



Whaleback Natural Area

Floristic Quality Assessment Results

A Floristic Quality Assessment of Whaleback Natural Area was conducted by Liana May during the fall of 2013; an addendum was created in the winter of 2015 (reflected below).

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 Whaleback Natural Area the total number of species and native species are:

Native Species	Total Species
145	193

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 0 is assigned to invasive species, also called adventives. At Whaleback Natural Area the mean C-values are:

Native Mean C	Mean C w/ Adventives
4.3	3.2

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 Whaleback Natural Area the mean coefficients of wetness are:

Native Mean W	Mean W w/ Adventives
2	2.3

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 Whaleback Natural Area the FQI's are:

Native FQI	FQI w/ Adventives
51.8	44.5

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.

Whaleback Natural Area (all)

Addendum 2/9/2015

Whaleback 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, Michigan State University, Lansing, MI.

Practitioner:

Liana May

Latitude:

Longitude:

Weather Notes:

Duration Notes:

Growing season 2013, additions and corrections from 2014

Community Type Notes:

Mesic northern forest, upland cedar boreal forest, open dune, cliff, and beach.

Other Notes:

Check Eurybia for similar spp.; check S. puniceum for similar spp.; Symphoricarpos albus var. albus may be non-native variety;

Private/Public:

Public

Conservatism-Based Metrics:

Total Mean C:	3.2
Native Mean C:	4.3
Total FQI:	44.5
Native FQI:	51.8
Adjusted FQI:	37.3
% C value 0:	29.5
% C value 1-3:	24.9
% C value 4-6:	33.7
% C value 7-10:	11.9
Native Tree Mean C:	3.9
Native Shrub Mean C:	4
Native Herbaceous Mean C:	4.4

Species Richness:

Total Species:	193
Native Species:	145 75.10%
Non-native Species:	48 24.90%

Species Wetness:

Mean Wetness:	2.3
Native Mean Wetness:	2

Physiognomy Metrics:

Tree:	23	11.90%
Shrub:	25	13%
Vine:	5	2.60%
Forb:	101	52.30%
Grass:	20	10.40%
Sedge:	8	4.10%
Rush:	0	0%
Fern:	11	5.70%
Bryophyte:	0	0%

Duration Metrics:

Annual:	12	6.20%
Perennial:	169	87.60%
Biennial:	12	6.20%
Native Annual:	6	3.10%
Native Perennial:	135	69.90%
Native Biennial:	4	2.10%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Abies balsamea	Pinaceae	ABIBAL	native	3	0	tree	perennial	balsam fir
Acer negundo	Sapindaceae	ACENEG	native	0	0	tree	perennial	box-elder
Acer rubrum	Sapindaceae	ACERUB	native	1	0	tree	perennial	red maple
Acer saccharum	Sapindaceae	ACESAU	native	5	3	tree	perennial	sugar maple
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	AGRIGIG	non-native	0	-3	grass	perennial	redtop
Alliaria petiolata	Brassicaceae	ALLPET	non-native	0	3	forb	biennial	garlic mustard
Allium tricoccum	Alliaceae	ALLTRI	native	5	3	forb	perennial	wild leek
Amelanchier arborea	Rosaceae	AMEARB	native	4	3	tree	perennial	juneberry
Ammophila breviligulata	Poaceae	AMMBRE	native	10	5	grass	perennial	marram grass
Antennaria parlinii	Asteraceae	ANTPAL	native	2	5	forb	perennial	smooth pussytoes
Apocynum cannabinum; a. sibiricum	Apocynaceae	APOCAN	native	3	0	forb	perennial	indian-hemp
Aquilegia canadensis	Ranunculaceae	AQUCAN	native	5	3	forb	perennial	wild columbine
Arabis lyrata; arabis l.	Brassicaceae	ARALYR	native	7	3	forb	biennial	sand cress
Arctium minus	Asteraceae	ARCMIN	non-native	0	3	forb	biennial	common burdock
Arctostaphylos uva-ursi	Ericaceae	ARCUVA	native	8	5	shrub	perennial	bearberry
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
Asparagus officinalis	Asparagaceae	ASPOFF	non-native	0	3	forb	perennial	garden asparagus
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 papyrifera	Betulaceae	BETPAP	native	2	3	tree	perennial	paper birch
Cakile edentata	Brassicaceae	CAKEDE	native	5	3	forb	annual	sea-rocket
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 albursina	Cyperaceae	CXALBU	native	5	5	sedge	perennial	sedge
Carex eburnea	Cyperaceae	CXEUBU	native	7	3	sedge	perennial	sedge
Carex hitcockiana	Cyperaceae	CXHITC	native	5	5	sedge	perennial	sedge
Carex interior	Cyperaceae	CXINTE	native	3	-5	sedge	perennial	sedge

Carex leptonevria	Cyperaceae	CXLEPO	native	3	0	sedge	perennial	sedge
Carex pensylvanica	Cyperaceae	CXPENS	native	4	5	sedge	perennial	sedge
Carex plantaginea	Cyperaceae	CXPLAN	native	8	5	sedge	perennial	sedge
Carex rosea; c. convoluta	Cyperaceae	CXROSE	native	2	5	sedge	perennial	curly-styled wood sedge
Caulophyllum thalictroides	Berberidaceae	CAUTHA	native	5	5	forb	perennial	blue cohosh
Celastrus orbiculatus	Celastraceae	CELORB	non-native	0	5	vine	perennial	oriental bittersweet
Celastrus scandens	Celastraceae	CELSCA	native	3	3	vine	perennial	american bittersweet
Centaurea stoebe; c. maculosa	Asteraceae	CENSTO	non-native	0	5	forb	biennial	spotted knapweed
Cerastium fontanum	Caryophyllaceae	CERYFO	non-native	0	3	forb	perennial	mouse-ear chickweed
Chenopodium album	Amaranthaceae	CHEALB	non-native	0	3	forb	annual	lamb-quarters
Chenopodium simplex; c. hybridum	Amaranthaceae	CHESIM	native	1	5	forb	annual	maple-leaved goosefoot
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 vulgare	Asteraceae	CIRVUL	non-native	0	3	forb	biennial	bull thistle
Clinopodium vulgare	Lamiaceae	CLIVUL	native	3	5	forb	perennial	wild-basil
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
Cynoglossum officinale	Boraginaceae	CYNOFF	non-native	0	5	forb	biennial	hounds-tongue
Cypripedium parviflorum; c. calceolus	Orchidaceae	CYPPAR	native	5	0	forb	perennial	yellow lady-slipper
Dactylis glomerata	Poaceae	DACGLO	non-native	0	3	grass	perennial	orchard grass
Dicentra cucullaria	Papaveraceae	DICCCU	native	7	5	forb	perennial	dutchmans-breeches
Diervilla lonicera	Diervillaceae	DIELON	native	4	5	shrub	perennial	bush-honeysuckle
Dryopteris carthusiana	Dryopteridaceae	DRYCAR	native	5	-3	fern	perennial	spinulose woodfern
Dryopteris marginalis	Dryopteridaceae	DRYMAR	native	5	3	fern	perennial	marginal woodfern
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 lanceolatus; agropyron dasystachyum	Poaceae	ELYLAN	native	10	3	grass	perennial	wheat grass
Elymus repens; agropyron r.	Poaceae	ELYREP	non-native	0	3	grass	perennial	quack grass
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	EQJARV	native	0	0	fern	perennial	common horsetail
Equisetum hyemale	Equisetaceae	EQHYHE	native	2	0	fern	perennial	scouring rush
Equisetum laevigatum	Equisetaceae	EQLAEE	native	2	-3	fern	perennial	smooth scouring rush
Erechtites hieracifolius	Asteraceae	EREHIE	native	2	3	forb	annual	fireweed
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
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
Festuca occidentalis	Poaceae	FESOC	native	6	5	grass	perennial	western fescue
Festuca subverticillata; f. obtusa	Poaceae	FESSUB	native	5	3	grass	perennial	nodding fescue
Fraxinus americana	Oleaceae	FRAAME	native	5	3	tree	perennial	white ash
Galium album; g. mollugo	Rubiaceae	GALALB	non-native	0	5	forb	perennial	white bedstraw
Galium odoratum	Rubiaceae	GALODO	non-native	0	5	forb	perennial	sweet woodruff
Geranium robertianum	Geraniaceae	GERROB	native	3	3	forb	annual	herb robert
Geum alepicum	Rosaceae	GEUALE	native	3	0	forb	perennial	yellow avens
Geum canadense	Rosaceae	GEUCAN	native	1	0	forb	perennial	white avens
Glyceria striata	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
Hieracium piloselloides	Asteraceae	HIEPIS	non-native	0	5	forb	perennial	king devil
Hydrophyllum appendiculatum	Boraginaceae	HYDAPP	native	7	3	forb	biennial	great waterleaf
Hypericum perforatum	Hypericaceae	HYPPER	non-native	0	5	forb	perennial	common st. johns-wort
Iris versicolor	Iridaceae	IRIVER	native	5	-5	forb	perennial	wild blue flag
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 horizontalis	Cupressaceae	JUNHOR	native	10	3	shrub	perennial	creeping juniper
Koeleria macrantha	Poaceae	KOEMAC	native	9	5	grass	perennial	june grass
Lappula squarrosa	Boraginaceae	LAPSQU	non-native	0	5	forb	annual	european stickseed
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
Lilium philadelphicum	Liliaceae	LILPHI	native	7	0	forb	perennial	wood lily
Linnaea borealis	Linnaeaceae	LINBOR	native	6	0	forb	perennial	twinflower
Lonicera canadensis	Caprifoliaceae	LONCAN	native	5	3	shrub	perennial	canadian fly honeysuckle
Lonicera morrowii	Caprifoliaceae	LONMOR	non-native	0	3	shrub	perennial	morrow honeysuckle
Lonicera tatarica	Caprifoliaceae	LONTAT	non-native	0	3	shrub	perennial	tartarian honeysuckle
Lycopus americanus	Lamiaceae	LYCAME	native	2	-5	forb	perennial	common water horehound
Maianthemum canadense	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
Maianthemum stellatum; smilacina s.	Convallariaceae	MAISTE	native	5	0	forb	perennial	starry false solomon-seal
Matteuccia struthiopteris	Onocleaceae	MATSTR	native	3	0	fern	perennial	ostrich fern
Medeola virginiana	Convallariaceae	MEDVIR	native	10	3	forb	perennial	indian cucumber-root
Melica smithii	Poaceae	MELSMI	native	7	5	grass	perennial	melic grass
Mellilotus albus	Fabaceae	MELALB	non-native	0	3	forb	biennial	white sweet-clover
Mentha Vópiperrita	Lamiaceae	MENPIP	non-native	0	-5	forb	perennial	peppermint
Milium effusum	Poaceae	MILEFF	native	8	3	grass	perennial	wood millet
Minuartia michauxii; arenaria stricta	Caryophyllaceae	MINMIC	native	10	5	forb	perennial	rock sandwort
Monarda fistulosa	Lamiaceae	MONFIS	native	2	3	forb	perennial	wild-bergamot
Myosotis sylvatica	Boraginaceae	MYOSYL	non-native	0	5	forb	perennial	garden forget-me-not
Nepeta cataria	Lamiaceae	NEPCAT	non-native	0	3	forb	perennial	catnip
Oenothera biennis	Onagraceae	OENBIE	native	2	3	forb	biennial	common evening-primrose
Onoclea sensibilis	Onocleaceae	ONOSEN	native	2	-3	fern	perennial	sensitive fern
Oryzopsis asperifolia	Poaceae	ORYASP	native	6	5	grass	perennial	rough-leaved rice-grass
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
Oxalis stricta; o. fontana	Oxalidaceae	OXASTR	native	0	3	forb	perennial	yellow wood-sorrel
Packera paupercula; senecio p.; senecio plattensis	Asteraceae	PACPAU	native	3	0	forb	perennial	balsam ragwort
Pedicularis canadensis	Orobanchaceae	PEDCAN	native	10	3	forb	perennial	wood-betony
Persicaria maculosa; polygonum persicaria	Polygonaceae	PERMAC	non-native	0	0	forb	annual	lady's-thumb
Phalaris arundinacea	Poaceae	PHARAU	native	0	-3	grass	perennial	reed canary grass
Phragmites australis var. australis	Poaceae	PHRAUU	non-native	0	-3	grass	perennial	reed
Phytolacca americana	Phytolaccaceae	PHYAME	native	2	3	forb	perennial	pokeweed
Pinus resinosa	Pinaceae	PINRES	native	6	3	tree	perennial	red pine
Pinus strobus	Pinaceae	PINSTR	native	3	3	tree	perennial	white pine
Plantago rugelii	Plantaginaceae	PLARUG	native	0	0	forb	perennial	red-stalked plantain
Poa compressa	Poaceae	POACOM	non-native	0	3	grass	perennial	canada bluegrass

<i>Poa nemoralis</i>	Poaceae	POANEM	non-native	0	3	grass	perennial	bluegrass
<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
<i>Populus alba</i>	Salicaceae	POPALB	non-native	0	5	tree	perennial	white poplar
<i>Populus balsamifera</i>	Salicaceae	POPBAL	native	2	-3	tree	perennial	balsam poplar
<i>Populus grandidentata</i>	Salicaceae	POPGRA	native	4	3	tree	perennial	big-tooth aspen
<i>Populus tremuloides</i>	Salicaceae	POPTRE	native	1	0	tree	perennial	quaking aspen
<i>Potentilla anserina</i>	Rosaceae	POTANS	native	5	-3	forb	perennial	silverweed
<i>Prenanthes alba</i>	Asteraceae	PREALB	native	5	3	forb	perennial	white lettuce
<i>Prunella vulgaris</i>	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
<i>Prunus serotina</i>	Rosaceae	PRUSER	native	2	3	tree	perennial	wild black cherry
<i>Prunus virginiana</i>	Rosaceae	PRUVIR	native	2	3	shrub	perennial	choke cherry
<i>Pteridium aquilinum</i>	Dennstaedtiaceae	PTEAQU	native	0	3	fern	perennial	bracken fern
<i>Quercus rubra</i>	Fagaceae	QUERUB	native	5	3	tree	perennial	red oak
<i>Ranunculus abortivus</i>	Ranunculaceae	RANABO	native	0	0	forb	perennial	small-flowered buttercup
<i>Rhamnus cathartica</i>	Rhamnaceae	RHACAT	non-native	0	0	tree	perennial	common buckthorn
<i>Ribes cynosbati</i>	Grossulariaceae	RIBCBY	native	4	3	shrub	perennial	prickly or wild gooseberry
<i>Rosa blanda</i>	Rosaceae	ROSBLA	native	3	3	shrub	perennial	wild rose
<i>Rosa palustris</i>	Rosaceae	ROSPAL	native	5	-5	shrub	perennial	swamp rose
<i>Rubus allegheniensis</i>	Rosaceae	RUBALL	native	1	3	shrub	perennial	common blackberry
<i>Rubus occidentalis</i>	Rosaceae	RUBOCC	native	1	5	shrub	perennial	black raspberry
<i>Rubus parviflorus</i>	Rosaceae	RUBPAR	native	6	3	shrub	perennial	thimbleberry
<i>Rubus strigosus</i>	Rosaceae	RUBSTR	native	2	0	shrub	perennial	wild red raspberry
<i>Rudbeckia hirta</i>	Asteraceae	RUDHIR	native	1	3	forb	perennial	black-eyed susan
<i>Rumex obtusifolius</i>	Polygonaceae	RUMOBT	non-native	0	0	forb	perennial	bitter dock
<i>Salix discolor</i>	Salicaceae	SALDIS	native	1	-3	shrub	perennial	pussy willow
<i>Salix eriocephala</i>	Salicaceae	SALERI	native	2	-3	shrub	perennial	willow
<i>Salix exigua</i>	Salicaceae	SALEXI	native	1	-3	shrub	perennial	sandbar willow
<i>Sambucus canadensis</i>	Adoxaceae	SAMCAN	native	3	-3	shrub	perennial	elderberry
<i>Sanicula marilandica</i>	Apiaceae	SANMAR	native	4	3	forb	perennial	black snakeroot
<i>Schedonorus pratensis</i> ; <i>festuca p.</i>	Poaceae	SCHPRA	non-native	0	3	grass	perennial	meadow fescue
<i>Schizachyrium scoparium</i> ; <i>andropogon s.</i>	Poaceae	SCHSCO	native	5	3	grass	perennial	little bluestem
<i>Sedum acre</i>	Crassulaceae	SEDAAC	non-native	0	5	forb	perennial	mossy stonecrop
<i>Shepherdia canadensis</i>	Elaeagnaceae	SHECAN	native	7	5	shrub	perennial	soapberry
<i>Silene latifolia</i> ; <i>s. pratensis</i>	Caryophyllaceae	SILLAT	non-native	0	5	forb	annual	white campion
<i>Silene vulgaris</i>	Caryophyllaceae	SILVUL	non-native	0	5	forb	perennial	bladder campion
<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 flexicaulis</i>	Asteraceae	SOLFLE	native	6	3	forb	perennial	zigzag goldenrod
<i>Solidago rugosa</i>	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod
<i>Solidago simplex</i>	Asteraceae	SOLSIM	native	10	3	forb	perennial	gillmans goldenrod
<i>Symphoricarpos albus var. albus</i>	Caprifoliaceae	SYMALA	native	5	3	shrub	perennial	snowberry
<i>Symphotrichum laeve</i> ; <i>aster l.</i>	Asteraceae	SYMLAE	native	5	3	forb	perennial	smooth aster
<i>Symphotrichum lanceolatum</i> ; <i>aster l.</i>	Asteraceae	SYMLAN	native	2	-3	forb	perennial	panicled aster
<i>Symphotrichum puniceum</i> ; <i>aster p.</i>	Asteraceae	SYMPUN	native	5	-5	forb	perennial	swamp aster
<i>Symphotrichum urophyllum</i> ; <i>aster sagittifolius</i>	Asteraceae	SYMURO	native	2	5	forb	perennial	arrow-leaved aster
<i>Taraxacum officinale</i>	Asteraceae	TAROFF	non-native	0	3	forb	perennial	common dandelion
<i>Thuja occidentalis</i>	Cupressaceae	THUOCC	native	4	-3	tree	perennial	arbor vitae
<i>Tilia americana</i>	Malvaceae	TILAME	native	5	3	tree	perennial	basswood
<i>Toxicodendron rydbergii</i> ; <i>t. radicans</i>	Anacardiaceae	TOXRYD	native	3	0	shrub	perennial	poison-ivy
<i>Tragopogon dubius</i>	Asteraceae	TRADUB	non-native	0	5	forb	biennial	goats beard
<i>Trientalis borealis</i>	Myrsinaceae	TRIBOR	native	5	0	forb	perennial	star-flower
<i>Trifolium campestre</i>	Fabaceae	TRICAM	non-native	0	5	forb	annual	low hop clover
<i>Trillium grandiflorum</i>	Trilliaceae	TRIGRA	native	5	3	forb	perennial	common trillium
<i>Tsuga canadensis</i>	Pinaceae	TSUCAN	native	5	3	tree	perennial	hemlock
<i>Uvularia grandiflora</i>	Convallariaceae	UVUGRA	native	5	5	forb	perennial	bellwort
<i>Verbascum thapsus</i>	Scrophulariaceae	VERTHA	non-native	0	5	forb	biennial	common mullein
<i>Veronica officinalis</i>	Plantaginaceae	VEROOF	non-native	0	3	forb	perennial	common speedwell
<i>Viburnum acerifolium</i>	Adoxaceae	VIBACE	native	6	5	shrub	perennial	maple-leaved viburnum
<i>Vinca minor</i>	Apocynaceae	VINMIN	non-native	0	5	shrub	perennial	periwinkle
<i>Viola canadensis</i>	Violaceae	VIOCAN	native	5	3	forb	perennial	canada violet
<i>Viola pubescens</i>	Violaceae	VIO PUB	native	4	3	forb	perennial	yellow violet
<i>Vitis riparia</i>	Vitaceae	VITRIP	native	3	0	vine	perennial	river-bank grape