

Appendix C. Comparison of groundcover vegetation of ten ecosystem types, University of Michigan's Nichols Arboretum, Washtenaw Co., Michigan. (values are average percent coverage per 100 m<sup>2</sup>, the frequency, or percentage of plots where each species occurred, is in parentheses).

Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B		Landform C	Landform D	Landform E		Landform F	Landform G	Landform I	
	3 (n=2)	4 (n=12)	5 (n=3)	7 (n=3)	8 (n=5)	9 (n=2)	13 (n=2)	14 (n=2)	15 (n=5)	18 (n=2)
<b>WOODY PLANTS (continued)</b>										
<b>Small-tree-species</b>										
Native Species										
Carpinus caroliniana	-- --	-- --	-- --	-- --	0.00 (20)	-- --	0.40 (100)	0.40 (100)	0.51 (100)	-- --
Cercis canadensis	-- --	0.13 (8)	0.00 (33)	-- --	-- --	-- --	-- --	-- --	-- --	-- --
Cornus alternifolia	-- --	0.12 (75)	0.00 (33)	0.10 (33)	0.00 (20)	-- --	0.18 (100)	0.00 (100)	0.12 (60)	-- --
Cornus florida	0.00 (50)	-- --	-- --	-- --	0.00 (60)	-- --	-- --	-- --	0.15 (40)	-- --
Crataegus spp.	0.00 (50)	0.04 (58)	0.12 (67)	-- --	0.01 (40)	0.18 (100)	-- --	-- --	0.01 (40)	0.00 (50)
Hamamelis virginiana	-- --	0.13 (8)	0.00 (33)	0.02 (33)	0.51 (80)	0.03 (50)	-- --	-- --	0.51 (80)	-- --
Viburnum lentago	-- --	0.05 (33)	-- --	-- --	0.01 (20)	-- --	-- --	0.00 (50)	0.00 (20)	0.00 (50)
Non-Native Species										
Acer ginnala	0.00 (100)	0.17 (83)	0.00 (100)	-- --	-- --	0.15 (100)	-- --	-- --	-- --	-- --
Acer pensylvanicum	-- --	-- --	-- --	-- --	0.00 (60)	-- --	-- --	-- --	0.00 (60)	-- --
Rhamnus cathartica	0.03 (100)	1.13 (100)	0.21 (100)	0.77 (100)	2.85 (100)	1.13 (100)	0.30 (100)	0.30 (100)	0.87 (100)	7.50 (100)
Rhamnus frangula	0.38 (50)	0.17 (75)	0.02 (33)	0.00 (33)	-- --	-- --	0.00 (50)	-- --	-- --	0.03 (100)
<b>Shrubs</b>										
Native Species										
Cornus amomum	-- --	-- --	-- --	-- --	-- --	-- --	-- --	0.38 (50)	-- --	-- --
Cornus foemina	-- --	1.78 (83)	0.00 (100)	-- --	0.23 (100)	0.15 (50)	-- --	-- --	0.06 (20)	0.00 (50)
Corylus americana	-- --	1.02 (92)	0.35 (67)	0.10 (33)	-- --	-- --	-- --	0.00 (50)	0.06 (20)	0.00 (50)
Juniperus communis var. dep.	-- --	-- --	-- --	-- --	-- --	0.00 (50)	-- --	-- --	-- --	-- --
Lonicera dioica	-- --	0.00 (17)	0.00 (33)	-- --	-- --	0.00 (50)	-- --	-- --	0.14 (80)	0.03 (50)
Lindera benzoin	-- --	-- --	-- --	-- --	-- --	-- --	0.00 (50)	-- --	-- --	-- --
Prunus virginiana	0.53 (100)	0.52 (100)	1.10 (100)	1.60 (100)	0.48 (100)	0.90 100	0.18 (100)	0.03 (100)	0.63 (100)	0.06 (100)
Rhus aromatica	-- --	-- --	-- --	-- --	-- --	0.15 (50)	-- --	-- --	-- --	-- --
Ribes americanum	-- --	0.06 (17)	-- --	0.02 (100)	-- --	-- --	-- --	0.00 (100)	-- --	0.53 (100)
Ribes cynosbati	-- --	0.01 (42)	0.10 (100)	0.02 (67)	0.01 (60)	-- --	-- --	0.15 (50)	0.08 (80)	0.03 (50)
Rosa spp.	-- --	0.00 (25)	-- --	-- --	0.00 (20)	-- --	-- --	-- --	0.00 (40)	-- --
Rubus alleghaniensis	-- --	0.06 (58)	0.10 (67)	0.00 (33)	-- --	-- --	-- --	-- --	-- --	-- --
Rubus flagellaris	-- --	0.01 (17)	0.10 (33)	0.10 (33)	0.00 (20)	-- --	-- --	-- --	-- --	-- --
Rubus occidentalis	0.01 (100)	0.01 (42)	0.02 (67)	0.02 (67)	0.00 (60)	-- --	-- --	-- --	0.02 (40)	0.00 (50)
Sambucus canadensis	-- --	0.00 (17)	-- --	0.10 (67)	-- --	-- --	0.00 (50)	0.15 (100)	0.00 (20)	0.15 (100)
Staphylea trifolia	-- --	-- --	-- --	-- --	0.00 (33)	0.00 (20)	-- --	0.75 (50)	0.00 (20)	-- --
Taxus canadensis	-- --	0.01 (33)	0.00 (67)	-- --	0.00 (20)	0.75 (50)	-- --	-- --	0.36 (80)	-- --
Vaccinium angustifolium	-- --	-- --	-- --	-- --	-- --	0.03 (50)	-- --	-- --	-- --	-- --

### Appendix C. (continued)

Species	Moraine			Ice-contact Terrain					Outwash Plain		
	Landform B		Landform C		Landform D	Landform E		Landform F		Landform G	Landform I
	3 (n=2)	4 (n=12)	5 (n=3)	7 (n=3)	8 (n=5)	9 (n=2)	13 (n=2)	14 (n=2)	15 (n=5)	18 (n=2)	
<b>WOODY PLANTS</b>											
<b>Shrubs</b>											
Native Species (continued)											
Viburnum acerifolium	---	---	0.00 (8)	---	---	0.28 (80)	---	---	0.22 (80)	---	---
Viburnum dentatum	---	---	0.00 (17)	---	---	---	---	---	---	---	---
Viburnum rafinesquianum	---	---	0.05 (25)	0.12 (100)	0.00 (33)	0.22 (80)	---	---	0.00 (20)	---	---
Viburnum trilobum	---	---	---	---	0.10 (67)	---	---	0.38 (100)	0.01 (100)	---	---
Zanthoxylum americanum	3.00 (50)	---	---	---	---	0.38 (50)	---	---	---	---	---
Non-Native Species											
Acer palmatum	---	---	---	0.00 (33)	---	---	---	---	---	---	---
Berberis thunbergii	---	---	0.03 (33)	0.10 (33)	---	0.00 (60)	0.03 (100)	---	0.02 (40)	0.00 (50)	---
Buxus sempervirens	---	---	---	---	---	0.00 (50)	---	---	---	---	---
Euonymus alata	---	---	0.07 (50)	0.00 (33)	0.02 (67)	0.00 (80)	0.38 (50)	0.00 (20)	0.00 (20)	---	---
Euonymus fortunei	---	---	0.00 (8)	0.00 (33)	---	---	0.03 (50)	---	---	---	---
Ligustrum vulgare	0.15 (100)	0.19 (67)	0.12 (67)	4.35 (100)	0.39 (100)	0.18 (100)	0.90 (100)	12.38 (100)	0.19 (80)	1.53 (100)	---
Lonicera hirsuta?	0.00 (100)	0.00 (17)	0.00 (33)	---	---	---	---	---	0.00 (20)	0.00 (20)	---
Lonicera mackii	12.75 (100)	0.77 (100)	1.00 (100)	0.22 (100)	1.62 (100)	0.53 (100)	1.88 (100)	0.30 (100)	0.57 (100)	0.75 (100)	---
Lonicera tatarica	0.75 (50)	0.21 (67)	0.00 (33)	0.04 (67)	0.01 (20)	---	---	0.00 (100)	0.23 (100)	0.03 (100)	---
Magnolia spp.	---	---	---	---	---	0.75 (50)	---	---	---	---	---
Rhodotypos scandens	---	---	---	---	0.06 (20)	---	---	---	---	---	---
Viburnum lantana	---	---	0.00 (8)	---	---	---	---	---	---	0.00 (50)	---
Viburnum opulus	0.00 (100)	0.23 (92)	0.04 (100)	0.02 (33)	0.06 (60)	0.15 (50)	0.03 (50)	0.00 (50)	0.16 (60)	0.40 (100)	---
<b>Vines</b>											
Native Species											
Menispermum canadense	---	---	---	---	---	0.00 (50)	0.15 (100)	0.03 (100)	0.00 (20)	---	---
Parthenocissus quinquefolia	12.75 (100)	0.66 (92)	0.21 (100)	1.10 (100)	2.49 (100)	0.03 (50)	0.15 (100)	0.18 (100)	0.03 (100)	0.18 (100)	---
Smilax tamnoides	0.00 (50)	0.01 (33)	0.02 (33)	0.02 (67)	0.02 (100)	---	0.00 (100)	0.90 (100)	0.01 (80)	---	---
Solanum dulcamara	---	---	---	---	0.02 (33)	---	---	---	0.00 (20)	---	---
Toxicodendron radicans	0.18 (100)	0.74 (92)	0.10 (100)	0.10 (100)	0.00 (60)	0.18 (100)	0.15 (100)	0.03 (100)	0.02 (100)	0.30 (100)	---
Vitis riparia	0.30 (100)	0.05 (67)	0.02 (100)	0.00 (33)	0.02 (80)	0.03 (100)	0.00 (50)	0.00 (50)	0.02 (100)	0.03 (100)	---
Non-Native Species											
Celastrus orbiculatus	0.18 (100)	0.02 (75)	0.10 (67)	0.02 (67)	0.12 (80)	0.18 (100)	0.00 (50)	---	0.07 (80)	0.00 (50)	---
Vinca minor	---	---	0.00 (8)	---	---	---	---	---	---	0.03 (50)	---

Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform C 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)
<b>HERBACEOUS PLANTS</b>										
<b>Forbs</b>										
Native Species										
Actaea spp.										
May	---	---	0.03 (17)	---	---	0.02 (67)	---	---	0.15 (50)	0.00 (50)
August	---	---	0.03 (17)	---	---	0.02 (67)	0.00 (20)	---	0.15 (50)	0.00 (50)
Agrimonia gryposepala										
May	0.03 (100)	0.00 (17)	---	---	---	0.00 (20)	---	---	---	---
August	0.15 (100)	0.01 (17)	---	---	---	0.00 (20)	---	---	---	---
Allium canadensis										
May	---	---	---	---	---	---	---	---	---	0.00 (50)
August	---	---	---	---	---	---	---	---	---	0.00 (50)
Ambrosia trifida										
May	---	0.01 (25)	---	---	0.00 (33)	0.00 (20)	---	---	0.00 (50)	---
August	0.00 (50)	0.00 (25)	---	---	0.00 (33)	0.00 (20)	---	---	0.00 (50)	---
Amphicarpea bracteata										
May	---	0.00 (8)	---	---	---	---	---	---	---	---
August	0.00 (50)	0.01 (25)	0.14 (100)	0.02 (33)	0.00 (20)	---	---	0.38 (100)	0.00 (20)	---
Anemone quinquefolia										
May	0.00 (50)	0.09 (58)	0.10 (100)	0.27 (67)	0.16 (80)	0.00 (50)	0.18 (100)	0.15 (50)	0.04 (80)	0.03 (100)
August	---	0.00 (8)	0.00 (67)	---	0.00 (20)	---	---	---	---	0.03 (50)
Anemonella thalictroides										
May	---	---	---	---	---	---	---	0.90 (100)	---	---
August	---	---	---	---	---	---	---	---	---	---
Apios americana										
May	---	---	---	---	---	---	---	---	---	---
August	---	---	---	---	---	---	---	0.38 (50)	---	---
Apocynum androsimifolia										
May	---	0.00 (8)	---	---	---	---	---	---	---	---
August	---	0.00 (8)	---	---	---	---	---	---	---	---
Arabis laevigata										
May	0.15 (50)	0.00 (8)	---	0.04 (67)	---	0.00 (50)	0.03 (50)	0.03 (50)	0.01 (20)	0.03 (50)
August	0.15 (50)	0.00 (8)	---	0.02 (67)	---	0.00 (50)	0.00 (50)	0.03 (50)	0.06 (20)	0.00 (50)
Aralia nudicaulis										
May	---	0.07 (17)	0.00 (33)	---	---	0.15 (100)	---	---	0.72 (80)	---
August	---	0.09 (17)	0.00 (33)	---	---	0.15 (100)	---	---	0.42 (80)	---
Arisaema triphyllum										
May	0.18 (100)	0.10 (92)	0.02 (100)	0.12 (100)	0.09 (100)	0.03 (100)	0.18 (100)	0.30 (100)	0.14 (100)	0.30 (100)
August	0.06 (100)	0.07 (83)	0.10 (100)	0.12 (67)	0.02 (100)	0.00 (50)	0.18 (100)	0.30 (100)	0.00 (100)	0.30 (100)
Asarum canadense										
May	---	---	---	---	---	---	---	0.00 (50)	0.30 (20)	---
August	---	---	---	---	---	---	---	0.00 (50)	0.30 (20)	---

## Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform D 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)
<b>HERBACEOUS PLANTS</b>										
<b>Forbs</b>										
Native Species (continued)										
<i>Aster novae-angliae</i>										
May	--	--	--	--	--	--	--	--	--	--
August	--	--	--	--	--	--	--	0.00 (50)	--	--
<i>Aster spp.</i>										
May	--	--	0.00 (8)	--	--	--	--	--	--	--
August	--	--	--	--	--	0.00 (50)	0.03 (100)	--	--	--
<i>Bidens connatus</i>										
May	--	--	--	--	--	--	--	0.00 (50)	--	--
August	--	--	--	--	--	--	--	0.00 (50)	--	--
<i>Boehmeria cylindrica</i>										
May	--	--	0.00 (8)	--	--	--	--	--	--	--
August	--	--	0.00 (8)	--	--	--	--	0.03 (100)	--	--
<i>Circaea lutetiana</i>										
May	0.53 (100)	0.43 (100)	0.10 (100)	0.30 (100)	0.01 (80)	0.15 (100)	0.30 (100)	0.30 (100)	0.03 (80)	0.15 (100)
August	0.53 (100)	0.52 (100)	0.04 (100)	0.45 (100)	0.00 (80)	0.15 (100)	0.18 (100)	0.18 (100)	0.07 (80)	0.03 (100)
<i>Cirsium muticum</i>										
May	--	--	--	--	0.00 (33)	--	--	--	--	--
August	--	--	--	--	0.00 (33)	--	--	--	--	--
<i>Claytonia virginica</i>										
May	--	--	0.00 (17)	--	--	--	--	0.18 (100)	0.03 (50)	--
August	--	--	--	--	--	--	--	--	--	--
<i>Clematis virginiana</i>										
May	--	--	--	--	--	--	--	--	--	--
August	--	--	--	--	--	--	--	0.03 (50)	--	--
<i>Collinsonia canadensis</i>										
May	0.30 (100)	0.04 (58)	0.00 (33)	--	0.00 (20)	0.00 (100)	0.03 (100)	0.15 (100)	0.01 (80)	--
August	1.65 (100)	0.09 (75)	0.10 (33)	--	0.01 (20)	0.00 (50)	0.06 (100)	0.53 (100)	0.03 (60)	--
<i>Cryptotaenia canadensis</i>										
May	0.00 (50)	--	--	--	0.00 (33)	--	--	0.03 (50)	1.13 (100)	--
August	0.00 (50)	--	--	--	0.00 (33)	--	--	0.03 (50)	0.75 (100)	--
<i>Dentaria diphylla</i>										
May	--	--	--	--	--	--	--	--	0.03 (100)	--
August	--	--	--	--	--	--	--	--	--	--
<i>Dentaria laciniata</i>										
May	--	--	0.00 (8)	--	--	--	--	0.18 (100)	--	0.00 (20)
August	--	--	--	--	--	--	--	--	--	--
<i>Desmodium glutinosum</i>										
May	--	0.00 (8)	--	--	0.00 (20)	0.00 (50)	--	--	--	--
August	0.15 (100)	0.04 (58)	0.10 (67)	0.00 (33)	0.00 (20)	0.00 (50)	--	--	0.02 (60)	0.00 (50)

## Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain	
	Landform B		Landform C	Landform D	Landform E		Landform F	Landform G	Landform I
	3 (n=2)	4 (n=12)	5 (n=3)	7 (n=3)	8 (n=5)	9 (n=2)	13 (n=2)	14 (n=2)	15 (n=5)
<b>HERBACEOUS PLANTS</b>									
<b>Forbs</b>									
Native Species (continued)									
<i>Dioscorea villosa</i>									
May	0.03 (100)	0.01 (67)	0.00 (33)	---	0.00 (20)	---	0.00 (50)	0.00 (20)	0.00 50
August	0.06 (100)	0.07 (75)	0.12 (67)	0.10 (67)	---	0.03 (100)	0.00 (50)	0.40 (100)	0.03 (80)
<i>Erigeron philadelphicus</i>									
May	---	---	---	---	---	---	---	0.03 (50)	---
August	---	---	---	---	---	---	---	---	---
<i>Erythronium americanum</i>									
May	---	0.00 (8)	---	0.00 (33)	0.00 (40)	---	65.00 (100)	1.65 (100)	1.26 (80)
August	---	---	---	---	---	---	---	---	---
<i>Eupatorium maculatum</i>									
May	---	0.00 (8)	---	---	---	---	0.00 (50)	0.06 (100)	---
August	---	0.00 (8)	---	---	---	---	0.00 (50)	3.15 (100)	---
<i>Eupatorium rugosum</i>									
May	---	---	---	---	---	---	---	---	---
August	---	0.00 (8)	---	---	---	---	---	---	---
<i>Fragaria virginiana</i>									
May	---	0.00 (8)	---	0.00 (33)	---	---	---	---	0.00 (50)
August	---	0.00 (8)	---	0.00 (33)	---	---	---	---	0.00 (50)
<i>Galium aparine</i>									
May	6.15 (100)	0.25 (100)	0.02 (100)	1.50 (100)	0.00 (20)	0.00 (50)	0.00 (50)	0.38 (50)	0.00 (20)
August	0.78 (100)	0.05 (58)	0.00 (67)	0.02 (67)	---	---	---	0.00 (50)	0.00 (20)
<i>Galium circaezans</i>									
May	0.03 (50)	0.00 (25)	0.00 (33)	---	---	---	---	---	---
August	0.03 (50)	0.01 (26)	0.00 (33)	---	0.00 (20)	---	---	---	---
<i>Geranium maculatum</i>									
May	1.50 (50)	3.82 (92)	2.10 (100)	2.00 (33)	0.15 (40)	0.03 (100)	3.00 (100)	1.65 (100)	0.92 (100)
August	0.03 (50)	0.11 (83)	0.22 (100)	0.10 (67)	0.06 (20)	0.01 (100)	0.30 (100)	0.18 (100)	0.08 (100)
<i>Geum canadense</i>									
May	1.65 (100)	0.59 (100)	0.20 (100)	4.52 (100)	0.07 (100)	0.03 (50)	0.18 (100)	0.30 (100)	0.67 (80)
August	0.53 (100)	0.21 (100)	0.20 (100)	2.52 (100)	0.12 (100)	0.03 (50)	0.18 (100)	0.30 (100)	0.07 (80)
<i>Hackelia virginiana</i>									
May	---	0.00 (17)	---	0.00 (67)	0.00 (40)	---	---	0.00 (50)	0.00 (40)
August	0.03 (100)	0.02 (67)	0.01 (67)	0.02 (67)	0.00 (40)	---	---	0.00 (50)	0.01 (40)
<i>Helianthus divaricatus</i>									
May	---	---	---	---	---	---	---	---	---
August	---	0.00 (17)	---	---	---	---	---	---	---
<i>Helianthus strumosus</i>									
May	---	---	---	---	---	---	---	0.15 (50)	---
August	---	---	---	---	---	---	---	0.15 (50)	---

## Appendix C. (continued)

Species	Moraine			Ice-contact Terrain			Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform D 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)
<b>HERBACEOUS PLANTS</b>									
<b>Forbs</b>									
Native Species (continued)									
<i>Hepatica acutiloba</i>									
May	---	---	---	---	---	---	0.00 (50)	---	---
August	---	---	---	---	---	---	0.00 (50)	---	---
<i>Hepatica americana</i>									
May	---	---	---	---	---	---	---	---	0.00 (40)
August	---	---	---	---	---	---	---	---	0.00 (40)
<i>Heracleum maximum</i>									
May	---	0.00 (8)	---	0.10 (33)	0.00 (20)	---	0.30 (100)	0.53 (100)	0.00 (40)
August	---	0.00 (8)	---	0.10 (33)	---	---	0.06 (100)	0.38 (100)	0.00 (40)
<i>Heuchera virginiana</i>									
May	0.00 (50)	0.00 (8)	---	---	0.01 (20)	---	---	---	0.00 (20)
August	0.00 (50)	0.00 (8)	---	---	0.01 (20)	---	---	---	0.01 (20)
<i>Impatiens capensis</i>									
May	1.13 (100)	0.06 (67)	0.00 (33)	0.10 (67)	---	0.00 (50)	0.00 (100)	1.65 (100)	---
August	0.18 (100)	0.01 (50)	---	0.00 (33)	---	---	---	6.38 (100)	---
<i>Iris virginica</i>									
May	---	---	---	---	---	---	---	0.15 (100)	---
August	---	---	---	---	---	---	---	0.15 (100)	---
<i>Laportea canadensis</i>									
May	---	---	---	---	---	---	---	0.15 (100)	---
August	---	---	---	---	---	---	---	0.78 (100)	---
<i>Lilium michiganense</i>									
May	---	---	---	---	---	---	---	0.18 (100)	---
August	---	---	---	---	---	---	---	0.03 (100)	---
<i>Lobelia siphilitica</i>									
May	---	---	---	---	---	---	---	---	---
August	---	---	---	---	---	---	---	0.00 (50)	---
<i>Lobelia spicata</i>									
May	---	---	---	---	---	---	0.00 (50)	---	---
August	---	---	---	---	---	---	0.00 (50)	---	---
<i>Lysimachia ciliata</i>									
May	---	---	---	---	---	---	---	0.00 (50)	0.00 (20)
August	---	---	---	---	---	---	---	0.03 (50)	0.03 (100)
<i>Lysimachia quadrifolia</i>									
May	---	---	---	---	---	---	0.00 (50)	---	0.00 (40)
August	---	---	---	---	---	---	0.00 (50)	---	0.00 (40)
<i>Mitella diphylla</i>									
May	---	---	---	0.00 (33)	---	---	---	0.02 (60)	---
August	---	---	---	0.00 (33)	---	---	---	0.01 (60)	---

Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform D 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)
<b>HERBACEOUS PLANTS</b>										
Forbs										
Native Species (continued)										
Osmorhiza claytonii										
May	---	---	0.03 (42)	0.02 (67)	0.45 (100)	0.00 (20)	---	---	---	0.38 (50)
August	---	---	0.03 (42)	0.00 (67)	0.35 (100)	0.00 (20)	---	---	---	0.38 (50)
Osmorhiza longistylis										
May	---	---	0.03 (25)	0.02 (67)	0.12 (67)	---	0.00 (50)	0.00 (50)	0.15 (100)	0.15 (100)
August	---	---	0.01 (25)	0.02 (67)	0.12 (67)	---	0.00 (50)	---	0.15 (100)	0.03 (100)
Oxalis stricta										
May	---	---	---	---	---	---	---	---	---	---
August	---	---	0.00 (17)	---	---	---	---	---	---	0.00 (50)
Pedicularis lanceolata										
May	---	---	---	---	---	---	---	---	0.00 (50)	---
August	---	---	---	---	---	---	---	---	0.00 (50)	---
Phryma leptostachya										
May	---	---	0.01 (17)	---	---	---	0.01 (100)	---	---	0.00 (20)
August	0.00 (100)	0.04 (58)	0.02 (67)	0.00 (33)	0.00 (20)	0.01 (100)	---	---	0.00 (20)	0.03 (50)
Phytolacca americana										
May	---	---	---	---	---	---	---	---	---	---
August	---	---	---	---	0.00 (33)	---	---	---	---	---
Pilea pumila										
May	---	---	---	---	---	---	---	---	---	0.00 (50)
August	0.00 (50)	0.06 (17)	---	---	---	---	0.00 (50)	0.18 (100)	---	0.03 (50)
Podophyllum peltatum										
May	0.00 (50)	12.81 (75)	25.00 (100)	6.00 (67)	0.51 (100)	1.88 (100)	27.00 (100)	0.75 (50)	0.00 (40)	0.00 (50)
August	---	0.00 (8)	0.02 (33)	---	---	---	---	---	---	---
Polygonatum biflora										
May	0.15 (50)	---	---	0.45 (100)	---	---	0.18 (100)	0.30 (100)	0.02 (60)	0.03 (100)
August	0.00 (50)	---	---	0.30 (100)	---	---	0.01 (100)	0.06 (100)	0.00 (60)	0.03 (100)
Polygonatum pubescens										
May	---	0.00 (8)	---	0.10 (33)	0.02 (40)	0.06 (100)	---	0.15 (50)	0.15 (100)	---
August	---	0.00 (8)	---	0.02 (33)	0.01 (40)	0.03 (100)	---	0.03 (50)	0.08 (100)	---
Polygonum virginianum										
May	0.75 (100)	0.03 (33)	0.00 (100)	0.02 (67)	0.00 (20)	---	0.03 (100)	0.06 (100)	0.01 (20)	0.15 (100)
August	0.75 (100)	0.01 (17)	0.02 (100)	0.10 (67)	0.00 (20)	---	0.03 (100)	0.18 (100)	---	0.03 (100)
Potentilla simplex										
May	---	---	---	---	0.00 (20)	---	---	---	---	---
August	---	---	---	---	0.00 (20)	---	---	---	---	---
Prenanthes altissima										
May	---	0.01 (25)	0.00 (33)	---	0.22 (100)	0.00 (50)	0.03 (100)	---	0.13 (60)	---
August	---	0.00 (25)	0.00 (33)	---	0.13 (100)	0.00 (50)	0.03 (100)	---	0.08 (60)	---

Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform D 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)
<b>HERBACEOUS PLANTS</b>										
<b>Forbs</b>										
Native Species (continued)										
<i>Pyrola elliptica</i>										
May	---	---	0.03 (8)	0.22 (100)	0.50 (67)	---	0.00 (50)	---	0.01 (20)	---
August	---	---	0.00 (8)	0.45 (100)	1.00 (67)	---	0.00 (50)	---	0.01 (20)	---
<i>Ranunculus abortivus</i>										
May	0.03 (100)	0.01 (25)	---	0.02 (67)	0.01 (40)	---	0.00 (50)	0.03 (100)	0.01 (80)	0.00 (50)
August	---	0.00 (17)	---	---	---	---	0.00 (50)	0.78 (100)	0.00 (40)	0.15 (50)
<i>Ranunculus hispida</i>										
May	0.06 (100)	0.00 (17)	0.00 (33)	---	---	---	0.01 (100)	1.65 (100)	0.00 (20)	0.00 (100)
August	---	---	0.00 (33)	---	0.00 (20)	---	0.00 (100)	0.18 (100)	0.00 (20)	0.03 (100)
<i>Sanguinaria canadensis</i>										
May	0.15 (50)	0.13 (67)	0.00 (33)	0.00 (33)	---	---	0.00 (50)	---	0.18 (80)	0.00 (50)
August	0.15 (50)	0.02 (50)	0.00 (33)	0.00 (33)	---	---	0.00 (50)	---	0.00 (80)	0.00 (50)
<i>Sanicula odorata</i>										
May	0.00 (50)	0.00 (25)	0.00 (33)	0.00 (33)	0.01 (20)	0.00 (100)	---	4.50 (100)	---	0.03 (50)
August	0.03 (50)	0.01 (25)	0.00 (67)	0.12 (100)	---	0.00 (100)	---	2.25 (100)	---	0.03 (50)
<i>Scrophularia lanceolata</i>										
May	---	---	---	---	---	---	---	---	---	---
August	---	---	---	---	---	---	---	---	0.00 (20)	---
<i>Senecio aureus</i>										
May	---	---	---	---	---	---	---	6.00 (100)	---	---
August	---	---	---	---	---	---	---	0.90 (100)	0.01 (40)	---
<i>Smilacina racemosa</i>										
May	0.53 (100)	0.19 (100)	0.22 (100)	1.75 (100)	0.87 (100)	0.30 (100)	1.13 (100)	0.75 (100)	0.57 (100)	3.03 (100)
August	0.53 (100)	0.17 (100)	0.20 (100)	0.85 (100)	0.72 (100)	0.30 (100)	0.53 (100)	0.53 (100)	0.43 (100)	0.38 (100)
<i>Smilacina stellata</i>										
May	---	---	---	---	0.02 (33)	---	0.00 (50)	0.30 (100)	0.01 (20)	0.53 (100)
August	---	---	---	---	0.00 (33)	---	0.00 (50)	0.06 (100)	0.01 (20)	0.18 (100)
<i>Smilax ecirrata</i>										
May	---	0.00 (17)	0.00 (33)	0.02 (33)	---	0.03 (100)	0.00 (50)	0.00 (50)	0.00 (20)	0.03 (50)
August	---	0.00 (17)	0.00 (33)	0.02 (33)	---	0.03 (50)	0.00 (50)	---	0.01 (20)	0.00 (50)
<i>Smilax lasioneura</i>										
May	0.03 (50)	---	---	0.10 (67)	---	---	---	0.00 (100)	---	---
August	0.03 (50)	---	---	0.10 (67)	---	---	---	0.00 (50)	---	---
<i>Solidago caesia</i>										
May	0.00 (50)	0.01 (58)	0.02 (67)	0.03 (33)	0.12 (80)	0.15 (100)	0.06 (100)	0.15 (100)	0.15 (100)	0.03 (50)
August	0.00 (50)	0.03 (67)	0.02 (67)	0.00 (67)	0.12 (80)	0.15 (100)	0.06 (100)	0.15 (100)	0.29 (100)	0.03 (50)

## Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform D 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)
<b>HERBACEOUS PLANTS</b>										
<b>Forbs</b>										
Native Species (continued)										
<i>Solidago canadensis</i>										
May	0.00 (50)	0.00 (8)	---	---	---	0.00 (40)	---	0.03 (50)	0.01 (40)	---
August	0.00 (50)	0.00 (17)	0.00 (33)	---	---	0.00 (40)	---	0.03 (50)	0.00 (40)	0.00 (100)
<i>Solidago flexicaulis</i>										
May	---	---	---	---	---	---	---	0.00 (50)	0.15 (40)	---
August	---	---	---	---	---	---	---	0.00 (50)	0.06 (40)	---
<i>Symplocarpus foetidus</i>										
May	---	---	---	---	---	---	---	0.03 (50)	0.00 (20)	0.15 (50)
August	---	---	---	---	---	---	---	1.88 (100)	---	---
<i>Taenidia integerina</i>										
May	---	---	---	---	---	---	0.00 (50)	---	---	---
August	---	---	---	---	---	---	0.00 (50)	---	---	---
<i>Thalictrum dioicum</i>										
May	0.03 (100)	4.00 (100)	1.60 (100)	---	0.21 (40)	0.78 (100)	0.18 (100)	---	3.75 (100)	---
August	0.00 (100)	0.76 (100)	0.60 (100)	---	0.12 (40)	0.18 (100)	0.06 (100)	---	0.96 (100)	---
<i>Trillium grandiflorum</i>										
May	---	5.03 (42)	0.27 (100)	0.02 (33)	0.00 (20)	0.00 (50)	3.38 (100)	0.40 (100)	0.42 (80)	0.18 (100)
August	---	0.01 (25)	0.02 (67)	---	---	0.00 (50)	0.03 (100)	0.06 (100)	0.02 (60)	0.00 (100)
<i>Trillium recurvatum</i>										
May	---	---	---	---	0.00 (33)	---	---	---	---	---
August	---	---	---	---	---	---	---	---	---	---
<i>Triosteum aurantiacum</i>										
May	0.00 (50)	0.00 (8)	---	---	0.01 (40)	0.00 (50)	---	---	0.00 (20)	---
August	0.00 (50)	0.00 (8)	---	---	0.01 (40)	0.00 (50)	---	---	0.00 (20)	---
<i>Viola cucullata</i>										
May	---	---	---	---	---	---	---	0.03 (50)	0.01 (20)	---
August	---	---	---	---	---	---	---	0.03 (50)	0.00 (20)	---
<i>Viola pubescens</i>										
May	---	0.00 (8)	---	---	---	---	---	---	0.00 (20)	---
August	---	0.00 (8)	---	---	---	---	---	---	0.00 (20)	---
<i>Viola sororia</i>										
May	0.00 (50)	0.01 (42)	0.00 (33)	1.00 (67)	---	0.00 (50)	0.00 (50)	0.03 (50)	0.00 (20)	0.38 (50)
August	0.00 (50)	0.00 (42)	0.00 (33)	0.10 (67)	---	0.00 (50)	0.00 (50)	0.03 (50)	0.01 (20)	0.03 (50)
<i>Zizia aurea</i>										
May	---	---	---	---	---	---	---	0.15 (100)	---	---
August	---	---	---	---	---	---	---	0.15 (100)	---	---

#### Appendix C. (continued)

Appendix C. (continued)

Species	Moraine			Ice-contact Terrain				Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform D 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)
<b>HERBACEOUS PLANTS</b>										
<b>Forbs</b>										
Non-Native Species (continued)										
<i>Lysimachia nummularia</i>										
May	--	--	--	--	--	--	--	--	0.53 (100)	--
August	--	--	--	--	--	--	--	--	0.53 (100)	--
<i>Malva neglecta</i>										
May	--	--	--	0.00 (67)	--	--	--	--	--	--
August	0.00 (50)	0.00 (8)	--	--	--	--	--	--	--	--
<i>Myosotis scorpioides</i>										
May	--	0.00 (8)	--	--	--	--	--	--	--	--
August	--	0.00 (8)	--	--	--	--	--	--	--	--
<i>Pachysandra terminalis</i>										
May	--	--	--	--	--	--	--	--	0.00 (20)	--
August	--	--	--	--	--	--	--	--	0.00 (20)	--
<i>Plantago major</i>										
May	--	--	--	0.00 (33)	--	--	--	--	--	--
August	--	--	--	0.00 (33)	--	--	--	--	--	--
<i>Rumex crispus</i>										
May	--	--	--	--	--	--	--	0.03 (50)	--	--
August	--	--	--	0.02 (33)	--	--	--	0.15 (50)	--	--
<i>Rumex obtusifolius</i>										
May	--	--	--	--	--	--	--	0.15 (100)	0.00 (20)	--
August	--	--	--	--	--	--	--	--	--	--
<i>Stellaria graminea</i>										
May	--	--	--	0.00 (33)	--	--	--	--	--	0.00 (50)
August	--	--	--	--	--	--	--	--	--	--
<i>Taraxacum officinalis</i>										
May	0.03 (100)	0.02 (67)	0.00 (33)	0.00 (67)	0.00 (20)	0.00 (50)	--	--	0.01 (60)	0.00 (50)
August	--	0.00 (75)	0.00 (33)	--	0.00 (20)	0.00 (50)	--	--	0.00 (20)	0.00 (50)
<b>Graminoids</b>										
Native Species										
<i>Carex blanda</i>										
May	0.06 (100)	0.00 (17)	0.00 (33)	0.00 (33)	0.02 (60)	--	0.30 (100)	1.65 (100)	0.00 (60)	0.03 (100)
August	0.06 (100)	0.00 (17)	0.00 (33)	0.00 (33)	0.01 (60)	--	0.53 (100)	12.15 (100)	0.00 (60)	0.01 (100)
<i>Carex pensylvanica</i>										
May	0.00 (100)	0.02 (75)	0.00 (33)	0.00 (33)	0.30 (100)	0.15 (100)	0.03 (50)	0.75 (100)	0.07 (100)	0.00 (50)
August	0.00 (100)	0.04 (75)	0.00 (67)	0.00 (33)	1.14 (100)	0.38 (100)	0.00 (50)	0.30 (100)	0.21 (100)	0.00 (50)
<i>Elymus riparius</i>										
May	--	--	--	--	--	--	--	--	--	--
August	--	--	--	--	--	--	--	--	--	--
<i>Scirpus cyperinus</i>										
May	--	--	--	--	--	--	--	--	--	--
August	--	--	--	--	--	--	--	0.03 (50)	--	--

### Appendix C. (continued)

Species	Moraine			Ice-contact Terrain					Outwash Plain		
	Landform B 3 (n=2)	Landform C 4 (n=12)	Landform C 5 (n=3)	Landform D 7 (n=3)	Landform E 8 (n=5)	Landform E 9 (n=2)	Landform F 13 (n=2)	Landform F 14 (n=2)	Landform G 15 (n=5)	Landform I 18 (n=2)	
<b>HERBACEOUS PLANTS</b>											
<b>Ferns, Horsetails, and Parasitic Plants</b>											
<b>NATIVE SPECIES</b>											
<i>Adiantum pedatum</i>											
May	---	---	---	---	0.00 (33)	---	---	---	0.00 (60)	---	---
August	---	---	---	---	0.00 (33)	---	---	---	0.01 (60)	---	---
<i>Asplenium platyneuron</i>											
May	---	---	---	---	---	0.00 (20)	---	---	0.00 (20)	---	---
August	---	---	---	---	---	0.00 (20)	---	---	0.00 (20)	---	---
<i>Athyrium filix-femina</i>											
May	---	0.00 (8)	0.25 (67)	---	---	---	---	0.00 (50)	0.02 (40)	0.00 (50)	---
August	---	0.00 (8)	0.25 (67)	---	---	---	---	0.00 (50)	0.02 (40)	0.00 (50)	---
<i>Corallorrhiza maculata</i>											
May	---	---	---	---	---	---	---	---	0.00 (20)	---	---
August	---	---	---	---	0.00 (33)	---	---	---	0.00 (20)	---	---
<i>Equisetum fluviatile</i>											
May	---	---	---	---	---	---	---	0.01 (100)	---	---	---
August	---	---	---	---	---	---	---	0.03 (100)	---	---	---
<i>Equisetum hyemale</i>											
May	---	---	---	---	---	---	---	---	0.00 (20)	---	---
August	---	---	---	---	---	---	---	---	0.00 (20)	---	---
<i>Lichen spp.</i>											
May	---	---	---	---	---	---	---	---	---	---	---
August	---	0.00 (17)	---	---	---	---	---	0.15 (50)	---	---	---
<i>Monotropa uniflora</i>											
May	---	---	---	---	---	---	---	---	---	---	---
August	---	0.00 (33)	---	---	0.00 (33)	0.00 (20)	---	---	0.01 (20)	---	---
<i>Onoclea sensibilis</i>											
May	---	---	---	0.00 (33)	---	---	---	---	---	---	0.00 (50)
August	---	---	---	0.00 (33)	---	---	---	---	---	---	0.00 (50)
<i>Osmunda cinnamomea</i>											
May	---	---	---	0.00 (33)	---	---	---	---	0.00 (40)	---	---
August	---	---	---	0.00 (33)	---	---	---	---	0.00 (40)	---	---
<i>Pteridium aquilinum</i>											
May	---	0.00 (8)	0.10 (33)	---	---	---	---	---	---	---	---
August	---	0.00 (8)	0.10 (33)	---	---	---	---	---	---	---	---
<b>NON-PLANT COVERAGE</b>											
Bare Soil	0.30 (100)	0.22 (100)	0.06 (100)	0.06 (100)	9.06 (100)	0.30 (100)	0.40 (100)	12.15 (100)	33.60 (100)	6.15 (100)	---
Coarse woody debris	1.13 (100)	2.31 (100)	1.50 (100)	1.60 (100)	0.93 (100)	0.30 (100)	0.53 (100)	7.50 (100)	0.90 (100)	1.13 (100)	---
Fine woody debris	1.13 (100)	0.86 (100)	1.00 (100)	0.70 (100)	0.57 (100)	0.30 (100)	0.30 (100)	0.30 (100)	0.63 (100)	0.75 (100)	---
Moss	0.03 (100)	0.34 (92)	0.12 (100)	0.12 (100)	0.01 (20)	0.06 (100)	0.38 (100)	0.30 (100)	0.28 (100)	0.06 (100)	---