

ECOLOGICAL ASSESSMENT OF SHARONVILLE STATE GAME AREA, PIERCE ROAD UNIT, JACKSON COUNTY, MICHIGAN



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FOR:

MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE DIVISION

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Cover photograph: Prairie Fen, Sharonville SGA, Jackson Co., Mich., July 1, 2015. All photographs in report by B.S. Slaughter.

Executive Summary

In 2014, Michigan Natural Features Inventory contracted with Michigan Department of Natural Resources, Wildlife Division, to conduct ecological assessments at two state game areas, including the Pierce Road Unit of the Sharonville State Game Area in southeastern Jackson County, Michigan. MNFI conducted surveys in June and July 2015. Surveys resulted in the identification of a diversity of natural communities, including three new element occurrences, one each of southern hardwood swamp, rich tamarack swamp, and prairie fen. In addition, one state-listed vascular plant species, the state threatened *Myrica pensylvanica* (bayberry) was documented. No state-listed animal species were observed. The conservation value of the Pierce Road Unit can be maintained and improved by controlling invasive plants, especially *Frangula alnus* (glossy buckthorn), applying prescribed fire in oak-dominated systems and adjacent wetlands, addressing hydrological disturbances such as wetland berms, reducing deer densities, and potentially converting severely degraded, formerly cleared lands to grassland and oak savanna to improve wildlife habitat and hunter access.

Introduction

In summer 2014, Michigan Natural Features Inventory (MNFI) contracted with Michigan Department of Natural Resources (MDNR), Wildlife Division (WLD) to conduct ecological assessments and targeted species surveys of selected recent or proposed land acquisitions. These surveys were envisioned to address strategies identified in the MDNR Managed Public Land Strategy, namely prioritizing and informing land acquisitions that may support (1) key state and federal threatened and endangered species (Division Land Acquisition Strategy 2.5), and (2) representative natural communities (Division Land Acquisition Strategy 2.6). The surveys were proposed to address Objective 3.3 identified in the MDNR WLD Guiding Principles and Strategies (GPS) strategic plan, namely, updating strategic guidance for WLD's land acquisition.

In spring 2015, two areas were identified for ecological assessments and targeted species surveys: three parcels constituting the Pierce Road Unit of the Sharonville State Game Area in southeastern Jackson County (addressed in this report), and Cornish State Game Area (and the adjacent federal Kinney Waterfowl Production Area) in southeastern Van Buren County (addressed in a separate report).

Survey Site

The Pierce Road Unit of the Sharonville State Game Area (SGA) is located in southeastern Jackson County, encompassing portions of Sections 35 and 36, T03S R02E, and Sections 1 and 2 of T04S R02E and totaling 623 acres, or 252 hectares (Figure 1). Historically, the topographically diverse ice-contact outwash in this area supported a variety of natural communities, including beech – sugar maple forest, oak – hickory forest, and mixed oak forest on the uplands and mixed hardwood swamp and mixed conifer swamp in the lowlands (Albert and Comer 2008). The broader landscape supported extensive areas of black oak barrens on less topographically chaotic landforms (Albert and Comer 2008).

Methods

Meander surveys of potential natural communities were conducted June 3, June 30, July 1, July 2, August 27, and September 23, 2015. Lists of all vascular plants identified or keyed during surveys were taken, and threats to the ecological integrity of these areas (e.g., invasive plant species) were noted. Species lists were entered into the Universal FQA Calculator (Freyman and Masters 2013) following the Michigan Floristic Quality Assessment Database (Reznicek et al. 2014). Natural communities were identified following Kost et al. (2007). Meander surveys also identified potential habitat for state-listed animals, and targeted surveys for potential state-listed reptiles and amphibians were conducted on August 27 and September 23, 2015.

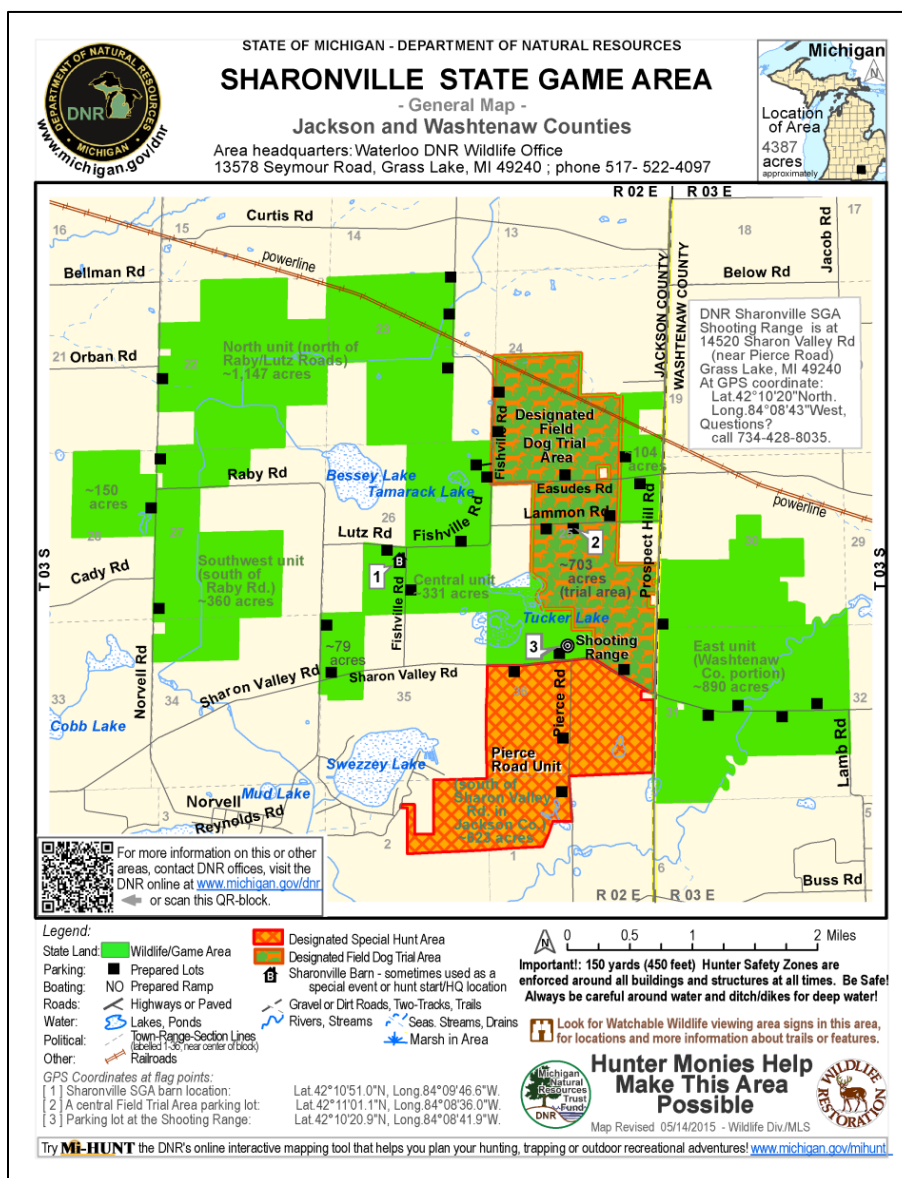


Figure 1. Map of Sharonville State Game Area, Jackson Co., Mich. The area designated “designated special hunt area” (orange with red cross-hatching) was the focus of the surveys.

Results

Ecological Assessments

The Pierce Road Unit of the Sharonville SGA is topographically and ecologically diverse, supporting numerous natural communities and high botanical diversity. Despite historic disturbances such as wetland modification and logging (and local clearing and farming) of upland forests, well over 400 species of vascular plants were documented during the summer surveys, including at least 380 native taxa, or 21% of all known species native to Michigan (Reznicek et al. 2011) (Appendix 1). The recently acquired 30 acre (12 hectare) Armstrong parcel alone supports over 200 native taxa (Appendix 2). Three new natural community element occurrences (EOs) and one new EO of a state threatened plant were documented during the surveys (Figure 2). Other natural communities present include southern wet meadow and southern shrub-carr in the lowlands, emergent marsh and submergent marsh in ponds and bermed wetlands, and dry-mesic southern forest and mesic southern forest on upland knobs and ridges. Although the uplands have been degraded by logging, grazing, local clearing, and colonization and infestation of invasive plants, two small areas of mature, fairly high quality upland forest were identified, one area each of mesic southern forest and dry-mesic southern forest (Figure 2).

The following are descriptions of EOs documented during the 2015 field surveys. Additional information on each EO is available in the MNFI database (MNFI 2015). Brief descriptions of upland habitats, including mesic southern forest and dry-mesic southern forest, are also provided below.

Southern Hardwood Swamp (EOID 20397). EO Rank BC.

Southern hardwood swamp covers much of the lowlands west of Pierce Road (Figure 2). 108 vascular plant taxa were identified in the southern hardwood swamp community, including 103 native species (Appendix 3). Common canopy species include *Acer rubrum* (red maple), *A. saccharinum* (silver maple), *Betula alleghaniensis* (yellow birch), and *Tilia americana* (basswood). *Fraxinus pennsylvanica* (green ash) and *F. nigra* (black ash) were formerly common but canopy individuals were killed by the emerald ash borer over the past decade. *Larix laricina* persists locally, but most of the areas that were dominated historically by tamarack have converted to hardwood dominance. The understory is dense in places with small trees and tall shrubs, particularly *Carpinus caroliniana* (blue-beech), green ash, black ash, *Lindera benzoin* (spicebush), and, occasionally, *Toxicodendron vernix* (poison sumac), *Zanthoxylum americanum* (prickly-ash), and *Vaccinium corymbosum* (highbush blueberry). The species-rich, lush ground layer is characterized by sedges in open areas, especially *Carex lacustris*, and a variety of forbs, graminoids, vines, dwarf shrubs, and ferns in more shaded areas, including *Symplocarpus foetidus* (skunk-cabbage), *Parthenocissus quinquefolia* (Virginia creeper), *Glyceria striata* (fowl manna grass), *Impatiens capensis* (spotted touch-me-not), *Rubus pubescens* (dwarf raspberry), *Cicuta maculata* (water hemlock), *Boehmeria cylindrica* (false nettle), *Laportea canadensis* (wood nettle), *Packera aurea* (golden ragwort), *Coptis trifolia* (goldthread), *Maianthemum canadense* (Canada mayflower), *Carex bromoides*, *C. leptalea*, *Cinna arundinacea* (wood reedgrass), and *Athyrium filix-femina* (lady fern). *Frangula alnus* (glossy buckthorn) is widespread but not particularly common in the southern hardwood swamp.

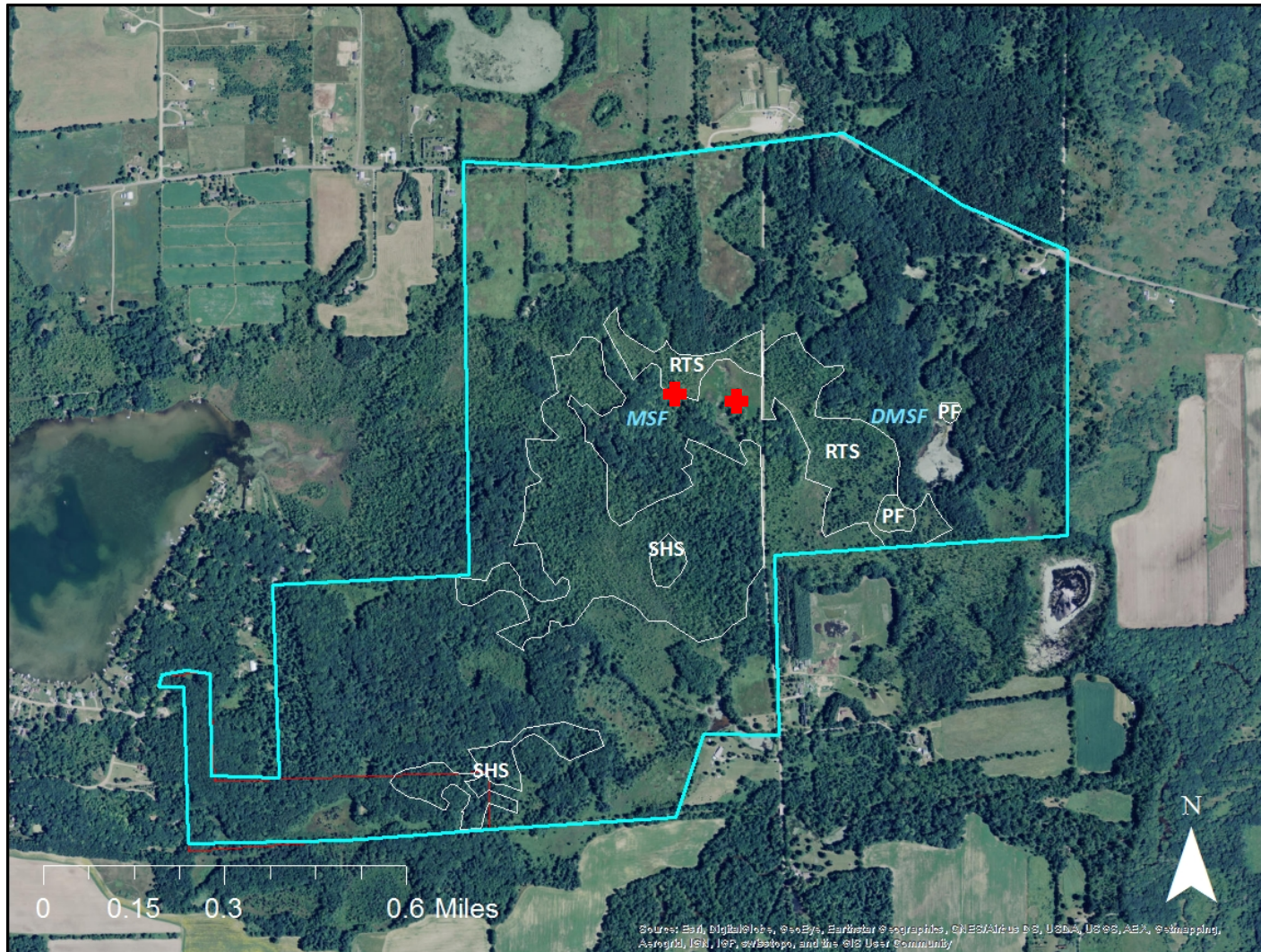


Figure 2. Map of element occurrences and other notable features at Sharonville State Game Area, Pierce Road Unit. SHS: Southern hardwood swamp; RTS: Rich tamarack swamp; PF: Prairie fen (all EOs). Red crosses = *Myrica pensylvanica*. Small areas of fairly high quality mesic southern forest (MSF) and dry-mesic southern forest (DMSF) also occur but were not processed as EOs.

Rich Tamarack Swamp (EOID 20396). EO Rank: BC.

A diverse rich tamarack swamp occurs east and west of Pierce Road, primarily in the southern part of Section 36, T03S R02E (Figure 3). 107 vascular plant taxa were identified in the southern hardwood swamp community, including 103 native species (Appendix 4). The rich tamarack swamp is dominated by *Larix laricina* (tamarack) in open groves to closed stands, where it is associated primarily with *Ulmus americana* (American elm) and *Betula alleghaniensis* (yellow birch). The low understory and tall shrub layer is characterized by *Toxicodendron vernix* (poison sumac), *Lindera benzoin* (spicebush), *Cornus foemina* (gray dogwood), *Cornus sericea* (red-osier), and *Rosa palustris* (swamp rose), with *Dasiphora fruticosa* (shrubby cinquefoil) and *Ribes hirtellum* (swamp gooseberry) in more open areas. *Frangula alnus* (glossy buckthorn) is widespread and locally abundant. The ground layer is luxuriant and diverse. Openings are dominated by the sedges *Carex lacustris* and *C. stricta*, whereas closed-canopy areas are carpeted by *Symplocarpus foetidus* (skunk-cabbage), associated with *Solidago rugosa* (rough-leaved goldenrod), *Rubus pubescens* (dwarf raspberry), *Eleocharis fluviatile* (marsh horsetail), *Packera aurea* (golden ragwort), *Leersia oryzoides* (cut grass), *Impatiens capensis* (spotted touch-me-not), *Onoclea sensibilis* (sensitive fern), and *Carex leptalea*. Especially springy, unstable mucks support *Thelypteris palustris* (marsh fern), *Carex comosa*, *Sagittaria latifolia* (common arrowhead), *Boehmeria cylindrica* (false nettle), and *Rumex orbiculatus* (great water dock).



Figure 3. Rich tamarack swamp with a dense, species-rich understory occurs E and W of Pierce Road.

Prairie Fen (EOID 20395). EO Rank: C.

A small ca. 2.1 acre (0.8 hectare) prairie fen was identified east of Pierce Road within a large wetland complex also supporting rich tamarack swamp and southern wet meadow (Figure 4). An additional very small patch of prairie fen was documented north of the pond in late summer. 76 vascular plant taxa were identified in the prairie fen community, including 73 native species (Appendix 5). The fen is dominated by sedges, especially *Carex stricta*, *C. prairea*, *C. interior*, and *Eleocharis elliptica* (golden-seeded spike rush), with *Dasiphora fruticosa* (shrubby cinquefoil) as a subdominant low shrub. Scattered individuals and groves of *Larix laricina* (tamarack) occur throughout the area, and tall shrubs, especially *Toxicodendron vernix* (poison sumac) and dogwoods (*Cornus* spp.) are common. Additional characteristic species include *Pycnanthemum virginianum* (common mountain mint), *Solidago ohioensis* (Ohio goldenrod), *Valeriana uliginosa* (bog valerian), *Thalictrum dasycarpum* (purple meadow-rue), and *Ribes hirtellum* (swamp gooseberry). Three invasive species were identified in this small fen, with *Frangula alnus* (glossy buckthorn) and *Elaeagnus umbellata* (autumn-olive) being of primary concern.



Figure 4. A small prairie fen occurs near the base of a forested ridge E of Pierce Road.

Uplands

Dry-mesic southern forest dominated by *Quercus alba* (white oak), *Q. rubra* (red oak), *Q. velutina* (black oak), *Sassafras albidum* (sassafras), and *Acer rubrum* (red maple) characterizes many of the upland ridges and knobs, with mesic associations of *Fagus grandifolia* (beech), *Acer saccharum* (sugar maple), and *Prunus serotina* (black cherry) also present. The majority of the upland forests are degraded by past land use, including logging and grazing; other areas were previously cleared for agriculture and are now succeeding to young forest (often of black cherry and red maple) and thickets with extensive infestations of invasive plants, including *Elaeagnus umbellata* (autumn-olive), *Lonicera* spp. (honeysuckles), *Rosa multiflora* (multiflora rose), and *Alliaria petiolata* (garlic mustard).

Two small areas of fairly high quality, fairly mature upland forest are indicated on Figure 2. Mature dry-mesic southern forest with mature oaks in the 45-80 cm DBH size class occurs east of Pierce Road, and supports characteristic native species such as *Amelanchier arborea* (juneberry), *Vaccinium pallidum* (hillside blueberry), *Gaylussacia baccata* (huckleberry), *Eurybia macrophylla* (large-leaved aster), and *Carex pensylvanica*. West of Pierce Road, an upland knob supports fairly mature mesic southern forest, with canopy sugar maple, beech, and red oak in the 45-80 cm DBH size class. Other characteristic species include *Viburnum acerifolium* (maple-leaved viburnum), *Eunonymus obovatus* (running strawberry-bush), *Galium lanceolatum* (yellow wild licorice), and *Hepatica americana* (round-lobed hepatica). This area likely supports a diversity of spring ephemerals. More degraded but fairly mature mesic southern forest also occurs along Pierce Road, where it is fragmented by access roads and parking areas.

Rare Species

One rare species was identified from the Pierce Road Unit, the state threatened *Myrica pensylvanica* (bayberry) (Figure 5). Two small clumps of bayberry were identified in scattered locations within the rich tamarack swamp community both east and west of Pierce Road.



Figure 5. The state threatened *Myrica pensylvanica* (bayberry) occurs very locally within the rich tamarack swamp.

Discussion

Ecological Assessments and Recommendations

Although the majority of the upland soils are forested, past land use, including logging, grazing, and clearing, and current threats, including invasive plant species and fragmentation associated with recreational access, have degraded most of these habitats. Wetland habitats are in generally better condition, with high quality examples of three natural community types (southern hardwood swamp, rich tamarack swamp, and prairie fen), associated with fairly intact southern wet meadow and patches of southern shrub-carr. All of these habitats could benefit from a targeted invasive species control program, focusing particularly species that have high potential to significantly degrade habitats, such as the widespread and locally prevalent glossy buckthorn and autumn-olive. Roadsides and drainages, in particular, should be monitored for introductions of *Typha angustifolia* (narrow-leaved cat-tail) and *Phragmites australis* subsp. *australis* (common reed). A large stand of likely native common reed (*Phragmites australis* subsp. *americanus*) was identified east of Pierce Road; this stand should be monitored to determine if invasive spread is occurring. The following are some recommendations for maintaining and improving the conservation value of the Pierce Road Unit:

- Treat and monitor populations of invasive species, focusing on species that have potential to significantly degrade habitat, such as glossy buckthorn, narrow-leaved cat-tail, and common reed, and areas that were identified as natural community EOs
- Consider application of prescribed fire to maintain and possibly expand prairie fen community
- Consider application of prescribed fire, mechanical thinning, and application of herbicide to restore woodland/savanna conditions on oak-dominated uplands, particularly east of Pierce Road
- Consider conversion of severely infested, early successional forest and conifer plantations in the northeastern part of the unit to grassland or oak savanna to improve wildlife habitat and hunter access
- Reduce deer densities to encourage recovery of severely browsed forest understories and populations of browse-sensitive wetland plants such as *Cypripedium reginae* (showy lady-slipper)
- Evaluate function and utility of berms and bermed wetlands west of Pierce Road
- If trails are constructed to improve hunter access, utilize accessible boardwalks in sensitive wetland areas

Rare Species

Myrica pensylvanica (bayberry) is known from very few populations that are considered native in Michigan, although the species is a fairly popular ornamental and is used occasionally in wildlife plantings, from which it sometimes spreads vegetatively (Reznicek et al. 2011). The source population of the sterile plants at Sharonville SGA may be a larger, fertile, presumably native colony in a fen on private land ca. 2 km southeast of the Pierce Road Unit. Although bayberry was the only confirmed rare vascular plant documented, a sterile specimen of *Betula* sp. (birch) was collected that may represent the state

special concern *Betula populifolia* (gray birch). A late spring site visit is necessary to collect additional material to identify this tree.

No listed animal species were documented at the Pierce Road Unit. However, potentially suitable habitat for many additional species was identified during surveys, so land managers should continue to search the area for species such as the state special concern and proposed federal threatened *Sistrurus catenatus catenatus* (eastern massasauga rattlesnake), the state special concern *Emydoidea blandingii* (Blanding's turtle), and the state special concern *Oecanthus laricis* (tamarack tree cricket).

Acknowledgments

Several individuals provided valuable assistance on this project. Jennifer Olson and Valerie Frawley (WLD) developed the project and identified target survey sites; Kristin Bissell (WLD) provided background information; Marshall Strong (WLD) produced a site map; Mike Penskar (University of Michigan Herbarium and MNFI Lead Botanist Emeritus) assisted with field surveys; and Brian Klatt, Nancy Toben, and Sue Ridge (MNFI) provided administrative support.

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Appendix 1. Sharonville State Game Area Pierce Road Unit Floristic Quality Assessment.

06/30/2015

Sharonville SGA

Jackson

MI

USA

FQA DB Region:

Michigan

FQA DB Publication Year:

2014

FQA DB Description:

Reznicek, A.A., M.R. Penskar, B.S. Walters, and B.S. Slaughter. 2014. Michigan Floristic Quality Assessment Database. Herbarium, University of Michigan, Ann Arbor, MI and Michigan Natural Features Inventory, Michigan State University, Lansing, MI. <http://michiganflora.net>

Practitioner:

Brad Slaughter

Latitude:

42.164345

Longitude:

-84.14971

Weather Notes:

Duration Notes:

Community Type Notes:

Dry-mesic southern forest (incl. EO), Emergent marsh, Inundated shrub swamp, Mesic southern forest, Prairie fen (EO), Rich tamarack swamp (EO), Southern hardwood swamp (EO), Southern shrub-carr, Southern wet meadow, Submergent marsh.

Also surveyed: 6/3/15, 7/1/15, 7/2/15 (BSS); 8/27/15 (John Paskus) and 9/23/15 (JP and Mike Penskar). Also noted: Agrimonia sp., Betula sp., Crataegus sp., Potamogeton spp., Prenanthes sp., Salix sp., Sanicula sp., Schedonorus sp. Many of the conifers were planted. Myrica pensylvanica presumed native but automatically loads as non-native in Universal FQA.

Other Notes:

Private/Public:

Private

Conservatism-Based Metrics:

Total Mean C:

4

Native Mean C:

4.7

Total FQI:

84.4

Native FQI:

91.6

Adjusted FQI:

43.4

% C value 0:	17.3	
% C value 1-3:	21.3	
% C value 4-6:	43.8	
% C value 7-10:	17.5	
Native Tree Mean C:	4.6	
Native Shrub Mean C:	4.8	
Native Herbaceous Mean C:	4.8	
Species Richness:		
Total Species:	445	
Native Species:	380	85.40%
Non-native Species:	65	14.60%
Species Wetness:		
Mean Wetness:	0.4	
Native Mean Wetness:	0	
Physiognomy Metrics:		
Tree:	44	9.90%
Shrub:	58	13%
Vine:	20	4.50%
Forb:	231	51.90%
Grass:	34	7.60%
Sedge:	41	9.20%
Rush:	0	0%
Fern:	17	3.80%
Bryophyte:	0	0%
Duration Metrics:		
Annual:	20	4.50%
Perennial:	405	91%
Biennial:	20	4.50%
Native Annual:	13	2.90%
Native Perennial:	359	80.70%

Native Biennial:

8 1.80%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer negundo	Sapindaceae	ACENEG	native	0	0	tree	perennial	box-elder
Acer rubrum	Sapindaceae	ACERUB	native	1	0	tree	perennial	red maple
Acer saccharinum	Sapindaceae	ACESAI	native	2	-3	tree	perennial	silver maple
Acer saccharum	Sapindaceae	ACESAU	native	5	3	tree	perennial	sugar maple
Achillea millefolium	Asteraceae	ACHMIL	native	1	3	forb	perennial	yarrow
Actaea pachypoda	Ranunculaceae	ACTPAC	native	7	5	forb	perennial	dolls-eyes
Adiantum pedatum	Pteridaceae	ADIPED	native	6	3	fern	perennial	maidenhair fern
Agrostis gigantea	Poaceae	AGRGIG	non-native	0	-3	grass	perennial	redtop
Alliaria petiolata	Brassicaceae	ALLPET	non-native	0	3	forb	biennial	garlic mustard
Ambrosia artemisiifolia	Asteraceae	AMBART	native	0	3	forb	annual	common ragweed
Amelanchier arborea	Rosaceae	AMEARB	native	4	3	tree	perennial	juneberry
Amphicarpaea bracteata	Fabaceae	AMPBRA	native	5	0	vine	annual	hog-peanut
Andromeda glaucophylla	Ericaceae	ANDGLA	native	10	-5	shrub	perennial	bog-rosemary
Andropogon gerardii	Poaceae	ANDGER	native	5	0	grass	perennial	big bluestem
Anemone cylindrica	Ranunculaceae	ANECYL	native	6	5	forb	perennial	thimbleweed
Anemone quinquefolia	Ranunculaceae	ANEQUI	native	5	3	forb	perennial	wood anemone
Anemone virginiana	Ranunculaceae	ANEVIR	native	3	3	forb	perennial	thimbleweed
Angelica atropurpurea	Apiaceae	ANGATR	native	6	-5	forb	perennial	purplestem angelica
Antennaria parlinii	Asteraceae	ANTPAL	native	2	5	forb	perennial	smooth pussytoes
Apios americana	Fabaceae	APIAME	native	3	-3	vine	perennial	groundnut
Apocynum androsaemifolium	Apocynaceae	APOAND	native	3	5	forb	perennial	spreading dogbane
Apocynum cannabinum; a. sibiricum	Apocynaceae	APOCAN	native	3	0	forb	perennial	indian-hemp
Aquilegia canadensis	Ranunculaceae	AQUCAN	native	5	3	forb	perennial	wild columbine
Aralia nudicaulis	Araliaceae	ARANUD	native	5	3	forb	perennial	wild sarsaparilla
Arctium minus	Asteraceae	ARCMIN	non-native	0	3	forb	biennial	common burdock
Arisaema triphyllum	Araceae	ARITRI	native	5	0	forb	perennial	jack-in-the-pulpit
Arnoglossum atriplicifolium; cacalia a.	Asteraceae	ARNATR	native	8	5	forb	perennial	pale indian plantain
Aronia prunifolia	Rosaceae	AROPRU	native	5	-3	shrub	perennial	chokeberry
Asclepias exaltata	Apocynaceae	ASCEXA	native	6	5	forb	perennial	poke milkweed
Asclepias incarnata	Apocynaceae	ASCINC	native	6	-5	forb	perennial	swamp milkweed

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Asclepias syriaca	Apocynaceae	ASCSYR	native	1	5	forb	perennial	common milkweed
Asclepias tuberosa	Apocynaceae	ASCTUB	native	5	5	forb	perennial	butterfly-weed
Asparagus officinalis	Asparagaceae	ASPOFF	non-native	0	3	forb	perennial	garden asparagus
Asplenium platyneuron	Aspleniaceae	ASPPLA	native	2	3	fern	perennial	ebony spleenwort
Athyrium filix-femina	Athyriaceae	ATHFIL	native	4	0	fern	perennial	lady fern
Aureolaria pedicularia	Orobanchaceae	AURPED	native	7	5	forb	annual	annual false foxglove
Baptisia tinctoria	Fabaceae	BAPTIN	native	10	5	forb	perennial	wild indigo
Berberis thunbergii	Berberidaceae	BERTHU	non-native	0	3	shrub	perennial	japanese barberry
Berteroa incana	Brassicaceae	BERINC	non-native	0	5	forb	annual	hoary alyssum
Betula alleghaniensis	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
Betula pumila	Betulaceae	BETPUM	native	8	-5	shrub	perennial	bog birch
Bidens cernua	Asteraceae	BIDCER	native	3	-5	forb	annual	nodding beggar-ticks
Boehmeria cylindrica	Urticaceae	BOECYL	native	5	-5	forb	perennial	false nettle
Botrypus virginianus	Ophioglossaceae	BOTVIR	native	5	3	fern	perennial	rattlesnake fern
Brachyelytrum erectum	Poaceae	BRAERE	native	7	5	grass	perennial	long-awned wood grass
Bromus ciliatus	Poaceae	BROCIL	native	6	-3	grass	perennial	fringed brome
Bromus inermis	Poaceae	BROINE	non-native	0	5	grass	perennial	smooth brome
Bromus pubescens	Poaceae	BROPUB	native	5	3	grass	perennial	canada brome
Calamagrostis canadensis	Poaceae	CALCAN	native	3	-5	grass	perennial	blue-joint
Caltha palustris	Ranunculaceae	CALPAR	native	6	-5	forb	perennial	marsh-marigold
Campanula aparinoides	Campanulaceae	CAMAPA	native	7	-5	forb	perennial	marsh bellflower
Campanula rotundifolia	Campanulaceae	CAMROT	native	6	3	forb	perennial	harebell
Campanulastrum americanum; campanula a.	Campanulaceae	CAMAME	native	8	0	forb	biennial	tall bellflower
Cardamine pratensis	Brassicaceae	CARPRA	native	10	-5	forb	perennial	cuckoo-flower
Carduus nutans	Asteraceae	CARNUT	non-native	0	3	forb	biennial	musk thistle
Carex albursina	Cyperaceae	CXALBU	native	5	5	sedge	perennial	sedge
Carex aquatilis	Cyperaceae	CXAQUA	native	7	-5	sedge	perennial	sedge
Carex arctata	Cyperaceae	CXARTT	native	3	5	sedge	perennial	sedge
Carex atherodes	Cyperaceae	CXATHE	native	5	-5	sedge	perennial	sedge
Carex aurea	Cyperaceae	CXAURE	native	3	-3	sedge	perennial	sedge
Carex blanda	Cyperaceae	CXBLAN	native	1	0	sedge	perennial	sedge
Carex bromoides	Cyperaceae	CXBROM	native	6	-3	sedge	perennial	sedge
Carex brunnescens	Cyperaceae	CXBRUN	native	5	-3	sedge	perennial	sedge

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Carex cephalophora	Cyperaceae	CXCEPP	native	3	3	sedge	perennial	sedge
Carex comosa	Cyperaceae	CXCOMO	native	5	-5	sedge	perennial	sedge
Carex crinita	Cyperaceae	CXCRIN	native	4	-5	sedge	perennial	sedge
Carex digitalis	Cyperaceae	CXDIGI	native	5	5	sedge	perennial	sedge
Carex gracillima	Cyperaceae	CXGRAA	native	4	3	sedge	perennial	sedge
Carex granularis	Cyperaceae	CXGRAN	native	2	-3	sedge	perennial	sedge
Carex grisea; c. amphibola	Cyperaceae	CXGRIS	native	3	0	sedge	perennial	sedge
Carex hystericina	Cyperaceae	CXHYST	native	2	-5	sedge	perennial	sedge
Carex interior	Cyperaceae	CXINTE	native	3	-5	sedge	perennial	sedge
Carex intumescens	Cyperaceae	CXINTU	native	3	-3	sedge	perennial	sedge
Carex lacustris	Cyperaceae	CXLACU	native	6	-5	sedge	perennial	sedge
Carex lasiocarpa	Cyperaceae	CXLASI	native	8	-5	sedge	perennial	sedge
Carex laxiculmis	Cyperaceae	CXLAXC	native	8	3	sedge	perennial	sedge
Carex laxiflora	Cyperaceae	CXLAXF	native	8	0	sedge	perennial	sedge
Carex leptalea	Cyperaceae	CXLEPA	native	5	-5	sedge	perennial	sedge
Carex meadii; c. tetanica	Cyperaceae	CXMEAD	native	8	0	sedge	perennial	sedge
Carex pedunculata	Cyperaceae	CXPEDU	native	5	3	sedge	perennial	sedge
Carex pensylvanica	Cyperaceae	CXPENS	native	4	5	sedge	perennial	sedge
Carex prairea	Cyperaceae	CXPRAI	native	10	-3	sedge	perennial	sedge
Carex pseudo-cyperus	Cyperaceae	CXPSEU	native	5	-5	sedge	perennial	sedge
Carex radiata; c. rosea	Cyperaceae	CXRADI	native	2	0	sedge	perennial	straight-styled wood sedge
Carex rosea; c. convoluta	Cyperaceae	CXROSE	native	2	5	sedge	perennial	curly-styled wood sedge
Carex stipata	Cyperaceae	CXSTIP	native	1	-5	sedge	perennial	sedge
Carex stricta	Cyperaceae	CXSTRI	native	4	-5	sedge	perennial	sedge
Carex vulpinoidea	Cyperaceae	CXVULP	native	1	-5	sedge	perennial	sedge
Carex woodii	Cyperaceae	CXWOOD	native	8	3	sedge	perennial	sedge
Carpinus caroliniana	Betulaceae	CARCAO	native	6	0	tree	perennial	blue-beech
Carya cordiformis	Juglandaceae	CARCOR	native	5	0	tree	perennial	bitternut hickory
Carya glabra	Juglandaceae	CARGLA	native	5	3	tree	perennial	pignut hickory
Carya ovata	Juglandaceae	CAROVA	native	5	3	tree	perennial	shagbark hickory
Ceanothus americanus	Rhamnaceae	CEAAME	native	8	5	shrub	perennial	new jersey tea
Celastrus orbiculatus	Celastraceae	CELORB	non-native	0	5	vine	perennial	oriental bittersweet
Centaurea stoebe; c. maculosa	Asteraceae	CENSTO	non-native	0	5	forb	biennial	spotted knapweed

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Cephalanthus occidentalis	Rubiaceae	CEPOCC	native	7	-5	shrub	perennial	buttonbush
Cerastium fontanum	Caryophyllaceae	CERFON	non-native	0	3	forb	perennial	mouse-ear chickweed
Chelone glabra	Plantaginaceae	CHEGLB	native	7	-5	forb	perennial	turtlehead
Cicuta bulbifera	Apiaceae	CICBUL	native	5	-5	forb	perennial	water hemlock
Cicuta maculata	Apiaceae	CICMAC	native	4	-5	forb	biennial	water hemlock
Cinna arundinacea	Poaceae	CINARU	native	7	-3	grass	perennial	wood reedgrass
Circaea canadensis; c. lutetiana	Onagraceae	CIRCAN	native	2	3	forb	perennial	enchanters-nightshade
Cirsium arvense	Asteraceae	CIRARV	non-native	0	3	forb	perennial	canada thistle
Cirsium discolor	Asteraceae	CIRDIS	native	4	5	forb	biennial	pasture thistle
Cirsium muticum	Asteraceae	CIRMUT	native	6	-5	forb	biennial	swamp thistle
Cirsium vulgare	Asteraceae	CIRVUL	non-native	0	3	forb	biennial	bull thistle
Cladium mariscoides	Cyperaceae	CLAMAR	native	10	-5	sedge	perennial	twig-rush
Clematis virginiana	Ranunculaceae	CLEVIR	native	4	0	vine	perennial	virgins bower
Collinsonia canadensis	Lamiaceae	COLCAN	native	8	0	forb	perennial	richweed
Comandra umbellata	Santalaceae	COMUMB	native	5	3	forb	perennial	bastard-toadflax
Conopholis americana	Orobanchaceae	CONAME	native	10	5	forb	perennial	squaw-root
Conyza canadensis	Asteraceae	CONCAN	native	0	3	forb	annual	horseweed
Coptis trifolia	Ranunculaceae	COPTRI	native	5	-3	forb	perennial	goldthread
Cornus alternifolia	Cornaceae	CORALT	native	5	3	tree	perennial	alternate-leaved dogwood
Cornus amomum	Cornaceae	CORAMO	native	2	-3	shrub	perennial	silky dogwood
Cornus florida	Cornaceae	CORFLO	native	8	3	tree	perennial	flowering dogwood
Cornus foemina	Cornaceae	CORFOE	native	1	0	shrub	perennial	gray dogwood
Cornus rugosa	Cornaceae	CORRUG	native	6	5	shrub	perennial	round-leaved dogwood
Cornus sericea; c. stolonifera	Cornaceae	CORSER	native	2	-3	shrub	perennial	red-osier
Corylus americana	Betulaceae	CORAMA	native	5	3	shrub	perennial	hazelnut
Cryptotaenia canadensis	Apiaceae	CRYCAN	native	2	0	forb	perennial	honewort
Cypripedium parviflorum; c. calceolus	Orchidaceae	CYPPAR	native	5	0	forb	perennial	yellow lady-slipper
Cypripedium reginae	Orchidaceae	CYPREG	native	9	-3	forb	perennial	showy or queens lady-slipper
Dactylis glomerata	Poaceae	DACGLO	non-native	0	3	grass	perennial	orchard grass
Danthonia spicata	Poaceae	DANSPI	native	4	5	grass	perennial	poverty grass; oatgrass
Dasiphora fruticosa; potentilla f.	Rosaceae	DASFRU	native	8	-3	shrub	perennial	shrubby cinquefoil
Daucus carota	Apiaceae	DAUCAR	non-native	0	5	forb	biennial	queen-annes-lace
Decodon verticillatus	Lythraceae	DECVER	native	7	-5	shrub	perennial	whorled or swamp loosestrife

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Desmodium canadense	Fabaceae	DESCAD	native	3	0	forb	perennial	showy tick-trefoil
Desmodium paniculatum	Fabaceae	DESPAN	native	4	3	forb	perennial	panicked tick-trefoil
Dianthus armeria	Caryophyllaceae	DIAARM	non-native	0	5	forb	annual	deptford pink
Dichanthelium clandestinum; panicum c.	Poaceae	DICCLA	native	3	-3	grass	perennial	panic grass
Dichanthelium dichotomum; panicum d.	Poaceae	DICDIC	native	7	0	grass	perennial	panic grass
Dichanthelium implicatum; panicum i.	Poaceae	DICIMP	native	3	0	grass	perennial	panic grass
Dichanthelium latifolium; panicum l.	Poaceae	DICLAT	native	5	3	grass	perennial	broad-leaved panic grass
Diervilla lonicera	Diervillaceae	DIELON	native	4	5	shrub	perennial	bush-honeysuckle
Dioscorea villosa; dioscorea villosa	Dioscoreaceae	DIOVIL	native	4	0	forb	perennial	wild yam
Dirca palustris	Thymelaeaceae	DIRPAL	native	8	0	shrub	perennial	leatherwood
Doellingeria umbellata; aster u.	Asteraceae	DOEUMB	native	5	-3	forb	perennial	flat-topped white aster
Dryopteris carthusiana	Dryopteridaceae	DRYCAR	native	5	-3	fern	perennial	spinulose woodfern
Dulichium arundinaceum	Cyperaceae	DULARU	native	8	-5	sedge	perennial	three-way sedge
Echinocystis lobata	Cucurbitaceae	ECHLOB	native	2	-3	vine	annual	wild-cucumber
Elaeagnus umbellata	Elaeagnaceae	ELAUMB	non-native	0	3	shrub	perennial	autumn-olive
Eleocharis elliptica	Cyperaceae	ELEELL	native	6	-5	sedge	perennial	golden-seeded spike rush
Elymus hystrix; hystrix patula	Poaceae	ELYHYS	native	5	3	grass	perennial	bottlebrush grass
Elymus repens; agropyron r.	Poaceae	ELYREP	non-native	0	3	grass	perennial	quack grass
Elymus trachycaulus; agropyron t.	Poaceae	ELYTRA	native	8	3	grass	perennial	slender wheatgrass
Elymus villosus	Poaceae	ELYVIL	native	5	3	grass	perennial	silky wild-rye
Epifagus virginiana	Orobanchaceae	EPIVIR	native	10	5	forb	annual	beech-drops
Epilobium coloratum	Onagraceae	EPICOL	native	3	-5	forb	perennial	cinnamon willow-herb
Epipactis helleborine	Orchidaceae	EPIHEL	non-native	0	0	forb	perennial	helleborine
Equisetum arvense	Equisetaceae	EQUARV	native	0	0	fern	perennial	common horsetail
Equisetum fluviatile	Equisetaceae	EQUFLU	native	7	-5	fern	perennial	water horsetail
Equisetum hyemale	Equisetaceae	EQUHYE	native	2	0	fern	perennial	scouring rush
Erigeron philadelphicus	Asteraceae	ERIPHI	native	2	0	forb	perennial	philadelphia fleabane
Erigeron pulchellus	Asteraceae	ERIPUL	native	5	3	forb	perennial	robins-plantain
Erigeron strigosus	Asteraceae	ERISTR	native	4	3	forb	perennial	daisy fleabane
Euonymus obovatus	Celastraceae	EUOOBO	native	5	3	shrub	perennial	running strawberry-bush
Eupatorium perfoliatum	Asteraceae	EUPPER	native	4	-3	forb	perennial	boneset
Euphorbia corollata	Euphorbiaceae	EUPCOR	native	4	5	forb	perennial	flowering spurge
Eurybia macrophylla; aster m.	Asteraceae	EURMAC	native	4	5	forb	perennial	big-leaved aster

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Euthamia graminifolia	Asteraceae	EUTGRA	native	3	0	forb	perennial	grass-leaved goldenrod
Eutrochium maculatum; eupatorium m.	Asteraceae	EUTMAC	native	4	-5	forb	perennial	joe-pye-weed
Fagus grandifolia	Fagaceae	FAGGRA	native	6	3	tree	perennial	american beech
Festuca subverticillata; f. obtusa	Poaceae	FESSUB	native	5	3	grass	perennial	nodding fescue
Fragaria virginiana	Rosaceae	FRAVIR	native	2	3	forb	perennial	wild strawberry
Frangula alnus; rhamnus frangula	Rhamnaceae	FRAALN	non-native	0	0	shrub	perennial	glossy buckthorn
Fraxinus americana	Oleaceae	FRAAME	native	5	3	tree	perennial	white ash
Fraxinus nigra	Oleaceae	FRANIG	native	6	-3	tree	perennial	black ash
Fraxinus pennsylvanica	Oleaceae	FRAPEN	native	2	-3	tree	perennial	red ash
Galium aparine	Rubiaceae	GALAPA	native	0	3	forb	annual	annual bedstraw
Galium asprellum	Rubiaceae	GALASP	native	5	-5	vine	perennial	rough bedstraw
Galium boreale	Rubiaceae	GALBOR	native	3	0	forb	perennial	northern bedstraw
Galium circaezans	Rubiaceae	GALCIR	native	4	3	forb	perennial	white wild licorice
Galium concinnum	Rubiaceae	GALCON	native	5	3	forb	perennial	shining bedstraw
Galium labradoricum	Rubiaceae	GALLAB	native	8	-5	forb	perennial	bog bedstraw
Galium lanceolatum	Rubiaceae	GALLAN	native	4	5	forb	perennial	yellow wild licorice
Galium obtusum	Rubiaceae	GALOBT	native	5	-3	forb	perennial	wild madder
Galium triflorum	Rubiaceae	GALTRR	native	4	3	forb	perennial	fragrant bedstraw
Gaylussacia baccata	Ericaceae	GAYBAC	native	7	3	shrub	perennial	huckleberry
Gentiana andrewsii	Gentianaceae	GENAND	native	5	-3	forb	perennial	bottle gentian
Geranium maculatum	Geraniaceae	GERMAC	native	4	3	forb	perennial	wild geranium
Geum canadense	Rosaceae	GEUCAN	native	1	0	forb	perennial	white avens
Glechoma hederacea	Lamiaceae	GLEHED	non-native	0	3	forb	perennial	ground-ivy
Glyceria septentrionalis	Poaceae	GLYSEP	native	7	-5	grass	perennial	floating manna grass
Glyceria striata	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
Goodyera pubescens	Orchidaceae	GOOPUB	native	7	3	forb	perennial	downy rattlesnake plantain
Hackelia virginiana	Boraginaceae	HACVIR	native	1	3	forb	biennial	beggars lice
Hamamelis virginiana	Hamamelidaceae	HAMVIR	native	5	3	shrub	perennial	witch-hazel
Hedeoma hispida	Lamiaceae	HEDHIS	native	3	5	forb	annual	rough pennyroyal
Helianthus divaricatus	Asteraceae	HELDIV	native	5	5	forb	perennial	woodland sunflower
Helianthus giganteus	Asteraceae	HELGIG	native	5	-3	forb	perennial	tall sunflower
Helianthus strumosus	Asteraceae	HELSTR	native	4	5	forb	perennial	pale-leaved sunflower
Hemerocallis fulva	Hemerocallidaceae	HEMFUL	non-native	0	5	forb	perennial	orange day-lily

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Hepatica americana	Ranunculaceae	HEPAME	native	6	5	forb	perennial	round-lobed hepatica
Hesperis matronalis	Brassicaceae	HESMAT	non-native	0	3	forb	perennial	dames rocket
Heuchera richardsonii	Saxifragaceae	HEURIC	native	8	3	forb	perennial	prairie alum root
Hieracium caespitosum	Asteraceae	HIECAE	non-native	0	5	forb	perennial	king devil
Hieracium venosum	Asteraceae	HIEVEN	native	6	5	forb	perennial	rattlesnake-weed
Houstonia longifolia	Rubiaceae	HOULON	native	6	5	forb	perennial	long-leaved bluets
Hylodesmum glutinosum; desmodium g.	Fabaceae	HYLGLU	native	5	5	forb	perennial	clustered-leaved tick-trefoil
Hylodesmum nudiflorum; desmodium n.	Fabaceae	HYLNUD	native	7	5	forb	perennial	naked tick-trefoil
Hypericum perforatum	Hypericaceae	HYPPER	non-native	0	5	forb	perennial	common st. johns-wort
Hypericum punctatum	Hypericaceae	HYPPUN	native	4	0	forb	perennial	spotted st. johns-wort
Ilex verticillata	Aquifoliaceae	ILEVER	native	5	-3	shrub	perennial	michigan holly
Impatiens capensis	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
Iris virginica	Iridaceae	IRIVIR	native	5	-5	forb	perennial	southern blue flag
Juglans nigra	Juglandaceae	JUGNIG	native	5	3	tree	perennial	black walnut
Juncus dudleyi	Juncaceae	JUNDUD	native	1	-3	forb	perennial	dudleys rush
Juncus tenuis	Juncaceae	JUNTEN	native	1	0	forb	perennial	path rush
Juniperus communis	Cupressaceae	JUNCOI	native	4	3	shrub	perennial	common or ground juniper
Juniperus virginiana	Cupressaceae	JUNVIR	native	3	3	tree	perennial	red-cedar
Krigia biflora	Asteraceae	KRIBIF	native	5	3	forb	perennial	false dandelion
Lactuca canadensis	Asteraceae	LACCAN	native	2	3	forb	biennial	tall lettuce
Laportea canadensis	Urticaceae	LAPCAN	native	4	-3	forb	perennial	wood nettle
Larix laricina	Pinaceae	LARLAR	native	5	-3	tree	perennial	tamarack
Lathyrus ochroleucus	Fabaceae	LATOCH	native	8	5	vine	perennial	pale vetchling
Lathyrus palustris	Fabaceae	LATPAL	native	7	-3	vine	perennial	marsh pea
Lathyrus venosus	Fabaceae	LATVEN	native	8	0	vine	perennial	veiny pea
Leersia oryzoides	Poaceae	LEEORY	native	3	-5	grass	perennial	cut grass
Lemna minor	Araceae	LEMMIN	native	5	-5	forb	perennial	common duckweed
Leonurus cardiaca	Lamiaceae	LEOCAR	non-native	0	5	forb	perennial	motherwort
Lepidium campestre	Brassicaceae	LEPCAM	non-native	0	5	forb	biennial	field cress
Lespedeza cuneata	Fabaceae	LESCUN	non-native	0	5	forb	perennial	sericea lespedeza
Lespedeza hirta	Fabaceae	LESHIR	native	7	5	forb	perennial	hairy bush-clover
Leucanthemum vulgare; chrysanthemum leucanthemum	Asteraceae	LEUVUL	non-native	0	5	forb	perennial	ox-eye daisy
Lilium michiganense	Liliaceae	LILMIC	native	5	-3	forb	perennial	michigan lily

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<i>Lindera benzoin</i>	Lauraceae	LINBEN	native	7	-3	shrub	perennial	spicebush
<i>Liriodendron tulipifera</i>	Magnoliaceae	LIRTUL	native	9	3	tree	perennial	tulip tree
<i>Lobelia kalmii</i>	Campanulaceae	LOBKAL	native	10	-5	forb	perennial	bog lobelia
<i>Lobelia siphilitica</i>	Campanulaceae	LOBSIP	native	4	-3	forb	perennial	great blue lobelia
<i>Lobelia spicata</i>	Campanulaceae	LOBSPI	native	4	0	forb	perennial	pale spiked lobelia
<i>Lonicera dioica</i>	Caprifoliaceae	LONDIO	native	5	3	vine	perennial	red honeysuckle
<i>Lonicera maackii</i>	Caprifoliaceae	LONMAA	non-native	0	5	shrub	perennial	amur honeysuckle
<i>Lonicera morrowii</i>	Caprifoliaceae	LONMOR	non-native	0	3	shrub	perennial	morrow honeysuckle
<i>Luzula multiflora</i>	Juncaceae	LUZMUL	native	5	3	forb	perennial	common wood rush
<i>Lycopus americanus</i>	Lamiaceae	LYCAME	native	2	-5	forb	perennial	common water horehound
<i>Lycopus uniflorus</i>	Lamiaceae	LYCUNI	native	2	-5	forb	perennial	northern bugle weed
<i>Lysimachia quadriflora</i>	Myrsinaceae	LYSQUR	native	10	-5	forb	perennial	whorled loosestrife
<i>Lysimachia quadrifolia</i>	Myrsinaceae	LYSQUL	native	8	3	forb	perennial	four-leaved loosestrife
<i>Lysimachia thyrsoflora</i>	Myrsinaceae	LYSTHY	native	6	-5	forb	perennial	tufted loosestrife
<i>Lythrum salicaria</i>	Lythraceae	LYTSAL	non-native	0	-5	forb	perennial	purple loosestrife
<i>Maclura pomifera</i>	Moraceae	MACPOM	non-native	0	3	tree	perennial	osage-orange
<i>Maianthemum canadense</i>	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
<i>Maianthemum racemosum</i> ; <i>smilacina</i> r.	Convallariaceae	MAIRAC	native	5	3	forb	perennial	false spikenard
<i>Maianthemum stellatum</i> ; <i>smilacina</i> s.	Convallariaceae	MAISTE	native	5	0	forb	perennial	starry false solomon-seal
<i>Malus pumila</i>	Rosaceae	MALPUM	non-native	0	5	tree	perennial	apple
<i>Medeola virginiana</i>	Convallariaceae	MEDVIR	native	10	3	forb	perennial	indian cucumber-root
<i>Medicago lupulina</i>	Fabaceae	MEDLUP	non-native	0	3	forb	annual	black medick
<i>Melilotus albus</i>	Fabaceae	MELALB	non-native	0	3	forb	biennial	white sweet-clover
<i>Menispermum canadense</i>	Menispermaceae	MENCAE	native	5	0	vine	perennial	moonseed
<i>Mentha canadensis</i> ; <i>m. arvensis</i>	Lamiaceae	MENCAS	native	3	-3	forb	perennial	wild mint
<i>Milium effusum</i>	Poaceae	MILEFF	native	8	3	grass	perennial	wood millet
<i>Mitchella repens</i>	Rubiaceae	MITREP	native	5	3	forb	perennial	partridge-berry
<i>Mitella diphylla</i>	Saxifragaceae	MITDIP	native	8	3	forb	perennial	bishops-cap
<i>Mitella nuda</i>	Saxifragaceae	MITNUD	native	8	-3	forb	perennial	naked miterwort
<i>Monarda fistulosa</i>	Lamiaceae	MONFIS	native	2	3	forb	perennial	wild-bergamot
<i>Morus alba</i>	Moraceae	MORALB	non-native	0	3	tree	perennial	white mulberry
<i>Muhlenbergia glomerata</i>	Poaceae	MUHGLO	native	10	-5	grass	perennial	marsh wild-timothy
<i>Muhlenbergia mexicana</i>	Poaceae	MUHMEX	native	3	-3	grass	perennial	leafy satin grass

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<i>Myrica pensylvanica</i>	Myricaceae	MYRPEA	non-native	0	0	shrub	perennial	bayberry
<i>Nuphar advena</i>	Nymphaeaceae	NUPADV	native	8	-5	forb	perennial	yellow pond-lily
<i>Nymphaea odorata</i>	Nymphaeaceae	NYMODO	native	6	-5	forb	perennial	sweet-scented waterlily
<i>Oenothera biennis</i>	Onagraceae	OENBIE	native	2	3	forb	biennial	common evening-primrose
<i>Onoclea sensibilis</i>	Onocleaceae	ONOSEN	native	2	-3	fern	perennial	sensitive fern
<i>Oryzopsis asperifolia</i>	Poaceae	ORYASP	native	6	5	grass	perennial	rough-leaved rice-grass
<i>Osmorhiza claytonii</i>	Apiaceae	OSMCLI	native	4	3	forb	perennial	hairy sweet-cicely
<i>Osmunda cinnamomea</i>	Osmundaceae	OSMCIN	native	5	-3	fern	perennial	cinnamon fern
<i>Osmunda regalis</i>	Osmundaceae	OSMREG	native	5	-5	fern	perennial	royal fern
<i>Ostrya virginiana</i>	Betulaceae	OSTVIR	native	5	3	tree	perennial	ironwood; hop-hornbeam
<i>Oxalis stricta</i> ; <i>o. fontana</i>	Oxalidaceae	OXASTR	native	0	3	forb	perennial	yellow wood-sorrel
<i>Oxypolis rigidior</i>	Apiaceae	OXYRIG	native	6	-5	forb	perennial	cowbane
<i>Packera aurea</i> ; <i>senecio a.</i>	Asteraceae	PACAUR	native	5	-3	forb	perennial	golden ragwort
<i>Parnassia glauca</i>	Parnassiaceae	PARGLA	native	8	-5	forb	perennial	grass-of-parnassus
<i>Parthenocissus quinquefolia</i>	Vitaceae	PARQUI	native	5	3	vine	perennial	virginia creeper
<i>Pedicularis canadensis</i>	Orobanchaceae	PEDCAN	native	10	3	forb	perennial	wood-betony
<i>Pedicularis lanceolata</i>	Orobanchaceae	PEDLAN	native	8	-3	forb	perennial	swamp-betony
<i>Peltandra virginica</i>	Araceae	PELVIR	native	6	-5	forb	perennial	arrow-arum
<i>Persicaria sagittata</i> ; <i>polygonum s.</i>	Polygonaceae	PERSAG	native	5	-5	forb	annual	arrow-leaved tear-thumb
<i>Persicaria virginiana</i> ; <i>polygonum v.</i>	Polygonaceae	PERVIR	native	4	0	forb	perennial	jumpseed
<i>Phalaris arundinacea</i>	Poaceae	PHAARU	native	0	-3	grass	perennial	reed canary grass
<i>Phegopteris hexagonoptera</i> ; <i>thelypteris h.</i>	Thelypteridaceae	PHEHEX	native	8	3	fern	perennial	broad beech-fern
<i>Phleum pratense</i>	Poaceae	PHLPRA	non-native	0	3	grass	perennial	timothy
<i>Phlox pilosa</i>	Polemoniaceae	PHLPIL	native	7	3	forb	perennial	prairie phlox
<i>Phragmites australis</i> var. <i>americanus</i>	Poaceae	PHRAUM	native	5	-3	grass	perennial	reed
<i>Phryma leptostachya</i>	Phrymaceae	PHRLEP	native	4	3	forb	perennial	lopseed
<i>Physalis heterophylla</i>	Solanaceae	PHYHET	native	3	5	forb	perennial	clammy ground-cherry
<i>Phytolacca americana</i>	Phytolaccaceae	PHYAME	native	2	3	forb	perennial	pokeweed
<i>Pilea pumila</i>	Urticaceae	PILPUM	native	5	-3	forb	annual	clearweed
<i>Pinus resinosa</i>	Pinaceae	PINRES	native	6	3	tree	perennial	red pine
<i>Pinus strobus</i>	Pinaceae	PINSTR	native	3	3	tree	perennial	white pine
<i>Pinus sylvestris</i>	Pinaceae	PINSYL	non-native	0	3	tree	perennial	scotch pine
<i>Piptatherum racemosum</i> ; <i>oryzopsis r.</i>	Poaceae	PIPRAC	native	8	5	grass	perennial	rice-grass

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Plantago lanceolata	Plantaginaceae	PLALAN	non-native	0	3	forb	perennial	english plantain
Plantago rugelii	Plantaginaceae	PLARUG	native	0	0	forb	perennial	red-stalked plantain
Platanthera aquilonis; habenaria hyperborea	Orchidaceae	PLAAQU	native	5	-3	forb	perennial	northern green orchid
Platanthera clavellata; habenaria c.	Orchidaceae	PLACLA	native	6	-3	forb	perennial	small green wood orchid
Platanthera flava; habenaria f.	Orchidaceae	PLAFLA	native	10	-3	forb	perennial	tubercled orchid
Poa compressa	Poaceae	POACOM	non-native	0	3	grass	perennial	canada bluegrass
Poa pratensis	Poaceae	POAPRA	non-native	0	3	grass	perennial	kentucky bluegrass
Podophyllum peltatum	Berberidaceae	PODPEL	native	3	3	forb	perennial	may-apple
Polygala paucifolia	Polygalaceae	POLPAU	native	7	3	forb	perennial	gay-wings
Polygala senega	Polygalaceae	POLSEN	native	8	3	forb	perennial	seneca snakeroot
Polygonatum pubescens	Convallariaceae	POLPUB	native	5	5	forb	perennial	downy solomon seal
Polystichum acrostichoides	Dryopteridaceae	POLACR	native	6	3	fern	perennial	christmas fern
Populus grandidentata	Salicaceae	POPGRA	native	4	3	tree	perennial	big-tooth aspen
Populus tremuloides	Salicaceae	POPTRE	native	1	0	tree	perennial	quaking aspen
Potentilla norvegica	Rosaceae	POTNOR	native	0	0	forb	annual	rough cinquefoil
Potentilla recta	Rosaceae	POTREC	non-native	0	5	forb	perennial	rough-fruited cinquefoil
Potentilla simplex	Rosaceae	POTSIM	native	2	3	forb	perennial	old-field cinquefoil
Prunella vulgaris	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
Prunus serotina	Rosaceae	PRUSER	native	2	3	tree	perennial	wild black cherry
Prunus virginiana	Rosaceae	PRUVIR	native	2	3	shrub	perennial	choke cherry
Pteridium aquilinum	Dennstaedtiaceae	PTEAQU	native	0	3	fern	perennial	bracken fern
Pycnanthemum virginianum	Lamiaceae	PYCVIR	native	5	-3	forb	perennial	common mountain mint
Pyrola americana; p. rotundifolia	Ericaceae	PYRAME	native	7	0	forb	perennial	round-leaved pyrola
Pyrola elliptica	Ericaceae	PYRELL	native	6	3	forb	perennial	large-leaved shinleaf
Quercus alba	Fagaceae	QUEALB	native	5	3	tree	perennial	white oak
Quercus bicolor	Fagaceae	QUEBIC	native	8	-3	tree	perennial	swamp white oak
Quercus ellipsoidalis; q. coccinea	Fagaceae	QUEELL	native	4	5	tree	perennial	hills oak
Quercus macrocarpa	Fagaceae	QUEMAC	native	5	3	tree	perennial	bur oak
Quercus palustris	Fagaceae	QUEPAL	native	8	-3	tree	perennial	pin oak
Quercus rubra	Fagaceae	QUERUB	native	5	3	tree	perennial	red oak
Quercus velutina	Fagaceae	QUEVEL	native	6	5	tree	perennial	black oak
Ranunculus abortivus	Ranunculaceae	RANABO	native	0	0	forb	perennial	small-flowered buttercup
Ranunculus recurvatus	Ranunculaceae	RANREC	native	5	-3	forb	perennial	hooked crowfoot

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Rhamnus alnifolia	Rhamnaceae	RHAALN	native	8	-5	shrub	perennial	alder-leaved buckthorn
Rhus glabra	Anacardiaceae	RHUGLA	native	2	5	shrub	perennial	smooth sumac
Ribes americanum	Grossulariaceae	RIBAME	native	6	-3	shrub	perennial	wild black currant
Ribes cynosbati	Grossulariaceae	RIBCYN	native	4	3	shrub	perennial	prickly or wild gooseberry
Ribes hirtellum	Grossulariaceae	RIBHIR	native	6	-3	shrub	perennial	swamp gooseberry
Robinia pseudoacacia	Fabaceae	ROBPSE	non-native	0	3	tree	perennial	black locust
Rosa carolina	Rosaceae	ROSCAR	native	4	3	shrub	perennial	pasture rose
Rosa multiflora	Rosaceae	ROSMUL	non-native	0	3	shrub	perennial	multiflora rose
Rosa palustris	Rosaceae	ROSPAL	native	5	-5	shrub	perennial	swamp rose
Rubus allegheniensis	Rosaceae	RUBALL	native	1	3	shrub	perennial	common blackberry
Rubus hispidus	Rosaceae	RUBHIS	native	4	-3	shrub	perennial	swamp dewberry
Rubus occidentalis	Rosaceae	RUBOCC	native	1	5	shrub	perennial	black raspberry
Rubus pubescens	Rosaceae	RUBPUB	native	4	-3	shrub	perennial	dwarf raspberry
Rubus strigosus	Rosaceae	RUBSTR	native	2	0	shrub	perennial	wild red raspberry
Rudbeckia hirta	Asteraceae	RUDHIR	native	1	3	forb	perennial	black-eyed susan
Rumex acetosella	Polygonaceae	RUMACL	non-native	0	3	forb	perennial	sheep sorrel
Rumex obtusifolius	Polygonaceae	RUMOBT	non-native	0	0	forb	perennial	bitter dock
Rumex orbiculatus	Polygonaceae	RUMORB	native	9	-5	forb	perennial	great water dock
Sagittaria latifolia	Alismataceae	SAGLAT	native	4	-5	forb	perennial	common arrowhead
Salix bebbiana	Salicaceae	SALBEB	native	1	-3	shrub	perennial	bebbs willow
Salix candida	Salicaceae	SALCAN	native	9	-5	shrub	perennial	hoary willow
Salix discolor	Salicaceae	SALDIS	native	1	-3	shrub	perennial	pussy willow
Salix petiolaris	Salicaceae	SALPET	native	1	-3	shrub	perennial	slender willow
Sambucus canadensis	Adoxaceae	SAMCAN	native	3	-3	shrub	perennial	elderberry
Sanguinaria canadensis	Papaveraceae	SANCAA	native	5	3	forb	perennial	bloodroot
Sanicula canadensis	Apiaceae	SANCAS	native	8	3	forb	biennial	black snakeroot
Sanicula marilandica	Apiaceae	SANMAR	native	4	3	forb	perennial	black snakeroot
Sanicula odorata; s. gregaria	Apiaceae	SANODO	native	2	0	forb	perennial	black snakeroot
Sassafras albidum	Lauraceae	SASALB	native	5	3	tree	perennial	sassafras
Schizachyrium scoparium; andropogon s.	Poaceae	SCHSCO	native	5	3	grass	perennial	little bluestem
Schoenoplectus acutus; scirpus a.	Cyperaceae	SCHACU	native	5	-5	sedge	perennial	hardstem bulrush
Schoenoplectus tabernaemontani; scirpus validus	Cyperaceae	SCHTAB	native	4	-5	sedge	perennial	softstem bulrush
Scirpus atrovirens	Cyperaceae	SCIATV	native	3	-5	sedge	perennial	bulrush

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
<i>Scirpus cyperinus</i>	Cyperaceae	SCICYP	native	5	-5	sedge	perennial	wool-grass
<i>Scutellaria galericulata</i>	Lamiaceae	SCUGAL	native	5	-5	forb	perennial	marsh skullcap
<i>Scutellaria lateriflora</i>	Lamiaceae	SCULAT	native	5	-5	forb	perennial	mad-dog skullcap
<i>Selaginella eclipses</i>	Selaginellaceae	SELECL	native	5	-3	fern	perennial	selaginella
<i>Silene latifolia</i> ; <i>s. pratensis</i>	Caryophyllaceae	SILLAT	non-native	0	5	forb	annual	white campion
<i>Sium suave</i>	Apiaceae	SIUSUA	native	5	-5	forb	perennial	water-parsnip
<i>Smilax ecirrata</i>	Smilacaceae	SMIECI	native	6	5	forb	perennial	upright carrion-flower
<i>Smilax hispida</i> ; <i>s. tamnoides</i>	Smilacaceae	SMIHIS	native	5	0	vine	perennial	bristly greenbrier
<i>Solanum carolinense</i>	Solanaceae	SOLCAR	non-native	0	3	forb	perennial	horse-nettle
<i>Solanum dulcamara</i>	Solanaceae	SOLDUL	non-native	0	0	vine	perennial	bittersweet nightshade
<i>Solidago altissima</i>	Asteraceae	SOLALT	native	1	3	forb	perennial	tall goldenrod
<i>Solidago caesia</i>	Asteraceae	SOLCAE	native	6	3	forb	perennial	bluestem goldenrod
<i>Solidago canadensis</i>	Asteraceae	SOLCAN	native	1	3	forb	perennial	canada goldenrod
<i>Solidago hispida</i>	Asteraceae	SOLHIS	native	3	5	forb	perennial	hairy goldenrod
<i>Solidago juncea</i>	Asteraceae	SOLJUN	native	3	5	forb	perennial	early goldenrod
<i>Solidago ohioensis</i>	Asteraceae	SOLOHI	native	8	-5	forb	perennial	ohio goldenrod
<i>Solidago patula</i>	Asteraceae	SOLPAT	native	6	-5	forb	perennial	swamp goldenrod
<i>Solidago riddellii</i>	Asteraceae	SOLRID	native	6	-5	forb	perennial	riddells goldenrod
<i>Solidago rugosa</i>	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod
<i>Solidago uliginosa</i>	Asteraceae	SOLULI	native	4	-5	forb	perennial	bog goldenrod
<i>Sphenopholis intermedia</i>	Poaceae	SPHINT	native	4	0	grass	perennial	slender wedgrass
<i>Spiraea alba</i>	Rosaceae	SPIALB	native	4	-3	shrub	perennial	meadowsweet
<i>Spiraea tomentosa</i>	Rosaceae	SPITOM	native	5	-3	shrub	perennial	steeplebush
<i>Stachys hispida</i> ; <i>s. tenuifolia</i>	Lamiaceae	STAHIS	native	5	-3	forb	perennial	hedge-nettle
<i>Symphotrichum cordifolium</i> ; aster c.	Asteraceae	SYMCOR	native	4	5	forb	perennial	heart-leaved aster
<i>Symphotrichum firmum</i> ; aster puniceus	Asteraceae	SYMFIR	native	4	-3	forb	perennial	smooth swamp aster
<i>Symphotrichum laeve</i> ; aster l.	Asteraceae	SYMLAE	native	5	3	forb	perennial	smooth aster
<i>Symphotrichum lanceolatum</i> ; aster l.	Asteraceae	SYMLAN	native	2	-3	forb	perennial	panicled aster
<i>Symphotrichum lateriflorum</i> ; aster l.	Asteraceae	SYMLAT	native	2	0	forb	perennial	calico aster
<i>Symphotrichum urophyllum</i> ; aster sagittifolius	Asteraceae	SYMURO	native	2	5	forb	perennial	arrow-leaved aster
<i>Symplocarpus foetidus</i>	Araceae	SYMFOE	native	6	-5	forb	perennial	skunk-cabbage
<i>Taenidia integerrima</i>	Apiaceae	TAEINT	native	8	5	forb	perennial	yellow-pimpernel
<i>Taraxacum officinale</i>	Asteraceae	TAROFF	non-native	0	3	forb	perennial	common dandelion

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Taxodium distichum	Cupressaceae	TAXDIS	non-native	0	-5	tree	perennial	bald cypress
Thalictrum dasycarpum	Ranunculaceae	THADAS	native	3	-3	forb	perennial	purple meadow-rue
Thalictrum dioicum	Ranunculaceae	THADIO	native	6	3	forb	perennial	early meadow-rue
Thalictrum thalictroides; anemonella t.	Ranunculaceae	THATHA	native	8	3	forb	perennial	rue-anemone
Thelypteris noveboracensis	Thelypteridaceae	THENOV	native	5	0	fern	perennial	new york fern
Thelypteris palustris	Thelypteridaceae	THEPAL	native	2	-3	fern	perennial	marsh fern
Thuja occidentalis	Cupressaceae	THUOCC	native	4	-3	tree	perennial	arbor vitae
Tilia americana	Malvaceae	TILAME	native	5	3	tree	perennial	basswood
Torilis japonica	Apiaceae	TORJAP	non-native	0	3	forb	annual	hedge-parsley
Toxicodendron radicans	Anacardiaceae	TOXRAD	native	2	0	vine	perennial	poison-ivy
Toxicodendron vernix	Anacardiaceae	TOXVER	native	6	-5	shrub	perennial	poison sumac
Tradescantia ohiensis	Commelinaceae	TRAOHI	native	5	3	forb	perennial	common spiderwort
Tragopogon dubius	Asteraceae	TRADUB	non-native	0	5	forb	biennial	goats beard
Tragopogon pratensis	Asteraceae	TRAPRA	non-native	0	5	forb	biennial	common goats beard
Triadenum fraseri	Hypericaceae	TRIFRA	native	6	-5	forb	perennial	marsh st. johns-wort
Trientalis borealis	Myrsinaceae	TRIBOR	native	5	0	forb	perennial	star-flower
Trifolium pratense	Fabaceae	TRIPRA	non-native	0	3	forb	perennial	red clover
Trifolium repens	Fabaceae	TRIREP	non-native	0	3	forb	perennial	white clover
Trillium grandiflorum	Trilliaceae	TRIGRA	native	5	3	forb	perennial	common trillium
Typha angustifolia	Typhaceae	TYPANG	non-native	0	-5	forb	perennial	narrow-leaved cat-tail
Typha latifolia	Typhaceae	TYPLAT	native	1	-5	forb	perennial	broad-leaved cat-tail
Ulmus americana	Ulmaceae	ULMAME	native	1	-3	tree	perennial	american elm
Ulmus rubra	Ulmaceae	ULMRUB	native	2	0	tree	perennial	slippery elm
Urtica dioica	Urticaceae	URTDIO	native	1	0	forb	perennial	stinging nettle
Uvularia grandiflora	Convallariaceae	UVUGRA	native	5	5	forb	perennial	bellwort
Vaccinium corymbosum	Ericaceae	VACCOR	native	6	-3	shrub	perennial	highbush blueberry
Vaccinium myrtilloides	Ericaceae	VACMYR	native	4	-3	shrub	perennial	canada blueberry
Vaccinium pallidum	Ericaceae	VACPAL	native	7	5	shrub	perennial	hillside blueberry
Valeriana uliginosa	Valerianaceae	VALULI	native	10	-5	forb	perennial	swamp valerian
Verbascum blattaria	Scrophulariaceae	VERBLA	non-native	0	3	forb	biennial	moth mullein
Verbascum thapsus	Scrophulariaceae	VERTHA	non-native	0	5	forb	biennial	common mullein
Verbena urticifolia	Verbenaceae	VERURT	native	4	0	forb	perennial	white vervain
Veronica polita	Plantaginaceae	VERPOL	non-native	0	5	forb	annual	speedwell

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Viburnum acerifolium	Adoxaceae	VIBACE	native	6	5	shrub	perennial	maple-leaved viburnum
Viburnum dentatum	Adoxaceae	VIBDEN	native	6	0	shrub	perennial	arrow-wood
Viburnum lentago	Adoxaceae	VIBLEN	native	4	0	shrub	perennial	nannyberry
Viburnum opulus	Adoxaceae	VIBOPU	non-native	0	-3	shrub	perennial	european highbush-cranberry
Viburnum rafinesquianum	Adoxaceae	VIBRAF	native	5	5	shrub	perennial	downy arrow-wood
Vicia americana	Fabaceae	VICAME	native	5	3	vine	perennial	american vetch
Vicia caroliniana	Fabaceae	VICCAR	native	8	5	vine	perennial	pale or wood vetch
Vicia hirsuta	Fabaceae	VICHIR	non-native	0	5	vine	annual	hairy vetch
Vinca minor	Apocynaceae	VINMIN	non-native	0	5	shrub	perennial	periwinkle
Viola blanda	Violaceae	VIOBLA	native	5	-3	forb	perennial	sweet white violet
Viola labradorica; v. conspersa	Violaceae	VIOLAB	native	3	0	forb	perennial	dog violet
Viola macloskeyi	Violaceae	VIOMAC	native	6	-5	forb	perennial	smooth white violet
Viola pubescens	Violaceae	VIOPUB	native	4	3	forb	perennial	yellow violet
Viola sororia	Violaceae	VIOSOR	native	1	0	forb	perennial	common blue violet
Vitis aestivalis	Vitaceae	VITAES	native	6	3	vine	perennial	summer grape
Vitis riparia	Vitaceae	VITRIP	native	3	0	vine	perennial	river-bank grape
Wolffia borealis; w. punctata	Araceae	WOLBOR	native	5	-5	forb	perennial	dotted water meal
Zanthoxylum americanum	Rutaceae	ZANAME	native	3	3	shrub	perennial	prickly-ash
Zizia aurea	Apiaceae	ZIZAUR	native	6	0	forb	perennial	golden alexanders

Appendix 2. Sharonville State Game Area Pierce Road Unit, Armstrong Tract Floristic Quality Assessment.

06/03/2015

Sharonville SGA

Jackson

MI

USA

FQA DB Region:

Michigan

FQA DB Publication Year:

2014

FQA DB Description:

Reznicek, A.A., M.R. Penskar, B.S. Walters, and B.S. Slaughter. 2014. Michigan Floristic Quality Assessment Database. Herbarium, University of Michigan, Ann Arbor, MI and Michigan Natural Features Inventory, Michigan State University, Lansing, MI. <http://michiganflora.net>

Practitioner:

Brad Slaughter

Latitude:

42.157377

Longitude:

-84.160318

Weather Notes:

Duration Notes:

Community Type Notes:

Dry-mesic southern forest, southern hardwood swamp, inundated shrub swamp, southern wet meadow

Also surveyed 7/2/15. Pinus str was planted. Check ID of Salix nig, Desmodium sp. (cf. paniculatum). Also: Agrimonia sp., Amelanchier sp., Bidens sp., Carex sp. (coll.), Crataegus sp., Eleocharis sp., Lactuca sp., Poa sp., Prenanthes sp. Both Cypripedium par var. makasin (swamps) and var. pubescens (upland margins) present.

Other Notes:

Private/Public:

Private

Conservatism-Based Metrics:

Total Mean C:

4

Native Mean C:

4.6

Total FQI:

62

Native FQI:

66

Adjusted FQI:

42.6

% C value 0:

18.3

% C value 1-3:

18.8

% C value 4-6:

46.7

% C value 7-10:	16.3	
Native Tree Mean C:	4.7	
Native Shrub Mean C:	4.9	
Native Herbaceous Mean C:	4.5	
Species Richness:		
Total Species:	240	
Native Species:	206	85.80%
Non-native Species:	34	14.20%
Species Wetness:		
Mean Wetness:	1.2	
Native Mean Wetness:	0.8	
Physiognomy Metrics:		
Tree:	28	11.70%
Shrub:	36	15%
Vine:	11	4.60%
Forb:	122	50.80%
Grass:	13	5.40%
Sedge:	16	6.70%
Rush:	0	0%
Fern:	14	5.80%
Bryophyte:	0	0%
Duration Metrics:		
Annual:	9	3.80%
Perennial:	220	91.70%
Biennial:	11	4.60%
Native Annual:	5	2.10%
Native Perennial:	197	82.10%
Native Biennial:	4	1.70%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer rubrum	Sapindaceae	ACERUB	native	1	0	tree	perennial	red maple
Acer saccharinum	Sapindaceae	ACESAI	native	2	-3	tree	perennial	silver maple
Acer saccharum	Sapindaceae	ACESAU	native	5	3	tree	perennial	sugar maple
Achillea millefolium	Asteraceae	ACHMIL	native	1	3	forb	perennial	yarrow
Actaea pachypoda	Ranunculaceae	ACTPAC	native	7	5	forb	perennial	dolls-eyes
Adiantum pedatum	Pteridaceae	ADIPED	native	6	3	fern	perennial	maidenhair fern
Agrostis gigantea	Poaceae	AGRGIG	non-native	0	-3	grass	perennial	redtop
Alliaria petiolata	Brassicaceae	ALLPET	non-native	0	3	forb	biennial	garlic mustard
Amphicarpaea bracteata	Fabaceae	AMPBRA	native	5	0	vine	annual	hog-peanut
Andromeda glaucophylla	Ericaceae	ANDGLA	native	10	-5	shrub	perennial	bog-rosemary
Anemone cylindrica	Ranunculaceae	ANECYL	native	6	5	forb	perennial	thimbleweed
Anemone virginiana	Ranunculaceae	ANEVIR	native	3	3	forb	perennial	thimbleweed
Antennaria parlinii	Asteraceae	ANTPAL	native	2	5	forb	perennial	smooth pussytoes
Apocynum androsaemifolium	Apocynaceae	APOAND	native	3	5	forb	perennial	spreading dogbane
Aquilegia canadensis	Ranunculaceae	AQUCAN	native	5	3	forb	perennial	wild columbine
Aralia nudicaulis	Araliaceae	ARANUD	native	5	3	forb	perennial	wild sarsaparilla
Arisaema triphyllum	Araceae	ARITRI	native	5	0	forb	perennial	jack-in-the-pulpit
Arnoglossum atriplicifolium; cackalia a.	Asteraceae	ARNATR	native	8	5	forb	perennial	pale indian plantain
Asclepias exaltata	Apocynaceae	ASCEXA	native	6	5	forb	perennial	poke milkweed
Asclepias syriaca	Apocynaceae	ASCSYR	native	1	5	forb	perennial	common milkweed
Asplenium platyneuron	Aspleniaceae	ASPPLA	native	2	3	fern	perennial	ebony spleenwort
Athyrium filix-femina	Athyriaceae	ATHFIL	native	4	0	fern	perennial	lady fern
Baptisia tinctoria	Fabaceae	BAPTIN	native	10	5	forb	perennial	wild indigo
Betula alleghaniensis	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
Betula pumila	Betulaceae	BETPUM	native	8	-5	shrub	perennial	bog birch
Boehmeria cylindrica	Urticaceae	BOECYL	native	5	-5	forb	perennial	false nettle
Botrypus virginianus	Ophioglossaceae	BOTVIR	native	5	3	fern	perennial	rattlesnake fern
Brachyelytrum erectum	Poaceae	BRAERE	native	7	5	grass	perennial	long-awned wood grass
Bromus pubescens	Poaceae	BROPUB	native	5	3	grass	perennial	canada brome
Caltha palustris	Ranunculaceae	CALPAR	native	6	-5	forb	perennial	marsh-marigold
Cardamine pratensis	Brassicaceae	CARPRA	native	10	-5	forb	perennial	cuckoo-flower
Carex bromoides	Cyperaceae	CXBROM	native	6	-3	sedge	perennial	sedge
Carex brunnescens	Cyperaceae	CXBRUN	native	5	-3	sedge	perennial	sedge

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Carex cephalophora	Cyperaceae	CXCEPP	native	3	3	sedge	perennial	sedge
Carex comosa	Cyperaceae	CXCOMO	native	5	-5	sedge	perennial	sedge
Carex crinita	Cyperaceae	CXCRIN	native	4	-5	sedge	perennial	sedge
Carex gracillima	Cyperaceae	CXGRAA	native	4	3	sedge	perennial	sedge
Carex granularis	Cyperaceae	CXGRAN	native	2	-3	sedge	perennial	sedge
Carex grisea; c. amphibola	Cyperaceae	CXGRIS	native	3	0	sedge	perennial	sedge
Carex lacustris	Cyperaceae	CXLACU	native	6	-5	sedge	perennial	sedge
Carex laxiflora	Cyperaceae	CXLAXF	native	8	0	sedge	perennial	sedge
Carex pensylvanica	Cyperaceae	CXPENS	native	4	5	sedge	perennial	sedge
Carex radiata; c. rosea	Cyperaceae	CXRADI	native	2	0	sedge	perennial	straight-styled wood sedge
Carex stipata	Cyperaceae	CXSTIP	native	1	-5	sedge	perennial	sedge
Carex stricta	Cyperaceae	CXSTRI	native	4	-5	sedge	perennial	sedge
Carpinus caroliniana	Betulaceae	CARCAO	native	6	0	tree	perennial	blue-beech
Carya cordiformis	Juglandaceae	CARCOR	native	5	0	tree	perennial	bitternut hickory
Carya glabra	Juglandaceae	CARGLA	native	5	3	tree	perennial	pignut hickory
Ceanothus americanus	Rhamnaceae	CEAAME	native	8	5	shrub	perennial	new jersey tea
Centaurea stoebe; c. maculosa	Asteraceae	CENSTO	non-native	0	5	forb	biennial	spotted knapweed
Cephalanthus occidentalis	Rubiaceae	CEPOCC	native	7	-5	shrub	perennial	buttonbush
Cerastium fontanum	Caryophyllaceae	CERFON	non-native	0	3	forb	perennial	mouse-ear chickweed
Chelone glabra	Plantaginaceae	CHEGLB	native	7	-5	forb	perennial	turtlehead
Cicuta bulbifera	Apiaceae	CICBUL	native	5	-5	forb	perennial	water hemlock
Cicuta maculata	Apiaceae	CICMAC	native	4	-5	forb	biennial	water hemlock
Circaea canadensis; c. lutetiana	Onagraceae	CIRCAN	native	2	3	forb	perennial	enchanters-nightshade
Cirsium arvense	Asteraceae	CIRARV	non-native	0	3	forb	perennial	canada thistle
Cirsium discolor	Asteraceae	CIRDIS	native	4	5	forb	biennial	pasture thistle
Collinsonia canadensis	Lamiaceae	COLCAN	native	8	0	forb	perennial	richweed
Comandra umbellata	Santalaceae	COMUMB	native	5	3	forb	perennial	bastard-toadflax
Conyza canadensis	Asteraceae	CONCAN	native	0	3	forb	annual	horseweed
Cornus alternifolia	Cornaceae	CORALT	native	5	3	tree	perennial	alternate-leaved dogwood
Cornus florida	Cornaceae	CORFLO	native	8	3	tree	perennial	flowering dogwood
Cornus foemina	Cornaceae	CORFOE	native	1	0	shrub	perennial	gray dogwood
Cornus rugosa	Cornaceae	CORRUG	native	6	5	shrub	perennial	round-leaved dogwood
Corylus americana	Betulaceae	CORAMA	native	5	3	shrub	perennial	hazelnut

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Cypripedium parviflorum; c. calceolus	Orchidaceae	CYPPAR	native	5	0	forb	perennial	yellow lady-slipper
Daucus carota	Apiaceae	DAUCAR	non-native	0	5	forb	biennial	queen-annes-lace
Desmodium paniculatum	Fabaceae	DESPAN	native	4	3	forb	perennial	panicled tick-trefoil
Dichanthelium clandestinum; panicum c.	Poaceae	DICCLA	native	3	-3	grass	perennial	panic grass
Dichanthelium dichotomum; panicum d.	Poaceae	DICDIC	native	7	0	grass	perennial	panic grass
Dichanthelium latifolium; panicum l.	Poaceae	DICLAT	native	5	3	grass	perennial	broad-leaved panic grass
Diervilla lonicera	Diervillaceae	DIELON	native	4	5	shrub	perennial	bush-honeysuckle
Dioscorea villosa; dioscorea villosa	Dioscoreaceae	DIOVIL	native	4	0	forb	perennial	wild yam
Doellingeria umbellata; aster u.	Asteraceae	DOEUMB	native	5	-3	forb	perennial	flat-topped white aster
Dryopteris carthusiana	Dryopteridaceae	DRYCAR	native	5	-3	fern	perennial	spinulose woodfern
Dulichium arundinaceum	Cyperaceae	DULARU	native	8	-5	sedge	perennial	three-way sedge
Elaeagnus umbellata	Elaeagnaceae	ELAUMB	non-native	0	3	shrub	perennial	autumn-olive
Elymus hystrix; hystrix patula	Poaceae	ELYHYS	native	5	3	grass	perennial	bottlebrush grass
Equisetum arvense	Equisetaceae	EQUARV	native	0	0	fern	perennial	common horsetail
Equisetum fluviatile	Equisetaceae	EQUFLU	native	7	-5	fern	perennial	water horsetail
Equisetum hyemale	Equisetaceae	EQUHYE	native	2	0	fern	perennial	scouring rush
Erigeron philadelphicus	Asteraceae	ERIPHI	native	2	0	forb	perennial	philadelphia fleabane
Erigeron pulchellus	Asteraceae	ERIPUL	native	5	3	forb	perennial	robins-plantain
Erigeron strigosus	Asteraceae	ERISTR	native	4	3	forb	perennial	daisy fleabane
Eurybia macrophylla; aster m.	Asteraceae	EURMAC	native	4	5	forb	perennial	big-leaved aster
Fagus grandifolia	Fagaceae	FAGGRA	native	6	3	tree	perennial	american beech
Frangula alnus; rhamnus frangula	Rhamnaceae	FRAALN	non-native	0	0	shrub	perennial	glossy buckthorn
Fraxinus americana	Oleaceae	FRAAME	native	5	3	tree	perennial	white ash
Fraxinus nigra	Oleaceae	FRANIG	native	6	-3	tree	perennial	black ash
Fraxinus pennsylvanica	Oleaceae	FRAPEN	native	2	-3	tree	perennial	red ash
Galium aparine	Rubiaceae	GALAPA	native	0	3	forb	annual	annual bedstraw
Galium boreale	Rubiaceae	GALBOR	native	3	0	forb	perennial	northern bedstraw
Galium circaezans	Rubiaceae	GALCIR	native	4	3	forb	perennial	white wild licorice
Galium concinnum	Rubiaceae	GALCON	native	5	3	forb	perennial	shining bedstraw
Galium lanceolatum	Rubiaceae	GALLAN	native	4	5	forb	perennial	yellow wild licorice
Galium obtusum	Rubiaceae	GALOBT	native	5	-3	forb	perennial	wild madder
Galium triflorum	Rubiaceae	GALTRR	native	4	3	forb	perennial	fragrant bedstraw
Gaylussacia baccata	Ericaceae	GAYBAC	native	7	3	shrub	perennial	huckleberry

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Geranium maculatum	Geraniaceae	GERMAC	native	4	3	forb	perennial	wild geranium
Geum canadense	Rosaceae	GEUCAN	native	1	0	forb	perennial	white avens
Glechoma hederacea	Lamiaceae	GLEHED	non-native	0	3	forb	perennial	ground-ivy
Glyceria septentrionalis	Poaceae	GLYSEP	native	7	-5	grass	perennial	floating manna grass
Glyceria striata	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
Hackelia virginiana	Boraginaceae	HACVIR	native	1	3	forb	biennial	beggars lice
Hamamelis virginiana	Hamamelidaceae	HAMVIR	native	5	3	shrub	perennial	witch-hazel
Helianthus divaricatus	Asteraceae	HELDIV	native	5	5	forb	perennial	woodland sunflower
Hemerocallis fulva	Hemerocallidaceae	HEMFUL	non-native	0	5	forb	perennial	orange day-lily
Hepatica americana	Ranunculaceae	HEPAME	native	6	5	forb	perennial	round-lobed hepatica
Hesperis matronalis	Brassicaceae	HESMAT	non-native	0	3	forb	perennial	dames rocket
Heuchera richardsonii	Saxifragaceae	HEURIC	native	8	3	forb	perennial	prairie alum root
Hieracium caespitosum	Asteraceae	HIECAE	non-native	0	5	forb	perennial	king devil
Hylodesmum glutinosum; desmodium g.	Fabaceae	HYLGLU	native	5	5	forb	perennial	clustered-leaved tick-trefoil
Hylodesmum nudiflorum; desmodium n.	Fabaceae	HYLNUD	native	7	5	forb	perennial	naked tick-trefoil
Hypericum perforatum	Hypericaceae	HYPPER	non-native	0	5	forb	perennial	common st. johns-wort
Hypericum punctatum	Hypericaceae	HYPPUN	native	4	0	forb	perennial	spotted st. johns-wort
Ilex verticillata	Aquifoliaceae	ILEVER	native	5	-3	shrub	perennial	michigan holly
Impatiens capensis	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
Juniperus communis	Cupressaceae	JUNCOI	native	4	3	shrub	perennial	common or ground juniper
Krigia biflora	Asteraceae	KRIBIF	native	5	3	forb	perennial	false dandelion
Lathyrus ochroleucus	Fabaceae	LATUCH	native	8	5	vine	perennial	pale vetchling
Lathyrus venosus	Fabaceae	LATVEN	native	8	0	vine	perennial	veiny pea
Lemna minor	Araceae	LEMMIN	native	5	-5	forb	perennial	common duckweed
Leonurus cardiaca	Lamiaceae	LEOCAR	non-native	0	5	forb	perennial	motherwort
Lepidium campestre	Brassicaceae	LEPCAM	non-native	0	5	forb	biennial	field cress
Lespedeza hirta	Fabaceae	LESHIR	native	7	5	forb	perennial	hairy bush-clover
Lindera benzoin	Lauraceae	LINBEN	native	7	-3	shrub	perennial	spicebush
Liriodendron tulipifera	Magnoliaceae	LIRTUL	native	9	3	tree	perennial	tulip tree
Lonicera dioica	Caprifoliaceae	LONDIO	native	5	3	vine	perennial	red honeysuckle
Lonicera maackii	Caprifoliaceae	LONMAA	non-native	0	5	shrub	perennial	amur honeysuckle
Lonicera morrowii	Caprifoliaceae	LONMOR	non-native	0	3	shrub	perennial	morrow honeysuckle
Luzula multiflora	Juncaceae	LUZMUL	native	5	3	forb	perennial	common wood rush

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<i>Lycopus uniflorus</i>	Lamiaceae	LYCUNI	native	2	-5	forb	perennial	northern bugle weed
<i>Lysimachia quadrifolia</i>	Myrsinaceae	LYSQUL	native	8	3	forb	perennial	four-leaved loosestrife
<i>Lysimachia thyrsoflora</i>	Myrsinaceae	LYSTHY	native	6	-5	forb	perennial	tufted loosestrife
<i>Maianthemum canadense</i>	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
<i>Maianthemum racemosum</i> ; <i>smilacina</i> r.	Convallariaceae	MAIRAC	native	5	3	forb	perennial	false spikenard
<i>Medeola virginiana</i>	Convallariaceae	MEDVIR	native	10	3	forb	perennial	indian cucumber-root
<i>Medicago lupulina</i>	Fabaceae	MEDLUP	non-native	0	3	forb	annual	black medick
<i>Melilotus albus</i>	Fabaceae	MELALB	non-native	0	3	forb	biennial	white sweet-clover
<i>Mentha canadensis</i> ; <i>m. arvensis</i>	Lamiaceae	MENCAS	native	3	-3	forb	perennial	wild mint
<i>Milium effusum</i>	Poaceae	MILEFF	native	8	3	grass	perennial	wood millet
<i>Mitella diphylla</i>	Saxifragaceae	MITDIP	native	8	3	forb	perennial	bishops-cap
<i>Monarda fistulosa</i>	Lamiaceae	MONFIS	native	2	3	forb	perennial	wild-bergamot
<i>Onoclea sensibilis</i>	Onocleaceae	ONOSEN	native	2	-3	fern	perennial	sensitive fern
<i>Osmorhiza claytonii</i>	Apiaceae	OSMCLI	native	4	3	forb	perennial	hairy sweet-cicely
<i>Osmunda cinnamomea</i>	Osmundaceae	OSMCIN	native	5	-3	fern	perennial	cinnamon fern
<i>Osmunda regalis</i>	Osmundaceae	OSMREG	native	5	-5	fern	perennial	royal fern
<i>Ostrya virginiana</i>	Betulaceae	OSTVIR	native	5	3	tree	perennial	ironwood; hop-hornbeam
<i>Oxalis stricta</i> ; <i>o. fontana</i>	Oxalidaceae	OXASTR	native	0	3	forb	perennial	yellow wood-sorrel
<i>Parthenocissus quinquefolia</i>	Vitaceae	PARQUI	native	5	3	vine	perennial	virginia creeper
<i>Pedicularis canadensis</i>	Orobanchaceae	PEDCAN	native	10	3	forb	perennial	wood-betony
<i>Persicaria virginiana</i> ; <i>polygonum</i> v.	Polygonaceae	PERVIR	native	4	0	forb	perennial	jumpseed
<i>Phalaris arundinacea</i>	Poaceae	PHAARU	native	0	-3	grass	perennial	reed canary grass
<i>Phlox pilosa</i>	Polemoniaceae	PHLPIL	native	7	3	forb	perennial	prairie phlox
<i>Phryma leptostachya</i>	Phrymaceae	PHRLEP	native	4	3	forb	perennial	lopseed
<i>Pinus strobus</i>	Pinaceae	PINSTR	native	3	3	tree	perennial	white pine
<i>Plantago lanceolata</i>	Plantaginaceae	PLALAN	non-native	0	3	forb	perennial	english plantain
<i>Plantago rugelii</i>	Plantaginaceae	PLARUG	native	0	0	forb	perennial	red-stalked plantain
<i>Poa compressa</i>	Poaceae	POACOM	non-native	0	3	grass	perennial	canada bluegrass
<i>Poa pratensis</i>	Poaceae	POAPRA	non-native	0	3	grass	perennial	kentucky bluegrass
<i>Podophyllum peltatum</i>	Berberidaceae	PODPEL	native	3	3	forb	perennial	may-apple
<i>Polygala senega</i>	Polygalaceae	POLSEN	native	8	3	forb	perennial	seneca snakeroot
<i>Polygonatum pubescens</i>	Convallariaceae	POLPUB	native	5	5	forb	perennial	downy solomon seal
<i>Polystichum acrostichoides</i>	Dryopteridaceae	POLACR	native	6	3	fern	perennial	christmas fern

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Populus grandidentata	Salicaceae	POPGRA	native	4	3	tree	perennial	big-tooth aspen
Potentilla norvegica	Rosaceae	POTNOR	native	0	0	forb	annual	rough cinquefoil
Potentilla simplex	Rosaceae	POTSIM	native	2	3	forb	perennial	old-field cinquefoil
Prunella vulgaris	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
Prunus serotina	Rosaceae	PRUSER	native	2	3	tree	perennial	wild black cherry
Prunus virginiana	Rosaceae	PRUVIR	native	2	3	shrub	perennial	choke cherry
Pteridium aquilinum	Dennstaedtiaceae	PTEAQU	native	0	3	fern	perennial	bracken fern
Pyrola americana; p. rotundifolia	Ericaceae	PYRAME	native	7	0	forb	perennial	round-leaved pyrola
Quercus alba	Fagaceae	QUEALB	native	5	3	tree	perennial	white oak
Quercus bicolor	Fagaceae	QUEBIC	native	8	-3	tree	perennial	swamp white oak
Quercus ellipsoidalis; q. coccinea	Fagaceae	QUEELL	native	4	5	tree	perennial	hills oak
Quercus rubra	Fagaceae	QUERUB	native	5	3	tree	perennial	red oak
Quercus velutina	Fagaceae	QUEVEL	native	6	5	tree	perennial	black oak
Ranunculus abortivus	Ranunculaceae	RANABO	native	0	0	forb	perennial	small-flowered buttercup
Ranunculus recurvatus	Ranunculaceae	RANREC	native	5	-3	forb	perennial	hooked crowfoot
Ribes cynosbati	Grossulariaceae	RIBCYN	native	4	3	shrub	perennial	prickly or wild gooseberry
Ribes hirtellum	Grossulariaceae	RIBHIR	native	6	-3	shrub	perennial	swamp gooseberry
Robinia pseudoacacia	Fabaceae	ROBPSE	non-native	0	3	tree	perennial	black locust
Rosa carolina	Rosaceae	ROSCAR	native	4	3	shrub	perennial	pasture rose
Rosa multiflora	Rosaceae	ROSMUL	non-native	0	3	shrub	perennial	multiflora rose
Rubus hispidus	Rosaceae	RUBHIS	native	4	-3	shrub	perennial	swamp dewberry
Rubus occidentalis	Rosaceae	RUBOCC	native	1	5	shrub	perennial	black raspberry
Rubus pubescens	Rosaceae	RUBPUB	native	4	-3	shrub	perennial	dwarf raspberry
Salix discolor	Salicaceae	SALDIS	native	1	-3	shrub	perennial	pussy willow
Salix petiolaris	Salicaceae	SALPET	native	1	-3	shrub	perennial	slender willow
Sanicula canadensis	Apiaceae	SANCAS	native	8	3	forb	biennial	black snakeroot
Sanicula odorata; s. gregaria	Apiaceae	SANODO	native	2	0	forb	perennial	black snakeroot
Sassafras albidum	Lauraceae	SASALB	native	5	3	tree	perennial	sassafras
Scirpus cyperinus	Cyperaceae	SCICYP	native	5	-5	sedge	perennial	wool-grass
Scutellaria lateriflora	Lamiaceae	SCULAT	native	5	-5	forb	perennial	mad-dog skullcap
Silene latifolia; s. pratensis	Caryophyllaceae	SILLAT	non-native	0	5	forb	annual	white campion
Sium suave	Apiaceae	SIUSUA	native	5	-5	forb	perennial	water-parsnip
Smilax ecirrata	Smilacaceae	SMIECI	native	6	5	forb	perennial	upright carrion-flower

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Smilax hispida; s. tamnoides	Smilacaceae	SMIHIS	native	5	0	vine	perennial	bristly greenbrier
Solanum carolinense	Solanaceae	SOLCAR	non-native	0	3	forb	perennial	horse-nettle
Solanum dulcamara	Solanaceae	SOLDUL	non-native	0	0	vine	perennial	bittersweet nightshade
Solidago caesia	Asteraceae	SOLCAE	native	6	3	forb	perennial	bluestem goldenrod
Solidago rugosa	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod
Spiraea tomentosa	Rosaceae	SPITOM	native	5	-3	shrub	perennial	steeplebush
Symphotrichum cordifolium; aster c.	Asteraceae	SYMCOR	native	4	5	forb	perennial	heart-leaved aster
Symphotrichum laeve; aster l.	Asteraceae	SYMLAE	native	5	3	forb	perennial	smooth aster
Symplocarpus foetidus	Araceae	SYMFOE	native	6	-5	forb	perennial	skunk-cabbage
Taenidia integerrima	Apiaceae	TAEINT	native	8	5	forb	perennial	yellow-pimpernel
Taraxacum officinale	Asteraceae	TAROFF	non-native	0	3	forb	perennial	common dandelion
Thalictrum dioicum	Ranunculaceae	THADIO	native	6	3	forb	perennial	early meadow-rue
Thelypteris palustris	Thelypteridaceae	THEPAL	native	2	-3	fern	perennial	marsh fern
Tilia americana	Malvaceae	TILAME	native	5	3	tree	perennial	basswood
Torilis japonica	Apiaceae	TORJAP	non-native	0	3	forb	annual	hedge-parsley
Toxicodendron radicans	Anacardiaceae	TOXRAD	native	2	0	vine	perennial	poison-ivy
Toxicodendron vernix	Anacardiaceae	TOXVER	native	6	-5	shrub	perennial	poison sumac
Tradescantia ohiensis	Commelinaceae	TRAOHI	native	5	3	forb	perennial	common spiderwort
Tragopogon dubius	Asteraceae	TRADUB	non-native	0	5	forb	biennial	goats beard
Triadenum fraseri	Hypericaceae	TRIFRA	native	6	-5	forb	perennial	marsh st. johns-wort
Trifolium repens	Fabaceae	TRIREF	non-native	0	3	forb	perennial	white clover
Trillium grandiflorum	Trilliaceae	TRIGRA	native	5	3	forb	perennial	common trillium
Typha latifolia	Typhaceae	TYPLAT	native	1	-5	forb	perennial	broad-leaved cat-tail
Ulmus americana	Ulmaceae	ULMAME	native	1	-3	tree	perennial	american elm
Ulmus rubra	Ulmaceae	ULMRUB	native	2	0	tree	perennial	slippery elm
Uvularia grandiflora	Convallariaceae	UVUGRA	native	5	5	forb	perennial	bellwort
Vaccinium corymbosum	Ericaceae	VACCOR	native	6	-3	shrub	perennial	highbush blueberry
Vaccinium myrtilloides	Ericaceae	VACMYR	native	4	-3	shrub	perennial	canada blueberry
Vaccinium pallidum	Ericaceae	VACPAL	native	7	5	shrub	perennial	hillside blueberry
Verbascum blattaria	Scrophulariaceae	VERBLA	non-native	0	3	forb	biennial	moth mullein
Verbena urticifolia	Verbenaceae	VERURT	native	4	0	forb	perennial	white vervain
Veronica polita	Plantaginaceae	VERPOL	non-native	0	5	forb	annual	speedwell
Viburnum acerifolium	Adoxaceae	VIBACE	native	6	5	shrub	perennial	maple-leaved viburnum

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Viburnum rafinesquianum	Adoxaceae	VIBRAF	native	5	5	shrub	perennial	downy arrow-wood
Vicia caroliniana	Fabaceae	VICCAR	native	8	5	vine	perennial	pale or wood vetch
Vinca minor	Apocynaceae	VINMIN	non-native	0	5	shrub	perennial	periwinkle
Viola pubescens	Violaceae	VIOPUB	native	4	3	forb	perennial	yellow violet
Viola sororia	Violaceae	VIOSOR	native	1	0	forb	perennial	common blue violet
Vitis aestivalis	Vitaceae	VITAES	native	6	3	vine	perennial	summer grape
Vitis riparia	Vitaceae	VITRIP	native	3	0	vine	perennial	river-bank grape
Zanthoxylum americanum	Rutaceae	ZANAME	native	3	3	shrub	perennial	prickly-ash
Zizia aurea	Apiaceae	ZIZAUR	native	6	0	forb	perennial	golden alexanders

Appendix 3. Pierce Road Southern Hardwood Swamp Floristic Quality Assessment.

06/30/2015

Sharonville SGA

Jackson

MI

USA

FQA DB Region:

Michigan

FQA DB Publication Year:

2014

FQA DB Description:

Reznicek, A.A., M.R. Penskar, B.S. Walters, and B.S. Slaughter. 2014. Michigan Floristic Quality Assessment Database. Herbarium, University of Michigan, Ann Arbor, MI and Michigan Natural Features Inventory, Michigan State University, Lansing, MI. <http://michiganflora.net>

Practitioner:

Brad Slaughter

Latitude:

42.162651

Longitude:

-84.148804

Weather Notes:

Duration Notes:

Community Type Notes:

Southern hardwood swamp

Other Notes:

Also surveyed 6/3/15. Also noted: *Bidens* sp., *Potamogeton* sp., *Prenanthes* sp.

Private/Public:

Private

Conservatism-Based Metrics:

Total Mean C:

4.5

Native Mean C:

4.7

Total FQI:

46.8

Native FQI:

47.7

Adjusted FQI:

45.9

% C value 0:

4.6

% C value 1-3:

24.1

% C value 4-6:

58.3

% C value 7-10:

13

Native Tree Mean C:

4.8

Native Shrub Mean C:

4.8

Native Herbaceous Mean C:	4.6	
Species Richness:		
Total Species:	108	
Native Species:	103	95.40%
Non-native Species:	5	4.60%
Species Wetness:		
Mean Wetness:	-1.6	
Native Mean Wetness:	-1.7	
Physiognomy Metrics:		
Tree:	13	12%
Shrub:	16	14.80%
Vine:	8	7.40%
Forb:	47	43.50%
Grass:	8	7.40%
Sedge:	10	9.30%
Rush:	0	0%
Fern:	6	5.60%
Bryophyte:	0	0%
Duration Metrics:		
Annual:	2	1.90%
Perennial:	104	96.30%
Biennial:	2	1.90%
Native Annual:	2	1.90%
Native Perennial:	99	91.70%
Native Biennial:	2	1.90%

Species:								
Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer rubrum	Sapindaceae	ACERUB	native	1	0	tree	perennial	red maple
Acer saccharinum	Sapindaceae	ACESAI	native	2	-3	tree	perennial	silver maple

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Amphicarpaea bracteata	Fabaceae	AMPBRA	native	5	0	vine	annual	hog-peanut
Anemone quinquefolia	Ranunculaceae	ANEQUI	native	5	3	forb	perennial	wood anemone
Aquilegia canadensis	Ranunculaceae	AQUCAN	native	5	3	forb	perennial	wild columbine
Aralia nudicaulis	Araliaceae	ARANUD	native	5	3	forb	perennial	wild sarsaparilla
Arisaema triphyllum	Araceae	ARITRI	native	5	0	forb	perennial	jack-in-the-pulpit
Athyrium filix-femina	Athyriaceae	ATHFIL	native	4	0	fern	perennial	lady fern
Berberis thunbergii	Berberidaceae	BERTHU	non-native	0	3	shrub	perennial	japanese barberry
Betula alleghaniensis	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
Boehmeria cylindrica	Urticaceae	BOECYL	native	5	-5	forb	perennial	false nettle
Brachyelytrum erectum	Poaceae	BRAERE	native	7	5	grass	perennial	long-awned wood grass
Caltha palustris	Ranunculaceae	CALPAR	native	6	-5	forb	perennial	marsh-marigold
Carex bromoides	Cyperaceae	CXBROM	native	6	-3	sedge	perennial	sedge
Carex brunnescens	Cyperaceae	CXBRUN	native	5	-3	sedge	perennial	sedge
Carex comosa	Cyperaceae	CXCOMO	native	5	-5	sedge	perennial	sedge
Carex gracillima	Cyperaceae	CXGRAA	native	4	3	sedge	perennial	sedge
Carex hystericina	Cyperaceae	CXHYST	native	2	-5	sedge	perennial	sedge
Carex intumescens	Cyperaceae	CXINTU	native	3	-3	sedge	perennial	sedge
Carex lacustris	Cyperaceae	CXLACU	native	6	-5	sedge	perennial	sedge
Carex stipata	Cyperaceae	CXSTIP	native	1	-5	sedge	perennial	sedge
Carex stricta	Cyperaceae	CXSTRI	native	4	-5	sedge	perennial	sedge
Carex vulpinoidea	Cyperaceae	CXVULP	native	1	-5	sedge	perennial	sedge
Carpinus caroliniana	Betulaceae	CARCAO	native	6	0	tree	perennial	blue-beech
Chelone glabra	Plantaginaceae	CHEGLB	native	7	-5	forb	perennial	turtlehead
Cicuta maculata	Apiaceae	CICMAC	native	4	-5	forb	biennial	water hemlock
Cinna arundinacea	Poaceae	CINARU	native	7	-3	grass	perennial	wood reedgrass
Cirsium muticum	Asteraceae	CIRMUT	native	6	-5	forb	biennial	swamp thistle
Collinsonia canadensis	Lamiaceae	COLCAN	native	8	0	forb	perennial	richweed
Coptis trifolia	Ranunculaceae	COPTRI	native	5	-3	forb	perennial	goldthread
Cryptotaenia canadensis	Apiaceae	CRYCAN	native	2	0	forb	perennial	honestwort
Cypripedium parviflorum; c. calceolus	Orchidaceae	CYPPAR	native	5	0	forb	perennial	yellow lady-slipper
Decodon verticillatus	Lythraceae	DECVER	native	7	-5	shrub	perennial	whorled or swamp loosestrife
Dichanthelium clandestinum; panicum c.	Poaceae	DICCLA	native	3	-3	grass	perennial	panic grass
Dioscorea villosa; dioscorea villosa	Dioscoreaceae	DIOVIL	native	4	0	forb	perennial	wild yam

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
<i>Dryopteris carthusiana</i>	Dryopteridaceae	DRYCAR	native	5	-3	fern	perennial	spinulose woodfern
<i>Elymus villosus</i>	Poaceae	ELYVIL	native	5	3	grass	perennial	silky wild-rye
<i>Festuca subverticillata</i> ; f. <i>obtus</i>	Poaceae	FESSUB	native	5	3	grass	perennial	nodding fescue
<i>Frangula alnus</i> ; <i>rhamnus frangula</i>	Rhamnaceae	FRAALN	non-native	0	0	shrub	perennial	glossy buckthorn
<i>Fraxinus nigra</i>	Oleaceae	FRANIG	native	6	-3	tree	perennial	black ash
<i>Fraxinus pennsylvanica</i>	Oleaceae	FRAPEN	native	2	-3	tree	perennial	red ash
<i>Galium asprellum</i>	Rubiaceae	GALASP	native	5	-5	vine	perennial	rough bedstraw
<i>Galium obtusum</i>	Rubiaceae	GALOB	native	5	-3	forb	perennial	wild madder
<i>Glyceria striata</i>	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
<i>Ilex verticillata</i>	Aquifoliaceae	ILEVER	native	5	-3	shrub	perennial	michigan holly
<i>Impatiens capensis</i>	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
<i>Iris virginica</i>	Iridaceae	IRIVIR	native	5	-5	forb	perennial	southern blue flag
<i>Laportea canadensis</i>	Urticaceae	LAPCAN	native	4	-3	forb	perennial	wood nettle
<i>Larix laricina</i>	Pinaceae	LARLAR	native	5	-3	tree	perennial	tamarack
<i>Leersia oryzoides</i>	Poaceae	LEEORY	native	3	-5	grass	perennial	cut grass
<i>Lemna minor</i>	Araceae	LEMMIN	native	5	-5	forb	perennial	common duckweed
<i>Lilium michiganense</i>	Liliaceae	LILMIC	native	5	-3	forb	perennial	michigan lily
<i>Lindera benzoin</i>	Lauraceae	LINBEN	native	7	-3	shrub	perennial	spicebush
<i>Liriodendron tulipifera</i>	Magnoliaceae	LIRTUL	native	9	3	tree	perennial	tulip tree
<i>Lonicera dioica</i>	Caprifoliaceae	LONDIO	native	5	3	vine	perennial	red honeysuckle
<i>Lycopus uniflorus</i>	Lamiaceae	LYCUNI	native	2	-5	forb	perennial	northern bugle weed
<i>Lysimachia thyrsiflora</i>	Myrsinaceae	LYSTHY	native	6	-5	forb	perennial	tufted loosestrife
<i>Maianthemum canadense</i>	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
<i>Maianthemum stellatum</i> ; <i>smilacina s.</i>	Convallariaceae	MAISTE	native	5	0	forb	perennial	starry false solomon-seal
<i>Medeola virginiana</i>	Convallariaceae	MEDVIR	native	10	3	forb	perennial	indian cucumber-root
<i>Menispermum canadense</i>	Menispermaceae	MENCAE	native	5	0	vine	perennial	moonseed
<i>Milium effusum</i>	Poaceae	MILEFF	native	8	3	grass	perennial	wood millet
<i>Mitchella repens</i>	Rubiaceae	MITREP	native	5	3	forb	perennial	partridge-berry
<i>Mitella nuda</i>	Saxifragaceae	MITNUD	native	8	-3	forb	perennial	naked miterwort
<i>Onoclea sensibilis</i>	Onocleaceae	ONOSEN	native	2	-3	fern	perennial	sensitive fern
<i>Osmunda cinnamomea</i>	Osmundaceae	OSMCIN	native	5	-3	fern	perennial	cinnamon fern
<i>Osmunda regalis</i>	Osmundaceae	OSMREG	native	5	-5	fern	perennial	royal fern
<i>Packera aurea</i> ; <i>senecio a.</i>	Asteraceae	PACAU	native	5	-3	forb	perennial	golden ragwort

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Parthenocissus quinquefolia	Vitaceae	PARQUI	native	5	3	vine	perennial	virginia creeper
Persicaria virginiana; polygonum v.	Polygonaceae	PERVIR	native	4	0	forb	perennial	jumpseed
Platanthera flava; habenaria f.	Orchidaceae	PLAFLA	native	10	-3	forb	perennial	tuberclad orchid
Podophyllum peltatum	Berberidaceae	PODPEL	native	3	3	forb	perennial	may-apple
Polygala paucifolia	Polygalaceae	POLPAU	native	7	3	forb	perennial	gay-wings
Polygonatum pubescens	Convallariaceae	POLPUB	native	5	5	forb	perennial	downy solomon seal
Pycnanthemum virginianum	Lamiaceae	PYCVIR	native	5	-3	forb	perennial	common mountain mint
Quercus bicolor	Fagaceae	QUEBIC	native	8	-3	tree	perennial	swamp white oak
Quercus macrocarpa	Fagaceae	QUEMAC	native	5	3	tree	perennial	bur oak
Quercus rubra	Fagaceae	QUERUB	native	5	3	tree	perennial	red oak
Ranunculus recurvatus	Ranunculaceae	RANREC	native	5	-3	forb	perennial	hooked crowfoot
Ribes americanum	Grossulariaceae	RIBAME	native	6	-3	shrub	perennial	wild black currant
Ribes hirtellum	Grossulariaceae	RIBHIR	native	6	-3	shrub	perennial	swamp gooseberry
Rosa multiflora	Rosaceae	ROSMUL	non-native	0	3	shrub	perennial	multiflora rose
Rubus pubescens	Rosaceae	RUBPUB	native	4	-3	shrub	perennial	dwarf raspberry
Sagittaria latifolia	Alismataceae	SAGLAT	native	4	-5	forb	perennial	common arrowhead
Salix petiolaris	Salicaceae	SALPET	native	1	-3	shrub	perennial	slender willow
Sambucus canadensis	Adoxaceae	SAMCAN	native	3	-3	shrub	perennial	elderberry
Sanicula odorata; s. gregaria	Apiaceae	SANODO	native	2	0	forb	perennial	black snakeroot
Scutellaria lateriflora	Lamiaceae	SCULAT	native	5	-5	forb	perennial	mad-dog skullcap
Sium suave	Apiaceae	SIUSUA	native	5	-5	forb	perennial	water-parsnip
Solanum dulcamara	Solanaceae	SOLDUL	non-native	0	0	vine	perennial	bittersweet nightshade
Solidago patula	Asteraceae	SOLPAT	native	6	-5	forb	perennial	swamp goldenrod
Solidago rugosa	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod
Symphotrichum lateriflorum; aster l.	Asteraceae	SYMLAT	native	2	0	forb	perennial	calico aster
Symplocarpus foetidus	Araceae	SYMFOE	native	6	-5	forb	perennial	skunk-cabbage
Thalictrum dasycarpum	Ranunculaceae	THADAS	native	3	-3	forb	perennial	purple meadow-rue
Thelypteris palustris	Thelypteridaceae	THEPAL	native	2	-3	fern	perennial	marsh fern
Tilia americana	Malvaceae	TILAME	native	5	3	tree	perennial	basswood
Toxicodendron radicans	Anacardiaceae	TOXRAD	native	2	0	vine	perennial	poison-ivy
Toxicodendron vernix	Anacardiaceae	TOXVER	native	6	-5	shrub	perennial	poison sumac
Trientalis borealis	Myrsinaceae	TRIBOR	native	5	0	forb	perennial	star-flower
Typha latifolia	Typhaceae	TYPLAT	native	1	-5	forb	perennial	broad-leaved cat-tail

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Ulmus americana	Ulmaceae	ULMAME	native	1	-3	tree	perennial	american elm
Vaccinium corymbosum	Ericaceae	VACCOR	native	6	-3	shrub	perennial	highbush blueberry
Viburnum lentago	Adoxaceae	VIBLEN	native	4	0	shrub	perennial	nannyberry
Viburnum opulus	Adoxaceae	VIBOPU	non-native	0	-3	shrub	perennial	european highbush-cranberry
Viola blanda	Violaceae	VIOBLA	native	5	-3	forb	perennial	sweet white violet
Vitis riparia	Vitaceae	VITRIP	native	3	0	vine	perennial	river-bank grape
Zanthoxylum americanum	Rutaceae	ZANAME	native	3	3	shrub	perennial	prickly-ash

Appendix 4. Pierce Road East Rich Tamarack Swamp Floristic Quality Assessment.

07/01/2015

Sharonville SGA

Jackson

MI

USA

FQA DB Region:

Michigan

FQA DB Publication Year:

2014

FQA DB Description:

Reznicek, A.A., M.R. Penskar, B.S. Walters, and B.S. Slaughter. 2014. Michigan Floristic Quality Assessment Database. Herbarium, University of Michigan, Ann Arbor, MI and Michigan Natural Features Inventory, Michigan State University, Lansing, MI. <http://michiganflora.net>

Practitioner:

Brad Slaughter

Latitude:

42.164829

Longitude:

-84.140785

Weather Notes:

Duration Notes:

Community Type Notes:

Rich tamarack swamp

Other Notes:

Additional surveys by John Paskus 27 August and 23 September. *Myrica pensylvanica* presumed native; automatically loads in this program as non-native.

Private/Public:

Private

Conservatism-Based Metrics:

Total Mean C:

4.4

Native Mean C:

4.6

Total FQI:

45.5

Native FQI:

46.5

Adjusted FQI:

44.9

% C value 0:

6.5

% C value 1-3:

25.2

% C value 4-6:

51.4

% C value 7-10:

16.8

Native Tree Mean C:	4.5	
Native Shrub Mean C:	4.4	
Native Herbaceous Mean C:	4.7	
Species Richness:		
Total Species:	107	
Native Species:	102	95.30%
Non-native Species:	5	4.70%
Species Wetness:		
Mean Wetness:	-2.6	
Native Mean Wetness:	-2.7	
Physiognomy Metrics:		
Tree:	8	7.50%
Shrub:	24	22.40%
Vine:	5	4.70%
Forb:	45	42.10%
Grass:	6	5.60%
Sedge:	13	12.10%
Rush:	0	0%
Fern:	6	5.60%
Bryophyte:	0	0%
Duration Metrics:		
Annual:	3	2.80%
Perennial:	103	96.30%
Biennial:	1	0.90%
Native Annual:	3	2.80%
Native Perennial:	98	91.60%
Native Biennial:	1	0.90%

Species:									
Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name	

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer rubrum	Sapindaceae	ACERUB	native	1	0	tree	perennial	red maple
Amphicarpaea bracteata	Fabaceae	AMPBRA	native	5	0	vine	annual	hog-peanut
Angelica atropurpurea	Apiaceae	ANGATR	native	6	-5	forb	perennial	purplestem angelica
Arisaema triphyllum	Araceae	ARITRI	native	5	0	forb	perennial	jack-in-the-pulpit
Aronia prunifolia	Rosaceae	AROPRU	native	5	-3	shrub	perennial	chokeberry
Berberis thunbergii	Berberidaceae	BERTHU	non-native	0	3	shrub	perennial	japanese barberry
Betula alleghaniensis	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
Bromus ciliatus	Poaceae	BROCIL	native	6	-3	grass	perennial	fringed brome
Caltha palustris	Ranunculaceae	CALPAR	native	6	-5	forb	perennial	marsh-marigold
Campanula aparinoides	Campanulaceae	CAMAPA	native	7	-5	forb	perennial	marsh bellflower
Carex aquatilis	Cyperaceae	CXAQUA	native	7	-5	sedge	perennial	sedge
Carex comosa	Cyperaceae	CXCOMO	native	5	-5	sedge	perennial	sedge
Carex gracillima	Cyperaceae	CXGRAA	native	4	3	sedge	perennial	sedge
Carex granularis	Cyperaceae	CXGRAN	native	2	-3	sedge	perennial	sedge
Carex hystericina	Cyperaceae	CXHYST	native	2	-5	sedge	perennial	sedge
Carex lacustris	Cyperaceae	CXLACU	native	6	-5	sedge	perennial	sedge
Carex lasiocarpa	Cyperaceae	CXLASI	native	8	-5	sedge	perennial	sedge
Carex leptalea	Cyperaceae	CXLEPA	native	5	-5	sedge	perennial	sedge
Carex pseudo-cyperus	Cyperaceae	CXPSEU	native	5	-5	sedge	perennial	sedge
Carex stipata	Cyperaceae	CXSTIP	native	1	-5	sedge	perennial	sedge
Carex stricta	Cyperaceae	CXSTRI	native	4	-5	sedge	perennial	sedge
Chelone glabra	Plantaginaceae	CHEGLB	native	7	-5	forb	perennial	turtlehead
Cicuta bulbifera	Apiaceae	CICBUL	native	5	-5	forb	perennial	water hemlock
Cirsium muticum	Asteraceae	CIRMUT	native	6	-5	forb	biennial	swamp thistle
Clematis virginiana	Ranunculaceae	CLEVIR	native	4	0	vine	perennial	virgins bower
Cornus amomum	Cornaceae	CORAMO	native	2	-3	shrub	perennial	silky dogwood
Cornus foemina	Cornaceae	CORFOE	native	1	0	shrub	perennial	gray dogwood
Cornus sericea; c. stolonifera	Cornaceae	CORSER	native	2	-3	shrub	perennial	red-osier
Cypripedium parviflorum; c. calceolus	Orchidaceae	CYPPAR	native	5	0	forb	perennial	yellow lady-slipper
Cypripedium reginae	Orchidaceae	CYPREG	native	9	-3	forb	perennial	showy or queens lady-slipper
Dasiphora fruticosa; potentilla f.	Rosaceae	DASFRU	native	8	-3	shrub	perennial	shrubby cinquefoil
Doellingeria umbellata; aster u.	Asteraceae	DOEUMB	native	5	-3	forb	perennial	flat-topped white aster
Epilobium coloratum	Onagraceae	EPICOL	native	3	-5	forb	perennial	cinnamon willow-herb

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Equisetum arvense	Equisetaceae	EQUARV	native	0	0	fern	perennial	common horsetail
Equisetum fluviatile	Equisetaceae	EQUFLU	native	7	-5	fern	perennial	water horsetail
Eupatorium perfoliatum	Asteraceae	EUPPER	native	4	-3	forb	perennial	boneset
Eutrochium maculatum; eupatorium m.	Asteraceae	EUTMAC	native	4	-5	forb	perennial	joe-pye-weed
Frangula alnus; rhamnus frangula	Rhamnaceae	FRAALN	non-native	0	0	shrub	perennial	glossy buckthorn
Galium asprellum	Rubiaceae	GALASP	native	5	-5	vine	perennial	rough bedstraw
Galium labradoricum	Rubiaceae	GALLAB	native	8	-5	forb	perennial	bog bedstraw
Galium triflorum	Rubiaceae	GALTRR	native	4	3	forb	perennial	fragrant bedstraw
Glyceria striata	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
Impatiens capensis	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
Juniperus communis	Cupressaceae	JUNCOI	native	4	3	shrub	perennial	common or ground juniper
Juniperus virginiana	Cupressaceae	JUNVIR	native	3	3	tree	perennial	red-cedar
Larix laricina	Pinaceae	LARLAR	native	5	-3	tree	perennial	tamarack
Leersia oryzoides	Poaceae	LEEORY	native	3	-5	grass	perennial	cut grass
Lindera benzoin	Lauraceae	LINBEN	native	7	-3	shrub	perennial	spicebush
Liriodendron tulipifera	Magnoliaceae	LIRTUL	native	9	3	tree	perennial	tulip tree
Lycopus uniflorus	Lamiaceae	LYCUNI	native	2	-5	forb	perennial	northern bugle weed
Lysimachia thyrsiflora	Myrsinaceae	LYSTHY	native	6	-5	forb	perennial	tufted loosestrife
Lythrum salicaria	Lythraceae	LYTSAL	non-native	0	-5	forb	perennial	purple loosestrife
Maianthemum canadense	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
Mitella nuda	Saxifragaceae	MITNUD	native	8	-3	forb	perennial	naked miterwort
Muhlenbergia glomerata	Poaceae	MUHGLO	native	10	-5	grass	perennial	marsh wild-timothy
Muhlenbergia mexicana	Poaceae	MUHMEX	native	3	-3	grass	perennial	leafy satin grass
Myrica pensylvanica	Myricaceae	MYRPEA	non-native	0	0	shrub	perennial	bayberry
Onoclea sensibilis	Onocleaceae	ONOSEN	native	2	-3	fern	perennial	sensitive fern
Osmunda cinnamomea	Osmundaceae	OSMCIN	native	5	-3	fern	perennial	cinnamon fern
Osmunda regalis	Osmundaceae	OSMREG	native	5	-5	fern	perennial	royal fern
Packera aurea; senecio a.	Asteraceae	PACAU	native	5	-3	forb	perennial	golden ragwort
Parthenocissus quinquefolia	Vitaceae	PARQUI	native	5	3	vine	perennial	virginia creeper
Pedicularis lanceolata	Orobanchaceae	PEDLAN	native	8	-3	forb	perennial	swamp-betony
Persicaria sagittata; polygonum s.	Polygonaceae	PERSAG	native	5	-5	forb	annual	arrow-leaved tear-thumb
Phragmites australis var. americanus	Poaceae	PHRAUM	native	5	-3	grass	perennial	reed
Platanthera aquilonis; habenaia hyperborea	Orchidaceae	PLAAQU	native	5	-3	forb	perennial	northern green orchid

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Platanthera clavellata; habenaria c.	Orchidaceae	PLACLA	native	6	-3	forb	perennial	small green wood orchid
Polygonatum pubescens	Convallariaceae	POLPUB	native	5	5	forb	perennial	downy solomon seal
Prunella vulgaris	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
Pycnanthemum virginianum	Lamiaceae	PYCVIR	native	5	-3	forb	perennial	common mountain mint
Quercus macrocarpa	Fagaceae	QUEMAC	native	5	3	tree	perennial	bur oak
Quercus rubra	Fagaceae	QUERUB	native	5	3	tree	perennial	red oak
Rhamnus alnifolia	Rhamnaceae	RHAALN	native	8	-5	shrub	perennial	alder-leaved buckthorn
Ribes hirtellum	Grossulariaceae	RIBHIR	native	6	-3	shrub	perennial	swamp gooseberry
Rosa palustris	Rosaceae	ROSPAL	native	5	-5	shrub	perennial	swamp rose
Rubus pubescens	Rosaceae	RUBPUB	native	4	-3	shrub	perennial	dwarf raspberry
Rubus strigosus	Rosaceae	RUBSTR	native	2	0	shrub	perennial	wild red raspberry
Rumex orbiculatus	Polygonaceae	RUMORB	native	9	-5	forb	perennial	great water dock
Sagittaria latifolia	Alismataceae	SAGLAT	native	4	-5	forb	perennial	common arrowhead
Salix bebbiana	Salicaceae	SALBEB	native	1	-3	shrub	perennial	bebb's willow
Salix candida	Salicaceae	SALCAN	native	9	-5	shrub	perennial	hoary willow
Salix discolor	Salicaceae	SALDIS	native	1	-3	shrub	perennial	pussy willow
Schoenoplectus acutus; scirpus a.	Cyperaceae	SCHACU	native	5	-5	sedge	perennial	hardstem bulrush
Schoenoplectus tabernaemontani; scirpus validus	Cyperaceae	SCHTAB	native	4	-5	sedge	perennial	softstem bulrush
Sium suave	Apiaceae	SIUSUA	native	5	-5	forb	perennial	water-parsnip
Solidago canadensis	Asteraceae	SOLCAN	native	1	3	forb	perennial	canada goldenrod
Solidago patula	Asteraceae	SOLPAT	native	6	-5	forb	perennial	swamp goldenrod
Solidago uliginosa	Asteraceae	SOLULI	native	4	-5	forb	perennial	bog goldenrod
Spiraea alba	Rosaceae	SPIALB	native	4	-3	shrub	perennial	meadowsweet
Symphotrichum firmum; aster puniceus	Asteraceae	SYMFIR	native	4	-3	forb	perennial	smooth swamp aster
Symphotrichum lanceolatum; aster l.	Asteraceae	SYMLAN	native	2	-3	forb	perennial	panicled aster
Symphotrichum lateriflorum; aster l.	Asteraceae	SYMLAT	native	2	0	forb	perennial	calico aster
Symplocarpus foetidus	Araceae	SYMFOE	native	6	-5	forb	perennial	skunk-cabbage
Thalictrum dasycarpum	Ranunculaceae	THADAS	native	3	-3	forb	perennial	purple meadow-rue
Thelypteris palustris	Thelypteridaceae	THEPAL	native	2	-3	fern	perennial	marsh fern
Toxicodendron vernix	Anacardiaceae	TOXVER	native	6	-5	shrub	perennial	poison sumac
Trientalis borealis	Myrsinaceae	TRIBOR	native	5	0	forb	perennial	star-flower
Typha latifolia	Typhaceae	TYPLAT	native	1	-5	forb	perennial	broad-leaved cat-tail
Ulmus americana	Ulmaceae	ULMAME	native	1	-3	tree	perennial	american elm

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Vaccinium corymbosum	Ericaceae	VACCOR	native	6	-3	shrub	perennial	highbush blueberry
Valeriana uliginosa	Valerianaceae	VALULI	native	10	-5	forb	perennial	swamp valerian
Viburnum lentago	Adoxaceae	VIBLEN	native	4	0	shrub	perennial	nannyberry
Viburnum opulus	Adoxaceae	VIBOPU	non-native	0	-3	shrub	perennial	european highbush-cranberry
Viola labradorica; v. conspersa	Violaceae	VIOLAB	native	3	0	forb	perennial	dog violet
Viola macloskeyi	Violaceae	VIOMAC	native	6	-5	forb	perennial	smooth white violet
Vitis riparia	Vitaceae	VITRIP	native	3	0	vine	perennial	river-bank grape
Zanthoxylum americanum	Rutaceae	ZANAME	native	3	3	shrub	perennial	prickly-ash

Appendix 5. Pierce Road East Prairie Fen Floristic Quality Assessment.

07/01/2015

Sharonville SGA

Jackson

MI

USA

FQA DB Region:

Michigan

FQA DB Publication Year:

2014

FQA DB Description:

Reznicek, A.A., M.R. Penskar, B.S. Walters, and B.S. Slaughter. 2014. Michigan Floristic Quality Assessment Database. Herbarium, University of Michigan, Ann Arbor, MI and Michigan Natural Features Inventory, Michigan State University, Lansing, MI. <http://michiganflora.net>

Practitioner:

Brad Slaughter

Latitude:

42.1646

Longitude:

-84.140062

Weather Notes:

Duration Notes:

Community Type Notes:

prairie fen

Other Notes:

Additional survey by John Paskus 27 August 2015.

Private/Public:

Private

Conservatism-Based Metrics:

Total Mean C:

4.6

Native Mean C:

4.8

Total FQI:

40.1

Native FQI:

41

Adjusted FQI:

47

% C value 0:

6.6

% C value 1-3:

32.9

% C value 4-6:

38.2

% C value 7-10:

22.4

Native Tree Mean C:

4.3

Native Shrub Mean C:

4.4

Native Herbaceous Mean C:	4.9	
Species Richness:		
Total Species:	76	
Native Species:	73	96.10%
Non-native Species:	3	3.90%
Species Wetness:		
Mean Wetness:	-2.9	
Native Mean Wetness:	-3	
Physiognomy Metrics:		
Tree:	3	3.90%
Shrub:	14	18.40%
Vine:	1	1.30%
Forb:	35	46.10%
Grass:	6	7.90%
Sedge:	14	18.40%
Rush:	0	0%
Fern:	3	3.90%
Bryophyte:	0	0%
Duration Metrics:		
Annual:	2	2.60%
Perennial:	73	96.10%
Biennial:	1	1.30%
Native Annual:	2	2.60%
Native Perennial:	70	92.10%
Native Biennial:	1	1.30%

Species:								
Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Anemone virginiana	Ranunculaceae	ANEVIR	native	3	3	forb	perennial	thimbleweed
Apios americana	Fabaceae	APIAME	native	3	-3	vine	perennial	groundnut

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
<i>Asclepias incarnata</i>	Apocynaceae	ASCINC	native	6	-5	forb	perennial	swamp milkweed
<i>Asclepias syriaca</i>	Apocynaceae	ASCSYR	native	1	5	forb	perennial	common milkweed
<i>Betula alleghaniensis</i>	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
<i>Bidens cernua</i>	Asteraceae	BIDCER	native	3	-5	forb	annual	nodding beggar-ticks
<i>Boehmeria cylindrica</i>	Urticaceae	BOECYL	native	5	-5	forb	perennial	false nettle
<i>Bromus ciliatus</i>	Poaceae	BROCIL	native	6	-3	grass	perennial	fringed brome
<i>Calamagrostis canadensis</i>	Poaceae	CALCAN	native	3	-5	grass	perennial	blue-joint
<i>Carex atherodes</i>	Cyperaceae	CXATHE	native	5	-5	sedge	perennial	sedge
<i>Carex aurea</i>	Cyperaceae	CXAURE	native	3	-3	sedge	perennial	sedge
<i>Carex interior</i>	Cyperaceae	CXINTE	native	3	-5	sedge	perennial	sedge
<i>Carex lacustris</i>	Cyperaceae	CXLACU	native	6	-5	sedge	perennial	sedge
<i>Carex lasiocarpa</i>	Cyperaceae	CXLASI	native	8	-5	sedge	perennial	sedge
<i>Carex leptalea</i>	Cyperaceae	CXLEPA	native	5	-5	sedge	perennial	sedge
<i>Carex meadii</i> ; <i>c. tetanica</i>	Cyperaceae	CXMEAD	native	8	0	sedge	perennial	sedge
<i>Carex prairea</i>	Cyperaceae	CXPRAI	native	10	-3	sedge	perennial	sedge
<i>Carex stricta</i>	Cyperaceae	CXSTRI	native	4	-5	sedge	perennial	sedge
<i>Cicuta bulbifera</i>	Apiaceae	CICBUL	native	5	-5	forb	perennial	water hemlock
<i>Cirsium muticum</i>	Asteraceae	CIRMUT	native	6	-5	forb	biennial	swamp thistle
<i>Cladium mariscoides</i>	Cyperaceae	CLAMAR	native	10	-5	sedge	perennial	twig-rush
<i>Cornus amomum</i>	Cornaceae	CORAMO	native	2	-3	shrub	perennial	silky dogwood
<i>Cornus foemina</i>	Cornaceae	CORFOE	native	1	0	shrub	perennial	gray dogwood
<i>Cornus sericea</i> ; <i>c. stolonifera</i>	Cornaceae	CORSER	native	2	-3	shrub	perennial	red-osier
<i>Cypripedium reginae</i>	Orchidaceae	CYPREG	native	9	-3	forb	perennial	showy or queens lady-slipper
<i>Dasiphora fruticosa</i> ; <i>potentilla f.</i>	Rosaceae	DASFRU	native	8	-3	shrub	perennial	shrubby cinquefoil
<i>Dichanthelium implicatum</i> ; <i>panicum i.</i>	Poaceae	DICIMP	native	3	0	grass	perennial	panic grass
<i>Doellingeria umbellata</i> ; <i>aster u.</i>	Asteraceae	DOEUMB	native	5	-3	forb	perennial	flat-topped white aster
<i>Elaeagnus umbellata</i>	Elaeagnaceae	ELAUMB	non-native	0	3	shrub	perennial	autumn-olive
<i>Eleocharis elliptica</i>	Cyperaceae	ELEELL	native	6	-5	sedge	perennial	golden-seeded spike rush
<i>Elymus trachycaulus</i> ; <i>agropyron t.</i>	Poaceae	ELYTRA	native	8	3	grass	perennial	slender wheatgrass
<i>Equisetum arvense</i>	Equisetaceae	EQUARV	native	0	0	fern	perennial	common horsetail
<i>Eupatorium perfoliatum</i>	Asteraceae	EUPPER	native	4	-3	forb	perennial	boneset
<i>Euthamia graminifolia</i>	Asteraceae	EUTGRA	native	3	0	forb	perennial	grass-leaved goldenrod
<i>Eutrochium maculatum</i> ; <i>eupatorium m.</i>	Asteraceae	EUTMAC	native	4	-5	forb	perennial	joe-pye-weed

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Fragaria virginiana	Rosaceae	FRAVIR	native	2	3	forb	perennial	wild strawberry
Frangula alnus; rhamnus frangula	Rhamnaceae	FRAALN	non-native	0	0	shrub	perennial	glossy buckthorn
Gentiana andrewsii	Gentianaceae	GENAND	native	5	-3	forb	perennial	bottle gentian
Helianthus giganteus	Asteraceae	HELGIG	native	5	-3	forb	perennial	tall sunflower
Ilex verticillata	Aquifoliaceae	ILEVER	native	5	-3	shrub	perennial	michigan holly
Impatiens capensis	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
Juncus dudleyi	Juncaceae	JUNDUD	native	1	-3	forb	perennial	dudleys rush
Juniperus communis	Cupressaceae	JUNCOI	native	4	3	shrub	perennial	common or ground juniper
Larix laricina	Pinaceae	LARLAR	native	5	-3	tree	perennial	tamarack
Lobelia kalmii	Campanulaceae	LOBKAL	native	10	-5	forb	perennial	bog lobelia
Lobelia siphilitica	Campanulaceae	LOBSIP	native	4	-3	forb	perennial	great blue lobelia
Lycopus americanus	Lamiaceae	LYCAME	native	2	-5	forb	perennial	common water horehound
Lysimachia quadriflora	Myrsinaceae	LYSQUR	native	10	-5	forb	perennial	whorled loosestrife
Lythrum salicaria	Lythraceae	LYTSAL	non-native	0	-5	forb	perennial	purple loosestrife
Muhlenbergia glomerata	Poaceae	MUHGLO	native	10	-5	grass	perennial	marsh wild-timothy
Oxypolis rigidior	Apiaceae	OXYRIG	native	6	-5	forb	perennial	cowbane
Parnassia glauca	Parnassiaceae	PARGLA	native	8	-5	forb	perennial	grass-of-parnassus
Pedicularis lanceolata	Orobanchaceae	PEDLAN	native	8	-3	forb	perennial	swamp-betony
Prunella vulgaris	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
Pycnanthemum virginianum	Lamiaceae	PYCVIR	native	5	-3	forb	perennial	common mountain mint
Rhamnus alnifolia	Rhamnaceae	RHAALN	native	8	-5	shrub	perennial	alder-leaved buckthorn
Ribes hirtellum	Grossulariaceae	RIBHIR	native	6	-3	shrub	perennial	swamp gooseberry
Salix bebbiana	Salicaceae	SALBEB	native	1	-3	shrub	perennial	bebbs willow
Salix candida	Salicaceae	SALCAN	native	9	-5	shrub	perennial	hoary willow
Salix petiolaris	Salicaceae	SALPET	native	1	-3	shrub	perennial	slender willow
Schoenoplectus acutus; scirpus a.	Cyperaceae	SCHACU	native	5	-5	sedge	perennial	hardstem bulrush
Schoenoplectus tabernaemontani; scirpus validus	Cyperaceae	SCHTAB	native	4	-5	sedge	perennial	softstem bulrush
Scirpus atrovirens	Cyperaceae	SCIATV	native	3	-5	sedge	perennial	bulrush
Selaginella eclipses	Selaginellaceae	SELECL	native	5	-3	fern	perennial	selaginella
Solidago canadensis	Asteraceae	SOLCAN	native	1	3	forb	perennial	canada goldenrod
Solidago ohioensis	Asteraceae	SOLOHI	native	8	-5	forb	perennial	ohio goldenrod
Solidago riddellii	Asteraceae	SOLRID	native	6	-5	forb	perennial	riddells goldenrod
Solidago rugosa	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Solidago uliginosa	Asteraceae	SOLULI	native	4	-5	forb	perennial	bog goldenrod
Sphenopholis intermedia	Poaceae	SPHINT	native	4	0	grass	perennial	slender wedgegrass
Thalictrum dasycarpum	Ranunculaceae	THADAS	native	3	-3	forb	perennial	purple meadow-rue
Thelypteris palustris	Thelypteridaceae	THEPAL	native	2	-3	fern	perennial	marsh fern
Toxicodendron vernix	Anacardiaceae	TOXVER	native	6	-5	shrub	perennial	poison sumac
Typha latifolia	Typhaceae	TYPLAT	native	1	-5	forb	perennial	broad-leaved cat-tail
Ulmus americana	Ulmaceae	ULMAME	native	1	-3	tree	perennial	american elm
Valeriana uliginosa	Valerianaceae	VALULI	native	10	-5	forb	perennial	swamp valerian