



# Clay Cliffs Natural Area

## Floristic Quality Assessment Results

A Floristic Quality Assessment of Clay Cliffs Natural Area was conducted by Liana May during the summer of 2012, with an addendum in 2015.

Floristic quality assessments (FQAs) are a useful tool to measure a plant community's conservation value. To perform an FQA, all vascular plant species in a community are quantified and an index representing the rarity of these species is summed to give a ranking that can be compared across different ecosystem types. This information can then be used to identify high-quality species and groupings of species in order to prioritize conservation and management efforts. At Clay Cliffs Natural Area the total number of species and native species are:

Native Species	Total Species
163	225

The coefficient of conservation (C) is a value between 0 and 10 assigned to each species, representing the species likelihood to occur in an unaltered, pre-European settlement landscape in the state of Michigan (Herman et al 2001). A C-value of 0 is assigned to species with low fidelity to their natural habitat and the ability to persist in numerous habitat conditions. A C-value of 10 is assigned to invasive species, also called adventives. At Clay Cliffs Natural Area the mean C-values are:

Native Mean C	Mean C w/ Adventives
4.2	3

The coefficient of wetness (W) is assigned to each species depending on their probability to occur in wetlands, where species with a W-value of -5 are obligatory wetland species, and those with a W-value of +5 are upland species. At Clay Cliffs Natural Area the mean coefficients of wetness are:

Native Mean W	Mean W w/ Adventives
1.2	1.7

FQIs less than 20 have minimal significance, while FQIs greater than 35 represent areas of conservation importance and are floristically significant on a statewide level. Areas with FQIs greater than 50 are extremely rare and represent areas of significant native biodiversity (Herman et al 2001). At Clay Cliffs Natural Area the FQI's are:

Native FQI	FQI w/ Adventives
53.6	35.7

May, L. 2012. Floristic Quality Assessment and Habitat Mapping of Clay Cliffs Natural Area. Addendum Feb. 2015.

Herman, K. D., L. A. Masters, M. R. Penskar, A. A. Reznicek, G. S. Wilhelm, W. W. Brodovich, and K. P. Gardiner. 2001. Floristic Quality Assessment with Wetland Categories and Examples of Computer Applications for the State of Michigan – Revised, 2nd Edition. Michigan Department of Natural Resources, Wildlife, Natural Heritage Program. Lansing, MI. 19 pp. + Appendices.



# Clay Cliffs Natural Area

## High Quality Plant Species

This list represents the most ecologically significant and high quality plants found at the Clay Cliffs Natural Area during a 2012 Floristic Quality Assessment conducted by Liana May. These plants are the highest quality species found on the property and therefore may be rare, difficult to find, or not be blooming depending on the season.

Please remember to practice Leave No Trace techniques; picking flowers may not seem like a big deal, but it means others won't have a chance to enjoy them. With thousands of people visiting Conservancy properties, the less impact we each make, the longer we will enjoy what we have. If you are interested in conducting a scientific study on the property please contact the Conservancy for written permission.

<b>C</b>	<b>Scientific Name</b>	<b>Common Name</b>
7	<i>Actaea pachypoda</i>	DOLL'S EYES
7	<i>Betula alleghaniensis</i>	YELLOW BIRCH
7	<i>Dicentra canadensis</i>	SQUIRREL CORN
7	<i>Dicentra cucullaria</i>	DUTCHMAN'S BREECHES
7	<i>Elymus canadensis</i>	CANADA WILD RYE
7	<i>Equisetum fluviatile</i>	WATER HORSETAIL
7	<i>Equisetum scirpoides</i>	DWARF SCOURING RUSH
7	<i>Shepherdia canadensis</i>	SOAPBERRY
7	<i>Solidago caesia</i>	BLUE STEMMED GOLDENROD
7	<i>Vitis labrusca</i>	FOX GRAPE
8	<i>Agropyron trachycaulum</i>	SLENDER WHEAT GRASS
8	<i>Aralia racemosa</i>	SPIKENARD
8	<i>Carex plantaginea</i>	SEDGE
8	<i>Corallorhiza odontorhiza</i>	FALL CORAL ROOT
8	<i>Coreopsis lanceolata</i>	SAND COREOPSIS
8	<i>Cornus florida</i>	FLOWERING DOGWOOD
8	<i>Hepatica acutiloba</i>	SHARP LOBED HEPATICA
8	<i>Mitella diphylla</i>	BISHOP'S CAP
8	<i>Oenothera oakesiana</i>	EVENING PRIMROSE
8	<i>Rhamnus alnifolia</i>	ALDER LEAVED BUCKTHORN
10	<i>Ammophila breviligulata</i>	MARRAM GRASS
10	<i>Calamovilfa longifolia</i>	SAND REED GRASS
10	<i>Dryopteris goldiana</i>	GOLDIE'S WOODFERN
10	<i>Epifagus virginiana</i>	BEECH DROPS
10	<i>Equisetum pretense</i>	MEADOW HORSETAIL
10	<i>Lathyrus japonicas</i>	BEACH PEA

To see pictures or learn more about the plants listed above please visit the Michigan Natural Features Inventory website at <http://mnfi.anr.msu.edu/data/specialplants.cfm> or consult Newcomb's Wildflower Guide by Lawrence Newcomb.

Table 2. Summary of high conservation-value species.

<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
8	<i>Agropyron trachycaulum</i>	0	FAC	Nt P-Grass	SLENDER WHEAT GRASS
8	<i>Aralia racemose</i>	5	UPL	Nt P-Forb	SPIKENARD
8	<i>Carex plantaginea</i>	5	UPL	Nt P-Sedge	SEDGE
8	<i>Corallorhiza odontorhiza</i>	5	UPL	Nt P-Forb	FALL CORAL ROOT
8	<i>Coreopsis lanceolate</i>	3	FACU	Nt P-Forb	SAND COREOPSIS
8	<i>Cornus florida</i>	4	FACU-	Nt Tree	FLOWERING DOGWOOD
8	<i>Hepatica acutiloba</i>	5	UPL	Nt P-Forb	SHARP LOBED HEPATICA
8	<i>Mitella diphylla</i>	2	FACU+	Nt P-Forb	BISHOP'S CAP
8	<i>Oenothera oakesiana</i>	5	UPL	Nt B-Forb	EVENING PRIMROSE
8	<i>Rhamnus alnifolia</i>	-5	OBL	Nt Shrub	ALDER LEAVED BUCKTHORN
10	<i>Ammophila breviligulata</i>	5	UPL	Nt P-Grass	MARRAM GRASS
10	<i>Calamovilfa longifolia</i>	5	UPL	Nt P-Grass	SAND REED GRASS
10	<i>Dryopteris goldiana</i>	0	FAC	Nt Fern	GOLDIE'S WOODFERN
10	<i>Epifagus virginiana</i>	5	UPL	Nt P-Forb	BEECH DROPS
10	<i>Equisetum pratense</i>	-3	FACW	Nt Fern Ally	MEADOW HORSETAIL
10	<i>Lathyrus japonicus</i>	4	FACU-	Nt P-Forb	BEACH PEA
10	<i>Veronica beccabunga</i> var. <i>americana</i>	-5	OBL	Nt P-Forb	AMERICAN BROOKLIME

Table 3. Summary of non-native vegetation (61 species making up 28% of the flora).

SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ACER PLATANOIDES	5	UPL	Ad Tree	NORWAY MAPLE
AGROPYRON REPENS	3	FACU	Ad P-Grass	QUACK GRASS
AGROSTEMMA GITHAGO	3	FACU	Ad P-Forb	CORN COCKLE
AGROSTIS GIGANTEA	0	FAC	Ad P-Grass	REDTOP
ALLIARIA PETIOLATA	0	FAC	Ad B-Forb	GARLIC MUSTARD
ARCTIUM MINUS	5	UPL	Ad B-Forb	COMMON BURDOCK
BERTEROA INCANA	5	UPL	Ad A-Forb	HOARY ALYSSUM
BROMUS INERMIS	5	UPL	Ad P-Grass	SMOOTH BROME
CENTAUREA MACULOSA	5	UPL	Ad B-Forb	SPOTTED BLUET
CERASTIUM FONTANUM	3	FACU	Ad P-Forb	MOUSE EAR CHICKWEED
CHRYSANTHEMUM LEUCANTHEMUM	5	UPL	Ad P-Forb	OX EYE DAISY
CIRSIUM ARVENSE	3	FACU	Ad P-Forb	CANADIAN THISTLE
CIRSIUM PALUSTRE	-4	FACW+	Ad B-Forb	MARSH THISTLE
CIRSIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CORONILLA VARIA	5	UPL	Ad P-Forb	CROWN VETCH
DACTYLIS GLOMERATA	3	FACU	Ad P-Grass	ORCHARD GRASS
DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
DIANTHUS ARMERIA	5	UPL	Ad A-Forb	DEPTFORD PINK
ELAEAGNUS UMBELLATA	3	FACU	Ad Shrub	AUTUMN OLIVE
EPILOBIUM PARVIFLORUM	3	FACU	Ad P-Forb	WILLOW HERB
EPIPACTIS HELLEBORINE	5	UPL	Ad P-Forb	HELLEBORINE
EUPHORBIA ESULA	5	UPL	Ad P-Forb	LEAFY SPURGE
FESTUCA PRATENSIS	4	FACU-	Ad P-Grass	MEADOW FESCUE
GALIUM ODORATUM	5	UPL	Ad P-Forb	SWEET WOODRUFF
HIERACIUM AURANTIACUM	5	UPL	Ad P-Forb	ORANGE HAWKWEED
LACTUCA SERRIOLA	0	FAC	Ad B-Forb	PRICKLY LETTUCE
LEONURUS CARDIACA	5	UPL	Ad P-Forb	MOTHERWORT
LONICERA MORROWII	5	UPL	Ad Shrub	MORROW HONEYSUCKLE
MALUS PUMILA	5	UPL	Ad Tree	APPLE
MEDICAGO SATIVA	5	UPL	Ad P-Forb	ALFALFA
MELILOTUS ALBA	3	FACU	Ad B-Forb	WHITE SWEET CLOVER
MENTHA PIPERITA	-5	OBL	Ad P-Forb	PEPPERMINT
NEPETA CATARIA	1	FAC-	Ad P-Forb	CATNIP
PHLEUM PRATENSE	3	FACU	Ad P-Grass	TIMOTHY
PLANTAGO LANCEOLATA	0	FAC	Ad P-Forb	ENGLISH PLANTAIN
POA COMPRESSA	2	FACU+	Ad P-Grass	CANADA BLUEGRASS
POLYGONUM CONVULVULUS	1	FAC-	Ad A-Forb	FALSE BUCKWHEAT
POPULUS ALBA	5	UPL	Ad Tree	WHITE POPLAR
PRUNELLA VULGARIS	0	FAC	Nt P-Forb	LAWN PRUNELLA
RANUNCULUS ACRIS	-2	FACW-	Ad P-Forb	TALL or COMMON BUTTERCUP
RHAMNUS CATHARTICA	3	FACU	Ad Tree	COMMON BUCKTHORN
RIBES RUBRUM	5	UPL	Ad Shrub	RED CURRANT
ROBINIA PSEUDOACACIA	4	FACU-	Ad Tree	BLACK LOCUST
ROSA EGLANTERIA	5	UPL	Ad Shrub	SWEET BRIER
ROSA MULTIFLORA	3	FACU	Ad Shrub	MULTIFLORA ROSE
RUMEX ACETOSELLA	0	FAC	Ad P-Forb	SHEEP SORREL
RUMEX OBTUSIFOLIUS	-3	FACW	Ad P-Forb	BITTER DOCK
SALIX FRAGILIS	-1	FAC+	Ad Tree	CRACK WILLOW
SILENE PRATENSIS	5	UPL	Ad A-Forb	WHITE CATCHFLY
SILENE VULGARIS	5	UPL	Ad P-Forb	BLADDER CAMPION
SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
STELLARIA GRAMINEA	5	UPL	Ad P-Forb	STARWORT
SYRINGA VULGARIS	5	UPL	Ad Shrub	COMMON LILAC
TARAXACUM OFFICINALE	3	FACU	Ad P-Forb	COMMON DANDELION
TRAGOPOGON DUBIUS	5	UPL	Ad B-Forb	GOAT'S BEARD
TRIFOLIUM CAMPESTRE	5	UPL	Ad A-Forb	LOW HOP CLOVER
TRIFOLIUM HYBRIDUM	1	FAC-	Ad P-Forb	ALSIKE CLOVER
TRIFOLIUM PRATENSE	2	FACU+	Ad P-Forb	RED CLOVER
VERBASCUM THAPSUS	5	UPL	Ad B-Forb	COMMON MULLEIN
VERONICA VERNA	5	UPL	Ad A-Forb	SPRING CORN SPEEDWELL
VIBURNUM OPULUS	0	FAC	Ad Shrub	EUROPEAN Highbush CRANBERRY
VINCA MINOR	5	UPL	Ad Shrub	PERIWINKLE

Clay Cliffs Natural Area (all)  
 Addendum 2015  
 Clay Cliffs Natural Area  
 Leland  
 Leelanau  
 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, Liana May

Practitioner:  
 Latitude:  
 Longitude:  
 Weather Notes:  
 Duration Notes: Growing season 2012  
 Community Type Notes: Mesic northern forest, fallow farm fields, Lk MI shoreline bluff and beach.  
 Other Notes: Eurybia may be similar species. Unknown vine along west side of viewing platform, check July for flw.  
 Private/Public: Public

Conservatism-Based Metrics:

Total Mean C: 3  
 Native Mean C: 4.2  
 Total FQI: 45  
 Native FQI: 53.6  
 Adjusted FQI: 35.7  
 % C value 0: 31.1  
 % C value 1-3: 27.1  
 % C value 4-6: 30.2  
 % C value 7-10: 11.6  
 Native Tree Mean C: 4.4  
 Native Shrub Mean C: 3.4  
 Native Herbaceous Mean C: 4.3

Species Richness:  
 Total Species: 225  
 Native Species: 163 72.40%  
 Non-native Species: 62 27.60%

Species Wetness:  
 Mean Wetness: 1.7  
 Native Mean Wetness: 1.2

Physiognomy Metrics:

Tree: 27 12%  
 Shrub: 27 12%  
 Vine: 5 2.20%  
 Forb: 127 56.40%  
 Grass: 17 7.60%  
 Sedge: 10 4.40%  
 Rush: 0 0%  
 Fern: 12 5.30%  
 Bryophyte: 0 0%

Duration Metrics:

Annual: 15 6.70%  
 Perennial: 196 87.10%  
 Biennial: 14 6.20%  
 Native Annual: 8 3.60%  
 Native Perennial: 151 67.10%  
 Native Biennial: 4 1.80%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer platanoides	Sapindaceae	ACEPLA	non-native	0	5	tree	perennial	norway maple
Acer saccharum	Sapindaceae	ACESAU	native	5	3	tree	perennial	sugar maple
Acer spicatum	Sapindaceae	ACESPI	native	5	3	tree	perennial	mountain maple
Achillea millefolium	Asteraceae	ACHMIL	native	1	3	forb	perennial	yarrow
Actaea pachypoda	Ranunculaceae	ACTPAC	native	7	5	forb	perennial	dolls-eyes
Agrostemma githago	Caryophyllaceae	AGRGIT	non-native	0	5	forb	annual	corn-cockle
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
Ammophila brevifolium	Poaceae	AMMBRE	native	10	5	grass	perennial	marram grass
Anaphalis margaritacea	Asteraceae	ANAMAR	native	3	5	forb	perennial	pearly everlasting
Anemone canadensis	Ranunculaceae	ANECAN	native	4	-3	forb	perennial	canada anemone
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
Aralia racemosa	Araliaceae	ARARAC	native	8	3	forb	perennial	spikenard
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
Artemisia campestris	Asteraceae	ARTCAM	native	5	5	forb	biennial	wormwood
Asclepias syriaca	Apocynaceae	ASCSYR	native	1	5	forb	perennial	common milkweed
Berteroa incana	Brassicaceae	BERINC	non-native	0	5	forb	annual	hoary alyssum

Betula alleghaniensis	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
Betula papyrifera	Betulaceae	BETPAP	native	2	3	tree	perennial	paper birch
Bromus inermis	Poaceae	BROINE	non-native	0	5	grass	perennial	smooth brome
Cakile edentula	Brassicaceae	CAKEDE	native	5	3	forb	annual	sea-rocket
Calamovilfa longifolia	Poaceae	CALLON	native	10	5	grass	perennial	sand reed grass
Campanula rotundifolia	Campanulaceae	CAMROT	native	6	3	forb	perennial	harebell
Cardamine concatenata; dentaria laciniata	Brassicaceae	CARCON	native	5	3	forb	perennial	cut-leaved toothwort
Cardamine diphylla; dentaria d.	Brassicaceae	CARDIP	native	5	3	forb	perennial	two-leaved toothwort
Carex arctata	Cyperaceae	CXARTT	native	3	5	sedge	perennial	sedge
Carex comosa	Cyperaceae	CXCOMO	native	5	-5	sedge	perennial	sedge
Carex granularis	Cyperaceae	CXGRAN	native	2	-3	sedge	perennial	sedge
Carex interior	Cyperaceae	CXINTE	native	3	-5	sedge	perennial	sedge
Carex pedunculata	Cyperaceae	CXPEDU	native	5	3	sedge	perennial	sedge
Carex plantaginea	Cyperaceae	CXPLAN	native	8	5	sedge	perennial	sedge
Carex scabrata	Cyperaceae	CXSCAB	native	4	-5	sedge	perennial	sedge
Carex vulpinoidea	Cyperaceae	CXVULP	native	1	-5	sedge	perennial	sedge
Caulophyllum thalictroides	Berberidaceae	CAUTHA	native	5	5	forb	perennial	blue cohosh
Centaurea stoebe; c. maculosa	Asteraceae	CENSTO	non-native	0	5	forb	biennial	spotted knapweed
Cerastium fontanum	Caryophyllaceae	CERFON	non-native	0	3	forb	perennial	mouse-ear chickweed
Chamerion angustifolium; epilobium a.	Onagraceae	CHAANG	native	3	0	forb	perennial	fireweed
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 palustre	Asteraceae	CIRPAL	non-native	0	-3	forb	biennial	marsh thistle
Cirsium vulgare	Asteraceae	CIRVUL	non-native	0	3	forb	biennial	bull thistle
Claytonia caroliniana	Montiaceae	CLACAR	native	6	3	forb	perennial	carolina spring-beauty
Clinopodium vulgare	Lamiaceae	CLIVUL	native	3	5	forb	perennial	wild-basil
Coryza canadensis	Asteraceae	CONCAN	native	0	3	forb	annual	horseweed
Corallorhiza odontorhiza	Orchidaceae	CORODO	native	8	5	forb	perennial	fall coral-root
Coreopsis lanceolata	Asteraceae	CORLAN	native	8	3	forb	perennial	sand coreopsis
Cornus florida	Cornaceae	CORFLO	native	8	3	tree	perennial	flowering dogwood
Cornus sericea; c. stolonifera	Cornaceae	CORSER	native	2	-3	shrub	perennial	red-osier
Cystopteris bulbifera	Cystopteridaceae	CYSBUL	native	5	-3	fern	perennial	bulblet fern
Dactylis glomerata	Poaceae	DACGLO	non-native	0	3	grass	perennial	orchard grass
Daucus carota	Apiaceae	DAUCAR	non-native	0	5	forb	biennial	queen-annes-lace
Dianthus armeria	Caryophyllaceae	DIAARM	non-native	0	5	forb	annual	deptford pink
Dicentra canadensis	Papaveraceae	DICCAN	native	7	5	forb	perennial	squirrel-corn
Dicentra cucullaria	Papaveraceae	DICCUC	native	7	5	forb	perennial	dutchmans-breeches
Dichanthelium implicatum; panicum i.	Poaceae	DICIMP	native	3	0	grass	perennial	panic grass
Digitaria cognata; leptoloma c.	Poaceae	DIGCOG	native	3	5	grass	perennial	fall witch grass
Dryopteris carthusiana	Dryopteridaceae	DRYCAR	native	5	-3	fern	perennial	spinulose woodfern
Dryopteris goldiana	Dryopteridaceae	DRYGOL	native	10	0	fern	perennial	goldies woodfern
Dryopteris intermedia	Dryopteridaceae	DRYINT	native	5	0	fern	perennial	evergreen woodfern
Dryopteris marginalis	Dryopteridaceae	DRYMAR	native	5	3	fern	perennial	marginal woodfern
Elaeagnus umbellata	Elaeagnaceae	ELAUMB	non-native	0	3	shrub	perennial	autumn-olive
Eleocharis erythropoda	Cyperaceae	ELEERY	native	4	-5	sedge	perennial	spike-rush
Elymus canadensis	Poaceae	ELYCAN	native	5	3	grass	perennial	canada wild rye
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
Epifagus virginiana	Orobanchaceae	EPIVIR	native	10	5	forb	annual	beech-drops
Epilobium parviflorum	Onagraceae	EPIPAR	non-native	0	-5	forb	perennial	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	EQFLU	native	7	-5	fern	perennial	water horsetail
Equisetum hyemale	Equisetaceae	EQHYHE	native	2	0	fern	perennial	scouring rush
Equisetum pratense	Equisetaceae	EQPRAT	native	10	-3	fern	perennial	meadow horsetail
Equisetum scirpoides	Equisetaceae	EQUSCI	native	7	0	fern	perennial	dwarf scouring rush
Eragrostis spectabilis	Poaceae	ERASPE	native	3	5	grass	perennial	purple love grass
Erythronium americanum	Liliaceae	ERYAME	native	5	5	forb	perennial	yellow trout lily
Eupatorium perfoliatum	Asteraceae	EUPPER	native	4	-3	forb	perennial	boneset
Euphorbia virgata; e. esula	Euphorbiaceae	EUPVIR	non-native	0	5	forb	perennial	leafy spurge
Eurybia macrophylla; aster m.	Asteraceae	EURMAC	native	4	5	forb	perennial	big-leaved aster
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
Fallopia convolvulus; polygonum c.	Polygonaceae	FALCON	non-native	0	3	vine	annual	false buckwheat
Fragaria virginiana	Rosaceae	FRAVIR	native	2	3	forb	perennial	wild strawberry
Fraxinus americana	Oleaceae	FRAAME	native	5	3	tree	perennial	white ash
Fraxinus nigra	Oleaceae	FRANIG	native	6	-3	tree	perennial	black ash
Galium aparine	Rubiaceae	GALAPA	native	0	3	forb	annual	annual bedstraw
Galium odoratum	Rubiaceae	GALODO	non-native	0	5	forb	perennial	sweet woodruff
Geranium robertianum	Geraniaceae	GERRRO	native	3	3	forb	annual	herb robert
Geum canadense	Rosaceae	GEUCAN	native	1	0	forb	perennial	white avens
Glyceria striata	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
Hackelia virginiana	Boraginaceae	HACVIR	native	1	3	forb	biennial	beggars lice
Hepatica acutiloba	Ranunculaceae	HEPACU	native	8	5	forb	perennial	sharp-lobed hepatica
Hieracium aurantiacum	Asteraceae	HIEAUR	non-native	0	5	forb	perennial	orange hawkweed
Impatiens capensis	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
Juncus dudleyi	Juncaceae	JUNDUD	native	1	-3	forb	perennial	dudleys rush
Juncus effusus	Juncaceae	JUNEFF	native	3	-5	forb	perennial	soft-stemmed 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
Lactuca canadensis	Asteraceae	LACCAN	native	2	3	forb	biennial	tall lettuce
Lactuca serriola	Asteraceae	LACSER	non-native	0	3	forb	biennial	prickly lettuce
Laportea canadensis	Urticaceae	LAPCAN	native	4	-3	forb	perennial	wood nettle
Lathyrus japonicus	Fabaceae	LATJAP	native	10	3	vine	perennial	beach pea

Leonurus cardiaca	Lamiaceae	LEOCAR	non-native	0	5	forb	perennial	motherwort
Leucanthemum vulgare; chrysanthemum leucanthemum	Asteraceae	LEUVUL	non-native	0	5	forb	perennial	ox-eye daisy
Lonicera morrowii	Caprifoliaceae	LONMOR	non-native	0	3	shrub	perennial	morrow honeysuckle
Maianthemum canadense	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
Maianthemum racemosum; smilacina r.	Convallariaceae	MAIRAC	native	5	3	forb	perennial	false spikenard
Maianthemum stellatum; smilacina s.	Convallariaceae	MAISTE	native	5	0	forb	perennial	starry false solomon-seal
Malus pumila	Rosaceae	MALPUM	non-native	0	5	tree	perennial	apple
Matteuccia struthiopteris	Onocleaceae	MATSTR	native	3	0	fern	perennial	ostrich fern
Medicago sativa	Fabaceae	MEDSAT	non-native	0	5	forb	perennial	alfalfa
Melilotus albus	Fabaceae	MELALB	non-native	0	3	forb	biennial	white sweet-clover
Mentha canadensis; m. arvensis	Lamiaceae	MENCAS	native	3	-3	forb	perennial	wild mint
Mentha √óppiperita	Lamiaceae	MENPIP	non-native	0	-5	forb	perennial	peppermint
Mitella diphylla	Saxifragaceae	MITDIP	native	8	3	forb	perennial	bishops-cap
Monotropa uniflora	Ericaceae	MONOUN	native	5	3	forb	perennial	indian-pipe
Nepeta cataria	Lamiaceae	NEPCAT	non-native	0	3	forb	perennial	catnip
Oenothera oakesiana	Onagraceae	OENOAK	native	7	5	forb	biennial	evening-primrose
Onoclea sensibilis	Onocleaceae	ONOSEN	native	2	-3	fern	perennial	sensitive fern
Osmorhiza claytonii	Apiaceae	OSMCLI	native	4	3	forb	perennial	hairy sweet-cicely
Osmorhiza depauperata	Apiaceae	OSMDEP	native	9	5	forb	perennial	sweet-cicely
Ostrya virginiana	Betulaceae	OSTVIR	native	5	3	tree	perennial	ironwood; hop-hornbeam
Packera pauperula; senecio p.; senecio plattensis	Asteraceae	PACPAU	native	3	0	forb	perennial	balsam ragwort
Phalaris arundinacea	Poaceae	PHAARU	native	0	-3	grass	perennial	reed canary grass
Phleum pratense	Poaceae	PHLPRA	non-native	0	3	grass	perennial	timothy
Phryma leptostachya	Phrymaceae	PHRLEP	native	4	3	forb	perennial	lopseed
Physalis heterophylla	Solanaceae	PHYHET	native	3	5	forb	perennial	clammy ground-cherry
Phytolacca americana	Phytolaccaceae	PHYAME	native	2	3	forb	perennial	pokeweed
Picea glauca	Pinaceae	PICGLA	native	3	3	tree	perennial	white spruce
Pinus resinosa	Pinaceae	PINRES	native	6	3	tree	perennial	red pine
Pinus strobus	Pinaceae	PINSTR	native	3	3	tree	perennial	white pine
Plantago lanceolata	Plantaginaceae	PLALAN	non-native	0	3	forb	perennial	english plantain
Plantago rugelii	Plantaginaceae	PLARUG	native	0	0	forb	perennial	red-stalked plantain
Poa compressa	Poaceae	POACOM	non-native	0	3	grass	perennial	canada bluegrass
Populus alba	Salicaceae	POPALB	non-native	0	5	tree	perennial	white poplar
Populus balsamifera	Salicaceae	POPBAL	native	2	-3	tree	perennial	balsam poplar
Populus tremuloides	Salicaceae	POPTRE	native	1	0	tree	perennial	quaking aspen
Potentilla anserina	Rosaceae	POTANS	native	5	-3	forb	perennial	silverweed
Potentilla norvegica	Rosaceae	POTNOR	native	0	0	forb	annual	rough cinquefoil
Prenanthes alba	Asteraceae	PREALB	native	5	3	forb	perennial	white lettuce
Prunella vulgaris	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
Prunus pensylvanica	Rosaceae	PRUPEN	native	3	3	tree	perennial	pin cherry
Prunus serotina	Rosaceae	PRUSER	native	2	3	tree	perennial	wild black cherry
Prunus virginiana	Rosaceae	PRUVIR	native	2	3	shrub	perennial	choke-cherry
Pyrola elliptica	Ericaceae	PYRELL	native	6	3	forb	perennial	large-leaved shinleaf
Quercus rubra	Fagaceae	QUERUB	native	5	3	tree	perennial	red oak
Ranunculus acris	Ranunculaceae	RANACR	non-native	0	0	forb	perennial	tall or common buttercup
Ranunculus recurvatus	Ranunculaceae	RANREC	native	5	-3	forb	perennial	hooked crowfoot
Rhamnus alnifolia	Rhamnaceae	RHAALN	native	8	-5	shrub	perennial	alder-leaved buckthorn
Rhamnus cathartica	Rhamnaceae	RHACAT	non-native	0	0	tree	perennial	common buckthorn
Ribes cynosbati	Grossulariaceae	RIBCYN	native	4	3	shrub	perennial	prickly or wild gooseberry
Ribes rubrum	Grossulariaceae	RIBRUB	non-native	0	5	shrub	perennial	red currant
Robinia pseudoacacia	Fabaceae	ROBPSE	non-native	0	3	tree	perennial	black locust
Rosa blanda	Rosaceae	ROSBLA	native	3	3	shrub	perennial	wild rose
Rosa multiflora	Rosaceae	ROSMUL	non-native	0	3	shrub	perennial	multiflora rose
Rosa rubiginosa; r. eglanteria	Rosaceae	ROSRUB	non-native	0	3	shrub	perennial	sweetbrier
Rubus allegheniensis	Rosaceae	RUBALL	native	1	3	shrub	perennial	common blackberry
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
Salix discolor	Salicaceae	SALDIS	native	1	-3	shrub	perennial	pussy willow
Salix exigua	Salicaceae	SALEXI	native	1	-3	shrub	perennial	sandbar willow
Salix fragilis	Salicaceae	SALFRA	non-native	0	0	tree	perennial	crack willow
Sambucus canadensis	Adoxaceae	SAMCAN	native	3	-3	shrub	perennial	elderberry
Sambucus racemosa	Adoxaceae	SAMRAC	native	3	3	shrub	perennial	red-berried elder
Schedonorus pratensis; festuca p.	Poaceae	SCHPRA	non-native	0	3	grass	perennial	meadow fescue
Scirpus atrovirens	Cyperaceae	SCIATV	native	3	-5	sedge	perennial	bulrush
Scutellaria lateriflora	Lamiaceae	SCULAT	native	5	-5	forb	perennial	mad-dog skullcap
Securigera varia; coronilla v.	Fabaceae	SECVAR	non-native	0	5	forb	perennial	crown-vetch
Shepherdia canadensis	Elaeagnaceae	SHECAN	native	7	5	shrub	perennial	soapberry
Silene latifolia; s. pratensis	Caryophyllaceae	SILLAT	non-native	0	5	forb	annual	white campion
Silene vulgaris	Caryophyllaceae	SILVUL	non-native	0	5	forb	perennial	bladder campion
Solanum dulcamara	Solanaceae	SOLDUL	non-native	0	0	vine	perennial	bittersweet nightshade
Solidago altissima	Asteraceae	SOLALT	native	1	3	forb	perennial	tall goldenrod
Solidago caesia	Asteraceae	SOLCAE	native	6	3	forb	perennial	bluestem goldenrod
Solidago canadensis	Asteraceae	SOLCAN	native	1	3	forb	perennial	canada goldenrod
Solidago flexicaulis	Asteraceae	SOLFLE	native	6	3	forb	perennial	zigzag goldenrod
Solidago gigantea	Asteraceae	SOLGIG	native	3	-3	forb	perennial	late goldenrod
Solidago hispida	Asteraceae	SOLHIS	native	3	5	forb	perennial	hairy goldenrod
Solidago juncea	Asteraceae	SOLJUN	native	3	5	forb	perennial	early goldenrod
Solidago rugosa	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod
Solidago uliginosa	Asteraceae	SOLULI	native	4	-5	forb	perennial	bog goldenrod
Stellaria graminea	Caryophyllaceae	STEGRE	non-native	0	5	forb	perennial	starwort
Streptopus lanceolatus; s. roseus	Convallariaceae	STRLAN	native	5	3	forb	perennial	rose twisted-stalk
Symphoricarpos albus var. albus	Caprifoliaceae	SYMALA	native	5	3	shrub	perennial	snowberry

Symphotrichum firmum; aster puniceus	Asteraceae	SYMFIR	native	4	-3	forb	perennial	smooth swamp aster
Symphotrichum laeve; aster l.	Asteraceae	SYMLAE	native	5	3	forb	perennial	smooth aster
Syringa vulgaris	Oleaceae	SYRVUL	non-native	0	5	shrub	perennial	common lilac
Taraxacum officinale	Asteraceae	TAROFF	non-native	0	3	forb	perennial	common dandelion
Taxus canadensis	Taxaceae	TAXCAN	native	5	3	shrub	perennial	yew
Thalictrum dasycarpum	Ranunculaceae	THADAS	native	3	-3	forb	perennial	purple meadow-rue
Thalictrum dioicum	Ranunculaceae	THADIO	native	6	3	forb	perennial	early meadow-rue
Thuja occidentalis	Cupressaceae	THUOCC	native	4	-3	tree	perennial	arbor vitae
Tilia americana	Malvaceae	TILAME	native	5	3	tree	perennial	basswood
Toxicodendron rydbergii; t. radicans	Anacardiaceae	TOXRYD	native	3	0	shrub	perennial	poison-ivy
Tragopogon dubius	Asteraceae	TRADUB	non-native	0	5	forb	biennial	goats beard
Trientalis borealis	Myrsinaceae	TRIBOR	native	5	0	forb	perennial	star-flower
Trifolium campestre	Fabaceae	TRICAM	non-native	0	5	forb	annual	low hop clover
Trifolium hybridum	Fabaceae	TRIHYP	non-native	0	3	forb	perennial	alsike clover
Trifolium pratense	Fabaceae	TRIPRA	non-native	0	3	forb	perennial	red clover
Trillium grandiflorum	Trilliaceae	TRIGRA	native	5	3	forb	perennial	common trillium
Tsuga canadensis	Pinaceae	TSUCAN	native	5	3	tree	perennial	hemlock
Typha latifolia	Typhaceae	TYPLAT	native	1	-5	forb	perennial	broad-leaved cat-tail
Urtica dioica	Urticaceae	URTDIO	native	1	0	forb	perennial	stinging nettle
Uvularia grandiflora	Convallariaceae	UVUGRA	native	5	5	forb	perennial	bellwort
Verbascum thapsus	Scrophulariaceae	VERTHA	non-native	0	5	forb	biennial	common mullein
Veronica beccabunga var. americana	Plantaginaceae	VERBEA	native	10	-5	forb	perennial	american brooklime
Veronica serpyllifolia	Plantaginaceae	VERSER	non-native	0	0	forb	perennial	thyme-leaved speedwell
Veronica verna	Plantaginaceae	VERVER	non-native	0	5	forb	annual	spring corn speedwell
Viburnum acerifolium	Adoxaceae	VIBACE	native	6	5	shrub	perennial	maple-leaved viburnum
Viburnum opulus	Adoxaceae	VIBOPU	non-native	0	-3	shrub	perennial	european highbush-cranberry
Vinca minor	Apocynaceae	VINMIN	non-native	0	5	shrub	perennial	periwinkle
Viola pubescens	Violaceae	VIOPUB	native	4	3	forb	perennial	yellow violet
Viola striata	Violaceae	VIOSTR	native	5	-3	forb	perennial	cream violet
Vitis labrusca	Vitaceae	VITLAB	native	7	3	vine	perennial	fox grape
Vitis riparia	Vitaceae	VITRIP	native	3	0	vine	perennial	river-bank grape