

I WPF000342

Mitchell's Grove Nature Preserve Plant Inventory

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Introduction

Mitchell's Grove Nature Preserve, located in LaSalle County, Illinois, is made up of 184 acres. Most of this Nature Preserve is made up of the ravines of streams (Map 1). A quarter mile of the Little Vermilion River is a part of the Nature Preserve at the confluence of Tomahawk Creek and also contains a half mile of Tomahawk Creek and three quarters of a mile of the creek's tributary.

These streams create a rugged topography of forested ridges, cliffs, ravines, and prairies. This diverse topography provides habitat for 397 species of vascular plants located during this study (Appendix I). The flora is made up of 333 native species and 64, or 16%, alien species. Three state threatened species were also identified.

In 1993 Gerould Wilhelm and Dennis Lubbs located 53 vascular plant species (Appendix II) that were not located during this study conducted from 1999 and 2000. Though G. Wilhelm and D. Lubbs inventory was not confined to the Mitchell's property it is likely that many of these 53 species will be found within the nature preserve. *Corallorhiza maculata* (Spotted coral root) is a state threatened species reported from the earlier inventory that was not relocated during this inventory.

Along with the vascular plants, mosses, liverworts, and lichens were also inventories. Twenty-one species of lichens (Appendix III) were located in four communities during this study. With lichens needing a relatively open environment, most species were found in the few acres of savanna. There were 39 mosses species and four species of liverworts (Appendix IV) also located during this study. No species from either of these groups were located in the old field community.

There are seven vegetation types or plant communities identified in this preserve (Map 1). These plant communities are found on three major soil associations. Five plant communities are found on the Morley-Birkbeck-Chatsworth Association (MBCA), which makes up the majority of the study area. Two plant communities are located on Hesch-Calco-Millington Association (HCMA) along the Little Vermilion River and Tomahawk Creek. There are three plant communities found on the Flanagan-Drummer-Catlin Association (FDCA).

The MBCA found in the study area has a high sand content with the bedrock exposed to no more than 20" below the surface. These soils were developed mostly under native forest. This soil association is covered almost entirely by dry-mesic forest with small areas of prairie at the crest of cliffs and bluffs. The sandstone cliffs and the west half of the savanna are also a part of this soil association. Old field one and two are found here too.

HCMA is an alluvial floodplain soil found along the Little Vermilion River and Tomahawk Creek. The small wet meadow and Mesic Bottomland Forest are entirely located in this association. FDCA is located at the west end of the preserve. These soils were developed under native prairie

vegetation. The three plant communities located on this association are old field three, the pasture, and the east half of the savanna.

There are also a few small plant communities included with the plant communities listed in appendix I and Map 1. The dry-mesic forest, savanna, pasture and old field one include an intermittent stream. The mesic bottomland forest includes river, creek, and a pond. These areas may provide habitat for plant species not typically associated with the plant communities mapped.

Illinois State Listed Species

Four state threatened species were located during this survey. The state threatened species are *Aster furcatus* (Burgess forked aster), *Carex communis* (Fibrous-rooted sedge), *Solidago sciaphila* (Cliff goldenrod), and *Thuja occidentalis* (White cedar). These populations range in size from a few plants to several thousand plants.

Illinois State Threatened Species

Aster furcatus Burgess forked aster

Five populations of *A. furcatus* were located at Mitchell's Grove Nature Preserve (Map 2). Two populations were found in a small narrow ravine with a south exposure. The three other populations have 50 or less plants and are found on the opposite side of a small ridge giving them a north exposure. The largest populations have several hundred plants and are in a small ravine, with the other three populations having no more than 150 plants total.

Only one of the populations was found growing directly on a sandstone cliff, though the other populations are growing in areas with sandstone bed rock near the surface. The habitat for this is listed as springy or marshy woods. Only one smaller population was connected with the large seep areas in the preserve. The populations at Mitchell's Grove Nature Preserve were quite healthy with nearly all plants producing fruit. There is no known threat to these populations.

The following is a list of associated species: *Agrostis perennans*, *Aquilegia canadensis*, *Aralia nudicaulis*, *Arisaema triphyllum*, *Aruncus dioicus*, *Carpinus caroliniana*, *Circaea lutetiana ssp canadensis*, *Dichanthelium acuminatum var fasciculatum*, *Dioscorea villosa*, *Dodecatheon meadia*, *Dryopteris marginalis*, *Eupatorium rugosum*, *Fraxinus americana*, *Geranium maculatum*, *Hepatica nobilis var acuta*, *Menispermum canadense*, *Osmunda claytoniana*, *Ostrya virginiana*, *Parthenocissus inserta*, *Polygonum virginianum*, *Polypodium virginianum*, *Populus grandidentata*, *Prenanthes alba*, *Quercus rubra*, *Rubus pensilvanicus*, *Saxifraga pensylvanica*, *Silene stellata*, *Smilacina racemosa*, *Solidago flexicaulis*, *Toxicodendron radicans*, and *Uvularia grandiflora*.

Carex communis Bailey Fibrous-rooted sedge

A large population of *Carex communis* is found on a steep slope along Tomahawk Creek (Map 3). This population contain 100 plus plants. This species is found in an area too steep for leaf litter to accumulate with a sparse vegetation cover.

There is no threat to this species' continued existence at Mitchell's Grove Nature Preserve. The population seems vibrant with most plants producing fruit. The best time for counting the population is in the fall when all other vegetation has died.

The areas are open to more or less closed mesic forest. The following is a list of associated species: *Acer saccharum*, *Arabis laevigata*, *Carex albursina*, *Carya cordiformis*, *Cinna arundinacea*, *Dryopteris marginalis*, *Elymus hystrix*, *Eupatorium purpureum*, *Hamamelis virginiana*, *Hepatica nobilis var acuta*, *Hydrophyllum virginianum*, *Osmorhiza claytonii*, *Ostrya virginiana*, *Quercus alba*, *Quercus rubra*, *Sanicula gregaria*, *Saxifraga pensylvanica*, *Smilax hispida*, and *Solidago flexicaulis*

***Solidago sciaphila* Steele Cliff goldenrod**

A populations of *S. sciaphila* is located in Mitchell's Grove Nature Preserve (Map 4). *S. sciaphila* is found growing on sandstone cliffs and out of sandstone at the crest. The only way to truly separate *S. hispida* from *S. sciaphila* is by the stem and achene being either glabrous or pubescent. Being on cliffs, they are usually out of reach. To separate them habitat was used: if plants were growing out of the cliff they were considered *S. sciaphila* and if growing out of soil on ledges it was considered *S. hispida*. This method has likely underestimated the number of population at this preserve.

As was the case at Starved Rock State Park, the taxonomy of these two species seems to be confused at Mitchell's Grove Nature Preserve. The pubescent achene and glabrous stem are determining characteristics for *S. sciaphila*, while glabrous achene and pubescent stem are determining characteristics for *S. hispida*. Specimens with both glabrous and pubescent stems have had pubescent achene.

The following is a list of associated species: *Aquilegia canadensis*, *Dryopteris marginalis*, *Eupatorium rugosum*, *Poa compressa**, and *Taraxacum officinale**

***Thuja occidentalis* L. White cedar**

This species is found at the crest of a cliff and its face along Tomahawk Creek (Map 5). Five plants were found on the talus slopes. Most of the population and largest trees were located on the crest of the cliff, with several growing out of the cracks in the cliffs. This population seems healthy with several young plants and many trees in fruit. The five plants on the talus slope are young plants. There are no known threats to this population.

The following list of associated species are from those plants on the talus slope: *Aruncus dioicus*, *Aster lateriflorus*, *Dryopteris marginalis*, *Eupatorium rugosum*, *Galium aparine*, *Glechoma hederacea**, *Lonicera tatarica**, *Osmorhiza claytonii*, *Phlox divaricata*, *Poa compressa**, *Sanicula gregaria*, *Solidago flexicaulis*, *Taraxacum officinale**, and *Toxicodendron radicans*.

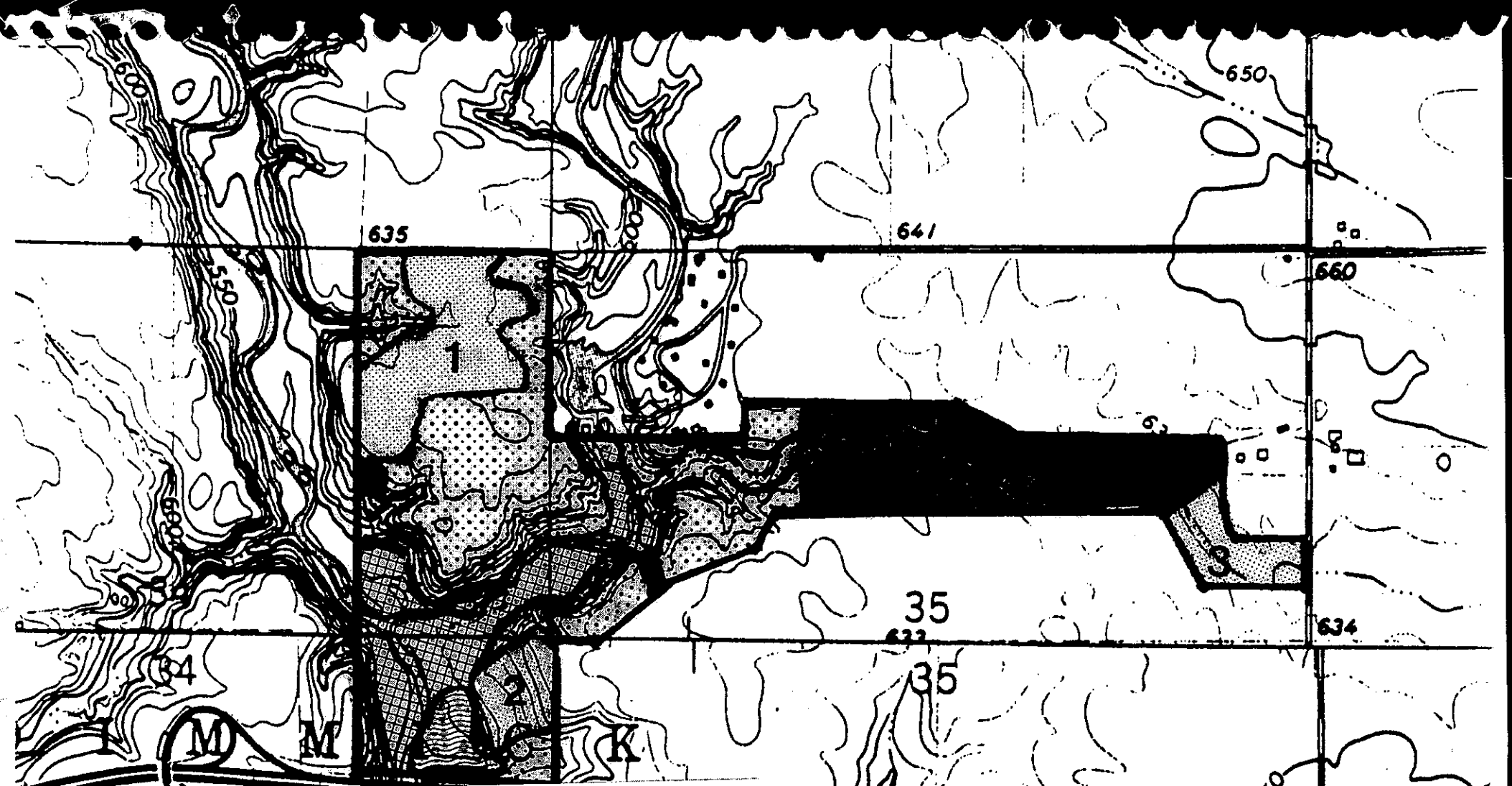
Problem Species

There were 63 alien species located during this study. Seventeen have the potential to cause serious problems. These seventeen are as follows: *Alliaria petiolata* *, *Bromus inermis**, *Cirsium arvense**, *Coronilla varia* *, *Elaeagnus umbellata**, *Euonymus alatus**, *Festuca pratensis**, *Lonicera maackii**, *Lonicera morrowii**, *Lonicera x bella**, *Melilotus alba**, *Melilotus officinalis**, *Phalaris arundinacea* *, *Rhamnus cathartica**, *Rhamnus frangula**, *Rosa multiflora**, and *Viburnum opulus**




Three species of *Lonicera* were identified during this study. This genus has had the greatest impact of any non-native species on the area. *Lonicera maackii** is by far the most abundant species of these with its greatest abundances in the bottomland (Map 1) dominating the shrub layer. The brush removal done in recent years has improved the area greatly. But follow up brush work will be needed to keep regrowth under control.





Phalaris arundinacea has had a great impact on the wet meadow (Map 1). The west half of the wet meadow is dominated by *P. arundinacea*. Without management of some kind, this species may come to dominate the entire wet meadow.

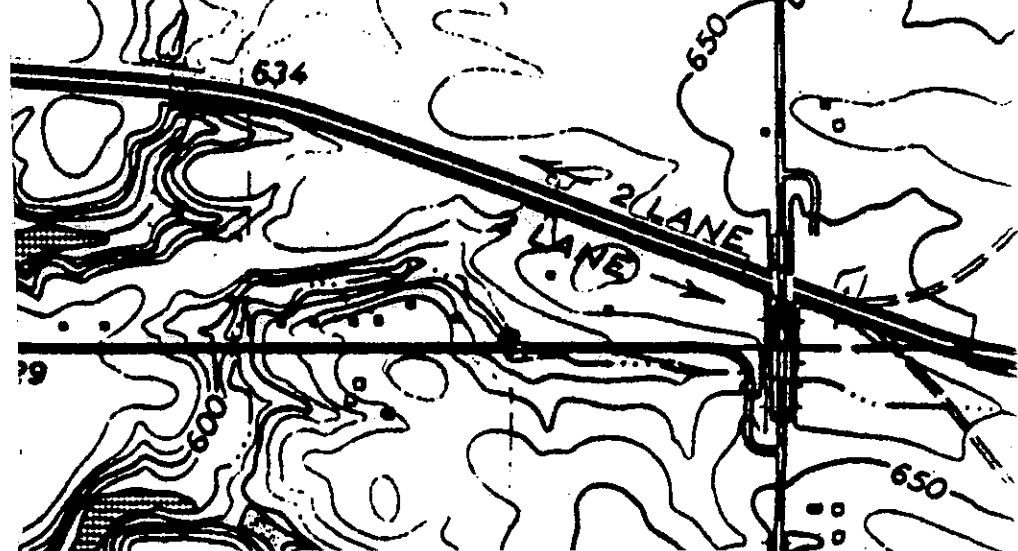
Old field two (Map 1) has a problem with *Coronilla varia* *, *Melilotus alba**, and *Melilotus officinalis**. Of these three species, *C. varia* is the most difficult to control so steps to control *C. varia* should be taken to prevent it from invading some of the more sensitive open areas in Mitchell's Grove Nature Preserve.



Map 1
Plant Communities

- Dry-mesic upland forest 
- Mesic flood forest 
- Savanna 

- Bluff prairie 
- Pasture 
- Old field 
- Wet meadow 



Appendix I Species List.

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
<i>Angelica atropurpurea</i>	Angelica	H									X
<i>Antennaria neglecta</i>	Field pussytoes	H				X					
<i>Antennaria plantaginifolia</i>	Pussy toes	H			X	X					
<i>Apocynum androsaemifolium</i>	Spreading dogbane	H				X					
<i>Apocynum sibiricum</i>	Prairie Indian hemp	H								X	
<i>Aquilegia canadensis</i>	Columbine	H	X		X		X				
<i>Arabis laevigata</i>	Smooth rock cress	H					X				
<i>Arabis shortii</i>	Toothed cress	H		X							
<i>Aralia nudicaulis</i>	Wild sarsaparilla	H									
<i>Aralia racemosa</i>	American spikenard	H	X								
<i>Arctium minus*</i>	Common burdock	H	X					X	X		
<i>Arisaema dracontium</i>	Green dragon	H	X								
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	H	X				X				
<i>Aruncus dioicus</i>	Goat's-beard	H	X				X				
<i>Asarum canadense</i>	Wild ginger	H		X							
<i>Asclepias exaltata</i>	Poke milkweed	H	X								
<i>Asclepias syriaca</i>	Common milkweed	H							X	X	
<i>Asclepias verticillata</i>	Whorled milkweed	H			X	X		X			
<i>Asparagus officinalis*</i>	Garden asparagus	H	X	X	X	X				X	
<i>Asplenium platyneuron</i>	Ebony spleenwort	P	X		X						
<i>Aster cordifolius</i>	Heart-leaved aster	H	X		X	X					
<i>Aster drummondii</i>	Drummond aster	H	X					X			
<i>Aster ericoides</i>	Heath aster	H				X					
<i>Aster furcatus <<</i>	Forked aster	H	X				X				
<i>Aster lateriflorus</i>	Side-flowering aster	H	X	X				X			
<i>Aster pilosus</i>	Hairy aster	H						X	X	X	
<i>Aster shortii</i>	Short's aster	H	X		X						

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<i>Aster urophyllus</i>	Arrow-leaved aster	H	X								
<i>Athyrium angustum</i>	Lady fern	P	X								
<i>Atriplex patula</i>	Common orach	H								X	
<i>Aureolaria grandiflora</i> var <i>pulchra</i>	Yellow false foxglove	H				X					
<i>Barbarea vulgaris</i> *	Yellow rocket	H							X		
<i>Berberis thunbergii</i> *	Japanese barberry	S						X			
<i>Bidens cernua</i>	Nodding bur marigold	H		X							
<i>Bidens connata</i>	Purple-stemmed tickseed	H		X							
<i>Bidens frondosa</i>	Common beggar's ticks	H	X	X							
<i>Bidens vulgata</i>	Tall beggar's ticks	H						X			
<i>Boehmeria cylindrica</i>	False nettle	H									X
<i>Botrychium virginianum</i>	Rattlesnake fern	P	X								
<i>Bouteloua curtipendula</i>	Side-oats gramma	G				X					
<i>Brickellia eupatorioides</i>	False boneset	H				X			X		
<i>Bromus inermis</i> *	Smooth brome	G						X	X	X	
<i>Bromus japonicus</i> *	Japanese chess	G						X			
<i>Bromus pubescens</i>	Woodland brome	G	X	X							
<i>Calystegia sepium</i>	Bindweed	HV							X	X	X
<i>Campanula americana</i>	Tall bellflower	H	X								
<i>Cannabis sativa</i> *	Hemp	H						X			
<i>Capsella bursa-pastoris</i> *	Sheperd's-purse	H							X	X	
<i>Cardamine bulbosa</i>	Spring cress	H		X							
<i>Cardamine pensylvanica</i>	Pennsylvania bitter cress	H		X							
<i>Carex albursina</i>	Blunt-scaled wood sedge	G					X				
<i>Carex amphibola</i>	Gray sedge	G	X								
<i>Carex bicknellii</i>	Prairie sedge	G				X					

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<i>Carex blanda</i>	Common woodland sedge	G			X			X			
<i>Carex cephaloidea</i>	Rough clustered sedge	G	X					X			
<i>Carex cephalophora</i>	Short-headed bracted sedge	G			X			X			
<i>Carex communis</i> <<	Fibrous-root sedge	G	X				X				
<i>Carex conjuncta</i>	Green-headed fox sedge	G						X			
<i>Carex cristatella</i>	Round-headed oval sedge	G		X							
<i>Carex davisii</i>	Davis sedge	G						X			
<i>Carex gravida</i>	Long-awned bracted sedge	G						X			
<i>Carex grisea</i>	Wood gray sedge	G	X	X				X			
<i>Carex jamesii</i>	Grass sedge	G	X								
<i>Carex molesta</i>	Field oval sedge	G							X		
<i>Carex normalis</i>	Spreading oval sedge	G						X			
<i>Carex pennsylvanica</i>	Pennsylvania sedge	G	X		X	X					
<i>Carex rosea</i>	Curly-styled wood sedge	G	X								
<i>Carex sparganioides</i>	Loose-headed bracted sedge	G	X					X			
<i>Carex stipata</i>	Common fox sedge	G		X				X	X		X
<i>Carex typhina</i>	Common cattail sedge	G						X			
<i>Carex vulpinoidea</i>	Fox sedge	G						X	X		
<i>Carpinus caroliniana</i>	Blue beech	ST	X								
<i>Carya ovata</i>	Shagbark hickory	T						X			
<i>Cassia fasciculata</i>	Partridge pea	H				X					
<i>Caulophyllum thalictroides</i>	Blue cohosh	H	X	X	X						
<i>Celtis occidentalis</i>	Hackberry	T	X								
<i>Cerastium vulgatum</i> *	Common mouse-ear chickweed	H						X	X		

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<i>Cercis canadensis</i>	Redbud	ST	X								
<i>Chaerophyllum procumbens</i>	Wild chervil	H		X							
<i>Chenopodium album</i>	Lamb's quarters	H						X			
<i>Chenopodium gigantospermum</i>	Maple-leaved goosefoot	H	X								
<i>Cinna arundinacea</i>	Common wood reed	G		X							
<i>Circaea lutetiana ssp canadensis</i>	Enchanter's nightshade	H	X				X	X			
<i>Cirsium arvense*</i>	Field thistle	H						X	X	X	
<i>Cirsium vulgare*</i>	Bull thistle	H						X	X	X	
<i>Comandra umbellata</i>	False toadflax	H			X	X					
<i>Conyza canadensis</i>	Mule tail	H	X		X	X		X	X	X	
<i>Corallorhiza odontorhiza</i>	Late coral root	H	X								
<i>Corallorhiza wisteriana</i>	Wister's coral-root orchid	H	X								
<i>Coreopsis palmata</i>	Prairie coreopsis	H				X					
<i>Cornus alternifolia</i>	Alternate-leaved dogwood	ST	X								
<i>Cornus racemosa</i>	Gray dogwood	S				X					
<i>Coronilla varia *</i>	Crown vetch	H							X		
<i>Corylus americana</i>	Hazelnut	S				X					
<i>Crataegus margareta</i>	Hawthorn	ST						X			
<i>Crataegus mollis</i>	Red haw	T						X			
<i>Crataegus succulenta</i>	Fleshy hawthorn	ST						X			
<i>Cryptotaenia canadensis</i>	Honewort	H	X					X			
<i>Cynoglossum officinale*</i>	Common hound's tongue	H						X			
<i>Cystopteris bulbifera</i>	Bladder fern	P	X				X				
<i>Cystopteris protrusa</i>	Fragile fern	P	X				X	X			
<i>Dactylis glomerata*</i>	Orchard grass	G						X	X	X	
<i>Dalea candida</i>	White prairie-clover	H			X	X					

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<i>Danthonia spicata</i>	Poverty oat grass	G			X	X	X				
<i>Datura stramonium*</i>	Jimsonweed	H								X	
<i>Daucus carota*</i>	Queen anne's lace	H				X		X	X		
<i>Dentaria laciniata</i>	Toothwort	H	X	X							
<i>Desmodium glutinosum</i>	Pointed tick trefoil	H	X								
<i>Desmodium paniculatum</i>	Panicled tick trefoil	H			X						
<i>Dicentra cucullaria</i>	Dutchman's-breeches	H	X				X				
<i>Dichanthelium acuminatum</i>	Old-field panic grass	G	X	X	X	X	X	X			
<i>Dichanthelium latifolium</i>	Broad-leaf panic grass	G	X	X							
<i>Dichanthelium oligosanthes var scribnerianum</i>	Scribner's panic grass	G				X					
<i>Diervilla lonicera</i>	Bush honeysuckle	S					X				
<i>Dioscorea villosa</i>	Wild yam	HV	X				X				
<i>Dodecatheon meadia</i>	Shooting star	H	X		X	X					
<i>Dryopteris intermedia</i>	Intermediate fern	P	X								
<i>Dryopteris marginalis</i>	Marginal shield fern	P	X		X		X				
<i>Echinacea pallida</i>	Pale purple coneflower	H				X					
<i>Echinochloa muricata</i>	Barnyard grass	G								X	
<i>Elaeagnus umbellata*</i>	Autumn olive	S						X			
<i>Ellisia nyctelea</i>	Annt lucy	H	X					X			
<i>Elodea canadensis</i>	Common waterweed	H		X							
<i>Elymus hystrix</i>	Bottlebrush grass	G	X					X			
<i>Elymus villosus</i>	Silky wild rye	G	X								
<i>Elymus virginicus</i>	Virginia wild rye	G		X							
<i>Equisetum arvense</i>	Field horsetail	P	X	X							
<i>Equisetum hyemale var affine</i>	Scouring rush	P		X							
<i>Erigeron annuus</i>	Annual fleabane	H	X					X			
<i>Erigeron philadelphicus</i>	Philadelphia fleabane	H	X					X			

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<i>Erigeron pulchellus</i>	Robin's plantain	H	X								
<i>Erigeron strigosus</i>	Daisy fleabane	H				X					
<i>Erythronium albidum</i>	White trout lily	H	X								
<i>Euonymus alatus*</i>	Winged euonymus	S		X							
<i>Eupatorium altissimum</i>	Tall Boneset	H						X			
<i>Eupatorium perfoliatum</i>	Boneset	H		X							
<i>Eupatorium purpureum</i>	Sweet joe-pye weed	H	X					X			
<i>Eupatorium rugosum</i>	White snakeroot	H	X	X	X			X			
<i>Eupatorium serotinum</i>	Late boneset	H		X							
<i>Euphorbia corollata</i>	Flowering spurge	H			X	X					
<i>Festuca obtusa</i>	Nodding fescue	G	X					X			
<i>Festuca pratensis*</i>	Tall fescue	G						X	X		
<i>Fragaria americana</i>	Hillside strawberry	H					X				
<i>Fragaria virginiana</i>	Wild strawberry	H			X	X		X			
<i>Fraxinus americana</i>	White ash	T	X					X			
<i>Fraxinus pennsylvanica</i>	Green ash	T									X
<i>Galium aparine</i>	Annual bedstraw	H	X					X			X
<i>Galium circaezans</i>	Hairy wild licorice	H	X		X			X			
<i>Galium concinnum</i>	Shining bedstraw	H	X		X	X		X			
<i>Galium triflorum</i>	Sweet-scented bedstraw	H	X		X						
<i>Gaylussacia baccata</i>	Black huckleberry	S			X		X				
<i>Geranium maculatum</i>	Wild geranium	H	X			X					
<i>Geum canadense</i>	White avens	H						X			
<i>Geum vernum</i>	Spring avens	H	X					X			
<i>Glechoma hederacea*</i>	Ground ivy	H	X					X			
<i>Gleditsia triacanthos</i>	Honey locust	T						X			
<i>Glyceria striata</i>	Fowl manna grass	G	X				X	X			

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<i>Hackelia virginiana</i>	Virginia stickseed	H	X					X			
<i>Hamamelis virginiana</i>	Witch-hazel	S	X								
<i>Helenium autumnale</i>	Sneezeweed	H		X							
<i>Helianthemum bicknellii</i>	Frostweed	H				X					
<i>Helianthus grosseserratus</i>	Saw-tooth sunflower	H								X	
<i>Helianthus strumosus</i>	Pale-leaved sunflower	H	X			X					
<i>Hemerocallis fulva*</i>	Orange day lily	H		X							
<i>Hepatica nobilis</i> var <i>acuta</i>	Sharp-lobed liverleaf	H	X				X				
<i>Heuchera richardsonii</i> var <i>grayana</i>	Prairie alumroot	H			X	X					
<i>Hieracium canadense</i>	Canada hawkweed	H			X	X	X				
<i>Hordeum jubatum</i>	Squirrel-tail	G						X	X		
<i>Hydrophyllum virginianum</i>	Virginia waterleaf	H						X			
<i>Hypoxis hirsuta</i>	Yellow stargrass	H			X	X					
<i>Ilex verticillata</i>	Winterberry	S					X				
<i>Impatiens capensis</i>	Spotted touch-me-not	H		X							
<i>Iris shrevei</i>	Wild blue flag	H		X							X
<i>Juglans cinerea</i>	Butternut	T	X								
<i>Juglans nigra</i>	Black walnut	T						X	X		
<i>Juncus Greenei</i>	Green's rush	G				X					
<i>Juncus tenuis</i>	Poverty rush	G	X		X	X		X			
<i>Juniperus virginiana</i>	Eastern red cedar	ST						X	X	X	
<i>Krigia biflora</i>	False dandeloin	H	X		X	X					
<i>Lactuca serriola*</i>	Prickly lettuce	H									
<i>Laportea canadensis</i>	Wood nettle	H	X					X			
<i>Leersia oryzoides</i>	Rice cutgrass	G		X				X			
<i>Leersia virginica</i>	White grass	G	X	X							
<i>Lemna minor</i>	Small duckweed								X		

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
<i>Leonurus cardiaca</i> *	Motherwort	H						X			
<i>Lepidium campestre</i> *	Field peppergrass	H		X							
<i>Lepidium virginicum</i>	Poor-man's pepper	H						X			
<i>Lespedeza capitata</i>	Round-headed bush clover	H				X					
<i>Lespedeza violacea</i>	Violet bush clover	H	X								
<i>Lespedeza virginica</i>	Slender bush clover	H				X					
<i>Liatris aspera</i>	Rough blazing star	H				X					
<i>Lilium michiganense</i>	Michigan lily	H		X							
<i>Lithospermum canescens</i>	Hoary puccoon	H			X	X					
<i>Lithospermum caroliniense</i>	Hairy puccoon	H			X	X					
<i>Lithospermum latifolium</i>	Broad-leaved puccoon	H		X				X			
<i>Lobelia inflata</i>	Indian tobacco	H	X								
<i>Lobelia inflata</i>	Indian tobacco	H	X		X						
<i>Lobelia siphilitica</i>	Great blue lobelia	H	X	X		X					
<i>Lobelia spicata</i> var <i>leptostachys</i>	Spiked lobelia	H			X	X					
<i>Lonicera maackii</i> *	Amur honeysuckle	S	X		X			X			
<i>Lonicera morrowii</i> *	Morrow's honeysuckle	S	X								
<i>Lonicera prolifera</i>	Rock honeysuckle	S		X	X						
<i>Lonicera x bella</i> *	Showy fly honeysuckle	S		X				X			
<i>Lysimachia nummularia</i> *	Moneywort	H									X
<i>Maclura pomifera</i> *	Osage orange	T	X	X							
<i>Maianthemum canadense</i> var <i>interius</i>	False lily-of-the-valley	H					X				
<i>Medicago lupulina</i> *	Black medic	H						X	X		
<i>Melilotus alba</i> *	White sweet clover	H								X	
<i>Melilotus officinalis</i> *	Yellow sweet clover	*							X		
<i>Melilotus canadensis</i>							X	X			

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
<i>Mentha arvensis</i> var <i>villosa</i>	Wild mint	H		X							
<i>Mentha x piperita</i> *	Peppermint	H						X	X		
<i>Mimulus ringens</i>	Monkey flower	H		X							
<i>Mitella diphylla</i>	Bishop's-cap	H	X								
<i>Monarda fistulosa</i>	Wild bergamot	H			X	X					
<i>Monotropa uniflora</i>	Indian pipe	H	X		X						
<i>Morus alba</i> *	White mulberry	T					X	X	X	X	
<i>Muhlenbergia frondosa</i>	Common satin grass	G		X							
<i>Muhlenbergia schreberi</i>	Nimblewill	G	X		X	X		X			
<i>Myosoton aquaticum</i> *	Giant chickweed	H		X							X
<i>Nepeta cataria</i> *	Catnip	H							X		
<i>Oenothera biennis</i>	Evening primrose	H							X		
<i>Osmorhiza claytonii</i>	Hairy sweet cicely	H	X		X		X				
<i>Osmorhiza longistylis</i>	Smooth sweet cicely	H	X	X							
<i>Osmorhiza longistylis</i> var <i>villicaulis</i>	Sweet cicely	H	X	X							
<i>Osmunda claytoniana</i>	Interrupted fern	P	X				X				
<i>Ostrya virginiana</i>	Eastern hop hornbeam	ST	X		X	X		X			
<i>Oxalis stricta</i>	Tall wood sorrel	H						X	X	X	
<i>Oxalis violacea</i>	Violet wood sorrel	H			X	X					
<i>Panax quinquefolius</i>	American ginseng	H	X								
<i>Panicum dichotomiflorum</i> var <i>geniculatum</i>	Fall panicum	G								X	
<i>Parthenocissus quinquefolia</i>	Virginia creeper	WV	X				X	X			
<i>Pastinaca sativa</i> *	Wild parsnip	H								X	
<i>Phalaris arundinacea</i> *	Reed canary grass	G		X					X	X	X
<i>Phleum pratense</i> *	Timothy	G						X	X		
<i>Phlox divaricata</i>	Blue phlox	H	X					X			

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
<i>Phryma leptostachya</i>	Lopseed	H	X								
<i>Phyla lanceolata</i>	Fog fruit	H		X							
<i>Physalis subglabrata</i>	Smooth ground cherry	H								X	
<i>Physocarpus opulifolius</i>	Ninebark	H		X		X					
<i>Phytolacca americana</i>	Pokeweed	H	X					X			
<i>Pilea pumila</i>	Clearweed	H	X	X							
<i>Pinus strobus</i>	White pine	T					X				
<i>Plantago rugelii</i> *	Rugel's plantain	H	X		X				X		
<i>Platanus occidentalis</i>	Sycamore	T	X	X							
<i>Poa compressa</i> *	Canadian bluegrass	G				X		X	X		
<i>Poa pratensis</i> *	Kentucky bluegrass	G				X		X	X	X	X
<i>Podophyllum peltatum</i>	Mayapple	H	X		X			X			
<i>Polemonium reptans</i>	Jacob's-ladder	H	X								
<i>Polygala verticillata</i>	Short whorled milkwort	H				X					
<i>Polygonatum commutatum</i>	Great solomon seal	H									
<i>Polygonum lapathifolium</i>	Pale smartweed	H		X						X	
<i>Polygonum punctatum</i>	Smartweed	H		X					X		
<i>Polygonum virginianum</i>	Woodland knotweed	H	X					X			
<i>Polypodium virginianum</i>	Common polypody	P					X				
<i>Polystichum acrostichoides</i>	Christmas fern	P	X								
<i>Populus deltoides</i>	Eastern cottonwood	T	X	X				X			X
<i>Populus grandidentata</i>	Large-toothed aspen	T			X	X	X				
<i>Potamogeton foliosus</i>	Leafy pondweed			X							
<i>Potentilla norvegica</i> *	Rough cinquefoil	H							X	X	
<i>Potentilla recta</i> *	Sulfur cinquefoil	H						X	X		
<i>Potentilla simplex</i>	Common cinquefoil	H			X	X		X			
<i>Prenanthes alba</i>	White lettuce	H	X				X				

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
<i>Prunella vulgaris</i> var <i>elongata</i>	Self-heal	H	X	X				X			
<i>Prunus americana</i>	Wild plum	ST						X			
<i>Prunus serotina</i>	Wild black cherry	T	X						X		
<i>Prunus virginiana</i>	Common chokecherry	ST	X				X	X			
<i>Ptelea trifoliata</i>	Wafer ash	ST				X					
<i>Pycnanthemum virginianum</i>	Common mountain mint	H				X					
<i>Quercus alba</i>	White oak	T	X					X			
<i>Quercus macrocarpa</i>	Bur oak	T	X					X			
<i>Quercus prinoides</i> var <i>acuminata</i>	Chinquapin oak	T						X			
<i>Quercus rubra</i>	Red oak	T	X								
<i>Quercus velutina</i>	Black oak	T			X	X		X			
<i>Ranunculus abortivus</i>	Small-flowered crowfoot	H	X					X			
<i>Ranunculus septentrionalis</i>	Swamp buttercup	H						X			X
<i>Rhamnus cathartica</i> *	Common buckthorn	ST					X				
<i>Rhamnus frangula</i> *	Glassy buckthorn	S					X				
<i>Rhus glabra</i>	Smooth sumac	S			X	X					
<i>Ribes cynosbati</i>	Prickly wild gooseberry	S	X				X				
<i>Ribes missouriense</i>	Missouri gooseberry	S	X					X			
<i>Rorippa islandica</i> ssp <i>fernaldiana</i>	Marsh yellow cress	H		X							
<i>Rosa carolina</i>	Pasture rose	S				X					
<i>Rosa multiflora</i> *	Multiflora rose	S	X						X		
<i>Rosa setigera</i>	Prairie rose	WV		X							
<i>Rubus allegheniensis</i>	Common blackberry	S	X								
<i>Rubus flagellaris</i>	Common dewberry	S			X	X					
<i>Rubus occidentalis</i>	Blackcap raspberry	S	X					X			
<i>Rubus pensilvanicus</i>	Yankee blackberry	S	X				X				

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
<i>Ulmus americana</i>	American elm	T	X					X			
<i>Ulmus rubra</i>	Slippery elm	T	X					X			
<i>Urtica dioica</i>	Stinging nettle	H	X					X	X	X	X
<i>Uvularia grandiflora</i>	Bellwort	H	X		X						
<i>Vaccinium angustifolium</i>	Early low-bush blueberry	S					X				
<i>Verbascum thapsus*</i>	Woolly mullein	H			X	X			X	X	
<i>Verbena hastata</i>	Blue vervain	H							X		
<i>Verbena stricta</i>	Woolly verbena	H					X	X	X		
<i>Verbena urticifolia</i>	White vervain	H	X	X				X	X		
<i>Verbesina alternifolia</i>	Wingstem	H		X	X	X					X
<i>Vernonia missurica</i>	Missouri ironweed	H							X		
<i>Veronica catenata</i>	Water speedwell	H						X	X		
<i>Veronica officinalis*</i>	Common speedwell	H								X	
<i>Veronicastrum virginicum</i>	Culver's root	H				X	X				
<i>Viburnum opulus*</i>	European high-bush cranberry	S	X	X							X
<i>Viburnum prunifolium</i>	Black haw	ST	X								
<i>Viburnum rafinesquianum</i>	Downy arrowwood	S			X		X				
<i>Viola fimbriatula</i>	Sand violet	H			X	X					
<i>Viola missouriensis</i>	Missouri violet	H						X			
<i>Viola pedata</i>	Birdfoot violet	H			X	X					
<i>Viola pubescens</i>	Downy yellow violet	H									
<i>Viola sororia</i>	Woolly blue violet	H	X					X			
<i>Vitis riparia</i>	Riverbank grape	WV	X		X			X			
<i>Wolffia braziliensis</i>	Nippled water-meal			X							
<i>Wolffia columbiana</i>	American watermeal			X							
<i>Wolffia punctata</i>				X							
<i>Woodsia obtusa</i>	Common woodsia	P					X				

SCIENTIFIC NAME	COMMON NAME	GROWTH LIFE FORM	DRY-MESIC UPLAND FOREST	MESIC FLOOD FOREST	CREST of CLIFF	BLUFF PRAIRIE	CLIFF	SAVANNA	PASTURE	OLD FIELD	WET MEADOW
Zanthoxylum americanum	Prickly ash	S	X		X						

Appendix II Species reported but not found.

SCIENTIFIC NAMES	COMMON NAMES
<i>Polygonum pensylvanicum</i> var <i>laevigatum</i>	Pennsylvania smartweed
<i>Polygonum persicaria</i> *	Spotted lady's thumb
<i>Potamogeton crispus</i> *	Curly pondweed
<i>Prunella vulgaris</i> *	Self-heal
<i>Pycnanthemum tenuifolium</i>	Slender mountain mint
<i>Ranunculus fascicularis</i>	Early buttercup
<i>Ranunculus hispidus</i>	Bristly buttercup
<i>Rosa palustris</i>	Swampy rose
<i>Rumex altissimus</i>	Water dock
<i>Rumex orbiculatus</i>	Great water dock
<i>Rumex verticillatus</i>	Swamp dock
<i>Scirpus tabernaemontanii</i>	Great bulrush
<i>Silphium integrifolium</i>	Deam's rosinweed
<i>Sphenopholis obtusata</i>	Prairie wedge grass
<i>Spiranthes magnicamporum</i>	Prairie ladies' tresses
<i>Thalictrum thalictroides</i>	Rue anemone
<i>Thaspium barbinode</i>	Hairy meadow parsnip
<i>Trillium grandiflorum</i>	Large-flowered trillium
<i>Triosteum perfoliatum</i>	Late horse gentian
<i>Vernonia gigantea</i>	Hairy tall iron weed
<i>Viburnum lentago</i>	Nannyberry
<i>Viburnum recognitum</i>	Smooth arrowwood
<i>Zizia aurea</i>	Golden alexanders

SCIENTIFIC NAMES	COMMON NAMES
<i>Acalypha rhomboidea</i>	Three-seeded mercury
<i>Agrostis hyemalis</i>	Tickle grass
<i>Alnus glutinosa*</i>	European alder
<i>Anemone virginiana</i>	Tall anemone
<i>Apios americana</i>	Groundnut
<i>Arabis canadensis</i>	Sicklepod
<i>Asclepias incarnata</i>	Swamp milkweed
<i>Aster laevis</i>	Smooth blue aster
<i>Aster umbellatus</i>	Flat-top aster
<i>Calamagrostis canadensis</i>	Bluejoint grass
<i>Calystegia spithamea</i>	Dwarf bindweed
<i>Carex conoidea</i>	Prairie gray sedge
<i>Carex stricta</i>	Common tussock sedge
<i>Corallorhiza maculata</i> <<	Spotted coral root
<i>Crataegus crus-galli</i>	Cock-spur thorn
<i>Cyperus strigosus</i>	Long-scaled nut sedge
<i>Cypripedium pubescens</i>	Large yellow lady-slipper
<i>Epilobium coloratum</i>	Cinnamon willow herb
<i>Euonymus atropurpurea</i>	Wahoo
<i>Eupatorium maculatum</i>	Spotted joe pye weed
<i>Gleditsia triacanthos</i>	Honey locust
<i>Goodyera pubescens</i>	Rattlesnake plantain
<i>Helianthus tuberosus</i>	Jerusalem artichoke
<i>Heracleum lanatum</i>	Cow parsnip
<i>Hieracium gronovii</i>	Hairy hawkweed
<i>Justicia americana</i>	Water willow
<i>Linum sulcatum</i>	Grooved yellow flax
<i>Lycopus americanus</i>	Common water horehound
<i>Lysimachia ciliata</i>	Fringed loosestrife
<i>Onosmodium hispidissimum</i>	Marbleseed

Appendix III List of Mosses

Latin Name	DMUF	MFF	SAV	C	BP	WM	P
Amblystegium sepens	W						
Amblystegium tenax						W	
Amblystegium varium						T	
Anomodon attenuatus	T, R, S		T	R	S		W
Anomodon minor	W, T						
Anomodon rostratus	T			R			
Atrichum angustatum	S			R			
Atrichum undulatum var. altecristatum				R			
Aulacomnium heterostichum				R			
Barbula fallax							S
Barbula unguiculata			S				S
Brachythecium acuminatum	S						
Brachythecium oxycladon	S, R			R	S		S
Brachythecium salebrosum	R	W	S	R			W, S
Bryhnia graminicolor	S						
Bryum lisae var cuspidatum			S				
Callicladium haldanianum				R			
Campylium chrysophyllum					S		
Desmatodon obtusifolius			R				
Dicranella varia							S
Dicranella heteromalla				R			
Dicranum scoparium				R			
Ditrichum pallidum				R			
Entodon cladorrhizans						W	
Entodon seductrix			T, W				W
Eurhynchium hians	S, R		S	S			S
Fissidens taxifolius	S						

MUF = Dry-mesic Upland Forest. MFF = Mesic Flood Forest. FLR = Forested Logging Road. SAV = Pastured Savanna. C = Cliff. BP = Bluff Prairie. WM = Wet meadow. OF = Old Field.
Substratum. R=Rock. S=Soil. T=Tree. W= Rotten Wood.

Latin Name	DMUF	MFF	SAV	C	BP	WM	P
<i>Grimmia pilifera</i>			S				
<i>Leskea gracilescens</i>			T, W, R	R		T	W
<i>Mnium affine</i> var. <i>ciliare</i>	S	S		R			
<i>Mnium cuspidatum</i>	W, S, R	W	S	R		W, T	
<i>Orthotrichum</i> sp.			T				
<i>Orthotrichum pusillum</i>						T	W
<i>Orthotrichum strangulatum</i>					R		
<i>Platygyrium repens</i>			T				W
<i>Polytrichum commune</i> var. <i>perigoniale</i>				R			
<i>Polytrichum juniperinum</i>				R			
<i>Rhynchostegium serrulatum</i>	S						
<i>Tortula mucronifolia</i>							W
<i>Conocephalum conicum</i>	R	W		R			
<i>Frullania eboracensis</i>			T	R		T	
<i>Jungermannia leiantha</i>		W, S		R			
<i>Mannia fragrans</i>				R			

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Appendix IV List of Lichens

Latin Name	DMUF	MFF	SAV	C	BP	WM	OF
<i>Arthonia caesia</i>			T				
<i>Caloplaca cinnabarina</i>			R				
<i>Candelaria concolor</i> var <i>concolor</i>					T	T	
<i>Candelaria concolor</i> var <i>effusa</i>			T, W				
<i>Candelariella reflexa</i>			T				
<i>Cladonia rei</i>			R				
<i>Flavoparmelia caperata</i>			T				
<i>Hyperphyscia adglutinata</i>			T				
<i>Lecanora dispersa</i>			R				
<i>Lepraria finkii</i>	R			R			
<i>Lepraria incana</i>	T?		T?				
<i>Pheoophyscia cernohorskyi</i>			W			T	
<i>Phaeophyscia pusilloides</i>			T, R				
<i>Phaeophyscia rubropulchra</i>			T			T	
<i>Physcia adscendens</i>			R				
<i>Physcia millegrana</i>			T, W, R		T	T	
<i>Physcia stellaris</i>			T		T		
<i>Physconia deterosa</i>						T	
<i>Punctelia bolliana</i>			T				
<i>Punctelia rudecta</i>			T				
<i>Xanthoria candelaria</i>			T				
<i>Xanthoria fallax</i>			W				

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Substratum. R=Rock. S=Soil. T=Tree. W=Rotten Wood.