

## **A Floristic Study of Mesic Slopes and Outcroppings in the Kaskaskia River Watershed, Shelby County, Illinois**

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### **I. Introduction**

Mesic wooded slopes and associated rock outcroppings remain as relatively undisturbed plant communities amid an altered, agricultural landscape in Shelby County, Illinois. Eight potential study sites within the Kaskaskia and Little Wabash River Watersheds were located based on the published soil survey of Shelby County. Four sites were found to be worthy of a complete floristic study. These sites were visited monthly from April through October, 1992, for voucher specimen collection. Of these four sites, the vegetation of two sites of highest quality were quantitatively sampled during July, 1993. Three sites were found to be severely grazed and disturbed from other activities such as road construction. Access was denied for one potential site on the Little Wabash River watershed.

### **II. Site Descriptions**

#### Little Wabash River Watershed

**Site 1:** Located 1 mile SW of the town of Trowbridge on an unnamed tributary flowing South to confluence with the Little Wabash, including adjacent sections of the Little Wabash. T.10N, R.6 E, Section 15 and 22, Big Spring Twp. Small outcroppings of various aspect are scattered along unnamed tributary, and larger outcroppings with northerly aspect are present along the Little Wabash. Local relief on the Little Wabash ranges from 50-75 feet from valley bottom to crest of ravine; the sandstone exposures on the unnamed tributary are situated within 5 ft of stream elevation. This site was visited in April, 1992 and determined to be unworthy of further examination.

**Site 2:** Located 4 miles east of the town of Stewardson on north facing section of the Little Wabash River valley. T. 10N, R. 6E, Section 32, Sigel Twp. A small portion of disturbed mesophytic ravine and an eroding exposure of unconsolidated sand is present at this site. Local relief here is approximately 50 ft. This site was visited in April, 1992, and found to be disturbed from recent logging and road building. While occasional collections were made at this site, a complete floristic study was not undertaken.

**Site 3:** Located 3 miles east/southeast of the town of Stewardson on Hog Creek and unnamed tributary. T. 9N, R. 6E, W 1/2 Section 6. Sigel Twp. Scattered well-developed sandstone outcroppings of various aspect are situated at the confluence of Hog Creek and an unnamed tributary. Local relief here is approximately 50 ft from valley bottom to crest of ravine. This site looks worthy of further examination, however, access to it was denied by the landowner, Mr. Baumgarten.

#### Kaskaskia River Watershed

**Site 4: The Pikes Site.** Located 2 miles northeast of the town of Mode on Brush Creek. T. 10N, R. 4E, W 1/2 Section 25. Clarksburg Twp. Many well-developed outcroppings of fissile sandstone with east and west aspects are scattered along Brush Creek. Associated mesophytic ravines are highly disturbed from grazing and past logging. This site was visited monthly from April to October in 1992 and is occupied by a diverse flora, described in Hatfield Site Species List. The Floristic Assessment Index is 38.29 and the mean rated quality is 3.62.

**Site 5: The Roleys Site.** Located 1 1/2 miles south of the town of Mode on Brush Creek. T. 9N, R. 4E, SE 1/4 Section 3, Holland Twp. Scattered sandstone outcrops on steep high-quality mesophytic ravine with northwest aspect. Local relief here is approximately 100 ft from the valley bottom to the crest of the ravine. This site was visited monthly from April to October in 1992 and is occupied by a diverse flora, described in Hatfield Site Species List. The Floristic Assessment Index is 46.02 and the mean rated quality is 4.22.

**Site 6: The Taylors Site.** Located 1 1/2 miles southeast of the town of Cowden near the confluence of Richland Creek and the Kaskaskia River. T. 9N, R. 3E, S 1/2 Section 11, Dry Point Twp. Scattered sandstone outcroppings on steep high-quality mesophytic ravine with northern aspect. Local relief is approximately 75 ft from the valley bottom to the crest of the ravine. Past logging is evident throughout this site and areas with less severe slope have

been grazed. This site was visited monthly from April to October in 1992 and is occupied by a diverse flora, described in Hatfield Site Species List. The Floristic Assessment Index is 46.92 and the mean rated quality is 4.08. In addition, quantitative sampling was performed on the herbaceous and woody vegetation during July, 1993. These data are forthcoming.

**Site 7: The Hatfield Site.** Located 3 1/2 miles south-southwest of Shelbyville on the Kaskaskia River. T. 11N, R. 3E, W 1/2 Section 35, Rose Twp. Scattered sandstone outcroppings along steep, high-quality mesophytic ravine with northern aspect. Local relief here is approximately 100 ft from valley bottom to the crest of the ravine. This site was visited monthly from April to October in 1992 and is occupied by a diverse flora, described in Hatfield Site Species List. The Floristic Assessment Index is 43.22 and the mean rated quality is 4.18. In addition, quantitative sampling was performed on the herbaceous and woody vegetation during July, 1993. These data are forthcoming.

**Site 8:** Located 3 miles southwest of the intersection IL 16 and IL 128 on Rocky Branch. T.11N, R. 3E, SE 1/4 Section 30, Rose Twp. Local relief is quite low. Exposures of eroding sand are present, and gently sloping hillsides are heavily grazed. This site was visited in April, 1992 and found to be floristically unworthy of further examination as a result of severe grazing. While occasional collections were made at this site, a complete floristic study was not undertaken.

### III. The Floristic Quality Assessment Method

This methodology was developed by Taft *et al*, 1993, as a means to measure the floristic integrity of natural areas in Illinois. Numerical values have been assigned to all native vascular plant species within the state of Illinois based on their rarity, nativity, and fidelity to a given set of ecological parameters. These numerical values are termed the Coefficients of Conservatism. The Floristic Quality Index is computed as follows:  $I = R/N (\sqrt{N})$ , where I represents the Floristic Quality Index, R is the sum of all Coefficients of Conservatism for all

native plant species within the study area, N is the total number of native plant species within the study area. Also computed is the Mean Rated Quality (R/N) which is the average Coefficient of Conservatism. This index should not be used as a substitute for quantitative vegetation analysis in assessing plant communities, however it is a useful tool with which to evaluate the integrity of a natural area.

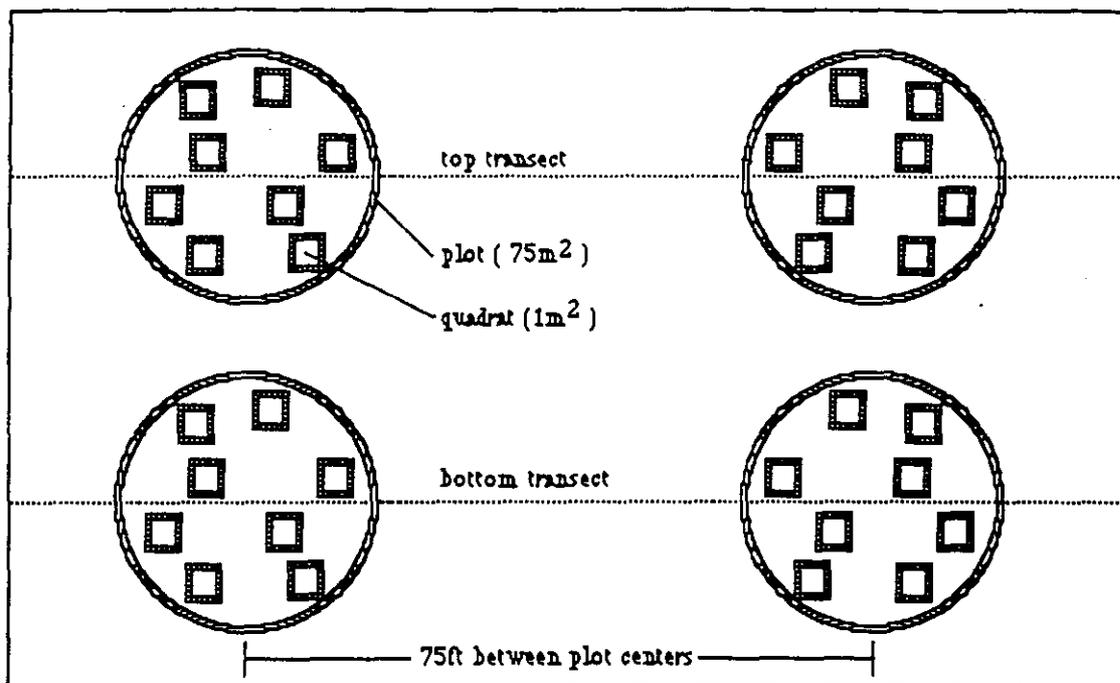
The Floristic Quality Assessment Method was applied to four sites within the Kaskaskia River Watershed. Species lists were compiled during monthly visits from April through October, 1992.

#### **IV. Quantitative Sampling**

The vegetation of two sites of high floristic quality was quantitatively sampled in July, 1993. A transect was established at the Taylor site which ran parallel with the steep ravine, approximately 4m from the crest of the hillside. Twelve plots (75m<sup>2</sup>) were established along this transect. The response variable recorded for woody vegetation was the diameter at breast height (DBH) of all trees, shrubs, and saplings within each plot. Values of DBH were converted to percent basal area (PBA), expressed as stem area divided by plot area. Eight quadrats (1m<sup>2</sup>) were placed randomly in each plot in order to collect herbaceous data. The response variable recorded for herbs was the percent areal cover of each species within each quadrat.

Two parallel transects were established at the Hatfield site; the top transect was located 4m from the crest, and the bottom transect 5m upslope from the rivers edge. In order to compare the vegetation of the top transect with that of the bottom, a paired t-test was employed. Vegetation data was collected as described above. These data are forthcoming. We hope to elucidate trends in forest gap phase dynamics of mesic slopes and how canopy coverage (logging and grazing history) affects the herbaceous plant composition. Figure 1 shows the sampling scheme used for these sites.

Figure 1: Sampling Scheme for Hatfield and Taylor Sites.



## V. Significant Botanical Resources

A population of the state-threatened False Hellebore (*Veratrum woodii* Robbins, Liliaceae) was reconfirmed at the Roley's Brush Creek Site. This population is made up of approximately 30 individuals, one of which was flowering in the summer of 1992.

Table 1: Roleys Brush Creek Species List

Scientific name	Common name	Coefficient of Conservatism
<i>Acalypha rhomboidea</i>	three-seeded mercury	0
<i>Acer negundo</i>	box elder	1
<i>Actaea pachypoda</i>	doll's eyes	7
<i>Adiantum pedatum</i>	maidenhair fern	6
* <i>Agalinis tenuifolia</i>	slender false foxglove	5
<i>Agastache nepetoides</i>	yellow giant hyssop	4
* <i>Agrimonia parviflora</i>	swamp agrimony	5
<i>Agrimonia rostellata</i>	woodland agrimony	4
<i>Agrimonia</i> spp.	agrimony	--
<i>Agrostis perennans</i>	autumn bent grass	2
<i>Allium canadense</i>	wild garlic	2
<i>Allium tricoccum burdickii</i>	ramp	6
<i>Ambrosia trifida</i>	giant ragweed	0
<i>Amelanchier arborea</i>	juneberry	7

<i>Anemone virginiana</i>	tall anemone	4
<i>Aplectrum hyemale</i>	putty-root orchid	7
<i>Aruncus dioicus</i>	goats beard	7
<i>Asarum canadense</i>	Canada wild ginger	5
<i>Aster shortii</i>	Short's aster	6
<i>Aster turbinellis</i>	prairie aster	7
<i>Aureolaria grandiflora</i>	yellow false foxglove	6
<i>Betula nigra</i>	river birch	4
<i>Bidens bipinnata</i>	Spanish needles	--
<i>Blephilia ciliata</i>	Ohio horsemint	6
* <i>Boehmeria cylindrica</i>	false nettle	3
<i>Brachyletrum erectum</i>	long-awned wood grass	7
<i>Bromus pubescens</i>	Canada brome grass	5
<i>Cacalia muhlenbergii</i>	Indian plantain	10
<i>Campanula americana</i>	American bellflower	3
<i>Carex</i> sp.	sedge	--
<i>Carex frankii</i>	sedge	4
<i>Carex hirsutella</i>	sedge	5
<i>Carex hirtifolia</i>	sedge	6
<i>Carex jamesii</i>	sedge	4
<i>Carex normalis</i>	sedge	4
<i>Carex rosea?</i>	sedge	5
<i>Carpinus caroliniana</i>	American hornbeam	6
<i>Carya cordiformis</i>	bitternut hickory	4
<i>Carya laciniosa</i>	shellbark hickory	7
<i>Carya ovata</i>	shagbark hickory	4
* <i>Ceanothus americanus</i>	New Jersey tea	7
<i>Chasmanthium latifolium</i>	sea oats	4
<i>Circaea lutetiana</i>	enchanter's nightshade	0
<i>Clematis virginiana</i>	virgin's bower	3
<i>Commelina communis</i>	common day flower	--
<i>Cystopteris protrusa</i>	fragile fern	3
* <i>Desmodium ciliare</i>	hairy tick trefoil	7
<i>Diarrhena americana</i>	beak grass	7
<i>Dicanthelium clandestinum</i>	broad-leaved panic grass	4
<i>Dicanthelium</i> sp.	panic grass	--
<i>Ellisia nyctelea</i>	aunt lucy	1
<i>Elymus</i> sp.	rye grass	--
<i>Elymus virginicus</i>	Virginia wild rye	4
<i>Erigeron philadelphicus</i>	marsh fleabane	3
<i>Erythronium albidum</i>	white adder's tongue	4
<i>Eupatorium purpureum</i>	sweet Joe Pye weed	5
<i>Eupatorium sessilifolium</i>	upland boneset	8
* <i>Euthamia graminifolia</i>	grassleaf goldenrod	3
<i>Fraxinus americana</i>	white ash	4
<i>Galium</i> sp.	bedstraw	--
<i>Galium aparine</i>	annual bedstraw	0
<i>Galium concinnum</i>	bedstraw	4
<i>Geum canadense</i>	white avens	2
<i>Geum verum</i>	spring avens	1
<i>Glyceria striata</i>	fowl manna grass	4
<i>Hackelia virginiana</i>	stickseed	1
<i>Hedyotis longifolia</i>	long-leaved bluets	7

<i>Helianthus divaricatus</i>	woodland sunflower	5
* <i>Hemerocallis fulva</i>	day lily	--
* <i>Hieracium scabrum</i>	hairy hawkweed	5
<i>Hydrangea arborescens</i>	wild hydrangea	6
<i>Hydrastis canadensis</i>	golden seal	7
<i>Hydrophyllum appendiculatum</i>	great water leaf	6
<i>Hypericum punctatum?</i>	spotted St. John's wort	3
<i>Impatiens capensis</i>	jewelweed	2
<i>Juncus interior</i>	inland rush	3
<i>Lactuca canadensis</i>	Canada lettuce	1
<i>Lactuca floridana</i>	blue lettuce	4
<i>Laportea canadensis</i>	Canada wood nettle	2
<i>Leersia virginica</i>	white grass	4
* <i>Lespedeza violacea</i>	violet bush clover	5
* <i>Lespedeza virginica</i>	slender bush clover	5
* <i>Liatris scabra</i>	blazing star	8
<i>Lobelia syphilitica</i>	blue lobelia	4
* <i>Lonicera maackii</i>	Amur honeysuckle	--
<i>Lonicera prolifera</i>	grape honeysuckle	5
<i>Monarda bradburiana</i>	monarda	5
<i>Monarda clinopodia?</i>	bee balm	7
<i>Monarda fistulosa</i>	wild bergamot	4
<i>Muhlenbergia frondosa</i> f. <i>commutata</i>	common satin grass	3
<i>Myosotis verna</i>	scorpion grass	3
<i>Ostrya virginiana</i>	hop hornbeam	4
<i>Dichanthelium acuminatum</i>		
<i>fasciculatum</i>	panic grass	1
<i>Parietaria pensylvanica</i>	Pennsylvania pellitory	2
<i>Penstemon digitalis</i>	foxglove beardtongue	4
* <i>Penstemon pallidus</i>	pale beardtongue	6
<i>Phlox divaricata</i>	blue phlox	5
<i>Phlox paniculata</i>	garden phlox	3
<i>Phryma leptostachya</i>	lopseed	4
<i>Phytolacca americana</i>	pokeweed	1
<i>Pilea pumila</i>	Canada clearweed	3
* <i>Plantago aristata</i>	bracted plantain	1
<i>Platanus occidentalis</i>	sycamore	3
<i>Polemonium reptans</i>	Jacob's ladder	5
<i>Polygala senega</i>	Seneca snakeroot	7
<i>Polygonum virginianum</i>	Virginia knotweed	3
<i>Polystichum acrostichoides</i>	Christmas fern	5
<i>Porteranthus stipulatus</i>	Indian physic	5
<i>Prunus serotina</i>	wild black cherry	1
<i>Pycnanthemum tenuifolium</i>	slender mountain mint	4
<i>Quercus rubra</i>	northern red oak	5
<i>Ranunculus septentrionalis</i>	swamp buttercup	4
<i>Rosa multiflora</i>	Japanese rose	--
<i>Rubus allegheniensis</i>	common blackberry	2
* <i>Rudbeckia triloba</i>	brown-eyed susan	3
<i>Sanicula canadensis</i>	Canadian black snakeroot	4
<i>Sanicula gregaria</i>	common snakeroot	2
<i>Sassafras albidum</i>	red sassafras	3
<i>Scrophularia marilandica</i>	late figwort	4

<i>Scutellaria incana</i>	downy skullcap	5
<i>Silene stellata</i>	starry campion	6
<i>Silphium perfoliatum</i>	cup plant	4
<i>Sisyrinchium albidum</i>	blue-eyed grass	4
<i>Smilacina racemosa</i>	false solomon's seal	4
<i>Solidago caesia</i>	blue stem golden rod	7
<i>Solidago flexicaulis</i>	broadleaf goldenrod	6
<i>Solidago ulmifolia</i>	elm-leaved goldenrod	5
<i>Spiranthes cernua</i>	nodding ladies-tresses	4
<i>Stachys palustris</i>	woundwort	5
<i>Staphylea trifoliata</i>	bladdernut	5
<i>Symphoricarpos orbiculatus</i>	buckbrush	1
<i>Thalictrum dasycarpum</i>	purple meadow rue	5
<i>Tradescantia subaspera</i>	spiderwort	5
<i>Tradescantia virginiana</i>	spiderwort	5
<i>Triosteum perfoliatum</i>	late horse gentian	2
<i>Uvularia grandiflora</i>	bellwort	7
<i>Veratrum woodii</i>	false hellebore	10
<i>Vernonia gigantea</i>	tall ironweed	4
<i>Veronica peregrina</i>	purslane speedwell	0
<i>Viburnum dentatum</i>	southern arrowwood	7
<i>Viburnum prunifolium</i>	black haw	4
<i>Viola sororia</i>	woolly blue violet	3
<i>Viola sp.</i>	violet	--
<i>Viola striata</i>	common white violet	4
<i>Viola triloba</i>	cleft violet	5

Floristic Assessment Index = 46.02

Mean Rated Quality = 4.22

\* Denotes collections made in areas not adjoining mesic slopes and rock outcroppings, these species were not included in the calculation of the Floristic Assessment Index.

Table 2: Taylors Site Species List

Scientific name	Common name	Coefficient of Conservatism
<i>Acer saccharum</i>	sugar maple	3
<i>Achillea millefolium</i>	yarrow	--
<i>Actaea pachypoda</i>	doll's eyes	7
<i>Adiantum pedatum</i>	maidenhair fern	6
<i>Agrimonia pubescens</i>	soft agrimony	4
<i>Agrostis perennans</i>	autumn bent grass	2
<i>Allium canadense</i>	wild garlic	2
<i>Ambrosia trifida</i>	giant ragweed	0
<i>Antennaria plantaginifolia</i>	pussy toes	4
<i>Arabis glabra</i>	tower mustard	6
<i>Arabis laevigata</i>	smooth rock cress	4
<i>Arisaema triphyllum</i>	jack-in-the-pulpit	5
<i>Asarum canadense</i>	Canada wild ginger	5

<i>Asimina triloba</i>	pawpaw	4
<i>Aster cordifolius</i>	blue wood aster	6
<i>Aster ontarionis</i>	Ontario aster	4
<i>Aster shortii</i>	Short's aster	6
<i>Aureolaria grandiflora</i>	yellow false foxglove	6
<i>Bidens frondosa</i>	beggar's ticks	--
<i>Blephilia ciliata</i>	Ohio horsemint	6
<i>Botrychium virginianum</i>	rattlesnake fern	4
<i>Brachyletrum erectum</i>	long-awned wood grass	7
<i>Bromus pubescens</i>	Canada brome grass	5
<i>Campanula americana</i>	American bellflower	3
<i>Carex albursina</i>	sedge	7
<i>Carex cf. amphibola</i>	sedge	8
<i>Carex gracilescens</i>	sedge	7
<i>Carex grayii</i>	bur sedge	6
<i>Carex hirtifolia</i>	hairy sedge	6
<i>Carex jamesii</i>	sedge	4
<i>Carex rosea</i>	sedge	5
<i>Carex sp</i>	sedge	--
<i>Carex sparganioides</i>	sedge	4
<i>Carpinus caroliniana</i>	American hornbeam	6
<i>Carya cordiformis</i>	bitternut hickory	4
<i>Carya ovalis</i>	pignut hickory	5
<i>Celastrus scandens</i>	bittersweet	2
<i>Celtis occidentalis</i>	hackberry	3
<i>Cercis canadensis</i>	Eastern redbud	3
<i>Chasmanthium latifolius</i>	sea oats	4
<i>Cinna arundinacea</i>	stout woodreed	5
<i>Commelina communis</i>	common day flower	--
<i>Cornus florida</i>	flowering dogwood	5
<i>Cryptotaenia canadensis</i>	honestwort	1
<i>Cystopteris protrusa</i>	fragile fern	3
<i>Dentaria laciniata</i>	toothwort	4
<i>Dichanthelium sp.</i>	panic grass	--
<i>Dodecatheon meadii</i>	shooting star	6
<i>Elymus hystrix</i>	bottlebrush grass	5
<i>Elymus virginicus</i>	Virginia wild rye	4
<i>Erigeron philadelphicus</i>	marsh fleabane	3
<i>Euonymus atropurpureus</i>	burning bush	5
<i>Festuca obtusa</i>	nodding fescue	5
<i>Galium aparine</i>	annual bedstraw	0
<i>Galium circaezans</i>	wild licorice	4
<i>Galium concinnum</i>	bedstraw	4
<i>Geranium maculatum</i>	wild geranium	4
<i>Glechoma hederacea</i>	ground ivy	--
<i>Hepatica nobilis var. acuta</i>	sharp-lobed hepatica	7
<i>Heuchera americana</i>	tall alumroot	7
<i>Hydrangea arborescens</i>	wild hydrangea	6
<i>Hydrophyllum appendiculatum</i>	great waterleaf	6
<i>Impatiens capensis</i>	jewelweed	2
<i>Impatiens pallida</i>	pale touch-me-not	4
<i>Iodanthus pinnatifidus</i>	purple rocket	6
<i>Isopyrum biternatum</i>	false rue anemone	5
<i>Lactuca floridana</i>	blue lettuce	4
<i>Leersia virginica</i>	white grass	4

<i>Lindera benzoin</i>	feverbush	5
<i>Lobelia syphilitica</i> var. <i>syphilitica</i>	blue lobelia	4
<i>Lysimachia nummularia</i>	moneywort	--
<i>Menispermum canadense</i>	moonseed	4
<i>Monarda bradburiana</i>	monarda	5
<i>Morus rubra</i>	red mulberry	4
<i>Muhlenbergia frondosa</i> f. <i>commutata</i>	common satin grass	3
<i>Muhlenbergia sobolifera</i>	muhly	5
<i>Osmorhiza claytonii</i>	sweet cicely	3
<i>Osmorhiza longistylis</i>	anise root	3
<i>Oxalis dillennii</i>	yellow wood sorrel	0
<i>Oxalis violacea</i>	purple oxalis	5
<i>Parietaria pensylvanica</i>	Pennsylvania pellitory	2
<i>Parthenocissus quinquefolia</i>	Virginia creeper	2
<i>Penstemon digitalis</i>	foxglove beardtongue	4
<i>Phalaris arundinacea</i>	reed canary grass	--
<i>Phlox divaricata</i>	blue phlox	5
<i>Phryma leptostachya</i>	lopseed	4
<i>Pilea pumila</i>	Canada clearweed	3
<i>Plantago rugellii</i>	red-stalked plantain	0
<i>Platanus occidentalis</i>	sycamore	3
<i>Podophyllum peltatum</i>	mayapple	4
<i>Polygonatum biflorum</i>	small Solomon's seal	7
<i>Polygonum hydropiperoides</i>	mild water pepper	4
<i>Polygonum scandens</i>	climbing buckwheat	2
<i>Polygonum virginianum</i>	Virginia knotweed	3
<i>Polystichum acrostichoides</i>	Christmas fern	5
<i>Porteranthus stipulatus</i>	Indian physic	5
<i>Potentilla simplex</i>	common cinquefoil	3
<i>Prenanthes alba</i>	lion's foot	5
<i>Prunella vulgaris</i>	self-heal	0
<i>Quercus alba</i>	white oak	5
<i>Quercus rubra</i>	Northern red oak	5
<i>Ranunculus abortivus</i>	little-leaf buttercup	1
<i>Ranunculus micranthus</i>	small-flowered crowfoot	2
<i>Rubus allegheniensis</i>	common blackberry	2
<i>Rubus occidentalis</i>	black raspberry	2
<i>Rubus</i> sp.	--	--
<i>Rudbeckia laciniata</i>	cutleaf coneflower	3
<i>Rudbeckia triloba</i>	brown-eyed susan	3
<i>Sanicula gregaria</i>	common snakeroot	2
<i>Sassafras albidum</i>	red sassafras	2
<i>Scrophularia marilandica</i>	late figwort	4
<i>Scutellaria nervosa</i>	veiny skullcap	6
<i>Senecio glabellus</i>	butterweed	0
<i>Silene stellata</i>	starry campion	6
<i>Smilacina racemosa</i>	false Solomon's seal	4
<i>Smilax lasioneuron</i>	common carrion flower	4
<i>Smilax hispida</i>	bristly greenbrier	3
<i>Solidago flexicaulis</i>	broadleaf goldenrod	6
<i>Solidago gigantea</i>	late goldenrod	3
<i>Solidago ulmifolia</i>	elm-leaved goldenrod	5
<i>Sphenopholis obtusata</i>	prairie wedge grass	5

<i>Staphylea trifoliata</i>	bladdernut	5
<i>Symphoricarpos orbiculatus</i>	buckbrush	1
<i>Sisyrinchium angustifolium</i>	common blue-eyed grass	5
<i>Taraxacum officinale</i>	common dandelion	--
<i>Phegopteris hexagonoptera</i>	broad beech fern	7
<i>Tilia americana</i>	American linden	5
<i>Tradescantia virginiana</i>	spiderwort	5
<i>Trillium recurvatum</i>	red trillium	5
<i>Triodanus perfoliata</i>	Venus' looking glass	2
<i>Ulmus americana</i>	American elm	4
<i>Ulmus sp.</i>	--	--
<i>Uvularia grandiflora</i>	bellwort	7
<i>Viola missouriensis</i>	Missouri violet	4
<i>Viola pratincola</i>	common blue violet	1
<i>Viola pubescens var. pubescens</i>	downy yellow violet	7
<i>Viola sororia</i>	woolly blue violet	3
<i>Viola triloba</i>	cleft violet	5
<i>Vitis cinerea</i>	winter grape	4
<i>Vitis riparia</i>	riverbank grape	3

Floristic Assessment Index = 46.92  
Mean Rated Quality = 4.08

Table 3: Hatfield Site Species List

Scientific name	Common name	Coefficient of Conservatism
<i>Acer negundo</i>	box elder	1
<i>Acer saccharinum</i>	silver maple	1
<i>Acer saccharum</i>	sugar maple	3
<i>Adiantum pedatum</i>	maidenhair fern	6
<i>Agrostis hyemalis</i>	hair grass	1
<i>Agrostis perennans</i>	autumn bent grass	2
<i>Allium canadense</i>	wild garlic	2
<i>Amelanchier arborea</i>	juneberry	7
<i>Thalictrum thalictroides</i>	rue anemone	5
<i>Antennaria plantaginifolia</i>	pussy toes	4
<i>Arabis canadensis</i>	sicklepod	6
<i>Arabis glabra</i>	tower mustard	6
<i>Arabis laevigata</i>	smooth rock cress	4
<i>Aralia racemosa</i>	American spikenard	9
<i>Aruncus dioicus</i>	goat's beard	7
<i>Asimina triloba</i>	pawpaw	4
<i>Aster drummondii</i>	Drummond's aster	3
<i>Aster shortii</i>	Short's aster	6
<i>Aureolaria grandiflora</i>	yellow false foxglove	6
<i>Botrychium virginianum</i>	rattlesnake fern	4
<i>Brachyletrum erectum</i>	long-awned wood grass	7
<i>Bromus pubescens</i>	Canada brome grass	5
<i>Campanula americana</i>	American bellflower	3
<i>Campsis radicans</i>	trumpet creeper	2
<i>Carex albursina</i>	sedge	7

<i>Carex blanda</i>	woodland sedge	2
<i>Carex cephalophora</i>	sedge	3
<i>Carex grayi</i>	bur sedge	6
<i>Carex hirtifolia</i>	hairy sedge	6
<i>Carex pennsylvanica</i>	Pennsylvania sedge	5
<i>Carex rosea</i>	sedge	5
* <i>Carex squarrosa</i>	sedge	5
<i>Carya ovalis</i>	pignut hickory	5
<i>Carya ovata</i>	shagbark hickory	4
<i>Celtis occidentalis</i>	hackberry	3
<i>Cerastium glomeratum</i>	mouse-eared chickweed	--
<i>Chaerophyllum procumbens</i>	wild chervil	1
<i>Claytonia virginica</i>	spring beauty	1
<i>Collinsia verna</i>	blue-eyed Mary	5
<i>Cornus drummondii</i>	rough-leaved dogwood	2
<i>Cornus florida</i>	flowering dogwood	5
<i>Cornus sp.</i>	dogwood	--
<i>Cryptotaenia canadensis</i>	honestwort	1
<i>Cystopteris protrusa</i>	fragile fern	3
<i>Dentaria laciniata</i>	toothwort	4
<i>Desmodium glutinosum</i>	beggar's lice	4
<i>Desmodium nudiflorum</i>	bare-stemmed tick trefoil	5
<i>Dichanthelium clandestinum</i>	broad-leaved panic grass	4
<i>Dicentra canadensis</i>	squirrel corn	7
* <i>Diodia teres</i>	poor joe	2
<i>Dodecatheon meadii</i>	shooting star	6
<i>Dryopteris marginalis</i>	leather fern	6
<i>Dryopteris marginalis</i>	leather fern	6
<i>Elymus hystrix</i>	bottlebrush grass	5
<i>Elymus sp</i>	--	--
<i>Elymus virginica</i>	Virginia wild rye	4
<i>Erigeron philadelphicus</i>	marsh fleabane	3
<i>Erythronium albidum</i>	white adder's tongue	4
<i>Eupatorium rugosum</i>	white snakeroot	2
<i>Eupatorium serotinum</i>	late boneset	1
<i>Galium aparine</i>	annual bedstraw	0
<i>Galium circaezans</i>	wild licorice	4
<i>Geranium maculatum</i>	wild geranium	4
<i>Helianthus divaricatus</i>	woodland sunflower	5
<i>Hydrangea arborescens</i>	wild hydrangea	6
<i>Hydrophyllum appendiculatum</i>	great waterleaf	6
* <i>Hypericum drummondii</i>	nits and lice	6
<i>Hypericum punctatum</i>	spotted St. John's wort	6
<i>Inpatiens pallida</i>	pale touch-me-not	4
<i>Iodanthus pinnatifidus</i>	purple rocket	6
<i>Isopyrum bitermatum</i>	false rue anemone	5
<i>Lechea tenuifolia</i>	narrow-leaved pinweed	6
<i>Lonicera japonica</i>	Japanese honeysuckle	--
* <i>Lysimachia lanceolata</i>	lance-leaved loosestrife	6
<i>Monarda bradburiana</i>	monarda	5
<i>Monotropa uniflora</i>	Indian pipe	8
<i>Ostrya virginiana</i>	hop hornbeam	4
<i>Panax quinquefolia</i>	ginseng	7
<i>Parthenocissus quinquefolia</i>	Virginia creeper	2
<i>Penstemon calycosus</i>	smooth beard tongue	3
<i>Penstemon digitalis</i>	foxglove beardtongue	4

<i>Penstemon pallidus</i>	pale beardtongue	6
<i>Phlox divaricata</i>	blue phlox	5
* <i>Plantago aristata</i>	bracted plantain	1
<i>Plantago rugellii</i>	red-stalked plantain	0
<i>Polystichum acrostichoides</i>	Christmas fern	5
<i>Porteranthus stipulata</i>	Indian physic	5
<i>Quercus alba</i>	white oak	5
<i>Quercus rubra</i>	Northern red oak	5
<i>Quercus velutina</i>	black oak	5
<i>Quercus X Bebbiana</i>	--	--
<i>Ranunculus micranthus</i>	small-flowered crowfoot	2
<i>Ranunculus septentrionalis</i>	swamp buttercup	4
<i>Ribes missouriense</i>	Missouri gooseberry	2
<i>Robinia pseudoacacia</i>	black locust	1
<i>Rorippa sessiliflora</i>	sessile-lowered cress	3
<i>Rosa multiflora</i>	Japanese rose	--
<i>Sanicula gregaria</i>	common snakeroot	2
<i>Sassafras albidum</i>	red sassafras	2
<i>Senecio glabellus</i>	butterweed	0
<i>Silene stellata</i>	starry campion	6
<i>Smilax hispida</i>	bristly greenbrier	3
<i>Solidago caesia</i>	bluestem goldenrod	7
<i>Solidago flexicaulis</i>	broad-leaved goldenrod	6
<i>Solidago ulmifolia</i>	elm-leaved goldenrod	5
<i>Sphenopholis obtusata</i>	prairie wedge grass	5
<i>Staphylea trifoliata</i>	bladdernut	5
<i>Teucrium canadense</i>	American germander	3
<i>Thalictrum dioicum</i>	early meadow rue	5
<i>Tilia americana</i>	American linden	5
<i>Trillium recurvatum</i>	red trillium	5
<i>Ulmus americana</i>	American elm	4
<i>Uvularia grandiflora</i>	bellwort	7
<i>Viola missouriensis</i>	Missouri violet	4
<i>Viola pratincola</i>	common blue violet	1
<i>Viola sororia</i>	woolly blue violet	3
<i>Vitis cinerea</i>	winter grape	4
<i>Vitis riparia</i>	riverbank grape	3

Floristic Assessment Index = 43.22

Mean Rated Quality = 4.18

\* Denotes collections made in areas not adjoining mesic slopes and rock outcroppings, these species were not included in the calculation of the Floristic Assessment Index.

Table 4: Pikes Site Species List

Scientific Name	Common Name	Coefficient of Conservatism

<i>Acer negundo</i>	box elder	1
<i>Agrimonia pubescens</i>	soft agrimony	4
<i>Agrimonia rostellata</i>	woodland agrimony	4
<i>Agrostis scabra</i>	rough bent grass	5
<i>Agrostis sp.</i>	bent grass	--
<i>Allium tricoccum</i>	ramp	7
<i>Antennaria plantaginifolia</i>	pussy toes	4
<i>Aquilegia canadensis</i>	columbine	6
<i>Arctium minus</i>	common burdock	--
<i>Aster drummondii</i>	Drummond's aster	3
<i>Aster shortii</i>	Short's aster	6
<i>Barbarea vulgaris</i>	winter cress	--
<i>Blephilia ciliata</i>	Ohio horsemint	6
<i>Blephilia hirsuta</i>	wood mint	5
<i>Botrychium virginianum</i>	rattlesnake fern	4
<i>Bromus sp.</i>	brome	--
<i>Calystegia sepium</i>	American bindweed	1
<i>Campanula americana</i>	American bellflower	3
<i>Carex sp.</i>	sedge	--
* <i>Carex frankii</i>	sedge	4
<i>Carex grisea</i>	sedge	3
<i>Carex hirtella</i>	--	--
<i>Carex hirtifolia</i>	hairy sedge	6
<i>Carex sp.</i>	sedge	--
<i>Carya cordiformis</i>	bitternut hickory	4
<i>Carya ovata</i>	shagbark hickory	4
<i>Carya tomentosa</i>	mockernut hickory	6
<i>Celtis occidentalis</i>	hackberry	3
<i>Cercis canadensis</i>	Eastern redbud	3
<i>Claytonia virginica</i>	spring beauty	1
<i>Commelina communis</i>	common dayflower	--
<i>Cornus drummondii</i>	dogwood	2
<i>Crataegus sp.</i>	hawthorn	--
<i>Cryptotaenia canadensis</i>	honestwort	1
<i>Cystopteris protrusa</i>	fragile fern	3
<i>Dactylis glomerata</i>	orchard grass	--
<i>Danthonia spicata</i>	poverty oats grass	3
<i>Dentaria laciniata</i>	pepper root	4
<i>Desmodium cuspidatum</i>	tick trefoil	6
<i>Desmodium ciliare</i>	hairy tick trefoil	7
<i>Desmodium glutinosum</i>	beggar's lice	4
<i>Dicanthelium sp.</i>	panic grass	--
<i>Dicentra cucullaria</i>	dutchman's breeches	5
<i>Echinochloa sp.</i>	barnyard grass	--
<i>Eclipta alba</i>	yerba de tajo	2
<i>Elaeagnus umbellata</i>	autumn olive	--
<i>Elymus hystrix</i>	bottlebrush grass	5
<i>Elymus virginicus</i>	Virginia wild rye	4
<i>Equisetum arvense</i>	common horsetail	0
<i>Erigeron philadelphicus</i>	marsh fleabane	6
<i>Erigeron strigosus</i>	daisy fleabane	2
<i>Erythronium albidum</i>	white adder's tongue	4
<i>Euonymus atropurpureus</i>	burning bush	5

<i>Eupatorium purpureum</i>	sweet Joe Pye weed	5
<i>Eupatorium rugosum</i>	white snakeroot	2
<i>Euthamia graminifolia</i>	grass leaved goldenrod	3
<i>Fragaria virginiana</i>	wild strawberry	2
<i>Fraxinus americana</i>	white ash	4
<i>Galium aparine</i>	annual bedstraw	0
<i>Galium circaezans</i>	wild licorice	4
<i>Galium triflorum</i>	sweet scented bedstraw	4
<i>Geum canadense</i>	white avens	2
<i>Geum vernum</i>	spring avens	1
<i>Glyceria striata</i>	fowl manna grass	4
<i>Hackelia virginiana</i>	stickseed	1
<i>Hydrangea arborescens</i>	wild hydrangea	6
<i>Hypericum mutilum</i>	dwarf St. John's wort	5
* <i>Hypericum prolificum</i>	shrubby St. John's wort	6
<i>Impatiens capensis</i>	jewelweed	2
<i>Lactuca canadensis</i>	Canada lettuce	1
<i>Lactuca floridana</i>	blue lettuce	4
<i>Leonurus cardiaca</i>	motherwort	--
<i>Lobelia inflata</i>	Indian tobacco	4
<i>Lobelia siphilitica</i>	blue lobelia	4
<i>Lonicera maackii</i>	Amur honeysuckle	--
<i>Lonicera prolifera</i>	grape honeysuckle	5
<i>Lysimachia nummularia</i>	moneywort	--
<i>Malus ioensis</i>	Iowa crab apple	3
<i>Mertensia virginica</i>	Virginia bluebells	5
<i>Mimulus alatus</i>	winged monkey flower	6
<i>Monarda bradburiana</i>	monarda	5
* <i>Monarda fistulosa</i>	wild bergamot	4
<i>Osmorhiza claytonii</i>	sweet cicely	3
<i>Osmorhiza longistylis</i>	anise-root	3
<i>Ostrya virginiana</i>	hop hornbeam	4
<i>Oxalis dillennii</i>	yellow wood sorrel	0
<i>Parthenocissus quinquefolia</i>	Virginia creeper	2
<i>Penstemon digitalis</i>	foxglove beardtongue	4
<i>Phlox divaricata</i>	blue phlox	5
* <i>Phragmites australis</i>	common reed	1
<i>Phryma leptostachya</i>	Northern lopseed	4
<i>Pilea pumila</i>	Canada clearweed	3
<i>Plantago aristata</i>	bracted plantain	1
<i>Polygala senega</i>	Seneca snakeroot	7
<i>Polygonum pensylvanica</i>	giant smartweed	1
<i>Polygonum scandens</i>	climbing buckwheat	2
<i>Polygonum virginianum</i>	Virginia knotweed	3
<i>Porteranthus stipulata</i>	Indian physic	5
<i>Prunus serotina</i>	wild black cherry	1
<i>Pycnanthemum tenuifolium</i>	slender mountain mint	4
* <i>Pycnanthemum pilosum</i>	hairy mountain mint	6
<i>Quercus alba</i>	white oak	5
* <i>Quercus imbricaria</i>	shingle oak	2
<i>Quercus macrocarpa</i>	burr oak	5
<i>Quercus prinoides acuminata</i>	chinquapin oak	5
<i>Quercus rubra</i>	northern red oak	5

<i>Ranunculus abortivus</i>	little-leaf buttercup	1
<i>Ranunculus septentrionalis</i>	swamp buttercup	4
<i>Ribes missouriense</i>	Missouri gooseberry	2
<i>Rorippa sessiliflora</i>	sessile-flowered cress	3
<i>Sanicula canadense</i>	Canadian black snakeroot	4
<i>Sanicula gregaria</i>	common snakeroot	2
<i>Sassafras albidum</i>	red sassafras	2
<i>Senecio glabellus</i>	butterweed	0
<i>Dasistoma macrophylla</i>	mullein foxglove	7
<i>Silene stellata</i>	starry campion	6
<i>Solidago caesia</i>	bluestem goldenrod	7
<i>Solidago ulmifolia</i>	elm-leaved goldenrod	5
<i>Staphylea trifoliata</i>	bladdernut	5
<i>Symphoricarpos orbiculatus</i>	buckbrush	1
<i>Taraxacum officinale</i>	common dandelion	--
<i>Teucrium canadense</i>	American germander	3
<i>Thaspium barbinode</i>	hairy meadow parsnip	7
<i>Trillium recurvatum</i>	red trillium	5
<i>Triosteum aurantiacum</i>	early horse gentian	5
<i>Ulmus americana</i>	American elm	4
<i>Verbena urticifolia</i>	white vervain	3
* <i>Vernonia</i> sp.	ironweed	--
* <i>Veronica arvensis</i>	corn speedwell	--
<i>Veronica peregrina</i>	purslane speedwell	0
<i>Viburnum dentatum</i>	southern arrowwood	7
<i>Viburnum prunifolium</i>	black haw	4
<i>Viola pratincola</i>	common blue violet	1
<i>Viola sororia</i>	wooly blue violet	3
<i>Viola</i> sp.	violet	--
<i>Vitis cinerea</i>	winter grape	4
<i>Zanthoxylum americanum</i>	prickly ash	4

Floristic Assessment Index = 38.29

Mean Rated Quality = 3.62

\* Denotes collections made in areas not adjoining mesic slopes and rock outcroppings, these species were not included in the calculation of the Floristic Assessment Index.

## VI. List of References

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FY93-030

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IDOC District Heritage Biologist, District 7  
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22 June, 1994

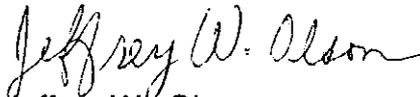
Dear Bob,

Please find enclosed a preliminary draft of our report "*A Floristic Study of Mesic Slopes and Outcroppings in the Kaskaskia River Watershed, Shelby County, Illinois*", funded by the IDOC Nongame Wildlife Conservation Grant. In addition, one potentially interesting site was located in the Little Wabash River watershed, however, access to this site was denied.

I have analyzed our quantitative tree data collected on the Hatfield Site and Taylor Site but have yet to regress these data with herbaceous data. The ultimate goal is to understand tree gap phase dynamics on mesic slopes and how it relates to herbaceous diversity. These data are forthcoming.

I'd like to thank you and others at IDOC for the opportunity to undertake this project. We do apologize for keeping you waiting so long for our data.

Sincerely,



Jeffrey W. Olson  
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Champaign, IL 61820