

Establishment of vegetation transects at the right of way of Marcy South at Greenwoods Conservancy, summer 1999

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ABSTRACT

Following the implementation of the Power Authority of the State of New York's (PASNY) fall 1998 management protocols, baseline data were collected to start monitoring the effects of the PASNY's Right of Way (ROW) management practices on the Volney-Marcy South power line. A stretch of the ROW that runs through Greenwoods Conservancy, Burlington, New York, was used for the study. Two belt-transects were used to sample the vascular vegetation on a percent cover basis. Each belt was divided into seventeen quadrats and analyzed by two teams of two with each pair sampling half a quadrant. All plants sampled were catalogued, by species, into cover class categories. The midpoints of these categories' ranges were used to determine the percent cover for each quadrant. The obtained data will be used to assess the impacts of the PASNY's management efforts.

INTRODUCTION

Marcy-South, a 345-kilovolt, 200-mile transmission line, became operational in 1988. Since that time the Right of Way (ROW) has been maintained to prevent interference to the line by vegetation and to allow access to the line. Electric utilities define desirable ROWs as those communities that are maintained at a tree-free state. At the same time, the stability of vegetation on ROWs is a function of the persistence of desirable vegetation, and the resistance and resilience of desirable vegetation to invasion and establishment of undesirable vegetation (Nowak *et al.*, 1991). This constant, tree-free state involves the use of chemical and physical means to remove tall shrubs, trees and other undergrowth. For instance, after cutting down trees, a non-selective stem-foliar herbicide is used to prevent the trees' regrowth. These programs are implemented every few years along different sections of Marcy-South on a rotating clearing regime. This clearing is done to insure the safe and reliable transmission of electricity along the ROWs. There now exists a concerted effort to monitor the ecological changes that are caused or effected by the ROW and maintenance thereof.

The developing trend is to analyze the interaction between a stable ROW and the surrounding area. Currently, PASNY is conducting many studies to analyze the effectiveness of their management practices and their inherent effects on the environment. The Biological Field Station's work is an example of the types of studies that PASNY is involved with. This baseline data set illustrates the existing ROW plant community.

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METHODS

In accordance with the 1998 study conducted by PASNY (Abrahmson *et al.*, 1998), data were collected from two belt-transects, *A* & *B* (Figure 1), each ten meters wide and spanning the width of the ROW (approximately 50 meters).

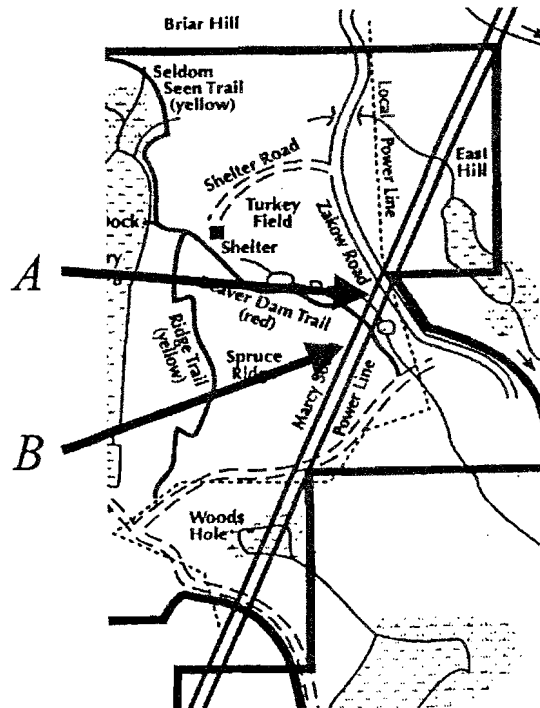


Figure 1. Location of belts A & B within Greenwood Conservancy.

These transect sites represent differing ecotypes. Transect *A* represents a somewhat stable state of succession while transect *B* was cleared of all vegetation in fall 1998. Transect *A* has a west-facing aspect and a slope of 25%. Transect *B* faces east with a slope of 20%. These differences must be considered when evaluating the affects of different management for guiding future management decisions. Specifically, the questions of which method is more effective, efficient, and ecologically sound with respect to natural processes and PASNY's objectives will be addressed after analyzing these differing sites over time.

Once selected and marked using permanent stakes, each belt was divided into 3x10 meter quadrats (Figure 2), providing 17 quadrats per transect. Teams of four, working in pairs of two, analyzed each quadrat utilizing percent cover analyses. Vascular plant species were grouped into cover class categories (Table 1).

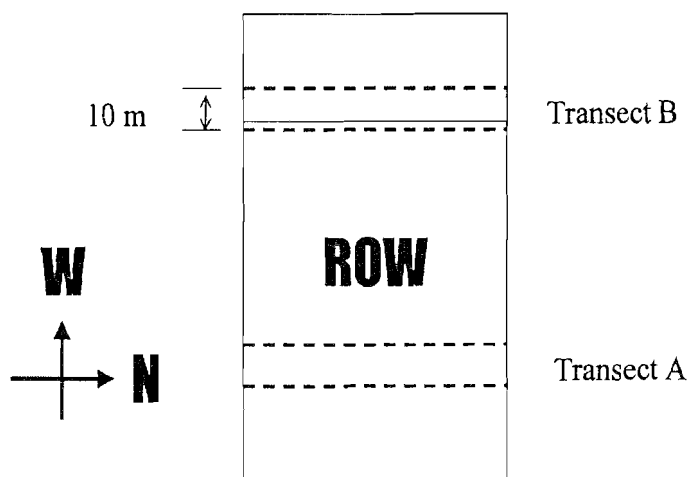


Figure 2. Illustration of 10x3 meter belt-transects crossing the Right of Way.

Class	Cover Range (%)	Mid-Point
1	0-5	2.5
2	5-25	15.0
3	25-50	37.5
4	50-75	62.5
5	75-95	85.0
6	95-100	97.5

Table 1. Cover ranges and midpoints used for the analyses of quadrats' percent cover. (Adapted from Mueller-Dombois et al., 1974).

The midpoints of these cover class categories were then used to determine the average percent cover for each quadrat. Average percent cover was calculated for each of the seventeen quadrats in each belt-transect. Further analyses revealed the average percent cover for each belt. Calculating this average value was accomplished by determining the sum of the average coverage values and dividing the sum by the number of quadrats (17). Such a calculation determines the average coverage for the transect but does not elucidate spatially relevant data. This analysis approach may cumulatively indicate areas of greater than 100 percent cover.

RESULTS

The results of the collections obtained were arranged into phylogenetic order and include average percent cover for all vegetation noted (Tables 2 and 3).

Transect *A* was dominated by Northern Arrowwood (*Viburnum recognitum*) and presented 46 different plant species. Transect *B* was dominated by Rough-stemmed Goldenrod (*Solidago rugosa*) and presented 58 different plant species.

DISCUSSION

Analysis of the two transects revealed obvious differences between vascular plant coverage of the two sites. The difference in percent woody cover is the most striking. Transect *A* had 37.75 percent woody cover while transect *B* had a woody cover of 7.57 percent. This difference, however, can be attributed to PASNY's recent clearing of the transect *B* area. The focus of this PASNY clearing was that of woody plants, particularly that of various tree species.

The two sites were similar with regard to their species composition, though Transect *B* did have a greater species richness. Transect *B* included 58 different species while 46 species were found on transect *A*. This difference can be attributed to the recent disturbance of the Transect *B* area that allows species to inhabit the newly opened spaces and prosper from the lack of competition. Transect *A*, with its comparatively stable habitat regime, presents a more competitive environment which may limit or prevent an increase in the number of species or serve to impede the perseverance of newer species. This trend is further revealed by comparing the different quadrats within the individual transect.

In Transect *A* there was increased vegetative cover in the center of the transect (A5-A12) when compared to the transect's periphery (A1-A4 and A13-A17). Effects of shading and forest-type competition slow growth and development in these peripheral areas. This observation strengthens the argument surrounding the open space concept in which increased sunlight, etc. allows for more vegetative establishment and development. Transect *B* presented similar characteristics although the trend is less obvious. The homogeneity of the newly clear-cut area surrounding transect *B* provided equal access to sunlight, etc. for all species.

Both sites must be monitored on an annual basis. Comparing future data to that presented here will help monitor successional changes. Such comparative studies will help determine the most cost-effective and goal oriented strategies for both PASNY and environmentally friendly concerns. Additional sample sites would present a deeper understanding of the changes in the area. Sites developed off of the ROW would aid in comparing the ROW's succession to that of the surrounding area to determine the vegetative changes and, ultimately, reveal trends specific to PASNY's management protocols. Additional sites along the ROW would further elucidate changes relative to the different, site specific tactics including vegetative clearing and other management strategies.

REFERENCES CITED

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Table 2. Summary of average percent cover, by quadrat, of species encountered across Transect A.

Plant Group	Family	Genus and Species Name	Common Name	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	
Pteridophytes	Dryopteridaceae	<i>Athyrium filix-femina</i>	Lady Fern								1.25	1.25									
		<i>Dryopteris sp.</i>	Wood Fern		1.25																
		<i>Onoclea sensibilis</i>	Sensitive Fern									1.25	1.25								
Gymnosperms	Pinaceae	<i>Picea rubens</i>	Red Spruce					1.25													
		<i>Pinus strobus</i>	White Pine							1.25											
Angiosperms Dicots	Ranunculaceae	<i>Ranunculus acris</i>	Tail Buttercup										1.25		1.25					1.25	
	Fagaceae	<i>Fagus grandifolia</i>	Beech					1.25													
		<i>Quercus rubra</i>	Red Oak	1.25	2.5				1.25					1.25		1.25				1.25	
	Betulaceae	<i>Alnus incana</i>	Speckled Alder			2.5	18.75		7.5	7.5					50						1.25
		<i>Betula lenta</i>	Black Birch																		
	Polygonaceae	<i>Rumex acetosella</i>	Sheep Sorrel																		
	Clusiaceae	<i>Hypericum perforatum</i>	St. John's Wort																		
	Salicaceae	<i>Populus tremuloides</i>	Quaking Aspen	7.5		2.5															1.25
	Ericaceae	<i>Pyrola minor</i>	Lesser Pyrola																		
		<i>Vaccinium angustifolium</i>	Low Bush Blueberry																		
		<i>Vaccinium corymbosum</i>	High Bush Blueberry																		
	Grossulariaceae	<i>Ribes glandulosum</i>	Skunk Currant			2.5															
	Rosaceae	<i>Crataegus sp.</i>	Hawthorn				1.25				7.5	7.5			8.75	1.25					
		<i>Fragaria virginiana</i>	Common Strawberry		8.75	2.5	38.75	32.5	18.75	7.5	8.75	15	8.75	2.5	7.5	8.75				1.25	8.75
		<i>Geum aleppicum</i>	Yellow Avens																		
		<i>Geum canadense</i>	White Avens																		
		<i>Geum laciniatum</i>	Rough Avens																		
		<i>Malus pumila</i>	Common Apple	18.75																	
		<i>Potentilla simplex</i>	Common Cinquefoil	1.25		2.5										1.25	1.25	1.25			1.25
		<i>Prunus serotina</i>	Black Cherry	7.5	2.5	2.5	7.5	26.25	8.75	38.75	38.75	7.5	18.75	15	1.25	1.25					
<i>Prunus virginiana</i>		Choke Cherry	1.25	2.5	8.75		2.5	8.75					7.5		1.25					2.5	1.25
<i>Prunus pensylvanica</i>		Fire Cherry	1.25			7.5	7.5	1.25	18.75	8.75	7.5	18.75	1.25								
<i>Rubus allegheniensis</i>		Blackberry	8.75	18.75	37.5	7.5		37.5	38.75	7.5	26.25	1.25	37.5	38.75	15	8.75	8.75	7.5			
<i>Rubus idaeus</i>		Red Raspberry	8.75	8.75	26.25	7.5	26.25	7.5	8.75		2.5	1.25	7.5	8.75	15	8.75	8.75	7.5	7.5		
<i>Spiraea latifolia</i>		Meadow Sweet	20	8.75	8.75	3.5	50	62.5	50	62.5	32.75	50	1.25	50	37.5	50	32.5	15	20		

Table 2 (cont.). Summary of average percent cover, by quadrat, of species encountered across Transect A.

		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17		
Fabaceae	<i>Melilotus alba</i>	White Sweet Clover																		
Cornaceae	<i>Cornus alterniflora</i>	Dogwood			1.25		1.25	1.25												
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia Creeper																		
Aceraceae	<i>Acer rubrum</i>	Red Maple	1.25		2.5	8.75	26.25	8.75	8.75	2.5	2.5	1.25			2.5	1.25	2.5			
	<i>Acer saccharum</i>	Sugar Maple			1.25		1.25					1.25								
Anacardiaceae	<i>Rhus glabra</i>	Smooth Sumac																		
Oxalidaceae	<i>Oxalis montana</i>	Common Wood Sorrel																		
	<i>Oxalis stricta</i>	Yellow Wood Sorrel									1.25			1.25						
Balsaminaceae	<i>Impatiens capensis</i>	Jewel Weed																		
Apiaceae	<i>Daucus carota</i>	Queen Anne's Lace					1.25	1.25	1.25	1.25				1.25						
	<i>Pastinaca sativa</i>	Wild Parsnip												1.25				1.25		
Gentianaceae	<i>Gentiana clausa</i>	Closed Bottle Gentian	1.25	2.5	8.75	1.25	2.5	7.5		2.5	7.5	1.25	1.25		1.25					
Lamiaceae	<i>Clinopodium vulgare</i>	Wild Basil	1.25	2.5																
	<i>Galeopsis tetrahit</i>	Hemp-Nettle	1.25																	
Oleaceae	<i>Fraxinus americana</i>	White Ash	2.5	8.75	2.5	1.25	1.25	0						1.25		1.25	1.25	7.5		
Scrophulariaceae	<i>Verbascum thapsus</i>	Mullein																		
	<i>Veronica officinalis</i>	Common Speedwell	1.25		2.5		1.25	1.25		1.25	1.25	1.25	1.25	1.25	1.25		1.25	1.25		
	<i>Veronica serpyllifolia</i>	Thyme-Leaved Speedwell																		
Rubiaceae	<i>Galium triflorum</i>	Bedstraw																		
Caprifoliaceae	<i>Viburnum lentago</i>	Nannyberry	1.25		2.5	1.25	1.25	18.75	2.5	7.5				1.25		1.25	7.5			
	<i>Viburnum recognitum</i>	Northern Arrowwood	20	8.75	20	37.5	8.75	26.25	62.5	38.75	38.75	38.75	23.13	15	15	2.5	15	20	8.75	
Asteraceae	<i>Anaphalis margaritacea</i>	Pearly Everlasting																		
	<i>Aster sp.</i>	Wood Aster sp.																		
	<i>Aster divaricatus</i>	White Wood Aster			2.5														1.25	
	<i>Cirsium discolor</i>	Field Thistle																		
	<i>Leucanthemum vulgare</i>	Ox-Eye Daisy										2.5				1.25				
	<i>Solidago graminifolia</i>	Lance-Leaved Goldenrod					7.5	1.25	7.5	8.75	15	1.25	18.75		1.25					
	<i>Solidago rugosa</i>	Rough-Stemmed Goldenrod		2.5	2.5	0	8.75	7.5	1.25	15	8.75	1.25	8.75	26.25	2.5	1.25	1.25	2.5	2.5	
	<i>Taraxacum officinale</i>	Common Dandelion	1.25																	

Table 2 (cont.). Summary of average percent cover, by quadrat, of species encountered across Transect A.

Monocots

		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	
Juncaceae	<i>Juncus effusus</i>	Soft Rush																	
	<i>Juncus tenuis</i>	Path Rush																	
Cyperaceae	<i>Carex sp.</i>	Sedge sp.	1.25					1.25			1.25		1.25	1.25	1.25		7.5	7.5	
	<i>Carex lurida</i>	Sedge sp.		20	2.5														
	<i>Carex scoparia</i>	Sedge sp.																	
	<i>Carex stricta</i>	Sedge sp.																	
Poaceae	<i>Agrostis gigantea</i>	Red Top Grass																	
	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	1.25	2.5	2.5		1.25		7.5	7.5	1.25	2.5	1.25		1.25		1.25	1.25	1.25
	<i>Dactylis glomerata</i>	Orchard Grass	1.25																
	<i>Festuca heterophylla</i>	Fescue																	
	<i>Glyceria striata</i>	Fowl Manna Grass																	
	<i>Panicum clandestinum</i>	Deer-Tongue Grass																	
	<i>Poa sp.</i>	Grass sp.								8.75	26.25		1.25						7.5
<i>Poa pratensis</i>	Kentucky Bluegrass																		
Liliaceae			A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17
	<i>Trillium sp.</i>	Trillium																	
Iridaceae			A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17
	<i>Sisyrinchium sp.</i>	Blue-eyed Grass																	

Table 3. Summary of average percent cover, by quadrat, of species encountered across Transect B.

Plant Group	Family	Genus and Species Name	Common Name	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17				
Pteridophytes	Dryopteridaceae	<i>Athyrium filix-femina</i>	Lady Fern																					
		<i>Dryopteris sp.</i>	Wood Fern	2.5	2.5	15	2.5	2.5	2.5		2.5	2.5	2.5					2.5	2.5	2.5	2.5			
		<i>Onoclea sensibilis</i>	Sensitive Fern							2.5	2.5	2.5	2.5	2.5				2.5	2.5					
Gymnosperms	Pinaceae	<i>Picea rubens</i>	Red Spruce																					
		<i>Pinus strobus</i>	White Pine																					
Angiosperms Dicots	Ranunculaceae	<i>Ranunculus acris</i>	Tall Buttercup										2.5				2.5	2.5						
	Fagaceae	<i>Fagus grandifolia</i>	Beech																					
		<i>Quercus rubra</i>	Red Oak																					
	Betulaceae	<i>Alnus incana</i>	Speckled Alder																					
		<i>Betula lenta</i>	Black Birch	2.5																				
	Polygonaceae	<i>Rumex acetosella</i>	Sheep Sorrel										2.5			2.5	2.5							
	Clusiaceae	<i>Hypericum perforatum</i>	St. John's Wort			2.5	2.5	2.5		2.5				2.5										
	Salicaceae	<i>Populus tremuloides</i>	Quaking Aspen	2.5			2.5		2.5	2.5			2.5				2.5							
	Ericaceae	<i>Pyrola minor</i>	Lesser Pyrola					2.5																
		<i>Vaccinium angustifolium</i>	Low Bush Blueberry	2.5							2.5					2.5	8.75							
		<i>Vaccinium corymbosum</i>	High Bush Blueberry	2.5							2.5			2.5			2.5							
	Grossulariaceae	<i>Ribes glandulosum</i>	Skunk Currant																					
	Rosaceae	<i>Crataegus sp.</i>	Hawthorn																				2.5	
		<i>Fragaria virginiana</i>	Common Strawberry					2.5	2.5	2.5	2.5	8.75	8.75	2.5	2.5	8.75	2.5	2.5						
		<i>Geum aleppicum</i>	Yellow Avens							2.5														
		<i>Geum canadense</i>	White Avens															2.5						
		<i>Geum laciniatum</i>	Rough Avens	2.5				2.5																
		<i>Malus pumila</i>	Common Apple																					
		<i>Potentilla simplex</i>	Common Cinquefoil								2.5		2.5		2.5									
		<i>Prunus serotina</i>	Black Cherry								2.5													
<i>Prunus virginiana</i>		Choke Cherry	2.5	2.5			2.5							2.5	2.75	2.5					2.5	2.5		
<i>Prunus pensylvanica</i>		Fire Cherry	2.5						2.5															
<i>Rubus allegheniensis</i>		Blackberry	2.5										2.5	2.5	2.5	8.75	2.5	2.5						
<i>Rubus idaeus</i>		Red Raspberry	2.5	8.75	2.5	2.5	8.75	2.5			2.5			2.5	2.5	2.5	2.5	2.5	8.75	8.75				
<i>Spiraea latifolia</i>		Meadow Sweet									2.5	2.5			2.5	2.5			2.5					

Table 3 (cont.). Summary of average percent cover, by quadrat, of species encountered across Transect B.

		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
Fabaceae																		
	<i>Mellilotus alba</i> White Sweet Clover								2.5	2.5								
Cornaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Cornus alterniflora</i> Dogwood	2.5															2.5	2.5
Vitaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Parthenocissus quinquefolia</i> Virginia Creeper												2.5					
Aceraceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Acer rubrum</i> Red Maple										2.5					2.5	2.5	
	<i>Acer saccharum</i> Sugar Maple	2.5																
Anacardiaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Rhus glabra</i> Smooth Sumac															2.5	2.5	
Oxalidaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Oxalis montana</i> Common Wood Sorrel										2.5	2.5						
	<i>Oxalis stricta</i> Yellow Wood Sorrel			2.5	2.5	2.5						2.5	8.75	2.5	2.5			
Balsaminaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Impatiens capensis</i> Jewel Weed															2.5	2.5	
Apiaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Daucus carota</i> Queen Anne's Lace																	
	<i>Pastinaca sativa</i> Wild Parsnip																	
Gentianaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Gentiana clausa</i> Closed Bottle Gentian																	
Lamiaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Clinopodium vulgare</i> Wild Basil							2.5						2.5				
	<i>Galeopsis tetrahit</i> Hemp-Nettle							2.5			2.5							
Oleaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Fraxinus americana</i> White Ash	8.75	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Scrophulariaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Verbascum thapsus</i> Mullein					2.5					2.5							
	<i>Veronica officinalis</i> Common Speedwell	2.5		2.5		2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	8.75			
	<i>Veronica serpyllifolia</i> Thyme-Leaved Speedwell							2.5		2.5	2.5	2.5	2.5					
Rubiaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Galium triflorum</i> Bedstraw					2.5												
Caprifoliaceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Viburnum lentago</i> Nannyberry										2.5	2.5	8.75					
	<i>Viburnum recognitum</i> Northern Arrowwood	2.5	2.5						2.5	2.5	2.5	2.5	2.5	2.5	2.5	8.75	8.75	2.5
Asteraceae		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
	<i>Anaphalis margaritacea</i> Pearly Everlasting												2.5					
	<i>Aster sp.</i> Wood Aster sp.										2.5							
	<i>Aster divaricatus</i> White Wood Aster																	
	<i>Cirsium discolor</i> Field Thistle		2.5	2.5	2.5	2.5					2.5	2.5	2.5					
	<i>Leucanthemum vulgare</i> Ox-Eye Daisy				2.5	2.5	2.5	2.5		2.5	2.5	2.5						
	<i>Solidago graminifolia</i> Lance-Leaved Goldenrod																	
	<i>Solidago rugosa</i> Rough-Stemmed Goldenrod			2.5	2.5	8.75	2.5	8.75	2.5	8.75	2.5	2.5	8.75	2.5	8.75	2.5		
	<i>Taraxacum officinale</i> Common Dandelion																	

Table 3 (cont.). Summary of average percent cover, by quadrat, of species encountered across Transect B.

Monocots

		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
Juncaceae	<i>Juncus effusus</i> Soft Rush										2.5							
	<i>Juncus tenuis</i> Path Rush							2.5	2.5		2.5	2.5						
Cyperaceae	<i>Carex sp.</i> Sedge sp.																	
	<i>Carex lurida</i> Sedge sp.	2.5					2.5	8.75	2.5	15	8.75	8.75		2.5	8.75			
	<i>Carex scoparia</i> Sedge sp.					8.75												
	<i>Carex stricta</i> Sedge sp.		2.5		2.5						15			2.5	2.5			
Poaceae	<i>Agrostis gigantea</i> Red Top Grass	2.5				2.5		2.5		2.5								
	<i>Anthoxanthum odoratum</i> Sweet Vernal Grass	2.5	2.5	2.5								2.5	2.5		2.5	2.5		
	<i>Dactylis glomerata</i> Orchard Grass									2.5								
	<i>Festuca heterophylla</i> Fescue									2.5		2.5						
	<i>Glyceria striata</i> Fowl Manna Grass								2.5			2.75			2.5	2.5		
	<i>Panicum clandestinum</i> Deer-Tongue Grass		2.5						2.5		2.5							
	<i>Poa sp.</i> Grass sp.																	
	<i>Poa pratensis</i> Kentucky Bluegrass									2.5		2.5			2.5			
Liliaceae	<i>Trillium sp.</i> Trillium												2.5					
Iridaceae	<i>Sisyrinchium sp.</i> Blue-eyed Grass						2.5				2.5	2.5	2.5	2.5				