



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.

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
161	222

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
4.1	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
.9	1.5

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
52.1	44.4

May, L. 2012. Floristic Quality Assessment and Habitat Mapping of Belanger Creek Preserve

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.

C	Scientific Name	Common Name
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 pratense</i>	MEADOW HORSETAIL
10	<i>Lathyrus japonicus</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.

ana is normally found south of the climactic tension zone and in the northern tip of the mitten and the western upper peninsula and is characteristic of rich mesic forests and stream and seep margins, similar to the habitat where it is found in Clay Cliffs Natural Area.

The herbaceous upland and farmstead is a mixture of 25 acres of old pasture and hay fields (“old field”), 16 acres early successional northern hardwood swamp, 7.2 acres of mixed forest, planted *Pinus* spp. and clones of *Populus alba* (“other”) and 1.7 acres of *Robinia pseudoacacia*. These areas are heavily effected by past farm-related disturbances and have been grouped together for the purposes of the FQA into “herbaceous upland and farmstead” (though northern hardwood swamp is a distinctive native community, it is found intermittently within the disturbed areas, and exhibits signs of past disturbance thus was grouped within the farmstead category). Forty percent of species found were non-native or invasive, and the average C-value is 2.2. The FQI is 26.1. Though the floristic value of the area is comparatively low, this area also provided the greatest diversity in species (n=146), not only because of the many Eurasian species found, but also because it provides a variety of habitat and niche space for native species. Sandy loam soils and seeps at the base of the moraine facilitate wetland species such as *Equisetum pratense* (C=10), *Veronica beccabunga* var. *americana* (C=10), *Carex comosa*, *C. interior*, *C. vulpinoidea*, *Eleocharis erythropoda*, and *Scutellaria lateriflora* while sandy ridges formed by outwash channels facilitate upland species such as *Anaphalis margaritacea*, *Asclepias syriaca*, *Calamovilfa longifolia* (C=10), *Epifagus virginiana* (C=10), and *Physalis heterophylla*. For a full species list see Appendix A.

Table 2. Summary of high conservation-value species.

C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
8	<i>Agropyron trachycaulum</i>	0	FAC	Nt P-Grass	SLENDER WHEAT GRASS
8	<i>Aralia racemosa</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 lanceolata</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

Site:	Clay Cliffs Natural Area
Locale:	Leelanau Co, MI
By:	Liana May

FLORISTIC QUALITY DATA	Native	161	72.50%	Adventive	61	27.50%
161 NATIVE SPECIES	Tree	21	9.50%	Tree	6	2.70%
222 Total Species	Shrub	17	7.70%	Shrub	8	3.60%
4.1 NATIVE MEAN C	W-Vine	3	1.40%	W-Vine	0	0.00%
3 W/Adventives	H-Vine	0	0.00%	H-Vine	0	0.00%
52.1 NATIVE FQI	P-Forb	76	34.20%	P-Forb	24	10.80%
44.4 W/Adventives	B-Forb	3	1.40%	B-Forb	10	4.50%
0.9 NATIVE MEAN W	A-Forb	9	4.10%	A-Forb	6	2.70%
1.5 W/Adventives	P-Grass	10	4.50%	P-Grass	7	3.20%
AVG: Faculative (-)	A-Grass	0	0.00%	A-Grass	0	0.00%
	P-Sedge	10	4.50%	P-Sedge	0	0.00%
	A-Sedge	0	0.00%	A-Sedge	0	0.00%
	Fern	12	5.40%			

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ACEPLA		0 ACER PLATANOIDES	5	UPL	Ad Tree	NORWAY MAPLE
ACESAU		5 Acer saccharum	3	FACU	Nt Tree	SUGAR MAPLE
ACESPI		5 Acer spicatum	3	FACU	Nt Tree	MOUNTAIN MAPLE
ACHMIL		1 Achillea millefolium	3	FACU	Nt P-Forb	YARROW
ACTPAC		7 Actaea pachypoda	5	UPL	Nt P-Forb	DOLL'S EYES
AGRREP		0 AGROPYRON REPENS	3	FACU	Ad P-Grass	QUACK GRASS
AGRTRA		8 Agropyron trachycaulum	0	FAC	Nt P-Grass	SLENDER WHEAT GRASS
AGRGIT		0 AGROSTEMMA GITHAGO	3	FACU	Ad P-Forb	CORN COCKLE
AGRGIG		0 AGROSTIS GIGANTEA	0	FAC	Ad P-Grass	REDTOP
ALLPET		0 ALLIARIA PETIOLATA	0	FAC	Ad B-Forb	GARLIC MUSTARD
AMBART		0 Ambrosia artemisiifolia	3	FACU	Nt A-Forb	COMMON RAGWEED
AMEARB		4 Amelanchier arborea	3	FACU	Nt Tree	JUNEBERRY
AMMBRE		10 Ammophila breviligulata	5	UPL	Nt P-Grass	MARRAM GRASS
ANAMAR		3 Anaphalis margaritacea	5	UPL	Nt P-Forb	PEARLY EVERLASTING
ANECAN		4 Anemone canadensis	-3	FACW	Nt P-Forb	CANADA ANEMONE

APOCAN	3 Apocynum cannabinum	0 FAC	Nt P-Forb	INDIAN HEMP
AQUCAN	5 Aquilegia canadensis	1 FAC-	Nt P-Forb	WILD COLUMBINE
ARANUD	5 Aralia nudicaulis	3 FACU	Nt P-Forb	WILD SARSAPARILLA
ARARAC	8 Aralia racemosa	5 UPL	Nt P-Forb	SPIKENARD
ARCMIN	0 ARCTIUM MINUS	5 UPL	Ad B-Forb	COMMON BURDOCK
ARITRI	5 Arisaema triphyllum	-2 FACW-	Nt P-Forb	JACK IN THE PULPIT
ARTCAM	5 Artemisia campestris	0 FAC	Nt B-Forb	WORMWOOD
ASCSYR	1 Asclepias syriaca	5 UPL	Nt P-Forb	COMMON MILKWEED
ASTFIR	4 Aster firmus	-5 OBL	Nt P-Forb	SMOOTH SWAMP ASTER
ASTLAE	5 Aster laevis	5 UPL	Nt P-Forb	SMOOTH ASTER
ASTMAC	4 Aster macrophyllum	5 UPL	Nt P-Forb	BIG LEAVED ASTER
BERINC	0 BERTEROA INCANA	5 UPL	Ad A-Forb	HOARY ALYSSUM
BETALL	7 Betula alleghaniensis	0 FAC	Nt Tree	YELLOW BIRCH
BETPAP	2 Betula papyrifera	2 FACU+	Nt Tree	PAPER BIRCH
BROINE	0 BROMUS INERMIS	5 UPL	Ad P-Grass	SMOOTH BROME
CAKEDE	5 Cakile edentula	3 FACU	Nt A-Forb	SEA ROCKET
CALLON	10 Calamovilfa longifolia	5 UPL	Nt P-Grass	SAND REED GRASS
CAMROT	6 Campanula rotundifolia	1 FAC-	Nt P-Forb	HAREBELL
CXARTT	3 Carex arctata	5 UPL	Nt P-Sedge	SEDGE
CXCOMO	5 Carex comosa	-5 OBL	Nt P-Sedge	SEDGE
CXGRAN	2 Carex granularis	-4 FACW+	Nt P-Sedge	SEDGE
CXINTE	3 Carex interior	-5 OBL	Nt P-Sedge	SEDGE
CXPEDU	5 Carex pedunculata	5 UPL	Nt P-Sedge	SEDGE
CXPLAN	8 Carex plantaginea	5 UPL	Nt P-Sedge	SEDGE
CXSCAB	4 Carex scabrata	-5 OBL	Nt P-Sedge	SEDGE
CXVULP	1 Carex vulpinoidea	-5 OBL	Nt P-Sedge	SEDGE
CAUTHA	5 Caulophyllum thalictroides	5 UPL	Nt P-Forb	BLUE COHOSH
CENMAU	0 CENTAUREA MACULOSA	5 UPL	Ad B-Forb	SPOTTED BLUET
CERFON	0 CERASTIUM FONTANUM	3 FACU	Ad P-Forb	MOUSE EAR CHICKWEED
CHRLEU	0 CHRYSANTHEMUM LEUCANTHEMUM	5 UPL	Ad P-Forb	OX EYE DAISY
CIRLUT	2 Circaea lutetiana	3 FACU	Nt P-Forb	ENCHANTER'S NIGHTSHADE
CIRARV	0 CIRSIUM ARVENSE	3 FACU	Ad P-Forb	CANADIAN THISTLE
CIRPAL	0 CIRSIUM PALUSTRE	-4 FACW+	Ad B-Forb	MARSH THISTLE
CIRVUL	0 CIRSIUM VULGARE	4 FACU-	Ad B-Forb	BULL THISTLE
CLAVIR	4 Claytonia virginica	3 FACU	Nt P-Forb	SPRING BEAUTY
CLIVUL	3 Clinopodium vulgare	5 UPL	Nt P-Forb	WILD BASIL
CONCAN	0 Conyza canadensis	1 FAC-	Nt A-Forb	HORSEWEED
CORODO	8 Corallorhiza odontorhiza	5 UPL	Nt P-Forb	FALL CORAL ROOT

CORLAN	8	Coreopsis lanceolata	3	FACU	Nt P-Forb	SAND COREOPSIS
CORFLO	8	Cornus florida	4	FACU-	Nt Tree	FLOWERING DOGWOOD
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CORVAR	0	CORONILLA VARIA	5	UPL	Ad P-Forb	CROWN VETCH
CYSBUL	5	Cystopteris bulbifera	-2	FACW-	Nt Fern	BULBLET FERN
DACGLO	0	DACTYLIS GLOMERATA	3	FACU	Ad P-Grass	ORCHARD GRASS
DAUCAR	0	DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
DIAARM	0	DIANTHUS ARMERIA	5	UPL	Ad A-Forb	DEPTFORD PINK
DICCAN	7	Dicentra canadensis	5	UPL	Nt P-Forb	SQUIRREL CORN
DICCUC	7	Dicentra cucullaria	5	UPL	Nt P-Forb	DUTCHMAN'S BREECHES
DRYCAR	5	Dryopteris carthusiana	-2	FACW-	Nt Fern	SPINULOSE WOODFERN
DRYGOL	10	Dryopteris goldiana	0	FAC	Nt Fern	GOLDIE'S WOODFERN
DRYINT	5	Dryopteris intermedia	0	FAC	Nt Fern	EVERGREEN WOODFERN
DRYMAR	5	Dryopteris marginalis	3	FACU	Nt Fern	MARGINAL WOODFERN
ELAUMB	0	ELAEAGNUS UMBELLATA	3	FACU	Ad Shrub	AUTUMN OLIVE
ELEERY	4	Eleocharis erythropoda	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELYSAN	7	Elymus canadensis	1	FAC-	Nt P-Grass	CANADA WILD RYE
EPIVIR	10	Epifagus virginiana	5	UPL	Nt P-Forb	BEECH DROPS
EPIANG	3	Epilobium angustifolium	0	FAC	Nt P-Forb	FIREWEED
EPIPAR	0	EPILOBIUM PARVIFLORUM	3	FACU	Ad P-Forb	WILLOW HERB
EPIHEL	0	EPIPACTIS HELLEBORINE	5	UPL	Ad P-Forb	HELLEBORINE
EQUARV	0	Equisetum arvense	0	FAC	Nt Fern Ally	COMMON HORSETAIL
EQUFLU	7	Equisetum fluviatile	-5	OBL	Nt Fern Ally	WATER HORSETAIL
EQUHYE	2	Equisetum hyemale	-2	FACW-	Nt Fern Ally	SCOURING RUSH
EQUPRA	10	Equisetum pratense	-3	FACW	Nt Fern Ally	MEADOW HORSETAIL
EQUSCI	7	Equisetum scirpoides	-1	FAC+	Nt Fern Ally	DWARF SCOURING RUSH
ERASPE	3	Eragrostis spectabilis	5	UPL	Nt P-Grass	PURPLE LOVE GRASS
ERYAME	5	Erythronium americanum	5	UPL	Nt P-Forb	YELLOW TROUT LILY
EUPMAM	4	Eupatorium maculatum	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUPESU	0	EUPHORBIA ESULA	5	UPL	Ad P-Forb	LEAFY SPURGE
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FAGGRA	6	Fagus grandifolia	3	FACU	Nt Tree	AMERICAN BEECH
FESPRA	0	FESTUCA PRATENSIS	4	FACU-	Ad P-Grass	MEADOW FESCUE
FRAVIR	2	Fragaria virginiana	1	FAC-	Nt P-Forb	WILD STRAWBERRY
FRAAME	5	Fraxinus americana	3	FACU	Nt Tree	WHITE ASH
FRANIG	6	Fraxinus nigra	-4	FACW+	Nt Tree	BLACK ASH
GALAPA	0	Galium aparine	3	FACU	Nt A-Forb	ANNUAL BEDSTRAW

GALODO	0 GALIUM ODORATUM	5 UPL	Ad P-Forb	SWEET WOODRUFF
GERROB	3 Geranium robertianum	5 UPL	Nt A-Forb	HERB ROBERT
GEUCAN	1 Geum canadense	0 FAC	Nt P-Forb	WHITE AVENS
GLYSTR	4 Glyceria striata	-5 OBL	Nt P-Grass	FOWL MANNA GRASS
HACVIR	1 Hackelia virginiana	1 FAC-	Nt P-Forb	BEGGAR'S LICE
HEPACU	8 Hepatica acutiloba	5 UPL	Nt P-Forb	SHARP LOBED HEPATICA
HIEAUR	0 HIERACIUM AURANTIACUM	5 UPL	Ad P-Forb	ORANGE HAWKWEED
HYSPAT	5 Hystrix patula	5 UPL	Nt P-Grass	BOTTLEBRUSH GRASS
IMPCAP	2 Impatiens capensis	-3 FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNDUD	1 Juncus dudleyi	0 FAC	Nt P-Forb	DUDLEY'S RUSH
JUNEFF	3 Juncus effusus	-5 OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNTEN	1 Juncus tenuis	0 FAC	Nt P-Forb	PATH RUSH
JUNCOI	4 Juniperus communis	3 FACU	Nt Shrub	COMMON or GROUND JUNIPER
LACCAN	2 Lactuca canadensis	2 FACU+	Nt B-Forb	TALL LETTUCE
LACSER	0 LACTUCA SERRIOLA	0 FAC	Ad B-Forb	PRICKLY LETTUCE
LAPCAN	4 Laportea canadensis	-3 FACW	Nt P-Forb	WOOD NETTLE
LATJAP	10 Lathyrus japonicus	4 FACU-	Nt P-Forb	BEACH PEA
LEOCAR	0 LEONURUS CARDIACA	5 UPL	Ad P-Forb	MOTHERWORT
LEPCOG	3 Leptoloma cognatum	5 UPL	Nt P-Grass	FALL WITCH GRASS
LONMOR	0 LONICERA MORROWII	5 UPL	Ad Shrub	MORROW HONEYSUCKLE
MAICAC	4 Maianthemum canadense	0 FAC	Nt P-Forb	CANADA MAYFLOWER
MALPUM	0 MALUS PUMILA	5 UPL	Ad Tree	APPLE
MATSTR	3 Matteuccia struthiopteris	-3 FACW	Nt Fern	OSTRICH FERN
MEDSAT	0 MEDICAGO SATIVA	5 UPL	Ad P-Forb	ALFALFA
MELALB	0 MELILOTUS ALBA	3 FACU	Ad B-Forb	WHITE SWEET CLOVER
MENARV	3 Mentha arvensis	-3 FACW	Nt P-Forb	WILD MINT
MENPIP	0 MENTHA PIPERITA	-5 OBL	Ad P-Forb	PEPPERMINT
MITDIP	8 Mitella diphylla	2 FACU+	Nt P-Forb	BISHOP'S CAP
MONOUN	5 Monotropa uniflora	3 FACU	Nt P-Forb	INDIAN PIPE
NEPCAT	0 NEPETA CATARIA	1 FAC-	Ad P-Forb	CATNIP
OENOAK	8 Oenothera oakesiana	5 UPL	Nt B-Forb	EVENING PRIMROSE
ONOSEN	2 Onoclea sensibilis	-3 FACW	Nt Fern	SENSITIVE FERN
OSMLON	3 Osmorhiza longistylis	4 FACU-	Nt P-Forb	SMOOTH SWEET CICELY
OSTVIR	5 Ostrya virginiana	4 FACU-	Nt Tree	IRONWOOD; HOP HORNBEAM
PANIMP	3 Panicum implicatum	0 FAC	Nt P-Grass	PANIC GRASS
PHAARU	0 Phalaris arundinacea	-4 FACW+	Nt P-Grass	REED CANARY GRASS
PHLPRA	0 PHLEUM PRATENSE	3 FACU	Ad P-Grass	TIMOTHY
PHRLEP	4 Phryma leptostachya	5 UPL	Nt P-Forb	LOPSEED

PHYHET	3 <i>Physalis heterophylla</i>	5 UPL	Nt P-Forb	CLAMMY GROUND CHERRY
PHYAME	2 <i>Phytolacca americana</i>	1 FAC-	Nt P-Forb	POKEWEED
PICGLA	3 <i>Picea glauca</i>	3 FACU	Nt Tree	WHITE SPRUCE
PINRES	6 <i>Pinus resinosa</i>	3 FACU	Nt Tree	RED PINE
PINSTR	3 <i>Pinus strobus</i>	3 FACU	Nt Tree	WHITE PINE
PLALAN	0 <i>PLANTAGO LANCEOLATA</i>	0 FAC	Ad P-Forb	ENGLISH PLANTAIN
PLARUG	0 <i>Plantago rugelii</i>	0 FAC	Nt A-Forb	RED STALKED PLANTAIN
POACOM	0 <i>POA COMPRESSA</i>	2 FACU+	Ad P-Grass	CANADA BLUEGRASS
POLCON	0 <i>POLYGONUM CONVULVULUS</i>	1 FAC-	Ad A-Forb	FALSE BUCKWHEAT
POPALB	0 <i>POPULUS ALBA</i>	5 UPL	Ad Tree	WHITE POPLAR
POPBAL	2 <i>Populus balsamifera</i>	-3 FACW	Nt Tree	BALSAM POPLAR
POPTRE	1 <i>Populus tremuloides</i>	0 FAC	Nt Tree	QUAKING ASPEN
POTANS	5 <i>Potentilla anserina</i>	-4 FACW+	Nt P-Forb	SILVERWEED
POTNOR	0 <i>Potentilla norvegica</i>	0 FAC	Nt A-Forb	ROUGH CINQUEFOIL
PREALB	5 <i>Prenanthes alba</i>	3 FACU	Nt P-Forb	WHITE LETTUCE
PRUVUL	0 <i>PRUNELLA VULGARIS</i>	0 FAC	Nt P-Forb	LAWN PRUNELLA
PRUPEN	3 <i>Prunus pensylvanica</i>	4 FACU-	Nt Tree	PIN CHERRY
PRUSER	2 <i>Prunus serotina</i>	3 FACU	Nt Tree	WILD BLACK CHERRY
PRUVIR	2 <i>Prunus virginiana</i>	1 FAC-	Nt Shrub	CHOKE CHERRY
PYRELL	6 <i>Pyrola elliptica</i>	5 UPL	Nt P-Forb	LARGE LEAVED SHINLEAF
QUERUB	5 <i>Quercus rubra</i>	3 FACU	Nt Tree	RED OAK
RANACR	0 <i>RANUNCULUS ACRIS</i>	-2 FACW-	Ad P-Forb	TALL or COMMON BUTTERCUP
RANREC	5 <i>Ranunculus recurvatus</i>	-3 FACW	Nt A-Forb	HOOKED CROWFOOT
RHAALN	8 <i>Rhamnus alnifolia</i>	-5 OBL	Nt Shrub	ALDER LEAVED BUCKTHORN
RHACAT	0 <i>RHAMNUS CATHARTICA</i>	3 FACU	Ad Tree	COMMON BUCKTHORN
RIBCYN	4 <i>Ribes cynosbati</i>	5 UPL	Nt Shrub	PRICKLY or WILD GOOSEBERRY
RIBRUB	0 <i>RIBES RUBRUM</i>	5 UPL	Ad Shrub	RED CURRANT
ROBPSE	0 <i>ROBINIA PSEUDOACACIA</i>	4 FACU-	Ad Tree	BLACK LOCUST
ROSBLA	3 <i>Rosa blanda</i>	3 FACU	Nt Shrub	WILD ROSE
ROSEGL	0 <i>ROSA EGLANTERIA</i>	5 UPL	Ad Shrub	SWEET BRIER
ROSMUL	0 <i>ROSA MULTIFLORA</i>	3 FACU	Ad Shrub	MULTIFLORA ROSE
RUBALL	1 <i>Rubus allegheniensis</i>	2 FACU+	Nt Shrub	COMMON BLACKBERRY
RUBOCC	1 <i>Rubus occidentalis</i>	5 UPL	Nt Shrub	BLACK RASPBERRY
RUBPUB	4 <i>Rubus pubescens</i>	-4 FACW+	Nt P-Forb	DWARF RASPBERRY
RUBSTR	2 <i>Rubus strigosus</i>	-2 FACW-	Nt Shrub	WILD RED RASPBERRY
RUDHIR	1 <i>Rudbeckia hirta</i>	3 FACU	Nt P-Forb	BLACK EYED SUSAN
RUMACL	0 <i>RUMEX ACETOSELLA</i>	0 FAC	Ad P-Forb	SHEEP SORREL
RUMOBT	0 <i>RUMEX OBTUSIFOLIUS</i>	-3 FACW	Ad P-Forb	BITTER DOCK

SALDIS	1 Salix discolor	-3 FACW	Nt Shrub	PUSSY WILLOW
SALEXI	1 Salix exigua	-5 OBL	Nt Shrub	SANDBAR WILLOW
SALFRA	0 SALIX FRAGILIS	-1 FAC+	Ad Tree	CRACK WILLOW
SAMCAN	3 Sambucus canadensis	-2 FACW-	Nt Shrub	ELDERBERRY
SAMRAC	3 Sambucus racemosa	2 FACU+	Nt Shrub	RED BERRIED ELDER
SCIATR	3 Scirpus atrovirens	-5 OBL	Nt P-Sedge	BULRUSH
SCULAT	5 Scutellaria lateriflora	-5 OBL	Nt P-Forb	MAD DOG SKULLCAP
SENPAU	3 Senecio pauperculus	-1 FAC+	Nt P-Forb	BALSAM RAGWORT
SHECAN	7 Shepherdia canadensis	5 UPL	Nt Shrub	SOAPBERRY
SILPRA	0 SILENE PRATENSIS	5 UPL	Ad A-Forb	WHITE CATCHFLY
SILVUL	0 SILENE VULGARIS	5 UPL	Ad P-Forb	BLADDER CAMPION
SMIRAC	5 Smilacina racemosa	3 FACU	Nt P-Forb	FALSE SPIKENARD
SMISTE	5 Smilacina stellata	1 FAC-	Nt P-Forb	STARRY FALSE SOLOMON SEAL
SOLDUL	0 SOLANUM DULCAMARA	0 FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLALT	1 Solidago altissima	3 FACU	Nt P-Forb	TALL GOLDENROD
SOLCAE	7 Solidago caesia	3 FACU	Nt P-Forb	BLUE STEMMED GOLDENROD
SOLCAN	1 Solidago canadensis	3 FACU	Nt P-Forb	CANADA GOLDENROD
SOLFLE	6 Solidago flexicaulis	3 FACU	Nt P-Forb	BROAD LEAVED GOLDENROD
SOLGIG	3 Solidago gigantea	-3 FACW	Nt P-Forb	LATE GOLDENROD
SOLHIS	3 Solidago hispida	5 UPL	Nt P-Forb	WHITE GOLDENROD
SOLJUN	3 Solidago juncea	5 UPL	Nt P-Forb	EARLY GOLDENROD
SOLRUG	3 Solidago rugosa	-1 FAC+	Nt P-Forb	ROUGH GOLDENROD
SOLULI	4 Solidago uliginosa	-5 OBL	Nt P-Forb	BOG GOLDENROD
STEGRN	0 STELLARIA GRAMINEA	5 UPL	Ad P-Forb	STARWORT
STRROS	5 Streptopus roseus	0 FAC	Nt P-Forb	ROSE TWISTED STALK
SYMALB	5 Symphoricarpos albus	4 FACU-	Nt Shrub	SNOWBERRY
SYRVUL	0 SYRINGA VULGARIS	5 UPL	Ad Shrub	COMMON LILAC
TAROFF	0 TARAXACUM OFFICINALE	3 FACU	Ad P-Forb	COMMON DANDELION
TAXCAN	5 Taxus canadensis	3 FACU	Nt Shrub	CANADIAN YEW
THADAS	3 Thalictrum dasycarpum	-2 FACW-	Nt P-Forb	PURPLE MEADOW RUE
THADIO	6 Thalictrum dioicum	2 FACU+	Nt P-Forb	EARLY MEADOW RUE
THUOCC	4 Thuja occidentalis	-3 FACW	Nt Tree	ARBOR VITAE
TILAME	5 Tilia americana	3 FACU	Nt Tree	BASSWOOD
TOXRAR	2 Toxicodendron radicans	-1 FAC+	Nt W-Vine	POISON IVY
TRADUB	0 TRAGOPOGON DUBIUS	5 UPL	Ad B-Forb	GOAT'S BEARD
TRIBOR	5 Trientalis borealis	-1 FAC+	Nt P-Forb	STARFLOWER
TRICAM	0 TRIFOLIUM CAMPESTRE	5 UPL	Ad A-Forb	LOW HOP CLOVER
TRIHBY	0 TRIFOLIUM HYBRIDUM	1 FAC-	Ad P-Forb	ALSIKE CLOVER

TRIPRA	0 TRIFOLIUM PRATENSE	2 FACU+	Ad P-Forb	RED CLOVER
TRIGRA	5 Trillium grandiflorum	5 UPL	Nt P-Forb	COMMON TRILLIUM
TSUCAN	5 Tsuga canadensis	3 FACU	Nt Tree	HEMLOCK
TYPLAT	1 Typha latifolia	-5 OBL	Nt P-Forb	BROAD LEAVED CATTAIL
URTDIO	1 Urtica dioica	-1 FAC+	Nt P-Forb	NETTLE
UVUGRA	5 Uvularia grandiflora	5 UPL	Nt P-Forb	BELLWORT
VERTHA	0 VERBASCUM THAPSUS	5 UPL	Ad B-Forb	COMMON MULLEIN
VERBEA	10 Veronica beccabunga var. americana	-5 OBL	Nt P-Forb	AMERICAN BROOKLIME
VERSER	0 Veronica serpyllifolia	-3 FACW	Nt P-Forb	THYME LEAVED SPEEDWELL
VERVER	0 VERONICA VERNA	5 UPL	Ad A-Forb	SPRING CORN SPEEDWELL
VIBACE	6 Viburnum acerifolium	5 UPL	Nt Shrub	MAPLE LEAVED ARROW WOOD
VIBOPO	0 VIBURNUM OPULUS	0 FAC	Ad Shrub	EUROPEAN Highbush CRANBERRY
VINMIN	0 VINCA MINOR	5 UPL	Ad Shrub	PERIWINKLE
VIOPUB	4 Viola pubescens	4 FACU-	Nt P-Forb	YELLOW VIOLET
VIOSTR	5 Viola striata	-3 FACW	Nt P-Forb	CREAM VIOLET
VITLAB	7 Vitis labrusca	3 FACU	Nt W-Vine	FOX GRAPE
VITRIP	3 Vitis riparia	-2 FACW-	Nt W-Vine	RIVERBANK GRAPE