



Hatlem Creek Preserve

Floristic Quality Assessment Results

A Floristic Quality Assessment of Hatlem Creek Preserve was conducted by Liana May during the summer of 2012 and 2013.

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 Hatlem Creek Preserve the total number of species and native species are:

Native Species	Total Species
97	112

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 Hatlem Creek Preserve the mean C-values are:

Native Mean C	Mean C w/ Adventives
4.3	3.7

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 Hatlem Creek Preserve the mean coefficients of wetness are:

Native Mean W	Mean W w/ Adventives
-0.2	-0.1

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 Hatlem Creek Preserve the FQI's are:

Native FQI	FQI w/ Adventives
42.4	40

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.

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Addendum 2/9/2015

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, Liana May

Practitioner:
Latitude:
Longitude:
Weather Notes:
Duration Notes:
Community Type Notes:
Other Notes:
Private/Public:

July-Oct 2012, some survey in 2013.
Mesic northern forest and toeslope wetlands that feed Big Glen Lake.
Eurybia macrophylla; aster m. may be similar spp. M michiganensis in cattail dominated area by old fill road.
Public

Conservatism-Based Metrics:

Total Mean C: 3.7
Native Mean C: 4.3
Total FQI: 39.2
Native FQI: 42.4
Adjusted FQI: 40
% C value 0: 16.1
% C value 1-3: 27.7
% C value 4-6: 44.6
% C value 7-10: 11.6
Native Tree Mean C: 4.4
Native Shrub Mean C: 3.7
Native Herbaceous Mean C: 4.3

Species Richness:

Total Species: 112
Native Species: 97 86.60%
Non-native Species: 15 13.40%

Species Wetness:

Mean Wetness: -0.1
Native Mean Wetness: -0.2

Physiognomy Metrics:

Tree: 14 12.50%
Shrub: 7 6.30%
Vine: 3 2.70%
Forb: 55 49.10%
Grass: 6 5.40%
Sedge: 12 10.70%
Rush: 0 0%
Fern: 15 13.40%
Bryophyte: 0 0%

Duration Metrics:

Annual: 4 3.60%
Perennial: 105 93.80%
Biennial: 3 2.70%
Native Annual: 4 3.60%
Native Perennial: 93 83%
Native Biennial: 0 0%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
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
Allium tricoccum	Alliaceae	ALLTRI	native	5	3	forb	perennial	wild leek
Anemone canadensis	Ranunculaceae	ANECAN	native	4	-3	forb	perennial	canada anemone
Apocynum androsaemifolium	Apocynaceae	APOAND	native	3	5	forb	perennial	spreading dogbane
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
Athyrium filix-femina	Athyriaceae	ATHFIL	native	4	0	fern	perennial	lady fern
Betula alleghaniensis	Betulaceae	BETALL	native	7	0	tree	perennial	yellow birch
Bidens cernua	Asteraceae	BIDCER	native	3	-5	forb	annual	nodding beggar-ticks
Botrypus virginianus	Ophioglossaceae	BOTVIR	native	5	3	fern	perennial	rattlesnake fern
Carex cristatella	Cyperaceae	CXCRI	native	3	-3	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 pennsylvanica	Cyperaceae	CXPENS	native	4	5	sedge	perennial	sedge
Carex plantaginea	Cyperaceae	CXPLAN	native	8	5	sedge	perennial	sedge
Carex scabrata	Cyperaceae	CXSCAB	native	4	-5	sedge	perennial	sedge
Carex stipata	Cyperaceae	CXSTIP	native	1	-5	sedge	perennial	sedge

Carex utriculata; c. rostrata	Cyperaceae	CXUTRI	native	5	-5	sedge	perennial	sedge
Circaea canadensis; c. lutetiana	Onagraceae	CIRCAN	native	2	3	forb	perennial	enchanters-nightshade
Clematis virginiana	Ranunculaceae	CLEVIR	native	4	0	vine	perennial	virgins bower
Clinopodium vulgare	Lamiaceae	CLIVUL	native	3	5	forb	perennial	wild-basil
Cornus sericea; c. stolonifera	Cornaceae	CORSER	native	2	-3	shrub	perennial	red-osier
Danthonia spicata	Poaceae	DANSPI	native	4	5	grass	perennial	poverty grass; oatgrass
Daucus carota	Apiaceae	DAUCAR	non-native	0	5	forb	biennial	queen-annes-lace
Diphasiastrum tristachyum; lycopodium t.	Lycopodiaceae	DIPTRI	native	7	5	fern	perennial	ground-cedar
Dryopteris carthusiana	Dryopteridaceae	DRYCAR	native	5	-3	fern	perennial	spinulose woodfern
Dryopteris cristata	Dryopteridaceae	DRYCRI	native	6	-5	fern	perennial	crested shield fern
Dryopteris intermedia	Dryopteridaceae	DRYINT	native	5	0	fern	perennial	evergreen woodfern
Dryopteris marginalis	Dryopteridaceae	DRYMAR	native	5	3	fern	perennial	marginal woodfern
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
Eupatorium perfoliatum	Asteraceae	EUPPER	native	4	-3	forb	perennial	boneset
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
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 triflorum	Rubiaceae	GALTRR	native	4	3	forb	perennial	fragrant bedstraw
Gymnocarpium dryopteris	Cystopteridaceae	GYMDRY	native	5	3	fern	perennial	oak fern
Hepatica acutiloba	Ranunculaceae	HEPACU	native	8	5	forb	perennial	sharp-lobed hepatica
Huperzia lucidula	Lycopodiaceae	HUPLUC	native	5	0	fern	perennial	shining clubmoss
Juncus acuminatus	Juncaceae	JUNACU	native	8	-5	forb	perennial	sharp-fruited rush
Juncus balticus	Juncaceae	JUNBAL	native	4	-5	forb	perennial	rush
Juncus effusus	Juncaceae	JUNEFF	native	3	-5	forb	perennial	soft-stemmed rush
Leersia oryzoides	Poaceae	LEEORY	native	3	-5	grass	perennial	cut grass
Lycopus americanus	Lamiaceae	LYCAME	native	2	-5	forb	perennial	common water horehound
Maianthemum canadense	Convallariaceae	MAICAN	native	4	3	forb	perennial	canada mayflower
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
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 vópipерita	Lamiaceae	MENPIP	non-native	0	-5	forb	perennial	peppermint
Milium effusum	Poaceae	MILEFF	native	8	3	grass	perennial	wood millet
Mimulus michiganensis	Phrymaceae	MIMMIC	native	10	-5	forb	perennial	michigan monkey-flower
Monotropa uniflora	Ericaceae	MONOUN	native	5	3	forb	perennial	indian-pipe
Myosotis scorpioides	Boraginaceae	MYOSCO	non-native	0	-5	forb	perennial	forget-me-not
Nasturtium officinale	Brassicaceae	NASOFF	native	4	-5	forb	perennial	watercress
Onoclea sensibilis	Onocleaceae	ONosen	native	2	-3	fern	perennial	sensitive fern
Osmorhiza longistylis	Apiaceae	OSMLON	native	3	3	forb	perennial	smooth sweet-cicely
Osmunda cinnamomea	Osmundaceae	OSMCIN	native	5	-3	fern	perennial	cinnamon fern
Ostrya virginiana	Betulaceae	OSTVIR	native	5	3	tree	perennial	ironwood; hop-hornbeam
Parthenocissus quinquefolia	Vitaceae	PARQUI	native	5	3	vine	perennial	virginia creeper
Persicaria hypodipер; polygonum h.	Polygonaceae	PERHYR	native	1	-5	forb	annual	water-pepper
Pilea fontana	Urticaceae	PILFON	native	5	-3	forb	annual	bog clearweed
Plantago lanceolata	Plantaginaceae	PLALAN	non-native	0	3	forb	perennial	english plantain
Poa compressa	Poaceae	POACOM	non-native	0	3	grass	perennial	canada bluegrass
Populus balsamifera	Salicaceae	POPBAL	native	2	-3	tree	perennial	balsam poplar
Populus grandidentata	Salicaceae	POPGRA	native	4	3	tree	perennial	big-tooth aspen
Prunella vulgaris	Lamiaceae	PRUVUL	native	0	0	forb	perennial	self-heal
Prunus serotina	Rosaceae	PRUSER	native	2	3	tree	perennial	wild black cherry
Pteridium aquilinum	Dennstaedtiaceae	PTEAQU	native	0	3	fern	perennial	bracken fern
Ranunculus acris	Ranunculaceae	RANACR	non-native	0	0	forb	perennial	tall or common buttercup
Rhamnus alnifolia	Rhamnaceae	RHAALN	native	8	-5	shrub	perennial	alder-leaved buckthorn
Ribes lacustre	Grossulariaceae	RIBLAC	native	6	-3	shrub	perennial	swamp black currant
Robinia pseudoacacia	Fabaceae	ROBPSE	non-native	0	3	tree	perennial	black locust
Rubus allegheniensis	Rosaceae	RUBALL	native	1	3	shrub	perennial	common blackberry
Rubus pubescens	Rosaceae	RUBPUB	native	4	-3	shrub	perennial	dwarf raspberry
Rubus strigosus	Rosaceae	RUBSTR	native	2	0	shrub	perennial	wild red raspberry
Sambucus canadensis	Adoxaceae	SAMCAN	native	3	-3	shrub	perennial	elderberry
Schoenoplectus tabernaemontani; scirpus validus	Cyperaceae	SCHTAB	native	4	-5	sedge	perennial	softstem bulrush
Scirpus atrovirens	Cyperaceae	SCIATV	native	3	-5	sedge	perennial	bulrush
Scirpus cyperinus	Cyperaceae	SCICYP	native	5	-5	sedge	perennial	wool-grass
Scutellaria lateriflora	Lamiaceae	SCULAT	native	5	-5	forb	perennial	mad-dog skullcap
Solanum dulcamara	Solanaceae	SOLDUL	non-native	0	0	vine	perennial	bittersweet nightshade
Solidago caesia	Asteraceae	SOLCAE	native	6	3	forb	perennial	bluestem goldenrod
Solidago flexicaulis	Asteraceae	SOLFLE	native	6	3	forb	perennial	zigzag goldenrod
Solidago gigantea	Asteraceae	SOLGIG	native	3	-3	forb	perennial	late goldenrod
Solidago rugosa	Asteraceae	SOLRUG	native	3	0	forb	perennial	rough-leaved goldenrod
Sparganium americanum	Typhaceae	SPAAME	native	6	-5	forb	perennial	american bur-reed
Symphyotrichum firmum; aster puniceus	Asteraceae	SYMFIR	native	4	-3	forb	perennial	smooth swamp aster
Symphyotrichum lanceolatum; aster l.	Asteraceae	SYMLAN	native	2	-3	forb	perennial	panicled aster
Thuja occidentalis	Cupressaceae	THUOCC	native	4	-3	tree	perennial	arbor vitae
Tiarella cordifolia	Saxifragaceae	TIACOR	native	9	3	forb	perennial	foamflower
Tilia americana	Malvaceae	TILAME	native	5	3	tree	perennial	basswood
Trientalis borealis	Myrsinaceae	TRIBOR	native	5	0	forb	perennial	star-flower
Trifolium hybridum	Fabaceae	TRIHBY	non-native	0	3	forb	perennial	alsike clover
Trifolium pratense	Fabaceae	TRIPRA	non-native	0	3	forb	perennial	red clover
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
Viola pubescens	Violaceae	VIOPUB	native	4	3	forb	perennial	yellow violet