Thesis
LB
2322
.A9x
T-666

THE VASCULAR FLORA OF THE TENNESSEE NATIONAL WILDLIFE REFUGE'S DUCK RIVER UNIT, HUMPHREYS COUNTY, TENNESSEE

STEPHANIE M. GUNN

To the Graduate Council:

I am submitting herewith a thesis written by Stephanie M. Gunn entitled "The Vascular Flora of the Tennessee National Wildlife Refuge's Duck River Unit, Humphreys County, Tennessee." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Biology.

Edward W. Chester, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:

Dean of the Graduate School

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a Master's degree at Austin Peay State University, I agree that the Library shall make it available to borrowers under rules of the Library. Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of the source is made.

Permission for extensive quotation from or reproduction of this thesis may be granted by my major professor, or in his absence, by the Head of Interlibrary Services when, in the opinion of either, the proposed use of the material is for scholarly purposes. Any copying or use of the material in this thesis for financial gain shall not be allowed without my written permission.

Signature Stephanie M. Hunn

Date 03-27-03

THE VASCULAR FLORA OF THE TENNESSEE NATIONAL WILDLIFE REFUGE'S DUCK RIVER UNIT, HUMPHREYS COUNTY, TENNESSEE

A Thesis

Presented for the

Master of Science

Degree

Austin Peay State University

Stephanie M. Gunn

May 2003

Copyright © Stephanie M. Gunn, 2003
All rights reserved

ACKNOWLEDGMENTS

Appreciation is extended to the staff of the Tennessee National Wildlife Refuge for their help during this study. Robert Wheat, Wildlife Biologist, was especially helpful in obtaining the Federal-lands collecting permit. I extend gratitude to the Center for Field Biology at Austin Peay State University for financial support. I especially thank Dr. Edward W. Chester, major professor, for his field assistance and mentorship throughout my project. Committee members Drs. Willodean Burton and Don Dailey provided invaluable assistance and insight. I also thank Susan Fletcher for her time and help on some of the collecting trips made to the Duck River Unit. Without the help of these people the completion of my research project would have been impossible.

ABSTRACT

The Tennessee National Wildlife Refuge's Duck River Unit, managed by the U.S. Fish and Wildlife Service, includes 10,817 ha, mostly within Humphreys County, Tennessee. The Refuge is mostly bottomland and includes portions of the former flood plains of the Tennessee and Duck rivers. Twelve pools with variable water levels and shorelines, wildlife plantings, fields under moist soil management and agricultural production, and a few secondary forests are found in the bottomlands. Uplands with secondary forests, bluffs and outcrops, successional fields, home sites, and cemeteries add to habitat diversity. Forty-seven trips were made to the Refuge from May 2001 through November 2002 to inventory the vascular flora. As now known, the flora includes 95 families, 403 genera, and 699 species. Over one-half of the species encountered were county records, and one *(Echinochloa walteri* (Pursh) Heller) was a state record. Introduced taxa (118) constitute 16.9 percent of the flora; 145 taxa (20.7 percent) are woody. The Asteraceae is the largest family (84 taxa), followed by Poaceae (81), Cyperaceae and Fabaceae (42 each), Lamiaceae (24), Scrophulariaceae (19), Rosaceae (18), and Fagaceae (17). *Carex* is the largest genus (21 species), followed by *Quercus* (16), *Cyperus* and *Solidago* (9 each), and *Desmodium*, *Eupatorium*, and *Polygonum* (8 each). Six taxa are on the Tennessee elements of concern list: *Echinochloa walteri* (Pursh) Heller (special concern), *Heteranthera limosa* (Sw.) Willd. (endangered), *Liparis loeselii* (L.) Rich. (endangered), *Sagittaria brevirostra* Mack. & Bush (threatened), *Scirpus fluviatilis* (Torr.) A. Gray (special concern), and *Spiranthes odorata* (Nutt.) Lindl. (endangered).

TABLE OF CONTENTS

CHAPTER PAGE

I. INTRODUCTION 1

The Tennessee National Wildlife Refuge 2
The Duck River Unit of the Tennessee National Wildlife Refuge 4
Location and Description 8
Soils 8
Present Land Use 10
History 10

II. METHODS AND MATERIALS 12

III. RESULTS AND DISCUSSION 14

Floristic Analyses 14
Rare Taxa 15
Plant Communities/Habitats 17
Wetland Species 20

LITERATURE CITED 23

APPENDIX 28

VITA 60

CHAPTER I

INTRODUCTION

The U.S. National Wildlife Refuge System was established in 1903 by President Theodore Roosevelt; more than 500 refuges, totaling over 37 million ha (93 million a), have been established, all under control and management of the U.S. Fish and Wildlife Service (Gove 2000). There are four refuges in Tennessee, but only two, the Reelfoot Lake National Wildlife Refuge Complex (including the Hatchie River, Lake Isom, and Reelfoot Lake) and the Cross Creeks National Wildlife Refuge, have had extensive floristic studies (Guthrie 1989; Henson 1990; Joyner and Chester 1994). The floras of the other two, the Tennessee National Wildlife Refuge and Chickasaw National Wildlife Refuge, mostly remain botanically unknown. Riley and Riley (1979) and Dutton and Thomas (1990) pointed out the great diversity, richness, and the need for botanical studies in refuges.

This study provides an inventory and analyses of the vascular flora of the Duck River Unit of the Tennessee National Wildlife Refuge in Humphreys County, Tennessee.

The objectives of this study are to:

(1) determine as completely as possible all vascular flora within the Refuge;

(2) qualitatively estimate abundance of all taxa;

(3) record exotic and invasive taxa;

(4) record federal and/or state listed taxa

(5) determine the wetland indicator status for each species, based on criteria of the U.S. Fish and Wildlife Service (1996);

(6) distinguish habitat/community types within the Refuge, mostly based on the wetland classification system for the Tennessee Valley Region (Carter and Burbank 1978) and assign taxa to one or more types.

The Tennessee National Wildlife Refuge

The Tennessee National Wildlife Refuge (hereafter as TNWR or the Refuge), with an area of 20,783 ha (51,358 a), was established in 1945 by President Harry Truman under Executive Order Number 9670 (Riley and Riley 1979). The TNWR includes 10,190 ha (25,180 a) of rivers, streams, and pools, 7,608 ha (18,800 a) of various timber (primarily upland hardwood), 1,214 ha (3,000 a) of farmland, 1,317 ha (3,254 a) of seasonally flooded basins, and 309 ha (764 a) of miscellaneous lands (U.S. Fish and Wildlife Service 2000). The Tennessee Valley Authority controls water levels of the large impoundments (Kentucky Lake, the impounded Tennessee River, and the lower Duck and Big Sandy rivers) that make up much of its area.

Three units make up the TNWR: Big Sandy, Duck River, and Busseltown (Figure 1). These units occur in four counties: Benton, Decatur, Henry, and Humphreys. In 1994, 46 ha (113 a) of land in Warren County was added to the Refuge. Management goals are to: 1) provide habitat for migratory birds and other wildlife; 2) provide habitat and protection for endangered species; and 3) provide recreation and environmental education opportunities for the public (U.S. Fish and Wildlife Service 2000).

The TNWR is home to 291 species of birds, 51 species of mammals, 89 species of reptiles and amphibians, and 142 species of fish. Its units encompass many seasonally flooded wetlands that serve as a wintering area for migratory birds and waterfowl,

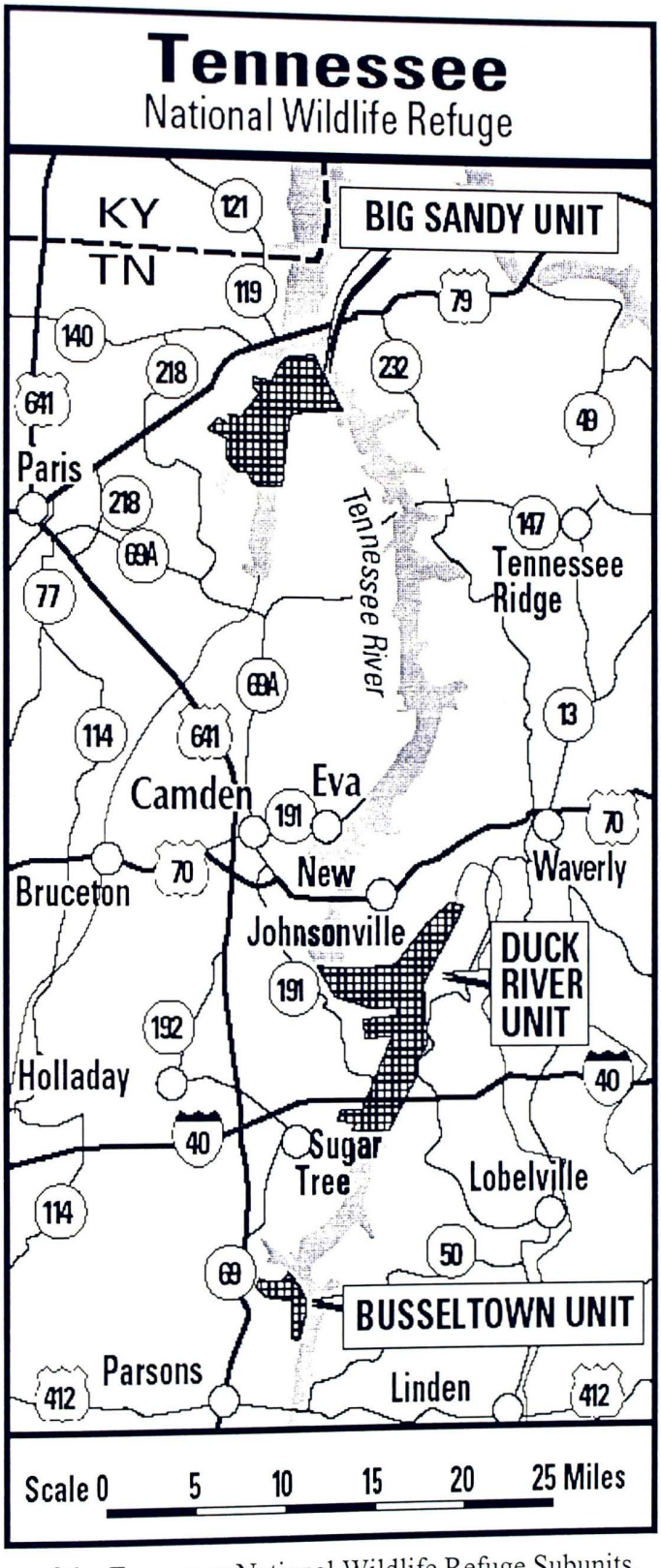

Figure 1. Location of the Tennessee National Wildlife Refuge Subunits.

including more than 250,000 ducks and 30,000 geese from the Mississippi flyway. The Refuge is also a major wintering area for bald and golden eagles, with peak populations of 92 birds in 1986. It has one of the largest great blue heron rookeries in the state. The Refuge is a popular area for bird watching with more than 500,000 visitors each year (Joan Stevens, TNWR, personal communication).

The Duck River Unit of the Tennessee National Wildlife Refuge

The Duck River Unit of the TNWR includes 10,817 ha (26,730 a) within Humphreys County, Tennessee (Figures 2 and 3). This county is within the Interior Low Plateau Province, Highland Rim Section, Western Highland Rim Subsection (Fenneman 1938). The Subsection is a highly dissected plateau with elevations ranging from 122-305 m above sea level. Topography varies from gentle to rugged and complex, and slopes vary from gentle to very steep. The underlying bedrock is a series of Mississippian limestones of varying coarseness, purity, and solubility. Soils include several series and associations and are generally cherty, acidic, and low in fertility (Griffith, Omernik, and Azevedo 1997; Smalley 1980).

The climate of the area is temperate and continental with an average annual temperature of 15.4°C. Winters are short and mild with a mean temperature of 5°C; summers are warm and humid with a mean temperature of 25.3°C. January is the coldest month, with an average temperature of 4.6°C, while July is the warmest month with an average temperature of 26.2°C. Average annual precipitation is 150.4 cm. Precipitation is consistent throughout the year, with fall being the driest season. Snowfalls average

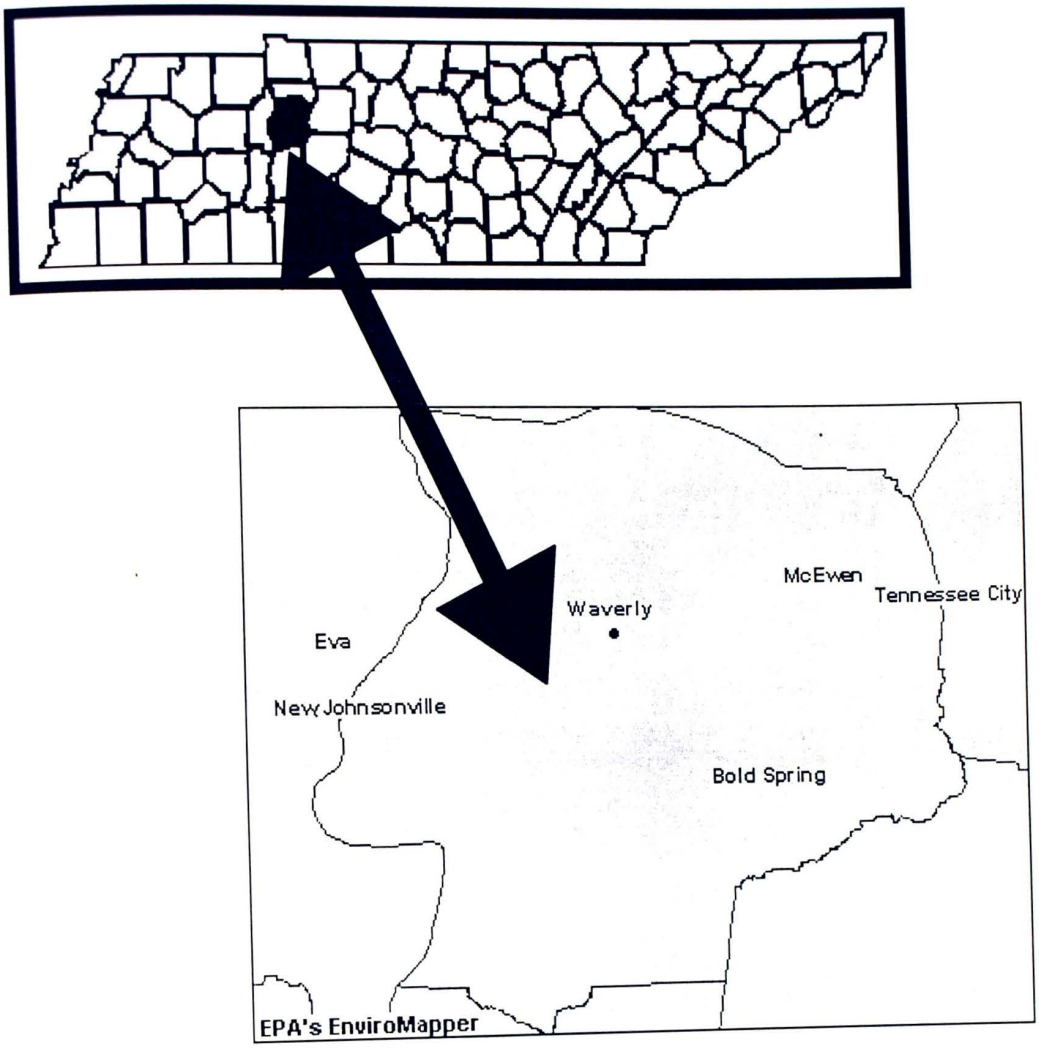

Figure 2. Location of Humphreys County, Tennessee.

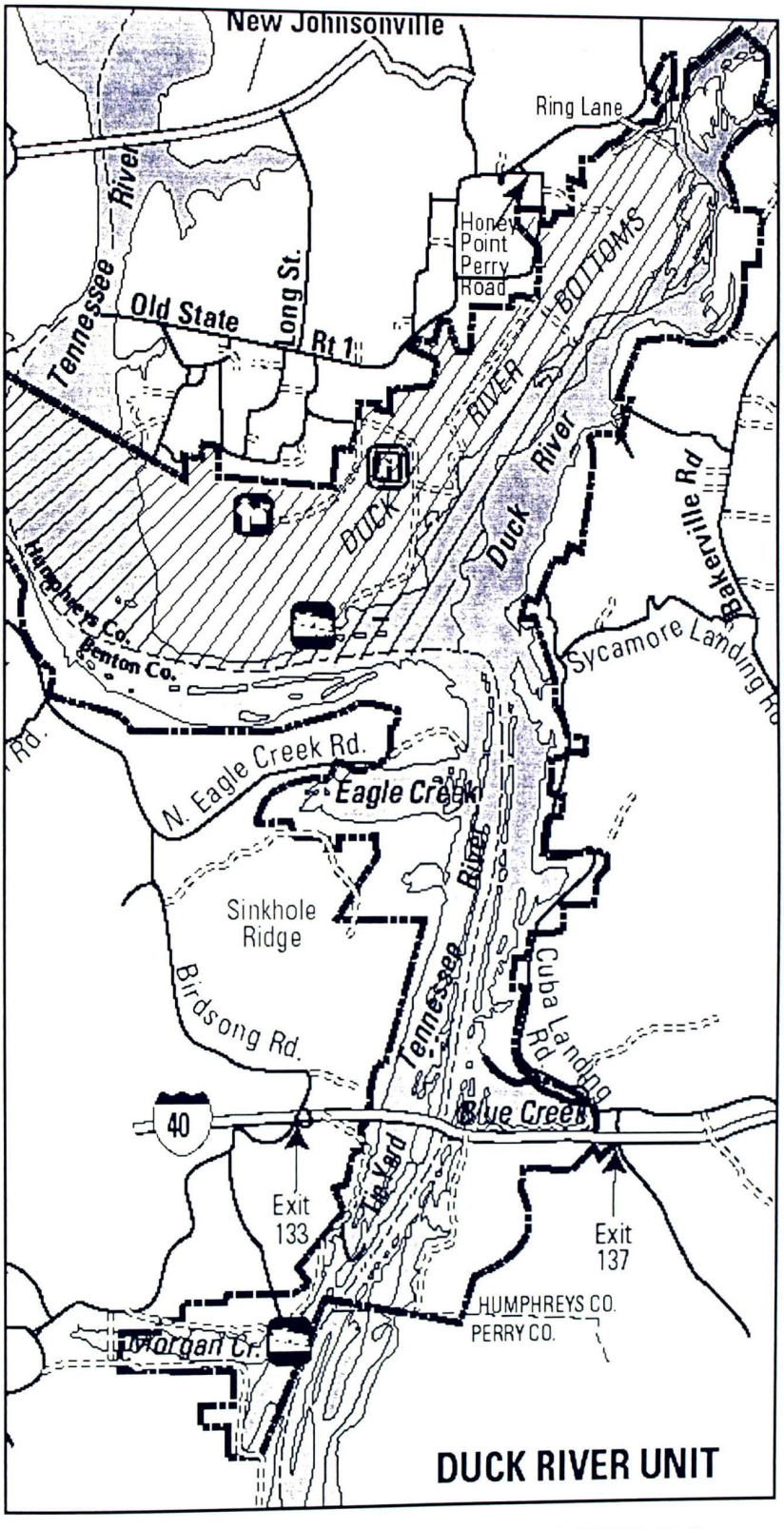

Figure 3. The Duck River Unit of the Tennessee National Wildlife Refuge.

19.05 cm of the annual precipitation. The average frost-free season is 197 days, from 18 April-22 October (Welles and Robbins 1946).

Vegetationally, the study area is within the Western Mesophytic Forest Region of Braun (1950). The western escarpment of the Cumberland and Allegheny plateaus forms the eastern boundary of this region; loess bluffs of the Mississippi River along the eastern section of the Mississippi alluvial plain form the western boundary. A single climax type does not characterize this region; instead, the area forms a transition region from mixed mesophytic forests to the east to extensive oak and oak-hickory communities westward. Thus, the existing mosaic of forest types is determined by topography, which shows great diversity in drainage patterns and slope aspect and steepness, and local climatic and edaphic factors (Chester and Ellis 1989).

The Western Highland Rim portion of the Western Mesophytic Forest Region is dominated by hardwood forests in which four genera, maples (*Acer*), hickories (*Carya*), oaks (*Quercus*), and elms (*Ulmus*) account for more than 50 percent of the stems (Chester, Jensen, Schibig and 1995). Dry ridges and upper slopes are dominated by such xerophytic species as black, blackjack, chestnut, post, and scarlet oak, various hickories, and blackgum (*Nyssa)*. Slopes include more mesophytic species such as sugar maple, tulip tree (*Liriodendron*), and white oak, while ravines and streambanks include numerous mesic species such as ashes (*Fraxinus*), cottonwood (*Populus*), elms, red and silver maple, sycamore (*Platanus*), and such oaks as overcup, pin, and Shumard. Chester and Ellis (1989) and Chester, Jensen, and Schibig (1995) presented a more complete

description of the physical and vegetative features of the area.

Location and Description

The Duck River Unit is within the Hustburg, Johnsonville, and Waverly topographic quadrangles (U.S. Geological Survey 1949, 1950a, 1950b). Most of the Refuge is bottomland, including portions of the former flood plains of the Tennessee and Duck rivers. Elevations range from 107-110 m above sea level (U.S. Geological Survey 1949, 1950a, 1950b). Twelve large, mostly man-made pools have been constructed within the bottomland, with water levels controlled by a series of dikes. Overflow of pools, as well as the Tennessee and Duck rivers, is common and this has a major affect on the flora within these areas. Flooding may last for a few weeks in some areas, but may be year-round in others. Bottomland forests are virtually absent, except for a few small secondary sites. Upland forests and successional fields make up a portion of the Refuge along its northern periphery, with elevations up to 183 m above sea level. To the south, along the Duck and Tennessee rivers, uplands with secondary forests, limestone bluffs and outcrops, home sites, cemeteries, and the extensive river shorelines add to habitat diversity.

Soils

Three main soil associations occupy the Duck River Unit (Springer and Elder 1980): Pickwick-Paden, Arrington-Lindell-Egam-Armour, and Bodine-Mountview-Dickson.

Pickwick-Paden soils occupy the major Tennessee and Duck River bottomlands,

hence most of the unit. An undulating and rolling landscape with well-drained (Pickwick) and moderately well-drained (Paden) silty soils characterize this association. These soils formed in loess 0.5-1.0 m thick and alluvium. They are low in fertility, strongly acidic, and have pale, silty surface layers and brown or red silty clay loam or clay loam subsoils. Occasional flooding is a problem, but otherwise the area is cultivated intensely.

The Arrington-Lindell-Egam-Armour association occurs along a small area of fairly wide, level bottomland along the Duck River, upstream from the Pickwick-Paden soils. This association consists of well-drained and moderately well-drained, deep, silty, loamy, and clayey soils. They are medium acid to neutral and generally high in phosphorus. The main parent material is alluvium, but in some places the upper 0.6 m is modified by loess. The majority of the land is level enough for agriculture and the productive soils respond well to management, although stream overflow and weeds are a major problem.

Bodine-Mountview-Dickson soil associations are found on wooded, steep or rolling hillsides surrounding the bottomlands and thus constitute a minor part of the Unit. These soils vary from excessively drained and cherty on the steepest sections, to well-drained and moderately well-drained and silty on the more undulating hillsides. The more cherty soils originated from limestone; the silty soils from thin loess and limestone. The majority of these soils are pale, deep, very cherty, droughty, strongly acidic, and low in natural fertility. A few sites contain less chert and are more productive. Shallow soils over shale occupy the lowermost part of some of the steeper sections. Some wider ridges

are capped with loess-formed soils 0.5-1.0 m thick, often underlain by cherty layers. It is common for the least sloping soils to have a fragipan in the bottom part of the silty layers or the upper part of the cherty layers. The majority of the area encompassing this association consists of hardwood forests, with clearings in the long, narrow valleys between the cherty hills or on some of the rolling hilltops. The potential is low for farming and medium for forest production and wildlife.

Present Land Use

An extensive amount of the Refuge is leased to area farmers who practice a type of conservation land usage called moist soil farming; this farming practice promotes natural vegetation that provides habitat for a wide variety of wetland-dependent migratory birds. Cultivated crops include wheat, soybeans, milo, corn, and other grains. One-fourth of crops is left for wildlife cover and food. Fire is used throughout the Refuge as a means to control invasive vegetation. Many invasive weeds, such as black willow, are removed mechanically; others, such as alligator-weed, are chemically treated to control populations (Gove 2000).

History

Few European settlers inhabited the area before 1800. Native Americans belonging to the Archaic, Woodland, and Mississippian periods utilized the area over several thousand years. Many artifacts and burial sites have been discovered and studied (Sims 1971). The area referred to as "The Big Bottom Site" has yielded various Indian

artifacts, including 46 flaked stone and two pecked-and-ground stone sculptures. These artifacts belonged to the Southern Cult or Death Cult (AD 1250-1500); the area of discovery has been called the greatest archeological site in Tennessee (Peacock 1984). Paint Rock, a bluff rising approximately 24 m out of the Duck River, also provides evidence of habitation by Native Americans. Carvings of a half moon and seven stars thought to be created by first inhabitants are cut into the bluff. Native Americans had villages surrounding Paint Rock, at Hurricane Rock Hill, and about two miles below the Duck River on the Tennessee River (Garrett 1963).

Because of the large population of Native Americans inhabiting sections of the county, it was not until at least 1805 that any portion of the county began to be settled. Between 1810-1815, the Native Americans were forced to move west of the Tennessee River, and only then did significant settlement of the county occur (Goodspeed 1886).

The area containing part of the Duck River Unit, also called the "Big Bottoms," was settled in about 1812 by five or six families of hunters and herdsmen. At the time the area was considered infertile and worthless with few inhabitants; it was not until the 1840s that the section began to be rapidly settled and was recognized as the best farming section in the county (Goodspeed 1886). The Tennessee Valley Authority purchased most of the lands within the Duck River Unit from private owners in association with the construction of Kentucky Lake between 1936-1943. The land was eventually transferred to the U.S. Fish and Wildlife Service, who acquired a small tract near Interstate 40 in 1978 (Robert Wheat, TNWR, personal communication).

CHAPTER II

METHODS AND MATERIALS

Forty-seven trips were made to the Refuge from mid-May 2001 to mid-October 2002. During each trip one or more portions of the Refuge were throughly examined, voucher specimens collected (totaling more than 800), relative abundances of each taxon estimated using the system of Joyner and Chester (1994), and habitat data recorded. All parts of the Refuge were visited at least twice during each part of the growing season. Identifications followed standard manuals, including Fernald (1950), Radford, Ahles, and Bell (1968), and Gleason and Cronquist (1991). Dr. H.R. DeSelm and the late Dr. Vern McNeilus (TENN, the acronym for the University of Tennessee Herbarium) kindly helped with the identification of some grasses and sedges respectively. Nomenclature (and nativity) follows Wofford and Kral (1993), except when superseded by more recent monographs and revisions.

Voucher specimen were prepared in accordance with standard herbarium practices and accessioned into the Austin Peay State University Herbarium (APSC, the acronym for the Austin Peay State University Herbarium). Vouchers, including a few previous collections from the area already in APSC, and the accumulated abundance and habitat data were used for floristic analyses and to prepare an annotated catalog of the Refuge flora.

Community/habitat types were identified from the wetland classification system for the Tennessee Valley Region of Carter and Burbank (1978); upland community types

were subjectively named. All species were designated by wetland indicator status based on data from the U.S. Fish and Wildlife Service (1996).

County records were determined from the Atlas of Tennessee Vascular Plants (Chester et al. 1993; Chester, Wofford, and Kral 1997). Rare taxa were determined by consulting lists from the Tennessee Natural Heritage Program (2001).

CHAPTER III

RESULTS AND DISCUSSION

Floristic Analyses

The study documented a vascular flora of 125 families, 403 genera, and 699 species and lesser taxa (Table 1).

Table 1. Summary of the vascular flora of the TNWR's Duck River Unit.

			Species and Lesser Taxa		
	Families	Genera	Native	Introduced	Total
Pteridophytes	11	17	21	0	21
Gymnosperms	3	3	3	1	4
Angiosperms					
Monocots	17	83	143	35	178
Dicots	94	300	414	82	496
Total	125	403	581	118	699

Large families included the Asteraceae (84 taxa), Poaceae (81), Cyperaceae and Fabaceae (42 each); these four families accounted for 35.6 percent of the flora. Other large families included: Lamiaceae (24 taxa), Scrophulariaceae (19), Rosaceae (18), Fagaceae (17), Polygonaceae (13), Apiaceae, Ranunculaceae, and Rubiaceae (12 each), and Euphorbiaceae (11). The largest genus was *Carex* (21 taxa), followed by *Quercus* (16), *Cyperus* and *Solidago* (9 each), *Desmodium*, *Eupatorium*, and *Polygonum* (8 each), *Carya*, *Eragrostis*, and *Hypericum* (7 each), and *Aster*, *Bidens*, *Dichanthelium*, *Ludwigia*, and *Panicum* (6 each).

The woody component consisted of 145 taxa, (20.7 percent) of the flora; this included large trees (72 taxa), small trees and shrubs (51), and vines (22). About 14.3

percent of the Tennessee flora is woody (Wofford and Kral 1993). The greater percentage of woody flora observed at the Duck River Unit is probably due to less diversity in the herbaceous flora when compared to the state as a whole. Large woody genera were *Quercus* (16 taxa), *Carya* (7), *Acer* (4), and, *Hypericum*, *Cornus*, *Crataegus*, *Prunus*, *Rosa*, *Rubus*, and *Ulmus* (3 each). Large woody vine genera were *Vitis* and *Smilax* (4 taxa each).

Non-native taxa accounted for 16.9 percent (118 taxa) of the flora. The total Tennessee flora consists of 19.7 percent non-native taxa (Wofford and Kral 1993). The extensive wetlands of the study area apparently do not harbor as many non-native species as is found in areas with greater anthropogenic disturbance. County records accounted for 55.8 percent (390 taxa) of the flora, and one state record [*Echinochloa walteri* (Pursh) Heller] was documented.

Rare Taxa

Six taxa listed by the Tennessee Natural Heritage Program (2001) as elements of concern were found. Categories of rareness are:

Endangered: a species whose continued existence as a viable component of the state's flora is determined to be in jeopardy.

Threatened: a species which appears likely, within the foreseeable future, to become endangered throughout all or significant portion of its range in Tennessee.

Special Concern: a species that is uncommon in Tennessee, or has unique or highly specific habitat requirements or scientific value and therefore requires careful monitoring of its status.

The listed taxa include:

Heteranthera limosa (Sw.) Willd. (Pontederiaceae). Threatened. This herbaceous annual is known from five other counties in Tennessee (Davidson, Henry, Humphreys, Montgomery, and Stewart). It was found in two small populations, both on exposed mudflats of pool margins.

Liparis loeselii (L.) Rich. (Orchidaceae). Endangered. This herbaceous perennial is known from six other counties in Tennessee (Carter, Coffee, DeKalb, Grundy, Stewart, and Unicoi). It was observed in a poorly drained bottomland forest near the Tennessee River.

Sagittaria brevirostra Mack. & Bush (Alismataceae). Threatened. This herbaceous perennial is known from three other Tennessee counties (Cumberland, Montgomery, and Stewart). It was observed in two Refuge sites; one large population was found along the margin of the Tennessee River; a smaller population was found within a small stream near the mouth of the Duck River.

Scirpus fluviatilis (Torr.) A. Gray (Cyperaceae). Special Concern. This herbaceous perennial is known from one other county in Tennessee (Henry). It was observed in two emergent marshes near the Tennessee River with very small populations in each. The previous report described several colonies within the Big Sandy Unit of the TNWR (Chester and Wofford 1992).

Spiranthes odorata (Nutt.) Lindl. (Orchidaceae). Endangered. This herbaceous perennial is known from two other counties in Tennessee (Knox and Sumner). A colony of about five plants were seen in a bottomland forest along frequently flooded edges of

the Tennessee River. Interestingly, browsing by deer prevented most plants from flowering.

Echinochloa walteri (Pursh) Heller (Poaceae). Special Concern. Extensive populations of this annual were observed around the large pools within bottomlands adjacent to the Tennessee River.

Plant Communities/Habitats

Each taxon was assigned to one or more community/habitat types based on the apparent preferenda of the species for the type(s). Wetland community/habitat types were designated following the classification scheme of Carter and Burbank (1978). Upland and other types were subjectively named and defined.

A. Wetland community/habitat types:

Class 1. Open water - Water up to two m deep with vegetation restricted to floating or submergent types.

Class 2. Bottomland Forests - Hardwood forests flooded annually during winter or early spring or covered locally with a few cm of water. Flooding can be brief or for extended periods.

Class 3. Swamp - Semipermanently and permanently flooded areas dominated by woody vegetation. Flooding can be man-made or due to natural circumstances. Three subclasses are identified:

Subclass 1. Forested Swamp - At least 30 percent of the area is covered by water-tolerant, usually deciduous trees. Unimproved drainage results in

progression to a dead woody swamp. Mesic or upland species may occur in recently flooded areas.

Subclass 2. Shrub Swamp - Major components include aquatic shrubs or saplings of water-tolerant trees. The area may be seasonally or permanently flooded. During late summer, some areas may lack standing water but the soil remains saturated or the water table will be near the surface. Shrub swamp is typically not a climax community, but serves as a transition to other community types.

Subclass 3. Dead Woody Swamp - Areas of open water with standing dead trees, shrubs, and stumps making up at least 70 percent of present vegetation. This subclass usually forms as a result of the intervention of man or beaver in wooded areas that become permanently impounded.

Class 4. Marsh - Wetlands dominated by herbaceous emergents. The area can remain permanently flooded or saturated. Extremely dry years can result in typically saturated soils becoming very dry at the surface during late summer or early fall. Extremely wet years can result in an area more similar to vegetated open water. Two subclasses are included:

Subclass 1. Wet Meadow - During the growing season, shallow water may cover extensive portions of this area. During drier seasons, these areas may be used for agricultural crops. Wetland species such as smartweeds, rushes, sedges, grasses, and composites usually dominate.

Subclass 2. Emergent Marsh - May be flooded permanently, semipermanently, or seasonally. Emergent herbaceous plants dominate throughout the year. During the winter, they may remain as dead stems and leaves above the water. Up to 30 percent of the vegetative cover consists of trees and shrubs.

Class 5. Seasonally Dewatered Flats - Areas of low relief and slopes along stream, lake, pool, and reservoir margins. May be covered with water much of the year, but as water begins to recede (due to drought or artificial lowering of water levels) mudflats are exposed, which can become vegetated given sufficient exposure before the first killing frost.

B. Upland and other community/habitat types (subjectively defined):

Low Woods - Found along smaller streams and in ravines where there is little flooding and erosion. Floristic influences from adjacent slopes are common. Standing water is rare and soils are saturated for only short periods of time.

Upland Woods - Dry to mesic, slope and ridge forests of varying ages and degrees of disturbance, all secondary.

Upland Fields - Former agricultural fields in various stages of succession.

Shallow Streams and Gravel Bars - Limited in area, but often floristically diverse. Frequently flooded for brief periods.

Limestone Outcrops - divided into:

Wooded Limestone Outcrops - Bluffs and outcrops within slope forests.

Nonwooded Limestone Outcrops - Mostly perpendicular bluffs with some herbaceous flora, occasionally with seeps near the base.

Agricultural Fields - Flooding from river and pool overflow may occur anytime from late autumn through spring and extends beyond planting season in some years. Many common agronomic weeds are present in this habitat.

Cultural Sites - Areas with on-going disturbance, including roadsides, boat ramp areas, gravel parking lots, bank-fishing areas, and cemeteries.

Wetland Species

The U.S. Fish and Wildlife Service (1996) has established a system of classifying plant species in regions of occurrence based on the predominant habitat type in which they are found. The system places plant species into one of seven categories based on habitat preferenda; the categories range from hydric to xeric and are coded for the Southeast region as follows:

OBL = Obligate Wetland: almost always (>99%) occur in wetlands under natural conditions;

FACW = Facultative Wetland: usually occur in wetlands (67%-99%), but are occasionally found in non-wetlands;

FAC = Facultative: are equally likely to occur in wetlands or non-wetlands (34%-66%);

FACU = Facultative Upland: usually occur in non-wetlands (67%-99%), but occasionally found in wetlands (1%-33%);

UPL = Obligate Upland: occur in wetlands in another region, but occur almost always (>99%) under natural conditions in non-wetlands in the region specified;

NI = No Indicator: those species for which insufficient information was available to determine indicator status or was not considered by the Regional Panel;

NL = Not listed: not listed in the 1996 National List of Vascular Plant Species that occur in wetlands.

A positive (+) or negative (-) sign is used with the Facultative indicator categories to more specifically define the regional frequency of occurrence in wetlands. A positive sign indicates a frequency toward the higher end of the category (more frequently found in wetlands). A negative sign indicates a frequency toward the lower end of the category (less frequently found in wetlands). The wetland code for each documented species was determined with the following results (Table 2).

Taxa that predominantly occur in wetlands accounted for 43.6 percent (304.5 taxa) of the flora. This included the codes OBL, FACW, and FAC+. One-half of the FAC taxa was added to the predominantly wetland groups and the other half was added to the primarily upland taxa. Primarily upland taxa accounted for 35.8 percent (250.8 taxa) of the flora. Taxa that were either given no indicator or apparently not included in the list accounted for 20.6 percent (144 taxa) of the flora.

Table 2. Summary of wetland codes for each documented species within the Duck River Unit.

	OBL	FACW+	FACW	FACW-	FAC+	FAC	FAC-	FACU+	FACU	FACU-	UPL	NI	NL	TOTAL
Pteridophytes	3	0	2	0	2	4	0	1	4	0	0	1	4	21
Gymnosperms	1	0	0	0	0	1	0	0	0	1	0	0	1	4
Angiosperms														
Monocots	42	4	26	7	10	19	5	3	23	2	5	4	28	178
Dicots	48	16	46	23	23	79	22	9	74	25	25	5	101	496
TOTAL	94	20	74	30	35	103	27	13	101	28	30	10	134	699

LITERATURE CITED

LITERATURE CITED

Braun, E.L. 1950. Deciduous forests of eastern North America. Hafner Publishing Co., New York, New York.

Carter, V. and J.H. Burbank. 1978. Wetland classification system for the Tennessee Valley Region. Tech. Note No. B24. Tennessee Valley Authority, Norris, Tennessee.

Chester, E.W. and B.E. Wofford. 1992. *Scirpus fluviatilis* (Cyperaceae) in Tennessee and southeastern United States. Sida 15:157-159.

Chester, E.W, B.E. Wofford, R.Kral, H.R. DeSelm, and A.M. Evans. 1993. Atlas of Tennessee vascular plants. Volume 1. Pteridophytes, gymnosperms, angiosperms: monocots. Misc. Publ. 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.

Chester, E.W., R.J. Jensen, and J. Schibig. 1995. Forest communities of Montgomery and Stewart counties, northwestern Middle Tennessee. Journal of the Tennessee Academy of Science 70:82-91.

Chester, E.W. and W.H. Ellis. 1989. Plant communities of northwestern Middle Tennessee. Journal of the Tennessee Academy of Science 64:75-78.

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

Fernald, M.L. 1950. Gray's manual of botany, 8th ed. Dioscorides Press, Portland, Oregon.

Garrett, J.K. 1963. A history of Humphreys County. Printed by the author, Columbia, Tennessee.

Gleason, H.A. and A. Cronquist. 1991. Manual of vascular plants of northeastern United States and adjacent Canada, 2nd ed. The New York Botanical Garden, Bronx, New York.

Goodspeed Histories of Montgomery, Robertson, Humphreys, Stewart, Dickson, Cheatam, and Houston Counties of Tennessee. 1886. Reprinted 1972 by Woodard and Stinson Printing Co., Columbia, Tennessee.

Gove, D. 2000. Audubon guide to the national wildlife refuges. Balliett & Fitzgerald, Inc., New York, New York.

Griffith, G.E., J.M. Omernik, and S.E. Azevedo. 1997. Ecoregions of Tennessee. U.S. Environmental Protection Agency, Corvallis, Oregon.

Guthrie, M. 1989. A floristic and vegetational overview of Reelfoot Lake. Journal of the Tennnessee Academy of Science 64:113-116.

Henson, J.W. 1990. Aquatic and certain vascular vegetation of Reelfoot Lake, 1920s-1980s. Journal of the Tennessee Academy of Science 65:63-68, 69-74, 108-111, 112-116.

Joyner, J.M. and E.W. Chester. 1994. The vascular flora of Cross Creeks National Wildlife Refuge, Stewart County, Tennessee. Castanea 59:117-145.

Peacock, C.K. 1984. Duck River cache: Tennessee's greatest archeological find. Mini-Histories, Nashville, Tennessee.

Radford, A.E., H.E. Ahles, and C.R. Bell. 1968. Manual of the vascular flora of the Carolinas. University North Carolina Press, Chapel Hill, North Carolina.

Riley, L. and W. Riley. 1979. Guide to the national wildlife refuges. Anchor Press/Doubleday, Garden City, New York.

Sims, E.J. 1971. The Big Bottom Site. Tennessee Archaeologist 27:49-91.

Smalley, G.W. 1980. Classification and evaluation of forest sites on the Western Highland Rim and Pennyroyal. U.S. Department of Agriculture, Forest Service. General Technical Report SO-30, 120 p. Southern Forest Experiment Station, New Orleans, Louisiana.

Springer M.E. and J.A. Elder. 1980. Soils of Tennessee. The University of Tennessee Agricultural Experiment Station, Knoxville, Tennessee.

Tennessee National Heritage Program. 2001. Rare plant list. Tennessee Department of Environment and Conservation. Division of Natural Heritage. Nashville, Tennessee.

U.S. Fish and Wildlife Service. 1996. National list of vascular plant species that occur in wetlands. [http://www.nwi.fws.gov] [Accessed 13 November 2001].

U.S. Fish and Wildlife Service. 2000. Tennessee National Wildlife Refuge. [http://tennesseerefuge.fws.gov/refuge.htm] [Accessed 17 September 2001].

U.S. Geological Survey. 1949. 7.5 minute Topographic Quadrangle, Hustburg, Tennessee. U.S. Department of Interior, Washington, D.C.

U.S. Geological survey. 1950a. 7.5 minute Topographic Quadrangle, Johnsonville, Tennessee. U.S. Department of Interior, Washington, D.C.

U.S. Geological Survey. 1950b. 7.5 minute Topographic Quadrangle, Waverly, Tennessee. U.S. Department of Interior, Washington, D.C.

Welles, G.M. and N.V. Robbins. 1946. Soil survey of Humphreys County, Tennessee. U.S. Department of Agriculture, Washington, D.C., and Tennessee Agricultural Experiment Station, Knoxville, Tennessee.

Wofford, B.E. and R. Kral. 1993. Checklist of the vascular plants of Tennessee. Botanical Miscellany No. 10, Botanical Research Institute of Texas, Fort Worth, Texas.

APPENDIX

APPENDIX

Annotated Checklist

The checklist is divided into: Pteridophyta (ferns and fern allies), Gymnospermae (non-flowering seed plants), and Angiospermae (flowering plants), which is then divided into Monocotyledonae and Dicotyledonae. Families, genera, and species are arranged alphabetically. Annotations include:

1. Non-native taxa are preceded by an asterisk (*).
2. Community/habitat type(s) in which the species was most often observed.
3. Abundance (following Joyner and Chester (1994):

   Infrequent = not always in stated community type(s), usually in small numbers;

   Occasional = often in community type(s), but rarely in large numbers;

   Frequent = usually encountered in the community type(s), but not always in large numbers;

   Abundant = expected in the type, usually in large numbers;

   Rare = known from few locales, generally with small populations;

   Locally Abundant = known from few locales, with numerous individuals in each.
4. Collectors and collection numbers are listed as: EWC = Edward W. Chester, LYLE = Laurina Lyle, SF = Susan Fletcher, and SG = Stephanie Gunn.
5. Wetland indicator status: OBL (obligate wetland), FACW (facultative wetland), FAC (facultative), FACU (facultative upland), UPL (obligate upland), NI (no indicator), and

NL (not listed). A positive (+) or negative (-) sign was used with the Facultative indicator categories to more specifically define the regional frequency of occurrence in wetlands. The positive sign indicates a frequency toward the higher end of the category (more frequently found in wetlands). A negative sign indicates a frequency toward the lower end of the category (less frequently found in wetlands).

6. County records (CR) and the state record (SR) are based on Chester et al. (1993) and Chester, Wofford, and Kral (1997).

7. Listed elements: E = Endangered; T = Threatened; S = Special Concern.

PTERIDOPHYTA

ASPLENIACEAE

Asplenium platyneuron (L.) Britton, Sterns, & Poggenb. Bottomland forests; occasional. SG-47, 268. FACU

Asplenium rhizophyllum L. Limestone outcrops; rare. SG-524. NL

AZOLLACEAE

Azolla caroliniana Willd. Open water; locally abundant. SG-220. OBL

BLECHNACEAE

Woodwardia areolata (L.) T. Moore. Limestone outcrops, low woods; infrequent. SG-477. OBL

DENNSTAEDTIACEAE

Pteridium aquilinum (L.) Kuhn. Limestone outcrops; infrequent. SG-474. FACU

DRYOPTERIDACEAE

Polystichum acrostichoides (Michx.) Schott. Bottomland and slope forests; occasional. SG-48. FAC

LYCOPODIACEAE

Diphasiastrum digitatum (A. Brown) Holub. Low woods; rare. SG-668. NL, CR

OPHIOGLOSSACEAE

Botrychium biternatum (Sav.) Underw. Bottomland forests; rare. LYLE-200. FAC
Botrychium dissectum Spreng. Bottomland forests; rare. SG-324. FAC
Botrychium virginianum (L.) Sw. Bottomland forests; rare. SG-390. FACU
Ophioglossum pycnostichum (Fernald) A. Löve & D. Löve Bottomland forests; rare. SG-438. FACW, CR

OSMUNDACEAE

Osmunda regalis L. var. *spectabilis*. Low woods; rare. SG-539. OBL

SINOPTERIDACEAE

Adiantum pedatum L. Calcareous slope forests; abundant. SG-522. FACU
Chelianthes lanosa (Michx.) D.C. Eaton. Xeric limestone bluffs; occasional. SG-548. NL

THELYPTERIDACEAE

Thelypteris hexagonoptera (Michx.) Weath. Mesic woods; occasional. SG-431, 573. FACU+
Thelypteris noveboracensis (L.) Nieuwl. Low woods; infrequent. SG-574. FAC+

WOODSIACEAE

Athyrium filix-femina (L.) Roth subsp. *asplenioides* (Michx.) Hulten. Bottomland forests; infrequent. SG-505. NI
Deparia acrostichoides (Sw.) M. Kato. Low woods; rare. SG-538. FAC
Diplazium pycnocarpon (Spreng.) M. Brown. Calcareous slope forests; occasional. SG-532. FAC+
Onoclea sensibilis L. Bottomland forests; frequent. SG-351. FACW
Woodsia obtusa (Spreng.) Torr. Bottomland forests; occasional. SG-286. NL

SPERMATOPHYTA: GYMNOSPERMAE

CUPRESSACEAE

Juniperus virginiana L. Upland fields, disturbed sites; infrequent. SF-68. FACU-, CR

PINACEAE

**Pinus taeda* L. Disturbed sites; infrequent. SG-414. FAC, CR
Pinus virginiana Mill. Limestone outcrops; occasional. SG-478, 641. NL, CR

TAXODIACEAE

Taxodium distichum (L.) Rich. Shallow water and streambanks; frequent. SF-108 OBL, CR

SPERMATOPHYTA: ANGIOSPERMAE 1. MONOCOTS

ALISMATACEAE

Alisma subcordatum Raf. Emergent marshes, wet meadows; occasional. SG-100. OBL, CR
Echinodorus cordifolius (L.) Griseb. Emergent marshes, wet meadows; infrequent. SG-30, 102. OBL
Sagittaria australis (J.G. Sm.) Small. Spring seeps; rare. SG-702. OBL, CR
Sagittaria brevirostra Mack. & Bush. Shorelines, small streams; infrequent. SG-610, 687. OBL, CR, T
Sagittaria calycina Engelm. Emergent marshes, wet meadows; frequent. SG-104. OBL

AMARYLLIDACEAE

Hymenocallis occidentalis (LeConte) Kunth. Bottomland forests; occasional. SG-277. OBL
**Narcissus pseudonarcissus* L. Old home sites; rare. SG-404. NL, CR

ARACEAE

Arisaema dracontium (L.) Schott. Bottomland forests; occasional. SG-143. FACW, CR
Arisaema triphyllum (L.) Schott. Bottomland forests; frequent. SG-506 . FACW-, CR

COMMELINACEAE

**Commelina communis* L. Disturbed sites; infrequent. SG-271. FAC, CR
Commelina diffusa Burm.f. Disturbed sites; rare. SG-463. FACW, CR
Commelina erecta L. Disturbed sites; occasional. SG-183. NI, CR
Commelina virginica L. Bottomland forests; frequent. SG-206. FACW, CR

**Murdannia keidsak* (Hassk.) Hand.-Mazz. Emergent marshes; locally abundant. SG-688. OBL, CR

Tradescantia ohiensis Raf. Bottomland forests, disturbed sites; occasional. SG-63. FAC, CR

Tradescantia subaspera KerGaul. Bottomland forests, disturbed sites; frequent. SG-57, 441. NL, CR

CYPERACEAE

Carex albicans Willd. *ex* Spreng. var. *albicans*. Upland woods; frequent. SG-473. NI

Carex blanda Dewy. Upland woods; occasional. SG-360. FAC-

Carex cephaloflora Willd. Upland woods; occasional. SG-406. FAC, CR

Carex complanata Torr. & Hook. Upland woods; occasional. SG-417. FAC+

Carex crinita Lam. Low woods; infrequent. SG-536. FACW+, CR

Carex crus-corvi Shuttlew. *ex* Kunze. Bottomland forests; abundant. SG-7, 35. OBL, CR

Carex frankii Kunth. Emergent marshes, wet meadows; occasional. SG-167, 179. OBL, CR

Carex grayi J. Carey. Bottomland forests; occasional. SG-36. FACW, CR

Carex intumescens Rudge. Bottomland forests; occasional. SG-492. FACW

Carex jamesii Schwein. Bottomland forests, wet meadows; infrequent. SG-336. NL

Carex laxiflora Lam. Bottomland forests; occasional. SG-435. FACU, CR

Carex leavenworthii Dewey. Bottomland forests; frequent. SG-18. NL

Carex lupulina Willd. Emergent marshes, wet meadows; frequent. SG-105, 113. OBL, CR

Carex muhlenbergii Schkuhr var. *muhlenbergii*. Upland woods; occasional. SG-359. NL

Carex oxylepis Torr. & Hook. var. *oxylepis*. Upland woods; occasional. SG-471. FACW-, CR

Carex retroflexa Willd. Emergent marshes; occasional. SG-389. NL

Carex rosea Willd. Wet meadows; occasional. SG-374. NL

Carex scoparia Schkuhr *ex* Willd. Bottomland forests; frequent. SG-498. FACW, CR

Carex tribuloides Wahlenb. Emergent marshes, wet meadows, mudflats; occasional. SG-86. FACW+, CR

Carex typhina Michx. Bottomland forests; occasional. SG-224. OBL, CR

Carex vulpinoidea Michx. Emergent marshes, wet meadows; frequent. SG-17, 142. OBL, CR

Cyperus aristatus Rottb. Mudflats; abundant. SG-291. OBL

Cyperus echinatus (L.) A.W. Wood. Mudflats, wet meadows; occasional. SG-76. FAC

Cyperus erythrorhizos Muhl. Mudflats; abundant. SG-280. OBL

Cyperus ferruginescens Boeck. Mudflats; abundant. SG-281. FACW, CR

Cyperus flavescens L. Nonwooded limestone outcrops with seeps; rare. SG-605. OBL

Cyperus lancastriensis Porter. Emergent marshes, wet meadows; occasional. SG-109. FAC

Cyperus polystachyos Rottb. var. *texensis*. Shorelines; infrequent. SG-649. FACW, CR

Cyperus pseudovegetus Steud. Emergent marshes, wet meadows; occasional. SG-91. FACW

Cyperus strigosus L. Emergent marshes, wet meadows, mudflats; occasional. SG-155. FACW+, CR

Eleocharis acicularis (L.) Roem. & Schult. Mudflats; abundant. SG-4. OBL

Eleocharis obtusa (Willd.) Schult. Emergent marshes, wet meadows; abundant. SG-3. OBL, CR

Eleocharis quadrangulata (Michx.) Roem. & Schult. Emergent marshes; rare. SG-636. OBL

Fimbristylis autunmalis (L.) Roem. & Schult. Mudflats; frequent. SG-589. OBL, CR

Fimbristylis vahlii (Lam.) Link. Mudflats; abundant. SG-279. OBL

Hemicarpha micrantha (Vahl) Britton. Shorelines; occasional. SG-692. NL

Kyllinga pumila Michx. Disturbed area; locally abundant. SG-626. FACW

Rhynchospora corniculata (Lam.) A. Gray. Emergent marshes, wet meadows; infrequent. EWC-13854, SG-154. OBL, CR

Scirpus fluviatilis (Torr.) A. Gray. Emergent marshes; rare. SG-146. OBL, CR, S

Scirpus pendulus Muhl. Pool edges; occasional. SG-627. OBL

Scirpus cyperinus (L.) Kunth. Emergent marshes, wet meadows; occasional. SG-256. OBL, CR

Scleria oligantha Michx. Upland woods; occasional. SG-472. FACU, CR

DIOSCOREACEAE

**Dioscorea batatas* Decne. Low woods, disturbed sites; infrequent. SG-451. NL

Dioscorea villosa L. Bottomland forests, disturbed sites; occasional. SG-171. FACW, CR

IRIDACEAE

Iris cristata Sol. Streambanks; rare. SG-503. NL, CR

Iris virginica L. Low woods; rare. SG-580. OBL, CR

Sisyrinchium albidum Raf. Bottomland forests; infrequent. SG-124. FAC+, CR

Sisyrinchium augustifolium Mill. Bottomland forests, disturbed sites; occasional. SG-81. FAC, CR

JUNCACEAE

Juncus acuminatus Michx. Wet meadows, emergent marshes; occasional. SG-5, 31, 466. OBL, CR

Juncus diffusissimus Buckley. Wet meadows, emergent marshes; abundant. SG-85, 116. FACW, CR

Juncus effusus L. Wet meadows, emergent marshes; frequent. SG-74. FACW+

Juncus tenuis Willd. Wet meadows, emergent marshes; occasional. SG-193. FAC, CR

Luzula bulbosa (A.W. Woods) Rydb. Bottomland forests; infrequent. SG-323. FACU, CR

LEMNACEAE

Lemna minor L. Open water; locally abundant. SG-534. OBL, CR
Spirodela polyrhiza (L.) Schleid. Open water; infrequent. SG-563. OBL

LILIACEAE

Allium canadense L. Disturbed sites; infrequent. SG- 16, 95. FACU-, CR
**Allium vineale* L. Disturbed sites; frequent. SG-34. FACU-, CR
Erythronium americanum KerGawl. Bottomland forests; infrequent. SG-326. NL, CR
**Hemerocallis fulva* (L.) L. Disturbed sites; infrequent. SG-457. UPL, CR
**Muscari atlanticum* Boiss. & Reut. Agricultural fields; occasional. SG-342. NL, CR
Nothoscordum bivalve (L.) Britt. Agricultural fields; infrequent. SG-341, 370. FAC, CR
**Ornithogalum umbellatum* L. Agricultural fields, disturbed sites; occasional. SG-337. FACU+, CR
Trillium cuneatum Raf. Bottomland forests, slope forests; occasional. SG-319. NL, CR
Trillium recurvatum Beck. Bottomland forests; infrequent. SG-344. FACU

NAJADACEAE

Najas guadalupensis (Spreng.) Magnus. Open water; locally abundant. SG-303. OBL
**Najas minor* All. Open water; locally abundant. SG-487. OBL, CR

ORCHIDACEAE

Goodyera pubescens (Willd.) R. Br. Bottomland forests; rare. SG-666. UPL, CR
Liparis loeselii (L.) Rich. Bottomland forests; rare. SG-537. FACW, CR, E
Tipularia discolor (Pursh) Nutt. Bottomland forests; infrequent. SG-266, 731. FACU, CR
Spiranthes cernua (L.) Rich. Low woods; rare. SG-724. FACW, CR
Spiranthes odorata (Nutt.) Lindl. Bottomland forests; rare. SG-730. OBL, CR, E
Spiranthes ovalis Lindl. Bottomland forests; occasional. SG-723, 729. FAC
Spiranthes vernalis Englem. & A. Gray. Upland fields; occasional. SG-512. FACW-, CR

POACEAE

**Agrostis gigantea* Roth. Upland fields; infrequent. SG-385 FACW, CR
Agrostis perennans (Walter) Tuck. Upland woods; occasional. SG-614. FACU
**Aira elegantissima* Schur. Upland fields; occasional. SG-424. NL, CR
Alopecurus carolinianus Walter. Roadsides, fields, ditches; frequent. SG-1. FACW
Andropogon gyrans Ashe. Upland fields; occasional. SG-541. NL, CR

Andropogon ternarius Michx. Upland fields; frequent. SG-713. FACU, CR
Andropogon virginicus L. Upland fields; abundant. SG-633. FAC-, CR
Aristida longespica Poir. Upland fields; rare. SG-674. FACU, CR
Aristida oligantha Michx. Upland fields; occasional. SG-651. NL
Aristida purpurascens Poir. Upland fields; occasional. SG-652. OBL, CR
**Arthraxon hispidus* (Thunb.) Makino. Disturbed sites; rare. SG-695. FACU+
Arundinaria gigantea (Walter) Muhl. ssp. *gigantea*. Low woods, shallow streams and gravel bars, roadsides, ditches; frequent. SG-151. FACW, CR
Brachiaria platyphylla (Briseb.) Nash. Wet meadows; occasional. SG-306. FAC+, CR
**Bromus commutatus* Schrad. Disturbed sites; frequent. SG-20. NL, CR
Bromus pubescens Muhl. *ex* Willd. var. *pubescens*. Disturbed sites; infrequent. SG-500. NI, CR
Chasmanthium latifolium (Michx.) H.O. Yates. Disturbed sites, low woods; occasional. SG-293. FAC-, CR
Cinna arundinacea L. Bottomland forests, disturbed sites; occasional. SG-248. FACW
**Cynodon dactylon* (L.) Pers. Disturbed sites; frequent. SG-454. FACU, CR
**Dactylis glomerata* L. Upland sites; occasional. SG-384. FACU, CR
Danthonia spicata (L.) P. Beauv. *ex*. Roem. & Schult. Upland woods; occasional. SG-382. NL, CR
Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. *acuminatum*. Disturbed sites; occasional. SG-71, 108, 234. OBL
Dichanthelium clandestinum (L.) Gould. Upland woods; infrequent. SG-439. FACW, CR
Dichanthelium commutatum (J.A. Schultes) Gould. Upland woods; occasional. SG-426. FAC
Dichanthelium laxiflorum (Lam.) Gould. Upland woods; occasional. SG-425. FAC, CR
Dichanthelium scoparium (Lam.) Gould. Wet meadows; frequent. SG-582. FACW, CR
Dichanthelium sphaerocarpon (Ell.) Gould var. *isophyllum* (Scribn.). Upland woods; infrequent. SG-489. FACU
**Digitaria ischaemum* (Schreb. *ex* Schweigg.) Schreb. *ex* Muhl. Disturbed sites; occasional. SG-716. UPL, CR
**Digitaria sanguinalis* (L.) Scop. Disturbed sites; occasional. SG-210. FAC-, CR
**Echinochloa crusgalli* (L.) P. Beauv. var. *frumentacea* (Link) W. Wright. Wet meadows, emergent marsh; SG-114. FACW-, CR
Echinochloa walteri (Pursh) Heller. Wet meadows, emergent marshes; occasional. SG-675, 701. OBL, SR, S
**Eleusine indica* (L.) Gaertn. Disturbed sites; occasional. SG-159. FACU, CR
Elymus histrix L. Shallow streams and gravel bars; occasional. SG-502. UPL, CR
Elymus virginicus L. Disturbed sites; frequent. SG-94,144. FAC, CR
Eragrostis capillaris (L.) Nees. Disturbed sites; occasional. SG-21. NL, CR
Eragrostis cilianensis (All.) Mosher. Shallow streams and gravel bars; frequent. SG-644. FACU, CR
**Eragrostis curvula* (Schrad.) Nees. Upland woods; occasional. SG-420. NL, CR

Eragrostis glomerata (Walter) L.H. Dewey. Shallow streams and gravel bars; occasional. SG-648. OBL, CR

Eragrostis hypnoides (Lam.) Britton, Sterns, & Poggenb. Mudflats; abundant. SG-590. OBL

**Eragrostis pilosa* (L.) P. Beauv. Disturbed sites; frequent. SG-162, 194. FACU, CR

Eragrostis spectabilis (Pursh) Steud. Upland fields; infrequent. SG-632. FACU, CR

Erianthus alopecuroides (L.) Elliott. Upland fields; rare. SG-719. NL, CR

Erianthus giganteus (Walter) Muhl. Upland fields; rare. SG-714. NL, CR

Erianthus strictus Baldwin. Wet meadows; rare. SG-677. NL, CR

**Festuca pratensis* L. Disturbed sites; infrequent. SG-396. FACU, CR

Festuca subverticillata (Pers.) E.B. Alexeev. Bottomland forests; occasional. SG-392. FACU

Hordeum pusillum Nutt. Disturbed sites; occasional. SG-2. FACU

Leersia oryzoides (L.) Sw. Swamps, wet meadows, emergent marshes; frequent. SG-304. FACW

Leersia virginica Willd. Disturbed sites; occasional. SG-203. FACW

Leptochloa filiformis (Lam.) P. Beauv. Disturbed sites; occasional. SG-635. NL, CR

Leptochloa panicoides (C. Presl) Hitchc. Disturbed sites; frequent. SG-117. FACW

**Lolium perenne* L. Disturbed sites; infrequent. SG-393. FACU

Melica mutica Walter. Upland woods; occasional. SG-366. NL

**Microstegium vimineum* (Trin.) A. Camus. Disturbed sites; occasional. SG-288. FAC+, CR

Muhlenbergia schreberi J.F. Gmel. Disturbed sites; occasional. SG-295. FAC

Panicum anceps Michx. Disturbed sites; occasional. SG-552. FAC-, CR

Panicum capillare L. var. *capillare*. Disturbed sites; infrequent. SG-682. FAC, CR

Panicum dichotomiflorum Michx. Upland fields, disturbed sites; infrequent. SG-679. FACW, CR

Panicum rigidulum Bosc *ex* Nees. var. *elongatum* (Scribn.) Lelong. Disturbed sites; occasional. SG-558. FACW, CR

Panicum rigidulum Bosc *ex* Nees var. *rigidulum*. Wet meadows, emergent marshes; frequent. SG-254. FACW

Panicum virgatum L. Shorelines; abundant. SG-615, 691. FAC+, CR

**Paspalum dilatatum* Poir. Disturbed sites; occasional. SG-559. FAC+, CR

Paspalum dissectum (L.) L. Disturbed sites; occasional. SG-681. OBL, CR

Paspalum floridanum Michx. Disturbed sites; occasional. SG-226. FACW, CR

Paspalum fluitans (Elliott) Kunth. Mudflats; abundant. SG-707. OBL

Paspalum laeve Michx. Disturbed sites; infrequent. SG-557. FACW-, CR

**Phleum pratense* L. Upland woods; infrequent. SG-411. FACU, CR

**Poa annua* L. Disturbed sites; occasional. SG-22. FAC, CR

Poa autumnalis Muhl. *ex* Elliott. Bottomland forests; occasional. SG-388. FACW-

**Poa pratensis* L. Upland woods; occasional. SG-415. FACW-, CR

Schizachyrium scoparium (Michx.) Nash. Upland fields; frequent. SG-620. FACU, CR

Setaria faberi R.A.W. Herrm. Disturbed sites; frequent. SG-236. UPL
Setaria parviflora (Poir.) Kerguelen. Disturbed sites; infrequent. SG-725. FAC, CR
Setaria pumila (Poir.) Roem. & Schult. Disturbed sites; frequent. SG-186, 690. NI, CR
Sorghum halepense (L.) Pers. Disturbed sites, agricultural fields. SG-449. FACU, CR
Sorghum bicolor (L.) Moench. Agricultural fields; abundant. SG-678. FACU
Sphenopholis obtusata (Michx.) Scribn. var. *obtusa*. Wet meadows; occasional. SG-375. FAC+, CR
Tridens flavus (L.) Hitchc. var. *flavus*. Disturbed sites; occasional. SG-616. NL, CR
**Triticum aestivum* L. Disturbed sites; infrequent. SG-391. NL
Tripsacum dactyloides (L.) L. Disturbed sites; frequent. EWC-4230, SG-79. FAC+
Vulpia octoflora (Walter) Rydb. var. *octoflora*. Disturbed sites; occasional. SG-420. FACU+, CR
**Zea mays* L. Disturbed sites, agricultural fields; infrequent. SG-727, NL.

PONTEDERIACEAE

Heteranthera limosa (Sw.) Willd. Mudflats; occasional. SG-215, 222. OBL, T

POTAMOGETONACEAE

**Potomogeton crispus* L. Open water; occasional. SG-373. OBL
Potamogeton nodosus Poir. Open water; occasional. SG-219. OBL, CR

SMILACACEAE

Smilax bona-nox L. Upland woods; frequent. SG-363. FAC, CR
Smilax glauca Walter. Upland woods, fields; occasional. SG-422. FAC, CR
Smilax rotundifolia L. Disturbed sites, bottomland forests; occasional. SG-60. FAC
Smilax tamnoides L. Bottomland forests; occasional. SG-201. FAC+, CR

TYPHACEAE

Typha latifolia L. Wet meadow; rare. SG-571. OBL, CR

SPERMATOPHYTA: ANGIOSPERMAE 2. DICOTS

ACANTHACEAE

Dicliptera brachiata (Pursh) Spreng. Bottomland forests; infrequent. SG-272. FACW
Justicia americana (L.) Vahl. Wet, open fields, shorelines; occasional. SG-255. OBL
Justicia ovata (Walter) Lindau var. *lanceolata* R.W. Long. Bottomland forests; rare. SG-189, 496. OBL, CR

Ruellia caroliniensis (J.F. Gmel.) Steud. Upland fields; occasional. SG-508. FACU, CR
Ruellia strepens L. Disturbed sites; frequent. SG-15,145,150. FAC-

ACERACEAE

Acer negundo L. Bottomland forests; occasional. SF-65, 80. FACW, CR
Acer rubrum L. Upland and low woods; occasional. SF-138, SG-380. FAC
Acer saccharinum L. Bottomland forests; occasional. SF-31, SG-330. FACW, CR
Acer saccharum Marshall. Bottomland and slope forests; infrequent. SF-39. FACU-, CR

AMARANTHACEAE

**Alternanthera philoxeroides* (Mart.) Griseb. Wet meadows, emergent marshes, and shorelines; locally abundant. EWC-4238, SG-67. OBL
**Amaranthus hybridus* L. Disturbed sites; infrequent. SG-665. NL, CR
**Amaranthus spinosus* L. Disturbed sites; rare. SG-585. FACU, CR
Amaranthus tuberculatus (Moq.) J.D. Sauer. Disturbed sites; occasional. SG-298. FACW+
Iresine rhizomatosa Standl. Bottomland forests; occasional. SG-250. FACW-, CR

ANACARDIACEAE

Rhus copallina L. Disturbed sites; occasional. SG-175. FACU-, CR
Rhus glabra L. Disturbed sites; occasional. SF-159. NL, CR
Toxicodendron radicans (L.) Kuntze. Bottomland forests, low woods, disturbed sites; frequent. Site record, no collections. FAC

ANNONACEAE

Asimina triloba (L.) Dunal. Bottomland forests; occasional. SG-347. FAC

APIACEAE

Chaerophyllum tainturieri Hook. Bottomland forests, disturbed sites; occasional. SG-322, 447. FAC
Cicuta maculata L. Disturbed sites; occasional. SG-134. OBL, CR
Cryptotaenia canadensis (L.) DC. Disturbed sites; occasional. SG-205. FAC+, CR
**Daucus carota* L. Disturbed sites; occasional. SG-188. NL, CR
Eryngium prostratum Nutt. Disturbed sites; occasional. SG-99. FACW, CR
Hydrocotyle verticillata Thunb. Emergent marshes; rare. SG-670. OBL, CR
Osmorhiza longistylis (Torr.) DC. Wooded limestone outcrops; occasional. SG-525. FAC

Ptilimnium capillaceum (Michx.) Raf. Disturbed sites; occasional. SG-89. OBL
Sanicula canadensis L. Disturbed sites, bottomland forests; occasional. SG-125. FACU
**Torilis arvensis* (Huds.) Link. Disturbed sites; frequent. SG-24,38. NL
Trepocarpus aethusae Nutt. *ex* DC. Shorelines, disturbed sites; frequent. SG-40. FACW
Zizia aurea (L.) W.D.J. Koch. Bottomland forests; occasional. SG-200. FAC+

APOCYNACEAE

Amsonia tabernaemontana Walter var. *tabernaemontana*. Bottomland forests; infrequent. SG-345. OBL
Apocynum cannabinum L. Roadsides, ditches; frequent. SG-42. FAC-
Trachelospermum difforme (Walter) A. Gray. Low woods, fencerows; occasional. SG-64, 241, 628. FACW

AQUIFOLIACEAE

Ilex decidua Walter. Bottomland forests, emergent marshes; occasional; SF-81. FACW-, CR
Ilex opaca Aiton. Upland woods; infrequent; SG-405. FAC-, CR

ARALIACEAE

Aralia spinosa L. Bottomland forests, disturbed areas; infrequent. SF-158. FAC, CR

ARISTOLOCHIACEAE

Aristolochia tomentosa Sims. Roadsides, fencerows; occasional. SG-54. FAC, CR

ASCLEPIADACEAE

Asclepias incarnata L. ssp. *incarnata*. Low woods, fields, ditches; occasional. SG-595. OBL, CR
Asclepias perennis Walter. Low woods; occasional. SG-37, 178, 529. OBL
Asclepias syriaca L. Disturbed sites; rare. SG-475. UPL, CR
Asclepias tuberosa L. Upland fields; infrequent. SG-490. NL
Asclepias variegata L. Upland woods; infrequent. SG-418, 568. FACU
Cynanchum laeve (Michx.) Pers. Roadsides, shorelines; occasional. SG-122. FAC, CR
Matelea gonocarpa (Walter) Shinners. Bottomland woods; abundant. EWC-13852, SG-58, 137, 161. FACW, CR

ASTERACEAE

Achillea millefolium L. Upland fields; occasional. SG-419. FACU, CR

Ageratina altisima (L.) R.M. King & H. Rob. Disturbed sites; occasional. SG-311. FACU-

Ambrosia artemisiifolia L. Disturbed sites; occasional. SG-312. FACU, CR

Ambrosia trifida L. Roadsides, upland fields; occasional. SG-289. FAC

Artemisia annua L. Disturbed sites; rare. SG-479. FACU, CR

Aster dumosus L. Upland fields; occasional. SG-570. FAC

Aster lanceolatus Willd. Disturbed areas; occasional. SG-307. NI

Aster paludosus Aiton ssp. *hemisphericus* (Alexander) Cronquist. Upland fields; rare. SG-711. FACU

Aster patens Aiton. Disturbed sites; infrequent. EWC-14563. NL, CR

Aster pilosus Willd. Wet meadows, thickets; occasional. SG-290. FAC-, CR

Aster urophyllus Lindl. Nonwooded limestone outcrops; rare. SG-685. NL, CR

Bidens aristosa (Michx.) Britton. Roadsides, ditches, waste places; occasional. SG-32. FACW, CR

Bidens bipinnata L. Disturbed sites; rare. SG-604. NL

Bidens cernua L. Wet meadows, shorelines; infrequent. SG-233, 278. OBL

Bidens discoidea (Torr. & A. Gray) Britton. Logs in water; frequent. SG-703. FACW

Bidens frondosa L. Low woods; frequent. SG-699. FACW

Bidens tripartita L. Mudflats, low woods; occasional. SG-292, 698. FACW+

Boltonia asteroides (L.) L'Her. Disturbed sites; occasional. SG-285. FACW

**Chrysanthemum leucanthemum* L. Agricultural fields, disturbed sites; occasional. SG-399. UPL, CR

Cirsium discolor (Muhl. *ex* Willd.) Spreng. Disturbed sites; frequent. SG-624. UPL

**Cirsium vulgare* (Savi) Ten. Disturbed sites; rare. SG-735. UPL, CR

Conoclinium coelestinum (L.) DC. Upland fields; occasional. SG-569. FAC

Conyza canadensis (L.) Cronquist. Disturbed sites; frequent. SG-586. FACU, CR

Coreopsis major Walter. Disturbed sites; infrequent. SG-485. NL

Coreopsis tripteris L. Upland fields; occasional. SG-566. FAC

**Eclipta prostrata* (L.) L. Wet fields, mudflats; occasional. SG-235. FACW-, CR

Elephantopus tomentosa L. Roadsides, weedy areas; occasional. SG-212. FAC, CR

Erechtities hieraciifolia (L.) Raf. *ex* DC. Upland fields; occasional. SG-554. FAC-, CR

Erigeron annus (L.) Pers. Roadsides, fields, ditches; occasional. SG-51. FACU, CR

Erigeron philadelphicus L. Waste places, roadsides, agricultural fields; occasional. SG-13. FAC, CR

Erigeron strigosus Muhl. *ex* Willd. Roadsides, agricultural fields, ditches; occasional. SG-52. FAC, CR

Eupatorium album L. var. *album*. Upland fields; rare. SG-565. NL

Eupatorium capillifolium (Lam.) Small. Disturbed sites; rare. SG-734. FACU, CR

Eupatorium fistulosum Barratt. Disturbed sites; infrequent. SG-659. FAC+

Eupatorium hyssopifolium L. Upland fields; occasional. SG-619. NL

Eupatorium perfoliatum L. Upland fields; occasional. SG-567. FACW+, CR

Eupatorium purpureum L. Disturbed sites; infrequent. SG-482. FAC, CR

Eupatorium rotundifolium L. ssp. *rotundifolium*. Upland fields; occasional. SG-553. FAC

Eupatorium serotium Michx. Disturbed areas; occasional. SG-294. FAC

Fleischmannia incarnata (Walter) R.M. King & H. Rob. Nonwooded limestone outcrops; frequent. SG-683. FACU+, CR

**Galinsoga quadriradiata* Ruiz & Pav. Disturbed sites; frequent. SG-131, EWC-14562. NL

Gnaphalium obtusifolium L. Upland fields; occasional. SG-631. NL, CR

Gnaphalium purpureum L. Disturbed sites; infrequent. SG-356, 445. UPL

Helenium amarum (Raf.) H. Rock. Roadsides, agricultural fields, ditches; occasional. SG-96. FACU-, CR

Helenium flexuosum Raf. Low woods, shorelines, disturbed sites; frequent. SG-176, 230. FACW, CR

Helianthus microcephalus Torr. & A. Gray. Upland fields; infrequent. SG-643. UPL

Helianthus silphioides Nutt. Upland fields; rare. SG-689. NL, CR

Helianthus strumosus L. Disturbed sites; infrequent. SG-587. NL

Helianthus tuberosus L. Disturbed sites; occasional. SG-301, 684. FAC

**Heterotheca camporum* (Greene) Shinners. Disturbed sites; rare. SG-721. NL, CR

Hieracium gronovii L. Low woods; rare. SG-607, 623. UPL, CR

**Iva annua* L. Wet meadows, roadsides; abundant. SG-283. FAC

Krigia caespitosa (Raf.) K.L. Chambers. Wet meadows, mudflats; occasional. SG-8, 275. FACU+

Krigia dandelion (L.) Nutt. Upland woods; occasional. SG-361. FACU

Lactuca canadensis L. Roadsides, disturbed sites; occasional. SG-217. FACU-

Lactuca floridana (L.) Gaerth. Disturbed sites; infrequent. SG-596. FACU, CR

**Lactuca saligna* L. Disturbed sites; rare. SG-693. FACU, CR

**Lactuca serriola* L. Roadsides, weedy areas; occasional. SG-263. FAC

Liatris squarrulosa Michx. Upland fields; occasional. SG-712. NL

Melanthera nivea (L.) Small. Roadsides, weedy areas near the Tennessee River; occasional. SG-227, 238. FACU

Mikania scandens (L.) Willd. Disturbed sites; occasional. SG-300. FACW+

Pluchea camphorata (L.) DC. Shorelines; rare. SG- 269. FACW

Polymnia uvedalia L. Bottomland forests; occasional. SG-501. NL, CR

Pyrrhopappus carolinianus (Walter) DC. Roadsides, fields, ditches; occasional. SG-44, 73. NL, CR

Rudbeckia hirta L. var. *hirta*. Upland thickets; infrequent. SG-491. FACU

Rudbeckia triloba L. Disturbed sites; occasional. SG-550. FACU-

Senecio anonymus A.W. Wood. Upland fields; infrequent; SG-423. FACU-, CR

Senecio glabellus Poir. Roadsides, fields, waste places; occasional. SG-9. FACW+

Sericocarpus linifolius (L.) Britton, Sterns, & Poggenb. Upland fields; rare. SG-510. NL, CR

Silphium perfoliatum L. Mesic woods; occasional. SG-245. FAC+

Solidago caesia L. Wooded limestone outcrops; occasional. SG-708. FACU, CR

Solidago canadensis L. Disturbed sites; occasional. SG-664. FACU, CR
Solidago erecta Pursh. Upland woods; occasional. SG-715. NL
Solidago flexicaulis L. Wooded limestone outcrops; occasional. SG-709. FACU, CR
Solidago gigantea Aiton. Wet meadows; roadsides, disturbed sites; occasional. SG-274. FACW
Solidago hispida Muhl. Disturbed sites; occasional. SG-694. NL, CR
Solidago nemoralis Aiton. Disturbed sites; occasional. SG-592. NL, CR
Solidago sphacelata Raf. Nonwooded limestone outcrops; abundant. SG-686, 726. NL
Solidago ulmifolia Muhl. Upland woods; occasional. SG-611. NL, CR
**Sonchus asper* (L.) Hill. Shorelines; infrequent. SG-119. FAC+, CR
**Taraxacum officinale* Weber. Roadsides, weedy areas; occasional. SG-164. FACU, CR
Verbesina alternifolia (L.) Britton. Low woods, disturbed sites; occasional. SG-199. FAC
Vernonia gigantea (Walter) Trel. *ex* Branner & Coville. Roadsides, fields, ditches, low woods; frequent. SG-249. FACW, CR
**Xanthium strumarium* L. Wet fields, waste places; abundant. SG-282. FAC

BALSAMINACEAE

Impatiens capensis Meerb. Bottomland woods; locally abundant. SG-240. FACW
Impatiens pallida Nutt. Nonwooded limestone outcrops; rare. SG-705. FACW, CR

BERBERIDACEAE

**Nandina domestica* Thunberg. Old home sites; rare. SG-518. NL, CR
Podophyllum peltatum L. Bottomland forests; frequent. SG-343. FACU

BETULACEAE

Alnus serrulata (Aiton) Willd. Forested swamps, streambanks; rare. SG-467. FACW
Betula nigra L. Forested swamps; occasional. SF-9,78. FACW
Carpinus caroliniana Walter. Bottomland and low woods; occasional. SG-257. FAC, CR
Corylus americana Walter. Low woods; rare. SG-543. FACU
Ostrya virginiana (Mill.) K. Koch. Bottomland and low forests; infrequent. SF-110. FACU-, CR

BIGNONIACEAE

Bignonia capreolata L. Roadsides, woods, weedy areas; occasional SG-165. FAC, CR
Campsis radicans (L.) Seem. *ex* Bureau. Woodlands, fencerows, roadsides; frequent. SG-26. FAC
**Catalpa speciosa* (Warder *ex* Barney) Engelm. Disturbed sites; infrequent. SG-412. FACU, CR

BORAGINACEAE

Cynoglossum virginianum L. Upland woods; infrequent. SG-401. UPL, CR
Heliotropium indicum L. Roadsides, fields, ditches; occasional. SG-111, 196. FAC+
Myosotis macrosperma Engelm. Low and bottomland woods, fields; occasional. SG-10. FAC
Myosotis verna Nutt. Bottomland forests, disturbed sites; frequent. SG-339. FAC-, CR

BRASSICACEAE

Arabis laevigata (Muhl.) Poir. var. *laevigata*. Bottomland forests; occasional. SG-352. NL
**Capsella bursa-pastoris* (L.) Medik. Agricultural fields, disturbed sites, wet meadows; occasional. SG-338. FACU+, CR
**Cardamine hirsuta* L. Wet meadows, disturbed areas; frequent. SG-313. FAC, CR
Dentaria laciniata Muhl. *ex* Willd. Bottomland forests, slope forests; frequent. SG-325. FACU
Iodanthus pinnatifidus (Michx.) Steud. Bottomland forests; infrequent. SG-387. FACW
Lepidium virginicum L. Waste places, roadsides, fields; frequent SG-12. FACU
Rorippa palustris (L.) Besser ssp. *fernaldiana* (Butters & Abbe) Jonsell. Wet meadows; infrequent. SG-101. OBL, CR
Sibara virginica (L.) Rollins. Bottomland fields; infrequent. SG-354. FAC, CR

CALLITRICHACEAE

Callitriche heterophylla Pursh emend. Darby. Open water; locally abundant. SG-328. OBL, CR
Calltriche terrestris Raf. emend. Torr. Agricultural fields; occasional. SG-372. FACW, CR

CAMPANULACEAE

Campanula americana L. Disturbed sites; occasional. SG-528. FAC, CR
Lobelia cardinalis L. Wet meadows, shorelines; occasional. SG-252. FAC
Lobelia inflata L. Low woods, disturbed sites; occasional. SG-184. FAC, CR
Lobelia puberula Michx. Upland fields; infrequent. SG-667, 732. FACW-
Triodanis perfoliata (L.) Nieuwl. var. *perfoliata*. Waste places, roadsides, fields; occasional. SG-27. FACU+

CAPPARACEAE

**Polanisia dodecandra* (L.) DC. Shorelines; locally abundant. SG-265. FACU-

CAPRIFOLIACEAE

**Lonicera japonica* Thunb. Disturbed sites; occasional. SG-448. FAC-, CR
Sambucus canadensis L. Roadsides, weedy areas; occasional. SG-174. FACW-, CR
Symphoricarpus orbiculatus Moench. Low woods; occasional. SG-551. FAC-

CARYOPHYLLACEAE

**Arenaria serpyllifolia* L. Disturbed sites; occasional. SG-395. FAC, CR
**Cerastium glomeratum* Thuill. Disturbed sites; occasional. SG-334. FACU-, CR
**Dianthus armeria* L. Roadsides, weedy areas; infrequent. SG-216. UPL, CR
**Saponaria officinalis* L. Disturbed sites; rare. SG-564. FACU, CR
Silene antirrhina L. Disturbed sites; infrequent. SG-486. NL
Silene virginica L. Upland woods; infrequent. SG-358. NL
**Stellaria media* (L.) Vill. Disturbed sites; frequent. SG-315. FACU

CELASTRACEAE

Euonymus americanus L. Upland woods; infrequent. SG-403. NL

CHENOPODIACEAE

**Chenopodium album* L. Disturbed sites; rare. SG-728. FAC-, CR
**Chenopodium ambrosioides* L. Disturbed sites; rare. SG-601. FACU, CR

CISTACEAE

Lechea tenuifolia Michx. Upland fields; infrequent. SG-661. NL

CLUSIACEAE

Hypericum denticulatum Walter var. *acutfolium* (Elliott) S.F. Blake. Upland fields; infrequent. SG-575. FACW
Hypericum drummondii (Grev. & Hook.) Torr. & A. Gray. Roadsides, weedy areas; occasional. SG-185. FACU, CR
Hypericum hypericoides (L.) Crantz. Shorelines; occasional. SG-229, 495. FAC, CR
Hypericum mutilum L. Roadsides, weedy areas; occasional. SG-153. FACW, CR
Hypericum prolificum L. Shorelines; infrequent. EWC-13858, SG-129. FACU
Hypericum punctatum Lam. Upland fields; occasional. SG-187. FAC, CR
Hypericum stragulum W.P. Adams & N. Robson. Upland woods; infrequent. SG-488. NL, CR
Triadenum tubulosum (Walter) Gleason. Low woods; occasional. SG-655. OBL, CR

Triadenum walteri (J.G. Gmel.) Gleason. Low woods; occasional. SG-657. OBL, CR

CONVOLVULACEAE

Calystegia sepium (L.) R. Br. Roadsides, weedy areas; frequent. SG-132, 163. FAC, CR
Cuscuta campestris Yunck. Roadsides, fencerows; occasional. SG-56,78. NL, CR
**Ipomoea coccinea* L. Bottomland forests, shorelines; occasional. EWC-4235, SG-166. FAC
**Ipomoea hederacea* Jacq. Roadsides, ditches, wooded areas; occasional. SG-80, 169. FAC-, CR
Ipomoea lacunosa L. Moist roadsides, thickets; occasional. SG-270. FAC+
Ipomoea pandurata (L.) G. Mey. Roadsides, fields, ditches, low woods; frequent. SG-84. FACU, CR

CORNACEAE

Cornus amomum Mill. Emergent marshes; occasional. SF-66. FACW+
Cornus drummondii C.A. Mey. Bottomland forests; infrequent. SG-465, 706. FAC, CR
Cornus florida L. Bottomland forests; infrequent. SG-331. FACU

CRASSULACEAE

Sedum pulchellum Michx. Nonwooded limestone outcrops; rare. SG-462. UPL
Sedum ternatum Michx. Wooded limestone outcrops; locally abundant. SG-520. NL, CR

CUCURBITACEAE

**Cucurbita pepo* L. Shorelines; rare. SG-647. NL, CR
Melothria pendula L. Disturbed sites; occasional. SG-593. FACW-, CR
Sicyos angulatus L. Disturbed sites, low woods; frequent. SG-299. FACW-

EBENACEAE

Diospyros virginiana L. Bottomland and slope forests; infrequent. SF-33. FAC

ELAEAGNACEAE

**Elaeagnus umbellata* Thunb. Disturbed areas; rare. SG-335. NL, CR

ERICACEAE

Chimaphila maculata (L.) Pursh. Upland woods; rare. SG-660, 717. NL, CR
Kalmia latifolia L. Wooded limestone outcrops; infrequent. SG-672. FACU

Oxydendrum arboreum (L.) DC. Slope woods; occasional. SG-430. FACU
Vaccinium arboreum Marshall. Upland woods and fields; frequent. SG-513. FACU
Vaccinium corymbosum L. Upland fields; rare. SG-517. FACW, CR

EUPHORBIACEAE

Acalypha ostryifolia Riddell. Agricultural fields, shorelines; occasional. SG-209. NL, CR
Acalypha rhomboidea Raf. Roadsides, weedy areas; occasional. SG-190. FAC-
Acalypha virginica L. Upland fields; rare. SG-542. FACU-, CR
Croton glandulosus L. var. *septentrionalis* Mull. Arg. Shorelines; occasional. SG-704. NL, CR
Croton monanthogynus Michx. Disturbed sites; infrequent. SG-603. NL
Euphorbia commutata Engelm. Disturbed sites; occasional. SG-397. FACU, CR
Euphorbia corollata L. Upland fields; infrequent. SG-509. NL
Euphorbia dentata Michx. Disturbed sites; rare. SG-634. NL, CR
Euphorbia maculata L. Roadsides, weedy areas; abundant. SG-251. FACU
Euphorbia supina Raf. Shorelines; occasional. SG-646. NL
Phyllanthus caroliniensis Walter. Shorelines; occasional. SG-645. FAC+

FABACEAE

**Albizia julibrissin* Durazz. Roadsides, weedy areas; occasional. SG-180. NL, CR
Amorpha glabra Desf. *ex* Poir. Shorelines; frequent. SG-650, SF-10. NL, CR
Amphicarpaea bracteata (L.) Fernald. Low woods, streambanks; occasional. SG-656. FAC, CR
Apios americana Medik. Shorelines, roadsides; abundant. SG-276. FACW, CR
Astragalus canadensis L. Nonwooded limestone outcrops; infrequent. SG-464. FAC, CR
Baptisia alba (L.) R. Br. Bottomland and low woods; infrequent. SG-149, 440. FAC
Cercis canadensis L. Disturbed sites, slope woods; infrequent. SF-69. FACU, CR
Chamaecrista fasciculata (Michx.) Greene. Roadsides, weedy areas; frequent. SG-239. FACU
Chamaecrista nictitans (L.) Moench. Shorelines; locally abundant. SG-267. FACU
Clitoria mariana L. Nonwooded limestone outcrops; rare. SG-549. NI, CR
Desmanthus illinoensis (Michx.) Macmill. *ex* B.L. Rob. & Fernald. Shorelines; infrequent. SG-228. FAC, CR
Desmodium canescens (L.) DC. Upland fields; occasional. SG-718. NL
Desmodium marilandricum (L.) DC. Upland fields; infrequent. SG-621. NL, CR
Desmodium nudiflorum (L.) DC. Wooded limestone outcrops; infrequent. SG-576. NL, CR
Desmodium paniculatum (L.) DC. Roadsides, open fields; occasional. SG-237, 287. FACU
Desmodium pauciflorum (Nutt.) DC. Low woods; infrequent. SG-577. NL, CR
Desmodium perplexum B.G. Schub. Roadsides, ditches; occasional. SG-75. NL, CR

Desmodium rotundifolium DC. Upland woods; frequent. SG-540. NL, CR
Desmodium viridiflorum (L.) DC. Upland fields; rare. SG-625. NL
Dioclea multiflora (Torr. & A. Gray) C. Mohr. Roadsides, ditches; occasional. SG-55. FAC+, CR
Gleditsia tricanthos L. Bottomland forests; occasional. SF-62. FAC, CR
**Glycine max* (L.) Merrill. Agricultural fields; frequent. SG-243. NL
**Kummerowia stipulacea* (Maxim.) Schindl. Disturbed sites; infrequent. SG-680. FACU-
**Kummerowia striata* (Thunb.) Schindl. Disturbed sites; occasional. SG-533. FACU, CR
**Lathyrus hirsutus* L. Disturbed sites; infrequent. SG-398. NI, CR
**Lespedeza cuneata* (Dum. Cours.) G. Don. Roadsides, weedy areas; abundant. SG-177. UPL, CR
Lespedeza hirta (L.) Hornem. Upland fields; occasional. SG-617. NL, CR
Lespedeza procumbens Michx. U pland fields; frequent. SG-511. NL
Lespedeza repens (L.) Barton. Upland fields; infrequent. SG-555. NL, CR
Lespedeza virginica (L.) Britton. Upland fields; occasional. SG-618. NL
**Melilotus alba* Medik. Roadsides, fields, ditches; occasional. SG-53. NL, CR
Robinia pseudoacacia L. Bottomland forests; occasional. SF-71,79. UPL, CR
Senna marilandica L. Shorelines; infrequent. SG-597. FAC, CR
**Senna obtusifolia* (L.) H.S. Irwin & Barneby. Open, sandy shores; locally abundant. EWC-4236. FACU+
Sesbania exaltata (Raf.) Cory. Wet meadows; abundant. EWC-13851, SG-157. FACW-, CR
Strophostyles helvula (L.) Elliott. Wet meadows; occasional. SG-302, 676. FAC
**Trifolium campestre* Schreb. Disturbed sites; infrequent. SG-365. NL
**Trifolium pratense* L. Roadsides, fields, ditches; occasional. SG-97. FACU-, CR
**Trifolium repens* L. Roadsides, weedy areas; infrequent. SG-197. FACU, CR
**Vicia sativa* L. ssp. *nigra* (L.) Ehrend. Disturbed sites; occasional. SG-413. FACU, CR
**Vicia villosa* Roth ssp. *varia* (Host) Corb. Roadsides, fields, ditches; frequent. SG-43. NL, CR
Wisteria frutescens (L.) Poir. Low woods, roadsides; infrequent. SG-59. FACW, CR

FAGACEAE

Fagus grandifolia Ehrend. Slope forests; occasional. SF-111. FACU, CR
Quercus alba L. Upland woods; occasional. SG-400. FACU, CR
Quercus coccinea Münchh. Upland woods; rare. SG-613. NL
Quercus falcata Michx. Upland woods; occasional. SG-407. FACU-
Quercus imbricaria Michx. Low woods; infrequent. SG-453. FAC-, CR
Quercus lyrata Walter. Bottomland forests; infrequent. EWC-4232, SG-264. OBL
Quercus michauxii Nutt. Bottomland forests; infrequent. SG-225. FACW-, CR
Quercus montana Willd. Wooded limestone outcrops; rare. SG-640. UPL, CR
Quercus muhlenbergii Engelm. Wooded limestone outcrops; infrequent. SG-530. UPL, CR

Quercus nigra L. Bottomland forests; rare. SG-493. FAC, CR
Quercus pagoda Raf. Bottomland forests; occasional. SF-11. FAC+, CR
Quercus palustris Münchh. Low woods; frequent. SG-561. FACW, CR
Quercus phellos L. Bottomland forests; frequent. SF-8, 40, SG-259. FACW-
Quercus rubra L. Upland woods; frequent. SG-531, 638. FACU
Quercus shumardii Buckley. Bottomland forests; locally abundant. EWC-4233, SG-258. FACW-
Quercus stellata Wangenh. Upland woods; infrequent. Wangenh SF-35. FACU
Quercus velutina Lam. Upland woods; occasional. SG-408. UPL, CR

FUMARIACEAE

Dicentra cucullaria (L.) Bernh. Slope forests; frequent. SG-320. NL, CR

GENTIANACEAE

Bartonia paniculata (Michx.) Muhl. Low woods; abundant. SG-662. OBL, CR
Sabatia angularis (L.) Pursh. Disturbed sites; infrequent. SG-547. FAC, CR

GERANIACEAE

Geranium carolinianum L. Waste places, roadsides, fields; frequent. SG-14. FACU

HALORAGACEAE

Myriophyllum spicatum L. Open water; occasional. SG-297. OBL, CR

HAMAMELIDACEAE

Liquidambar stryaciflua L. Bottomland forests; occasional. SF-12. FAC+

HYDROPHYLLACEAE

Hydrolea uniflora Raf. Shorelines, emergent marshes; infrequent. SG-223. OBL
Nemophila aphylla (L.) Brummitt. Bottomland forests; frequent. SG-327. FACW, CR

JUGLANDACEAE

Carya aquatica (F. Michx.) Nutt. Bottomland forests; infrequent. SF-82. OBL, CR
Carya cordiformis (Wangenh.) K. Koch. Bottomland forests; infrequent. SG-560. FAC, CR
Carya glabra (Mill.) Sweet. Upland woods; occasional. SG-262. FACU
Carya illinoensis (Wangenh.) K. Koch. Bottomland forests; rare. SG-310. FAC+, CR

Carya lanciniosa (F. Michx.) Loudon. Bottomland forests; rare. SG-309. FACW-, CR
Carya ovata (Mill.) K. Koch. Bottomland forests; infrequent. SF-139. FACU
Carya tomentosa (Poir.) Nutt. Bottomland forests and slope woods; occasional. SF-157. NL, CR
Juglans nigra L. Bottomland forests; occasional. SF-117. FACU, CR

LAMIACEAE

Agastache nepetoides (L.) Kuntze. Disturbed sites; infrequent. SG-600. FAC
Blephilia hirsuta (Pursh) Benth. Upland woods; frequent. SG-598. FACU, CR
Cunila origanoides (L.) Britton. Upland woods; frequent. SG-612. NL
**Glechoma hederacea* L. Low woods; infrequent. SG-658. FACU, CR
Hedeoma hispidum Pursh. Upland fields; infrequent. SG-427. NL, CR
**Lamium amplexicaule* L. Disturbed areas; infrequent. SG-364. NL, CR
**Lamium purpureum* L. Bottomland woods, disturbed areas; frequent. SG-316. NL, CR
Lycopus americanus Muhl. *ex* Barton. Low woods; occasional. SG-653. OBL, CR
Lycopus virginicus L. Low woods; occasional. SG-671. OBL
**Mentha* x *piperita* L. Wet meadows; rare. SG-583. FACW, CR
Monarda fistulosa L. Disturbed sites; rare. SG-468. FACU-
**Perilla frutescens* (L.) Britton. Disturbed sites; occasional. SG-296. FAC
**Prunella vulgaris* L. Roadsides, weedy areas; occasional. SG-191. FAC-
Pycanthemum incanum (L.) Michx. ssp. *loomisii* (Nutt.) Hamer comb. nov., ined. Disturbed sites; occasional. SG-526. NL
Pycnanthemum tenuifolium Schrad. Upland fields; infrequent. SG-556. FAC-
Salvia lyrata L. Upland woods; occasional. SG-383. FAC-, CR
Scutellaria elliptica Muhl. var. *hirsuta* (Short & Peter) Fernald. Low woods; rare. SG-545. NL, CR
Scutellaria integrifolia L. Low woods; infrequent. SG-654. FAC, CR
Scutellaria lateriflora L. Wooded limestone outcrops; occasional. SG-606. FACW+
Scutellaria nervosa Pursh. Low woods; infrequent. SG-572. FAC
Scutellaria ovata Hill. Roadsides, low woods; occasional. SG-61, 127. FACU, CR
Stachys tenuifolia Willd. var. *tenuifolia*. Low woods, shorelines; occasional. SG-120. FACW-
Teucrium canadense L. Roadsides, ditches, low woods; frequent. SG-82. FACW-
Trichostema dichotomum L. Upland fields; infrequent. SG-700. UPL, CR

LAURACEAE

Lindera benzoin (L.) Blume. Bottomland forests; occasional. SG-499. FACW, CR
Sassafras albidum (Nutt.) Nees. Upland woods; infrequent. SG-436. FACU

LINACEAE

Linum virginianum L. Upland fields; rare. SG-514. FAC+, CR

LYTHRACEAE

Ammania coccinea Rottb. Roadsides, fields, ditches; locally abundant. SG-93, 156, 261. OBL

Cuphea viscosissima Jacq. Disturbed sites; infrequent. EWC-14561. FACU, CR

Rotala ramosior (L.) Koehne. Mudflats, shorelines; occasional. SG-247. OBL, CR

MAGNOLIACEAE

Liriodendron tulipifera L. Upland woods; infrequent. SG-379. FACU, CR

MALVACEAE

**Abutilon theophrasti* Medik. Disturbed sites; rare. SG-579. FACU-, CR

Hibiscus laevis All. Roadsides, wet meadows, emergent marshes; frequent. EWC-4229, SG-152. OBL

Hibiscus moscheutos ssp. *moscheutos*. Wet meadows, emergent marshes; rare. SG-581. OBL, CR

**Sida spinosa* L. Roadsides, wet meadows; locally abundant. SG-173. FACU

MELASTOMATACEAE

Rhexia virginica L. Disturbed sites; rare. SG-588. FACW+, CR

MENISPERMACEAE

Calycocarpum lyonii (Pursh) A. Gray. Bottomland forests; occasional. SG-170. FACW-, CR

Cocculus carolinus (L.) DC. Bottomland forests; occasional. SG-246. FAC

MOLLUGINACEAE

**Mollugo verticillata* L. Agricultural fields; locally abundant. SG-207. FAC

MORACEAE

**Maclura pomifera* (Raf.) C.K. Schneid. Bottomland forests; rare. SF-77. FACU, CR

**Morus alba* L. Low woods; rare. SG-455. FACU-, CR

Morus rubra L. Bottomland forests; occasional. SF-73. FAC, CR

NELUMBONACEAE

Nelumbo lutea (Willd.) Pers. Open water; locally abundant. EWC-4228, SG-128. OBL

NYMPHAEACEAE

Nuphar luteum (L.) Sibth. & Sm. ssp. *macrophyllum* (Small) E.O. Beal. Open water; locally abundant. SG-221. OBL, CR

NYSSACEAE

Nyssa aquatica L. Bottomland forests; rare. EWC-13859. OBL
Nyssa sylvatica Marshall. Upland woods; occasional. SG-428. FAC

OLEACEAE

Forestiera acuminata (Michx.) Poir. Pool shorelines; occasional. SF-18. OBL, CR
**Forsythia suspensa* (Thunb.) Vahl. Old home sites; rare. SG-594. NL
Fraxinus americana L. Low woods; occasional. SF-70, 85. FACU
Fraxinus pennsylvanica Marshall. Low woods; frequent. SF-36, 64, SG-260. FACW
Fraxinus quadrangulata Michx. Wooded limestone outcrops; rare. SG-476. NL, CR
**Ligustrum vulgare* L. Bottomland forests; infrequent. SF-17, SG-181. UPL, CR

ONAGRACEAE

Ludwigia alternifolia L. Wet woods, wet meadows, mudflats, shorelines; frequent. SG-253. OBL, CR
Ludwigia decurrens Walter. Roadsides, fields, ditches; occasional. SG-92. OBL, CR
Ludwigia glandulosa Walter. Wet meadows, emergent marshes; frequent. SG-147. OBL, CR
Ludwigia leptocarpa (Nutt.) H. Hara. Wet meadows, emergent marshes; occasional. SG-308, EWC-4237. OBL
Ludwigia palustris (L.) Elliott. Wet meadows, emergent marshes; frequent. SG-232. OBL
Ludwigia peploides (Humb., Bonpl. & Kunth) P.H. Raven ssp. *glabrescens* (Kunze) P.H. Raven. Wet meadows, emergent marshes; frequent. SG-106. OBL, CR
Oenothera biennis L. Disturbed sites; occasional. SG-158. FACU-, CR

OROBANCHACEAE

Epifagus virginiana (L.) Barton. Low woods, wooded limestone outcrops; rare. SG-546, 733. NL

OXALIDACEAE

Oxalis stricta L. Roadsides, fields, ditches; occasional. SG-39. UPL

Oxalis violacea L. Upland woods; occasional. SG-362. NL

PAPAVERACEAE

Sanguinaria canadensis L. Wooded limestone outcrops; rare. SG-521. UPL, CR

PASSIFLORACEAE

Passiflora incarnata L. Roadsides, low woods; occasional. SG-103. NL, CR
Passiflora lutea L. Low woods, forested swamp; occasional. SG-139. NL, CR

PHRYMACEAE

Phryma leptostachya L. Low woods, disturbed sites; occasional. SG-527. FACU

PHYTOLACCACEAE

Phytolacca americana L. Roadsides, agricultural fields, ditches; occasional. SG-88. FACU+, CR

PLANTAGINACEAE

Plantago aristata Michx. Disturbed sites; occasional. SG-65,107. NL
**Plantago lanceolata* L. Disturbed sites; infrequent. SG-458. FAC, CR
Plantago rugelii Decne. Disturbed sites; frequent. SG-148. FAC, CR
Plantago virginica L. Disturbed sites, low fields; frequent. SG-377. FACU-, CR

PLATANACEAE

Platanus occidentalis L. Bottomland forests; infrequent. SF-67. FACW-, CR

POLEMONIACEAE

Phlox paniculata L. Bottomland forests; occasional. SG-198. FACU, CR
Polemonium reptans L. Wooded limestone outcrops; infrequent. SG-432. FAC

POLYGALACEAE

Polygala sanguinea L. Upland fields; rare. SG-516. FAC-
Polygala verticillata L. var. *verticillata* (Nutt.) A.W. Wood. Upland fields; occasional. SG-515. UPL, CR

POLYGONACEAE

Brunnichia ovata (Walter) Shinners. Shrub swamp; occasional. EWC-4234, SG-118. FACW

**Polygonum aviculare* L. Roadsides, ditches, fields; frequent. SG-87. FAC-, CR

**Polygonum caespitosum* Blume var. *longisetum* (Bruijn) A.N. Steward. Shorelines, forested swamp; frequent. SG-121, 123. FACW-, CR

Polygonum hydropiperoides Michx. Wet meadows, emergent marshes, disturbed sites; occasional. SG-62, 231. OBL

Polygonum lapathifolium L. Roadsides, fields, ditches; occasional. SG-98. FACW

Polygonum pensylvanicum (L.) Small. Roadsides, fields, ditches; occasional. SG-68. FACW, CR

Polygonum punctatum Elliott. Wet meadows; occasional. SG-115. FACW+

Polygonum scandens L. Roadsides, wet meadows; abundant. SG-273. FAC-

Polygonum virginianum L. Agricultural fields, low woods; occasional. SG-195. FAC

**Rumex acetosella* L. Roadsides, fields, ditches; occasional. SG-110. FACU+

Rumex altissimus A.W. Wood. Disturbed sites; frequent. SG-376. FACW

**Rumex conglomeratus* Murray. Agricultural fields, disturbed sites; occasional. SG-456. FACW-, CR

**Rumex crispus* L. Roadsides, fields; frequent. SG-19. FAC

PORTULACEAE

Claytonia virginica L. Bottomland forests; frequent. SG-348. FACU-, CR

**Portulaca oleracea* L. Shorelines; infrequent. SG-608. FACU, CR

PRIMULACEAE

Lysimachia ciliata L. Roadsides; occasional. SG-140. FACW-

**Lysimachia nummularia* L. Bottomland woods; locally abundant. SG-204. FACW+, CR

Samolus parviflorus Raf. Bottomland woods, fields; occasional. SG-33. OBL, CR

RANUNCULACEAE

Aquilegia canadensis L. Nonwooded limestone outcrops; infrequent. SG-459. FAC-, CR

Cimicifuga racemosa (L.) Nutt. Wooded limestone outcrops; infrequent. SG-434. NL, CR

Clematis crispa L. Low woods; infrequent. SG-368. FACW+, CR

Clematis viorna L. Roadsides, low woods; infrequent. SG-77. NL, CR

Clematis virginiana L. Nonwooded limestone outcrops; rare. SG-637. FAC+, CR

Myosurus minimus L. Agricultural fields; infrequent. SG-371. FACW-

Ranunculus abortivus L. Wet meadows, disturbed sites; frequent. SG-318. FAC

Ranunculus hispidus Michx. Bottomland forests; occasional. SG-333. FAC

Ranunculus pusillus Poir. Wet meadows, emergent marshes; frequent. SG-378. FACW+

Ranunculus recurvatus Poir. Bottomland forests; infrequent. SG-350. FAC, CR

**Ranunculus sardous* Crantz. Roadsides, ditches, fields; frequent. SG-28,50. FAC+, CR

Thalictrum revolutum DC. Upland woods; rare. SG-437. FAC+, CR

RHAMNACEAE

Rhamnus caroliniana Walter. Disturbed sites, mesic woods; occasional. SG- 578. NL

ROSACEAE

Agrimonia parviflora Aiton. Low fields; occasional. SG-584. FAC
Amelanchier arborea (F. Michx.) Fernald. Slope forests; rare. SG-639. FACU
Aruncus dioicus (Walter) Fernald. Wooded limestone outcrops; rare. SG-433. FACU+, CR
Crataegeus mollis (Torr. & A. Gray) Scheele. Bottomland forests; occasional. SF-14. FAC
Crataegeus phaenopyrum (L.) Medik. Bottomland forests; infrequent. SF-13,34,38. FAC-, CR
Crataegeus virdis L. Bottomland forests; infrequent. SG-356. FACW, CR
Geum canadense Jacq. Disturbed sites; occasional. SG-135. FACW, CR
Malus augustifolia (Aiton) Michx. Upland fields; rare. SG-381. NL
Potentilla simplex Michx. var. *simplex.* Upland fields; infrequent. SG-386. FACU
Prunus augustifolia Marshall. Disturbed sites; rare. SG-722. NL
**Prunus persica* (L.) Batsch. Old home sites; rare. SG-402. NL
Prunus serotina Ehrend. Bottomland forests; infrequent. SF-72. FACU
**Rosa* cultivar. Old home sites; locally abundant. SG-446. NL
**Rosa multiflora* Thumb. *ex* Murray. Disturbed sites; infrequent. SG-25,484. UPL, CR
Rosa setigera Michx. Disturbed sites; rare. SG-452. FACU, CR
Rubus argutus Link. Disturbed sites, fields; occasional. SG-49. FAC
**Rubus bifrons* Vest *ex* Trutt. Nonwooded limestone outcrops, disturbed sites; locally abundant. SG-469. NL, CR
Rubus flagellaris Willd. Bottomland forests, disturbed sites; occasional. SG-346. UPL

RUBIACEAE

Cephalanthus occidentalis L. Swamps, emergent marshes; frequent. SF-109. OBL, CR
Diodia teres Walter. Upland fields; occasional. SG-182. FACU-
Diodia virginiana L. Roadsides, shorelines, wet meadows; frequent. SG-45. FACW
Galium aparine L. Wet meadows, disturbed sites; occasional. SG-349. FACU, CR
Galium circaezans Michx. Roadsides, low woods; occasional. SG-112. FACU-, CR
Galium pilosum Aiton. Upland woods; infrequent. SG-470. NL
Galium tinctorium L. Low woods; occasional. SG-69. FACW, CR
Galium triflorum Michx. Wooded limestone outcrops; infrequent. SG-480, 507. FACU, CR
Hedyotis caerulea (L.) Hook. Disturbed sites; occasional. SG-314. FAC, CR

Hedyotis purpurea (L.) Torr. & A. Gray var. *purpurea*. Upland woods; occasional. SG-409. NL
Oldenlandia boscii (DC.) Chapm. Shorelines; occasional. SG-669. FACW-, CR
Spermacoce glabra Michx. Disturbed sites; frequent. SG-130. FACW, CR

RUTACEAE

Ptelea trifoliata L. Bottomland forests; infrequent. SG-429. FAC

SALICACEAE

Populus deltoides Bartram *ex* Marshall. Low woods; infrequent. SF-16. FAC+
Salix caroliniana Michx. Shorelines; frequent. SF-76. OBL
Salix nigra Marshall. Low woods; occasional. SF-83. OBL

SAPINDACEAE

**Cardiospermum halicacabum* L. Wet meadows, emergent marshes; infrequent. EWC-4231. FAC

SAPOTACEAE

Bumelia lycioides (L.) Pers. Roadsides, slope forests; infrequent. SG-218. FACW

SAURURACEAE

Saururus cernuus L. Forested swamps; abundant. SG-450. OBL, CR

SAXIFRAGACEAE

Heuchera villosa Michx. var. *villosa*. Wooded and nonwooded limestone outcrops; infrequent. SG-461, 523. NL
Hydrangea cinerea Ser. Low woods; frequent. SG-443. NL
Itea virginica L. Low woods; infrequent. SG-535. FACW+, CR
Penthorum sediodes L. Mudflats, shorelines; occasional. SG-242. OBL, CR

SCROPHULARIACEAE

Agalinis fasiculata (Elliott) Raf. Upland fields; occasional. SG-673. FAC+, CR
Agalinis tenuifolia (Vahl) Raf. Limestone seeps; infrequent. SG-663. FACU
Aureolaria flava (L.) Farw. Forest borders; occasional. SG-642. NL
Bacopa rotundifolia (Michx.) Wettst. Wet meadows; occasional. SG-214. OBL, CR
Chelone glabra L. Low woods; rare. SG-720. OBL

Dasystoma macrophylla (Nutt.) Raf. Disturbed sites, slope woods infrequent. FAC, CR
Gratiola neglecta Torr. Agricultural fields; frequent. SG-369. OBL, CR
Gratiola virginiana L. Wet meadows; infrequent. SG-357. OBL, CR
**Kickxia elatine* (L.) Dumort. Wet woods; occasional. SG-211. FACU
Leucospora multifida (Michx.) Nutt. Shorelines; rare. SG-602. OBL
Lindernia dubia (L.) Pennell var. *anagallidea*. Wet meadows, mudflats; occasional. SG-90, 160. FACW+, CR
Mimulus alatus Aiton. Wet meadows; occasional. SG-192. OBL
Penstemon calycosus Small. Roadsides, waste places; occasional. SG-23. FACU
Scrophularia marilandica L. Disturbed sites; occasional. SG-599. FACU, CR
**Verbascum blattaria* L. Roadsides, fields, ditches; occasional. SG-83. FAC, CR
**Verbascum thapsus* L. Roadsides, fields, ditches; occasional. SG-46 NI, CR
**Veronica arvensis* L. Disturbed sites; occasional. SG-332. UPL
**Veronica peregrina* L. Wet meadows, disturbed sites; occasional. SG-353. FAC+, CR
**Veronica serpyllifolia* L. Disturbed sites; occasional. SG-394. FAC+, CR

SIMAROUBACEAE

**Ailanthus altissima* (Mill.) Swingle. Disturbed sites; infrequent. SG-481. FACU-, CR

SOLANACEAE

**Datura stramonium* L. Disturbed sites; infrequent. SG-629. NL, CR
Physalis angulata L. var. *angulata*. Roadsides, ditches ;occasional. SG-70, 172. FAC, CR
Physalis heterophylla Nees. Disturbed sites; rare. SG-630. NL
Physalis longifolia Nutt. var. *subglabrata* Mack. & Bush. Roadsides, weedy areas; occasional. SG-138. NL
Physalis pubescens L. Shorelines; infrequent. SG-609. UPL
Solanum carolinense L. Roadsides, ditches, fields; occasional. SG-41. FACU, CR
Solanum ptycanthum Dunal. Roadsides, fields, ditches; infrequent. SG-244, 284. FACU, CR

STAPHYLEACEAE

Staphylea trifolia L. Wooded limestone outcrops; rare. SG-340. FAC, CR

STYRACACEAE

Halesia tetraptera J. Ellis. Bottomland forests; occasional. SF-75, SG-427. NI
Styrax americana Lam. Bottomland forests; frequent. SG-494. FACW
Styrax grandifolia Aiton. Low woods; rare. SG-544. FACU-

ULMACEAE

Celtis laevigata Willd. Bottomland forests; frequent. SF-15. FACW
Celtis occidentalis L. Bottomland forests; occasional. SF-74. FAC, CR
Planera aquatica (Walter) J.F. Gmel. Bottomland forests; occasional. SF-86. OBL, CR
Ulmus alata Michx. Bottomland forests and slope woods; frequent. SF-32. FACU+
Ulmus americana L. Bottomland forests; occasional. SF-84. FACW
Ulmus rubra Muhl. Bottomland forests; frequent. SF-37, 63, 138. FAC, CR

URTICACEAE

Boehmeria cylindrica (L.) Sw. Wet woods, weedy areas; occasional. SG-213. FACW+, CR
Laportea canadensis (L.) Wedd. Wet woods; occasional. SG-208. FACW, CR
Pilea pumila (L.) A. Gray. Low woods; frequent. SG-697. FACW, CR
Urtica chamaedryoides Pursh. Low woods; infrequent. EWC-13841. FAC, CR

VALERIANACEAE

**Valerianella locusta* (L.) Betcke. Disturbed sites; infrequent. SG-367. NL, CR
Valerianella radiata (L.) Dufr. Roadsides, agricultural fields; frequent. SG-11. FAC-

VERBENACEAE

Callicarpa americana L. Wooded limestone outcrops; rare. SG-696. FACU-, CR
Phyla lanceolata (Michx.) Greene. Shorelines; occasional. SG-126. FACW+, CR
Verbena simplex Lehm. Roadsides; occasional. SG-410. NL, CR
Verbena urticifolia L. Roadsides, weedy areas; occasional. SG-133, 202. FAC+

VIOLACEAE

Viola pubescens Aiton. Bottomland forests; frequent. SG-329. FACU
Viola rafinesquii Greene. Wet meadows, disturbed sites; occasional. SG-317. FAC
Viola sororia Willd. var. *sororia*. Bottomland forests, disturbed sites; occasional. SG-321. FAC

VISCACEAE

Phoradendron leucarpum (Raf.) Reveal. Parasitic on various hardwood species; occasional. Site record, no collections. NL, CR

VITACEAE

Ampelopsis arborea (L.) Koehne. Disturbed sites; infrequent. SG-460. FAC+, CR
Ampelopsis cordata Michx. Roadsides, fencerows; occasional. SG-66. FAC+, CR

Parthenocissus quinquefolia (L.) Planch. Roadsides, bottomland and low woods; frequent. SG-136. FAC, CR

Vitis aestivalis Michx. var. *aestivalis*. Bottomland forests. SG-504. FAC-

Vitis palmata Vahl. Low woods; infrequent. SG-29. FACW-, CR

Vitis rotundifolia Michx. Low woods, fencerows; infrequent. SG-72. FAC

Vitis vulpina L. Low woods, fencerows; occasional. SG-141, 168. FAC+

VITA

Stephanie Michelle Gunn was born on 16 August 1979 in Dickson, Tennessee. Her parents, William M. and Brenda Davis Gunn, raised her in McEwen, Tennessee. Her two younger brothers are William H. and David R. Gunn. Stephanie attended elementary, junior high, and high school at McEwen School where she graduated in 1997 as valedictorian of her senior class. During the fall of 1997, she enrolled as a freshman at Austin Peay State University. She was a biology major/chemistry minor and member of the President's Emerging Leaders Program. She began working for the Center for Field Biology in 1999 as a student field assistant for Dr. E. W. Chester and continued employment at the Center as a graduate research assistant. Stephanie graduated from Austin Peay State University in Clarksville, Tennessee, obtaining a Bachelor of Science with honors, during the spring of 2001. Stephanie received her Master of Science degree from Austin Peay State University in May 2003.