*JTB-2956*.
Huperzia lucidula (Michx.) Trevis.; R. MS. *JTB-1676*.

SELAGINELLACEAE

Selaginella apoda (L.) Spring; VR. RI. Δ*JTB-1634*.

PTERIDOPHYTA
ASPLENIACEAE

Asplenium bradleyi D.C.Eaton; S. CB. *JTB-3863*.
Asplenium montanum Willd.; S. CB. *JTB-1335*.
Asplenium pinnatifidum Nutt.; R. CB. *E. Schell s.n.* (TENN).
Asplenium platyneuron (L.) Britton, Sterns & Poppenb.; O. RO. *JTB-1318*.
Asplenium resiliens Kunze; VR. RO. *JTB-1915*.
Asplenium rhizophyllum L.; S. RO. *JTB-1316*.
Asplenium ×*trudellii* Wherry; VR. CB. A.M. *Evans & E. Schell 4315* (TENN).

BLECHNACEAE

Woodwardia areolata (L.) T.Moore; R. SS, UD. *JTB-1804*.

DENNSTAEDTIACEAE

Dennstaedtia punctilobula (Michx.) T.Moore; O. MS, WB. *JTB-1746*.
Pteridium aquilinum (L.) Kuhn; O. CPS, WB. *JTB-1578*.

DRYOPTERIDACEAE

Athyrium filix-femina (L.) Roth ex Mert. var. *asplenioides* (Michx.) Farw.; O. DS, RI, UD. Δ*JTB-2180*.
Cystopteris protrusa (Weath.) Blasdell; I. MS. *JTB-1512*.
Dryopteris intermedia (Muhl. ex Willd.) A.Gray; S. MS. Δ*JTB-3108*.
Dryopteris marginalis (L.) A.Gray; O. MS. *JTB-1267*.
Onoclea sensibilis L.; R. APP. *JTB-1839*.
Polystichum acrostichoides (Michx.) Schott; C. CPS, DS, RI. *JTB-1270*.
Woodsia obtusa (Spreng.) Torr.; R. RO. *JTB-1315*.

LYGODIACEAE

Lygodium palmatum (Bernh.) Sw.; VR. APP. Δ*JTB-3613*.

OPHIOGLOSSACEAE

Botrychium biternatum (Savigny) Underw.; S. CPS, DS. *JTB-1355*.
Botrychium dissectum Spreng.; R. MS. *JTB-2355*.
Botrychium virginianum (L.) Sw.; S. MS. *JTB-1704*.
Ophioglossum engelmannii Prantl; VR. MF. *JTB-2198*.

OSMUNDACEAE

Osmunda cinnamomea L.; I. SS. *JTB-1711*.
Osmunda regalis L. var. *spectabilis* (Willd.) A.Gray; R. SS. *JTB-1712*.

POLYPODIACEAE

Pleopeltis polypodioides (L.) E.G. Andrews & Windham var. *michauxiana* (Weath.) E.G. Andrews & Windham; S. DI, RO. *JTB-1312*.
Polypodium appalachianum Haufler & Windham; I. DS, MS, SO/CB. Δ*JTB-3080*.

PTERIDACEAE

Adiantum capillus-veneris L.; S. RI. *JTB-2632*.
Adiantum pedatum L.; R. DS. *JTB-1484*.
Cheilanthes alabamensis (Buckley) Kunze; R. CB. *JTB-1914*.
Cheilanthes lanosa (Michx.) D.C.Eaton; VR. DS. *E. Bridges & P. Somers 345* (Tennessee River Gorge Trust herbarium).

Cheilanthes tomentosa Link; R. SO/CB. *JTB-2590*.
Pellaea atropurpurea (L.) Link; S. DS. *JTB-1441*.

THELYPTERIDACEAE

**Macrothelypteris torresiana* (Gaudich.) Ching; VR. DI. ***JTB-2302*.
Phegopteris hexagonoptera (Michx.) Fée; I. MS. *JTB-1518*.
Thelypteris noveboracensis (L.) Nieuwl.; F. RI, SO/CB. *JTB-1661*.

VITTARIACEAE

Vittaria appalachiana Farrar & Mickel; VR. CB. *A.M. Evans & E. Schell 4330* (TENN).

PINOPHYTA
CUPRESSACEAE

Juniperus virginiana L.; I. MF, SO/CB. *JTB-2576*.
Taxodium distichum (L.) Rich.; R. APP, FL. Δ*JTB-1842*.

PINACEAE

Pinus echinata Mill.; O. CPS, DI. Δ*JTB-1718*.
Pinus strobus L.; R. CPS, WB. Δ*JTB-1372a*, Δ*JTB-3049*.
Pinus taeda L.; S. DI. Δ*A. Couch 59* (UCHT).
Pinus virginiana Mill.; O. RI, SO/CB. Δ*JTB-2546*, Δ*JTB-3077*.
Tsuga canadensis (L.) Carrière; O. DI, RI. Δ*JTB-3053*, Δ*JTB-3074*.

MAGNOLIOPHYTA: LILIOPSIDA
AGAVACEAE

Manfreda virginica (L.) Salisb. ex Rose; R. RO. *JTB-1650*.
Yucca filamentosa L.; R. DS, MF. Δ*JTB-1857*, Δ*JTB-3708*.

ALISMATACEAE

Alisma subcordatum Raf.; VR. FL. *JTB-2004*.
Echinodorus cordifolius (L.) Griseb.; VR. FL. Δ*JTB-2635*.
Sagittaria australis (J.G.Sm.) Small; R. FL. *JTB-2747*.

ARACEAE

Arisaema dracontium (L.) Schott; R. FL. Δ*JTB-1550*.
Arisaema quinatum (Nutt.) Schott; VR. RI. Δ*JTB-1455*.
Arisaema triphyllum (L.) Schott; I. DS, MS, SS. *JTB-1534*.
Peltandra virginica (L.) Schott; VR. FL. Δ*JTB-s.n.* (TENN).

COMMELINACEAE

**Commelina communis* L.; I. DI, MF. Δ*JTB-1983*, Δ*JTB-3717*.
Commelina virginica L.; VR. RI. Δ*JTB-2624*.
**Murdannia keisak* (Hassk.) Hand.-Mazz.; VR. FL. Δ*JTB-s.n.* (TENN). Rank 2.
Tradescantia subaspera Ker Gawl.; O. DS, FL. *JTB-1825*.
Tradescantia virginiana L.; VR. DS. Δ*JTB-3245*.

CYPERACEAE

Bulbostylis capillaris (L.) C.B.Clarke; VR. DI. *JTB-2812*.
Carex albicans Willd. ex Spreng. var. *emmonsii* (Dewey ex Torr.) Rettig; R. DI. *JTB-3135*.
Carex albursina E.Sheld.; VR. DS. *JTB-s.n.* (TENN).
Carex amphiloba Steud.; I. FL. *JTB-1932*.
Carex annectens (E.P.Bicknell) E.P.Bicknell.; R. CB, DS. Δ*JTB-2377*.
Carex atlantica L.H.Bailey ssp. *atlantica*; VR. DS. Δ*E. Bridges & P. Somers 650* (Tennessee River Gorge Trust herbarium).
Carex austrocaroliniana L.H.Bailey; S. DS. *JTB-3165*.
Carex baileyi Britton; R. SS, WB. Δ*JTB-3237*.
Carex caroliniana Schwein.; R. FL. *JTB-3647*.
Carex cephalophora Muhl. ex Willd.; S. RI. *JTB-1618*.
Carex cherokeensis Schwein.; S. FL. Δ*JTB-1557*.
Carex complanata Torr. & Hook.; I. DI, DS. *JTB-1699*.
Carex conjuncta Boott; VR. MF. *JTB-3584*.
Carex crinita Lam.; O. APP, FL. Δ*JTB-1959*.
Carex cumberlandensis Naczi, Kral & Bryson; VR. DS. Δ*JTB-s.n.* (TENN).
Carex debilis Michx.; I. MS, SS. *JTB-1709*.
Carex digitalis Willd.; I. CB, DS. *JTB-1801*.
Carex festucacea Schkuhr ex Willd.; S. SS. *JTB-2552*.
Carex frankii Kunth; O. DI, FL. *JTB-2309*.
Carex gigantea Rudge; O. APP. *JTB-2144*.
Carex granularis Muhl. ex Willd.; VR. CE. Δ*JTB-s.n.* (TENN).
Carex grayi J.Carey; S. FL. *JTB-1733*.
Carex intumescens Rudge; I. UD. *JTB-1806*.
Carex joorii L.H.Bailey; S. APP, SS. Δ*JTB-2472*.
Carex kraliana Naczi & Bryson; VR. CE. Δ*JTB-s.n.* (TENN).
Carex laxiculmis Schwein.; S. RO. *JTB-1828*.
Carex leavenworthii Dewey; R. MF. Δ*JTB-3232*.
Carex lupulina Muhl. ex Willd.; S. FL. *JTB-1943*.
Carex lurida Wahlenb.; I. APP, MS. *JTB-2118*.
Carex meadii Dewey; VR. CE. Δ*JTB-s.n.* (TENN).
Carex muehlenbergii Schkuhr ex Willd. var. *enervis* Boott; S. DS. *JTB-1506*.
Carex nigromarginata Schwein.; S. WB. Δ*JTB-1492*.
Carex oxylepis Torr. & Hook. var. *oxylepis*; VR. DI. Δ*JTB-3213*.
Carex pensylvanica Lam.; O. MS, SO/CB. *JTB-1749*.
Carex picta Steud.; VR. DS. Δ*E. Bridges & P. Somers 259* (Tennessee River Gorge Trust herbarium).
Carex retroflexa Muhl. ex Willd.; I. DI. *JTB-1536*.
Carex rosea Schkuhr ex Willd.; VR. DS. *E. Bridges & P. Somers 389* (Tennessee River Gorge Trust herbarium).
Carex scoparia Schkuhr ex Willd.; R. APP. Δ*JTB-2113*.
Carex seorsa Howe; VR. DS. Δ*JTB-1707*.
Carex squarrosa L.; S. FL. *JTB-1963*.
Carex stipata Muhl. ex Willd.; R. FL. *JTB-3199*.
Carex striatula Michx.; I. DS. Δ*JTB-1505*.
Carex styloflexa Buckley; S. FL. Δ*JTB-3207*.
Carex swanii (Fernald) Mack.; VR. SS. Δ*JTB-s.n.* (TENN).
Carex virescens Muhl. ex Willd.; S. DI, SO/CB. *JTB-3585*.
Carex vulpinoidea Michx.; O. APP, FL. *JTB-1939*.
Cyperus echinatus (L.) Wood; S. MF. *JTB-2093*.
Cyperus esculentus L.; R. DI. Δ*JTB-3035*.
Cyperus flavescens L.; VR. DI. *JTB-3874* (TENN).
Cyperus lancastriensis Porter; S. MF. *JTB-2463*.
Cyperus odoratus L.; S. DI. Δ*JTB-2912*, Δ*JTB-3030*.
Cyperus pseudovegetus Steud.; S. FL. *JTB-2741*.
Cyperus refractus Engelm. ex Boeck.; R. FL. Δ*JTB-2273*.
Cyperus retrofractus (L.) Torr.; R. DI. Δ*JTB-2301*.
Cyperus strigosus L.; O. FL, MF. *JTB-2557*.
Dulichium arundinaceum (L.) Britton; R. FL. Δ*JTB-2640*.
Eleocharis microcarpa Torr. var. *microcarpa*; S. APP. Δ*JTB-2461*.
Eleocharis obtusa (Willd.) Schult.; S. FL, UD. *JTB-1962*.
Eleocharis quadrangulata (Michx.) Roem. & Schult.; R. FL. Δ*JTB-2634*.
Kyllinga gracillima Miq.; VR. FL. *JTB-2939*.
Rhynchospora capitellata (Michx.) Vahl; S. UD. *JTB-2528*.

Rhynchospora corniculata (Lam.) A.Gray; VR. APP. *JTB-2798*.
Rhynchospora recognita (Gale) Kral; VR. WB. *JTB-2255*.
Schoenoplectus purshianus (Fernald) M.T.Strong; R. FL. *JTB-2752*.
Schoenoplectus tabernaemontani (C.C.Gmel.) Palla; R. FL. *JTB-2679* (TENN).
Scirpus atrovirens Willd.; S. APP, RI. Δ*JTB-2122*.
Scirpus cyperinus (L.) Kunth; S. FL, RI. *JTB-2644*.
Scirpus pendulus Muhl.; R. DI. Δ*JTB-1903*.
Scleria ciliata Michx.; VR. DI. *JTB-3657*.
Scleria oligantha Michx.; S. DI, DS. Δ*JTB-3788*.
Scleria triglomerata Michx.; S. DS. *JTB-2629*.

DIOSCOREACEAE

**Dioscorea oppositifolia* L.; VR. DI. *JTB-s.n.* (TENN). Rank 1.
Dioscorea villosa L.; I. DS, MS. Δ*JTB-3097*.

HYDROCHARITACEAE

Elodea canadensis Michx.; VR. FL. *JTB-2675*.
**Hydrilla verticillata* (L.f.) Royle; VR. FL. Δ*JTB-s.n.* (TENN). Rank 2.
Vallisneria americana Michx.; R. APP. *JTB-3668*.

IRIDACEAE

**Belamcanda chinensis* (L.) DC.; VR. DI. Δ*JTB-5034* (TENN).
Iris cristata Sol. ex Aiton; I. RI. *JTB-1426*.
Iris verna L. var. *smalliana* Fernald ex M.E.Edwards; R. DS. Δ*JTB-3610*.
**Iris germanica* L.; VR. DI. Δ*JTB-1826*.
Sisyrinchium albidum Raf.; R. DI, WB. *JTB-1455.2*.
Sisyrinchium angustifolium Mill.; I. DI. *JTB-1562*.
Sisyrinchium mucronatum Michx.; R. SS. Δ*JTB-3620*.

JUNCACEAE

Juncus acuminatus Michx.; I. FL. *JTB-1956*.
Juncus biflorus Elliott; I. APP, UD. *JTB-2469*.
Juncus brachycarpus Engelm.; R. DS. *JTB-2253*.
Juncus coriaceus Mack.; S. APP, SS. *JTB-2553*.
Juncus debilis A.Gray; I. APP, SS. *JTB-2536*.
Juncus effusus L.; S. APP, SS. *JTB-1837*.
Juncus elliottii Chapm.; VR. SS. Δ*E. Bridges & P. Somers 238* (Tennessee River Gorge Trust herbarium).
Juncus marginatus Rostk.; R. SS. *JTB-2205*.
Juncus repens Michx.; I. APP. *JTB-1836*.
Juncus tenuis Willd.; I. SS, UD. *JTB-2092*.
Luzula acuminata Raf.; S. RI. *JTB-1794*.
Luzula bulbosa (A.W.Wood.) Rydb.; S. MF. Δ*JTB-1784*.
Luzula echinata (Small) F.J.Herm.; S. FL. *JTB-1354*.

LEMNACEAE

Spirodela polyrrhiza (L.) Schleid.; VR. FL. Δ*JTB-2298*.

LILIACEAE

Allium canadense L.; I. FL. *JTB-1643*.
**Allium fistulosum* L.; VR. DI. *JTB-3560*.
**Allium vineale* L.; I. MF, WB. *JTB-2138*. Rank 3.
Amianthium muscitoxicum (Walter) A.Gray; S. CPS. Δ*JTB-2024*.
**Asparagus officinalis* L.; VR. DI. Δ*JTB-2203.1*.
Chamaelirium luteum (L.) A.Gray; VR. MS. *JTB-6356*.
Erythronium americanum Ker Grawl.; S. DS. *JTB-1333*.
**Hemerocallis fulva* (L.) L.; VR. DI. Δ*JTB-2079*.
Hypoxis hirsuta (L.) Coville; S. CPS, DS. *JTB-1465*.
Maianthemum canadense Desf.; VR. RI. Δ*JTB-2061*.
Maianthemum racemosum (L.) Link ssp. *racemosum*; I. DS, MS. Δ*M. Colson 30* (UCHT).
Medeola virginiana L.; S. MS. Δ*JTB-1583*.
**Narcissus pseudonarcissus* L.; VR. MF. Δ*JTB-1371*.
**Narcissus* ×*medioluteus* Mill.; VR. MF. Δ*JTB-1468*.
Nothoscordum bivalve (L.) Britton; VR. WB. *JTB-1454.1*.
**Ornithogalum umbellatum* L.; VR. MF. Δ*JTB-3177*. Rank 3.
Polygonatum biflorum (Walter) Elliott; I. DI, DS, CPS. *JTB-1472*.
Polygonatum pubescens (Willd.) Pursh; VR. RO. Δ*JTB-3276*.
Prosartes lanuginosa (Michx.) D.Don; S. DS. *JTB-1394*.
Prosartes maculata (Buckley) A.Gray; R. MS. *JTB-1516*.
Stenanthium gramineum (Ker Gawl.) Morong; R. DI, MS. *JTB-3676*.
Trillium cuneatum Raf.; I. MS, SS. *JTB-1298*.
Trillium luteum (Muhl.) Harb.; VR. MS. Δ*JTB-1368*.
Trillium sulcatum T.S.Patrick; VR. MS. *JTB-1452.1*.
Uvularia grandiflora Sm.; S. MS. *JTB-1367*.
Uvularia perfoliata L.; S. DS. *JTB-1459*.
Uvularia sessilifolia L.; S. RI. *JTB-3738*.
Veratrum viride Aiton; R. DS. *JTB-3494*.

NAJADACEAE

Najas guadalupensis (Spreng.) Magnus; VR. FL. Δ*JTB-2676*.
**Najas minor* All.; R. FL. *JTB-2703*.

ORCHIDACEAE

Cypripedium acaule Aiton; S. DS, MS. Δ*E. Bridges & P. Somers 341* (Tennessee River Gorge Trust herbarium). E-CE.
Cypripedium parviflorum Salisb. var. *pubescens* (Willd.) O.W.Knight; R. DS. *JTB-2247*.
Goodyera pubescens (Willd.) R.Br.; I. RI, MS, WB. Δ*JTB-1374*, Δ*JTB-3056*, Δ*JTB-3085*.
Isotria verticillata Raf.; VR. CPS. Δ*JTB-3853* (TENN).
Malaxis unifolia Michx.; VR. RI. Δ*JTB-3255*.
Platanthera ciliaris (L.) Lindl.; R. APP, UD. Δ*JTB-2435*.
Platanthera clavellata (Michx.) Luer; S. SS, UD. Δ*JTB-2538*.
Platanthera integrilabia (Correll) Luer; VR. SS. *JTB-3772*. E, C.
Spiranthes lacera (Raf.) Raf. var. *gracilis* (Bigelow) Luer; I. DI, MF. Δ*JTB-2761*.
Tipularia discolor (Pursh) Nutt.; I., CPS, DS, MS. Δ*JTB-3051*, Δ*JTB-3082*.

POACEAE

Agrostis perennans (Walter) Tuck.; S. CB, DS. *JTB-2814*.
Agrostis scabra Willd.; R. CPS. *JTB-3770*.
Andropogon glomeratus (Walter) Britton, Sterns & Poppenb.; R. MF. *JTB-3048*.
Andropogon ternarius Michx.; R. SO/CB. *JTB-3861*.
Andropogon virginicus L.; O. WB. *JTB-3045*.
**Anthoxanthum odoratum* L.; VR. DI. Δ*JTB-1853*.
Aristida dichotoma Michx. var. *dichotoma*; R. SO/CB, WB. *JTB-2895*.
Aristida purpurascens Poir.; VR. SO/CB. *JTB-3853*.
**Arthraxon hispidus* (Thunb.) Makino; VR. WB. Δ*JTB-3007*. Rank 2.

Arundinaria gigantea (Walter) Muhl. ssp. *gigantea*; I. DS. *JTB-1553*.
Arundinaria gigantea (Walter) Muhl. ssp. *tecta* (Walter) McClure; VR. WB. Δ*JTB-2009*.
**Avena sativa* L.; VR. DI. Δ*JTB-s.n.* (TENN).
Brachyelytrum erectum (Schreb.) P.Beauv.; I. DS, SS. *JTB-2171*.
**Bromus commutatus* Schrad.; I. DI, FL. *JTB-1926*. Rank 2.
**Bromus inermis* Leyss.; VR. DI. Δ*JTB-1743*. Rank 3.
Bromus pubescens Muhl. ex Willd.; I. DI, DS. *JTB-2075*.
**Bromus sterilis* L.; VR. DI. *JTB-3589*.
**Bromus tectorum* L.; S. FL, WB. Δ*JTB-1734*. Rank 2.
Calamagrostis coarctata (Torr.) Eaton; S. RI, SS. *JTB-2846*.
Chasmanthium latifolium (Michx.) H.O.Yates; I. FL. *JTB-2292*.
Chasmanthium laxum (L.) H.O.Yates; S. MF, SS. *JTB-2483*.
Chasmanthium sessiliflorum (Poir.) H.O.Yates; I. DI. *JTB-2392*.
Cinna arundinacea L.; I. DI, FL. *JTB-2944*.
**Cynodon dactylon* (L.) Pers.; VR. FL. Δ*JTB-3838*.
**Dactylis glomerata* L.; I. DI, WB. *JTB-1899*.
Danthonia compressa Austin; I. DI, MF. Δ*JTB-1854*.
Danthonia sericea Nutt.; S. MF, SO/CB. *JTB-1880*.
Danthonia spicata (L.) P.Beauv. ex Roem. & Schult.; I. MS, RI. *JTB-2028*.
Deschampsia flexuosa (L.) Trin.; S. SO/CB. *JTB-1599*.
Diarrhena americana P.Beauv.; VR. FL. *JTB-2240*.
Dichanthelium boscii (Poir.) Gould & C.A.Clark; O. DI. *JTB-2012*.
Dichanthelium clandestinum (L.) Gould; R. FL, WB. Δ*JTB-2877*.
Dichanthelium commutatum (Schult.) Gould; S. DS, SO/CB. *JTB-1819*.
Dichanthelium depauperatum (Muhl.) Gould; I. DI. *JTB-3217*.
Dichanthelium dichotomum (L.) Gould var. *dichotomum*; O. CPS. *JTB-2026*.
Dichanthelium laxiflorum (Lam.) Gould; I. FL, SO/CB. *JTB-1933*.
Dichanthelium linearifolium (Scribn.) Gould; R. DI. Δ*JTB-3804*.
Dichanthelium villosissimum (Nash) Freckmann var. *villosissimum*; S. DI. Δ*JTB-2032*.
Dichanthelium scoparium (Lam.) Gould; S. DI. Δ*JTB-2279*.
Dichanthelium sphaerocarpon (Elliott) Gould var. *isophyllum* (Schribn.) Gould & C.A.Clark; S. CPS, DI, MS. *JTB-2246*.
Dichanthelium sphaerocarpon (Elliott) Gould var. *sphaerocarpon*; VR. SO/CB. *E. Bridges & P. Somers 633* (Tennessee River Gorge Trust herbarium).
**Digitaria ischaemum* (Schreb.) Schreb. ex Muhl.; I. MF. *JTB-2408*.
**Digitaria sanguinalis* (L.) Scop.; I. MF, SS. *JTB-3045*.
**Echinochloa crus-galli* (L.) P.Beauv.; I. DI. Δ*JTB-3018*.
Echinochloa muricata (P.Beauv.) Fernald var. *muricata*; S. FL. Δ*JTB-2908*.
**Eleusine indica* (L.) Gaertn.; S. DI. *JTB-2606*.
Elymus hystrix L.; I. DS. *JTB-2073*.
Elymus villosus Muhl. ex Willd.; VR. DI. Δ*JTB-3752*.
Elymus virginicus L.; I. DI, SO/CB. *JTB-2244*.
**Eragrostis cilianensis* (All.) Vignolo ex Janch.; R. DI. Δ*JTB-2564*.
Eragrostis hirsuta (Michx.) Nees; S. DI. Δ*JTB-2957*.
Eragrostis pectinacea (Michx.) Nees; R. FL. Δ*JTB-3800*.
Eragrostis spectabilis (Pursh) Steud.; S. DI, SO/CB. Δ*JTB-2515*.
Festuca subverticillata (Pers.) E.B.Alexeev; VR. FL. *JTB-3649*.
Glyceria acutiflora Torr.; VR. NPP. Δ*JTB-3794*. S.
Glyceria striata (Lam.) Hitchc.; VR. WB. Δ*JTB-2190*.
**Holcus lanatus* L.; R. DI, MS. *JTB-3562*.
Hordeum pusillum Nutt.; I. DI. *JTB-2339*.
**Hordeum vulgare* L.; I. DI. Δ*JTB-1979*.
Leersia virginica Willd.; I. APP, CPS. *JTB-2709*.
**Lolium perenne* L. ssp. *multiflorum* (Lam.) Husn.; I. DI, MF. *JTB-1980*.
**Lolium pratense* (Huds.) Darbysh.; VR. DI. *JTB-3230*. Rank 2.
Melica mutica Walter; O. DS, WB. *JTB-1444*.
**Microstegium vimineum* (Trin.) A.Camus; I. DI. *JTB-3003*. Rank 1.
Muhlenbergia schreberi J.F.Gmel.; S. DI, MF. Δ*JTB-2805*.
Muhlenbergia sobolifera (Muhl. ex Willd.) Trin.; S. MF, RO. Δ*JTB-2899*.
Panicum anceps Michx.; S. MF, MS. *JTB-2572*.
Panicum dichotomiflorum Michx.; I. DI. Δ*JTB-3001*.
Panicum flexile (Gatt.) Scribn.; VR. DI. *JTB-5037*.
**Panicum miliaceum* L.; R. MF. Δ*JTB-3813*.
Panicum rigidulum Bosc ex Nees var. *pubescens* (Vasey) M.G.Lelong; R. SS. Δ*JTB-2550*.
Panicum rigidulum Bosc ex Nees var. *rigidulum*; R. DI. *JTB-3562*.
Panicum verrucosum Muhl.; R. APP. *JTB-2793*.
Panicum virgatum L.; R. MF. Δ*JTB-2464*.
**Paspalum dilatatum* Poir.; S. FL, MF. *JTB-2262*.
Paspalum laeve Michx.; VR. DI. *JTB-3793*.
Paspalum pubiflorum Rupr. ex Galeotti; S. DI. Δ*JTB-3703*.
Paspalum setaceum Michx.; I. MF. Δ*JTB-2411*.
**Pennisetum glaucum* (L.) R.Br.; S. DI. Δ*JTB-2511*.
**Phleum pratense* L.; S. WB. Δ*JTB-2342*.
Piptochaetium avenaceum (L.) Parodi; O. DS. *JTB-1542*.
**Poa annua* L.; S. MF, WB. *JTB-1537*.
Poa autumnalis Muhl. ex Elliott; S. CB, DS. Δ*JTB-3095*.
**Poa compressa* L.; I. DI, MF. Δ*JTB-3227*.
Poa cuspidata Nutt.; I. DS. *JTB-1311*.
Poa pratensis L.; VR. DI. *JTB-1831*.
Poa sylvestris A.Gray; VR. SS. Δ*JTB-1614*.
Saccharum alopecuroideum (L.) Nutt.; I. DI. *JTB-s.n.* (TENN).
Saccharum brevibarbe (Michx.) Pers. var. *contortum* (Elliott) R.D.Webster; R. DI. Δ*JTB-3862*.
Schizachyrium scoparium (Michx.) Nash; R. DI, MF. *JTB-2775*.
**Secale cereale* L.; S. DI, WB. Δ*JTB-2162*.
**Setaria faberi* Herrm.; R. MF. Δ*JTB-2407*. Rank 2.
Setaria parviflora (Poir.) Kerguélen; I. DI, FL. *JTB-2272*.
**Setaria pumila* (Poir.) Roem. & Schult.; I. DI, MF. *JTB-2981*. Rank 2.
Sorghastrum nutans (L.) Nash; S. DI. *JTB-2947*.
**Sorghum bicolor* (L.) Moench; R. MF. *JTB-3043*.
**Sorghum halepense* (L.) Pers.; O. DI, FL. *JTB-2067*. Rank 1.
Sphenopholis intermedia (Rydb.) Rydb.; S. DS, SO/CB. *JTB-3156*.
Sphenopholis nitida (Biehler) Scribn.; I. DS. *E. Bridges & P. Somers 369* (Tennessee River Gorge Trust herbarium).
Tridens flavus (L.) Hitchc. var. *flavus*; O. DI, MF. *JTB-2619*.
Tripsacum dactyloides (L.) L.; VR. DI. Δ*JTB-s.n.* (TENN).

Triticum aestivum L.; R. DI. Δ*JTB-1847*.
**Vulpia bromoides* (L.) Gray; VR. SO/CB. Δ*E. Bridges and P. Somers 650* (Tennessee River Gorge Trust herbarium).
**Vulpia myuros* (L.) C.C.Gmel.; VR. MF. *JTB-3628*.
Vulpia octoflora (Walter) Rydb. var. *octoflora*; R. CPS, MF. *JTB-3576*.
Zizaniopsis miliacea (Michx.) Döll & Asch.; VR. FL. *JTB-5039* (TENN).
**Zea mays* L.; VR. MF. *JTB-3824*.

PONTEDERIACEAE

Pontederia cordata L.; VR. FL. Δ*JTB-5035* (TENN).

POTAMOGETONACEAE

**Potamogeton crispus* L.; VR. FL. *JTB-3650*. Rank 2.
Potamogeton foliosus Raf.; S. FL. *JTB-2704*.
Potamogeton nodosus Poir.; S. FL. Δ*JTB-2641.1*.

SMILACACEAE

Smilax bona-nox L.; O. DS. *JTB-2376*.
Smilax glauca Walter; O. DI, DS, RI. Δ*JTB-3078*.
Smilax herbacea L. var. *herbacea*; R. DI. *JTB-2223*.
Smilax hugeri (Small) J.B.Norton ex Pennell; R. DS. *JTB-1513*.
Smilax rotundifolia L.; S. WB. *JTB-1560*.

SPARGANIACEAE

Sparganium americanum Nutt.; R. APP. *JTB-2141*.

TYPHACEAE

Typha latifolia L.; S. APP, FL. Δ*JTB-2672*.

XYRIDACEAE

Xyris torta Sm.; S. UD. *JTB-2521*.

ZANNICHELLIACEAE

Zannichellia palustris L.; VR. FL. *JTB-2725*.

MAGNOLIOPHYTA: MAGNOLIOPSIDA

ACANTHACEAE

Justicia americana (L.) Vahl; S. FL. *JTB-1941*.
Ruellia caroliniensis (J.F.Gmel.) Steud.; I. DI. *JTB-1992*.
Ruellia humilis Nutt.; S. DI. *JTB-2980*.
Ruellia strepens L.; R. DI. *JTB-1978*.

ACERACEAE

Acer leucoderme Small; VR. CE. Δ*JTB-4683* (TENN). S.
Acer negundo L.; I. FL. *JTB-1386*.
Acer pensylvanicum L.; I. MS. *JTB-1575*.
Acer rubrum L.; F. DI, RI. Δ*JTB-3084*.
Acer saccharinum L.; S. FL. *JTB-1937*.
Acer saccharum Marshall; F. DS, MS. *JTB-3121*.

AMARANTHACEAE

**Alternanthera philoxeroides* (Mart.) Griseb.; S. FL. *JTB-2682*. Rank 2.
**Amaranthus hybridus* L.; R. MF. Δ*JTB-3810*.

ANACARDIACEAE

Rhus aromatica Aiton; R. DI, WB. *JTB-1452*.
Rhus copallina L.; O. DS, WB. Δ*JTB-3089*.
Rhus glabra L.; I. FL, WB. Δ*JTB-1930*.
Toxicodendron radicans (L.) Kuntze; F. DI, RO. Δ*JTB-1732*.

ANNONACEAE

Asimina triloba (L.) Dunal; S. FL, RI. *JTB-1520*.

APIACEAE

Angelica venenosa (Greenway) Fernald; I. DI, WB. *JTB-2319*.
Chaerophyllum tainturieri Hook.; I. DI. *JTB-1443*.
Cicuta maculata L.; S. FL. Δ*JTB-2299*.
Cryptotaenia canadensis (L.) DC.; S. DI, DS. *JTB-1924*.
**Cyclospermum leptophyllum* (Pers.) Sprague ex Britton & P.Wilson; VR. DI. Δ*E. Bridges & P. Somers 596* (Tennessee River Gorge Trust herbarium).
**Daucus carota* L.; F. DI. Δ*JTB-1810*. Rank 2.
Daucus pusillus Michx.; VR. SO/CB. Δ*JTB-3850*.
Erigenia bulbosa (Michx.) Nutt.; R. DS. *JTB-1299*.
Eryngium prostratum Nutt. ex DC.; R. DI, FL. *JTB-3656*.
Eryngium yuccifolium Michx.; R. DI, SO/CB. *JTB-2778*.
Hydrocotyle verticillata Thunb.; R. FL. *JTB-2267*.
Ligusticum canadense (L.) Britton; S. MS. *JTB-1581*.
Osmorhiza claytonii (Michx.) C.B.Clarke; O. DI, MS. Δ*JTB-1517*.
Osmorhiza longistylis (Torr.) DC.; R. DI, DS. *JTB-2106*.
Oxypolis rigidior (L.) Raf.; R. RI, SS. Δ*JTB-2811*.
Ptilimnium capillaceum (Michx.) Raf.; S. Fl. *JTB-2266*.
Sanicula canadensis L.; I. RI. *JTB-2027*.
Sanicula smallii E.P.Bickn.; R. CPS, MS. *JTB-1884*.
Sanicula trifoliata E.P.Bickn.; S. DS. Δ*JTB-1616*.
Taenidia integerrima (L.) Drude; I. DI, WB. *JTB-1691*.
Thaspium barbinode (Michx.) Nutt.; S. DI, DS. *JTB-1490*.
Thaspium trifoliatum (L.) A.Gray var. *aureum* Britton; S. DS, RI. *JTB-1442*.
Thaspium trifoliatum (L.) A.Gray var. *trifoliatum*; VR. MS. Δ*E. Bridges & P. Somers 463* (Tennessee River Gorge Trust herbarium).
**Torilis arvensis* (Huds.) Link; I. DI. *JTB-1918*. Rank 2.
Trepocarpus aethusae Nutt. ex DC.; VR. FL. Δ*JTB-3642*.
Zizia aurea (L.) W.D.J.Koch; S. DI. *JTB-1730*.

APOCYNACEAE

Amsonia tabernaemontana Walter var. *tabernaemontana*; VR. DI. *JTB-1453*.
Apocynum cannabinum L.; I. DI, MF. *JTB-1920*.
**Vinca minor* L.; R. DI. Δ*JTB-1637*, Δ*JTB-3069*. Rank 2.

AQUIFOLIACEAE

Ilex ambigua (Michx.) Torr.; VR. DS. Δ*E. Bridges & P. Somers 333* (Tennessee River Gorge Trust herbarium).
Ilex decidua Walter; I. FL. *JTB-1556*.
Ilex longipes Chapm. ex Trel.; R. CE, CPS. *JTB-3747*.
Ilex montana Torr. & A.Gray ex A.Gray; S. CB, MS. Δ*JTB-1800*.
Ilex opaca Aiton; I. MS. *JTB-1291*.
Ilex verticillata (L.) A.Gray; VR. RI. *JTB-2045*.

ARALIACEAE

Aralia racemosa L.; I. MS, RI. *JTB-2044*.
Aralia spinosa L.; O. DI, MS. Δ*JTB-3086*, Δ*JTB-3710*.
**Hedera helix* L.; VR. DI. Δ*JTB-1280*. Rank 1.
Panax quinquefolius L.; VR. MS. Δ*JTB-1486*. S-CE.

ARISTOLOCHIACEAE

Aristolochia serpentaria L.; R. CPS. *JTB-3601*.

Aristolochia tomentosa Sims; VR. FL. *JTB-1942*.
Hexastylis arifolia (Michx.) Small var. *ruthii* (Ashe) H.L.Blomq.; O. MS. *JTB-1491*.
Hexastylis shuttleworthii (Britten & Baker) Small; S. RI. Δ*JTB-1453*, Δ*JTB-3081*.

ASCLEPIADACEAE

Asclepias amplexicaulis Sm.; I. MF, MS. Δ*JTB-2165*.
Asclepias exaltata L.; R. WB. Δ*JTB-3726*.
Asclepias quadrifolia Jacq.; R. DS. *JTB-1701*.
Asclepias tuberosa L.; I. DI. *JTB-2069*.
Asclepias variegata L.; I. DS. *JTB-1968*.
Cynanchum laeve (Michx.) Pers.; S. FL, WB. Δ*JTB-2604*.
Matelea carolinensis (Jacq.) Woodson; S. DS. *JTB-1913*.
Matelea gonocarpos (Walter) Shinners; S. DI, MF. *JTB-2324*.

ASTERACEAE

Achillea millefolium L.; S. DS, MF. Δ*JTB-1843*.
Ageratina altissima (L.) R.M.King & H.Rob.; I. DI. *JTB-2921*.
Ageratina aromatica (L.) Spach; I. DI, WB. *JTB-2706*.
Ambrosia artemisiifolia L.; O. MF. *JTB-3741*.
Ambrosia trifida L.; I. DI. *JTB-2838*.
Antennaria plantaginifolia (L.) Richardson; O. DI, DS. *JTB-1325*.
Antennaria solitaria Rydb.; R. DS. *JTB-1373*.
**Anthemis arvensis* L.; S. DI, MF. Δ*JTB-1987*, Δ*JTB-3142*.
**Arctium minus* Bernh.; VR. WB. Δ*JTB-2366*.
Arnoglossum atriplicifolium (L.) H.Rob.; I. WB. Δ*JTB-2083*.
**Artemisia annua* L.; S. WB. Δ*JTB-2751*.
Bidens aristosa (Michx.) Britton; I. DI. Δ*JTB-2808*.
Bidens bipinnata L.; I. DI. Δ*JTB-2784*.
Bidens frondosa L.; R. CB. *JTB-2860*.
Bidens vulgata Greene; VR. RI. Δ*JTB-2670*.
Brickellia eupatorioides (L.) Shinners; VR. WB. *JTB-2977*.
**Carduus nutans* L.; R. DI. Δ*JTB-2007*. Rank 2.
Chrysopsis mariana (L.) Elliott; S. WB. *JTB-2787*.
**Cichorium intybus* L.; S. MF. Δ*JTB-2081*. Rank 3.
Cirsium carolinianum (Walter) Fernald & B.G.Schub.; S. DI. Δ*JTB-1559*.
**Cirsium vulgare* (Savi) Ten.; S. DI. Δ*JTB-2110*. Rank 2.
Conoclinium coelestinum (L.) DC.; S. DI, RI. *JTB-2353*.
Conyza canadensis (L.) Cronquist var. *canadensis*; I. FL, WB. Δ*JTB-2609*.
Coreopsis auriculata L.; S. DI, DS. Δ*M. Colson 14* (UCHT).
Coreopsis major Walter; I. MF. *JTB-1996*.
Coreopsis tinctoria Nutt.; I. DI. Δ*JTB-2356*.
Coreopsis tripteris L.; VR. RI. *JTB-2373*.
**Crepis pulchra* L.; I. DI. *JTB-1897*.
Doellingeria infirma (Michx.) Greene; VR. SO/CB. *JTB-2864*.
**Eclipta prostrata* (L.) L.; S. FL, UD. *JTB-2626*.
Elephantopus carolinianus Raeusch.; S. FL. *JTB-2270*.
Elephantopus tomentosus L.; I. DI, DS. Δ*JTB-3729*.
Erechtites hieraciifolia (L.) Raf. ex DC.; I. APP, CB. *JTB-2799*.
Erigeron annuus (L.) Pers.; I. DI. Δ*JTB-2048*.
Erigeron philadelphicus L.; I. DI. *JTB-1413*.
Erigeron pulchellus Michx.; S. DI. *JTB-1352*.
Erigeron strigosus Muhl. ex Willd. var. *strigosus*; I. DI, MF. *JTB-1787*.
Eupatorium album L. var. *album*; S. CPS, DI. Δ*JTB-2320*, Δ*JTB-3005*.
Eupatorium capillifolium (Lam.) Small; S. DI, MF. *JTB-2939*.
Eupatorium fistulosum Barratt; I. CB, RI. Δ*JTB-2749*.
Eupatorium hyssopifolium L. var. *hyssopifolium*; S. DI. Δ*JTB-2773*.
Eupatorium hyssopifolium L. var. *lanciniatum* A.Gray; R. MF, WB. Δ*JTB-2409*.
Eupatorium perfoliatum L.; S. APP, WB. *JTB-2424*.
Eupatorium pilosum Walter; I. CPS. *JTB-3848*.
Eupatorium purpureum L.; S. DS, WB. *JTB-2202*.
Eupatorium rotundifolium L. var. *ovatum* (Bigelow) Torr.; S. SO/CB, WB. *JTB-2423*.
Eupatorium serotinum Michx.; I. DI, RI. *JTB-2847*.
Eupatorium sessilifolium L.; I. CB, DS. *JTB-2175*.
Eurybia divaricata (L.) G.L.Nesom; O. RI, SO/CB. *JTB-2849*.
Eurybia surculosa (Michx.) G.L.Nesom; R. DI, WB. *JTB-2803*.
Fleischmannia incarnata (Walter) R.M.King & H.Rob.; R. DI. *JTB-2918*.
**Galinsoga quadriradiata* Ruiz & Pav.; R. DI. Δ*JTB-2185*.
Gamochaeta purpurea (L.) Cabrera; I. FL, MF. Δ*JTB-1781*.
Helenium amarum (Raf.) H.Rock; I. DI. Δ*JTB-2357*.
Helenium autumnale L.; S. FL. Δ*JTB-2734*.
Helianthus angustifolius L.; VR. DI. *JTB-2997*.
!**Helianthus annuus* L.; I. DI.
Helianthus decapetalus L.; R. DS. *JTB-2449*.
Helianthus divaricatus L.; I. CPS, MF. *JTB-2326*.
Helianthus hirsutus Raf.; I. DI. *JTB-2554*.
Helianthus microcephalus Torr. & A.Gray; S. DI, SO/CB. *JTB-2872*.
Helianthus strumosus L.; S. DI. Δ*JTB-2340*.
Hieracium gronovii L.; S. DI, M. Δ*JTB-2756*.
Hieracium paniculatum L.; VR. DS. *JTB-3557*.
Hieracium venosum L.; I. CB, DS. Δ*JTB-1685*.
**Hypochaeris radicata* L.; VR. APP. Δ*JTB-2459*.
Ionactis linariifolius (L.) Greene; R. SO/CB. *JTB-3854*.
**Iva annua* L.; VR. MF. *JTB-3812*.
Krigia biflora (Walter) S.F.Blake; O. CPS, DI, DS. *JTB-1576*.
Krigia dandelion (L.) Nutt.; S. CPS, DS. Δ*JTB-1630*.
Krigia virginica (L.) Willd.; S. MF. Δ*JTB-1660*.
Lactuca canadensis L.; O. DI, WB. *JTB-2305*.
Lactuca floridana (L.) Gaertn.; I. DI. *JTB-2717*.
**Lactuca saligna* L.; R. DI. *JTB-s.n.* (TENN).
**Leucanthemum vulgare* Lam.; I. DI. Δ*JTB-1608*. Rank 3.
Liatris squarrosa (L.) Michx.; S. SO/CB. Δ*JTB-2580*.
Liatris squarrulosa Michx.; S. WB. *JTB-3008*.
Mikania scandens (L.) Willd.; VR. FL. *JTB-1325*.
Packera anonyma (Wood) W.A.Weber & Á.Löve; R. CM, DI. *JTB-2104*.
Packera glabella (Poir.) C.Jeffrey; I. DI, MF. *JTB-1964*.
Packera obovata (Muhl. ex Willd.) W.A.Weber & Á.Löve; I. DI, DS. *JTB-1348*.
Parthenium integrifolium L.; S. DI, WB. Δ*JTB-1782*, Δ*JTB-2176*.
Pityopsis graminifolia (Michx.) Nutt.; I. MF. *JTB-2759*.
Pluchea camphorata (L.) DC.; VR. FL. *JTB-2718*.
Polymnia laevigata Beadle; S. CB, MS, RI. *JTB-2232*.
Prenanthes altissima L.; R. DI, RI. Δ*JTB-2848*, Δ*JTB-3019*.
Prenanthes serpentaria Pursh; R. DI. Δ*JTB-3019*.
Prenanthes trifoliolata (Cass.) Fernald; CB, DI. Δ*JTB-2825*.
Pseudognaphalium obtusifolium (L.) Hilliard & B.L.Burtt; I. DS, MF. *JTB-2788*.
Pyrrhopappus carolinianus (Walter) DC.; I. DI, DS. *JTB-2107*.

Ratibida pinnata (Vent.) Barnhart; VR. DI. Δ*JTB-2068*.
Rudbeckia fulgida Aiton var. *fulgida*; S. DI, FL. *JTB-2389*.
Rudbeckia hirta L. var. *pulcherrima* Farw.; O. DS, WB. Δ*JTB-2181*, Δ*JTB-2417*.
Sericocarpus asteroides (L.) Britton, Sterns & Poppenb.; I. CPS, DI. Δ*JTB-2422*.
Sericocarpus linifolius (L.) Britton, Sterns & Poppenb.; R. WB. *JTB-2348*.
Silphium asteriscus L.; I. DI, DS. Δ*JTB-2201*.
Silphium trifoliatum L. var. *trifoliatum*; I. DI. *JTB-s.n.* (TENN).
Smallanthus uvedalius (L.) Mack. ex Small; I. DI. Δ*JTB-1808*.
Solidago canadensis L. var. *scabra* Torr. & A.Gray; S. DI. *JTB-2932*.
Solidago caesia L. var. *caesia*; R. CPS, DI. *JTB-2776*.
Solidago caesia L. var. *curtisii* (Torr. & A.Gray) Wood; R. DI. *JTB-2923*.
Solidago flexicaulis L.; R. MS. *JTB-2954*.
Solidago gigantea Aiton; O. DI, MF. Δ*JTB-2712*.
Solidago juncea Aiton; VR. Habitat unknown. *E. Bridges & P. Somers 478* (Tennessee River Gorge Trust herbarium).
Solidago nemoralis Aiton; I. WB. *JTB-2974*.
Solidago odora Aiton; I. MF. Δ*JTB-2783*.
Solidago roanensis Porter; S. CB. *JTB-2828*.
Solidago rugosa Mill. ssp. *aspera* (Aiton) Cronquist; I. WB. *JTB-2323*.
Solidago speciosa Nutt. var. *erecta* (Pursh) MacMill.; VR. SO/CB. *E. Bridges & P. Somers 1580* (Tennessee River Gorge Trust herbarium).
Solidago speciosa Nutt. var. *speciosa*; R. DS, MS. *JTB-2919*.
Solidago sphacelata Raf.; R. CPS. Δ*E. Bridges & P. Somers 784* (Tennessee River Gorge Trust herbarium).
**Sonchus asper* (L.) Hill; O. DI. Δ*JTB-1648*, Δ*JTB-3723*.
Symphyotrichum concolor (L.) G.L.Nesom; VR. SO/CB. *E. Bridges & E. Schell 979* (Tennessee River Gorge Trust herbarium).
Symphyotrichum cordifolium (L.) G.L.Nesom; S. RI, RO. *JTB-2495*.
Symphyotrichum dumosum (L.) G.L.Nesom; S. CB, SO/CB. Δ*E. Bridges & P. Somers 981* (Tennessee River Gorge Trust herbarium).
Symphyotrichum laeve (L.) Á. & D.Löve var. *concinnum* (Willd.) G.L.Nesom; VR. SO/CB. Δ*JTB-s.n.* (TENN).
Symphyotrichum laeve (L.) Á. & D.Löve var. *laeve*; R. CPS, DI. *JTB-2977*.
Symphyotrichum lateriflorum (L.) Á. & D.Löve; O. RI. *JTB-2991*.
Symphyotrichum patens (Aiton) G.L.Nesom; I. DS, WB. *JTB-2920*.
Symphyotrichum phlogifolium (Muhl. ex Willd.) G.L.Nesom; I. DI, WB. Δ*JTB-2938*, Δ*JTB-3020*.
Symphyotrichum pilosum (Willd.) G.L.Nesom; O. DI, WB. *JTB-2950*.
Symphyotrichum shortii (Lindl.) G.L.Nesom; I. DI. *JTB-2393*.
Symphyotrichum urophyllum (Lindl.) G.L.Nesom; R. DI. Δ*JTB-2973*.
**Taraxacum officinale* Weber ex F.H.Wigg.; S. DI. Δ*JTB-1285*, Δ*JTB-3719*.
**Tragopogon dubius* Scop.; VR. MF. Δ*JTB-3746*. Rank 3.
Verbesina occidentalis (L.) Walter; I. RI. Δ*JTB-2845*.
Verbesina virginica L.; I. DI. *JTB-2904*.
Vernonia flaccidifolia Small; R. DI. *JTB-2388*.
Vernonia gigantea (Walter) Trel.; I. DI, MF. *JTB-2804*.
**Xanthium strumarium* L.; S. MF. *JTB-2890*. Rank 2.
**Youngia japonica* (L.) DC.; VR. DS. Δ*JTB-1591*.

BALSAMINACEAE

Impatiens capensis Meerb.; S. RI. Δ*JTB-2237*.

BERBERIDACEAE

**Berberis bealei* Fortune; VR. DS. Δ*JTB-1339*. Rank 2.
Caulophyllum thalictroides (L.) Michx.; S. DS. *JTB-1358*.
Podophyllum peltatum L.; S. FL. *JTB-1345*.

BETULACEAE

Alnus serrulata (Aiton) Willd.; O. FL, RI. Δ*JTB-1277*, Δ*JTB-3093*.
Betula lenta L.; O. MS, RI. Δ*JTB-1582*, Δ*JTB-3059*.
Betula nigra L.; S. FL. Δ*JTB-1411*.
Carpinus caroliniana Walter; I. DI, RI. Δ*JTB-3083*.
Corylus americana Walter; R. CB, DS. Δ*JTB-3057*.
Ostrya virginiana (Mill.) K.Koch; S. CB, FL. *JTB-1876*.

BIGNONIACEAE

Bignonia capreolata L.; I. CB, SS. Δ*JTB-3096*.
Campsis radicans (L.) Seem. ex Bureau; S. DI. Δ*JTB-3709*.
**Catalpa bignonioides* Walter; VR. DI. Δ*JTB-3635*.

BORAGINACEAE

**Buglossoides arvensis* (L.) I.M.Johnst.; I. DI. *JTB-1809*. Rank 3.
Cynoglossum virginianum L.; I. DS. Δ*M. Colson 16* (UCHT).
Lithospermum canescens (Michx.) Lehm.; R. WB. *JTB-1445*.
Lithospermum tuberosum Rugel ex DC.; R. WB. Δ*JTB-1458*.
Myosotis macrosperma Engelm.; S. DS. *JTB-1508*.

BRASSICACEAE

**Arabidopsis thaliana* (L.) Heynh.; VR. MF. Δ*JTB-3146*.
Arabis canadensis L.; S. RO. Δ*JTB-3678*.
Arabis laevigata (Muhl. ex Willd.) Poir. var. *laevigata*; I. CB, SS. *JTB-1342*.
**Barbarea verna* (Mill.) Asch..; I. DI, MF. Δ*JTB-1398*.
**Barbarea vulgaris* R.Br. ex W.T.Aiton; S. APP, DI. Δ*JTB-1482*.
**Brassica napus* L.; R. MF. Δ*JTB-1377*.
**Capsella bursa-pastoris* (L.) Medik.; R. DI. Δ*JTB-3119*.
Cardamine concatenata (Michx.) O.Schwarz; S. DS. *JTB-1302*.
Cardamine diphylla (Michx.) A.Wood; I. DS, RO. Δ*JTB-3107*.
Cardamine dissecta (Leavenw.) Al-Shehbaz; S. DS. *JTB-1303*.
Cardamine flagellifera O.E.Schulz; VR. DS. Δ*JTB-1407*. T.
**Cardamine hirsuta* L.; O. DI. *JTB-1273*.
Cardamine pensylvanica Muhl. ex Willd.; R. CB. Δ*JTB-3163*.
**Draba verna* L.; VR. MF. *JTB-3148*.
**Lepidium campestre* (L.) R.Br.; S. MF. Δ*JTB-2119*.
Lepidium virginicum L.; I. DI, MF. Δ*JTB-1433*.
**Lunaria annua* L.; VR. DI. Δ*JTB-3065*.
**Rorippa nasturtium-aquaticum* (L.) Hayek; VR. DI. *JTB-3244*. Rank 2.
Rorippa sessiliflora (Nutt.) Hitchc.; R. FL. Δ*JTB-3695*.

Sinapis arvensis L.; VR. DI. Δ*JTB-3625*.
Sisymbrium officinale (L.) Scop.; VR. DI. Δ*JTB-3735*.

CABOMBACEAE

Brasenia schreberi J.F.Gmel.; R. APP. Δ*JTB-3673*.

CALLITRICHACEAE

Callitriche heterophylla Pursh; VR. DI. Δ*JTB-1466*.
Callitriche terrestris Raf.; R. DI. *JTB-3252*.

CALYCANTHACEAE

Calycanthus floridus L. var. *floridus*; O. DS. *JTB-1438*.

CAMPANULACEAE

Campanula divaricata Michx.; S. CB. *JTB-2841*.
Campanulastrum americanum (L.) Small; S. DI, RO. *JTB-2621*.
Lobelia cardinalis L.; S. SS. Δ*JTB-2525*.
Lobelia inflata L.; I. DI. *JTB-2418*.
Lobelia puberula Michx.; I. DS, WB. *JTB-2647*.
Lobelia siphilitica L.; R. DI. Δ*JTB-2943*.
Lobelia spicata Lam.; I. DI, DS. *JTB-2183*.
Triodanis perfoliata (L.) Nieuwl. var. *perfoliata*; S. DI. *JTB-1921*.

CANNABACEAE

Cannabis sativa L.; VR. SO/CB. Δ*E. Bridges & P. Somers 638* (Tennessee River Gorge Trust herbarium).

CAPRIFOLIACEAE

Diervilla lonicera Mill.; R. RI. *JTB-1510*. T.
Diervilla sessilifolia Buckley; VR. RI. Δ*JTB-3114*.
Lonicera fragrantissima Lindl. & Paxton; VR. DS. Δ*JTB-1317*. Rank 1.
Lonicera japonica Thunb.; F. MF. *JTB-1698*. Rank 1.
Lonicera maackii (Rupr.) Herder; I. DI. Δ*JTB-3861*. Rank 1.
Lonicera sempervirens L.; S. CE, DI. *JTB-1695*.
Sambucus nigra L. ssp. *canadensis* (L.) R.Bolli; I. DI, WB. Δ*JTB-2078*.
Symphoricarpos orbiculatus Moench; I. CPS, DI. *JTB-1279*.
Viburnum acerifolium L.; S. MS. *JTB-1494*.
Viburnum rufidulum Raf.; S. CPS, SO/CB. *JTB-1487*.

CARYOPHYLLACEAE

Arenaria serpyllifolia L.; S. DI. *JTB-1437*.
Cerastium fontanum Baumg. ssp. *vulgare* (Hartm.) Greuter & Burdet; I. DI. Δ*JTB-1855*.
Cerastium glomeratum Thuill.; S. DI. Δ*JTB-1380*.
Cerastium nutans Raf. var. *nutans*; S. MF. *JTB-3553*.
Cerastium semidecandrum L.; VR. DI. Δ*JTB-1460*.
Dianthus armeria L.; S. DI. Δ*JTB-2018*, Δ*JTB-3701*.
Holosteum umbellatum L.; R. DI. Δ*JTB-3116*.
Minuartia glabra (Michx.) Mattf.; VR. SS. Δ*JTB-3236*.
Paronychia canadensis (L.) A.W.Wood; R. CPS. Δ*JTB-3256*.
Silene antirrhina L.; I. MF, SS. *JTB-1788*.
Silene rotundifolia Nutt.; R. CB. Δ*JTB-1877*.
Silene stellata (L.) W.T.Aiton ex Aiton & W.T.Aiton; S. DS. *JTB-2384*.
Silene virginica L.; I. CB, DS. *JTB-1422*.
Stellaria media (L.) Vill. ssp. *media*; O. DI. *JTB-1276*.
Stellaria pubera Michx.; I. DS, MS, RI. *JTB-1334*.

CELASTRACEAE

Celastrus orbiculatus Thunb.; I. DI, OHS, WB. Δ*JTB-1861*, Δ*JTB-2197*. Rank 1.
Euonymus alatus (Thunb.) Siebold; VR. FL. Δ*JTB-1525*. Rank 2.
Euonymus americanus L.; I. DI, DS. *JTB-1489*.

CERATOPHYLLACEAE

Ceratophyllum demersum L.; VR. FL. Δ*JTB-2674*.

CHENOPODIACEAE

Chenopodium album L. var. *album*; S. DI, MF. Δ*JTB-2562*, Δ*JTB-3034*.
Chenopodium ambrosioides L.; VR. DI. Δ*JTB-6123* (TENN).

CISTACEAE

Lechea racemulosa Michx.; S. MF. Δ*JTB-2403*.

CLUSIACEAE

Hypericum acutifolium Elliott; VR. DI. *JTB-3771*.
Hypericum frondosum Michx.; I. FL. *JTB-2297*.
Hypericum gentianoides (L.) Britton, Sterns & Poppenb.; I. DI, MF. *JTB-2405*.
Hypericum hypericoides (L.) Crantz ssp. *hypericoides*; S. DS. *JTB-2503*.
Hypericum hypericiodes (L.) Crantz ssp. *multicaule* (Michx. ex Willd.) Robson; S. APP, CB. *JTB-2289*.
Hypericum mutilum L.; I. DI, SS. *JTB-2434*.
Hypericum nudiflorum Michx.; VR. SO/CB. *E. Bridges s.n.* (Tennessee River Gorge Trust herbarium).
Hypericum prolificum L.; R. Fl. *JTB-3763*.
Hypericum punctatum Lam.; I. DS, MF. *JTB-2066*.
Hypericum sphaerocarpum Michx.; VR. CE. Δ*JTB-s.n.* (TENN).
Triadenum walteri (J.G.Gmel.) Gleason; VR. FL. *JTB-s.n.* (TENN).

CONVOLVULACEAE

Calystegia sepium (L.) R.Br.; S. FL. *JTB-2910*.
Calystegia catesbiana Pursh; R. DI. *JTB-3201*.
Cuscuta gronovii Willd. ex Schult.; S. FL, RI. Δ*JTB-3091*.
Cuscuta pentagona Engelm.; I. FL, MF. Δ*JTB-2325*.
Dichondra carolinensis Michx.; VR. FL. Δ*JTB-2730*.
Ipomoea coccinea L.; R. MF. Δ*JTB-2781*.
Ipomoea hederacea Jacq.; S. DI, MF. *JTB-2777*.
Ipomoea lacunosa L.; R. APP. Δ*JTB-2952*.
Ipomoea pandurata (L.) G.Mey.; I. MF. Δ*JTB-2479*.
Ipomoea quamoclit L.; VR. CM. Δ*JTB-3860* (TENN).

CORNACEAE

Cornus amomum Mill.; I. FL. *JTB-1938*.
Cornus florida L.; O. DI, MS. Δ*JTB-3109*.

CRASSULACEAE

Sedum pulchellum Michx.; VR. RO. *JTB-1652*.
Sedum ternatum Michx.; O. RO. *JTB-1328*.

CUCURBITACEAE

Citrullus lanatus (Thunb.) Matsum. & Nakai; VR. DI. Δ*JTB-3859* (TENN).
Melothria pendula L.; VR. DI. *JTB-2959*.
Sicyos angulatus L.; R. DI, FL. Δ*JTB-2907*.

EBENACEAE

Diospyros virginiana L.; F. DS, WB. *JTB-1802*.

ELAEAGNACEAE

**Elaeagnus pungens* Thunb.; I. DI. Δ*JTB-1357*. Rank 1.
**Elaeagnus umbellata* Thunb.; I. DI, MF. Δ*M. Colson 28*. Rank 1.

ERICACEAE

Epigaea repens L.; I. CPS, WB. Δ*JTB-1359*, Δ*JTB-3055*.
Kalmia latifolia L.; I. CB, MS. *JTB-1791*.
Lyonia ligustrina (L.) DC.; VR. MS. *JTB-2178*.
Oxydendrum arboreum (L.) DC.; O. CPS, MS. Δ*JTB-3052*, Δ*JTB-3079*.
Rhododendron arborescens (Pursh.) Torr.; S. RI. *JTB-2509*.
Rhododendron canescens (Michx.) Sweet; I. APP. *JTB-2984*.
Rhododendron catawbiense Michx.; S. MS. *JTB-1823*.
Rhododendron cumberlandense E.L.Braun; VR. DS. Δ*JTB-3607*.
Rhododendron periclymenoides (Michx.) Shinners; I. RI, SO/CB. *JTB-3554*.
Rhododendron prinophyllum (Small) Millais; I. CB, DS. Δ*JTB-1429*.
Vaccinium arboreum Marshall; O. CPS, SO/CB. *JTB-2041*.
Vaccinium corymbosum L.; R. RI. *JTB-1480*.
Vaccinium fuscatum Aiton; VR. Δ*E. Bridges & P. Somers 31* (Tennessee River Gorge Trust herbarium).
Vaccinium pallidum Aiton; S. CPS, WB. *JTB-2321*.
Vaccinium stamineum L.; I. CPS, DS, WB. *JTB-1500*.

EUPHORBIACEAE

Acalypha gracilens A.Gray; S. DI, MF. *JTB-2566*.
Acalypha rhomboidea Raf.; I. DI. *JTB-2649*.
Acalypha virginica L.; I. DI, RI. *JTB-2379*.
Chamaesyce maculata (L.) Small; I. DI, UD. *JTB-2088*.
Chamaesyce nutans (Lag.) Small; R. DI. *JTB-2967*.
**Chamaesyce prostrata* (Aiton) Small; VR. DI. Δ*JTB-3031*.
Croton monanthogynus Michx.; S. DI. *JTB-2360*.
Croton willdenowii G.L.Webster; S. DI. *JTB-2650*.
Euphorbia corollata L.; I. DI. Δ*JTB-1811*.
Euphorbia dentata Michx.; S. CB, DI. Δ*JTB-2385*.
Euphorbia mercurialina Michx.; R. DS, RO. *JTB-1428*.
Phyllanthus caroliniensis Walter; S. DI, WB. Δ*JTB-2999*.

FABACEAE

**Albizia julibrissin* Durazz.; S. DI. Δ*JTB-1871*, Δ*JTB-3714*. Rank 1.
Amorpha fruticosa L.; S. FL. *JTB-1923*.
Amorpha nitens F.E.Boynton; R. CE, DS. *JTB-3566*.
Amphicarpaea bracteata (L.) Fernald; I. DI. *JTB-2941*.
Apios americana Medik.; S. FL. Δ*JTB-2728*.
Astragalus canadensis L.; R. DI. Δ*JTB-3681*.
Centrosema virginianum (L.) Benth.; I. DI, WB. *JTB-2362*.
Chamaecrista fasciculata (Michx.) Greene; S. DI. *JTB-2714*.
Chamaecrista nictitans (L.) Moench; I. DI, MF. *JTB-2410*.
Cercis canadensis L.; I. WB. *JTB-2082*.
Cladrastis kentukea (Dum.Cours.) Rudd; R. DI, SS. Δ*JTB-1883*.
Clitoria mariana L.; S. CPS. *JTB-2317*.
**Coronilla varia* L.; S. DI. Δ*JTB-1973*. Rank 2.
Desmodium canescens (L.) DC.; I. DI, FL. *JTB-2276*.
Desmodium glutinosum (Muhl. ex Willd.) A.W.Wood; I. DS. *JTB-2680*.
Desmodium nudiflorum (L.) DC.; O. CPS, SO/CB. *JTB-2327*.
Desmodium nuttallii (Schindl.) B.G.Schub.; R. DI. Δ*JTB-3016*.
Desmodium obtusum (Muhl. ex Willd.) DC.; R. MS. Δ*JTB-2916*.
Desmodium paniculatum (L.) DC.; S. MF, WB. Δ*JTB-2768*.
Desmodium pauciflorum (Nutt.) DC.; R. WB. Δ*JTB-2350*.
Desmodium rotundifolium DC.; I. APP, DI. *JTB-2442*.
Galactia volubilis (L.) Britton; VR. SS. *JTB-3815*.
Gleditsia triacanthos L.; R. FL. Δ*JTB-3644*.
**Glycine max* (L.) Merr.; VR. MF. Δ*JTB-3823*.
**Kummerowia stipulacea* (Maxim.) Makino; I. DI. *JTB-2748*. Rank 3.
**Lathyrus hirsutus* L.; VR. MF. Δ*JTB-1982*.
**Lathyrus latifolius* L.; S. CPS. Δ*JTB-2193*.
**Lespedeza bicolor* Turcz.; O. DI. Δ*JTB-2518*. Rank 2.
**Lespedeza cuneata* (Dum.Cours.) G.Don; I. DI. Δ*JTB-2610*. Rank 1.
Lespedeza hirta (L.) Hornem.; I. DI, MF. *JTB-2763*.
Lespedeza intermedia (S.Watson) Britton; S. CPS, MF. *JTB-2758*.
Lespedeza repens (L.) W.P.C.Bart.; I. APP, MF. *JTB-2460*.
**Medicago lupulina* L.; I. DI, WB. Δ*JTB-1989*.
**Melilotus alba* Medik.; S. DI, MF. Δ*JTB-1998*, Δ*JTB-3705*. Rank 2.
**Melilotus officinalis* (L.) Pall.; R. DI. Δ*JTB-1905*, Δ*JTB-3702*. Rank 2.
Mimosa microphylla Dryand. ex Sm.; S. DI. *JTB-1563*.
Orbexilum pedunculatum (Mill.) Rydb.; I. DI, DS. *JTB-1886*.
Phaseolus polystachios (L.) Britton, Sterns & Poppenb.; O. CB, MF. *JTB-2398*.
**Pueraria montana* (Lour.) Merr. var. *lobata* (Willd.) Maesen & S.M.Almeida; S. DI. *JTB-2053*. Rank 1.
Rhynchosia tomentosa (L.) Hook. & Arn.; S. DI. *JTB-2396*.
Robinia hispida L.; S. CPS, MF. Δ*JTB-3232*.
Robinia pseudoacacia L.; I. DI, DS. Δ*JTB-1692*.
Senna marilandica (L.) Link; S. DI. Δ*JTB-2615*.
**Senna obtusifolia* (L.) H.S.Irwin & Barneby; R. DI. Δ*JTB-3023*. Rank 3.
Stylosanthes biflora (L.) Britton, Sterns & Poppenb.; I. DI. *JTB-2014*.
Tephrosia virginiana (L.) Pers.; S. DI. Δ*JTB-2039*.
**Trifolium campestre* Schreb.; I. DI. Δ*JTB-1497*.
**Trifolium incarnatum* L.; R. MF. Δ*JTB-1662*.
**Trifolium pratense* L.; I. DI. *JTB-1612*.
**Trifolium repens* L.; I. DI. Δ*JTB-1524*.
Vicia caroliniana Walter; S. DI, DS. Δ*M. Colson 12* (UCHT).
**Vicia sativa* L. ssp. *nigra* (L.) Ehrh.; R. DI. Δ*JTB-1421*.
**Vicia sativa* L. ssp. *sativa*; VR. MF. Δ*JTB-1860*. Rank 2.
**Vicia villosa* Roth ssp. *varia* (Host) Corb.; I. DI, MF. Δ*JTB-1844*.
Wisteria frutescens (L.) Poir.; VR. FL. Δ*JTB-1974*.
**Wisteria sinensis* (Sims) Sweet; S. DI. *JTB-3135*. Rank 2.

FAGACEAE

Castanea dentata (Marshall) Borkh.; R. CPS, DS. *JTB-1669*.
Fagus grandifolia Ehrh.; S. DS. *JTB-1551*.
**Quercus acutissima* Carruth.; VR. MF. Δ*JTB-4403* (TENN).
Quercus alba L.; C. CPS, WB. Δ*A. Couch 98* (UCHT).
Quercus coccinea Münchh.; F. DI. Δ*JTB-2035*.

Quercus falcata Michx.; O. CPS, DI. Δ*JTB-1717*, Δ*JTB-3066*.
Quercus lyrata Walter; VR. FL. *JTB-3755*.
Quercus marilandica Münchh.; S. CPS, SO/CB. Δ*E. Bridges & P. Somers s.n.* (Tennessee River Gorge Trust herbarium).
Quercus michauxii Nutt.; O. DI. *JTB-2218*.
Quercus muehlenbergii Engelm.; F. DI. *JTB-1716*.
Quercus nigra L.; R. WB. *JTB-2237*.
Quercus pagoda Raf.; S. DI. *JTB-1538*.
Quercus montana Willd.; F. CB, DS. *JTB-1592*.
Quercus rubra L.; C. DI, DS. Δ*JTB-2217*.
Quercus stellata Wangenh.; F. DS, WB. Δ*JTB-3730*.
Quercus velutina Lam.; O. CB, CPS. *JTB-1678*.

FUMARIACEAE

Corydalis flavula (Raf.) DC.; R. DI. Δ*JTB-1305*.

GENTIANACEAE

Frasera caroliniensis Walter; S. DS. *JTB-1483*.
Gentiana saponaria L.; R. RI. Δ*JTB-3844*.
Gentiana villosa L.; VR. CPS. *JTB-s.n.* (TENN).
Obolaria virginica L.; VR. DS. *JTB-1379*.
Sabatia angularis (L.) Pursh; S. WB. *JTB-2359*.
Sabatia capitata (Raf.) S.F.Blake; I. CPS, DI, MF. Δ*JTB-2415*. E.

GERANIACEAE

Geranium carolinianum L.; I. DI. Δ*JTB-1420*.
**Geranium dissectum* L.; S. DI. Δ*JTB-1283*.
Geranium maculatum L.; I. DI, MS. *JTB-1393*.

HALORAGACEAE

**Myriophyllum aquaticum* (Vell.) Verdc.; VR. FL. Δ*JTB-3697*. Rank 2.
Proserpinaca palustris L.; S. APP, UD. *JTB-2143*.

HAMAMELIDACEAE

Fothergilla major (Sims) Lodd.; VR. RO. Δ*E. Bridges & P. Somers 76* (Tennessee River Gorge Trust herbarium). T.
Hamamelis virginiana L.; O. RI. Δ*JTB-3090*.
Liquidambar styraciflua L.; I. DS, RI. Δ*JTB-1507*, Δ*JTB-3092*.

HIPPOCASTANACEAE

Aesculus flava Aiton; S. DS. Δ*JTB-1745*.
Aesculus pavia L.; S. DS. A. *Couch 92* (UCHT).

HYDROPHYLLACEAE

Hydrophyllum canadense L.; R. DS. *JTB-1527*.
Hydrophyllum macrophyllum Nutt.; VR. DS. Δ*E. Bridges & P. Somers 262* (Tennessee River Gorge Trust herbarium).
Nemophila aphylla (L.) Brummitt; S. DS, FL. *JTB-1347*.
Phacelia bipinnatifida Michx.; R. DS. *JTB-1338*.
Phacelia dubia (L.) Trel. var. *dubia*; R. DS. Δ*JTB-1554*.

JUGLANDACEAE

Carya cordiformis (Wangenh.) K.Koch; C. FL, SO/CB. *JTB-2569*.
Carya glabra (Mill.) Sweet; C. CPS. *JTB-1850*.
Carya laciniosa (F.Michx.) Loudon; R. FL. Δ*JTB-2221*.
Carya ovalis (Wangenh.) Sarg.; F. DS, WB. Δ*JTB-2076*.
Carya ovata (Mill.) K.Koch var. *australis* (Ashe) Little; S. CE. *JTB-3567*.
Carya pallida (Ashe) Engl. & Graebn.; I. CB. *JTB-2284*.
Carya tomentosa (Poir.) Nutt.; C. RI, WB. *JTB-2017*.
Juglans cinerea L.; VR. DI. Δ*JTB-3627*. T.
Juglans nigra L.; I. DI, FL. Δ*JTB-1638*.

LAMIACEAE

Agastache nepetoides (L.) Kuntze; VR. DI. Δ*JTB-2716*.
Blephilia hirsuta (Pursh) Benth.; R. DI. Δ*JTB-2300*.
**Calamintha nepeta* (L.) Savi; VR. DI. *JTB-2352*.
Collinsonia canadensis L.; S. RI. *JTB-2856*.
Collinsonia tuberosa Michx.; VR. DI. *JTB-3846*
Collinsonia verticillata Baldwin; S. DS. *JTB-1519*.
Cunila origanoides (L.) Britton; S. CPS, SO/CB. Δ*JTB-2029*.
**Glechoma hederacea* L.; S. DI, MF. Δ*JTB-1498*. Rank 3.
Hedeoma pulegioides (L.) Pers.; R. DI, DS. Δ*JTB-2887*.
Isanthus brachiatus (L.) Britton, Sterns & Poppenb.; VR. DI. Δ*JTB-2968*.
**Lamium amplexicaule* L.; S. DI. Δ*JTB-1451*, Δ*JTB-3068*.
**Lamium purpureum* L.; S. DI. Δ*JTB-1286*, Δ*JTB-3070*.
**Leonurus cardiaca* L.; R. FL. Δ*JTB-3797*.
Lycopus americanus Muhl. ex W.P.C.Barton; VR. FL. Δ*JTB-5041* (TENN).
Lycopus virginicus L.; I. APP, UD. *JTB-2537*.
Monarda clinopodia L.; I. DI, DS. *JTB-1922.1*.
Monarda fistulosa L.; S. DI. *JTB-1946*.
**Mosla dianthera* (Buch.-Ham. ex Roxb.) Maxim.; O. CPS. *JTB-2889*.
**Perilla frutescens* (L.) Britton; I. CB. Δ*JTB-2835*.
**Prunella vulgaris* L.; I. DI. Δ*JTB-1898*.
Pycnanthemum loomisii Nutt.; I. CPS, MF. *JTB-2478*.
Pycnanthemum tenuifolium Schrad.; S. CPS, WB. Δ*JTB-2444*.
Salvia lyrata L.; I. CM, DI, DS. Δ*M. Colson 37* (UCHT).
Salvia urticifolia L.; S. MS, WB. *JTB-1653*.
Scutellaria elliptica Muhl. ex Spreng. var. *hirsuta* (Short & Peter) Fernald; O. DI, DS. *JTB-1908*.
Scutellaria incana Biehler var. *punctata* (Chapm.) C.Mohr; VR. SO/CB. Δ*JTB-2282*.
Scutellaria integrifolia L.; I. MF, RI. *JTB-1993*.
Scutellaria lateriflora L.; R. FL. *JTB-2733*.
Scutellaria montana Chapm.; I. DI, DS. *JTB-1922.2*. T, LT.
Scutellaria ovata Hill; R. DS. *JTB-2375*.
Scutellaria parvula Michx. var. *missouriensis* (Torr.) Goodman & Lawson; R. DI. *JTB-1912*.
Scutellaria pseudoserrata Epling; S. DS, WB. *JTB-1909*.
Stachys nuttallii Shuttlew. ex Benth.; S. DI. *JTB-2215*.
Stachys tenuifolia Willd. var. *tenuifolia*; R. FL. Δ*JTB-2692*.
Teucrium canadense L.; S. DI. *JTB-2245*.
Trichostema setaceum Houtt.; VR. DI, SO/CB. *JTB-3851*.

LAURACEAE

Lindera benzoin (L.) Blume; S. DS. *JTB-1309*.
Sassafras albidum (Nutt.) Nees; F. DI, DS. Δ*JTB-1402*, Δ*JTB-3101*, Δ*JTB-3715*.

LINACEAE

Linum intercursum E.P.Bicknell; R. WB. *JTB-2628*.
Linum medium (Planch.) Britton var. *texanum* (Planch.) Fernald; R. CPS. *JTB-2139*.
Linum striatum Walter; I. DI, SS. *JTB-2369*.

LOGANIACEAE

Gelsemium sempervirens (L.) J.St.-Hil.; VR. DS. *JTB-1418*. S.
Spigelia marilandica L.; S. DI. *JTB-1907*.

LYTHRACEAE

Ammannia coccinea Rottb.; R. FL. Δ*JTB-2605*.
Rotala ramosior (L.) Koehne; VR. FL. Δ*JTB-2631*.

MAGNOLIACEAE

Liriodendron tulipifera L.; C. DI, DS, MS. Δ*A. Couch 101* (UCHT), Δ*JTB-3104*.
Magnolia acuminata (L.) L.; S. MS. *JTB-1675*.
Magnolia macrophylla Michx.; S. MS. Δ*JTB-3062*.
Magnolia tripetala L.; R. MS. *JTB-1674*

MALVACEAE

Hibiscus laevis All.; VR. FL. *JTB-2693*.
Hibiscus moscheutos L. ssp. *moscheutos*; R. FL. Δ*JTB-2625*.
**Sida spinosa* L.; I. MF. *JTB-2557*.

MELASTOMATACEAE

Rhexia mariana L. var. *mariana*; I. CPS, UD. *JTB-2440*.
Rhexia virginica L.; I. APP, UD. *JTB-2476*.

MENISPERMACEAE

Calycocarpum lyonii (Pursh) A.Gray; R. DS, FL. *JTB-1951*.
Cocculus carolinus (L.) DC.; S. DI. Δ*JTB-3680*.
Menispermum canadense L.; S. DI, DS. *JTB-1503*.

MOLLUGINACEAE

**Mollugo verticillata* L.; S. DI. Δ*JTB-2567*.

MONOTROPACEAE

Monotropa hypopithys L.; VR. MS. Δ*JTB-2498*.
Monotropa uniflora L.; VR. CPS. *JTB-3871* (TENN).

MORACEAE

**Maclura pomifera* (Raf.) C.K.Schneid.; VR. Fl. *JTB-2259*.
Morus rubra L.; I. DS, MS. Δ*JTB-1687*.

NYSSACEAE

Nyssa sylvatica Marshall var. *sylvatica*; O. RI, WB. Δ*JTB-1851*.

OLEACEAE

Chionanthus virginicus L.; S. DS. Δ*JTB-1696*.
**Forsythia suspensa* (Thunb.) Vahl; VR. OHS. Δ*JTB-1322*.
Fraxinus americana L.; I. FL. *JTB-2687*.
Fraxinus pennsylvanica Marshall; I. DS, FL. Δ*JTB-2001*.
**Ligustrum obtusifolium* Siebold & Zucc.; VR. CPS. Δ*JTB-4684* (TENN).
**Ligustrum sinense* Lour.; O. RI. Δ*JTB-1275*. Rank 1.

ONAGRACEAE

Circaea lutetiana (L.) Asch. & Magnus ssp. *canadensis* (L.) Asch. & Magnus; S. RI, SS. *JTB-2150*.
Gaura filipes Spach; R. WB. *JTB-3801*.
Ludwigia alternifolia L.; I. DI, UD. *JTB-2425*.
Ludwigia decurrens Walter; VR. FL. Δ*JTB-2740*.
Ludwigia leptocarpa (Nutt.) H.Hara; R. FL. *JTB-2903*.
Ludwigia palustris (L.) Elliott; S. FL. *JTB-2005*.
Ludwigia peploides (Kunth) P.H.Raven ssp. *glabrescens* (Kuntze) Shinners; VR. FL. Δ*JTB-3699*.
Oenothera biennis L.; I. DI. Δ*JTB-1947*, Δ*JTB-3707*.
Oenothera fruticosa L. ssp. *fruticosa*; S. CPS, WB. *JTB-1994*.
Oenothera fruticosa L. ssp. *glauca* (Michx.) Straley; VR. DI. Δ*JTB-3641*.
Oenothera laciniata Hill; VR. MF. Δ*JTB-2560*.

OROBANCHACEAE

Conopholis americana (L.) Wallr.; I. DS, MS. Δ*JTB-1395*.
Epifagus virginiana Bärl.; VR. DS. *JTB-1356*.

OXALIDACEAE

Oxalis grandis Small; S. CPS, DS. *JTB-1589*.
Oxalis stricta L.; I. DS, MF. *JTB-1637*.
Oxalis violacea L.; S. DS. *JTB-1430*.

PAPAVERACEAE

Sanguinaria canadensis L.; R. DS. Δ*JTB-1310*.

PASSIFLORACEAE

Passiflora incarnata L.; R. DI. *JTB-2013*.
Passiflora lutea L.; VR. DI. *JTB-2025*.

PHRYMACEAE

Phryma leptostachya L.; S. DS. *JTB-2228*.

PHYTOLACCACEAE

Phytolacca americana L.; S. DI, WB. Δ*JTB-1866*, Δ*JTB-3722*.

PLANTAGINACEAE

Plantago aristata Michx.; S. DI. Δ*JTB-2363*.
**Plantago lanceolata* L.; I. DI. Δ*JTB-1573*.
Plantago rugelii Decne.; S. CPS. Δ*JTB-2181.1*.
Plantago virginica L.; I. DI. *JTB-1474*.

PLATANACEAE

Platanus occidentalis L.; S. DI. Δ*JTB-1647*.

POLEMONIACEAE

Phlox amoena Sims; I. CPS, DI. *JTB-1657*.
Phlox amplifolia Britton; R. SS. *JTB-2426*.
Phlox divaricata L.; I. DS. *JTB-1332*.
Phlox glaberrima L.; S. DI. *JTB-1919*.
**Phlox nivalis* Lodd. ex Sweet; R. CM. Δ*JTB-2102*.

POLYGALACEAE

Polygala ambigua Nutt.; S. DI, WB. Δ*JTB-2203*.
Polygala curtissii A.Gray; I. MF, WB. *JTB-2420*.
Polygala incarnata L.; VR. WB. Δ*JTB-2419*.

POLYGONACEAE

**Fagopyrum esculentum* Moench; R. MF. Δ*JTB-2034*.
**Fallopia japonica* (Houtt.) Ronse Decr.; I. WB. *JTB-3025*. Rank 1.
Fallopia scandens (L.) Holub; S. CB, DI. Δ*JTB-2823*, Δ*JTB-3026*.
Persicaria hydropiperoides (Michx.) Small; R. APP, FL. *JTB-2471*.
**Persicaria maculosa* A.Gray; I. CPS, DI. *JTB-2364*. Rank 3.

Persicaria punctata (Elliott) Small; S. CB, DI. *JTB-2831*.
Persicaria sagittata (L.) H.Gross; VR. CB. Δ*JTB-2839*.
Persicaria setacea (Baldwin) Small; O. CB, DI. Δ*JTB-2840*.
Persicaria virginiana (L.) Gaertner; R. DS. *JTB-2645*.
Polygonum aviculare L.; S. DI. Δ*JTB-2306*, Δ*JTB-3720*.
Polygonum tenue Michx.; VR. SO/CB. *JTB-s.n.* (TENN).
**Rumex acetosella* L.; S. CPS, MF. Δ*JTB-1786*.
**Rumex conglomeratus* Murray; R. DI. *JTB-2222*.
**Rumex crispus* L.; S. APP, DI. Δ*JTB-1812*.
**Rumex obtusifolius* L.; VR. MF. Δ*JTB-2491*.

PORTULACACEAE

Claytonia virginica L.; R. DS. *JTB-1464*.
Phemeranthus mengesii (W.Wolf) Kiger; VR. SO/CB. *G.S. Van Horn 2056*. T.
**Portulaca oleracea* L.; R. DI. Δ*JTB-2948.1*.

PRIMULACEAE

Dodecatheon meadia L.; VR. CB. Δ*JTB-1600*.
Lysimachia fraseri Duby; VR. DS. Δ*JTB-2174*. E.
Lysimachia lanceolata Walter; S. CPS, DI. *JTB-2154*.
**Lysimachia nummularia* L.; S. FL. Δ*JTB-2724*. Rank 2.
Lysimachia quadrifolia L.; I. DS, SS. Δ*E. Bridges & P. Somers 402* (Tennessee River Gorge Trust herbarium).
Lysimachia tonsa (A.W.Wood) R.Knuth; I. DI, DS. *JTB-2064*.
Samolus valerandi L. ssp. *parviflorus* (Raf.) Hultén; R. FL. Δ*JTB-2002*.

PYROLACEAE

Chimaphila maculata (L.) Pursh; O. CPS, MS. *JTB-1360*.

RANUNCULACEAE

Actaea pachypoda Elliott; R. MS. Δ*JTB-1486*.
Anemone quinquefolia L.; VR. DS. *E. Bridges & P. Somers 65* (Tennessee River Gorge Trust herbarium).
Anemone virginiana L.; S. DI, DS. *JTB-1902*.
Cimicifuga racemosa (L.) Nutt.; S. DI, WB. *JTB-2225*.
**Clematis terniflora* DC.; I. FL. Δ*JTB-2729*. Rank 2.
Clematis viorna L.; S. DI, DS. Δ*JTB-2216*.
Clematis virginiana L.; S. MF. Δ*JTB-2464*.
Delphinium tricorne Michx.; R. DS. *S. Newland 17* (UCHT).
Hepatica nobilis Mill. var. *acuta* (Pursh) Steyerm.; I. DS. *JTB-1303*.
Hydrastis canadensis L.; VR. MS. Δ*E. Bridges & P. Somers 716* (Tennessee River Gorge Trust herbarium). S-CE.
Ranunculus abortivus L.; S. SS. *JTB-1378*.
**Ranunculus bulbosus* L.; S. DI, MF. Δ*JTB-1496*.
Ranunculus hispidus Michx. var. *hispidus*; I. CPS, DI, DS. *JTB-1346*.
Ranunculus recurvatus Poir.; S. RI. *JTB-1414*.
**Ranunculus sardous* Crantz; S. DI. Δ*JTB-2049*.
Thalictrum clavatum DC.; VR. RI. *JTB-2062*.
Thalictrum dioicum L.; S. SS. *JTB-1343*.
Thalictrum revolutum DC.; S. RI, WB. Δ*JTB-1856*.
Thalictrum thalictroides (L.) Eames & B.Boivin; I. DS. *JTB-1297*.
Xanthorhiza simplicissima Marshall; I. DS, RI. *JTB-1329*.

RHAMNACEAE

Berchemia scandens (Hill) K.Koch; R. DI. *JTB-1469*.
Ceanothus americanus L.; I. DI. *JTB-1891*.
Frangula caroliniana (Walter) A.Gray; S. DS, WB. *JTB-1706*.

ROSACEAE

Agrimonia pubescens Wallr.; I. DI, MF. *JTB-2387*.
Agrimonia rostellata Wallr.; I. MS. *JTB-2661*.
Amelanchier arborea (F.Michx.) Fernald; O. DI, DS. *JTB-1350*.
Amelanchier sanguinea (Pursh) DC.; VR. DS. *E. Bridges & P. Somers s.n.* (Tennessee River Gorge Trust herbarium). T.
Aruncus dioicus (Walter) Fernald; R. DI. *JTB-2051*.
**Chaenomeles speciosa* (Sweet) Nakai; VR. OHS. Δ*JTB-1324*.
Crataegus crus-galli L.; R. FL. Δ*JTB-1642*.
Crataegus flabellata (Bosc ex Spach) Rydb.; R. DI. Δ*JTB-2992*.
!*Crataegus marshallii* Eggl.; VR. CPS.
Crataegus spathulata Michx.; VR. CPS. *JTB-2182*.
**Duchesnea indica* (Andr.) Focke; R. DI. Δ*JTB-1300*.
Fragaria virginiana Duchesne; VR. DI. Δ*JTB-3857* (TENN).
Geum canadense Jacq.; I. CPS, FL. Δ*JTB-2261*.
Malus angustifolia (Aiton) Michx.; F. CPS, DI. *JTB-1454*.
Malus coronaria (L.) Mill.; VR. CPS. Δ*JTB-2194*.
Photinia melanocarpa (Michx.) K.R.Robertson & J.B.Phipps; R. WB. *JTB-1349*.
Porteranthus stipulatus (Muhl. ex Willd.) Britton; R. DS. *JTB-1684*.
Porteranthus trifoliatus (L.) Britton; R. DS. *JTB-1864*.
Potentilla canadensis L.; I. WB. Δ*JTB-1477*.
**Potentilla recta* L.; S. DI. Δ*JTB-1917*.
Potentilla simplex Michx. var. *simplex*; I. DS, FL. *JTB-3210*.
Prunus americana Marshall; VR. FL. *JTB-3687*.
**Prunus cerasus* L.; VR. DI. Δ*JTB-s.n.* (TENN).
**Prunus mahaleb* L.; VR. DS. Δ*JTB-3125*.
Prunus mexicana S.Watson; VR. CE. *JTB-6180* (TENN).
**Prunus persica* (L.) Batsch; VR. DI, FL. Δ*JTB-3186*.
Prunus serotina Ehrh.; F. CPS, FL, WB. Δ*JTB-3725*.
Rosa carolina L.; S. DI, WB. *JTB-1901*.
**Rosa multiflora* Thunb. ex Murray; O. DI, SS. Δ*JTB-1711*. Rank 1.
Rosa palustris Marshall; VR. FL. *JTB-3692*.
Rubus allegheniensis Porter; F. SO/CB. Δ*JTB-2290*.
Rubus argutus Link; O. DI, WB. *JTB-1689*.
Rubus flagellaris Willd.; S. WB. *JTB-2893*.
Rubus occidentalis L.; I. DS. Δ*JTB-2200*.
**Rubus phoenicolasius* Maxim.; R. DI. *JTB-1816*. Rank 3.
**Spiraea japonica* L.f.; VR. CPS. *JTB-4685* (TENN). Rank 1.
**Spiraea prunifolia* Siebold & Zucc.; VR. WB. Δ*JTB-1326*.
**Spiraea thunbergii* Siebold ex Blume; R. WB. Δ*JTB-1388*.
Waldsteinia fragarioides (Michx.) Tratt.; R. DS. Δ*JTB-3111*.

RUBIACEAE

Cephalanthus occidentalis L.; S. UD. *JTB-2112*.
Diodia teres Walter; O. DI, MF, WB. Δ*JTB*-3712.
Diodia virginiana L.; I. DI, UD. Δ*JTB-2307*.
Galium aparine L.; O. DI, SO/CB. Δ*JTB-1403*.
Galium circaezans Michx.; O. DS, SS. *JTB-2089*.
Galium lanceolatum Torr.; VR. DS. *JTB-4647* (TENN).
Galium latifolium Michx.; I. CPS, DS. *JTB-2130*.
Galium obtusum Bigelow; S. FL. *JTB-2003*.

Galium pilosum Aiton; O. CPS, DI, FL. Δ*JTB-2271*.
Galium tinctorium L.; S. FL, UD. *JTB-1952*.
Galium triflorum Michx.; R. DS. Δ*JTB-2233*.
Galium uniflorum Michx.; VR. DS. ***JTB-2354*. S.
Houstonia caerulea L.; I. DS, RI, SO/CB. Δ*JTB-3100*.
Houstonia canadensis Willd. ex Roem. & Schult.; VR. SO/CB. *JTB-6169* (TENN).
Houstonia longifolia Gaertn.; S. SO/CB. *JTB-1602*.
!*Houstonia purpurea* L. var. *calycosa* A.Gray; VR. CE.
Houstonia purpurea L. var. *purpurea*; I. DI, RI. *JTB-1628*.
Mitchella repens L.; F. DS, MS. Δ*JTB-3075*.
!**Sherardia arvensis* L.; VR. DI.

RUTACEAE

**Poncirus trifoliata* (L.) Raf.; VR. CE. Δ*JTB-3117*.
Ptelea trifoliata L.; VR. DI. Δ*JTB-3854* (TENN).

SALICACEAE

Populus deltoides W.Bartram ex Marshall.; S. DI, RI. Δ*JTB-2370*.
**Salix babylonica* L.; R. DI. Δ*JTB-3029*.
Salix caroliniana Michx.; R. DI. Δ*JTB-3653*.
Salix nigra Marshall; I. FL. *JTB-1840*.

SANTALACEAE

Comandra umbellata (L.) Nutt.; VR. DI. Δ*E. Bridges & P. Somers 33* (Tennessee River Gorge Trust herbarium).

SAPOTACEAE

Sideroxylon lycioides L.; VR. CE. *JTB-3566*.

SAURURACEAE

Saururus cernuus L.; R. FL. *JTB-1944*.

SAXIFRAGACEAE

Astilbe biternata (Vent.) Britton; S. DI, MS. *JTB-1742*.
Decumaria barbara L.; R. DI. Δ*JTB-2210*.
Heuchera americana L.; I. DS. *JTB-1587*.
Heuchera parviflora Bartl.; I. CB. Δ*JTB-3058*.
Heuchera villosa Michx. var. *villosa*; R. CB. Δ*JTB-1884*.
Hydrangea arborescens L.; R. RI. *JTB-2212*.
Hydrangea cinerea Small; S. CB, DI. *JTB-2043*.
Itea virginica L.; I. RI. Δ*JTB-3103*.
Penthorum sedoides L.; VR. FL. *JTB-1945*.
Philadelphus hirsutus Nutt.; S. CB, DS. *JTB-1595*.
Philadelphus inodorus L.; I. FL. *JTB-1731*.
Saxifraga careyana A.Gray; VR. SO/CB. *A.M. Evans & E. Schell 4319* (TENN).
Saxifraga virginiensis Michx.; I. CB. *JTB-1597*.
Tiarella cordifolia L.; I. RI. *JTB-1321*.

SCROPHULARIACEAE

Agalinis gattingeri (Small) Small; S. SO/CB. *JTB-3858*.
Agalinis tenuifolia (Vahl.) Raf.; S. DI, DS. *JTB-3849*.
Aureolaria patula (Chapm.) Pennell; VR. DI. Δ*JTB-2940*. T.
Aureolaria pectinata (Nutt.) Pennell; R. CPS, WB. *JTB-3658*.
Aureolaria virginica (L.) Pennell; S. DI. *JTB-2429*.
Chelone lyonii Pursh; R. DI. *JTB-2928*.
Gratiola virginiana L.; I. RI, SS. *JTB-1627*.
Leucospora multifida (Michx.) Nutt.; VR. MF. *JTB-2638*.
Linaria canadensis (L.) Dum.Cours.; R. MF. *JTB-3238*.
Lindernia dubia (L.) Pennell var. *dubia*; I. APP, DI. Δ*JTB-2958*, Δ*JTB-2998*.
Mecardonia acuminata (Walter) Small; S. WB. Δ*JTB-2816*.
Mimulus alatus Aiton; R. SS. *JTB-2547*.
Mimulus ringens L.; VR. FL. Δ*JTB-2685*.
**Paulownia tomentosa* (Thunb.) Steud.; F. DI, RI. Δ*JTB-1288*, Δ*JTB-3067*, Δ*JTB-3110*. Rank 1.
Pedicularis canadensis L.; I. DI. *JTB-1439*.
Penstemon canescens (Britton) Britton; I. DI. *JTB-3559*.
Penstemon pallidus Small; S. WB. Δ*JTB-3273*.
**Verbascum blattaria* L.; S. DI. *JTB-1829*.
**Verbascum thapsus* L.; S. DI. Δ*JTB-1986*. Rank 2.
**Veronica arvensis* L.; S. DI, RI. Δ*JTB-1399*.
**Veronica hederifolia* L.; I. DI. Δ*JTB-1314*.
**Veronica officinalis* L.; VR. CPS. Δ*JTB-2809*.
**Veronica peregrina* L.; S. DI, UD. Δ*JTB-1423*.
**Veronica serpyllifolia* L.; VR. DI. Δ*E. Bridges et al. 464* (Tennessee River Gorge Trust herbarium).

SIMAROUBACEAE

**Ailanthus altissima* (Mill.) Swingle; O. DI. Δ*JTB-1721*. Rank 1.

SOLANACEAE

**Datura stramonium* L.; I. DI. Δ*JTB-2563*, Δ*JTB-3033*.
Physalis heterophylla Nees; I. CPS, MF. *JTB-2639*.
Physalis longifolia Nutt. var. *subglabrata* (Machenzie & Bush) Cronquist; I. DI. *JTB-2909*.
Physalis pubescens L. var. *integrifolia* (Dunal) Waterf.; VR. MF. Δ*JTB-3792*.
Solanum carolinense L.; I. DI, MF. Δ*JTB-1990*.
**Solanum lycopersicum* L. var. *lycopersicum*; VR. DI, FL. Δ*JTB-2732*.
Solanum ptychanthum Dunal; I. CB. Δ*JTB-3039*.
**Solanum rostratum* Dunal; R. DI. Δ*JTB-2512*.

STAPHYLEACEAE

Staphylea trifolia L.; S. DS. *JTB-1528*.

STYRACACEAE

Halesia tetraptera J.Ellis; S. DS, FL. *JTB-1412*.
Styrax grandifolia Aiton; VR. DS. *M. Pyne & B. Bowen 94-120* (Tennessee River Gorge Trust herbarium).

TILIACEAE

Tilia americana L. var. *heterophylla* (Vent.) Loudon; R. DS. *JTB-1515*.

ULMACEAE

Celtis laevigata Willd.; O. FL. *JTB-1535*.
Celtis occidentalis L.; R. FL. Δ*JTB-s.n.* (TENN).
Celtis tenuifolia Nutt.; R. DS. *JTB-3183*.
Ulmus alata Michx.; C. DS, SO/CB. Δ*JTB-1543*.
Ulmus americana L.; R. FL. Δ*JTB-3119*.
Ulmus rubra Muhl.; O. DS. Δ*JTB-2199*.

URTICACEAE

Boehmeria cylindrica (L.) Sw.; I. APP, SS. Δ*JTB-1805*.
Laportea canadensis (L.) Wedd.; S. DS. Δ*JTB-1408*.
Parietaria pensylvanica Muhl. ex Willd.; R. CB. *JTB-2288*.
Pilea pumila (L.) A.Gray; S. RI. Δ*JTB-2230*.

VALERIANACEAE

**Valerianella locusta* (L.) Betcke; S. DI. Δ*JTB-1522*.

Valerianella radiata (L.) Dufr.; S. DI, MF. *JTB-1417*.

VERBENACEAE

Callicarpa americana L.; S. CB, DS. *JTB-2275*.
Phyla lanceolata (Michx.) Greene; I. FL. Δ*JTB-2301*.
**Verbena brasiliensis* Velloso; R. DI. Δ*JTB-2080*.
Verbena simplex Lehm.; I. DI. Δ*JTB-1900*.
Verbena urticifolia L.; I. DI. Δ*JTB-3700*.

VIOLACEAE

Hybanthus concolor (T.F.Forst.) Spreng.; VR. DS. Δ*JTB-1529*.
**Viola arvensis* Murray; VR. DI. *JTB-4419* (TENN).
Viola bicolor Pursh; I. DS. *JTB-1306*.
Viola blanda Willd.; S. DS, RI. *JTB-1574*.
Viola canadensis L.; R. DS. *JTB-1365*.
Viola cucullata Aiton; S. DS. Δ*JTB-1366*.
Viola hastata Michx.; O. DS, MS. *JTB-1398*.
Viola hirsutula Brainerd; R. DS, MS. *JTB-1396*.
Viola palmata L.; O. CPS, DS. *JTB-1432*.
Viola pedata L.; S. DI. *JTB-1448*.
Viola ×*primulifolia* L.; I. RI, WB. *JTB-1476*.
Viola rostrata Pursh; S. DS. *JTB-1313*.
Viola sagittata Aiton var. *sagittata*; I. DI, WB. *JTB-1478*.
Viola sororia Willd.; O. DI. *JTB-3189*.
Viola tripartita Elliott var. *glaberrima* (DC.) R.M.Harper; VR. MS. *JTB-1667*.
Viola tripartita Elliott var. ***tripartita***; R. MS, RI. *JTB-1381*. S.

VISCACEAE

Phoradendron leucarpum (Raf.) Reveal & M.C.Johnst.; S. FL. *JTB-1272*.

VITACEAE

Ampelopsis cordata Michx.; F. DI. *JTB-2242*.
Parthenocissus quinquefolia (L.) Planch.; O. MS. Δ*JTB-1495*, Δ*JTB-3129*.
Vitis aestivalis Michx. var. *aestivalis*; I. CB, DI. *JTB-1890*.
Vitis labrusca L.; R. APP, CPS. Δ*JTB-2191*, Δ*JTB-2456*.
Vitis palmata Vahl; VR. DI. Δ*JTB-2927*.
Vitis rotundifolia Michx.; F. DS. *JTB-1504*.
Vitis vulpina L.; S. RI. *JTB-2630*.

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LITERATURE CITED

Bailey, L.H. 1949. Manual of cultivated plants. MacMillan Company, New York, New York.

Beck, J.T. 2000. The vascular flora of Prentice Cooper State Forest and Wildlife Management Area, Tennessee. M.S. thesis, The University of Tennessee, Chattanooga, Tennessee.

Beck, J.T. 2005. Noteworthy Collections. Castanea 70:314–316.

Braun, E.L. 1950. Deciduous forests of eastern North America. The Blakiston Company, Philadelphia, Pennsylvania.

Brummit, R.K. and C.E. Powell. 1992. Authors of plant names. Royal Botanical Gardens, Kew, Great Britain.

Chester, E.W., H.R. Deselm, B.E. Wofford, A.M. Evans, and R. Kral. 1993. Atlas of Tennessee vascular plants. Volume 1. Pteridophytes, Gymnosperms, Angiosperms: Monocots. Misc. Pub. No. 9. Center for Field Biology, Austin Peay State University, Clarksville, Tennessee.

Chester, E.W., B.E. Wofford, and R. Kral. 1997. Atlas of Tennessee vascular plants. Volume 2. Angiosperms: Dicots. Misc. Publ. No. 13. Center for Field Biology, Austin Peay State University, Clarksville, Tennessee.

Clements, R.K. and B.E. Wofford. 1991. The vascular flora of Wolf Cove, Franklin County, Tennessee. Castanea 56:268–286.

Cronquist, A.J. 1980. Vascular flora of the southeastern United States. Volume 1. Asteraceae. The University of North Carolina Press, Chapel Hill, North Carolina.

Elder, J.A., K.Y. Ernest, and B.E. Irvin. 1958. Soil survey of Marion County, Tennessee. United States Department of Agriculture Soil Conservation Service, Washington, District of Columbia.

Fenneman, N.M. 1938. Physiography of eastern United States. McGraw-Hill Book Co., Inc., New York, New York.

FERNALD, M.L. 1950. Gray's manual of botany. 8th ed. American Book Company, New York, New York.
FLEMING, C.A. and B.E. WOFFORD. 2004. The vascular flora of Fall Creek Falls State Park, Van Buren and Bledsoe Counties, Tennessee. Castanea 69:164–184.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 1993. Flora of North America, north of Mexico. Volume 2. Pteridophytes and Gymnosperms. Oxford University Press, Inc., New York, New York.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 1997. Flora of North America, north of Mexico. Volume 3. Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Inc., New York, New York.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 2000. Flora of North America, north of Mexico. Volume 22. Magnoliophyta: Alismatidae, Arecidae, Commelinidae (in part), and Zingiberidae. Oxford University Press, Inc., New York, New York.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 2003a. Flora of North America, north of Mexico. Volume 23. Magnoliophyta: Commelinidae (in part): Cyperaceae. Oxford University Press, Inc., New York, New York.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 2003b. Flora of North America, north of Mexico. Volume 26. Magnoliophyta: Liliidae: Liliales and Orchidales. Oxford University Press, Inc., New York, New York.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 2004. Flora of North America, north of Mexico. Volume 4. Magnoliophyta: Caryophyllidae, part 1. Oxford University Press, Inc., New York, New York.
FLORA OF NORTH AMERICA EDITORIAL COMMITTEE. 2005. Flora of North America, north of Mexico. Volume 5. Magnoliophyta: Caryophyllidae, part 2. Oxford University Press, Inc., New York, New York.
GLEASON, H.A. and A. CRONQUIST. 1991. Manual of vascular plants of northeastern United States and adjacent Canada, 2nd ed. New York Botanical Garden, Bronx, New York.
GODFREY, R.K. and J.W. WOOTON. 1979. Aquatic and wetland plants of southeastern United States: monocotyledons. The University of Georgia Press, Athens, Georgia.
GODFREY, R.K. and J.W. WOOTON. 1981. Aquatic and wetland plants of southeastern United States: dicotyledons. The University of Georgia Press, Athens, Georgia.
HINKLE, C.R. 1989. Forest communities of the Cumberland Plateau in Tennessee. J. Tennessee Acad. Sci. 64:123–129.
HITCHCOCK, A.S. 1971. Manual of grasses of the United States, 2nd ed., A. Chase (rev.). Volumes I and II. Dover Publications, Inc., New York, New York.
ISELY, A. 1990. Vascular flora of the southeastern United States. Volume III. Part 2. Leguminosae (Fabaceae). The University of North Carolina Press, Chapel Hill, North Carolina.
JACKSON, W.B. 1982. Soil survey of Hamilton County, Tennessee. United States Department of Agriculture Soil Conservation Service, Washington, D.C.
MAHLER, W.F. 1970. Manual of the legumes of Tennessee. J. Tennessee Acad. Sci. 45:65–96.
MURRELL, Z.E. and B.E. WOFFORD. 1987. Floristics and phytogeography of Big Frog Mountain, Polk County, Tennessee. Castanea 52:262–290.
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA). 1974. Officials of the National Oceanic and Atmospheric Administration, United States Department of Commerce. Climatological data from 1931–1955. National Climatic Data Center (NCDC), Asheville, North Carolina.
RADFORD, A.E., H.E. AHLES, and C.R. BELL. 1968. Manual of the vascular flora of the Carolinas. The University of North Carolina Press, Chapel Hill, North Carolina.
RAMSEY, G.W., C.H. LEYS, R. WRIGHT, D.A. COLEMAN, A.O. NEAS, and C. STEVENS. 1993. Vascular flora of the James River Gorge watersheds in the central Blue Ridge Mountains of Virginia. Castanea 58:260–300.
RESEARCH COMMITTEE OF THE TENNESSEE EXOTIC PEST PLANT COUNCIL. 1996. Invasive Exotic Pest Plants in Tennessee. Developed by the Research Committee of the Tennessee Exotic Pest Plant Council.
SCHMALZER, P.A., T.S. PATRICK, and H.R. DESELM. 1985. Vascular flora of the Obed Wild and Scenic River, Tennessee. Castanea 50:71–88.
SMITH, R.L. 1992. Elements of ecology, 3rd ed. Harper Collins, West Virginia University, Morgantown, West Virginia.
SNEATH, P.H.A. and R.R. SOKAL. 1973. Numerical taxonomy: the principles and practice of numerical classification. W.H. Freeman and Co., San Francisco, California.
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC). 2004. Tennessee Natural Heritage Program rare plant list. Nashville, Tennessee.
TENNESSEE DIVISION OF GEOLOGY. 1979. Geology of Hamilton County, Tennessee. Bulletin, 79.
THE UNIVERSITY OF TENNESSEE HERBARIUM (TENN). 2003. Online atlas of the vascular plants of Tennessee (http://tenn.bio.utk.edu/vascular). The University of Tennessee, Knoxville, Tennessee.
UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE. 2004. The PLANTS Database (http://plants.usda.gov). National Plant Data Center, Baton Rouge, Louisiana.

VAN HORN, G.S. 1981. A checklist of the vascular plants of Chickamauga and Chattanooga National Military Park. J. Tennessee Acad. Sci. 56:92–99.
WOFFORD, B.E. and R. KRAL. 1993. Checklist of the vascular plants of Tennessee. Sida Bot. misc. no. 10.
WOFFORD, B.E., T.S. PATRICK, L.R. PHILLIPPE, and D.H. WEBB. 1979. The vascular flora of Savage Gulf, Tennessee. Sida 8:135–151.
WUNDERLIN, R.P. 1998. Guide to the vascular plants of Florida. University Press of Florida, Gainesville, Florida.

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