

THE VASCULAR FLORA OF CEDAR LAKE RESERVOIR,  
JACKSON COUNTY, ILLINOIS

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ABSTRACT

The vascular flora of approximately five square miles surrounding Cedar Lake Reservoir in southern Illinois was investigated for nineteen months ending in April, 1977. The seven plant community types found in the study are described. Fifty-four taxa were collected that were new for Jackson County, and thirteen new taxa were recorded for the state of Illinois. An annotated checklist of 941 taxa, including 893 species concludes this paper.

INTRODUCTION

Cedar Lake Reservoir is located approximately six miles south of Carbondale in southeastern Jackson County, Illinois. The lake is almost five miles in length from north to south and covers about 1750 acres. Little Cedar Lake, an earlier impoundment, is situated below the far southwest leg of Cedar Lake. It has 97 acres of water surface.

The lake is jointly owned by the City of Carbondale and the United States Forest Service, the northern half by the former, the southern half by the latter. Regulation of the entire lake is shared by both parties.

The study area includes slightly more than 3200 acres.

THE ENVIRONMENT

Climate

The climate of Jackson County, located in the interior of a large land mass, is humid, continental, and subject to wide variations in temperature and precipitation.

The average temperature in Jackson County is  $57.8^{\circ}$  F. July has an average temperature of  $79.4^{\circ}$  F. The mean temperature for January is  $35^{\circ}$  F. The annual precipitation in the county averages 44.8 inches (Anonymous, 1964).

### Geology, Topography, and Soils

Cedar Lake is situated in the Shawnee Hills Section of the Interior Low Plateau physiographic province of North America (Leighton, et al., 1948). This area is known for its rugged and scenic topography. Within the study area stream action is primarily responsible for the topographical development, with wind and glacial action being lesser influences (Desborough, 1959). The relief shown in much of the area between the low woods and the ridgetops is often quite stark, demonstrating a high resistance of the massive sandstone bedrock to erosive factors. Mississippian and Pennsylvanian aged bedrock underlies the region.

The highest point in the Cedar Lake area is approximately 660 feet above sea level. The lowest point of the region exists at approximately 400 feet above sea level, giving a total relief of 260 feet. Tall, sheer cliffs arise from the water on both sides of the lake at its northern end. Cliffs of slightly smaller stature occur upslope from the lake throughout the area studied. The most striking of these are located at Cove Hollow and Wolfden Hollow on the west side of the watershed. Cove Hollow is surrounded by massive sandstone cliffs which help provide the rich mesic habitat in the ravine below. Approximately one mile south is Wolfden Hollow, a deep mesic canyon with steeply sloping wooded hillsides. At its wide mouth tall cliffs are present on both sides. These gradually disappear as the slopes merge at the ridgetops. The cliff at the south side of Wolfden Hollow circles south, then west, forming an almost round, easterly projecting peninsula.

Soils of the study area can be broadly divided into upland and lowland groups. The upland types include soils of the Alford, Hosmer, Neotoma, Wellston, Hickory and Berks units. The lowland soils are of two types, Burnside and Wakeland. Soils of the Banlie, Belknap and Bird Series are now covered by water (Herman, 1976).

On most of the flat ridgetops surrounding Cedar Lake are found soils of the Alford and Hosmer Series. These soils, which are formed in loess, are deep and highly permeable to water, affording a generally dry condition.

Many of the lower, moderately steep, wooded slopes in the Cedar Lake area have soils of the Wellston-Berks Complex. These soils are deep and well drained (Herman, 1976). A lower topographical position, resulting in a more favorable moisture condition, allows for a mesic situation to exist. Localities with this complex are wooded, mesic, mostly north-facing slopes.

The northern tip of the region is dominated by gentle wooded slopes with soils of the Hickory-Alford Complex.

These two soils are mapped together, the Alford soils being found on the upper slopes and the Hickory soils on the lower. Pebbles and gravel commonly occur throughout the latter soil type. This complex is well drained and moderately deep to bedrock (Parks and Miles, 1967). Mesic to dry woods are associated with this soil unit.

Several soil types situated in the lowlands are now concealed by the lake. Of those units which are not, the Burnside Series is the most abundant. It can be found adjacent to some of the creeks which feed Cedar Lake and Little Cedar Lake. Its alluvial soils are moderately well drained and occupy rather flat terrain.

Soils of the Wakeland Series are found in several small, very flat regions in the northern part of the study area. These soils are deep, poorly drained and formed in alluvium (Herman, 1976). These characteristics allow for a plant community that is tolerant of wet conditions for prolonged periods of time.

#### PLANT COMMUNITIES

Seven major plant community types are found at Cedar Lake. These are: 1) Aquatic communities; 2) Streambank communities; 3) Mesic ravine communities; 4) Xerophytic ledge communities; 5) Dry woods communities; 6) Old field communities; and 7) Disturbed communities.

#### Aquatic Communities

Cedar Lake reached full pool late in 1975. No true aquatic species were found in the lake, and the marginal, semi-aquatic flora reflects an early successional state. The moist shorelines produce dense populations of pioneer species. Sedges such as Cyperus strigosus, C. esculentus, and Eleocharis obtusa grow commonly along most of the lake's edge. The family Polygonaceae is well represented on these wet banks. Polygonum pensylvanicum, P. lapathifolium, P. punctatum, and Rumex crispus are all found with regularity adjacent to the lake.

Little Cedar Lake, which was impounded in 1969, exhibits a more advanced state of aquatic succession. True aquatics found in the lake are Lemna minor, Spirodela polyrhiza, Najas minor, and Potamogeton spp. The wet shoreline is inhabited by Jussiaea spp., Eleocharis obtusa, Juncus effusus var. solutus, Sagittaria latifolia and Typha latifolia, among others.

#### Streambank Communities

Only a small portion of the Cedar Lake area contains streambank communities. In two locations, this community is

found bordering Cedar Creek—just downstream from the emergency spillway of the impoundment, and at the far south end of the region studied, where Cedar Creek enters Little Cedar Lake. These sites have soils which are very deep and moderately to poorly permeable to water. This community exhibits a rather tight canopy with dense shrub and herbaceous layers. Characteristic trees found adjacent to the creek and in the surrounding floodplain are Platanus occidentalis, Acer negundo, Betula nigra, Fraxinus americana, and Liquidambar styraciflua. The heavy understory consists of shrubs such as Staphylea trifolia, Cephalanthus occidentalis, and Arundinaria gigantea, the latter often in dense, nearly pure stands. Woody vines frequently encountered are Parthenocissus quinquefolia, Smilax spp. and Vitis spp.

The vernal aspect of the floodplain woods is characterized by a distinct herbaceous flora. Early-flowering plants, such as Viola striata, Collinsia verna, Cardamine bulbosa, and Valeriana pauciflora inhabit these very moist woods.

Many sedges occupy the floor of these woods. Some of these are Carex muskingumensis, C. rosea, Cyperus strigosus and Eleocharis obtusa. Grasses including Glyceria striata, Phalaris arundinacea, Chasmanthium latifolium, and Leerzia oryzoides commonly grow with these sedges.

On gravel bars within the creek, a number of herbaceous taxa can be found. Mimulus alatus, Commelina spp., and Lippia lanceolata frequently occupy these temporary terrestrial habitats.

#### Mesic Ravine Communities

The deep, moist, shaded ravines support the most diverse and luxuriant flora in the area. Soils occupying these mesic canyons are moderately deep, well drained, and rich in organic matter. Fagus grandifolia, Acer saccharum, and Liriodendron tulipifera form the dominants in the arborescent portion of this community in the bottoms and north-facing slopes. Farther upslope and on the less moist, south-facing mesic slopes, Acer saccharum, Quercus rubra and Q. alba compose most of the canopy. Other trees contributing to the great diversity of this community are Carya glabra, Ulmus americana, Nyssa sylvatica, Tilia americana and, rarely Magnolia acuminata.

The midstratum is occupied by Ostrya virginiana, Carpinus caroliniana, Cercis canadensis, Lindera benzoin, Asimina triloba, and Staphylea trifolia. Toxicodendron radicans is the most abundant shrub inhabiting the rich floor.

The herbaceous vernal flora consists of a wide variety of brightly colored woodland forms which produce flowers before the trees form a tight canopy above. Eryngium

bulbosa, Claytonia virginica, Dicentra cucullaria, D. canadensis, Sanguinaria canadensis, Erythronium americanum, Trillium spp., Viola spp. and many other small, profusely flowering herbs cover the surface of the moist ravines in the spring.

Ferns exist in great abundance in this habitat. Some of the pteridophytes common to this community are Polystichum acrostichoides, Dryopteris marginalis, Adiantum pedatum and Athyrium spp.

#### Xerophytic Ledge Communities

Sandstone bedrock outcrops in a narrow band running east and west in southern Illinois. Well defined south- and west-facing sandstone ledges occur in several localities within the area under discussion. The extremes of heat and dryness are maintained by the high porosity of the bedrock and interspersed patches of thin soil, the relative high topographic position, and the relentless exposure to the sun. The most notable of these ledges are at Cove Hollow and Wolfden Hollow. A dwarfed, shrubby, xerophytic woods predominates on these outcrops and adjacent slopes. The distinct physiognomy of this community consists of a general openness and a preponderance of woody forms with lustrous, leathery leaves. Two oaks, Quercus marilandica and Q. stellata, are found in abundance on these dry sites. Juniperus virginiana shares the dominant role with these oaks. Although usually less abundant, Ulmus alata also forms a conspicuous portion of this community; an occasional Amelanchier arborea occurs, often growing on the precipitous edge of a cliff.

The shrub layer is composed mostly of Vaccinium arboreum. Less obvious members of this stratum include Rhus aromatica and Symporicarpos orbiculatus.

Thin patches of soil in depressions on the ledges and on the margins of the loess cap provide enough substratum to sustain many drought-resistant herbs. During the spring, mixtures of diminutive species, including Houstonia pusilla, Hypoxis hirsuta, Oxalis violacea, and Nothoscordum bivalve flower in a bright array of color. Several succulent forms grow from the soil-filled crevices and depressions on the outcrops. These include Opuntia compressa, Sedum pulchellum, and Polianthes virginica.

In slightly deeper soil and partial shade provided by intermittent trees grow Tradescantia virginica, Antennaria plantaginifolia, Dodecatheon meadia, and grasses such as Danthonia spicata and Panicum laxiflorum. A conspicuous fern on these dry shelves is Chilanthes lanosa.

Summer produces a group of generally larger herbs in this deeper substratum. Among these are Pycnanthemum flex-

uosum, Psoralia psoraloides, and Stylosanthes biflora. These plants give way to the flowering of several grasses in late summer and fall. Schizachyrium scoparium, Sorghastrum nutans, and Aristida spp. are major components of the autumnal herbaceous aspect of this community. Rarely, a small orchid, Spiranthes tuberosa, is found mixed with these grasses.

North- and east-facing escarpments have a less extreme environment. This is reflected by a moderate difference in species composition. These ledges are more moist and cool and support an abundance of mosses and lichens. One such ledge and adjacent cliff remain constantly moist throughout the year. A dense population of Sphagnum spp. dominates this site. Under the cooler conditions provided by the difference in aspect, Vaccinium vacillans usually becomes conspicuous in the shrub layer. Herbaceous taxa in this habitat often include Mitchella repens, Phlox bifida and the ferns Dryopteris marginalis and Woodsia obtusa.

Dripways are occasionally encountered on the sandstone shelves. Scirpus atrovirens, Cyperus aristatus, Eleocharis tenuis var. verrucosa, and other sedges commonly occupy these locally moist regions. The ephemeral Isotes melanopoda inhabits some of these dripways, although its aerial portions are withered away by late spring.

#### Dry Woods Communities

Upslope from the bare sandstone ledge community, the soil of the loess cap thickens significantly and the composition of the vegetation changes. Highly permeable soil, generally low in organic matter, and the high topographic position produce a dry woods with an open canopy. The arborescent forms are less scrubby than those of the xeric ledge community, although seldom large in stature. Composing the canopy are several oaks, including Quercus stellata, Q. velutina, Q. muhlenbergii and Q. alba. Other tree species commonly intermixed with these are Fraxinus pennsylvanica, Carya spp., Acer saccharum, and Juniperus virginiana. Woody vines found on these slopes include Smilax spp., Vitis spp., Toxicodendron radicans, and intermittent colonies of Lonicera japonica. The latter species occurs particularly in woods bordering ridgetop fields or other disturbances. Shrubby plants of the understory are Rosa carolina, Vaccinium arboreum, Cornus spp., and Hypericum spathulatum. Some of the forbs of this community are Penstemon digitalis, Houstonia longifolia, Liparis liliifolia, and, rarely, Ranunculus harveyi, all of vernal and late vernal aspect. Summer and fall yield species such as Corallorrhiza odontorhiza, Desmodium nudiflorum, Galium spp., Solidago petiolaris, and Aster spp. Ferns regularly encountered in these woods are Dryopteris marginalis, Polystichum acrostichoides, Woodsia obtusa, and Asplenium platyneuron. Dianthonia spicata, Schizachyrium scoparium, and Bromus spp. are a few of the grasses which

play a conspicuous role in this community. Of note is Chasmantium latifolium, which forms extensive, nearly pure, local stands, usually adjacent to sites of disturbance.

#### Old Field Communities

Most of the old fields at Cedar Lake are on the ridge-tops which surround the lake. The soils of these fields are deep, well drained, and formed in loess. Having been cultivated in the past, these open ridgetops exhibit several stages of succession. An abundance of herbaceous species inhabit these habitats. In the spring small cruciferous herbs, including Capsella bursa-pastoris, Draba brachycarpa, Lepidium virginianum, and Arabidopsis thaliana are common. Many species of the Compositae and the Poaceae become conspicuous in the summer and fall. Eupatorium serotinum, Circium discolor, Solidago spp., Aster spp., Erigeron spp., Vulpia octoflora, Hordeum pusillum, Andropogon virginicus, and Elymus canadensis are but a few of the many taxa which flower during this time. Other abundant herbs are Ranunculus abortivus, Plantago virginica, Trifolium spp., Melilotus spp., and Desmodium spp. Woody species can be found in all of the old fields but those which were most recently cultivated. Often encountered are Juniperus virginiana, Diospyros virginiana, Sassafras albidum, Gleditsia triacanthos, and Juglans nigra.

In several locations abandoned fields occupy a low topographic position. Trees found in these fields include Betula nigra, Platanus occidentalis, Salix nigra, and Acer rubrum. The moist depressions and regions nearest the lake are dominated by herbaceous forms such as Juncus spp., Scirpus atrovirens, Carex spp., and several members of the Polygonaceae. Festuca pratensis, Glyceria striata, Leerzia oryzoides, and occasionally Muhlenbergia X curtisetosa are grasses that inhabit the drier portions of these low fields.

#### Disturbed Communities

Under this general class are lumped old homesites, parking lots, and highly disturbed portions of communities already discussed.

Within the study area are sixteen old homesites which have been purchased by the United States Forest Service or the City of Carbondale at various times in the past. These sites have been allowed, for the most part, to return gradually to their natural state. Many are filled with rank annuals and pioneer arborescent taxa like Sassafras albidum, Diospyros virginiana, and Rubus spp. Others still clearly show the care given them by the original landowners. Their condition is generally a reflection of how long the land has been deserted, its topographic position, and the state in which it was left. Those homesites on low slopes and near

streams are all but obliterated by Lonicera japonica, Campsis radicans, and Rubus spp. Most of the homesites in the area, however, are located on or near ridgetops. The onslaught of pioneer species is usually much less pronounced on these sites.

These former homes offer an unusual and interesting aspect to this study. In the spring most display an array of formerly cultivated ornamentals. Narcissus pseudo-narcissus and Iris germanica are nearly ubiquitous to these old farm-yards. Syringa vulgaris, Forsythia viridissima, and F. suspensa are conspicuous portions of the vernal aspect on several localities. A total of forty-nine taxa of plants were found to be associated with homesites and surrounding areas. Some of these are ephemeral and will soon lose the struggle with the better adapted native plants. Others show signs of persisting for many years.

Several parking lots provided a habitat for a few species. Amaranthus spinosus, Polanisia dodecandra, Polygonum perfoliatum, Chenopodium polyspermum, and various species of annual grasses occurred on the edges and in unused portions of these lots. Some of these species were found nowhere else.

The native community which showed the most disturbance was the upland, dry woods community. Those locations showing the worst disruption of the native state border ridge-top fields. Several weedy species like Phytolacca americana, Eupatorium scrotonium, Chenopodium spp., and Agrimonia parviflora cover the formerly open-woods floor. Woody invaders include Robinia pseudo-acacia, Prunus scotina, Sassafras albidum, and Acer negundo. Other localities adjacent to habitations, parking lots, trails, and old roads showed similar indications of disturbance.

#### THE FLORA

##### Methods and Materials

The collection of vascular plants for the study began in late September, 1975, and was continued until December, 1976. Voucher specimens were placed in the herbarium of Southern Illinois University.

The identification of the collected material was made with the aid of the following floras and manuals: Mohlenbrock (1967, 1970, 1973, 1975), Fernald (1950), Gleason (1963), Steyermark (1963), and Bailey (1949). Some of the specimens were verified with material from the herbarium at Southern Illinois University.

Nomenclature of taxa previously recorded from Illinois follows that of Mohlenbrock (1975) with the following

exceptions:

Contrary to Mohlenbrock (1975), Fernald's (1950) splitting of Desmodium dillenii into two separate species, D. glabellum and D. perplexum, has been accepted. These taxa, differing in the pubescence of the stems, the persistence of the stipules, and the shape of the leaflets, seem to have sufficient basis for species designations.

Also differing from Mohlenbrock (1975), who considers Solidago hispida equivalent to S. bicolor var. concolor, the former taxon, in this work, is considered a distinct species due to differences in the color of the inflorescence and the outer phyllaries.

The nomenclature for taxa which had not been recorded for Illinois before this study follows Bailey (1949), Fernald (1950), or Steyermark (1963).

The plant community to which each taxon is assigned is based on field observation and collection data. A code is used in the annotated list to indicate the plant community in which each plant is found: 1 = Aquatic community, 2 = Streambank community, 3 = Mesic ravine community, 4 = Xerophytic ledge community, 5 = Dry woods community, 6 = Old field community, and 7 = Disturbed community. The frequency of occurrence is given only for those taxa considered to be rare. Others are interpreted as being common or occasional.

Fifty-four Illinois species were collected which were previously unreported from Jackson County. In the annotated list these county records are indicated by an asterisk (\*) preceding the binomial. Taxa not previously reported from Illinois are marked with a double asterisk (\*\*). Ephemeral homesite taxa are not considered state records. Thirteen new taxa for Illinois were recorded during this study.

#### Rare and Unusual Plants of Cedar Lake

Due to the presence of Southern Illinois University, Jackson County has been well explored botanically. Nevertheless, many unusual plants were found in this study.

One of the rarest taxa occurring in the study area is Bromus nottowayanus which, until its discovery here, had been known from only five counties in north and north-central Illinois. This species was found in mesic to dry woods in three locations at Cedar Lake. A combination of rounded lemmas and a drooping inflorescence clearly defines this taxon.

Two species of the genus Poa which are quite rare in the state were also found. Both are known from only one other county in Illinois. Poa angustifolia occurs in a field adjacent to dry, upland woods, its only location. The second

species, P. autumnalis, also collected from only one site, inhabits rich, mesic woods.

Muhlenbergia X curtisetosa, a species of northern distribution, forms a rather large, nearly pure colony in a moist field near Topping Creek. Its longer, acute to aristate glumes separate it from the common M. shreberi.

#### New Records for Illinois

Five taxa not associated with old homesites or similar disturbances were collected during this study which had not been previously reported for the state. All five were quite rare in the Cedar Lake area. Polygonum hydropiperoides var. bushianum was found growing from the edge of a rocky creek in rich, mesic woods. Its major distribution is south and west of Illinois.

Solidago arguta, a form with glabrous lower leaf surfaces and achenes, occurs on the edge of some upland woods. Although Fernald (1950) attributes Illinois to the range of this taxon, neither Jones et al. (1955) nor Mohlenbrock (personal communication) know of any prior collection in Illinois assignable to the typical variety of this species. Mohlenbrock (1975) records S. arguta, but this report is based on a collection of S. strigosa, a taxon considered by Mohlenbrock at that time to be equivalent to S. arguta.

Another goldenrod, Solidago neurolepis, was discovered at the edge of a dry woods community. Fernald (1950) limits the range of this species to Missouri. Steyermark (1963) states that this taxon is known from only one locality in Missouri.

The final two taxa were collected before in Illinois but never correctly recorded. Solidago hispida var. lanata, according to Fernald (1950), has an extreme northern distribution including Maine and southern portions of Canada. Herbarium searches, however, have turned up a number of specimens which were assigned to the typical variety but which had lanate stems and pilose leaf surfaces. These correspond closely with Fernald's (1950) S. hispida var. lanata. The Cedar Lake specimen was found growing from a crack in sandstone on a xeric blufftop.

Inhabiting rich, mesic woods, Diarrhena americana was found in one locality in the study area. This taxon differs from D. americana var. obovata in possessing longer glumes and lemmas, the latter being acuminate in the typical variety and abruptly rounded in var. obovata. Specimens of the state record taxon were found in the herbarium of Southern Illinois University which had been erroneously placed in the genus Bromus.

## Taxonomic Summary

A total of 941 vascular taxa were collected and identified from Cedar Lake. Of this number 27 are ferns or fern allies, 8 are gymnosperms, and 906 are angiosperms. A total of 103 families are represented. The families with the largest number of taxa are Poaceae (130), Compositae (105), Leguminosae (59), and Cyperaceae (51). The largest genera are Carex (37 taxa), Panicum (32 taxa), Polygonum (18 taxa), and Solidago (15 taxa).

### ANNOTATED LIST OF VASCULAR PLANTS

#### EQUISETACEAE

- Equisetum arvense L. 1, 2.  
Equisetum nyemale L. var.  
    affine (Engelm.)  
    A. A. Eaton 1, 2.

#### ISOETACEAE

- Isoetes melanopoda Gay & Dr. 4.

#### OPHIOGLOSSACEAE

- Botrychium dissectum Spreng. 3.  
Botrychium dissectum Spreng.  
    var. obliquum (Muhl.)  
    Clute. 3.  
Botrychium virginianum (L.) Sw.  
    3, 5.  
Ophioglossum vulgatum L. var.  
    pycnostichum Fern. 5.

#### POLYPODIACEAE

- Adiantum pedatum (Tourn.) L. 3.  
Cheilanthes lanosa (Michx.)  
    D. C. Eaton. 5.  
Polypodium vulgare L. var.  
    virginianum (L.) Eaton.  
    3.  
Polypodium polypodioides (L.)  
    Watt var. michaixianum  
    Weatherby. 5.  
Polystichum acrostichoides  
    (Michx.) Schott. 3, 5.  
Polystichum acrostichoides f.  
    incisum (Gray) Gilbert.  
    3.  
Onoclea sensibilis L. 2, 3.  
Thelypteris hexagonoptera  
    (Michx.) Weatherby. 3.

- Dryopteris marginalis (L.)  
    Gray. 3.

- Athyrium pycnocarpon  
    (Spreng.) Tidestrom.  
    3.

- Athyrium thelypteroides  
    (Michx.) Desv. 3.

- Athyrium felix-femina (L.)  
    Roth var. rubellum  
    Gilb. 3.

- Athyrium felix-femina (L.)  
    Roth var. asplenio-  
    oides (Michx.) Farw.  
    3.

- Asplenium rhizophyllum L. 3.

- Asplenium pinnatifidum Nutt. 4.

- Asplenium trichomanes L. 3.

- Asplenium platyneuron (L.)  
    Oakes, 3, 5, 6.

- Woodsia obtusa (Spreng.)  
    Torr. 3, 5.

- \*Cystopteris fragilis (L.)  
    Bernh. 3. Rare.

- Cystopteris fragilis (L.)  
    Bernh. var. protrusa  
    Weatherby. 3.

#### PINACEAE

- Pinus strobus L. 6.  
\*Pinus echinata Mill. 6.  
Pinus taeda L. 7.  
\*Pinus sylvestris L. 7.

#### TAXODIACEAE

- Taxodium distichum (L.)  
    Rich. 7.

## CUPRESSACEAE

- Thuja occidentalis L. 7.  
Thuja orientalis L. 7.  
Juniperus virginiana L. 4, 5,  
 6.

## TYPHACEAE

- Typha latifolia L. 1, 2.

## NAJADACEAE

- Najas minor All. 1.

## POTAMOGETONACEAE

- Potamogeton foliosus Raf. 1.  
Potamogeton nodosus Poir. 1.

## ALISMACEAE

- Sagittaria calycina Engelm.  
 1.  
Sagittaria latifolia Willd.  
 1.  
Alisma subcordatum Raf. 1, 2.

## POACEAE

- Bromus tectorum L. 7.  
 \*Bromus nottowayanus Fern. 3.  
 Rare.  
Bromus secalinus L. 7.  
Bromus racemosus L. 3.  
Bromus arvensis L. 6, 7.  
Bromus inermis Leyss. 7.  
Bromus pubescens Muhl. 5.  
Bromus ciliatus L. 2.  
Vulpia octoflora (Walt.)  
 Rydb. 6.  
Vulpia octoflora (Walt.)  
 Rydb. var. tenella  
 (Willd.) Fern. 6.  
Festuca ovina L. var. duriscula  
 (L.) Koch. 6.  
Festuca rubra L. 7.  
Festuca pratensis Huds. 6, 7.  
Festuca pratensis Huds. f.  
 aristata Holmb. 6.  
Festuca arundinacea Schreb. 6.  
Festuca obtusa Bieler. 3.  
Lolium multiflorum Lam. 7.  
Lolium perenne L. 7.

Poa annua L. 7.

\*Poa autumnalis Muhl. 5.  
 Rare.

Poa pratensis L. 6, 7.

\*Poa angustifolia L. 5.  
 Rare.

Poa compressa L. 4, 5.

Poa sylvestris Gray. 3.

Dactylis glomerata L. 6, 7.

Sphenopholis obtusata  
 (Michx.) Scribn.

var. major (Torr.)  
 Erdman. 6.

Sphenopholis nitida (Biehler)  
 (Biehler) Scribn. 3.

\*Avena fatua L. 2.

Avena sativa L. 9.

Holcus lanatus L. 7.

Agrostis elliotiana  
 Schult. 4.

Agrostis hyemalis (Walt.)  
 BSP. 5, 6.

\*Agrostis scabra Willd. 6.

Argrostis perennans (Walt.)  
 Tuckerm. 4, 5.

Agrostis alba L. 3, 5.

Agrostis alba L. var.  
 pallustris (Huds.)  
 Pers. 6. Rare.

Cinna arundinacea L. 3.

Phalaris arundinacea L. 2.

Alopecurus carolinianus  
 Walt. 6.

Phleum pratense L. 6, 7.

Elymus hystrix L. 3, 5.

Elymus virginicus L. 3, 5.

Elymus riparius Wiegand. 5.

Elymus villosus Muhl. 3.

Elymus canadensis L. 6, 7.

Hordeum pusillum Nutt. 4,  
 6.

Triticum aestivum L. 7.

Secale cereale L. 7.

Glyceria striata (Lam.)  
 Hitchcock. 3.

Brachyelytrum erectum  
 (Schreb.) Beauv. 3.

\*Diarrhena americana Beauv.  
 3. Rare.

Diarrhena americana Beauv.  
 var. obovata Gleason.  
 3.

- Digitaria sanguinalis* (L.)  
 Scop. 7.  
*Digitaria ischaemum* (Schreb.)  
 Muhl. 7.  
\**Digitaria filiformis* (L.) Koel.  
 6. Rare.  
*Paspalum publiflorum* Rupr.  
 var. *glabrum* (Vasey)  
 Vasey. 5, 6.  
*Paspalum laeve* Michx. 6, 7.  
*Paspalum ciliatifolium* Michx.  
 6, 7.  
*Panicum dichotomiflorum* Michx.  
 6, 7.  
*Panicum dichotomiflorum* Michx.  
 var. *geniculatum* (Muhl.)  
 Fern. 7.  
*Panicum flexile* (Gattinger)  
 Scribn. 4.  
\**Panicum philadelphicum* Bernh.  
 4.  
*Panicum capillare* L. 6.  
*Panicum rigidulum* Bosc. 6.  
\**Panicum rigidulum* Bosc. var.  
*condensum* (Nash) Mohlen-  
 brock. 6.  
*Panicum anceps* Michx. 6.  
\**Panicum perlongum* Nash. 6.  
 Rare.  
*Panicum linearifolium* Scribn.  
 6.  
*Panicum laxiflorum* Lam. 5  
*Panicum microcarpon* Muhl. 6.  
*Panicum dichotomum* L. 6.  
*Panicum dichotomum* L. var.  
*barbulatum* (Michx.)  
 Wood. 5.  
*Panicum lanuginosum* Ell. 6, 7.  
*Panicum lanuginosum* Ell. var.  
*implicatum* (Scribn.)  
 Fern. 6.  
*Panicum lanuginosum* Ell. var.  
*lindheimeri* (Nash) Fern.  
 3, 5, 6.  
*Panicum lanuginosum* Ell. var.  
*septentrionale* (Fern.)  
 Fern. 6, 7.  
*Panicum praecocius* Hitchc. &  
 Chase. 6, 7.  
*Panicum villosissimum* Nash. 6.  
*Panicum sphaerocarpon* Ell. 6, 7.  
*Panicum sphaerocarpon* Ell. var.  
*inflatum* (Scribn. & Sm.)  
 Hitchc. 4. Rare.
- Panicum polyanthes* Schult.  
 5, 6.  
*Panicum malacophyllum* Nash.  
 4. Rare.  
*Panicum oligosanthes* Schult.  
 var. *scribnerianum*  
 (Nash) Fern. 5.  
*Panicum commutatum* Schult.  
 6.  
*Panicum clandestinum* L. 6.  
 7.  
*Panicum boscii* Poir. 3, 5.  
*Echinochloa crus-galli* (L.)  
 Beauv. 1, 7.  
*Echinochloa pungens* (Poir.)  
 Rydb. 1.  
*Echinochloa pungens* (Poir.)  
 Rydb. var. *micro-*  
*stachya* (Wieg.)  
 Mohl. 1.  
*Echinochloa pungens* (Poir.)  
 Rydb. var. *wiegandii*  
 Fassett. 1.  
*Setaria lutescens* (Weigel)  
 Hubb. 7.  
*Setaria faberi* Herrm. 6, 7.  
*Setaria viridis* (L.) Beauv.  
 7.  
\**Setaria viridis* (L.) Beauv.  
 var. *major* (Gaudin)  
 Pospichal. 1. Rare.  
*Miscanthus sinensis* Anderss.  
 var. *variegatus*  
 Beal. 7.  
*Erianthus ravennae* (L.)  
 Beauv. 7.  
*Erianthus alopecuroides*  
 (L.) Ell. 5, 7.  
*Sorghum halepense* (L.)  
 Pers. 7.  
*Sorghastrum nutans* (L.)  
 Nash. 4, 7.  
*Andropogon gerardii* Vitman.  
 5. Rare.  
*Andropogon virginicus* L.  
 6, 7.  
*Andropogon elliotii* Chapm.  
 6.  
*Schizachyrium scoparium*  
 (Michx.) Nash. 6.  
*Tripsacum dactyloides* (L.)  
 L. 4. Rare  
*Zea mays* L. 7.

- Eragrostis hypnoides (Lam.)  
 BSP. 1.  
Eragrostis cilianensis (All.)  
 Mosher. 7.  
Eragrostis poaeoides Beauv. 7.  
Eragrostis spectabilis (Pursh)  
 Steud. 5, 6.  
Eragrostis pectinacea (Michx.)  
 Nees. 7.  
Tridens flavus (L.) Hitchcock.  
 6, 7.  
Muhlenbergia schreberi J. F.  
 Gmel. 3.  
**\*Muhlenbergia X curtisetosa**  
 (Schribn.) Pohl. 6. Rare.  
Muhlenbergia sobolifera (Muhl.)  
 Trin. 3.  
**\*Muhlenbergia bushii** Pohl. 5.  
Muhlenbergia frondosa (Poir.)  
 Fern. 4, 5.  
Muhlenbergia sylvatica (Torr.)  
 Torr. 5. Rare.  
Eleusine indica (L.) Gaertn. 7.  
Cynodon dactylon (L.) Pers. 7.  
Aristida oligantha Michx. 6.  
Aristida purpurascens Poir. 4.  
Aristida ramosissima Engelm. 4, 6.  
Aristida longespica Poir. 6.  
Aristida dichotoma Michx. 4, 6.  
**\*Aristida curtissii** (Gray) Nash.  
 4. Rare.  
Arundinaria gigantea (Walt.)  
 Chapm. 3.  
Leersia oryzoides (L.) Swartz.  
 1, 6.  
Leersia virginica Willd. 3.  
Danthonia spicata (L.) Beauv. 4.  
Chasmanthium latifolium (Michx.)  
 Yates. 3, 5.
- CYPERACEAE
- Cyperus aristatus Rottb. 1, 7.  
Cyperus ovularis (Michx.) Torr.  
 6.  
Cyperus erythrorhizos Muhl. 6,  
 7.  
Cyperus esculentus L. var. lepto-  
tostachyus Boeckl. 1.  
Cyperus strigosus L. 1, 7.  
**\*Eleocharis erythropoda** Steud. 1.  
Eleocharis obtusa (Willd.) Schult.  
Eleocharis obtusa (Willd.) Schult.  
 var. detonsa (Gray) Drap.  
 & Mohlenbr. 1, 7.
- Eleocharis acicularis (L.)  
 Roem. & Schultes. 1,  
 7.  
Eleocharis tenuis (Willd.)  
 Schult. var. ver-  
rucosa (Svenson)  
 Svenson. 1, 4, 7.  
Bulbostylis capillaris (L.)  
 C. B. Clarke. 4.  
Scirpus atrovirens Willd.  
 1, 7.  
Scirpus cyperinus (L.)  
 Kunth. 1, 7.  
Carex retroflexa Muhl. 3.  
Carex texensis (Torr.)  
 Bailey. 6, 7.  
Carex convoluta Mack. 1, 7.  
Carex rosea Schk. 1, 2, 7.  
**\*Carex socialis** Mohlenbr. &  
 Schwegm. 5. Rare.  
Carex cephalophora Muhl. 5,  
 6.  
Carex leavenworthii Dewey.  
 3.  
Carex muhlenbergii Schk. 1,  
 7.  
Carex austrina (Small)  
 Mack. 5, 6.  
Carex vulpinoidea Michx. 1,  
 7.  
Carex annexens Bickn. 1,  
 7.  
Carex muskingumensis  
 Schwein. 2.  
Carex scoparia Schk. 1, 7.  
Carex tribuloides Wahlenb.  
 1, 7.  
Carex normalis Mack. 1, 7.  
Carex tenera Dewey. 1, 7.  
Carex brevior (Dewey) Mack.  
 1, 7.  
Carex molesta Mack. 5, 6.  
Carex jamesii Schwein. 3,  
 5.  
Carex artictecta Mack. 3.  
Carex shortiana Dewey. 3.  
Carex hirsutella Mack. 5.  
Carex bushii Mack. 5, 6.  
**\*Carex gracillima** Schwein.  
 1. Rare.  
Carex amphibola Steud. 1, 7.  
Carex grisea Wahlenb. 3.  
Carex glaucodea Tuckerm. 5.  
Carex careyana Torr. 3.  
 Rare.

*Carex albursina* Sheldon 3.  
\**Carex laxiflora* Lam. 6. Rare.  
\**Carex striatula* Michx. 5.  
*Carex blanda* Dewey. 3, 5.  
*Carex gracilescens* Steud. 3.  
*Carex frankii* Kunth. 1, 7.  
*Carex lurida* Wahlenb. 1, 7.  
*Carex lupulina* Muhl. 1, 7.  
*Carex lupuliformis* Sartwell. 1, 7.

#### ARACEAE

*Acorus calamus* L. 7.  
*Arisaema dracontium* (L.) Schott. 3.  
*Arisaema triphyllum* (L.) Schott. 3.

#### LEMNACEAE

*Spirodela polyrhiza* (L.) Schleiden. 1.  
*Lemna minor* L. 1.  
\**Lemna obscura* (Austin) Daubs. 1. Rare.

#### COMMELINACEAE

*Tradescantia subaspera* Ker. 3.  
*Tradescantia ohiensis* Raf. 5.  
*Tradescantia virginiana* L. 5.  
*Commelina communis* L. 1, 7.  
*Commelina diffusa* Burm. 2.  
*Commelina virginica* L. 1, 7.

#### JUNCACEAE

*Luzula multiflora* (Retz.) Lejeune. 3.  
*Luzula multiflora* (Retz.) Lejeune var. *echinata* (Small) Mohlenbr. 5.  
*Juncus effusus* L. var. *solutus* Fern. & Wieg. 1, 7.  
*Juncus biflorus* Ell. 1, 7.  
\**Juncus marginatus* Rostk. 7.  
Rare.  
*Juncus brachycephalus* (Engelm.) Buch. 1, 7.  
*Juncus torreyi* Coville. 1, 7.  
*Juncus diffusissimus* Buckl. 7.  
*Juncus nodatus* Coville. 1, 7.  
*Juncus acuminatus* Michx. 1, 7.

*Juncus tenuis* Willd. 7.  
*Juncus interior* Wieg. 1, 7.

#### LILIACEAE

*Lilium michiganense* Farw. 3.  
*Hemerocallis fulva* L. 7.  
*Hemerocallis flava* L. 7.  
*Hemerocallis* sp. 7.  
*Ornithogalum umbellatum* L. 3, 7.  
*Muscari boytryoides* (L.) Mill. 7.  
*Muscari atlanticum* Boiss. & Reut. 7.  
*Erythronium americanum* Ker. 3.  
*Uvularia grandiflora* Sm. 3.  
*Polygonatum commutatum* (Schult.) A. Dietr. 3.  
*Polygonatum biflorum* (Walt.) Ell. 5.  
*Smilacina racemosa* (L.) Desf. 3.  
*Asparagus officinalis* L. 6. 7.

*Lycoris radiata* Herb. 7.  
*Allium canadense* L. 1, 7.  
*Allium vineale* L. 6.  
*Nothoscordum bivalve* (L.) Britt. 4, 5.  
*Trillium recurvatum* Beck. 3.  
*Trillium flexipes* Raf. 3.  
Rare.

*Yucca filamentosa* L. var. *smalliana* (Fern.) Ahles. 7.  
*Narcissus pseudo-narcissus* L. 7.  
*Narcissus poeticus* L. 7.  
*Polianthes virginica* (L.) Shinners. 4.  
*Hypoxis hirsuta* (L.) Coville. 4.

#### SMILACACEAE

*Smilax glauca* Walt. 5.  
*Smilax bona-nox* L. 5.  
*Smilax rotundifolia* L. 5.  
*Smilax hispida* Muhl. 3, 5.  
*Smilax pulverulenta* Michx. 5.

## DIOSCOREACEAE

- Dioscorea villosa L. 3, 5.  
Dioscorea quaternata (Walt.)  
J. F. Gmel. 3.

## IRIDACEAE

- \*Iris germanica L. 7.  
Iris pseudacorus L. 7.  
Belamcanda chinensis (L.)  
DC. 7.  
Sisyrinchium angustifolium  
Mill. 6.  
Sisyrinchium albidum Raf. 6, 7.

## ORCHIDACEAE

- Orchis spectabilis L. 3. Rare.  
Liparis liliifolia (L.) Rich.  
Spiranthes ovalis Lindl. 3.  
Spiranthes cernua (L.) Rich.  
6.  
\*Spiranthes magnicamporum  
Sheviak. 4. Rare.  
Spiranthes gracilis (Bigel.)  
Bock. 6. Rare.  
Spiranthes tuberosa Raf. 4.  
Goodyera pubescens (Willd.)  
R. Br. 3. Rare.  
Corallorrhiza wisteriana Conrad.  
3.  
Corallorrhiza odontorhiza  
(Willd.) Nutt. 5  
Aplectrum hyemale (Muhl.) Torr.  
3.  
\*Tipularia discolor (Pursh)  
Nutt. 3. Rare.

## SAURURACEAE

- Saururus cernuus L. 2.

## SALICACEAE

- Salix nigra Marsh. 1, 2, 7.  
Salix fragilis L. 7.  
Salix Alba L. var. calva  
3. f. W. Moy. 6.  
Salix interior Rowlee. 2  
Salix interior Rowlee f.  
wheeleri (Rowlee)  
Rouleau. 7. Rare.

- Salix matsudana Kordz. var.  
tortuosa Hort. 2.  
Populus deltoides Marsh. 2,  
7.  
Populus alba L. 7.

## JUGLANDACEAE

- Juglans cinerea L. 3. Rare.  
Juglans nigra L. 3, 7.  
Juglans regia L. 7.  
Carya illinoensis (Wang.)  
K. Koch, 3.  
Carya cordiformis (Wang.)  
K. Koch, 5.  
Carya texana Buckl. 5.  
Carya ovalis (Wang.) Sarg.  
3, 5.  
Carya glabra (Mill.) Sweet.  
3.  
Carya tomentosa (Poir.)  
Nutt. 3.  
Carya ovata (Mill.) K. Koch.  
3.  
Carya laciniosa (Michx.)  
Loud. 3.

## BETULACEAE

- Betula nigra L. 2, 7.  
\*Alnus glutinosa (L.)  
Gaertn. 7.  
Corylus americana Walt. 5,  
7.  
Ostrya virginiana (Mill.)  
K. Koch. 3.  
Carpinus caroliniana Walt.  
3.

## FAGACEAE

- Fagus grandifolia Ehrh. 3.  
\*\*Castanea mollissima Blume.  
7.  
Quercus imbricaria Michx.  
5.  
Quercus marilandica Muenchh.  
4.  
Quercus falcata Michx. 5.  
Quercus velutina Lam. 5.  
\*Quercus velutina Lam. f.  
missouriensis  
(Sarg.) Trcl. 5. Rare.

- \*\**Quercus velutina* Lam. f.  
*pagodaeformis* Trel.  
 4. Rare.  
*Quercus rubra* L. 3.  
*Quercus shumardii* Buckley.  
 3.  
*Quercus coccinea* Muenchh.  
 4, 5.  
*Quercus muhlenbergii* Engelm.  
 3, 5.  
*Quercus alba* L. 3, 5.  
*Quercus stellata* Wangh. 4.

#### ULMACEAE

- Ulmus rubra* Muhl. 2, 7.  
*Ulmus americana* L. 3.  
\**Ulmus pumila* L. 7.  
*Ulmus alata* Michx. 4, 5.  
*Celtis occidentalis* L.  
 3, 7.  
*Celtis occidentalis* L. var.  
*canina* (Raf.) Sarg.  
 6. Rare.  
*Celtis laevigata* Willd. 3,  
 7.  
*Celtis laevigata* Willd. var.  
*texana* Sarg. 3.  
*Celtis tenuifolia* Nutt. 4.  
*Celtis tenuifolia* Nutt. var.  
*georgiana* (Small)  
 Fern. & Schub. 4.

#### MORACEAE

- Morus rubra* L. 3, 5, 7.  
*Morus alba* L. 3, 5, 7.  
*Morus alba* L. f. *skeletoniana* (Schneider) Rehder.  
 3.  
*Broussonetia papyrifera* (L.)  
 L'Her. 7.  
*Maclura pomifera* (Raf.)  
 Schneider. 7.  
*Humulus lupulus* L. 7.

#### URTICACEAE

- Boehmeria cylindrica* (L.)  
 Sw. 1, 2, 7.  
*Pilea pumila* (L.) Gray. 3, 7.  
*Laportea canadensis* (L.)  
 Wedd. 2.

- Parietaria pensylvanica*  
 Mühl. 3, 7.

#### ARISTOLOCHIACEAE

- Asarum canadense* L. var.  
*reflexum* (Bickn.)  
 Robins. 3.  
*Aristolochia serpentaria* L.  
 3.

#### POLYGONACEAE

- Rumex acetosella* L. 7.  
*Rumex obtusifolius* L. 7.  
*Rumex crispus* L. 7.  
*Rumex altissimus* Wood. 6.  
*Rumex verticillatus* L. 1, 7.  
*Polygonum sagittatum* L. 2.  
*Polygonum convolvulus* L. 7.  
*Polygonum cristatum* Engelm.  
 & Gray. 7.  
*Polygonum scandens* L. 2, 7.  
*Polygonum tenue* Michx. 4.  
\**Polygonum aviculare* L. var.  
*littorale* (Link)  
 W. D. J. Koch. 7.  
\**Polygonum prolificum* (Small)  
 Robbins. 6.  
*Polygonum erectum* L. 7.  
*Polygonum virginianum* L. 3.  
*Polygonum punctatum* Ell.  
 1, 2.  
*Polygonum hydropiper* L. 1.  
*Polygonum persicaria* L. 1,  
 7.  
\*\**Polygonum hydropiperoides*  
 Michx. var. *bushianum* Stanford. 3.  
 Rare.  
*Polygonum amphibium* L. var.  
*stipulaceum* (Coleman)  
 Fern. 1. Rare.  
*Polygonum coccineum* Mühl.  
 1, 7.  
*Polygonum lapathifolium* L.  
 1.  
*Polygonum pensylvanicum* L.  
 6, 7.  
*Polygonum pensylvanicum* L.  
 var. *laevigatum*  
 Fern. 6, 7.

CHENOPODIACEAE

- Chenopodium botrys L. 7.  
Chenopodium ambrosioides L.  
7.  
\*Chenopodium pallescens Standl.  
7.  
Chenopodium desiccatum A.  
Nels. var. lepto-  
phyllloides (Murr.)  
Wahl. 1.  
Chenopodium berlandieri Moq.  
var. zschackei (Murr.)  
Murr. 7.  
Chenopodium album L. 7.  
Chenopodium missouriense  
Aellen. 7.  
Chenopodium gigantospermum  
Aellen. 3. Rare.  
Chenopodium polyspermum L.  
7.  
Chenopodium standleyanum  
Aellen. 5.

AMARANTHACEAE

- Amaranthus spinosus L. 7.  
Amaranthus hybridus L. 7.

PHYLLOLACCACEAE

- Phytolacca americana L. 7.

AIZOACEAE

- Mollugo verticillatus L. 7.

PORTULACACEAE

- Claytonia virginica L. 3, 5.

CARYOPHYLLACEAE

- Stellaria media (L.) Cyrillo.  
6, 7.  
Cerastium vulgatum L. 7.  
Cerastium nutans Raf. 7.  
Dianthus armeria L. 6.  
Silene stellata (L.) Ait. 3.  
Silene antirrhina L. 6.  
Saponaria officinalis L. 7.

NYMPHAEACEAE

- Nuphar luteum L. ssp.  
macrophyllum (Small)  
Beal. 1.

RANUNCULACEAE

- Ranunculus harveyi (Gray)  
Britt. 5.  
Ranunculus abortivus L. 7.  
Ranunculus abortivus L. var.  
acrosanthus Fern. 6.  
Ranunculus micranthus Nutt.  
3.  
Ranunculus recurvatus Poir.  
3.  
Ranunculus hispidus Michx.  
5.  
Ranunculus septentrionalis  
Poir. 2.  
\*Ranunculus carolinianus DC.  
5. Rare.  
Ranunculus fascicularis  
Muhl. 5, 6.  
Ranunculus sardous Crantz.  
7.  
\*Delphinium ajacis L. 7.  
Delphinium tricorne Michx.  
3.  
Thalictrum dioicum L. 3, 6.  
Actaea pachypoda Ell. 3.  
\*Cimicifuga rubifolia  
Kearney. 3. Rare.  
Hydrastis canadensis L. 3.  
Anemone thalictroides  
(L.) Spach. 3.  
Anemone virginiana L. 3, 5.  
Myosurus minimus L. 1, 7.  
Aquilegia canadensis L. 3,  
5.  
Clematis virginiana L. 3, 7.  
Paeonia lactiflora Pall. 7.

BERBERIDACEAE

- Podophyllum peltatum L. 3.  
Caulophyllum thalictroides  
(L.) Mich. 3.

MENISPERMACEAE

- Calycocarpum lyonii (Pursh)  
Gray, 6. Rare.  
Menispermum canadense L. 3, 5.

MAGNOLIACEAE

- Magnolia acuminata L. 3.  
Rare.  
Liriodendron tulipifera L.  
3.

ANONANACEAE

- Asimina triloba (L.) Dunal  
3.

LAURACEAE

- Sassafras albidum (Nutt.)  
Nees. 6, 7.  
Sassafras albidum (Nutt.)  
Nees. var. molle  
(Raf.) Fern. 6.  
Lindera benzoin (L.) Blume.  
3.

PAPAVERACEAE

- Sanguinaria canadensis L. 3.  
Dicentra cucullaria (L.) Bernh.  
3.  
Dicentra canadensis (Goldie)  
Walp. 3.  
Corydalis flavula (Raf.) DC. 3.  
Corydalis micrantha (Engelm.)  
Gray 3.

CAPPARIDACEAE

- Polanisia dodecandra (L.) DC.  
7.

CRUCIFERAE

- Dentaria laciniata Muhl. 3.  
Capsella bursa-pastoris (L.)  
Medic. 7.  
Arabis laevigata (Muhl.)  
Poir. 3.  
Cardamine bulbosa (Schreb.)  
BSP. 2.  
Cardamine hirsuta L. 6, 7.  
Cardamine pensylvanica Muhl.  
7.  
Cardamine parviflora L. var.  
arenicola (Britt.)  
O. E. Schulz. 3.

Sibaria virginica (L.)

Rollins. 5, 6.

Draba brachycarpa Nutt. 7.

Arabidopsis thaliana (L.)

Heynh. 7.

Lepidium virginicum L. 6,  
7.

Thlaspi arvense L. 6, 7.

Barbarea vulgaris R. Br. 7.

Barbarea vulgaris R. Br.

var. arcuata (Opiz.)

Fries. 7.

Conringia orientalis (L.)

Dumort. 7.

Brassica kaber (DC.) L. C.

Wheeler var. pinnatifida (Stokes)

L. C. Wheeler. 7.

Brassica juncea (L.) Coss.

7.

Sisymbrium officinale (L.)

Scop. var. leiocarpum DC. 7.

Rorippa sessiliflora (Nutt.)

Hitchc. 6.

\*Rorippa truncata (Jepson)

Stuckey. 7. Rare.

Rorippa islandica (Oeder)

Borbas. 7.

CRASSULACEAE

\*Sedum sarmentosum Bunge. 4.

Rare.

Sedum pulchellum Michx.

\*\*Sedum telephium L. 7.

SAXIFRAGACEAE

Hydrangea arborescens L. 3.

Ribes odoratum Wendl. 7.

Heuchera parviflora Bartl.

var. rugelii (Shuttlew.) Rosend., Tutt. & Lak. 3.

Heuchera hirsuticaulis

(Wheelock) Rydb. 3.

\*Heuchera richardsonii R.

Br. var. grayana Rosend., Butt. & Lak. 6.

Penthorum sedoides L. 1, 7.

HAMAMELIDACEAE

Liquidambar styraciflua L.  
2, 7.

PLATANACEAE

Platanus occidentalis L.  
2, 6.

ROSACEAE

Spiraea latifolia (Ait)  
Borkh. 7.  
Spiraea prunifolia Sieb. &  
Zucc. 7.  
Prunus persica (L.) Batsch.  
7.  
Prunus hortulana Bailey. 5.  
Prunus munsoniana Wight &  
Hedrick. 7.  
Prunus angustifolia Marsh.  
6.  
Prunus americana Marsh. 5.  
Prunus americana Marsh.  
var. lanata Sudw.  
7.  
\*Prunus cerasus L. 6.  
\*Prunus avium L. 7.  
Prunus serotina Ehrh. 3,  
5, 7.  
\*\*Prunus triloba Lindl. 7.  
Amelanchier arborea (Michx.)  
Fern. 4, 5.  
Chaenomeles japonica L. 7.  
Pyrus communis L. 6, 7.  
Malus pumila Mill. 7.  
Malus coronaria (L.) Mill.  
5.  
Crataegus engelmannii Sarg.  
7.  
Crataegus pruinosa (Wendl.)  
K. Koch. 6.  
Rubus occidentalis L. 6, 7.  
\*Rubus occidualis Bailey. 5.  
Rare.  
Rubus flagellaris Willd. 6,  
7.  
Rubus allegheniensis Porter.  
6, 7.  
Rubus pensylvanicus Poir. 4.  
Rubus frondosus Bigel. 3.  
Rosa multiflora Thunb. 6, 7.  
Rosa setigera Michx. 5.

Rosa carolina L. 5, 6.  
\*Rosa canina L. 7.  
Rosa gallica L. 7.  
\*\*Rosa rubifolia Vill. 7.  
Potentilla simplex Michx.  
7.  
Potentilla recta L. 7.  
Potentilla norvegica L.  
1, 7.  
Aruncus dioicus (Walt.)  
Fern. 3.  
Gillenia stipulata (Muhl.)  
Baill. 5.  
Geum canadense Jacq. 3.  
Geum vernum (Raf.) Torr.  
& Gray. 3, 6.  
Agrimonia parviflora Ait.  
3, 6.  
Agrimonia pubescens Wallr.  
3.  
Agrimonia rostellata Wallr.  
3.

LEGUMINOSAE

Cercis canadensis L. 3.  
Gleditsia triacanthos L. 6,  
7.  
Desmanthus illinoensis  
(Michx.) MacM. 7.  
Albizia julibrissin Duraz.  
7.  
\*Wisteria macrostachya Nutt.  
7.  
Robinia pseudoacacia L. 7.  
Robinia hispida L. 7.  
Psoralea psoraliooides Walt.)  
Cory var. eglandulosa  
(Ell.) Freeman.  
4.  
Vicia villosa Roth. 7.  
Vicia dasycarpa Ten. 6.  
Vicia sativa L. 7.  
Vicia angustifolia Reich. 6.  
Lathyrus latifolius L. 7.  
Cassia marilandica L. 7.  
Cassia fasciculata Michx.  
7.  
Cassia nictitans L. 5, 6.  
Apios americana Medic. 7.  
Coronilla varia L. 7.

- Tephrosia virginiana (L.)  
 Pers. 4.  
Melilotus alba Desr. 7.  
Melilotus officinalis (L.)  
 Lam. 6.  
Trifolium campestre Schreb.  
 7.  
Trifolium pratense L. 7.  
Trifolium repens L. 7.  
Trifolium hybridum L. 7.  
Medicago sativa L. 6, 7.  
Stylosanthes biflora (L.)  
 BSP. 4.  
Lespedeza striata (Thunb.)  
 Hook. & Arn. 6, 7.  
Lespedeza stipulacea Maxim.  
 7.  
Lespedeza procumbens Michx.  
 6.  
Lespedeza repens (L.) Bart.  
 6.  
Lespedeza hirta (L.) Hornem.  
 4, 5.  
Lespedeza stuevei Nutt. 6.  
Lespedeza cuneata (Dum.-  
 Cours.) G. Don. 7.  
Lespedeza violacea (L.)  
 Pers. 6.  
Lespedeza intermedia (S.  
 Wats.) Britt. 5, 6.  
Lespedeza virginica (L.)  
 Britt. 6.  
Desmodium nudiflorum (L.)  
 DC. 5.  
Desmodium glutinosum (Muhl.)  
 Wood. 5.  
Desmodium pauciflorum (Nutt.)  
 DC. 3.  
Desmodium sessilifolium (Torr.)  
 Torr. & Gray. 7.  
Desmodium rotundifolium DC. 3.  
Desmodium illinoense Gray. 7.  
Desmodium canescens (L.) DC. 7.  
Desmodium cuspidatum (Muhl.)  
 Loud. 5.  
Desmodium laevigatum (Nutt.)  
 DC. 5.  
Desmodium ciliare (Muhl.) DC.  
 6.  
Desmodium nuttallii (Schindl.)  
Desmodium paniculatum (L.) DC.  
 7.  
Desmodium glabellum (Michx.)  
 DC. 5.
- Desmodium perplexum Schub.  
 5.  
Glycine max (L.) Merr. 7.  
Pueraria lobata (Willd.)  
 Ohwi. 7.  
Strophostyles leiosperma  
 (Torr. & Gray) Piper  
 6.  
Strophostyles helvola (L.)  
 Ell. 7.  
Strophostyles helvola (L.)  
 Ell. var. missouriensis  
 (S. Wats.) Britt. 5.  
Strophostyles umbellata  
 (Muhl.) Britt. 4.
- Galactia volubilis (L.)  
 Britt. var. mississippiensis  
 vail. 5, 6.  
Amphicarpa bracteata (L.)  
 Fern. 5.
- LINACEAE
- Linum medium (Planch.)  
 Britt. var. texanum  
 (Planch.) Fern. 4.
- OXALIDACEAE
- Oxalis violacea L. 4.  
Oxalis corniculata L. 7.  
Oxalis dillenii Jacq. 5, 6.  
Oxalis stricta L. 6, 7.
- GERANIACEAE
- Geranium maculatum L. 3.  
Geranium carolinianum L.  
 6, 7.
- SIMAROUBACEAE
- Ailanthus altissima (Mill.)  
 Swingle. 7.
- POLYGALACEAE
- Polygala sanguinea L. 6.

## EUPHORBIACEAE

- Croton glandulosus L. var.  
septentrionalis  
Muell.-Arg. 6.
- Croton capitatus Michx. 6.  
Croton monanthogynus Michx.  
4, 6.
- Crotonopsis elliptica Willd.  
4, 6
- Acalypha rhomboidea Raf. 6.  
Acalypha virginica L. 6, 7.  
Acalypha gracilens Gray. 4.  
Acalypha gracilens Gray ssp.  
monococca (Engelm.)  
Webster. 4.
- Euphorbia corollata L. 6, 7.  
Poinsettia dentata (Michx.)  
Kl. & Garske. 7.
- Chamaesyce supina (Raf.)  
Moldenke. 7.
- Chamaesyce humistrata  
(Engelm.) Small. 7.
- Chamaesyce maculata (L.)  
Small. 6, 7.

## ANACARDIACEAE

- Toxicodendron radicans (L.)  
Kuntze. 3, 5, 6, 7.
- Rhus copallina L. 6, 7.  
Rhus glabra L. 6, 7.  
Rhus aromatica Ait. 4, 5.

## AQUIFOLIACEAE

- Ilex decidua Walt. 1, 3.

## CELASTRACEAE

- Euonymus fortunei (Turcz.)  
Hand.-Maz. 7.
- Euonymus atropurpureus Jacq.  
3.
- Celastrus scandens L. 7.

## STAPHYLEACEAE

- Staphylea trifolia L. 3.

## ACERACEAE

- Acer negundo L. 2, 7.

- Acer saccharum Marsh. 3.  
Acer saccharum Marsh. var.  
schnneckii Rehder. 3.  
Acer saccharinum L. 2, 7.  
Acer rubrum L. 3, 5, 6.

## BALSAMINACEAE

- Impatiens biflora Walt. 2,  
3.  
Impatiens pallida Nutt. 2,  
3.

## VITACEAE

- Parthenocissus quinquefolia  
(L.) Planch. 3, 5, 7.  
Ampelopsis cordata Michx.  
3, 7.
- Vitis labruscana Bailey. 7.  
Vitis aestivalis Michx. 3,  
5.  
Vitis cinerea Engelm. 3, 5,  
7.
- \*Vitis rupestris Schlecht. 3.  
Rare.

- Vitis vulpina L. 3, 5.  
Vitis palmata Vahl. 3, 5.  
Vitis riparia Michx. 3.

## TILIACEAE

- Tilia americana L. 3.

## MALVACEAE

- Hibiscus syriacus L. 7.  
Althaea rosea (L.) Cav. 7.  
Abutilon theophrasti Medic. 7.  
Sida spinosa L. 6, 7.

## HYPERICACEAE

- Ascyrum hypericoides L.  
var. multicaule  
(Michx.) Fern. 4, 6.  
Hypericum perforatum L.  
6, 7.  
Hypericum punctatum Lam. 6.  
Hypericum spathulatum  
(Spach.) Steud. 5,  
6.

Hypericum mutilum L. 1, 7.  
Hypericum gentianoides (L.)  
BSP. 4.  
Hypericum drummondii (Grev.  
& Hook.) Torr. & Gray.  
4.

TAMARICACEAE

\*\*Tamarix gallica L. 7.

CISTACEAE

Lechea tenuifolia Michx. 4.

VIOLACEAE

Hybanthus concolor (T. F.  
Forst.) Spreng. 3.  
Viola pratincola Greene, 3,  
5.  
Viola missouriensis Greene,  
3.  
\*Viola affinis LeConte. 3.  
Rare.  
Viola sororia Willd. 3.  
Viola triloba Schwein. 5.  
Viola triloba Schwein. var.  
dilatata (Ell.)  
Brainerd. 3.  
Viola pubescens Ait. var.  
eriocarpa (Schwein.)  
Russell. 3.  
Viola striata Ait. 2.  
Viola rafinesquii Greene. 6,  
7.

PASSIFLORACEAE

Passiflora lutea L. var.  
glabriiflora Fern. 5,  
6.

Passiflora incarnata L. 6.

CACTACEAE

Opuntia compressa (Salisb.)  
Macbr. 4.

ELAEAGNACEAE

Elaeagnus umbellata Thunb. 6.

LYTHRACEAE

Cuphea petiolata (L.)  
Koehne. 6.  
Lythrum alatum Pursh. 1, 6.  
Peplis diandra Nutt. 1,  
Rare.  
Ammannia coccinea Rottb. 1,  
7.  
Lagstroemia indica L. 7.

NYSSACEAE

Nyssa sylvatica Marsh. var.  
caroliniana (Poir.)  
Fern. 3.

ONAGRACEAE

Circaeа quadrifoliate  
(Maxim.) Franch. &  
Sav. var. canadensis  
(L.) Hara. 3.  
Ludwigia palustris (L.) Ell.  
var. americana (DC.)  
Fern. & Griseb. 1.  
Ludwigia alternifolia L. 7.  
Epilobium coloratum Muhl.  
7.  
Jussiaea repens L. 1  
\*Jussiaea leptocarpa Nutt.  
1. Rare.  
Oenothera laciniata Hill. 7.  
\*Oenothera fruticosa L. var.  
linearis (Michx.)  
S. Wats. 3. Rare.  
Oenothera biennis L. 6, 7.  
Oenothera linifolia Nutt.  
4.

ARALIACEAE

Hedera helix L. 7.  
Aralia spinosa L. 5.  
Aralia racemosa L. 3.  
Panax quinquefolius L. 3.

UMBELLIFERAE

Thaspium trifoliatum (L.)  
Gray var. flavum  
Blake. 6.  
Sanicula canadensis L. 3.

- Torilis japonica (Houtt.)  
DC. 7.  
Daucus carota L. 6, 7.  
Cryptotaenia canadensis  
(L.) DC. 5.  
Osmorrhiza longistylis (Torr.)  
DC. var. villicaulis  
Fern. 3.  
Osmorrhiza claytonii (Michx.)  
Clarke. 3.  
Erigenia bulbosa (Michx.)  
Nutt. 2, 3.  
Chaerophyllum procumbens (L.)  
Crantz. 6, 7.  
Chaerophyllum tainturieri  
Hook 6.  
cicuta maculata L. 1, 7.

CORNACEAE

- Cornus florida L. 3, 5.  
Cornus drummondii C. A. Mey.  
5, 7.

ERICACEAE

- Monotropa uniflora L. 3.  
Vaccinium arboreum Marsh.  
4, 5.  
vaccinium vacillans Torr.  
4, 5.

PRIMULACEAE

- Dodecatheon meadia L. 5.  
Dodecatheon frenchii  
(Vasey) Rydb. 3.  
Lysimachia ciliata L. 7.  
Lysimachia lanceolata  
Walt. 3.  
Lysimachia nummularia L.  
1, 7.

EBENACEAE

- Diospyros virginiana L.  
5, 6.

OLEACEAE

- Fraxinus pennsylvanica  
Marsh. 3.

- Fraxinus pennsylvanica  
Marsh. var. subin-  
tegerrima (Vahl)  
Fern. 3, 5, 6.  
Fraxinus americana L. 3, 5,  
6.  
Fraxinus americana L. var.  
biltmoreana (Beadle)  
J. Wright. 3.  
Syringa vulgaris L. 7.  
Ligustrum obtusifolium  
Sieb. & Zucc. 7.  
\*\*Forsythia suspensa Vahl. 7.  
\*\*Forsythia viridissima  
Lindl. 7.

GENTIANACEAE

- Swertia carolinensis  
(Walt.) Kintze. 5.  
Obolaria virginica L. 3.  
Rare.  
Sabatia angularis (L.)  
Pursh. 6, 7.

APOCYNACEAE

- Apocynum cannabinum L.  
5, 6.  
Apocynum cannabinum L.  
var. pubescens  
(Mitchell) A. DC. 6.

ASCLEPIADACEAE

- Asclepias tuberosa L. var.  
interior (Woodson)  
Shinners. 6, 7.  
Asclepias verticillata L.  
4, 6.  
Asclepias purpurascens L.  
7.  
Asclepias syriaca L. 7.  
Asclepias quadrifolia  
Jacq. 3. Rare.  
Asclepias variegata L. 5.  
Asclepias incarnata L. 1,  
7.  
Cynanchum laeve (Michx.)  
Pers. 7.

CONVOLVULACEAE

- Convolvulus arvensis L. 6.

- Calystegia sepium* (L.)  
var. *repens*  
(L.) Michx. 7.  
*Calystegia sepium* (L.)  
var. *repens* (L.)  
H. B. K. ex Steyermark  
Shrubber. 6.  
*Iporrea coccinea* L. 7.  
*Iporrea pseudolata* (L.)  
Gmel. 7. a. May. 6. 7.  
*Iporrea heteroclada* (L.)  
Cogn. 6.  
*Iporrea laciniata* L. 6.  
*Iporrea pseudopappa* (L.) Roth.  
7.  
*Cuscuta campestris* Schrad. 2.  
*Cuscuta polypodioides* Schrad.  
6.  
*Cuscuta cephalanthi* Schrad.  
6.  
\**Cuscuta coryli* L. 7.  
*Cuscuta granovii* Willd. 7.  
*Cuscuta canescens* Vauquier.  
7.  
*Cuscuta indecora* Chodat. 2.

#### POLEMONIACEAE

- Polemonium reptans* L. 3.  
*Phlox diffusa* Beck. 4. 5.  
*Phlox divaricata* L. 3.  
*Phlox paniculata* L. 1

#### HYDROPHYLUMACEAE

- Hydrophyllum lacophyllum*  
Nutt. 3.  
*Hydrophyllum virginianum* L.  
3.

#### CORAGINACEAE

- Cynoglossum virginianum* L. 5.  
*Hackelia virginiana* (L.)  
A. N.els. Johnston. 3.  
*Myosotis virginica* (L.) Bsp.  
3. 6.  
*Lithospermum latifolium*  
Michx. 7.

#### VERBENACEAE

- Lippia lanceolata* Michx.  
1. 7.

- Verbena canadensis* Britt.  
7.  
*Verbena stricta* Vent. 7.  
*Verbena hastata* L. 7.  
*Verbena urticifolia* L. 6.  
7.

#### PHRYMACEAE

- Priyya leptostachya* B. 3.

#### JARVITIACEAE

- Isanthus brachiatus* (L.)  
Bsp. 4.  
*Lycopus americanus* Muhl.  
1. 7.  
*Lycopus virginicus* L. 3.  
*Teucrium canadense* L. var.  
*virginicum* (L.)  
F. 7.  
*Scutellaria parvula* Michx.  
3.  
*Scutellaria lateriflora* L.  
3.  
*Scutellaria ovata* Hill. 3.  
*Scutellaria ovata* Hill var.  
*versicolor* (Nutt.)  
Fern. 3.  
*Scutellaria incana* Bichler.  
5.  
*Marrubium vulgare* L. 7.  
*Canila origanoides* (L.)  
Britt. 5.  
*Monarda bradburiana* Beck.  
3.  
*Monarda fistulosa* L. 6.  
*Blephilia ciliata* (L.)  
Benth. 3.  
*Blephilia hirsuta* (Pursh)  
Benth. 3.  
*Collinsonia canadensis* L.  
3.  
*Hedione pulchriodoides* (L.)  
Pers. 5.  
*Pycnanthemum pycnanthe-*  
*roides* (Leaverw.)  
Fern. 5.  
*Pycnanthemum incanum* (L.)  
Michx. 5.  
*Pycnanthemum tenuifolium*  
Schrab. 5. 6.  
*Agastache nepetoides* (L.)  
Ktze. 6.

Glecoma hederacea L. 7.  
Lamium amplexicaule L. 6.  
Lamium purpureum L. 7.  
Stachys tenuifolia Willd.  
3, 7.  
perilla frutescens L.  
3, 7.  
Prunella vulgaris L. 5.  
Prunella vulgaris L. var.  
lanceolata (Bart.)  
Fern. 5.

SOLANACEAE

Solanum carolinense L.  
6, 7.  
Solanum americanum Mill.  
1, 7.  
Lycium halimifolium Mill. 7.  
Datura stramonium L. var.  
tatula (L.) Torr. 7.  
Datura innoxia Mill. 7.  
Physalis longifolia Nutt. 6.  
Physalis pruinosa L. 6.  
Physalis heterophylla Nees.  
7.  
Physalis heterophylla Nees.  
var. ambigua (Gray)  
Rydb. 6.  
Physalis pubescens L. 7.

SCROPHULARIACEAE

Veronicastrum virginicum  
(L.) Farw. 3.  
Veronica peregrina L. 7.  
Veronica arvensis L. 6.  
Gratiola virginiana L. 7.  
Rare.  
Gratiola neglecta Torr.  
1, 7.  
Lindernia dubia (L.) Pen-  
nelli. 1, 7.  
Penstemon digitalis Nutt. 3.  
6.  
Penstemon pallidus Small. 5.  
Conobea multifida (Michx.)  
Benth. 7.  
Gerardia flava L. 5.  
Gerardia tenuifolia Vahl. 4.  
Gerardia tenuifolia Vahl. var.  
macrophylla Benth. 4.  
Seymeria macrophylla Nutt. 5.  
Mimulus alatus Ait. 1, 7.

Scrophularia marilandica  
L. 3.  
Collinsia verna Nutt. 2.  
Verbascum thapsus L. 7.

BIGNONIACEAE

Campsis radicans (L.) Seem.  
7.  
Catalpa speciosa Warden. 7.

ACANTHACEAE

Ruellia humilis Nutt. 6, 7.  
Ruellia pedunculata Torr. 5.  
Ruellia strepens L. 2.

PLANTAGINACEAE

Plantago aristata Michx.  
4, 7.  
Plantago pusilla Nutt. 4.  
6.  
Plantago lanceolata L. 7.  
Plantago virginica L. 6, 7.  
Plantago rugelii Dcne. 7.

RUBIACEAE

Cephalanthus occidentalis  
L. 1, 3.  
Galium ciraezans Michx. 3.  
Galium pilosum Ait. 3.  
Galium triflorum Michx. 3,  
5.  
Galium aparine L. 3, 5.  
Galium concinnum Torr. &  
Gray. 5.  
Diodia teres Walt. 4, 6.  
Mitchella repens L. 3.  
Houstonia pusilla Schoepf.  
4, 6.  
Houstonia purpurea L. 3, 5.  
Houstonia longifolia  
Gaertn. var. cilio-  
lata (Torr.) Torr.  
5.  
Houstonia longifolia  
Gaertn. var. tenui-  
folia (Nutt.) Wood.  
5.

CAPRIFOLIACEAE

- Sambucus canadensis L. 7.  
Lonicera japonica Thunb.  
 7.  
Symporicarpos orbiculatus  
 Moench. 4, 6.  
\*Viburnum opulus L. 7.  
Viburnum rufidulum Raf. 5,  
 6.  
Viburnum prunifolium L. 3.  
Triosteum angustifolium L.  
 5.  
Triosteum illinoense (Wieg.)  
 Rydb. 3.

VALERIANACEAE

- Valeriana pauciflora Michx.  
 2.  
Valerianella radiata (L.)  
 Dufr. 7.

CUCURBITACEAE

- Cucumis sativus L. 7.  
Sicyos angulatus L. 6.

CAMPANULACEAE

- Specularia perfoliata (L.)  
 A. DC. 6.  
Campanula americana L. 3, 7.  
Lobelia cardinalis L. 2, 3.  
Lobelia silphilitica L. 1, 7.  
Lobelia puberula Michx. 3.  
Lobelia inflata L. 3, 7.

COMPOSITAE

- Polymnia canadensis L. 3.  
Polymnia uvedalia (L.) L. 3.  
Silphium perfoliatum L. 7.  
Silphium integrifolium Michx.  
 7.  
Ambrosia bidentata Michx. 7.  
Ambrosia trifida L. 7.  
Ambrosia artemisiifolia L. 7.  
Xanthium strumarium L. var.  
 canadensis (Mill.)  
 Torr. & Gray. 7.  
Xanthium strumarium L. var.  
 glabratum (DC.) Cronq.  
 7.

- Heliopsis helianthoides  
 (L.) Sweet. 5, 6.  
Eclipta alba (L.) Hassk. 7.  
Rudbeckia laciniata L. 6, 7.  
Rudbeckia subtomentosa  
 Pursh. 6, 7.  
Rudbeckia hirta L. 6, 7.  
\*Rudbeckia fulgida Ait. 6.  
 Rare.  
Ratibida pinnata (Vent.)  
 Barnh. 6.  
Helianthus annuus L. 6.  
Helianthus microcephalus  
 Torr. & Gray. 6.  
Helianthus decapetalus L.  
 3, 5.  
Helianthus divaricatus L.  
 5.  
Helianthus strumosus L. 5,  
 6.  
Helianthus tuberosus L. 6,  
 7.  
Verbesina helianthoides  
 Michx. 4, 5.  
Verbesina alternifolia (L.)  
 Britt. 7.  
Bidens coronata (L.) Britt.  
 6.  
Bidens aristosa L. 6, 7.  
Bidens aristosa L. var.  
 retrorsa (Sherff)  
 Wunderlin. 1, 7.  
Bidens connata Muhl. 1, 7.  
Bidens comosa (Gray) Wieg.  
 6.  
Bidens bipinnata L. 1, 7.  
Bidens frondosa L. 1, 7.  
Helenium flexuosum Raf. 7.  
Solidago caesia L. 3, 5.  
Solidago buckleyi Torr. &  
 Gray. 3. Rare.  
Solidago petiolaris Ait. 5.  
Solidago missouriensis Nutt.  
 6.  
Solidago juncea Ait. 5, 6.  
Solidago speciosa Nutt. 7.  
Solidago gigantea Ait. 3,  
 6.  
\*\*Solidago arguta Ait. 5.  
 Rare.  
\*\*Solidago neurolepis Fern.  
 5. Rare.  
Solidago ulmifolia Muhl.  
 5.

- Solidago canadensis L. 6, 7.  
Solidago nemoralis Ait. 6.  
Solidago rugosa Mill. 6.  
Solidago hispida Muhl. 5.  
\*\*Solidago hispida Muhl. var.  
    lanata (Hook.) Fern.  
    4. Rare.  
Boltonia asteroides (L.)  
    L'Her. 6.  
Aster anomalus Engelm. 5.  
Aster shortii Lindl. 5.  
Aster sagittifolius Wedem.  
    6.  
Aster oblongifolius Nutt. 5.  
Aster patens Ait. 5.  
Aster pilosus Willd. 6.  
Aster vimineus Lam. 6. Rare.  
\*Aster dumosus L. 6. Rare.  
Aster praealtus Poir. 6.  
Aster turbinellus Lindl. 5.  
Aster lateriflorus (L.)  
    Britt. 5, 6.  
Aster simplex Willd. 6.  
Erigeron pulchellus Michx.  
    3.  
Erigeron philadelphicus  
    L. 7.  
Erigeron annuus (L.) Pers.  
    7.  
Erigeron strigosus Muhl.  
    7.  
Erigeron canadensis L. 6,  
    7.  
Anthemis cotula L. 7.  
Anthemis arvensis L. 7.  
Achillea millefolium L. 6.  
Achillea millefolium L. ssp.  
    lanulosa (Nutt.)  
    Piper. 7.  
Matricaria matricarioides  
    (Less.) Porter. 7.  
Chrysanthemum leucanthemum  
    L. 6.  
\*Artemisia absinthium L. 7.  
Antennaria plantaginifolia  
    (L.) Richards. 4, 5.  
Gnaphalium purpureum L. 4, 6.  
Gnaphalium obtusifolium L. 6.  
Erechtites hieracifolia L.  
    3, 5.  
Cacalia atriplicifolia L. 3,  
    5.  
Cacalia muhlenbergii (Sch.-  
    Bip.) Fern. 3. Rare.  
Senecio glabellus Poir. 7.  
Eupatorium purpureum L. 3.  
Eupatorium fistulosum  
    Barratt. 1, 7.  
Eupatorium coelestinum L.  
    6, 7.  
Eupatorium serotinum Michx.  
    6, 7.  
Eupatorium rugosum Houtt.  
    5, 6.  
Eupatorium perfoliatum L.  
    7.  
Vernonia nissurica Raf. 7.  
Vernonia baldwinii Torr.  
    6, 7.  
Vernonia gigantea (Walt.)  
    Trel. 6.  
Elephantopus carolinianus  
    Willd. 3.  
Arctium minus (Hill) Bernh.  
    7.  
Cirsium vulgare (Savi)  
    Tenore. 7.  
Cirsium discolor (Muhl.)  
    Spreng. 6, 7.  
Cirsium altissima (L.)  
    Spreng. 5.  
Cichorium intybus L. 7.  
Krigia dandelion (L.)  
    Nutt. 5.  
Krigia biflora (Walt.)  
    Blake. 6, 7.  
Krigia virginica (L.)  
    Willd. 7.  
Krigia oppositifolia Raf.  
    7.  
Taraxacum officinale Weber.  
    7.  
Lactuca canadensis L. 6.  
Lactuca serriola L. 7.  
Lactuca floridana (L.)  
    Gaertn. 3.  
Pyrrhopappus carolinianus  
    (Walt.) DC. 6, 7.  
Prenanthes altissima L. 3.  
Hieracium gronovii L. 5.

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