

THE FLORA AND VEGETATIONAL COMMUNITIES OF WILBUR WRIGHT FISH AND WILDLIFE AREA, HENRY COUNTY, INDIANA

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ABSTRACT. This paper on Wilbur Wright Fish and Wildlife Area (WWFWA), Henry County, Indiana, documents 635 vascular plant species and varieties within the 416.6 ha (1029 acre) site. The 635 species and varieties represent 343 genera and 109 families with the Asteraceae (76 species), Cyperaceae (55 species including 44 *Carex* spp.) and Poaceae (53 species) having the highest number of species. Unusual sedges include *Carex atherodes* and *Carex gravida*. A total of 274 species is recorded for the first time from Henry County. Of the 611 angiosperms listed, 163, or approximately 27%, are non-native or exotic species. The vascular flora of WWFWA includes one rare species (*Rudbeckia fulgida* var. *fulgida* [in prairie plantings]), two endangered species (*Epilobium ciliatum* and *Zannichellia palustris*), two threatened species (*Thalictrum pubescens* and *Veronica anagallis-aquatica*) and four species on the watch list (*Filipendula rubra*, *Panax quinquefolium*, *Spiranthes ovalis* and *Synandra hispidula*) compiled by the Indiana Natural Heritage Program. The physical and biotic history of the site is reviewed, and the major community types (upland forest, floodplain forest, wetlands, aquatic and successional) are described.

Keywords: Henry County, flora, upland forest, floodplain forest, successional forest, wetlands, exotic plants

The Wilbur Wright Fish and Wildlife Area (WWFWA) is a repository for many wild plants and animals indigenous to Henry County, Indiana and the counties of the Blue River Valley drainage basin. Located approximately two miles (3 km) north of the city of New Castle, most of WWFWA is situated between the Big Blue and Little Blue Rivers. In spite of its proximity to a fairly large population center, the 416.6 ha (1029 acre) area supports a rich flora in a diversity of habitats. As a “nature preserve,” it serves as a permanent habitat for the native flora and fauna of the region. However, prior to or since its establishment in August 1974, no formal botanical survey has been performed.

WWFWA is managed by of the Division of Fish and Wildlife (IDNR) whose primary management objective is to maximize game populations for public hunting. Currently, the management activities include mowing and disking of open fields to maintain an early successional plant community. In addition to

open fields, much of the eastern half of WWFWA contains a variety of forest habitats, ranging from morainic ridgetop forest to bottomland forest. WWFWA is notable in that it contains one of the largest remaining sections of natural forest in east-central Indiana. Forests in this area have been greatly reduced through clearing for wood products, farming and urbanization.

An inventory of resources is the necessary first step in developing a long-term resource management plan. In determining a classification system for the natural regions of Indiana, Homoya et al. (1985) used floral species composition and distribution as an important component for delineating various natural regions. Species presence and absence reveal much about the landscape. Demographic information is also important to determine if the numbers of individuals or populations of a species are increasing, decreasing or stable (Schemske 1994). An inventory is the simplest means to document species diversity and is a fundamental step in monitoring changes that may occur in species composition. Meier

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Figure 1.—Location of Henry County, Indiana (left) and the location of the Wilbur Wright Fish and Wildlife Area north of New Castle (right).

et al. (1995) found that even small forest stands, in the size ranges typical of those found in east central Indiana, are important reserves of vernal herb diversity. Additionally, measures of diversity are frequently seen as indicators of the well-being of ecological systems (Magurran 1988). These quantitative, as well as qualitative, measurements of vegetation are essential to wildlife management and research (Higgins et al. 1994).

This study has two goals: first, to inventory the vascular flora; and second, to describe the relative abundance and distribution of each species. Additionally, it is an important component of a regional survey of biodiversity in east-central Indiana (Badger et al. 1998; Rothrock et al. 1993; Rothrock 1997; Ruch et al. 1998).

THE STUDY AREA

WWFWA, consisting of 416.6 ha, is located approximately 3.2 km north of the city of New Castle in Henry County, Indiana (Sections 1, 2, and 3, Township 17 North, Range 10 East; and Sections 35 and 36, Township 18 North, Range 10 East) (Fig. 1). The property is bordered on the north by County Road (CR) 250 N to the east of State Road 103 and by the hypothetical extension of CR 250 N west of SR 103 to the Blue River; on the west by the

Big Blue River; on the southwest by the Little Blue River and an abandoned railroad right-of-way which forms an inverted “V,” and on the southeast by CR 150 North; and on the southern two-thirds of the east side by Hillsboro Road (Fig. 2). The northern one-third boundary of the east side wanders irregularly along various private properties. WWFWA is divided into four units. Units 1 and 2 lie to the east of SR 103, while Units 3 and 4 lie to the west. Unit 1 is separated from Unit 2 by the Little Blue River, and Unit 3 is separated from Unit 4 by CR 200 N (Fig. 2). A new state prison facility is located across the Big Blue River from Unit 4 near CR 200 N. The property is owned by the IDNR Division of Fish and Wildlife.

WWFWA lies within the eastern third of the Tipton Till Plain Section of the Central Till Plain Natural Region (Homoya et al. 1985) or in the Castle Till Plain and Drainage-way of the Central Till Plain Natural Region (Gray 2000). This portion of the state is characterized by flat to gently rolling terrain, the result of continental glaciation during which glacial till and outwash were deposited as the ice advanced and retreated from Indiana during the Wisconsin glacial stage (Hedge 1997; Melhorn 1997). Thus, all features of the

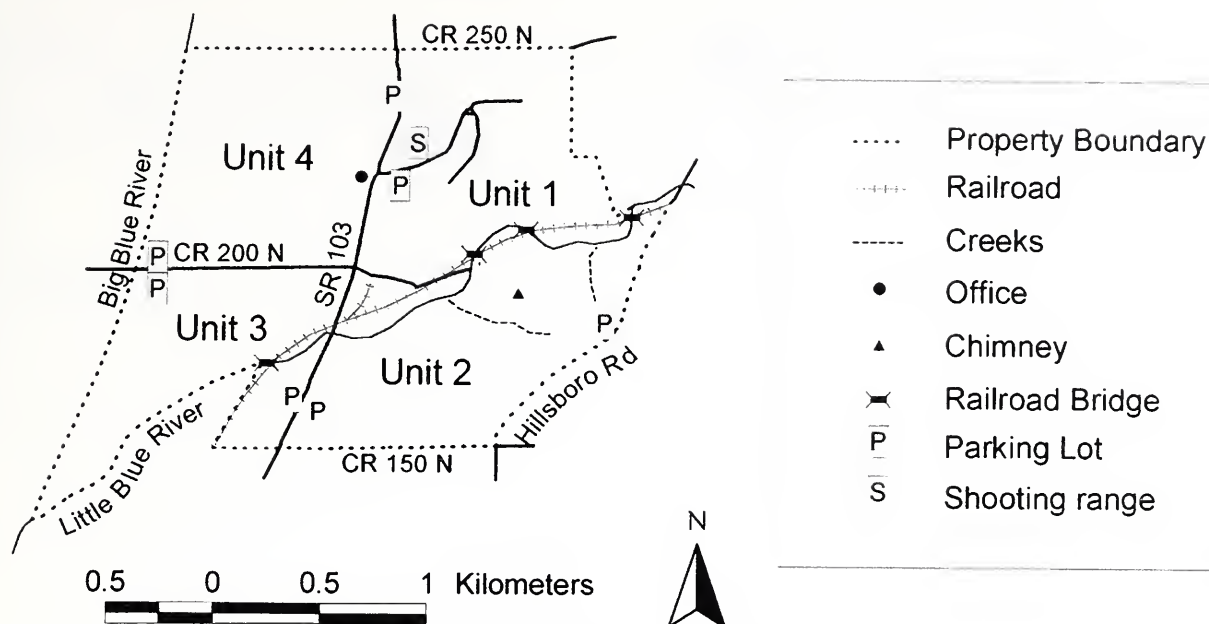


Figure 2.—Map of the Wilbur Wright Fish and Wildlife Area.

Tipton Till Plain either are glacial in origin or were formed by stream erosion in late to post-glacial time. Because the Blue River Valley was formed many millennia ago by meltwater discharge, the valley seems very wide for the size and age of the Big Blue River running through it. According to Gray (1997), “This valley is part of a complex that formed along the margin of a wasting glacier. Intermixed slices of till and gravel mark this as the site of a group of sub-ice tunnels, or of ice-walled channels that carried meltwater from inner parts of the glacier to its margin, whence the meltwater flowed down what is now the valley of the Blue River.”

Geologically, WWFWA lies on the western side of the Cincinnati Arch. The property sets on a bedrock of limestone and dolostones of Silurian origin (Thompson 1997). The bedrock is overlain by a mass of unconsolidated material (e.g., the glacial till and soil layers above) that is between 15–60 m and the landscape is strewn with abundant large crystalline erratics (glacial erratics) (Indiana Geological Survey 2001a; Phinney 1886). Franzmeier (1997) describes the area as having a “thin loess over glacial till.” The eastern half of Units 1 and 2 are morainic deposits from the Knightstown Morainic System, formerly known as the Champaign Morainic System (Indiana Geological Survey 2001b; Malott 1922; Wayne 1965). It is on these deposits that most of the natural woodlands of WWFWA occur.

The soils in WWFWA are varied but can be summarized into a few general categories. Most of the soil in Units 3 and 4 are Westland silt loam. Unit 4 also has a large area of Martisco muck. These soils are described as being deep, nearly level, very poorly drained, medium textured or mucky soil formed in glacial outwash sediments and organic deposits (USDA 1987). In WWFWA these soils occur in the Blue River Valley plain east of the river. Although described as being poorly drained, these areas were tiled and drained and used by the Department of Mental Health (see land-use history below) for row crops. The soils of the upsloping eastern one-third of Unit 4 and most of Unit 1 are Eldean silt loam or Eldean clay loam. At WWFWA these areas are nearly level to strongly sloping (up to 18% or more), have well drained, medium to moderately fine textured soils that are moderately deep lying over sand and gravel (USDA 1987). Nearly all of the springs (e.g., seeps, fens, etc.) at WWFWA occur within Eldean map units. The soils in the forested area of Unit 2 are mostly Losantville silt loam with some Miamian silt loam. These soils are level to steep, usually well drained, and of medium to moderately fine texture (USDA 1987). At WWFWA these soils cover the wooded morainic deposit from the Knightstown Morainic System. This area has several woodland seeps and a few springs forming small creeks that drain into the Little Blue River. Two small headwater creeks have eroded the woodland terrain forming small,

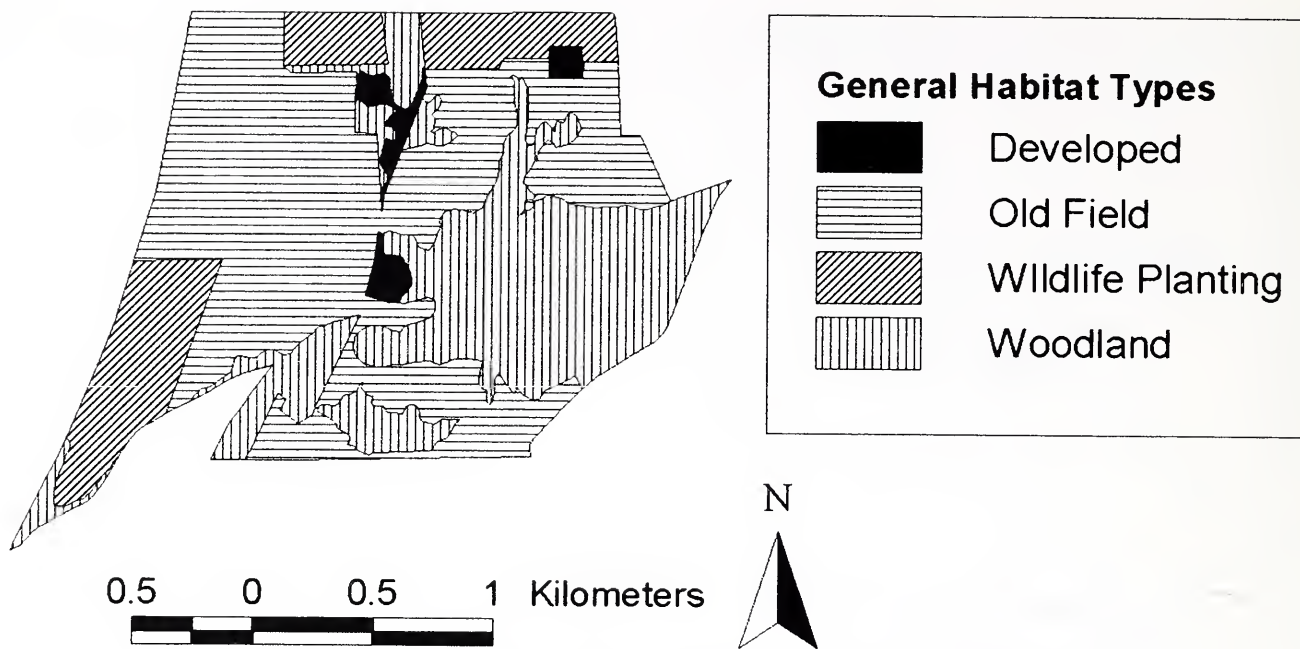


Figure 3.—Habitat types of the Wilbur Wright Fish and Wildlife Area.

moist, botanically rich ravines. Several plant species only occur in these ravines and their accompanying alluvial plains.

Flatwood communities are common in the Tipton Till Plain section. Characterized by having poorly drained soils with many shallow depressions that are seasonally wet, these communities apparently do not occur at WWFWA. This is in part because the flat areas of the property, e.g., Units 3 and 4, have been tilled and drained for row crop farming when the Department of Mental Health owned the land. The morainic ridge-top forest, slope forest, and bottomland forests are moderate to very well drained. We only found three very small vernal pools in the woodland area. The principal habitats that occur in WWFWA are old fields (some with prairie plantings), developed, morainic ridge-top forest, slope forest, bottomland or floodplain forest, black locust plantings, hillside seeps, calcareous fens, and sedge meadows (Fig. 3).

The head of the Blue River lies approximately 11.3 km north and east of WWFWA in the general depression within which Summit Lake now resides. According to Potzger (1935), this area of the Blue River Valley was the site of “an ancient lake with shore lines sharply marked by high ridges and knolls. When civilized man [*European settlers*] first came to Henry County, this ancient lake was a wet swamp into which numerous springs drained.” At that time, the head of the Blue

River was a powerful bubbling spring (Potzger 1935), but at present the source is hidden below Summit lake. The upper Blue River Valley, where WWFWA is located, lies in the White River basin, specifically in the Driftwood Watershed (USGS Cataloging Unit 05120204). The Big Blue River, along with several other rivers in this watershed flow south and west, eventually forming the East Fork of the White River near Columbus, Indiana.

LAND USE HISTORY

Potzger (1935) hypothesized that following the Wisconsin glacial age, the once powerful Blue River dwindled in water volume as the glaciers retreated, and the shallowing outer reaches of the river evidently supported aquatic and helophytic vegetation that gradually filled in the shallow water. Mosses then invaded, and in time the valley developed into a cedar-tamarack (*Thuja* and *Larix*) bog. Over the millennia the decay of mosses and other plant material left a thick layer of peat (0.6–1.8 m in depth) especially near the Blue River. Potzger (1935) further postulated that some catastrophic influence, possible fire, occurred during the time when the cedar-tamarack forest had been reduced to a relic colony by an advancing broad-leaved forest. He suggested that the fire might have been the immediate cause for the complete destruction of the

Table 1.—Wilbur Wright fish and wildlife area land acquisition time line.

Date	Acreage (ha)	Description of transfer
7 February, 1972	344.13	Transferred from Indiana Village of the Epileptics to IDNR Division of State Parks.
1 August, 1974	344.13	Transferred from IDNR Division of State Parks to IDNR Division of Fish and Wildlife.
24 October, 1980	0.19	House site on Hillsborough Rd. transferred from Mental Health to IDNR Division of Fish and Wildlife (house demolished).
24 October, 1980	1.21	Residential site along west side of SR103 and CR 250 N (buildings demolished).
18 July, 1990	46.96	Unit 2 transferred from Mental Health to IDNR Division of Fish and Wildlife.
6 August, 1991	1.67	Residential site transferred from Mental Health to IDNR Division of Fish and Wildlife (buildings demolished).
28 May, 1999	16.19	Land south of Department of Corrections Facility, west of Blue River, and East of old Railroad bed transferred from Department of Corrections to IDNR Division of Fish and Wildlife.
8 June, 1999	6.07	Service area in Unit 1 transferred from Mental Health to IDNR Division of Fish and Wildlife. The Department of Corrections is currently using this area.

northern forest and the initiation of a sedge meadow community.

Prior to European settlement, the Tipton Till Plain Section of Indiana was primarily covered with beech-maple forest (Homoya et al. 1985). Review of original land survey data collected by General Land Office (GLO) surveyors between 1820–1821 reveals that several other plant communities may have existed including wet-mesic prairie and oak-hickory community types. The upper Blue River Valley floor was covered by an intermittent lowland forest and sedge-covered flats (Potzger 1935). No conifers were in the valley when the settlers first moved into the region (Potzger 1935). The GLO land survey data indicates that the morainic ridge on the eastern side of WWFWA was largely forested at the time of settlement.

In the 1890s the Big Blue River channel was dredged. The dredging lowered the water table of the adjacent land so that the area could be used for agriculture (Potzger 1935).

In March of 1906, the State of Indiana purchased 416.6 ha, which included most of the present WWFWA. From this time until the land was transferred to IDNR Division of Fish and Wildlife in 1972, it was under the management of the Department of Mental Health. Through extensive tiling, much of the valley floor (e.g., Units 3 and 4 of WWFWA) was either cultivated or pastured. Units 1, 2, and

4 also contained some building sites (Fig. 3). While under Department of Mental Health ownership, the property was a state-operated farm with patients housed at the Village for the Epileptics providing labor. In 1969, the state farming operation was closed (New Castle State Hospital 1980). Portions of the property, mainly in Units 3 and 4, remained in row crops through the late 1990's. WWFWA consists currently of old field and wooded habitats. Portions of old field habitats in all units are intensively managed for public hunting through mowing, disking, and plowing (Schuyler pers. comm.). Table 1 lists the time line of land acquisition for WWFWA. The area covered in this study includes all land acquired before 6 August 1991, e.g., approximately 392.3 ha.

METHODS

During the late summer and fall of 1999 and the 2000 and 2001 growing seasons, one to four forays per week were made into the study area. Voucher specimens of each species observed were collected and have been deposited in the Ball State University Herbarium (BSUH). Notes on vegetation consisted of species lists with visual estimates of their abundance (see catalog of vascular plants). Additionally, seasonal changes in the dominant vegetation (bases on time of flowering) were noted for many of the varied habitats.

Nomenclature of pteridophytes and gymnosperms follows the *Flora of North America*, Volume 2 (Morin et al. 1993). Except for the Cyperaceae and the Poaceae, nomenclature of the Magnoliophyta follows Gleason & Cronquist (1991). The Cyperaceae and Poaceae follow the nomenclature of Swink & Wilhelm (1994). Species were deemed unreported for Henry County if they did not appear in the computer database of Keller et al. (1984). Within the catalog of vascular flora, each species is followed by its common name(s) based primarily on Gleason & Cronquist (1991), a visual estimate of its relative abundance, its typical habitat in the study area, and a Ball State University Herbarium (BSUH) number(s). The relative abundance for species is defined as follows: rare = < 5 sites although a species may be abundant at one site; infrequent = occasional, not widespread throughout its potential habitats, but may be locally abundant at a site; frequent = common throughout its potential habitats and may be locally abundant at one or more sites; and abundant = common and numerous throughout its potential habitats.

RESULTS

The catalog of the vascular flora of the Wilbur Wright Fish and Wildlife Area contains 635 species representing 343 genera and 109 families. Thirty-three families are represented by only one species. A comparison with the Indiana Natural Heritage Data Center's records for Henry County suggests that the county was poorly collected since a total of 274 species and varieties are recorded for the first time. Of the 611 angiosperms listed, 163, or approximately 27%, are non-native or exotic species. The ten families with the highest number of species are the Asteraceae (76 species), Cyperaceae (55 species, including 44 *Carex* spp.), Poaceae (53 species), Rosaceae (30 species), Liliaceae (23 species), Lamiaceae (21 species), Ranunculaceae (19 species), Brassicaceae (18 species), Fabaceae (17 species), and Apiaceae (16 species). Based on the list compiled by the Indiana Natural Heritage Program (3 May 1996 draft, available from the Indiana Natural Heritage Program), the status of several plant at WWFWA is as follows: Rare: *Rudbeckia fulgida* var. *fulgida*; Endangered: *Epilobium ciliatum* and *Zanichellia palustris*; Threatened: *Thalictrum pu-*

bescens and *Veronica anagallis-aquatica*; and on the Watch List: *Filipendula rubra*, *Panax quinquefolium*, *Spiranthes ovalis*, and *Synandra hispidula*. The location and dbh of some of the largest trees are shown in Fig. 4.

Habitat Descriptions

Vegetational communities at WWFWA are very diverse, due both to complex topography and a variety of land uses in the past and at present. Plant communities therefore reflect both original natural types as well as types that have originated through human disturbance and introduction of alien species. Both natural and anthropogenic communities, especially the later, are in various stages of ecological succession and development.

Natural communities in WWFWA, although affected by periodic logging, clearing, introductions of alien species and other disturbance, nevertheless retain much of the characteristic plant associations of this region. These include both forest (upland and floodplain forests) and wetland communities. Other community types are more strikingly anthropogenic; these include open fields, meadows, thickets and early successional woodlands. Figure 3 outlines general habitat types. A broader description of each habitat follows.

Upland forest.—The upland forest occupies much of the land in Unit 2, encompassing two headwater tributary valleys and the land in between. It also occurs in Unit 1 and Unit 3 in small, very disturbed stands. This deciduous forest type is significantly different from the poorly-drained flatwoods type occurring on the Tipton Till Plain to the west (Badger et al. 1998; Ruch et al. 1998). Tree species present are characteristic of well-drained soils, e.g., *Carpinus caroliniana*, *Carya cordiformis*, *C. ovata*, *Fagus grandifolia*, *Fraxinus americana*, *Juglans nigra*, *Liriodendron tulipifera*, *Ostrya virginiana*, *Quercus alba*, and *Q. rubra*. Other tree species occurring in the upland forest include *Acer saccharum*, *Aesculus glabra*, *Carya glabra*, and *Tilia americana*. Common woody vines are *Parthenocissus quinquefolia*, *Smilax hispida*, *Vitis riparia*, and *V. vulpina*. Common shrubs include *Lindera benzoin*, *Ribes cynosbati*, and *Viburnum prunifolium*. Ground plants include *Agrimonia pubescens*, *Alliaria petiolata*, *Allium tricoccum*, *Anemonella thalictroides*, *Arisaema triphyllum*, *Asarum canadense*, *Asplenium pla-*

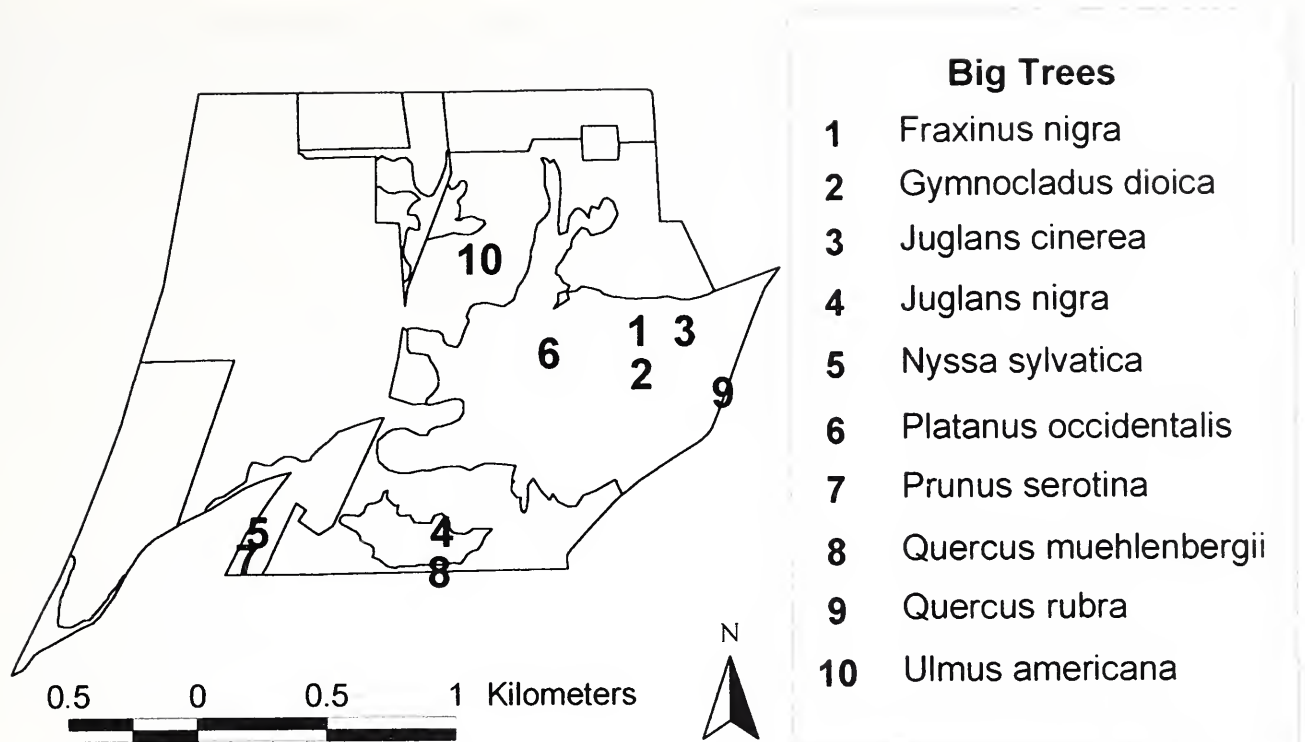


Figure 4.—Location of some of the largest trees at Wilbur Wright Fish and Wildlife Area. 1 = *Fraxinus nigra*, dbh = 50.0 cm; 2 = *Gymnocladus dioica*, dbh = 64.3 cm; 3 = *Juglans cinerea*, dbh = 63.0 cm; 4 = *Juglans nigra*, dbh = 80.2 cm; 5 = *Nyssa sylvatica*, dbh = 78.3 cm; 6 = *Platanus occidentalis*, dbh = 242.9 cm; 7 = *Prunus serotina*, dbh = 103.0 cm; 8 = *Quercus muehlenbergii*, dbh = 110.9 cm; 9 = *Quercus rubra*, dbh = 148.5 cm; 10 = *Ulmus americana*, dbh = 89.6 cm.

tyneuron, *Aster cordifolius*, *A. lateriflorus*, *A. sagittifolius*, *A. shortii*, *Botrychium virginianum*, *B. dissectum*, *Camassia scilloides*, *Campauula americana*, *Cardamine concatenata*, *C. douglassii*, *Circaea lutetiana*, *Claytonia virginica*, *Cystopteris protrusa*, *Dicentra cucullaria*, *Elymus hystrix*, *Erigenia bulbosa*, *Erythronium americanum*, *Euonymus obovatus*, *Eupatorium rugosum*, *Galium concinnum*, *Geranium maculatum*, *Geum canadense*, *Hydrophyllum appendiculatum*, *H. macrophyllum*, *Isopyrum biternatum*, *Juncus tenuis*, *Lactuca floridana*, *Luzula multiflora*, *Orchis spectabilis*, *Osmorhiza longistylis*, *O. claytonii*, *Phlox divaricata*, *Podophyllum peltatum*, *Polemonium reptans*, *Polygonatum biflorum*, *Polygonum virginianum*, *Prenanthes altissima*, *Ranunculus micranthus*, *Ruellia strepens*, *Sanguinaria canadensis*, *Sanicula gregaria*, *S. trifoliata*, *Silene virginica*, *Solidago caesia*, *Stellaria pubera*, *Trillium flexipes*, *T. recurvatum*, *T. sessile*, *Uvularia grandiflora*, *Viola pubescens* and *V. sororia*. In addition, approximately 20 species of *Carex* occur in these woodlands. Although much of this forest type lies on uplands and gentle slopes and is fairly uniform in composition, several community

subtypes occur within the boundaries of the mixed mesophytic forest. These are mostly shaded and some could be considered wetlands. Several of these sites are described below.

Steeper slopes and ravines: This type is only poorly differentiated from the mesophytic forest of upland areas. However, certain plants tend to favor this habitat, including *Diplazium pycnocarpon*, *Fraxinus quadrangulata*, *Hepatica acutiloba*, *Mitella diphylla*, *Polystichum acrostichoides*, *Ranunculus hispidus*, *R. recurvatus*, *Quercus muehlenbergii*, *Solidago flexicaulis*, *Thalictrum dioicum*, and several *Carex* spp.

Depositional banks and alluvial plains of streams: This habitat is found in the lower reaches of both headwater streams in Unit 2. It is subject to brief flooding during heavy rains and its depositional soils are deep and rich. *Cryptotaenia canadensis*, *Laportea canadensis*, *Leersia virginica*, *Lobelia siphilitica*, *Minutus alatus*, *Ranunculus hispidus*, and *Valeriana pauciflora* are characteristic species.

A rather similar, but unshaded, plant community is found where the northern headwater

stream in Unit 2 ends by subsidence into the bottomland soils of the Little Blue River Valley. Here soft, wet soils promote the tipping and falling of any sizable trees and hence an open meadow results. This habitat supports many of the species listed for alluvial plains as well as *Aster puniceus*, *Cardamine rhomboidea*, *Carex* spp., *Equisetum arvense*, *Eupatorium maculatum*, *E. perfoliatum*, *Senecio aureus*, *Valerianella umbilicata* and several species of grass. A large individual *Juglans cinerea* is located on the western edge of this meadow.

Skunk cabbage seep: This community occurs on a shaded seepage area at the base of the north-facing slope of the Blue River Valley in Unit 2. It is about 100 m long and as much as 10 m wide. The soft, mucky organic soil is occupied almost exclusively by *Symplocarpus foetidus* (skunk cabbage). Other plants that occur in association with the margin of this seep, or the seep itself, and were found almost nowhere else in this study include *Caltha palustris*, *Cornus alternifolia*, *Smilacina stellata*, and *Senecio aureus*.

Hydrangea seeps: These also occur mostly on steep, wet slopes of the Little Blue River Valley in Unit 2. These rather small communities are dominated by *Hydrangea arborescens*, sometimes occurring with *Equisetum hyemale*.

Scouring rush seeps: These communities consist of dense stands of *Equisetum hyemale*, often to the virtual exclusion of other plants. These occur on both shaded and open slopes, river bottomlands, wet fields and old railroad beds or wherever there is a slow discharge of moisture from the soil.

Woodland ephemeral ponds: Only three small examples were found, all in Unit 2. A number of plants occurred in the dried pond next to parking area 2A, including *Carex davisi*, *C. grayi*, and *C. tribuloides*.

Camass swales: These consist of shallow, gently sloping valleys carrying rainwater runoff into headwater streams within the forest. They typically support large dense colonies of *Camassia scilloides* in spring. Other plants include *Cryptotaenia canadensis*, *Laportea canadensis* and *Physostegia virginiana*.

Dry hilltops and south-facing dry slopes: The topography and open canopy of this habitat permits sunlight to penetrate to the forest floor. This provides a partially sunny but very

dry situation quite different from most of the forest. In some respects, the margins of a recovering clear-cut in between the headwater streams of Unit 2 provides a similar habitat where *Heuchera americana* and *Scutellaria ovata*, both typically species of dry wooded slopes, have become established. A dry, south-facing slope community is found just southeast of the junction of the south headwater stream and the Little Blue River. The plants that occur here include *Antennaria plantaginifolia*, *Arabis laevigata*, *Cacalia atriplicifolia*, *Carex pennsylvanica*, *Dodecatheon meadia*, *Luzula multiflora*, *Quercus velutina*, *Silene virginica*, *Thlaspium trifoliatum*, and *Tradescantia virginiana*. Most of these species occurred only at this site.

Successional forests: Much of the original forest in Unit 2 is now bounded by areas that are undergoing succession. Furthermore, a 25+ year old clear-cut area, located between the two headwater streams, is also undergoing similar succession. These "new," young forests are adjacent to native vegetation seed sources. Thus, they are tending toward a more archetypal successional process than many other areas at WWFVA where seed sources of native communities are more remote. Many of these successional forests occur where lawns with buildings once stood. Some of these retained original oaks and other species as lawn trees. The buildings were gradually removed in the 1960–1970 time period, and the areas have been invaded by *Campsis radicans*, *Crataegus* spp., *Elaeagnus umbellata*, *Rosa multiflora*, and *Syringa vulgaris*. These species are persisting but are gradually being overtopped by larger, sun tolerant trees, such as *Acer platanoides*, *Fraxinus americana*, *Gleditsia triacanthos*, *Prunus serotina*, *Ulmus americana*, and *U. pumila*. Concurrently, herbaceous woodland plants have begun to colonize these successional forests. Species such as *Chaerophyllum procumbens* and *Liparis liliifolia* were found only in these areas. Additionally, in successional forests dominated by *Crataegus* spp. and *Acer platanoides*, the ground cover through spring and early summer consisted almost exclusively of *Galium aparine* and *Stellaria media*.

Floodplain forest.—A second major forest type is the floodplain forest. At WWFVA this plant community is represented by the Little Blue River Valley bottomlands in Units 1, 2,

and 3. This forest usually has an understory dominated by *Acer negundo*. Larger trees include *Aesculus glabra*, *Celtis occidentalis*, *Fraxinus pennsylvanica*, *F. nigra*, *Juglans nigra*, *Platanus occidentalis*, *Populus deltoides*, and *Ulmus americana*. One sycamore in Unit 2, recently dead, is ca. 2.44 m in diameter. Shrubs include *Lonicera* × *bella*, *L. morrowii* and *Sambucus canadensis*. The herbaceous flora includes *Ambrosia trifida*, *Cryptotaenia canadensis*, *Elymus riparius*, *E. virginicus*, *Galium triflorum*, *Helenium autumnale*, *Helianthus helianthoides*, *Humulus lupulus*, *Impatiens capensis*, *I. pallida*, *Isopyrum biter-natum*, *Laportea canadensis*, *Monarda clinopodia*, *Osmorhiza longistylis*, *Pilea pumila*, *Rudbeckia laciniata*, *Sanicula gregaria*, *Silphium perfoliatum*, *Stachys tenuifolia*, *Urtica dioica*, *Verbesina alternifolia*, and *Viola striata*. Bur oaks, *Quercus macrocarpa*, have become established on the Little Blue River Valley east of the bridge on State Road 103. Although the floodplain forest has fewer special communities and less diversity than the upland mesophytic forest, one could delineate riverbanks and old riverbed depressions as subcommunity types.

Wetlands.—The open, unshaded natural communities that persist or have re-established are all wetland community types. A large wetland complex is found north of the Little Blue River in Unit 1. Other unshaded wetlands cover large areas in Units 3 and 4. Most of these wetlands have been restricted by drain tile installation and were formerly of larger dimensions. Major invasive exotic species in wetlands of all types include *Dipsacus sylvestris*, *Lysimachia nummularia*, *Morus alba*, and *Phalaris arundinacea*. Additionally, *Elaeagnus umbellata* and *Pastinaca sativa* invade the slightly drier marginal regions. Natural wetland communities include several distinct subtypes described below.

Sedge meadows: Several species of *Carex* dominate individual meadows, often to the exclusion of other plants. Sedge meadow communities occupy very moist ground and are less than one hectare in size. They are most often located at the base of gentle slopes. In Unit 1, a large sedge meadow with four distinct and recognizable subcommunities lies along the base of the river valley slope. The first subcommunity (at the northern end) is nearly a monoculture of *Carex trichocarpa*;

the second is a mixture of *Carex* spp., *Eleocharis palustris*, *Juncus tenuis*, *J. torreyi*, *Pycnanthemum virginiana*, *Rudbeckia hirta* and other plants; the third is a dense stand of *Carex stricta* with *Filipendula rubra*, *Pycnanthemum virginiana*, and *Rudbeckia hirta*; and the fourth is a mixed stand of *Carex* spp., including *C. lurida* and *C. hystericina*, with *Typha angustifolia*, *T. latifolia* and many forbs, some characteristic of calcareous habitats, such as *Bidens coronata* and *Lysimachia quadriflora*. Several more sedge meadows in Units 1, 3, and 4 include large monocultures of *Carex atherodes*, *C. emoryi*, *C. stricta*, and/or *C. vulpinoidea*. The large *C. atherodes* meadow in Unit 1 occurs in the flat floodplain of the Big Blue River and is nearly surrounded by *Phalaris arundinacea*. Other species of *Carex* occur in wet fields and mixed wetland communities often being dominant plants in such situations.

Shrub-carr: Much of the open wetlands of Units 1, 3, and 4 are covered with dense stands of willows, especially *Salix exigua* and *S. nigra*. The large sedge meadow in Unit 1, discussed above, is bordered in part by stands of *Cornus amomum*, *Rosa setigera*, and *Sambucus canadensis*.

Cattail marsh: A narrow band of cattails occurs along the edges of the four sedge meadow communities in Unit 1. This area is wetter than the sedge meadow communities, often with standing water. *Typha latifolia* associates here with *Eupatorium perfoliatum*, *Lycopus americana*, *Mentha arvensis*, *M. × gentilis*, *Solanum dulcamara*, *Stachys tenuifolia*, and *Verbena hastata*.

Sweet flag swales: Along the northern bank of the Little Blue River in Unit 1, a raised ridge separates the present river channel from a former river bed now occupied by dense stands of sweet flag (*Acorus calamus*). These were probably planted. *Acorus calamus* is a triploid sterile exotic (Thompson 1995, 2000) which had formerly not been separated from the native species (Deam 1940). These stands are bordered to the north by the cattail stands and the four sedge meadow communities discussed above. Here the water depth is greater (up to 6 inches) (25 cm) than that of the cattail marsh, but these swales often dry up by mid summer. Although few species are able to grow among the sweet flag rhizomes, those that do include *Aster puniceus*, *Lycopus amer-*

icanus, *L. uniflorus*, *Ranunculus hispidus* var. *caricetorum*, *Stachys tenuifolia*, *Valerianella umbilicata*, *Verbena hastata*, and in some places *Leersia oryzoides*.

Fens: All of the fens at WWFWA are, at least in part, severely disturbed and unshaded. They have distinct springs with rivulets that flow throughout the year. All of these rivulets appear to eventually enter field drain tiles that carry their water to the rivers. Of the two fens in Unit 1, one is dominated by sweet flag plantings and *Muhlenbergia mexicana*, although it has a small sedge meadow in its upper portion. The other has been severely disturbed and is dominated by *Impatiens capensis*, *Rosa multiflora*, and *Sambucus canadensis*. In Unit 4, just west of the parking lot 1A on Indiana Highway 103, several small fens, some dominated by sweet flag plantings and some severely disturbed, can be found. Whether or not any of these fens can be considered natural plant communities, even in part, is very questionable.

Aquatic plant communities.—The Little Blue River, a shaded stream in a forested valley, has virtually no truly aquatic plants. Even *Sagittaria latifolia* occurs only on the banks. Colonies of *Lemna minor* and *Wolffia papulifera* may develop in quiet backwaters if sufficient sunlight is available. On the other hand, the Big Blue River lies in cleared land, free of shade, and has been excavated into a long straight channel. Here the river bed is usually covered by submerged macrophytes, including *Ceratophyllum demersum*, *Myriophyllum* sp., *Potamogeton crispus*, *P. pectinata*, and *Zanichellia palustris*. Colonies of *Rorippa nasturtium-aquaticum* and *Veronica anagallis-aquatica* occur along the bank margin wherever ground water enters the river directly. A small pond, probably artificial, is found below a disturbed fen in Unit 4, receiving its water from the spring water rivulet. *Potamogeton foliosus* and *Lemna minor* are the only true aquatic plants in this pond.

Successional (anthropogenic) communities.—Most anthropogenic plant communities are developing on sites of former lawns, buildings, and agricultural fields. Such areas, which are adjacent to natural forest communities, are undergoing succession to native forest (described earlier). However, sites more distant from native plant community remnants are undergoing various types of successional

development, involving both native and exotic species. Furthermore, management for wildlife habitat in some areas includes both mowing and tilling. Mesic old fields are typically dominated by such plants as *Bromus inermis*, *Dactylis glomerata*, *Daucus carota*, *Elaeagnus umbellata*, *Festuca elatior*, *Geum laciniatum*, *Lonicera maackii*, *Rosa multiflora*, and *Solidago canadensis*. Fields recently released from row crops are dominated by plants of early succession, including *Abutilon theophrasti*, *Amaranthus retroflexus*, *Barbarea vulgaris*, *Brassica nigra*, *Bromus commutatus*, *Datura stramonium*, *Erigeron annuus*, *Hibiscus trionum*, *Lactuca serriola*, *Panicum capillare*, *Physalis longifolia* var. *subglabrata*, *Portulaca oleracea*, *Sisymbrium loeselii*, *Solanum carolinense*, *S. nigrum*, and *Torilis arvensis*. Prairie plantings have been made in Units 1 and 3. These consist of *Andropogon gerardii*, *Schizachyrium scoparium*, and *Sorghastrum nutans* with various forbs. Many old fields have grown into thickets and successional woods. Plowed edges, black locust (*Robinia pseudoacacia*) groves, roadsides, ditches, dry hillsides, and conifer plantings are other vegetational community types present that could be distinguished.

Perhaps the most distinctive man-induced plant community on the property is a small area north of the Little Blue River along State Road 103 in Unit 1. This site, hereafter called the cindery, is an area of approximately 0.2–0.3 ha covered with a layer of crushed cinders from an old heating plant. Plants that occurred here, but nowhere else, are *Diodia teres*, *Froelichia gracilis*, *Plantago aristata*, *Silene antirrhina*, and *Sporobolus vaginiflorus*. Although occurring elsewhere on the property, *Mollugo verticillata* and *Poa compressa* are particularly abundant here.

Exotics

As stated above, approximately 27% of the angiosperms (164 of 611 species and varieties) at WWFWA Wright are non-native. This is expected since the Village for the Epileptics was housed at this site for several decades. During that time, many of the exotics currently at WWFWA were planted for landscaping or gardening. However, most of these ornamental plants are not exhibiting evidence of spreading. These include *Acer platanoides* cv. *Schwedleri*, *Alnus glutinosa*, *Asparagus offi-*

cinalis, *Berberis thunbergii*, *Betula nigra*, *Campanula rapunculoides*, *Chaenomeles speciosa*, *Chelidonium majus*, *Convallaria majalis*, *Euonymus fortunei*, *Hesperis matronalis*, *Iris germanica*, *Lespedeza bicolor*, *Lonicera tatarica*, *Narcissus poeticus*, *N. pseudonarcissus*, *Ornithogalum umbellatum*, *Pyrus malus*, *Rosa canina*, *Salix pentandra*, *S. purpurea*, *S. × rubens*, *Tilia cordata*, *Viburnum opulus* var. *opulus*, and *Weigela florida* and *Zea mays*. Exotics found in prairie plantings that appear not to be spreading include *Carduus nutans*, *Coreopsis grandiflora*, *C. tinctoria*, *Helianthus maximilianii*, *Mirabilis nyctaginea*, and *Papaver rhoeas*. Exotic species confined to the grounds around the office building include *Euonymus alatus*, *Forsythia × intermedia*, *Iris pseudacorus*, *Sedum sarmentosum*, and *Spiraea vanhouttei*.

A few exotic ornamentals are spreading from their original sites. Those spreading slowly include *Acorus calamus*, *Artemisia ludoviciana*, *Celastrus orbiculatus*, *Commelina communis*, *Hemerocallis fulva* (vegetative expansion only), *Ligustrum vulgare*, *Malva neglecta*, *Medicago sativa*, *Prunus cerasus*, *Viola priceana*, and *Yucca filamentosa*. Those that are invasive and expanding quickly include *Acer platanoides* (especially in Unit 2 woods), *Coronilla varia* and *Lotus corniculatus* (planted to reduce roadside erosion), *Elaeagnus umbellata* (planted for wildlife), *Morus alba*, *Nepeta cataria*, *Rosa multiflora*, *Saponaria officinalis*, *Silene latifolia*, *Syringa vulgaris*, and *Ulmus pumila*.

The origin of the non-ornamental exotics and grasses is unclear or unknown. Within this group of plants are a few species that are not exhibiting signs of expansion, including *Brassica kaber*, *Chaenorhinum minus*, *Plantago major*, and *Polygonum hydropiper*. Most of the non-ornamental exotics at WWFWA appear to be expanding their range at various rates, although some were undoubtedly planted or sown as seed. These include *Abutilon theophrasti*, *Achillea millefolium*, *Alliaria petiolata*, *Allium vineale*, *Amaranthus powellii*, *A. retroflexus*, *Arctium minus*, *Arenaria serpyllifolia*, *Barbarea vulgaris*, *Brassica nigra*, *Capsella bursa-pastoris*, *Centaurea maculosa*, *Cerastium vulgatum*, *Chrysanthemum leucanthemum*, *Cichorium intybus*, *Cirsium arvense*, *Conium maculatum*, *Convolvulus arvensis*, *Datura stramonium*, *Daucus carota*,

Dianthus armeria, *Dipsacus sylvestris*, *Draba verna*, *Froelichia gracilis*, *Geranium pusillum*, *Glechoma hederacea*, grasses [*Bromus commutatus*, *Bromus inermis*, *Bromus japonicus*, *Bromus racemosa*, *Bromus tectorum*, *Dactylis glomerata*, *Digitaria ischaemum*, *Eleusine indica*, *Elytrigia repens*, *Eragrostis cilianensis*, *Lolium perenne* var. *perenne*, *Phalaris arundinacea*, *Phleum pratense*, *Poa annua*, *Poa compressa*, *Poa trivialis*, *Setaria faberi*, *Setaria glauca*, *Setaria viridis*, and *Sorghum halepense*], *Hibiscus trionum*, *Holosteum umbellatum*, *Hypericum perforatum*, *Ipomoea hederacea*, *I. purpurea*, *Lactuca saligna*, *L. serriola*, *Lamium amplexicaule*, *L. purpureum*, *Leonurus cardiaca*, *Lepidium campestre*, *Linaria vulgaris*, *Lithospermum arvense*, *Lonicera japonica*, *L. maackii*, *L. morrowii*, *Lysimachia nummularia*, *Maclura pomifera*, *Matricaria matricarioides*, *Medicago lupulina*, *Melilotus alba*, *M. officinalis*, *Mollugo verticillata*, *Pastinaca sativa*, *Plantago lanceolata*, *Polygonum cespitosum*, *P. persicaria*, *Portulaca oleracea*, *Potamogeton crispus*, *Potentilla argentea*, *Potentilla recta*, *Rorippa nasturtium-aquaticum*, *Rumex acetosella*, *R. crispus*, *R. obtusifolius*, *Sisymbrium loeselii*, *Solanum dulcamara*, *Sonchus asper*, *Stellaria media*, *Taraxacum officinale*, *Thlaspi arvense*, *Torilis arvensis*, *Tragopogon* spp., *Trifolium campestre*, *T. hybridum*, *T. pratense*, *T. repens*, *Verbascum blattaria*, *V. thapsus*, *Veronica arvensis* and *Vicia cracca*.

The 15 most-invasive exotics are *Acer platanoides*, *Alliaria petiolata*, *Brassica nigra*, *Bromus inermis*, *Dipsacus sylvestris*, *Elaeagnus umbellata*, *Festuca elatior*, *Lotus corniculatus*, *Lysimachia nummularia*, *Morus alba*, *Pastinaca sativa*, *Phalaris arundinacea*, *Potamogeton crispus* (in the Big Blue River), *Rosa multiflora*, and *Sisymbrium loeselii*.

DISCUSSION

This study provides a baseline of information about native and exotic plants species at Wilbur Wright Fish and Wildlife Area. As time passes, new plant communities will gradually develop composed of both native and exotic elements. WWFWA provides a "natural laboratory" in which the behavior of native and exotic species, as well as their contributions to community development and stability, can be observed over time.

ACKNOWLEDGMENTS

The authors wish to thank the Office of Academic Research and Sponsored Programs, Ball State University, for financial support of this publication. We also wish to thank Cary Schuyler, property manager of WWFVA during this study, and Gary Doxtater, Director of Indiana Division of Fish and Wildlife, for permission to conduct the study, and the Indiana Department of Natural Resources personnel for their kind cooperation. Additionally, we wish to thank Dr. Ned K. Bleuer, Indiana Geological Survey, for his critical evaluation and suggestions pertaining to the geology of the Upper Blue River Valley (e.g., study area section). Ball State University students Sarah Wennerberg, Jordan Aversman, Nathaniel Walmsley, Sean Dickens, Christine Craddock, Nicole Case and Kim Hunter provided valuable assistance both in the field and in the herbarium.

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Manuscript received 3 June 2002, revised 9 September 2002.

APPENDIX 1. CATALOG OF VASCULAR PLANTS IN
WILBUR WRIGHT FISH AND WILDLIFE AREA
(arranged alphabetically by family)

Following each species is information specific to its occurrence at WWFWA. This information includes the following: The symbols in parentheses immediately following each species refer to the following: * = naturalized (exotic), non-native species; + = county record; a = planted but apparently not spreading; b = horticultural variety planted, escaped and naturalized; c = planted but disappearing; z = photographed in WWFWA before this study but not found during the study period.

Relative abundance: rare = < 5 sites although a species may be abundant at one site; infrequent = occasional, not widespread throughout its potential habitats, but may be locally abundant at one site; frequent = common throughout its potential habitats and may be locally abundant at one or more sites; and abundant = common and numerous throughout its potential habitats.

The status categories of certain species in brackets (e.g., [Endangered], [Threatened], [Rare], and [Watch List]) is from the list compiled by the Indiana Natural Heritage Program (3 May 1996).

PHYLUM EQUISETOPHYTA
(Scouring Rushes)

Equisetaceae (Horsetail Family)

Equisetum arvense L.: Common or Field Horsetail; infrequent; ditches and moist meadows; BSUH 10557, 10958, 11518, 11585.

Equisetum hyemale L.: Common Scouring Rush; abundant; mesic woods and along railroad track, often in dense large colonies; BSUH 10558, 10872, 11225.

PHYLUM POLYPODIOPHYTA
(Ferns)

Aspleniaceae (Spleenwort Family)

Asplenium platyneuron (L.) Britt., Sterns & Poggen: (+); Ebony Spleenwort; common; mesic woods; BSUH 11282.

Dryopteridaceae (Wood Fern Family)

Cystopteris protrusa (Weatherby) Blasdell: (+); Lowland Brittle or Southern Bladder Fern; abundant; mesic woods; BSUH 11278.

Diplazium pycnocarpon (Spreng.) M. Broun: (+); Synonym—*Athyrium pycnocarpon* (Spreng.) Tidestrom; Narrow-leaved Glade Fern or Glade Fern; infrequent; ravines in mesic woods; BSUH 10776.

Dryopteris carthusiana (Villars) H.P. Fuchs: (+); Synonym—*Dryopteris spinulosa* (Mull.) Watt; Toothed or Spinulose Wood Fern; rare, one site; ravine in mesic woods; BSUH 11108.

Matteuccia struthiopteris (L.) Todaro: (a,+) Ostrich Fern; rare; plant next to building; BSUH 11446.

Onoclea sensibilis L.: Sensitive Fern; rare, one site; bank of Little Blue River; BSUH 10775.

Polystichum acrostichoides (Michx.) Schott: (+);

Christmas Fern; infrequent to common; ravines in mesic woods; BSUH 10556, 11277.

Ophioglossaceae (Adder's-tongue Family)

Botrychium dissectum var. *dissectum* Spreng: Lace-frond Grapefern; Dissected Grapefern; infrequent; mesic woods; BSUH 10465.

Botrychium dissectum var. *obliquum* (Muhl.): Clute Lace-frond Grapefern; abundant; mesic woods; BSUH 10587.

Botrychium virginianum (L.) Swartz: Rattlesnake Fern or Common Grapefern; abundant; mesic woods; BSUH 11279.

Pteridaceae (Maidenhair Fern Family)

Adiantum pedatum L.: Northern Maidenhair Fern; rare; mesic woods; BSUH 10466.

Thelypteridaceae (Marsh Fern Family)

Phegopteris hexagonoptera (Michx.) Fee: Synonym—*Thelypteris hexagonoptera* (Michx.) Weatherly; Broad Beech or Southern Beech Fern; rare, one site; ravine in mesic woods; BSUH 11105.

PHYLUM PINOPHYTA (Gymnosperms)

Cupressaceae (Redwood or Cypress Family)

Juniperus virginiana L.: (a,*,+); Eastern Red Cedar; rare; planted next to building; BSUH 11437, 11655.

Taxodium distichum (L.) Rich.: (a,*,+); Bald Cypress; rare; planted in Unit 4 field; BSUH 11441.

Thuja occidentalis L.: (a,*,+); Northern White Cedar; rare; planted at corner of SR 103 and CR 200 N; BSUH 11203.

Pinaceae (Pine Family)

Picea abies (L.) Karst.: (a,*,+); Norway Spruce; rare; planted at corner of SR 103 and asphalt road into Unit 2; BSUH 10896.

Pinus banksiana Lambert: (c,*,+); Jack Pine; rare; Unit 2 woods south of asphalt road; these are being crowded out by the advancing deciduous forest; BSUH 10378.

Pinus resinosa Aiton: (a,*,+); Red Pine; infrequent; planted throughout property; BSUH 10862, 11623.

Pinus strobus L.: (a,*,+); Eastern or Northern White Pine; infrequent; planted throughout property; BSUH 10864.

Pinus sylvestris L.: (b,*,+); Scotch Pine; infrequent; planted throughout property and spreading; BSUH 11615.

Pinus virginiana Miller: (c,*,+); Virginia or Scrub Pine; rare; Unit 2 woods south of asphalt road; these are being crowded out by the advancing deciduous forest; BSUH 10384.

Taxaceae (Yew Family)

Taxus cuspidata Sieb. & Zucc.: (a,*,+); Japanese Yew; rare; planted next to building; BSUH 11566.

PHYLUM MAGNOLIOPSIDA (Flowering Plants)

Acanthaceae (Acanthus Family)

Ruellia strepens L.: Smooth Ruellia; common; mesic woods especially along paths; BSUH 11242.

Aceraceae (Maple Family)

Acer negundo L.: Box-elder or Ash-leaved Maple; abundant; floodplain woods; BSUH 10460, 11040.

Acer nigrum Michx. f.: Black Maple; frequent; floodplain woods; BSUH 11597.

Acer platanoides L.: (b,*,+); Norway maple; abundant at several sites in Unit 2; mesic woods; BSUH 10464.

Acer platanoides L. cv. *Schwedleri*: (a,*,+); Purple Norway Maple; rare, one tree, apparently planted; Unit 2 field; BSUH 10660.

Acer rubrum L.: Red Maple; rare, one tree planted in Unit 4; BSUH 11444.

Acer saccharinum L.: Silver Maple; infrequent, some planted, some natural; floodplain woods and fields; BSUH 11019.

Acer saccharum Marshall: Sugar Maple; abundant; mesic woods; BSUH 10462, 10463.

Acoraceae (Sweet Flag Family)

Acorus calamus L.: (*,+); Sweet Flag; abundant in large dense colonies in localized sites; Units 1 and 4 fens and Unit 1 swales; BSUH 11006.

Agavaceae (Agave Family)

Yucca filamentosa L.: (b,*,+); Adam's Needle or Spanish Bayonet; infrequent but locally common; Units 1 and 2 dry fields; BSUH 11177.

Alismataceae (Water-Plantain Family)

Sagittaria latifolia Willd.: Common Arrowhead; infrequent; wet areas along the Little Blue River; BSUH 10734, 10902.

Amaranthaceae (Amaranth Family)

Amaranthus arenicola I.M. Johnst.: (*,+); Sand-hill Amaranth; infrequent; disturbed areas; BSUH 10434.

Amaranthus powellii S. Wats.: (*,+); Amaranth; infrequent to common; disturbed areas; BSUH 11407.

Amaranthus retroflexus L.: (*,+); Redroot or Rough Pigweed or Green Amaranth; common to abundant; disturbed areas; BSUH 10723, 11175.

Froelichia gracilis (Hook.) Moq.: (*,+); Slender Cottonweed; locally abundant in the cindery area of Unit 1; BSUH 11438.

Anacardiaceae (Cashew Family)

Rhus glabra L.: Smooth Sumac; infrequent; several large colonies in fields; BSUH 11025.

Toxicodendron radicans (L.) Kuntze var. *negundo* (Greene) Reveal: (+); Common Poison Ivy; abundant; widespread; BSUH 11269.

Annonaceae (Custard-apple Family)

Asimina triloba (L.) Dunal: (+); Pawpaw; rare, one site with 12 individuals; Unit 2 along railroad track near Hillsboro Road; BSUH 11563, 11574.

Apiaceae (Carrot Family)

Angelica atropurpurea L.: Purplestem Angelica; infrequent; wet fields and river banks; BSUH 10993.

Chaerophyllum procumbens (L.) Crantz.: Spreading Chervil; infrequent; young woods in Unit 3; BSUH 10894, 11136.

Cicuta maculata L.: Common Water Hemlock; common; widespread in wet areas; BSUH 10467, 11254.

Conium maculatum L.: (*); Poison Hemlock; infrequent; roadsides; BSUH 10831.

Cryptotaenia canadensis (L.) DC.: Honewort; abundant; mesic and floodplain woods; BSUH 11003.

Daucus carota L.: (*); Wild Carrot or Queen Anne's Lace; abundant; fields; BSUH 10470, 10472.

Erigenia bulbosa (Michx.) Nutt.: (+); Harbinger of Spring; abundant; mesic woods; BSUH 10914.

Osmorhiza claytonii (Michx.) C.B. Clarke: Bland Sweet Cicely; abundant; mesic woods; BSUH 11154.

Osmorhiza longistylis (Torr.) DC.: Long-styled Sweet Cicely; abundant; mesic and floodplain woods; BSUH 10899.

Pastinaca sativa L.: (*); Wild Parsnip; abundant; fields, especially wet fields; BSUH 11262.

Sanicula canadensis L.: Canada Sanicle; common; open areas in woods and woods' edge; BSUH 11050, 11167.

Sanicula gregaria E. Bickn.: (+); Cluster Sanicle or Clustered Snakeroot; abundant; mesic and floodplain woods; BSUH 11116, 11126.

Sanicula trifoliata E. Bickn.: Beaked Sanicle; common; mesic woods; BSUH 11417, 11419.

Sium suave Walter: Water Parsnip; common; widespread in wet areas; BSUH 10707.

Thaspium trifoliatum (L.) A. Gray: Smooth Meadow Parsnip; infrequent; dry, open upland woods and wooded slopes; BSUH 10333, 10708.

Torilis arvensis (Hudson) Link: (*,+); Field Hedge Parsley; common; disturbed areas; BSUH 11060, 11183.

Apocynaceae (Dogbane Family)

Apocynum cannabinum L.: (+); Hemp Dogbane; common to abundant; fields; BSUH 11214.

Vinca minor L.: (a,*,+); Periwinkle; rare; planted next to building; BSUH 11507.

Araceae (Arum Family)

Arisaema triphyllum var. *triphyllum* (L.) Schott: Jack-in-the-pulpit; common; mesic woods; BSUH 10949, 11145.

Symplocarpus foetidus (L.) Nutt.: (+); Skunk Cabbage; infrequent although locally abundant at some sites; seeps, riverbanks and sedge meadows; BSUH 10875, 10877.

Araliaceae (Ginseng Family)

Panax quinquefolium L.: (+); American Ginseng; rare, two sites; mesic woods; BSUH 11073, 11352. [Watch List]

Aristolochiaceae (Birthwort Family)

Asarum canadense L.: Wild Ginger; abundant; mesic woods; BSUH 10952.

Asclepiadaceae (Milkweed Family)

Ampelamus albidus (Nutt.) Britton: (+); Sandvine; Blue Vine; common in fields and disturbed areas; BSUH 11401.

Asclepias incarnata L.: Swamp Milkweed; rare to infrequent; low wet areas in fields and Sweet Flag swales; BSUH 11082.

Asclepias syriaca L.: Common Milkweed; abundant; fields; BSUH 11174.

Asclepias verticillata L.: Whorled Milkweed; rare, two sites, but common at one site; dry open hillsides; BSUH 11458, 11472.

Asteraceae (Aster Family)

Achillea millefolium L.: (*); Common Yarrow; common; fields and roadsides; BSUH 11274.

Ambrosia artemisiifolia L.: Common ragweed; abundant; fields and disturbed areas; BSUH 10473, 10474.

Ambrosia trifida L.: Giant ragweed; abundant; widespread but especially in moist fields and floodplain woods; BSUH 10475, 10476.

Antennaria plantaginifolia (L.) Richardson: Plantain Pussytoes; rare; dry exposed slopes; BSUH 11306.

Arctium minus Schk.: (*,+); Common Burdock; common; fields, roadsides and wildlife fields; BSUH 10748, 10750.

Artemisia ludoviciana Nutt.: (b,*,+); White Sage; rare, one site with many plants; dry field; BSUH 10665, 11404.

Aster cordifolius L.: Common Blue Heart-leaved Aster; common; mesic woods; BSUH 11113.

Aster lanceolatus Willd. var. *simplex* (Willd.) Jones: Synonym—*Aster simplex* Willd.: Eastern Lined Aster; common; fields, meadows and wildlife plantings; BSUH 10477.

Aster lateriflorus (L.) Britton: (+); Goblet Aster;

common; mesic woods and wet fields; BSUH 10478.

Aster novae-angliae L.: New England Aster; abundant; fields and sedge meadows; BSUH 10480, 10481, 10482.

Aster pilosus Willd.: Owl Aster; abundant; fields; BSUH 10484, 10485.

Aster puniceus L.: Bristly Aster or Purple-stemmed Aster; common; sedge meadows, moist fields and riverbanks; BSUH 10487, 11109.

Aster sagittifolius Willd.: Arrow-leaved Aster; common; mesic woods; BSUH 10489, 10709.

Aster shortii Lindley: (+); Midwestern Blue Heart-leaved Aster; common; mesic woods; BSUH 10490, 10491.

Bidens cernua L.: Bur-marigold; infrequent; meadows; BSUH 10492, 10667.

Bidens comosa (A. Gray) Wieg.: (+); Strawstem Begger Tick; infrequent; meadows and riverbanks; BSUH 10493.

Bidens coronata (L.) Britton: Northern Tickseed Sunflower; rare, one site; sedge meadow; BSUH 10494.

Bidens frondosa L.: Devil's Begger Tick; infrequent; meadows; BSUH 10496, 10944.

Cacalia atriplicifolia L.: Pale Indian Plantain; rare; dry hilltop forest; BSUH 11070.

Carduus nutans L.: (*,+); Nodding or Musk Thistle; infrequent; fields with prairie plantings; BSUH 10753.

Centaurea maculosa Lam.: (*,+); Spotted Knapweed; infrequent; fields and waste areas; BSUH 10669.

Chrysanthemum leucanthemum L.: (*,+); Oxeye Daisy; abundant; fields; BSUH 11012.

Cichorium intybus L.: (*); Chicory; abundant; fields and roadsides; BSUH 11201, 11481.

Cirsium arvense var. *arvense* (L.) Scop.: (*); Canada Thistle; abundant; widespread; BSUH 10764, 11204.

Cirsium arvense (L.) Scop. var. *horridum* Wimmer & Graebner: (*); Canada Thistle; infrequent; fields; BSUH 11047.

Cirsium discolor (Muhl.) Sprengel.: Field Thistle; abundant; fields; BSUH 10497, 10692, 11522.

Conyza canadensis var. *canadensis* (L.) Cronq. (+); Horseweed; abundant; fields and roadsides; BSUH 10638.

Coreopsis grandiflora Hogg.: (*,+); Bigflower Tickseed; rare; Unit 1 field with prairie planting; BSUH 11029.

Coreopsis tinctoria Nutt.: (*,+); Plains Tickseed; rare; Unit 1 field with prairie planting; BSUH 10674.

Echinacea purpurea (L.) Minc.: (+); Purple Coneflower; rare; Unit 1 field with prairie planting; BSUH 10637.

Erechtites hieracifolia (L.) Raf.: (+); Fireweed; infrequent; roadsides; BSUH 10756.

Erigeron annuus (L.) Pers.: Annual Fleabane; abundant; fields and waste places; BSUH 11258, 11259.

Erigeron philadelphicus L.: Common or Philadelphia Fleabane or Philadelphia Daisy; abundant; mesic woods and fields; BSUH 11157, 11162.

Eupatorium altissimum L.: Tall Eupatorium; common; dry fields; BSUH 10498, 10499, 10500.

Eupatorium maculatum L.: Spotted Joe-Pye Weed; rare, one site; meadow; BSUH 10501.

Eupatorium perfoliatum L.: Boneset or Thoroughwort; abundant; moist fields and meadows; BSUH 10502, 10503, 10505.

Eupatorium purpureum L.: Purple-node Joe-Pye Weed; rare, one site; mowed strip under power lines in Unit 3; BSUH 11397.

Eupatorium rugosum Houttuyn: White Snake-root; abundant; mesic woods; BSUH 10506, 10903.

Euthamia graminifolia (L.) Nutt.: Common Flat-topped Goldenrod; abundant; wet fields; BSUH 10507.

Galinsoga quadriradiata Ruiz & Pavon: (+); Common Quickweed; abundant; disturbed areas; BSUH 10671, 10673.

Helianthemum autumnale L.: Common Sneezeweed; common; wet fields, meadows and riverbanks; BSUH 10509.

Helianthus maximilianii Schrader: (*,+); Maximilian Sunflower; rare, one site; prairie planting in Unit 2; BSUH 10940.

Helianthus mollis Lamb.: (+); Ashy Sunflower; rare, one site with two colonies; prairie planting in Unit 2; BSUH 10650, 11405.

Helianthus tuberosus L.: Jerusalem Artichoke; common; fields and wood's edge; BSUH 10716.

Heliopsis helianthoides (L.): Sweet Sunflower Everlasting or False Sunflower; abundant; widespread in floodplain woods and wet fields; BSUH 10511, 10512.

Lactuca biennis (Minc.) Fern: Tall Blue Lettuce; common; mesic woods, woodland edges and fields; BSUH 11104.

Lactuca canadensis L.: Wild or Tall Lettuce; abundant; widespread; BSUH 11173.

Lactuca floridana (L.) Gaetner: Woodland Lettuce; common; mesic woods; BSUH 10661, 11693.

Lactuca saligna L.: (*); Willowleaf Lettuce; infrequent; fields and waste areas; BSUH 10643, 10654.

Lactuca serriola L.: (*); Prickly Lettuce; abundant; fields, especially in Units 3 and 4; BSUH 11453, 11454.

Matricaria matricarioides (Less.) Porter: (*,+); Pineapple Weed; common; roadsides; BSUH 11249.

Polynnia canadensis L.: (+); Pale-flowered or Small-flowered Leafcup; rare, one site; wood's edge in Unit 1; BSUH 11448.

Prenanthes altissima L.: Tall White Lettuce;

common to abundant although flowering plants rare; mesic woods; BSUH 10513.

Ratibida pinnata (Vent.) Barnard: Globular or Gray-headed Coneflower; infrequent; fields and prairie planting in Unit 2; BSUH 10662.

Rudbeckia fulgida var. *fulgida* Aiton: (+); Eastern or Orange Coneflower; rare; Unit 1 field with prairie planting; BSUH 10646. [Rare].

Rudbeckia hirta L. var. *pulcherrima* Farw.: Black-eyed Susan; abundant in sedge meadows of Unit 1; BSUH 10514, 11051.

Rudbeckia laciniata L.: Cutleaf, Tall or Green-headed Coneflower; common; widespread in floodplain woods; BSUH 10516, 10517, 10740.

Rudbeckia triloba var. *triloba* L.: (+); Three-leaved coneflower; infrequent; moist to wet areas in mesic woods and along river banks; BSUH 10518, 10519, 10946.

Senecio aureus L.: (+); Synonym—*Packera aurea* (L.) Love & Love; Heart-leaved Groundsel or Golden Ragwort; common; lowland moist to wet woods and seeps; BSUH 10876.

Senecio glabellus Poir.: Synonym—*Packera glabella* (Poir.) Jeffrey; Yellowtop; abundant; fields, disturbed areas and waste places; BSUH 11053, 11193.

Senecio obovatus Muhl.: Synonym—*Packera obovata* (Muhl.) Weber & Love; Running Groundsel or Round-leaved Ragwort; abundant; upland mesic woods; BSUH 10919, 10939.

Silphium integrifolium var. *integrifolium* Michx.: Prairie Rosinweed; rare, one site; prairie planting in Unit 2; BSUH 10726.

Silphium perfoliatum L.: Cup Plant; common; floodplain woods and wet meadows; BSUH 10724.

Solidago caesia L.: Axillary Goldenrod; abundant; mesic woods; BSUH 10521, 10522.

Solidago canadensis L. var. *canadensis*: Common Goldenrod; abundant; fields; BSUH 10718, 11644.

Solidago canadensis L. var. *scabra* T. & G.: Common Goldenrod; common; fields; BSUH 10523.

Solidago flexicaulis L.: (+); Zigzag Goldenrod; common; slopes in mesic woods; BSUH 10524.

Solidago gigantea Aiton: Smooth Goldenrod; common; Unit 1 field near sedge meadow; BSUH 11112.

Solidago nemoralis Aiton: (+); Gray Goldenrod; rare, one site with many plants; dry field in Unit 2; BSUH 10656, 11500.

Solidago patula Muhl.: Rough-leaved Goldenrod; rare, two site; Units 1 and 4 fens; BSUH 10526.

Sonchus asper (L.) Hill: (*); Prickly Sow Thistle; infrequent; roadsides and waste places; BSUH 10835.

Taraxacum officinale Weber: (+); Common Dandelion; abundant; widespread; BSUH 10866.

Tragopogon dubius Scop.: (*,+); Fistulous Goat's Beard; common; roadsides and fields; BSUH 11256.

Tragopogon pratensis L.: (*); Showy Goat's Beard; common; roadsides and fields; BSUH 11118, 11261.

Verbesina alternifolia (L.) Britton: Wingstem; abundant; widespread but most frequent in floodplain woods and wet fields; BSUH 10527, 10528.

Vernonia gigantea (Walter) Trel.: Tall Ironweed; abundant; fields; BSUH 10529.

Balsaminaceae (Touch-me-not Family)

Impatiens capensis Meerb.: Orange Touch-me-not (or Jewelweed); abundant; moist fields, floodplain woods and seeps; BSUH 10530, 10531.

Impatiens pallida Nutt.: Yellow Touch-me-not or Jewelweed; common; moist fields and woods; BSUH 10532, 10533, 10534.

Berberidaceae (Barberry Family)

Berberis thunbergii DC.: (*,+); Japanese Barberry; rare; mesic woods; BSUH 10535.

Podophyllum peltatum L.: May Apple; abundant; mesic woods; BSUH 11150.

Betulaceae (Birch Family)

Alnus glutinosa (L.) Gaertner: (*,+); Black or European Alder; rare, two sites; wood's edge; BSUH 10710.

Betula nigra L.: (*,+); River Birch; rare, one site with several trees; wood's edge; BSUH 11689.

Carpinus caroliniana Walter: Hornbeam, Blue Beech or Musclewood; abundant; mesic woods; BSUH 10741, 11090.

Ostrya virginiana (Miller) K. Koch: Hop-hornbeam or Ironwood; abundant; mesic woods; BSUH 11036.

Bignoniaceae (Trumpet Creeper Family)

Caupsis radicans (L.) Seemann: Trumpet Creeper; infrequent; wood's edge and dry fields; BSUH 10664.

Catalpa speciosa Warder: (+); Northern Catalpa; rare, one site; field next to shooting range; BSUH 11450.

Boraginaceae (Borage Family)

Hackelia virginiana (L.) M. Johnston: (+); Stickseed or Beggar's Lice; common; fields and young woods; BSUH 11395, 11400, 11646.

Lithospermum arvense L.: (*,+); Synonym—*Buglossoides arvense* (L.) Johnst.; Corn Gromwell; rare, one site; disturbed area; BSUH 10931.

Brassicaceae (Mustard Family)

Alliaria petiolata (Bieb.) Cavara & Grande: (*,+); Garlic Mustard; abundant; widespread; BSUH 11140.

Arabis laevigata (Muhl.) Poiret: Rock Cress; infrequent; dry slope woods; BSUH 11580.

Barbarea vulgaris R. Brown: (*); Yellow Rocket; common; disturbed areas; BSUH 10936.

Brassica kaber (DC.) Wheeler: (*,+); Synonym—*Sinapis arvensis* L., Charlock; rare; roadsides; BSUH 10536.

Brassica nigra L.: (*,+); Black Mustard; common; fields (planted?); BSUH 11223, 11538.

Capsella bursa-pastoris (L.) Medikus: (*); Shepherd's Purse; frequent; roadsides and disturbed areas; BSUH 10937.

Cardamine concatenata (Michx.) O. Schwarz: Five-parted or Cut-leaf Toothwort; abundant; mesic woods; BSUH 10908.

Cardamine douglassii Britton: (+); Pink Spring Cress or Purple Cress; abundant; mesic woods; BSUH 10910.

Cardamine pensylvanica Muhl.: Pennsylvania Bittercress; rare; Little Blue River; BSUH 11134.

Cardamine rhomboidea (Pers.) DC.: Synonym—*Cardamine bulbosa* (Schreb. ex Muhl.) BSP; Spring Cress; infrequent; wet meadows; BSUH 10351.

Draba verna L.: (*,+); Whitlow Grass; infrequent; roadsides and disturbed areas; BSUH 10916.

Hesperis matronalis L.: (*,+); Dame's Rocket; rare, one site; bank of Big Blue River; BSUH 11526.

Iodanthus pinnatifidus (Michx.) Steudel.: (+); Purple Rocket; infrequent; moist meadows and riverbanks; BSUH 10970.

Lepidium campestre (L.) R. Brown: (*); Field-cress or Field Peppergrass; infrequent; disturbed areas; BSUH 11120.

Lepidium virginicum L.: Poor-man's Pepper; infrequent; disturbed areas; BSUH 11532.

Rorippa nasturtium-aquaticum (L.) Hayek.: (*,+); Synonym—*Nasturtium officinale* R. Br.; Water Cress; infrequent; Big Blue River; BSUH 11475, 11484.

Sisymbrium loeselii L.: (*,+); Tall Hedge Mustard; abundant; fields and disturbed areas; BSUH 11032.

Thlaspi arvense L.: (*); Field Pennycress; infrequent; disturbed areas; BSUH 10857, 10880.

Caesalpiniaceae (Caesalpinia Family)

Cercis canadensis L.: Redbud; infrequent; woodland edges; BSUH 10881.

Chamaecrista fasciculata (Michx.) Greene: (+); Partridge Pea; rare, one site; prairie planting; BSUH 10469.

Gleditsia triacanthos L.: (+); Honey Locust; common; floodplain woods and woodland edges; BSUH 10537.

Gleditsia triacanthos f. *inermis* (L.) Zabel: (b,+); Thornless Honey Locust; abundant in Unit 2 near old village site; BSUH 11424.

Gymnocladus dioica (L.) K. Koch: (+); Ken-

tucky Coffeetree; infrequent; mesic woods and planted; BSUH 10666.

Campanulaceae (Bellflower Family)

Campanula americana L.: (+); Tall Bellflower; abundant; mesic woods; BSUH 10539, 10540, 10541.

Campanula rapunculoides L.: (*,+); Creeping or Rover Bellflower; rare; field and building sites; BSUH 10700.

Lobelia inflata L.: Indian Tobacco; infrequent; wood's edge; BSUH 11415.

Lobelia siphilitica L.: Great Lobelia; infrequent; wet fields and streambanks; BSUH 10542, 10543.

Cannabaceae (Indian Hemp Family)

Humulus lupulus L. var. *lupuloides* E. Small: Hops; common; floodplain woods, wet meadows and fields; BSUH 10545, 10649, 10729, 10730, 10731.

Caprifoliaceae (Honeysuckle Family)

Lonicera × *bella* Zabel: (b,+); Honeysuckle; frequent; floodplain woods; BSUH 10999.

Lonicera japonica Thunb.: (*,+); Japanese Honeysuckle; common in Units 2 and 3; BSUH 11494.

Lonicera maackii (Rupr.) Maxim: (*,+); Amur Honeysuckle; abundant; fields and young woods; BSUH 11125, 11139.

Lonicera morrowii A. Gray: (*,+); Morrow Honeysuckle; frequent; floodplain woods; BSUH 11001.

Lonicera prolifera (Kirch.) Rehder: Grape Honeysuckle; rare, one colony; dry hillside in successional woods in Unit 3; BSUH 11560, 11564.

Lonicera tatarica L.: (*,+); Tartarian Honeysuckle; rare, one bush; field; BSUH 11456.

Sambucus canadensis L.: Common Elder; common; floodplain woods and meadows; BSUH 11210.

Viburnum acerifolium L.: Dockmackie or Flowering Maple; infrequent; mesic woods; BSUH 10994.

Viburnum lentago L.: Sheepberry or Nannyberry; rare; mesic woods; BSUH 10897, 11562.

Viburnum opulus var. *opulus* L.: (*,+); Guelder Rose; infrequent; fields and wood's edge; BSUH 10738, 10849.

Viburnum prunifolium L.: Black Haw; common; mesic woods; BSUH 11561, 11603.

Weigela florida (Bunge) A. DC. var. *nusta*: (a,*,+); Old-fashioned Weigela; rare, one site; next to asphalt road in Unit 2; BSUH 11537.

Caryophyllaceae (Pink Family)

Arenaria serpyllifolia L.: (*); Thyme-leaved Sandwort; infrequent; disturbed areas; BSUH 11164.

Cerastium vulgatum L.: (*,+); Mouse-ear Chick-

weed; common; disturbed areas, roadsides and waste places; BSUH 11165, 11452.

Dianthus armeria L.: (*); Deptford Pink; common; fields; BSUH 11042, 11244.

Holosteum umbellatum L.: (*,+); Jagged Chickweed; disturbed areas; BSUH 10861.

Saponaria officinalis L.: (*); Soapwort or Bouncing Bet; infrequent to common; widespread; BSUH 10547, 10659.

Silene antirrhina L.: (+); Sleepy Catchfly; rare, one site with many plants; cindery area of Unit 1; BSUH 11620.

Silene latifolia Poiret: (*,+); White Campion; abundant; fields; BSUH 11268.

Silene stellata (L.) Aiton f.: (+); Starry Campion; infrequent; mesic woods; BSUH 11077.

Silene virginica L.: Fire Pink; infrequent; sunny wooded slopes in mesic woods; BSUH 11234.

Stellaria media (L.) Villars: (*); Common Chickweed; abundant; widespread in young woods, fields, roadsides and disturbed sites; BSUH 10867.

Stellaria pubera Michx.: Star or Great Chickweed; common; mesic woods; BSUH 10922.

Celastraceae (Staff-tree Family)

Celastrus orbiculatus Thunb.: (b,*,+); Oriental Bittersweet; rare, one large colony in Unit 2; field; BSUH 10548, 10845.

Celastrus scandens L.: American Bittersweet; rare, one colony; edge of mesic woods; BSUH 11271.

Euonymus alatus (Thunb.) Siebold.: (a,*,+); Winged Burning Bush; rare; planted next to office; BSUH 11492.

Euonymus atropurpureus Jacq.: Wahoo; infrequent; floodplain woods; BSUH 11426.

Euonymus fortunei (Turcz.) Hand.-Mazz.: (a,*,+); Wintercreeper; rare; planted near building and in woods near Unit 4 fen; BSUH 11411.

Euonymus obovatus Nutt.: Running Strawberry Bush; common on hilltop forest of Unit 2; BSUH 11616.

Ceratophyllaceae (Hornwort Family)

Ceratophyllum demersum L.: (+); Hornwort or Coontail; frequent; Big Blue River; BSUH 11670.

Chenopodiaceae (Goosefoot Family)

Chenopodium album L.: (+); Lamb's Quarters or Pigweed; abundant; disturbed areas; BSUH 10754.

Clusiaceae (Mangosteen Family)

Hypericum perforatum L.: (*,+); Common St. John's Wort; infrequent; moist fields and meadows; BSUH 10696.

Hypericum punctatum Lam.: Spotted St. John's Wort; infrequent; eroding, moist bank along Little Blue River; BSUH 10550.

Commelinaceae (Spiderwort Family)

Commelina communis L.: (*,+); Common Day Flower; infrequent; open mesic woods and river bank; BSUH 10743, 11102.

Tradescantia subaspera Ker Gawler: (+); Wide-leaved Spiderwort; infrequent, though colonies large; woodland edges and floodplain woods; BSUH 11534, 11555.

Tradescantia virginiana L.: Virginia Spiderwort; rare, two sites; sunny wooded slopes; BSUH 10850.

Convolvulaceae (Morning-glory Family)

Calystegia sepium (L.) R. Br.: Hedge Bindweed; common; fields; BSUH 10549, 10551.

Convolvulus arvensis L.: (*,+); Field Bindweed; frequent; fields and roadsides; BSUH 11260.

Ipomoea hederacea Jacq.: (*,+); Ivy-leaved Morning Glory; infrequent; fields; BSUH 10552.

Ipomoea pandurata (L.) G. Meyer: Wild Potato; infrequent to frequent, especially in Unit 1 fields; BSUH 11402.

Ipomoea purpurea (L.) Roth.: (*,+); Common Morning Glory; infrequent; fields; BSUH 10806.

Cornaceae (Dogwood Family)

Cornus alternifolia L. f.: Pagoda Dogwood; rare; wooded ravines and seeps; BSUH 11094.

Cornus amomum Miller var. *schuetzeana* (C.A. Miller) Rickett: Knob-styled Dogwood; abundant; widespread in moist soil; BSUH 11288.

Cornus drummondii C.A. Meyer: (+); Rough-leaved Dogwood; abundant; fields and wood's edge; BSUH 11216.

Cornus florida L.: Flowering Dogwood; infrequent to common; mesic woods and dry hilltops; BSUH 11149.

Cornus racemosa Lam.: (+); Northern Swamp Dogwood; infrequent; wood's edge; BSUH 11286.

Nyssa sylvatica Marshall: (+); Black Tupelo or Black Gum; rare, several sites with only one tree; BSUH 10713.

Crassulaceae (Stonecrop Family)

Sedum sarmentosum Bunge: (a,*,+); Stonecrop; rare, one site; planted near building; BSUH 11510.

Sedum ternatum Michx.: (+); Stonecrop (White); frequent; wet mesic woods and floodplain woods; BSUH 11152.

Cucurbitaceae (Gourd Family)

Echinocystis lobata (Michx.) T.& G.: (+); Balsam Apple; Wild Cucumber; infrequent; wet fields and waste places; BSUH 10648.

Cuscutaceae (Dodder Family)

Cuscuta gronovii Willd.: Common Dodder; infrequent; parasitic on plants in wet fields; BSUH 10553, 10674.

Cyperaceae (Sedge Family)

- Carex aggregata* Mackenzie: Synonym—*Carex sparganioides* Muhl. var. *aggregata* (Mackenzie) Gleason; Sedge; infrequent; woods and thickets; BSUH 10804, 11325, 11393.
- Carex albicans* Willd.: (+); Sedge; dry upland woods; infrequent; BSUH 11310.
- Carex albursina* Sheldon: Sedge; common; moist areas of mesic woods and alluvial plains; BSUH 11324.
- Carex atherodes* Sprengel: (+); Sedge; rare, one very large colony; moist field/sedge meadow; (this only the 5th known collection of this species in the state; BSUH 11376, 11377, 11392.
- Carex blanda* Dewey: Sedge; infrequent; mesic woods; BSUH 11293.
- Carex careyana* Torr.: (+); Sedge; infrequent; mesic woods (moist ravine hillsides); BSUH 10980, 11323.
- Carex comuuuis* Bailey: Sedge; common; moist hills in mesic woods; BSUH 11297, 11390.
- Carex complanata* Torr. & Hook var. *hirsuta* (L. Bailey) Gleason: (+); Sedge; infrequent; mesic woods; BSUH 11313.
- Carex conjuncta* Muhl.: (+); Sedge; common; widespread in moist field and riverbanks; BSUH 11370, 11372.
- Carex cristatella* Britton: Sedge; common; moist fields and sedge meadows; BSUH 10786, 11381.
- Carex davisii* Schwein & Torr.: Sedge; abundant; widespread; BSUH 10785, 10991, 10992, 10995, 11380.
- Carex emoryi* Dewey: (+); Sedge; common; sedge meadows; BSUH 10780.
- Carex frankii* Kunth.: Sedge; infrequent; alluvial plains and moist meadows and fields; BSUH 11347, 11674.
- Carex gracillima* Schwein: Sedge; rare; alluvial plain; BSUH 11296.
- Carex granularis* Muhl.: Sedge; common; sedge meadows and wet fields; BSUH 10792, 11320.
- Carex gravaida* var. *gravaida* L. Bailey: (+); Sedge; rare; moist field; (this species is out of its normal range; it is more northern and western); BSUH 10803.
- Carex grayi* Carey: Sedge; rare; vernal pool in mesic woods; BSUH 11656.
- Carex grisea* Wahlenb.: (+); Synonym—*Carex amphibola* Steudel; Sedge; infrequent; creek bank and alluvial plain in mesic woods; BSUH 11299.
- Carex hirtifolia* Mackenzie: Sedge; infrequent; mesic woods; BSUH 11295.
- Carex hitchcockiana* Dewey: Sedge; rare; mesic woods; BSUH 11307.
- Carex hystericina* Muhl.: Sedge; common; sedge meadows; BSUH 10986, 10987, 11316.
- Carex jamesii* Schwein.: Sedge; infrequent; mesic woods; BSUH 11294.
- Carex laevivaginata* (Kuk.) Mackenzie: Sedge; common; sedge meadow, edge of river and alluvial plain; BSUH 10989, 10990, 10996.
- Carex laxiculmis* Schwein: Sedge; infrequent; mesic woods; BSUH 10783.
- Carex laxiflora* Lam.: Sedge; infrequent; wooded slopes; BSUH 11321.
- Carex lurida* Wahlenb.: Sedge; frequent to common; sedge meadow; BSUH 10789, 10791.
- Carex mesochorea* Mackenzie: (+); Synonym—*Carex cephalophora* Muhl. var. *mesochorea* (Mackenzie) Gleason; Sedge; infrequent; in crack of asphalt and dry fields; BSUH 10806.
- Carex molesta* Bright: (+); Sedge; infrequent; low wet fields; BSUH 11368, 11676.
- Carex normalis* Mackenzie: (+); Sedge; frequent; wood's edge and field with prairie plantings; BSUH 11371, 11682.
- Carex pellita* Muhl.: (+); Sedge; rare; fen in Unit 1; BSUH 11311.
- Carex pensylvanica* Lam.: Sedge; infrequent; dry hilltop forest; BSUH 11308.
- Carex prasina* Wahlenb.: (+); Sedge; infrequent; wet woods and streambanks; BSUH 11322, 11686.
- Carex radiata* (Wahlenb.) Small: (+); Sedge; abundant; moist woods and wet field; BSUH 11300.
- Carex rosea* Schk.: Sedge; common; rich mesic woods; BSUH 11302.
- Carex shortiana* Dewey: Sedge; common; wet fields; BSUH 11309, 11369.
- Carex sparganioides* var. *sparganioides* Muhl.: Sedge; infrequent; mesic woods; BSUH 10981, 11298.
- Carex sterilis* Willd.: (+); Sedge; infrequent; sedge meadow; BSUH 11317.
- Carex stipata* Muhl.: Sedge; abundant; low wet fields; BSUH 11319, 11394.
- Carex stricta* Lam.: Sedge; infrequent; several large colonies; sedge meadows; BSUH 10962.
- Carex suberecta* (Olney) Britton: (+); Sedge; infrequent; sedge meadow; BSUH 10800, 11315.
- Carex tribuloides* Wahlenb.: Sedge; infrequent; vernal pool in mesic woods and wet fields; BSUH 10796, 11642.
- Carex trichocarpa* Muhl.: Sedge; rare, one large colony; sedge meadow; BSUH 11314.
- Carex vulpinoidea* var. *vulpinoidea* Michx.: Sedge; common; sedge meadow and wet fields; BSUH 10793, 10795.
- Carex woodii* Dewey: (+); Sedge; infrequent; mesic woods; BSUH 10361.
- Cyperus esculentus* L.: (+); Field or Yellow Nut-sedge; common; disturbed areas; BSUH 11640, 11710.
- Cyperus strigosus* L.: (+); Long-scaled Nut-sedge; infrequent; disturbed areas; BSUH 11647.
- Eleocharis acicularis* (L.) Roemer & Schultes: (+); Needle Spike Rush; rare, one site; low wet disturbed area; BSUH 11618.
- Eleocharis erythropoda* Steud.: (+); Red-rooted

Spike Rush; rare, one site; wet field/meadow; BSUH 11351.

Eleocharis obtusa (Willd.) Schult.: Blunt Spike Rush; rare, one site; low wet disturbed area; BSUH 11619.

Eleocharis palustris (L.) Roem. & Schult. var. *major* Sond.: (+); Great Spike Rush; infrequent but locally abundant; wet fields and sedge meadow; BSUH 11350.

Scirpus atrovirens Willd.: Dark Green Bulrush; common; seeps, sedge meadows, ditches and wet fields; BSUH 11658, 11659.

Scirpus georgianus R.M. Harper: (+); Bristleless Dark Green Bulrush; rare to infrequent; wet fields and sedge meadows; BSUH 11391.

Scirpus hattorianus Willd.: (+); Early Dark Green Bulrush; common; seeps, sedge meadows, ditches and wet fields; BSUH 11344, 11345.

Scirpus pendulus Muhl.: (+); Red Bulrush; rare, one site; moist field; BSUH 10798.

Scirpus validus Vahl.: (+); Great or Softstem Bulrush; rare, one site; sedge meadow; BSUH 11346.

Dipsacaceae (Teasel Family)

Dipsacus sylvestris Hudson: (*,+); Teasel; common to abundant; wet fields; BSUH 10554, 10555.

Elaeagnaceae (Oleaster Family)

Elaeagnus umbellata Thunb.: (*,+); Autumn Olive; abundant; widespread in old fields and openings in woods; BSUH 11143.

Euphorbiaceae (Spurge Family)

Acalypha rhomboidea Raf.: Synonym—*Acalypha virginica* L. var. *rhomboidea* (Raf.) Coperr.; Rhombic Copperleaf or Three-seeded Mercury; infrequent; fields, roadsides and waste places; BSUH 11649.

Euphorbia dentata Michx.: Synonym—*Poinsettia dentata* (Michx.) Small (this is the broad-leaved form); Toothed Spurge; infrequent; roadsides; BSUH 10658, 10728.

Euphorbia dentata Michx.: (+); Synonyms—*Euphorbia dentata* var. *cuphosperma* Engelm; *E. cuphosperma* (this is the narrow-leaved form); Toothed Spurge; rare; growing in cracks in asphalt road of Unit 2; BSUH 10657.

Euphorbia maculata L.: Synonyms—*Chanuaesyce maculata* (L.) Small, *Euphorbia supina* Raf.; Milk Purslane or Spotted Spurge; abundant; roadsides, dry fields and cracks in asphalt; BSUH 10676, 10905.

Euphorbia nutans Lagasca: (+); Synonym—*Chanuaesyce nutans* (Lag.) Small; Eyebane; abundant; roadsides, dry fields and cracks in asphalt; BSUH 11101, 11521.

Fabaceae (Pea or Bean Family)

Anuphycarpaea bracteata (L.) Fern.: (+); Hog Peanut; infrequent, common along the bank of the Little Blue River; BSUH 10652, 10749, 10942.

Coronilla varia L.: (*,+); Crown Vetch; common; fields and roadsides (planted?); BSUH 10560, 10561.

Desmodium canadense (L.) DC.: Canadian Tick Trefoil; infrequent; moist fields near sedge meadows; BSUH 11434.

Desmodium glutinosum (Muhl.) A. Wood: Cluster-leaf Tick Trefoil; infrequent; mesic woods; BSUH 11075.

Lespedeza bicolor Turcz.: (a,*,+); Bicolor Lespedeza; rare; several plants on a fence row near maintenance barn in Unit 1; BSUH 10717.

Lotus corniculatus L.: (*,+); Birdsfoot Trefoil; common to abundant; field and roadsides Unit 1; BSUH 11246.

Medicago lupulina L.: (*); Black Medick; abundant; disturbed areas, roadsides, fields and waste places; BSUH 11163.

Medicago sativa L.: (*); Alfalfa; common; fields (planted?); BSUH 11200.

Melilotus alba Medikus: (*); White Sweet Clover; frequent; roadsides, fields and waste places; BSUH 11213.

Melilotus officinalis (L.) Pallas: (*); Yellow Sweet Clover; abundant; roadsides, fields and waste places; BSUH 10837.

Robinia pseudoacacia L.: (b); Black Locust; abundant; planted in grooves in fields; BSUH 11023, 11550.

Trifolium campestre Schreber: (*,+); Pinnate Hop Clover; infrequent to common; fields; BSUH 11275.

Trifolium hybridum L.: (*,+); Alsike Clover; common; roadsides and fields; BSUH 11250.

Trifolium pratense L.: (*,+); Red Clover; abundant; roadsides and fields; BSUH 10563, 10564, 10836.

Trifolium repens L.: (*,+); White Clover; common; roadsides, fields and lawns; BSUH 10670, 10839.

Vicia cracca L.: (*,+); Bird (Cow) Vetch; rare, one site; field; BSUH 10668.

Fagaceae (Beech Family)

Fagus grandifolia Ehrh.: American Beech; common; mesic woods; BSUH 10565.

Quercus alba L.: White Oak; abundant; mesic woods; BSUH 10566.

Quercus imbricaria Michx.: (a); Shingle Oak; rare, one site; field; BSUH 11171, 11172.

Quercus macrocarpa Michx.: Bur Oak; rare; mesic woods and floodplain woods; BSUH 10768, 10769.

Quercus muhlenbergii Engelm: Yellow or Chin-

quapin Oak; common; mesic woods especially along rivers on wooded slopes; BSUH 10567.

Quercus palustris Muenchh.: Pin Oak; rare (planted?); fields; BSUH 11027.

Quercus rubra L.: Northern Red Oak; abundant; mesic woods; BSUH 10766, 11577.

Quercus velutina Lam.: Black Oak; infrequent; dry hilltop forest; BSUH 11095.

Fumariaceae (Fumitory Family)

Dicentra canadensis (Goldie) Walp.: (z,+); Squirrel Corn; rare; ravine slope near Little Blue River; BSUH 10279.

Dicentra cucullaria (L.) Bernh.: Dutchman's Breeches; abundant; mesic woods especially on wooded slopes; BSUH 10945.

Gentianaceae (Gentian Family)

Frasera caroliniensis Walter: (+); American Columbo; rare, one large colony; dry upland woods; BSUH 11096, 11572.

Geraniaceae (Geranium Family)

Geranium maculatum L.: Wild Geranium; abundant; mesic woods; BSUH 10901, 11147.

Geranium pusillum L.: (*,+); Small-flowered Crane's-bill; rare; roadsides; BSUH 11460.

Grossulariaceae (Gooseberry Family)

Ribes americanum Miller: (+); Eastern Black Currant; rare, one colony in Unit 3; wet thicket; BSUH 11476.

Ribes cynosbati L.: Dogberry; common to abundant; mesic woods; BSUH 10887.

Ribes missouriense Nutt.: Missouri Gooseberry; infrequent; mesic woods; BSUH 11583.

Haloragaceae (Water Milfoil Family)

Mriophyllum sp.: (+); Water Milfoil; infrequent; Big Blue River; BSUH 11668.

Hamamelidaceae (Witch Hazel Family)

Liquidambar styraciflua L.: (a,+); Sweet Gum; rare, two sites; fields; BSUH 11455.

Hippocastanaceae (Horse-chestnut Family)

Aesculus glabra Willd.: Ohio Buckeye; abundant; floodplain woods and occasionally in mesic woods; BSUH 10950.

Hydrangeaceae (Hydrangea Family)

Hydrangea arborescens L.: (+); American Hydrangea; common; wooded slopes with seeps; BSUH 10569, 10695, 10777.

Hydrophyllaceae (Waterleaf Family)

Hydrophyllum appendiculatum Michx.: (+); Biennial Waterleaf; abundant; mesic woods; BSUH 11148.

Hydrophyllum macrophyllum Nutt.: (+); Hairy

Waterleaf; abundant; mesic woods; BSUH 10328, 10362, 11098.

Hydrophyllum virginianum L.: Eastern Waterleaf; infrequent; floodplain woods of Unit 3; BSUH 11552.

Phacelia purshii Buckley: (+); Miami Mist; infrequent; floodplain woods Unit 3; BSUH 10442.

Iridaceae (Iris Family)

Iris germanica L.: (*,+); German Iris; infrequent; fields; BSUH 10848.

Iris pseudacorus L.: (*,+); Water Flag or Yellow Flag; rare; artificial pond near office; BSUH 11431.

Iris virginica L. var. *shrevei* (Small) E. Anderson: Southern Blue Flag; frequent; wet areas in meadows and floodplain woods; BSUH 10971.

Sisyrinchium angustifolium Miller: (+); Blue-eyed Grass; infrequent; wet meadows; BSUH 10963.

Juglandaceae (Walnut Family)

Carya cordiformis (Wangenh.) K. Koch: Bitternut Hickory; abundant; mesic woods; BSUH 11058.

Carya glabra (Miller) Sweet: (+); Pignut Hickory; common; mesic woods, especially dry hilltops; BSUH 11099.

Carya ovata (Miller) K. Koch: Shagbark Hickory; abundant; mesic woods; BSUH 11160.

Juglans cinerea L.: (+); Butternut; rare, two sites; floodplain woods and floodplain woods; BSUH 11578.

Juglans nigra L.: Black Walnut; abundant; mesic and floodplain woods; BSUH 11169.

Juncaceae (Rush Family)

Juncus tenuis Willd. var. *dudleyi* (Wieg.) F.S. Herm.: (+); Synonym—*Juncus dudleyi* Wiegand; Path Rush or Dudley's Rush; common to abundant; sedge meadows and wet areas; BSUH 10976, 11653.

Juncus tenuis var. *tenuis* Willd.: Path Rush; common; fields, meadows, and paths; BSUH 10802.

Juncus torreyi Coville: Rush; infrequent to frequent; ditches, sedge meadows and wet fields; BSUH 11348, 11355, 11625, 11629, 11680.

Luzula multiflora (Retz.) Lej.: (+); Common Wood Rush; infrequent; dry hilltop woods; BSUH 11312, 11389.

Lamiaceae (Mint Family)

Agastache nepetoides (L.) Kuntze: Catnip Giant Hyssop; infrequent; railroad bank and wooded fields; BSUH 10571.

Blephilia hirsuta (Pursh.) Benth.: Wood Mint or Pagoda Plant; infrequent; mesic woods and floodplain woods; BSUH 11556.

Glechoma hederacea L.: (*,+); Gill-over-the-ground; abundant; widespread; BSUH 10909.

Lamium amplexicaule L.: (*); Henbit; abundant; disturbed areas; BSUH 10869.

Lamium purpureum L.: (*); Red Dead Nettle; abundant; disturbed areas; BSUH 10871.

Leonurus cardiaca L.: (*); Motherwort or Lion's Tail; common (in large colonies); fields and waste areas; BSUH 11206.

Lycopus americanus Muhl.: American Water Horehound; common; wet fields and meadows; BSUH 10573, 11089.

Lycopus uniflorus Michx.: Northern Water Horehound; infrequent, though locally common in Sweet Flag swales; Sweet Flag swales and wet fields; BSUH 10468, 10559, 11557.

Mentha arvensis L.: Wild or Field Mint; common; wet fields and meadows; BSUH 11097.

Mentha × gentilis L.: (+); Red or Scotch Mint; infrequent; sedge meadow; BSUH 10574.

Monarda clinopodia L.: (+); Basil Bee-balm; infrequent but often in large colonies; floodplain woods and riverbanks; BSUH 10678, 10684, 11464.

Nepeta cataria L.: (*); Catnip; abundant; widespread; BSUH 10704, 10778.

Physostegia virginiana (L.) Benth.: (+); Obedience; rare, two colonies; floodplain woods and riverbank; BSUH 10575, 11697.

Prunella vulgaris L.: Sealheal; abundant; moist fields; BSUH 10576, 10694.

Pycnanthemum virginianum (L.) Druand. & B.D. Jackson: Mountain Mint; infrequent; sedge meadows; BSUH 10577.

Scutellaria incana Biehler: Downy Skullcap; infrequent; mesic woods; BSUH 10691, 11078.

Scutellaria lateriflora L.: (+); Skullcap (Mad-dog skullcap); infrequent; wet meadows, stream banks and Sweet Flag swales; BSUH 10579.

Scutellaria ovata Hill var. *versicolor* (Nutt.) Fern.: (+); Forest Skullcap; rare, one site; mesic woods near an opening; BSUH 10690.

Stachys tenuifolia Willd.: Smooth Hedge Nettle; abundant; wet meadows, floodplain woods and Sweet Flag swales; BSUH 10580.

Synandra hispidula (Michx.) Britton: (z,+); Synandra or Gyandotte-beauty; rare; mesic woods; BSUH 10863. [Watch List]

Teucrium canadense L. var. *virginicum* (L.) Eaton: American Germander; common; open mesic woods and wet meadows; BSUH 11079.

Lauraceae (Laurel Family)

Lindera benzoin (L.) Blume: Spicebush; infrequent; mesic woods; BSUH 11068.

Sassafras albidum (Nutt.) Nees: (+); Sassafras; rare; two sites with twelve stems at one site; BSUH 11208.

Lemnaceae (Duckweed Family)

Lemna minor L.: (+); Lesser Duckweed; infrequent; Little Blue River; BSUH 11093.

Wolffia papulifera C. Thompson: (+); Water Meal; infrequent; Little Blue River; BSUH 11091.

Liliaceae (Lily Family)

Allium canadense L.: (+); Onion or Wild Garlic; common; fields and floodplain woods; BSUH 11230.

Allium tricoccum var. *tricoccum* Aiton: Ramps; abundant; mesic woods; BSUH 11030.

Allium vineale L.: (*); Field Garlic or Scallions; common; fields; BSUH 11220.

Asparagus officinalis L.: (a*,+); Asparagus; rare, two sites (planted?); fields and woods' edge; BSUH 11017.

Camassia scilloides (Raf.) Cory: Wild Hyacinth; abundant; moist, shallow sloping areas in mesic woods; BSUH 11146.

Convallaria majalis L.: (*,+); Lily of the Valley; rare, two sites (planted?); mesic woods; BSUH 10947, 11581.

Erythronium albidum Nutt.: (+); White Trout Lily; rare, one site with many plants; mesic woods; BSUH 11513.

Erythronium americanum Ker Gawler: Yellow Trout Lily or Fawn Lily; common; mesic woods; BSUH 10961.

Hemerocallis fulva L.: (b*,+); Day Lily; common; old building sites, hill slopes, fields and roadsides; BSUH 11185.

Lilium michiganense Farw.: (+); Michigan Lily; rare, one site; mesic woods (these did not flower during this study); BSUH 11541.

Narcissus poeticus L.: (b*,+); Poet's Narcissus; infrequent; old building sites now in mesic woods and fields; BSUH 10934.

Narcissus pseudonarcissus L.: (b*,+); Daffodil; infrequent; old building sites now in mesic woods and fields; BSUH 10858.

Ornithogalum umbellatum L.: (b*,+); Star of Bethlehem; rare; floodplain woods in Unit 1 (planted?); BSUH 11158.

Polygonatum biflorum (Walter) Elliott: (+); Smooth Solomon's Seal; abundant; mesic woods; BSUH 11014.

Polygonatum biflorum (Walter) Elliott var. *commutatum* (Schultes f.) Morong.: (+); Great Solomon's Seal; common; mesic woods; (see Voss (1972) for a discussion of this variety); BSUH 11015.

Polygonatum pubescens (Willd.) Pursh.: Downy Solomon's Seal; infrequent; mesic woods; BSUH 11416.

Smilacina racemosa (L.) Desf.: Synonym—*Maianthemum racemosus* (L.) Link; False Solomon's Seal or Feathery Solomon's Plume; infrequent; mesic woods; BSUH 11005.

Smilacina stellata (L.) Desf.: (+); Synonym—*Maianthemum stellatum* (L.) Link; Star-flowered

False Solomon's Seal or Starry Solomon's Plume; rare; woodland seep; BSUH 10299, 11695.

Trillium flexipes Raf.: (+); Bent Trillium; common; mesic woods; BSUH 10889.

Trillium recurvatum Beck.: Prairie Trillium; abundant; mesic woods; BSUH 10923.

Trillium sessile L.: Toadshade; common; mesic woods; BSUH 10926.

Trillium sessile var. *luteum* L.: Toadshade; infrequent; mesic woods; (this variety is recognized by Deam, 1940); BSUH 10376.

Uvularia grandiflora T.E. Smith: Bellwort; common; mesic woods; BSUH 10918, 10943.

Veratrum woodii Robbins: (+); Synonym—*Melanthium woodii* (Robbins) Bodkin; Wood's False Hellebore; rare, one plant; mesic woods; BSUH 11280.

Limnanthaceae (Meadow-foam Family)

Floerkea proserpinacoides Willd.: False Mermaid; rare, one site; riverbank; BSUH 10883.

Magnoliaceae (Magnolia Family)

Liriodendron tulipifera L.: Tuliptree; abundant; mesic woods; BSUH 10581, 10843, 11595.

Malvaceae (Mallow Family)

Abutilon theophrasti Medikus: (*); Velvetleaf or Pie Marker; common; disturbed areas; BSUH 11044.

Hibiscus trionum L.: (*); Flower of an Hour; infrequent; disturbed areas; BSUH 11540.

Malva neglecta Wallr.: (*); Common Mallow or Cheeses; infrequent; disturbed areas and waste places; BSUH 10841.

Menispermaceae (Moonseed Family)

Menispermum canadense L.: Moonseed; infrequent; woods; BSUH 11187, 11194.

Mimosaceae (Mimosa Family)

Desmanthus illinoensis (Michx.) MacMillan: (b,+); Bundleflower or Prairie Mimosa; infrequent; in prairie planted fields; BSUH 10645, 10759.

Molluginaceae (Carpetweed Family)

Mollugo verticillata L.: (*,+); Carpetweed; infrequent; disturbed areas and cindery area; BSUH 10679, 11409.

Monotropaceae (Indian Pipe Family)

Monotropa uniflora L.: (+); Indian Pipe; infrequent; mesic woods; BSUH 11103.

Moraceae (Mulberry Family)

Maclura pomifera (Raf.) C.K. Schneider: (*); Osage-orange; common (especially in Unit 4); floodplain woods and woods' edge; BSUH 11245, 11267.

Morus alba L.: (*); White Mulberry; abundant; wood's edge and fields; BSUH 10582, 10853.

Morus rubra L.: Red Mulberry; infrequent; mesic woods; BSUH 11111.

Nyctaginaceae (Four-O'Clock Family)

Mirabilis nyctaginea (Michx.) MacMillan: (*,+); Umbrella Wort; rare, one site; one field with prairie plantings; BSUH 11525.

Oleaceae (Olive Family)

Forsythia × *intermedia* Zabel: (a,*,+); Border Forsythia; rare; planted next to building; BSUH 11504.

Fraxinus americana L.: White Ash; common; mesic woods and floodplain woods; BSUH 10736.

Fraxinus nigra Marshall: Black Ash; infrequent; floodplain woods; BSUH 11694.

Fraxinus pennsylvanica Marshall: Green Ash; common; floodplain woods; BSUH 11062.

Fraxinus quadrangulata Michx.: (+); Blue Ash; common; mesic woods; BSUH 10584, 11188.

Ligustrum vulgare L.: (b,*,+); Common Privet; infrequent, though locally abundant at one site in Unit 2; mesic woods; BSUH 11285.

Syringa vulgaris L.: (b,*,+); Common Lilac; common in Unit 2 field and woods south of asphalt road; BSUH 11354, 11593, 11605.

Onagraceae (Evening Primrose Family)

Circaea lutetiana var. *canadensis* L.: Synonym—*Circaea quadrisulcata* (Maxim.) Franch. & Sav.; Common Enchanter's Nightshade; abundant; mesic woods; BSUH 10772.

Epilobium ciliatum Raf.: (+); American Willow Herb; common; banks of the Little Blue River and sedge meadow; BSUH 10585, 10746. [Endangered]

Oenothera biennis L.: Common Evening Primrose; abundant; fields and roadsides; BSUH 10586, 11539.

Orchidaceae (Orchid Family)

Aplectrum hyemale (Muhl.) Torr.: Putty-root; rare, one site with three plants; mesic woods; BSUH 10329.

Liparis liliifolia (L.) Rich.: (+); Large Twayblade or Mauve Sleekwort; infrequent, several sections of young woods with many plants; secondary growth mesic woods; BSUH 11284.

Orchis spectabilis L.: Synonym—*Galearis spectabilis* (L.) Raf.; Showy Orchis; infrequent; scattered in mesic woods; BSUH 11305, 11573.

Spiranthes ovalis Lindl.: (+); Oval Ladies' Tresses; rare, two sites; mesic woods; BSUH 10705. [Watch List]

Orobanchaceae (Broom-rape Family)

Conopholis americana (L.) Wallr.: (+); Squawroot; infrequent; scattered in mesic woods; BSUH 10898, 11117.

Epifagus virginiana (L.) Barton: (+); Beech Drops; rare to infrequent; mesic woods with beech; BSUH 10471, 10760, 11353.

Oxalidaceae (Wood Sorrel Family)

Oxalis dillenii Jacq.: Southern Yellow Wood Sorrel; infrequent; moist fields and riverbanks; BSUH 11653.

Oxalis stricta L.: Common Yellow Wood Sorrel; abundant; fields and woods (widespread); BSUH 11524, 11122.

Oxalis violacea L.: Violet Wood Sorrel; rare; dry upland woods of unit 2; BSUH 10370.

Papaveraceae (Poppy Family)

Chelidonium majus L.: (*,+); Celandine; rare, one site; wooded railroad bed; BSUH 11551.

Papaver rhoeas L.: (c.*,+); Shirley or Corn Poppy; infrequent; fields with prairie plantings; BSUH 10762.

Sanguinaria canadensis L.: Bloodroot; common; mesic woods; BSUH 10907.

Phytolaccaceae (Pokeweed Family)

Phytolacca americana L.: Pokeweed or Pokeberry; common; fields, open woods and roadsides; BSUH 10639.

Plantaginaceae (Plantain Family)

Plantago aristata Michx.: Buckhorn or Bracted Plantain; rare, but abundant at one site; cindery area; BSUH 11528.

Plantago lanceolata L.: (*,+); English Plantain; common; widespread; BSUH 10840.

Plantago major L.: (*,+); Common Plantain; rare, but abundant at one site; gravel parking lot #3 (this plant may now be extirpated as parking lot #3 was covered with asphalt in Fall, 2001); BSUH 11088.

Plantago rugelii Decne.: American Plantain; abundant; widespread; BSUH 10751.

Platanaceae (Plane-tree Family)

Platanus occidentalis L.: Sycamore; common; floodplain woods, occasionally in mesic woods; BSUH 10588.

Poaceae (Grass Family)

Agrostis gigantea Roth: Synonym—*Agrostis alba* L.; Redtop; abundant; widespread; BSUH 10811, 10828, 11608, 11698.

Andropogon gerardii Vitman: Big Bluestem or Turkey-foot; common; fields with prairie plantings; BSUH 10641.

Andropogon virginicus L.: Broom Sedge; rare, two sites; roadsides and dry field; BSUH 11650, 11685.

Bromus commutatus Schrader: (*); Hairy Chess; infrequent but with large number of plants; disturbed areas; BSUH 10824.

Bromus inermis Leysser: (*); Smooth Brome; abundant; fields; BSUH 10820.

Bromus japonicus Thunb.: (*); Japanese Chess; abundant; fields, disturbed areas and waste places; BSUH 11218, 11388, 11636, 11665.

Bromus pubescens Willd.: (+); Woodland Brome; rare; mesic woods; BSUH 11628.

Bromus racemosus L.: (*,+); Smooth Chess; Brome; common; fields, disturbed areas and waste places; BSUH 11703.

Bromus tectorum L.: (*); Junegrass or Downy Chess; common; fields, disturbed areas and waste places; BSUH 11373, 11638, 11643, 11699, 11702, 11704.

Cinna arundinacea L.: Common Woodreed; abundant; widespread; BSUH 11329.

Dactylis glomerata L.: (*); Orchard Grass; abundant; fields; BSUH 10855, 10856.

Digitaria ischaemum (Schreber) Muhl.: (*,+); Smooth Crabgrass; abundant; roadsides, lawns; fields and waste places; BSUH 10951, 11357.

Echinochloa crusgalli (L.) P. Beauv.: Barnyard Grass; abundant; disturbed areas (often damp); BSUH 11366.

Elyusine indica (L.) Gaertner: (*,+); Yardgrass or Goosegrass; abundant; fields, roadsides and in cracks of cement and asphalt; BSUH 11358, 11520, 11660.

Elymus hystrix L.: Synonym—*Hystrix patula* Moench.; Bottlebrush Grass; abundant; mesic woods; BSUH 11240.

Elymus riparius Wieg.: (+); Streambank Wild Rye; common; floodplain woods and riverbanks; BSUH 10814, 11359.

Elymus villosus Muhl.: Downy Wild Rye; common; mesic woods; BSUH 11588, 11634, 11635.

Elymus virginicus L.: Virginia Wild Rye; abundant; mesic and floodplain woods; BSUH 10817.

Elytrigia repens (L.) Nevski: (*); Synonym—*Agropyron repens* (L.) Beauv.; Quack Grass; common; roadsides, fields and waste places; BSUH 10826, 11221.

Eragrostis cilianensis (All.) Janchen: (*); Stinkgrass; infrequent; disturbed areas and waste places; BSUH 11617.

Eragrostis minor Host.: (+); Synonym—*Eragrostis poaeoides* Roem. & Schult.; Lovegrass; infrequent; in cracks of concrete and asphalt; BSUH 10797, 10799.

Eragrostis pectinacea (Michx.) Nees: Carolina Lovegrass; infrequent; roadsides, fields and waste areas; BSUH 11519.

Festuca elatior L.: (*); Tall or Alta Fescue; abundant; fields; BSUH 10822, 11612.

Festuca subverticillata (Pers.) E. Alexeev.: Synonym—*Festuca obtusa* Biehler; Nodding Fescue; common; ravines and alluvial plains of mesic woods and wildlife plantings in Unit 3; BSUH 10982, 10983, 10984, 10985, 11301.

Glyceria striata (Lam.) A. Hitchc.: Fowl Managress; common; widespread; BSUH 10830, 11318.

Hordeum jubatum L.: Foxtail Barley; common; roadsides; BSUH 11198.

Leersia oryzoides (L.) Swartz: Rice Cutgrass; frequent to common; wet meadows; BSUH 10590.

Leersia virginica Willd.: White Grass; infrequent; ravine bottoms with creeks; BSUH 11334.

Lolium perenne var. *perenne* L.: (*); English Ryegrass; common; roadsides and waste places; BSUH 11487.

Muhlenbergia frondosa (Poiret) Fern.: (+); Muhly; abundant; widespread; BSUH 11337, 11681, 11606, 11678.

Muhlenbergia mexicana (L.) Trin.: Wirestem Muhly; frequent; fen in Unit 1 and fields of Unit 3; BSUH 11343.

Muhlenbergia schreberi J.F. Gmelin: Nimbleweed; infrequent; waste places and railroad bed; BSUH 11338.

Panicum capillare L.: Witch-grass; common; disturbed fields; BSUH 11341.

Panicum dichotomiflorum Michx.: (+); Knee Grass; rare; cindery area; BSUH 11684.

Panicum implicatum Britton (+); Synonym—*Panicum lanuginosum* Elliott var. *implicatum* (Scribn.) Fern; Panic-grass; rare; growing on eroding, moist bank along Little Blue River; BSUH 11342.

Panicum virgatum L.: Prairie Switchgrass; rare; prairie planting in Unit 2; BSUH 11609, 11610, 11630.

Phalaris arundinacea L.: (*,+); Reed Canary Grass; abundant; widespread in wet fields, especially Unit 4; BSUH 0973, 10975.

Phleum pratense L.: (*); Timothy; abundant; fields; BSUH 10809, 11292.

Poa annua L.: (*); Speargrass; infrequent; gravel parking lots and waste places; BSUH 11706.

Poa compressa L.: (*); Canada Bluegrass; common; dry hillsides, roadsides, cindery area and waste places; BSUH 11382, 11384, 11654.

Poa pratensis L.: Kentucky Bluegrass; abundant; fields, roadsides and lawns; BSUH 11137, 11375, 11385.

Poa sylvestris Gray: Forest Bluegrass; infrequent; mesic woods; BSUH 10801, 11349.

Poa trivialis L.: (*,+); Rough Bluegrass; infrequent on the bank of the Big Blue River; BSUH 11632, 11708.

Schizachyrium scoparium (Michx.) Nash: Synonym—*Andropogon scoparius* Michx.; Little Blue-stem; infrequent to common; fields with prairie plantings (especially Unit 1); BSUH 11591.

Setaria faberi R. Herrm.: (*,+); Nodding or Giant Foxtail; abundant; disturbed areas and waste places; BSUH 11362.

Setaria glauca (L.) P. Beauv.: (*); Yellow Foxtail

Grass; abundant; disturbed areas and waste places; BSUH 11360.

Setaria viridis (L.) P. Beauv.: (*); Green Foxtail Grass; common; disturbed areas, waste places and in crack of concrete; BSUH 11364.

Sorghastrum nutans (L.) Nash: Indian Grass; abundant; fields with prairie plantings; BSUH 11331.

Sorghum halepense (L.) Pers.: (*,+); Johnson Grass; infrequent; fields and roadsides; BSUH 11587.

Sphenopholis intermedia Rybd.: Synonym—*Sphenopholis obtusata* var. *major* (Torr.) Erdman; Slender Wedge Grass; infrequent to common; woodland seeps and moist fields; BSUH 11383, 11700.

Sporobolus vaginiflorus (Torr.) A. Wood: Poverty Grass; rare, one site; cindery area; BSUH 11633.

Tridens flavus (L.) A. Hitchc.: (+); Purpletop; abundant; roadsides, fields and in cracks of asphalt; BSUH 10592, 10593, 11326, 11356.

Zea mays L.: (*); Volunteer Corn; infrequent; disturbed fields; BSUH 10722.

Polemoniaceae (Phlox Family)

Phlox divaricata L.: Forest Phlox; abundant; mesic woods; BSUH 10927.

Polemonium reptans L.: Spreading Jacob's Ladder of Greek Valerian; common; mesic woods; BSUH 10882, 10886.

Polygonaceae (Smartweed Family)

Polygonum aviculare L.: (+); Doorweed or Common Knotgrass; abundant; roadsides, lawns, fields and waste places; BSUH 10663.

Polygonum cespitosum Blume: (*,+); Creeping Smartweed; common; mesic woods along paths; BSUH 11064, 11418.

Polygonum hydropiper L.: (*,+); Water Pepper; rare, one large colony; sedge meadow; BSUH 11589.

Polygonum hydropiperoides var. *hydropiperoides* Michx.: (+); False Water Pepper; infrequent; riverbanks; BSUH 11083, 11084, 11651.

Polygonum pennsylvanicum L.: Pennsylvania Smartweed; common; fields and disturbed areas; BSUH 10569, 10636, 10655.

Polygonum persicaria L.: (*); Lady's Thumb; abundant; moist fields, disturbed areas and meadows; BSUH 10594.

Polygonum punctatum Elliot: Dotted Smartweed; rare; wet meadows; BSUH 10596, 10672.

Polygonum sagittatum L.: (+); Arrow-leaved Tearthumb; infrequent; wet meadows near Little Blue River; BSUH 10572, 10598.

Polygonum scandens L.: False Climbing Buckwheat; abundant; fields, waste areas, thickets and woodland edges; BSUH 10599, 10651.

Polygonum virginianum L.: Jumpseed or Wood-

land Knotweed; abundant; mesic woods; BSUH 10601.

Rumex acetosella L.: (*); Red Sorrel; infrequent; upland field of Unit 1; BSUH 11008.

Rumex crispus L.: (*); Curly Dock; abundant; fields, thickets, disturbed areas and roadsides; BSUH 10967.

Rumex obtusifolius L.: (*,+); Bitter Dock; common; wet fields and meadows; BSUH 11238.

Portulacaceae (Purslane Family)

Claytonia virginica L.: Spring Beauty; abundant; mesic woods; BSUH 10879, 10912.

Portulaca oleracea L.: (*,+); Common Purslane; common; disturbed areas; BSUH 11180.

Potamogetonaceae (Pondweed Family)

Potamogeton crispus L.: (*,+); Curly Pondweed; common; Big Blue River; BSUH 11671.

Potamogeton foliosus Raf.: (+); Leafy Pondweed; rare, one site; pond in Unit 4; BSUH 11667, 11673.

Potamogeton nodosus Poiret: (+); Longleaf Pondweed; rare; Big Blue River; BSUH 11687, 11688.

Potamogeton pectinatus L.: (+); Sago Pondweed; common; Big Blue River; BSUH 11664.

Primulaceae (Primrose Family)

Dodecatheon meadia L.: Shooting Star; rare, abundant at one site; dry upland woods; BSUH 11142.

Lysimachia ciliata L.: Fringed Loosestrife; infrequent; wet meadows and woods edge; BSUH 11054.

Lysimachia nummularia L.: (*,+); Moneywort; abundant; moist fields and meadows, wet ground, and floodplain woods; BSUH 10603, 11236.

Lysimachia quadriflora Sims.: Smooth or Narrow-leaved Loosestrife; rare, one site with few plants; sedge meadow; BSUH 11430.

Ranunculaceae (Buttercup Family)

Actaea alba (L.) Miller: (+); Synonym—*Actaea pachypoda* Elliot; Doll's Eyes; infrequent; mesic woods; BSUH 11071.

Anemone canadensis L.: Canadian Anemone; rare, one site; along railroad track near SR 103 in Unit 3; BSUH 11529.

Anemone quinquefolia L. var. *bifolia* Farw.: (+); American Wood Anemone; infrequent; mesic woods; BSUH 10888.

Anemone virginiana L.: Tall Anemone or Thimbleweed; frequent; along railroad track, in successional upland woods, and roadsides; BSUH 10605, 11056.

Anemonella thalictroides (L.) Spach.: Synonym—*Thalictrum thalictroides* (L.) Eames & Boivin; Rue Anemone; frequent; mesic woods; BSUH 10933.

Caltha palustris L.: Marsh Marigold; rare; seeps with skunk cabbage; BSUH 10955.

Clematis virginiana L.: Virgin's Bower; infrequent; edge of floodplain woods next to sedge meadows; BSUH 11045, 10747.

Hepatica acutiloba DC.: Synonym—*Hepatica nobilis* Mill. var. *acuta* (Pursh) Steyermark; Sharp-lobed Hepatica; common; creek banks and ravine slopes in mesic woods; BSUH 10913.

Isopyrum biternatum (Raf.) T. & G.: (+); Synonym—*Enemion biternatum* Raf.; False Rue Anemone or Isopyrum; abundant; mesic and floodplain woods; BSUH 10906.

Ranunculus abortivus L.: Small-flowered or Kidney-leaved Crowfoot; infrequent to common; slope woods and floodplain woods; BSUH 10954, 11599.

Ranunculus hispidus Michx. var. *caricetorum* (Greene) T. Duncan: Synonym—*Ranunculus septentrionalis* Poir.; Hispid (Swamp) Buttercup; infrequent but common at one site; wet meadow and swale; BSUH 10965.

Ranunculus hispidus var. *hispidus* Michx.: Hispid Buttercup; common; creek banks of mesic woods and wet meadows; BSUH 10978.

Ranunculus micranthus Nutt.: (+); Rock or Small-flowered Crowsfoot or Buttercup; infrequent; upland woods; BSUH 10917, 11600.

Ranunculus recurvatus Poiret: Hooked Crowsfoot or Buttercup; infrequent; moist woods and ravines; BSUH 11114, 11156.

Ranunculus sceleratus L.: (z,+), Cursed Crowfoot; rare, one site; standing water in Sweet Flag swale; BSUH 10865.

Thalictrum dasycarpum Fischer & Ave-Lall.: (+); Purple Meadow Rue; rare; banks of Big Blue River and moist field in Unit 1; BSUH 11190, 11473.

Thalictrum dioicum L.: Early Meadow Rue; infrequent; ravine slopes in mesic woods; BSUH 10884.

Thalictrum pubescens Pursh.: (+); Synonym—*Thalictrum polygamum* Muhl.; Tall Meadow Rue; infrequent; meadows; (this collection may possibly be *Thalictrum perelegans* Greene of Deam [1940], but this species is not recognized by Gleason & Cronquist [1991]; BSUH 11265. [Threatened])

Thalictrum revolutum DC.: Waxy or Skunk Meadow Rue; infrequent; bank of Big Blue River and meadows; BSUH 11482.

Rosaceae (Rose Family)

Agrimonia parviflora Aiton: Southern Agrimony; abundant; moist fields; BSUH 10606.

Agrimonia pubescens Wallr.: Downy Agrimony; common; mesic woods; BSUH 10608, 10609, 11085, 11422.

Agrimonia rostellata Wallr.: Woodland Agrimony; infrequent; mesic woods; BSUH 11074.

Chaenomeles speciosa (Sweet) Nakai: (a,*,+);

Common Flowering Quince; rare, one plant, field; BSUH 11511.

Crataegus mollis (T. & G.) Scheele: Downy Hawthorn; abundant; fields, thickets and woods; BSUH 11601.

Crataegus punctata Jacq.: (+); Dotted Hawthorn; abundant; fields, thickets and woods; BSUH 11543.

Filipendula rubra (Hill) B.L. Robinson: Queen of the Prairie; rare, one site with many plants; sedge meadow; BSUH 11048. [Watch List]

Fragaria virginiana Duchesne: Thick-leaved Wild Strawberry; common; widespread but especially in fields; BSUH 10892.

Geum canadense Jacq.: White Avens; abundant; mesic woods; BSUH 10611.

Geum laciniatum Murray: Rough Avens; abundant; fields; BSUH 11232, 11462, 11480.

Geum vernum (Raf.) T. & G.: Spring Avens; infrequent; mesic woods; BSUH 10893, 11135.

Potentilla argentea L.: (*,+); Silvery Five-finger or Cinquefoil; rare, one site with many plants; field; BSUH 11043.

Potentilla norvegica L.: Strawberry Weed; infrequent; fields; BSUH 11531.

Potentilla recta L.: (*); Sulphur Five-fingers; common; fields; BSUH 11257.

Potentilla simplex Michx.: Old Field Five-fingers or Common Cinquefoil; infrequent; fields; BSUH 10098, 10330.

Prunus americana Marshall: Wild Plum; rare, one site; field; BSUH 11479.

Prunus cerasus L.: (b,*,+); Sour Cherry; infrequent; fields; BSUH 11516.

Prunus serotina Ehrh.: Wild Black Cherry; abundant; fields and woods; BSUH 10846, 11123.

Prunus virginiana L.: Choke Cherry; infrequent; low moist areas in mesic woods; BSUH 11420, 11506.

Pyrus coronaria L.: Synonym—*Malus coronaria* (L.) Mill.; Sweet Crab; infrequent; fields and wood's edge; BSUH 11648.

Pyrus malus L.: (b,*,+); Synonym—*Malus malus* (L.) Britton; Apple; infrequent; BSUH 10878, 11604.

Rosa canina L.: (*,+); Dog Rose; infrequent; fields (planted?); BSUH 11248.

Rosa carolina L.: Pasture Rose; common; fields, open areas in woods, and wood's edge; BSUH 11272.

Rosa multiflora Thunb.: (*,+); Multiflora Rose; abundant; widespread in fields and woods (especially young woods); BSUH 10833.

Rosa palustris Marshall: Swamp Rose; rare, one site; riverbank; BSUH 10761, 10770.

Rosa setigera Michx.: Climbing Prairie Rose; common; fields and wood's edge; BSUH 10681, 11196.

Rubus allegheniensis T.C. Porter: (+); Common

Blackberry; abundant; fields and wood's edge; BSUH 10969, 10997.

Rubus occidentalis L.: Black Raspberry; abundant; fields, thickets, wood's edge, and roadsides; BSUH 11128.

Rubus pensilvanicus Poir.: Pennsylvania Blackberry; abundant; fields; BSUH 11442.

Spiraea vanhouttei (Briot.) Zabel.: (a,*,+); Bridal Wreath or Spiraea; rare; planted next to building; BSUH 11495.

Rubiaceae (Madder Family)

Diodia teres Walter: (+); Poorjoe or Buttonweed; rare, one site; cindery area of Unit 1; BSUH 11410.

Galium aparine L.: Cleavers; abundant; young woods, floodplain woods, and thickets; BSUH 10959.

Galium asprellum Michx.: Rough Bedstraw; infrequent; mesic woods; BSUH 10612, 11066.

Galium circaezans Michx.: Forest Bedstraw or Wild Licorice; infrequent; mesic woods; BSUH 11276.

Galium concinnum T. & G.: Shining Bedstraw; common to abundant; mesic woods; BSUH 11621.

Galium triflorum Michx.: Sweet-scented Bedstraw; infrequent though locally abundant; floodplain woods and moist fields; BSUH 10757.

Rutaceae (Rue Family)

Ptelea trifoliata var. *trifoliata* L.: Hop Tree; infrequent; along railroad track, stream banks and wood's edge; BSUH 10613, 11226.

Zanthoxylum americanum Miller: Common Prickly Ash; rare, one site in mesic woods with several small individuals; BSUH 11092.

Salicaceae (Willow Family)

Populus deltoides Marshall: Cottonwood; abundant; widespread in moist/wet areas; BSUH 10614, 10854.

Populus grandidentata Michx.: (+); Big-toothed Aspen; rare, one site; dry hilltop forest; BSUH 11536.

Salix amygdaloides Andersson: Peach-leaf Willow; infrequent; wet fields; BSUH 11499.

Salix discolor Michx.: Pussy Willow; rare; seeps; BSUH 11414, 11498.

Salix eriocephala Michx.: (+); Diamond Willow; infrequent; wet fields; BSUH 11408, 11489, 11501.

Salix exigua Nutt.: (+); Sandbar Willow; abundant; wet fields; BSUH 11569.

Salix nigra Marshall: Black Willow; common; wet fields and riverbanks; BSUH 11144, 11467.

Salix pentandra L.: (b,*,+); Bay-leaved Willow; infrequent; wet fields and wood's edge; BSUH 11567.

Salix purpurea L.: (*,+); Basket Willow; rare; wet field; BSUH 11459, 11533, 11571.

Salix × *rubens* Schrank.: (*,+); Hybrid Crack Willow; rare; fens in Unit 4; BSUH 11428.

Saxifragaceae (Saxifrage Family)

Heuchera americana L.: Common Alum Root; infrequent; mesic woods (especially along openings); BSUH 11427.

Mitella diphylla L.: Two-leaved Mitrewort; common; ravine banks and wet areas of mesic woods; BSUH 10925.

Penthorum sedoides L.: Ditch Stonecrop; infrequent; moist open areas; BSUH 10735, 10739.

Scrophulariaceae (Figwort Family)

Chaenorrhinum minus (L.) Lange: (*,+); Lesser Toadflax or Dwarf Snapdragon; rare; waste place; BSUH 11449.

Chelone glabra L.: White Turtlehead; rare; wet meadow; BSUH 10948.

Linaria vulgaris Miller: (*); Butter-and-eggs; rare, one site with many plants; open hillside at shooting range; BSUH 11470.

Mimulus alatus Aiton: (+); Sharpwing Monkey Flower; infrequent; streambanks and alluvial plains in mesic woods; BSUH 10745, 11076.

Mimulus ringens L.: Allegheny Monkey Flower; rare, one site; sandbar in Little Blue River; BSUH 11469.

Pedicularis lanceolata Michx.: Swamp Lousewort; abundant; moist fields in Unit 1; BSUH 10615, 10706.

Penstemon digitalis Nutt.: Tall White Beard Tongue; common in moist upland field of Unit 1; BSUH 11228.

Penstemon laevigatus Aiton: Synonym—*Penstemon calycosus* Small; Eastern or Smooth Beard Tongue; infrequent to common; mesic woods and woodland sedge meadow; BSUH 11264, 11281.

Scrophularia marilandica L.: Eastern Figwort; infrequent; floodplain woods, riverbanks, and successional woods; BSUH 10616, 11081.

Verbascum blattaria L.: (*); Moth Mullein; common; disturbed areas, roadsides and waste places; BSUH 11255, 11263.

Verbascum thapsus L.: (*); Common or Woolly Mullein; common; disturbed areas, roadsides and waste places; BSUH 11034, 11166.

Veronica anagallis-aquatica L.: (+); Water Speedwell; common; Big Blue River; BSUH 11527. [Threatened]

Veronica arvensis L.: (*); Corn Speedwell; common; disturbed areas, roadsides and waste places; BSUH 10844, 10885.

Smilacaceae (Catbrier Family)

Smilax herbacea L. var. *lasioneura* (Small) Rydb.: (+); Carrion Flower (Greenbrier); infrequent; open areas in mesic woods; BSUH 11100.

Smilax hispida Muhl.: Bristly Greenbrier; common to abundant; mesic woods; BSUH 11290.

Solanaceae (Nightshade Family)

Datura stramonium L.: (*); Jimsonweed; infrequent to common; disturbed fields; BSUH 11178.

Physalis longifolia Nutt. var. *subglabrata* (Mack. & Bush) Cronq.: (+); Synonym—*Physalis subglabrata* Mack. & Bush; Longleaf Groundcherry; infrequent; disturbed fields; BSUH 10720, 11508.

Solanum carolinense L.: (+); Horse Nettle; infrequent; disturbed fields; BSUH 11212.

Solanum dulcamara L.: (*,+); Bittersweet; rare; in cattail stand near sedge meadow; BSUH 11433.

Solanum nigrum L.: Black Nightshade; infrequent to common; disturbed fields; BSUH 11181, 11523.

Tiliaceae (Linden Family)

Tilia americana L.: Basswood; American Linden; frequent; mesic woods; BSUH 10618, 11038.

Tilia cordata Miller: (a,*,+); Little-leaved Linden; rare; planted in lawns and at site of old village in Unit 2; BSUH 11436.

Typhaceae (Cattail Family)

Typha angustifolia L.: (+); Narrow-leaved Cattail; rare; sedge meadow; BSUH 10712.

Typha latifolia L.: (+); Common Cattail; infrequent; in dense stands in wet soil or standing water near sedge meadows; BSUH 11429, 11558.

Ulmaceae (Elm Family)

Celtis occidentalis L.: Northern Hackberry; abundant; woods, especially floodplain and successional; BSUH 11021.

Ulmus americana L.: White (American) Elm; abundant; woods, especially floodplain and successional; BSUH 10619, 10915.

Ulmus pumila L.: (b,*,+); Siberian Elm; common; old building sites and old village; BSUH 10620.

Ulmus rubra Muhl.: Slippery or Red Elm; abundant; mesic woods; BSUH 10732.

Urticaceae (Nettle Family)

Boehmeria cylindrica (L.) Swartz: False Nettle; rare, two sites; moist field in Unit 4 and floodplain woods in Unit 1; BSUH 10562, 11477.

Laportea canadensis (L.) Wedd.: (+); Wood Nettle; abundant; floodplain woods and alluvial plains in mesic woods; BSUH 10621, 10622.

Pilea pumila (L.) A. Gray: Clearweed; abundant; floodplain woods and wet shaded places; BSUH 10624, 10625.

Urtica dioica L. var. *procera* (Muhl.) Wedd.: Synonym—*Urtica procera* Willd.: Tall Nettle or Tall Stinging Nettle; abundant; moist fields, meadows and floodplain woods; BSUH 10627, 10628, 10629, 11016, 11195.

Valerianaceae (Valerian Family)

Valeriana pauciflora Michx.: (+); Long-tube Valerian; infrequent; alluvial plains; BSUH 11153.

Valerianella umbilicata (Sulliv.) A. Wood: (+); Corn Salad; abundant; moist fields and meadows; BSUH 11132.

Verbenaceae (Vervain Family)

Phryna leptostachya L.: Lopseed; frequent; mesic woods; BSUH 10631, 10773.

Verbena bracteata Lagasca & Rodriguez: (+); Prostrate or Creeping Vervain; frequent; roadsides and crack in asphalt; BSUH 10698.

Verbena hastata L.: Common (Blue or Violet) Vervain; frequent; moist fields and meadows; BSUH 10632.

Verbena urticifolia L.: White Vervain; frequent; moist fields and meadows; BSUH 11087.

Violaceae (Violet Family)

Viola cucullata Aiton: (+); Blue Marsh Violet; infrequent; sedge meadow; BSUH 11010.

Viola priceana Willd.: (b,*,+); Synonym—*Viola sororia* Willd.; Confederate Violet; infrequent; up-

land mesic woods; (see Gleason & Cronquist (1991) for a description of this species); BSUH 10860.

Viola pubescens Aiton: Forest Yellow Violet; common; mesic woods; BSUH 10920.

Viola sororia Willd.: Dooryard Violet or Common Blue Violet; abundant; mesic woods, moist fields and lawns; BSUH 10874, 11130.

Viola striata Aiton: Creamy Violet; common; mesic and floodplain woods; BSUH 10924.

Vitaceae (Grape Family)

Parthenocissus quinquefolia (L.) Planchon: Virginia Creeper; abundant; widespread especially in woods; BSUH 10852, 10938, 11191.

Vitis riparia Michx.: River or Frost Grape; common; mesic and floodplain woods; BSUH 10634.

Vitis vulpina L.: Frost Grape; common; mesic and floodplain woods; BSUH 11252.

Zannichelliaceae (Horned Pondweed Family)

Zannichellia palustris L.: (+); Horned Pondweed; infrequent; Big Blue River; BSUH 11663. [Endangered]