



# Soper Natural Area

## Floristic Quality Assessment Results

A Floristic Quality Assessment of Soper Natural Area was conducted by Liana May during the summer of 2016.

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

Native Species	Total Species
219	293

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 Soper Natural Area the mean C-values are:

Native Mean C	Mean C w/ Adventives
4.1	3.1

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 Soper Natural Area the mean coefficients of wetness are:

Native Mean W	Mean W w/ Adventives
2.7	3.1

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 Soper Natural Area the FQI's are:

Native FQI	FQI w/ Adventives
60.7	53.1

May, L 2016. Floristic Quality Assessment and Habitat Mapping of Soper Natural Area.

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.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ABIBAL	3	<i>Abies balsamifera</i>	-3	FACW	Nt Tree	balsam fir
ACESAC	5	<i>Acer saccharum</i>	3	FACU	Nt Tree	sugar maple
ACESPI	5	<i>Acer spicatum</i>	3	FACU	Nt Tree	mountain maple
AMBART	0	<i>Ambrosia artemisiifolia</i>	3	FACU	Nt A-Forb	common ragweed
ANTNEG	3	<i>Antennaria neglecta</i>	5	UPL	Nt P-Forb	field pussytoes
ARIATR	5	<i>Arisaema atrorubens</i>	-2	FACW-	Nt P-Forb	jack-in-the-pulpit
ASPOFF	*	<i>Asparagus officinalis</i>	3	FACU	Ad P-Forb	Wild asparagus
ASTLAE	5	<i>Aster laevis</i>	5	UPL	Nt P-Forb	smooth aster
ATHFEL	4	<i>Athyrium felix-femina</i>	0	FAC	Nt Fern	northern lady fern
BERTHU	*	<i>Berberis thunbergii</i>	4	FACU-	Ad Shrub	Japanese barberry
BETALL	7	<i>Betula alleghaniensis</i>	0	FAC	Nt Tree	yellow birch
BETPAP	2	<i>Betula papyrifera</i>	2	FACU+	Nt Tree	white birch
BOTDIS	5	<i>Botrychium dissectum</i>	0	FAC	Nt Fern	cut-leaved grape fern
BOTMUL	5	<i>Botrychium multifidum</i>	3	FACU	Nt Fern	leathery grape fern
CALPAL	6	<i>Caltha palustris</i>	-5	OBL	Nt P-Forb	marsh marigold
CENMAC	*	<i>Centaurea maculosa</i>	5	UPL	Ad B-Forb	spotted knapweed
CLEVIR	4	<i>Clematis virginiana</i>	0	FAC	Nt W-Vine	virgin's bower
COPTRI	5	<i>Coptis trifolia</i>	-3	FACW	Nt P-Forb	goldthread
CORSTO	2	<i>Cornus stolonifera</i>	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CORSTO	2	<i>Cornus stolonifera</i>	-3	FACW	Nt Shrub	red stemmed dogwood
CRA sp.	4	<i>Crataegus sp.</i>	4	UPL	Nt Tree	Hawthorn
CYPREG	9	<i>Cypripedium reginae</i>	-4	FACW+	Nt P-Forb	SHOWY or QUEEN'S LADY SLIPPER
DAUCAR	*	<i>Daucus carota</i>	5	UPL	Ad B-Forb	queen anne's lace
DRYCAR	5	<i>Dryopteris carthusiana</i>	-2	FACW-	Nt Fern	spinulose wood fern
DRYCRI	6	<i>Dryopteris cristata</i>	-5	OBL	Nt Fern	crested wood fern
DRYINT	5	<i>Dryopteris intermedia</i>	0	FAC	Nt Fern	intermediate wood fern
ELAUMB	*	<i>Elaeagnus umbellata</i>	3	FACU	Ad Shrub	autumn olive
EPIVIR	10	<i>Epifagus virginiana</i>	5	UPL	Nt P-Forb	beechdrops
EQUIARV	0	<i>Equisetum arvense</i>	0	FAC	Nt Fern Ally	common horsetail
EQISYL	5	<i>Equisetum sylvaticum</i>	-3	FACW	Nt Fern Ally	woodland horsetail
EQUIVAR	8	<i>Equisetum variegatum</i>	-3	FACW	Nt Fern Ally	Variegated scouring rush
ERISTR	4	<i>Erigeron strigosus</i>	1	FAC-	Nt P-Forb	daisy fleabane
FAGGRA	6	<i>Fagus grandifolia</i>	3	FACU	Nt Tree	American beech
FRAVIR	2	<i>Fragaria virginiana</i>	1	FAC-	Nt P-Forb	wild strawberry
FRAAME	5	<i>Fraxinus americana</i>	3	FACU	Nt Tree	white ash
FRANIG	6	<i>Fraxinus nigra</i>	-4	FACW+	Nt Tree	black ash
GERROB	3	<i>Geranium robertianum</i>	5	UPL	Nt A-Forb	herb Robert
GEURIV	7	<i>Geum rivale</i>	-5	OBL	Nt P-Forb	water avens
GEUURG	*	<i>Geum urganum</i>	5	UPL	Ad P-Forb	false avens
GYMDRY	5	<i>Gymnocarpon dryopteris</i>	0	FAC	Nt Fern	oak fern
HYPPER	*	<i>Hypericum perforatum</i>	5	UPL	Ad P-Forb	common st. john's-wort
JUNCOM	4	<i>Juniperus communis</i>	3	FACU	Nt Shrub	common juniper
LARLAR	5	<i>Larix laricina</i>	-3	FACW	Nt Tree	tamarack
MITREP	5	<i>Mitchella repens</i>	2	FACU+	Nt P-Forb	partridgeberry
MONFIS	2	<i>Monarda fistulosa</i>	3	FACU	Nt P-Forb	wild bergamot
MORALB	*	<i>Morus alba</i>	0	FAC	Ad Tree	white mulberry
NASOFF	0	<i>Nasturtium officinale</i>	-5	OBL	Ad P-Grass	watercress
ONOSEN	2	<i>Onoclea sensibilis</i>	-3	FACW	Nt Fern	sensitive fern
OSMCIN	5	<i>Osmunda cinnamomea</i>	-3	FACW	Nt Fern	cinnamon fern
OSMREG	5	<i>Osmunda regalis</i>	-5	OBL	Nt Fern	royal fern
OSTVIR	5	<i>Ostrya virginiana</i>	4	FACU-	Nt Tree	hop hornbeam
PICGLA	3	<i>Picea glauca</i>	3	FACU	Nt Tree	white spruce
PICMAR	6	<i>Picea mariana</i>	-3	FACW	Nt Tree	black spruce
PINBAN	5	<i>Pinus banksiana</i>	3	FACU	Nt Tree	Jack pine
PINSTR	3	<i>Pinus strobus</i>	3	FACU	Nt Tree	Eastern white pine
PINSYL	*	<i>Pinus sylvestris</i>	5	UPL	Ad Tree	scotch pine
POPBAL	2	<i>Populus balsamifera</i>	-3	FACW	Nt Tree	balsam poplar
POPGRA	4	<i>Populus grandidentata</i>	3	FACU	Nt Tree	big-tooth aspen
POPTRE	1	<i>Populus tremuloides</i>	0	FAC	Nt Tree	quaking aspen
PRUPEN	3	<i>Prunus pennsylvanica</i>	4	FACU-	Nt Tree	pin cherry
PRUSER	2	<i>Prunus serotina</i>	3	FACU	Nt Tree	black cherry
PTEAQI	0	<i>Pteridium aquilinum</i>	3	FACU	Nt Fern	bracken fern
QUEALB	5	<i>Quercus alba</i>	3	FACU	Nt Tree	white oak

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
RHACAT	*	<i>Rhamnus cathartica</i>	3	FACU	Ad Tree	common buckthorn
RHUTYP	2	<i>Rhus typhina</i>	5	UPL	Nt Tree	STAGHORN SUMAC
RUBSTR	2	<i>Rubus strigosus</i>	-2	FACW-	Nt Shrub	red raspberry
RUMACE	*	<i>Rumex acetosella</i>	0	FAC	Ad P-Forb	sheep sorrel
SALDIS	1	<i>Salix discolor</i>	-3	FACW	Nt Shrub	PUSSY WILLOW
SOLDUL	*	<i>Solanum dulcamara</i>	0	FAC	Ad A-Forb	Poison (bittersweet) Nightshade
THEPAL	2	<i>Thelypteris palustris</i>	-4	FACW+	Nt Fern	marsh fern
THUOCC	4	<i>Thuja occidentalis</i>	-3	FACW	Nt Tree	white cedar, arbor vitae
TIACOR	9	<i>Tiarella cordifolia</i>	1	FAC-	Nt P-Forb	foamflower
TILAME	5	<i>Tilia americana</i>	3	FACU	Nt Tree	basswood
TRIBOR	5	<i>Trientalis borealis</i>	-1	FAC+	Nt P-Forb	starflower
TSUCAN	5	<i>Tsuga Canadensis</i>	3	FACU	Nt Tree	eastern hemlock
VEROFF	*	<i>Veronica officinalis</i>	5	UPL	Ad P-Forb	common speedwell