



Frazier Freeland Preserve

Floristic Quality Assessment Results

A Floristic Quality Assessment of Frazier-Freeland Preserve 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 Frazier-Freeland Preserve the total number of species and native species are:

Native Species	Total Species
65	83

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 Frazier-Freeland Preserve the mean C-values are:

Native Mean C	Mean C w/ Adventives
3.1	2.4

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 Frazier-Freeland Preserve the mean coefficients of wetness are:

Native Mean W	Mean W w/ Adventives
0	0.7

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 Frazier-Freeland Preserve the FQI's are:

Native FQI	FQI w/ Adventives
24.9	22.1

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.

FLORISTIC QUALITY DATA

65	NATIVE SPECIES
83	Total Species
3.1	NATIVE MEAN C
2.4	W/Adventives
24.9	NATIVE FQI
22.1	W/Adventives
0	NATIVE MEAN W
0.7	W/Adventives
AVG:	Faculative

Native	65	78.30%	Adventive	18	21.70%
Tree	13	15.70%	Tree	3	3.60%
Shrub	10	12.00%	Shrub	1	1.20%
W-Vine	5	6.00%	W-Vine	0	0.00%
H-Vine	0	0.00%	H-Vine	0	0.00%
P-Forb	26	31.30%	P-Forb	8	9.60%
B-Forb	2	2.40%	B-Forb	3	3.60%
A-Forb	2	2.40%	A-Forb	0	0.00%
P-Grass	0	0.00%	P-Grass	3	3.60%
A-Grass	0	0.00%	A-Grass	0	0.00%
P-Sedge	0	0.00%	P-Sedge	0	0.00%
A-Sedge	0	0.00%	A-Sedge	0	0.00%
Fern	7	8.40%			

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ACERUB	1	Acer rubrum	0	FAC	Nt Tree	RED MAPLE
ACESAU	5	Acer saccharum	3	FACU	Nt Tree	SUGAR MAPLE
ACHMIL	1	Achillea millefolium	3	FACU	Nt P-Forb	YARROW
ACTPAC	7	Actaea pachypoda	5	UPL	Nt P-Forb	DOLL'S EYES
AGRGRY	2	Agrimonia gryposepala	2	FACU+	Nt P-Forb	TALL AGRIMONY
AMBART	0	Ambrosia artemisiifolia	3	FACU	Nt A-Forb	COMMON RAGWEED
APOCAN	3	Apocynum cannabinum	0	FAC	Nt P-Forb	INDIAN HEMP
ARITRI	5	Arisaema triphyllum	-2	FACW-	Nt P-Forb	JACK IN THE PULPIT
ASPOFF	0	ASPARAGUS OFFICINALIS	3	FACU	Ad P-Forb	ASPARAGUS

ASTERI	3	Aster ericoides	4	FACU-	Nt P-Forb	HEATH ASTER
ASTPIL	1	Aster pilosus	2	FACU+	Nt P-Forb	HAIRY ASTER
ATHFIL	4	Athyrium filix-femina	0	FAC	Nt Fern	LADY FERN
BETPAP	2	Betula papyrifera	2	FACU+	Nt Tree	PAPER BIRCH
BROINE	0	BROMUS INERMIS	5	UPL	Ad P-Grass	SMOOTH BROME
CENMAU	0	CENTAUREA MACULOSA	5	UPL	Ad B-Forb	SPOTTED BLUET
CHRLEU	0	CHRYSANTHEMUM LEUCANTHEMUM	5	UPL	Ad P-Forb	OX EYE DAISY
CIRALP	4	Circaea alpina	-3	FACW	Nt P-Forb	SMALL ENCHANTER'S NIGHTSHADE
CIRVUL	0	CIRSIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CLEVIR	4	Clematis virginiana	0	FAC	Nt W-Vine	VIRGIN'S BOWER
CLIVUL	3	Clinopodium vulgare	5	UPL	Nt P-Forb	WILD BASIL
CORAMO	2	Cornus amomum	-4	FACW+	Nt Shrub	SILKY DOGWOOD
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CYPREG	9	Cypripedium reginae	-4	FACW+	Nt P-Forb	SHOWY or QUEEN'S LADY SLIPPER
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
ELAUMB	0	ELAEAGNUS UMBELLATA	3	FACU	Ad Shrub	AUTUMN OLIVE
EPIHIR	0	EPILOBIUM HIRSUTUM	-4	FACW+	Ad P-Forb	GREAT HAIRY WILLOW HERB
EIPAR	0	EPILOBIUM PARVIFLORUM	3	FACU	Ad P-Forb	WILLOW HERB
EQUARV	0	Equisetum arvense	0	FAC	Nt Fern Ally	COMMON HORSETAIL
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUPPUR	5	Eupatorium purpureum	0	FAC	Nt P-Forb	PURPLE JOE PYE WEED
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FAGGRA	6	Fagus grandifolia	3	FACU	Nt Tree	AMERICAN BEECH
FRAVIR	2	Fragaria virginiana	1	FAC-	Nt P-Forb	WILD STRAWBERRY
FRAAME	5	Fraxinus americana	3	FACU	Nt Tree	WHITE ASH
HYPPER	0	HYPERICUM PERFORATUM	5	UPL	Ad P-Forb	COMMON ST. JOHN'S WORT
IMPCAP	2	Impatiens capensis	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNCOI	4	Juniperus communis	3	FACU	Nt Shrub	COMMON or GROUND JUNIPER
LACBIE	2	Lactuca biennis	0	FAC	Nt B-Forb	TALL BLUE LETTUCE
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
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
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT

MITREP	5	Mitchella repens	2	FACU+	Nt P-Forb	PARTRIDGE BERRY
OENBIE	2	Oenothera biennis	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
ONOSEN	2	Onoclea sensibilis	-3	FACW	Nt Fern	SENSITIVE FERN
OSMREG	5	Osmunda regalis	-5	OBL	Nt Fern	ROYAL FERN
PARQUI	5	Parthenocissus quinquefolia	1	FAC-	Nt W-Vine	VIRGINIA CREEPER
PHLPRA	0	PHLEUM PRATENSE	3	FACU	Ad P-Grass	TIMOTHY
PHYHET	3	Physalis heterophylla	5	UPL	Nt P-Forb	CLAMMY GROUND CHERRY
PINRES	6	Pinus resinosa	3	FACU	Nt Tree	RED PINE
PINSTR	3	Pinus strobus	3	FACU	Nt Tree	WHITE PINE
PINSYL	0	PINUS SYLVESTRIS	5	UPL	Ad Tree	SCOTCH PINE
POPALB	0	POPULUS ALBA	5	UPL	Ad Tree	WHITE POPLAR
POPBAL	2	Populus balsamifera	-3	FACW	Nt Tree	BALSAM POPLAR
POPTRE	1	Populus tremuloides	0	FAC	Nt Tree	QUAKING ASPEN
PRUVUL	0	PRUNELLA VULGARIS	0	FAC	Nt P-Forb	LAWN PRUNELLA
PTEAQU	0	Pteridium aquilinum	3	FACU	Nt Fern	BRACKEN FERN
RHUTYP	2	Rhus typhina	5	UPL	Nt Tree	STAGHORN SUMAC
ROSPAL	5	Rosa palustris	-5	OBL	Nt Shrub	SWAMP ROSE
RUBALL	1	Rubus allegheniensis	2	FACU+	Nt Shrub	COMMON BLACKBERRY
RUBSTR	2	Rubus strigosus	-2	FACW-	Nt Shrub	WILD RED RASPBERRY
RUDHIR	1	Rudbeckia hirta	3	FACU	Nt P-Forb	BLACK EYED SUSAN
RUMOBT	0	RUMEX OBTUSIFOLIUS	-3	FACW	Ad P-Forb	BITTER DOCK
SALBEB	1	Salix bebbiana	-4	FACW+	Nt Shrub	BEBB'S WILLOW
SAMCAN	3	Sambucus canadensis	-2	FACW-	Nt Shrub	ELDERBERRY
SMIRAC	5	Smilacina racemosa	3	FACU	Nt P-Forb	FALSE SPIKENARD
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
TAROFF	0	TARAXACUM OFFICINALE	3	FACU	Ad P-Forb	COMMON DANDELION
THUOCC	4	Thuja occidentalis	-3	FACW	Nt Tree	ARBOR VITAE
TOXRAR	2	Toxicodendron radicans	-1	FAC+	Nt W-Vine	POISON IVY
TSUCAN	5	Tsuga canadensis	3	FACU	Nt Tree	HEMLOCK
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
ULMAME	1	Ulmus americana	-2	FACW-	Nt Tree	AMERICAN ELM
VIBACE	6	Viburnum acerifolium	5	UPL	Nt Shrub	MAPLE LEAVED ARROW WOOD
VIBOPA	5	Viburnum opulus var. americanum	-3	FACW	Nt Shrub	HIGHBUSH CRANBERRY
VITAES	6	Vitis aestivalis	3	FACU	Nt W-Vine	SUMMER GRAPE
VITRIP	3	Vitis riparia	-2	FACW-	Nt W-Vine	RIVERBANK GRAPE