

# Brian Bader's species list for Oak Savanna and Oak Woodland Restoration

The following list was published by Brian Bader in 2001. At that time he was at the University of Wisconsin Arboretum. It is based on extensive work at the Arboretum, starting with that of Virginia Kline, the Arboretum Ecologist, plus additional information provided by other Arboretum staff, and an extensive review of the available literature.

Also consulted were extensive historical records and published work not only from Wisconsin but from Iowa, Illinois, and other states. The original savanna list was expanded to include species of the closed canopy oak woodland, and wet-mesic and lowland savanna habitats. The extensive list of *Carex* species was added by Andrew Hipp.

The complete citation of this work is as follows:  
Bader, Brian J. 2001. Developing a species list for oak savanna/oak woodland restoration at the University of Wisconsin-Madison Arboretum. *Ecological Restoration*: Volume 19, number 4, pp. 242-250.

An Excel file of the complete database was made available to me and has been used to produce the present digital file.

Abbreviations for the Headings are as follows:

SH = Shade  
PS = Partial shade  
SU = Full sun  
W-M = Wet-mesic  
D-M = Dry-mesic  
Ca = Calcareous  
LP = Limestone prairie

\* = Species listed by the Wisconsin Department of Natural Resources as endangered or threatened.

1 = Species with restricted ranges in southern Wisconsin

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<b>Graminoids</b>									
<i>Agropyron trachycaulum</i> = <i>Elymus trachycaulus</i>									
<i>Agrostis hyemalis</i> v. <i>scabra</i>	x	x	x			x	x	x	
<i>Agrostis perennans</i>	x	x	x				x	x	
<i>Agrostis scabra</i> = <i>A. hyemalis</i> v. <i>scabra</i>									
<i>Andropogon gerardii</i>			x	x	x	x	x	x	lp
<i>Andropogon scoparius</i> - <i>Schizachrium scoparium</i>									
<i>Aristida basiramea</i>			x					x	
<i>Aristida purpurascens</i>		x	x					x	
<i>Aristida tuberculosa</i>			x					x	
<i>Bouteloua curtipendula</i>		x	x			x	x	x	lp
<i>Bouteloua hirsuta</i> 1		x	x				x	x	lp
<i>Brachyelytrum erectum</i>	x				x	x			
<i>Bromus altissimus</i>	x	x			x	x			
<i>Bromus ciliatus</i>	x	x		x	x				x
<i>Bromus kalmii</i>		x	x			x	x	x	lp
<i>Bromus pubescens</i>	x	x			x	x			
<i>Bromus purgans</i> = <i>B. pubescens</i>									
<i>Calamagrostis canadensis</i>			x	x	x	x			x
<i>Carex abdita</i> = <i>C. umbellata</i>									
<i>Carex annectens</i>			x	x	x				
<i>Carex atherodes</i>		x	x	x	x				
<i>Carex bebbii</i>		x	x	x	x				
<i>Carex bicknellii</i>			x	x	x	x			
<i>Carex blanda</i>	x	x			x	x	x		
<i>Carex brevior</i>		x	x			x	x	x	
<i>Carex buxbaumii</i>			x	x	x				x
<i>Carex cephalophora</i>	x	x				x	x	x	
<i>Carex conoidea</i>			x	x	x				
<i>Carex convoluta</i> = <i>C. rosea</i>									
<i>Carex eburnea</i> 1		x	x				x	x	x
<i>Carex foenea</i> = <i>C. siccata</i>									
<i>Carex gracillima</i>	x				x	x			
<i>Carex granularis</i>	x	x		x	x				x

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Carex haydenii</i>			x	x	x				
<i>Carex hystricina</i>			x	x	x				x
<i>Carex hystericina</i> = <i>C. hystericina</i>									
<i>Carex interior</i>			x	x	x				
<i>Carex laeviconica</i>		x	x	x	x				
<i>Carex lanuginosa</i> = <i>C. pellita</i>									
<i>Carex lupulina</i>	x	x		x	x				
<i>Carex meadii</i>			x				x	x	x
<i>Carex molesta</i> 1			x	x	x	x			
<i>Carex muehlenbergii</i>		x	x				x	x	
<i>Carex muhlenbergii</i> = <i>C. muehlenbergii</i>									
<i>Carex normalis</i>	x	x	x	x	x	x			
<i>Carex pellita</i>			x	x	x				
<i>Carex pensylvanica</i>	x	x	x			x	x	x	lp
<i>Carex projecta</i>		x		x	x				
<i>Carex radiata</i>	x	x				x	x		
<i>Carex richardsonii</i> 1			x				x	x	x
<i>Carex rosea</i>	x	x				x	x		
<i>Carex rugosperma</i> 1		x	x				x	x	
<i>Carex sartwellii</i>			x	x	x				x
<i>Carex scoparia</i>			x	x	x				
<i>Carex siccata</i>		x	x	x	x		x	x	
<i>Carex stipata</i>		x	x	x	x				
<i>Carex tenera</i>		x	x	x	x	x			
<i>Carex tetanica</i>			x	x	x				x
<i>Carex tonsa</i>			x					x	
<i>Carex tribuloides</i>		x	x	x	x				
<i>Carex trichocarpa</i>	x	x	x	x	x				
<i>Carex umbellata</i> 1			x					x	x
<i>Carex umbellata</i> v. <i>tonsa</i> = <i>C. tonsa</i>									
<i>Carex umbellata</i> v. <i>umbellata</i> = <i>C. rugosperma</i>									
<i>Carex vulpinoidea</i>		x	x	x	x				
<i>Cinna arundinacea</i>	x	x			x	x			

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Cinna latifolia</i> 1	x	x			x	x			
<i>Danthonia spicata</i>		x	x					x	
<i>Elymus canadensis</i>		x	x		x	x	x	x	lp
<i>Elymus hystrix</i>	x	x				x	x	x	
<i>Elymus riparius</i>	x	x		x	x	x			x
<i>Elymus trachycaulus</i>		x	x			x	x	x	
<i>Elymus villosus</i>	x	x			x	x	x	x	
<i>Elymus virginicus</i>	x	x	x	x	x	x			
<i>Festuca obtusa</i> = <i>F. subverticillata</i>									
<i>Festuca subverticillata</i>	x	x				x	x	x	
<i>Glyceria striata</i>	x	x	x	x	x				x
<i>Hierochloe odorata</i>		x	x	x	x				x
<i>Hystrix patula</i> = <i>Elymus hystrix</i>									
<i>Koeleria cristata</i> = <i>K. pyramidata</i>									
<i>Koeleria macrantha</i> = <i>K. pyramidata</i>									
<i>Koeleria pyramidata</i>		x	x			x	x	x	lp
<i>Leersia oryzoides</i>		x	x	x	x				x
<i>Leersia virginica</i>	x	x		x	x	x			
<i>Luzula acuminata</i>	x				x	x			
<i>Luzula multiflora</i>	x	x				x	x	x	
<i>Melica nitens</i>	x	x					x	x	
<i>Muhlenbergia cuspidata</i> 1			x				x	x	lp
<i>Muhlenbergia frondosa</i>		x	x	x	x	x			
<i>Muhlenbergia glomerata</i> 1			x	x	x				x
<i>Muhlenbergia mexicana</i>		x	x		x	x			
<i>Muhlenbergia racemosa</i>		x	x			x	x	x	lp
<i>Muhlenbergia schreberi</i>		x	x		x	x	x	x	
<i>Muhlenbergia sobolofera</i>	x	x				x	x	x	
<i>Muhlenbergia sylvatica</i>	x	x		x		x			
<i>Oryzopsis racemosa</i>	x					x	x	x	
<i>Panicum implicatum</i> = <i>P. lanuginosum</i> v. <i>implicatum</i>									
<i>Panicum lanuginosum</i> v. <i>implicatum</i>		x						x	

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Panicum latifolium</i>	x	x				x	x	x	
<i>Panicum leibergii</i>		x	x		x	x	x	x	lp
<i>Panicum oligosanthes</i>		x	x			x	x	x	lp
<i>Panicum praecocius</i>									
<i>Panicum villosissimum</i>		x	x				x	x	lp
<i>Panicum virgatum</i>		x	x	x	x	x	x	x	
<i>Schizachrium scoparium</i>			x		x	x	x	x	lp
<i>Scleria trigomerata</i>			x	x	x	x			x
<i>Sorghastrum nutans</i>			x	x	x	x	x	x	lp
<i>Spartina pectinata</i>			x	x	x	x			
<i>Sphenopholis obtusata</i>		x	x			x	x	x	x
<i>Sporobolis heterolepis</i>			x		x	x	x	x	lp
<i>Sporobolus cryptandrus</i>		x	x				x	x	lp
<i>Stipa spartea</i>		x	x			x	x	x	lp
<b>Forbs</b>									
<i>Actaea alba</i>	x				x	x	x		
<i>Actaea pachypoda</i> = <i>A. alba</i>									
<i>Actaea rubra</i>	x				x	x	x		
<i>Agalinis aspera</i> 1			x			x	x	x	
<i>Agalinis auriculata</i> 1		x	x			x	x	x	
<i>Agalinis gattingeri</i> *1		x				x			
<i>Agalinis purpurea</i>		x	x	x					x
<i>Agalinis skinneriana</i> *1		x	x				x	x	
<i>Agalinis tenuifolia</i>			x	x	x	x			x
<i>Agastache nepetoides</i> *1		x				x	x		
<i>Agastache scrophulariaefolia</i>		x				x	x		
<i>Agrimonia gryposepala</i>	x	x			x	x	x	x	
<i>Agrimonia pubescens</i>	x	x	x	x	x	x	x		x
<i>Allium canadense</i>		x	x	x	x	x	x		
<i>Allium cernuum</i> 1			x		x	x			x
<i>Amphicarpaea bracteata</i>	x	x	x		x	x	x		
<i>Anaphalis margaralacea</i>	x	x				x	x		
<i>Anemone canadensis</i>			x	x	x	x			
<i>Anemone cylindrica</i>		x	x		x	x	x	x	lp
<i>Anemone patens</i>			x				x	x	lp
<i>Anemone quinquefolia</i>	x	x				x	x	x	x



SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Aster ericoides</i>		x	x		x	x	x	x	lp
<i>Aster laevis</i>		x	x		x	x	x	x	lp
<i>Aster lateriflorus</i>		x			x	x	x	x	
<i>Aster linariifolius</i>		x	x				x	x	lp
<i>Aster novae-angliae</i>		x	x	x	x	x			x
<i>Aster oblongifolius</i> 1		x	x				x	x	lp
<i>Aster oolentangiensis</i>		x	x		x	x	x	x	lp
<i>Aster prenanthoides</i>	x	x	x	x	x				
<i>Aster ptarmicoides</i> = <i>Solidago ptarmicoides</i>									
<i>Aster sagittifolius</i>	x	x			x	x	x	x	lp
<i>Aster sericeus</i>		x	x				x	x	lp
<i>Aster shortii</i>	x	x				x	x		x
<i>Aster umbellatus</i>		x	x	x	x				
<i>Astragalus canadensis</i>		x	x		x	x	x		
<i>Athyrium filix-femina</i>	x	x			x	x	x		
<i>Aureolaria flava</i>	x	x				x	x	x	
<i>Aureolaria grandiflora</i>		x					x	x	lp
<i>Aureolaria pedicularia</i> 1		x				x	x		
<i>B. leucantha</i> = <i>B. leucantha</i>									
<i>B. leucophaea</i> = <i>B. leucophaea</i>									
<i>Baptisia bracteata</i>		x	x		x	x	x		
<i>Baptisia lactea</i>			x		x	x	x		
<i>Bessya bullii</i> *1		x	x				x	x	
<i>Blephilia ciliata</i>		x	x	x	x	x			x
<i>Boehmeria cylindrica</i>	x	x		x	x				
<i>Botrychium dissectum</i>	x	x			x	x			
<i>Botrychium virginianum</i>	x	x				x			
<i>Cacalia atriplicifolia</i> 1		x	x		x	x	x		
<i>Cacalia muhlenbergii</i>		x				x			
<i>Cacalia plantaginea</i> *1			x	x	x	x	x		
<i>Cacalia suaveolens</i> 1		x	x	x		x			
<i>Cacalia tuberosa</i> = <i>C. plantaginea</i>									
<i>Caltha palustris</i>	x	x	x	x					x
<i>Calystegia sepium</i>		x	x	x	x	x	x	x	lp
<i>Calystegia spithamea</i>		x	x				x	x	

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Camassia scilloides</i> * 1	x	x	x	x	x	x			
<i>Campanula americana</i>	x	x			x	x	x		
<i>Campanula aparinoides</i>		x	x	x	x				x
<i>Campanula rotundifolia</i>		x	x				x	x	lp
<i>Cassia fasciculata</i> = <i>Chamaecrista fasciculata</i>									
<i>Castilleja coccinea</i>			x	x	x	x			x
<i>Castilleja sessiliflora</i>			x				x	x	lp
<i>Chamaecrista fasciculata</i> 1		x	x			x	x	x	
<i>Chelone glabra</i>	x	x	x	x	x				x
<i>Cicuta maculata</i>		x	x	x	x	x			
<i>Circaea lutetiana</i>	x	x			x	x	x		
<i>Circaea quadrisculcata</i> = <i>C. lutetiana</i>									
<i>Cirsium altissimum</i>		x	x		x	x	x		
<i>Cirsium discolor</i>			x	x	x	x	x		lp
<i>Cirsium hillii</i> * 1			x				x		lp
<i>Cirsium muticum</i>	x	x	x	x	x				x
<i>Claytonia virginica</i>	x	x				x	x		
<i>Comandra richardsiana</i> = <i>C. umbellata</i>									
<i>Comandra umbellata</i>		x	x	x	x	x	x	x	lp
<i>Convolvulus sepium</i> = <i>Calystegia sepium</i>									
<i>Convolvulus spithameus</i> = <i>Calystegia spithamea</i>									
<i>Coreopsis lanceolata</i>			x				x	x	
<i>Coreopsis palmata</i>		x	x		x	x	x	x	lp
<i>Corydalis sempervirens</i>	x	x	x				x	x	
<i>Cryptotaenia canadensis</i>	x	x			x	x			
<i>Cypripedium pubescens</i>	x	x		x	x	x			x
<i>Dalea candida</i>		x	x			x	x	x	lp
<i>Dalea purpurea</i>		x	x		x	x	x	x	lp
<i>Desmodium canadense</i>		x	x	x	x	x	x		
<i>Desmodium canescens</i> 1		x	x			x	x	x	
<i>Desmodium cuspidatum</i> 1		x				x	x	x	
<i>Desmodium glutinosum</i>	x	x				x	x	x	
<i>Desmodium illinoense</i>		x	x			x	x	x	lp



SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Desmodium nudiflorum</i>	x	x				x	x	x	
<i>Dioscorea villosa</i>	x	x		x	x	x			
<i>Dodecatheon meadia</i>		x	x		x	x	x		lp
<i>Draba reptans</i>			x				x		lp
<i>Echinacea pallida</i> * 1			x			x	x		
<i>Erigeron pulchellus</i>		x	x					x	
<i>Erigeron strigosus</i>		x	x		x	x	x	x	lp
<i>Eryngium yuccifolium</i> 1			x		x	x	x		
<i>Erythronium albidum</i>	x	x				x	x		
<i>Eupatorium altissimum</i>		x	x			x			
<i>Eupatorium maculatum</i>			x	x	x				x
<i>Eupatorium perfoliatum</i>		x	x	x	x				x
<i>Eupatorium purpureum</i>	x	x			x	x	x		
<i>Eupatorium sessilifolium</i> 1		x				x	x		
<i>Euphorbia corollata</i>	x	x	x	x	x	x	x	x	lp
<i>Euthamia graminifolia</i>		x	x	x	x	x			x
<i>Fragaria vesca</i>	x	x			x	x	x		
<i>Fragaria virginiana</i>	x	x	x		x	x	x	x	lp
<i>Galium boreale</i>		x	x	x	x	x	x		
<i>Galium circaezans</i>	x	x				x	x	x	
<i>Galium concinnum</i>	x	x				x	x	x	
<i>Galium trifidum</i>	x	x	x	x	x				x
<i>Galium triflorum</i>	x	x			x	x			
<i>Gaura biennis</i> 1		x	x		x	x	x		
<i>Gentiana alba</i> = <i>G. flavida</i>									
<i>Gentiana andrewsii</i>		x	x		x	x			x
<i>Gentiana crinita</i> = <i>Gentianopsis crinita</i>									
<i>Gentiana flavida</i> *1		x	x		x	x			
<i>Gentiana puberula</i> = <i>G. puberulenta</i>									
<i>Gentiana puberulenta</i>		x	x			x	x		lp
<i>Gentiana quinquefolia</i> = <i>Gentianella quinquefolia</i>									
<i>Gentianella quinquefolia</i>		x	x			x	x	x	x
<i>Gentianopsis crinita</i>		x	x	x	x				x
<i>Geranium maculatum</i>	x	x			x	x	x		

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Gerardia aspera</i> = <i>Agalinis aspera</i>									
<i>Gerardia gattingeri</i> = <i>Agalinis gattingeri</i>									
<i>Gerardia grandiflora</i> = <i>Aureolaria grandiflora</i>									
<i>Gerardia pedicularia</i> = <i>Aureolaria pedicularia</i>									
<i>Gerardia purpurea</i> = <i>Agalinis purpurea</i>									
<i>Gerardia skinneriana</i> = <i>Agalinis skinneriana</i>									
<i>Gerardia tenuifolia</i> = <i>Agalinis tenuifolia</i>									
<i>Geum canadense</i>	x	x	x		x	x	x		
<i>Geum triflorum</i>			x		x		x	x	lp
<i>Gnaphalium obtusifolium</i>		x	x				x	x	lp
<i>Goodyera pubescens</i>	x	x			x	x	x		
<i>Hedeoma hispida</i>		x	x				x	x	lp
<i>Helenium autumnale</i>			x	x	x				x
<i>Helianthemum bicknellii</i>		x	x				x	x	
<i>Helianthemum canadense</i>		x	x				x	x	
<i>Helianthus decapetalus</i>	x	x				x	x	x	
<i>Helianthus divaricatus</i>	x	x			x	x	x	x	
<i>Helianthus giganteus</i>			x	x	x	x			x
<i>Helianthus grosseserratus</i>			x	x	x	x			
<i>Helianthus hirsutus</i>		x	x				x	x	
<i>Helianthus laetiflorus</i> = <i>H. pauciflorus</i>									
<i>Helianthus occidentalis</i>		x	x			x	x	x	lp
<i>Helianthus pauciflorus</i>		x	x			x	x	x	lp
<i>Helianthus rigidus</i> = <i>H. pauciflorus</i>									
<i>Helianthus strumosus</i>	x	x			x	x	x		
<i>Heliopsis helianthoides</i>		x	x	x	x	x			lp
<i>Hepatica acutiloba</i>	x					x	x		
<i>Hepatica americana</i>	x					x	x		
<i>Heracleum lanatum</i>	x	x		x	x	x			
<i>Heuchera richardsonii</i>		x	x		x	x	x	x	lp

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
Hieracium canadense = H. kalmii									
Hieracium kalmii l		x	x		x	x	x		
Hieracium longipilum l		x	x				x	x	lp
Hieracium scabrum		x	x			x	x	x	
Hypericum punctatum			x			x	x	x	
Hypericum pyrmidatum		x	x	x	x				x
Hypoxis hirsuta		x	x	x	x	x	x		x
Iris shrevei = I. virginica v. shrevei									
Iris virginica v. shrevei		x	x	x	x				x
Krigia biflora		x			x	x	x	x	lp
Krigia virginica			x				x		
Kuhnia eupatorioides		x	x			x	x	x	lp
Lactuca biennis	x	x			x	x	x		
Lactuca canadensis		x	x	x	x	x	x	x	lp
Lactuca floridana	x	x				x	x	x	
Lactuca ludoviciana l			x			x	x	x	
Lathyrus ochroleucus	x	x				x	x	x	
Lathyrus palustris		x	x	x	x	x			x
Lathyrus venosus		x	x		x	x	x		
Lechea intermedia l		x	x				x	x	
Lechea tenuifolia l		x	x			x	x	x	
Lespedeza capitata		x	x		x	x	x	x	lp
Lespedeza leptostachya* l			x			x	x	x	
Lespedeza violacea l		x					x	x	
Lespedeza virginica* l		x	x				x	x	
Liatis aspera		x	x			x	x	x	lp
Liatis cylindracea		x	x				x	x	lp
Liatis pchnostachya			x	x	x	x			x
Lilium michiganense		x	x	x	x	x	x		x
Lilium philadelphicum v. andinum		x	x			x	x		lp
Lilium superbum = L. michiganense									
Linum sulcatum			x				x	x	lp
Liparis liliifolia	x	x				x	x	x	
Lithospermum canescens		x	x		x	x	x	x	lp

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Lithospermum caroliniense</i> 1		x	x				x	x	lp
<i>Lithospermum incisum</i>			x				x	x	lp
<i>Lobelia cardinalis</i>		x	x	x	x				
<i>Lobelia inflata</i>		x	x		x	x	x	x	
<i>Lobelia siphilitica</i>		x	x	x	x				x
<i>Lobelia spicata</i>		x	x		x	x	x	x	lp
<i>Lupinus perennis</i>		x	x				x	x	
<i>Lycopus americanus</i>		x	x	x	x				x
<i>Lycopus uniflorus</i>		x	x	x	x				x
<i>Lysimachia ciliata</i>	x	x			x	x	x		
<i>Lysimachia lanceolata</i> 1		x	x		x	x	x		
<i>Lysimachia quadriflora</i> 1			x	x	x				x
<i>Lysimachia quadrifolia</i> 1	x	x				x	x	x	
<i>Microseris cuspidata</i> 1									
<i>Monarda fistulosa</i>		x	x		x	x	x	x	lp
<i>Monarda punctata</i>		x	x				x	x	
<i>Napaea dioica</i> 1		x	x	x	x				
<i>Nothoculais cuspidata</i> = <i>microseris cuspidata</i>									
<i>Oenothera biennis</i>		x	x		x	x	x	x	lp
<i>Oenothera clelandii</i> 1		x	x				x	x	
<i>Oenothera perennis</i>		x	x	x	x				
<i>Oenothera rhombipetala</i> = <i>O.</i> <i>clelandii</i>									
<i>Onoclea sensibilis</i>	x	x	x	x	x				
<i>Opuntia humifusa</i> 1		x	x				x	x	
<i>Orobanche uniflora</i> *1		x	x				x	x	
<i>Osmorhiza claytonii</i>	x	x			x	x	x	x	
<i>Osmorhiza longistylis</i>	x	x			x	x	x		
<i>Osmunda claytoniana</i>	x	x			x	x			
<i>Oxalis violacea</i>		x	x			x	x	x	lp
<i>Oxypolis rigidior</i>			x	x	x				x
<i>Parthenium integrifolium</i> *1		x	x		x	x	x		
<i>Pedicularis canadensis</i>	x	x	x		x	x	x	x	lp
<i>Pedicularis lanceolata</i>		x	x	x	x				x
<i>Penstemon digitalis</i>		x	x			x	x		
<i>Penstemon gracilis</i> 1		x	x				x	x	lp
<i>Penstemon grandiflorus</i> 1		x	x				x	x	

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Penstemon hirsutus</i> 1		x	x				x	x	
<i>Penstemon pallidus</i>		x	x				x	x	x
<i>Petalostemum candidum</i> = <i>Dalea candida</i>									
<i>Petalostemum purpureum</i> = <i>Dalea purpurea</i>									
<i>Phlox divaricata</i>	x	x			x	x	x	x	
<i>Phlox pilosa</i>		x	x		x	x	x		x
<i>Phyrma leptostachya</i>	x				x	x	x		
<i>Physalis heterophylla</i>		x	x		x	x	x	x	lp
<i>Physalis virginiana</i>		x	x		x	x	x	x	lp
<i>Physostegia virginiana</i>		x	x	x	x	x			x
<i>Platanthera leucophaea</i> *1			x	x	x				x
<i>Podophyllum peltatum</i>	x	x				x	x		
<i>Polemonium reptans</i>		x	x		x	x	x		x
<i>Polygala polygama</i>		x	x				x	x	lp
<i>Polygala sanguinea</i>		x	x		x	x	x	x	lp
<i>Polygala senega</i>		x	x		x	x	x		
<i>Polygala verticillata</i>		x	x				x	x	
<i>Polygonatum biflorum</i>	x	x	x		x	x	x	x	lp
<i>Polygonatum canniculatum</i> = <i>P. biflorum</i>									
<i>Polygonum virginianum</i>	x	x		x	x	x			
<i>Polymnia canadensis</i>	x	x			x	x	x		
<i>Polytaenia nuttalli</i> *1		x	x		x	x			
<i>Potentilla arguta</i>			x		x	x	x	x	lp
<i>Potentilla simplex</i>		x	x		x	x	x		
<i>Prenanthes alba</i>	x	x			x	x			
<i>Prenanthes aspera</i> *1			x		x	x	x		lp
<i>Prenanthes racemosa</i> 1			x		x	x	x		x
<i>Pteridium aquilinum</i>		x	x			x	x	x	
<i>Pycnanthemum virginianum</i>		x	x	x	x	x	x		x
<i>Pyrola elliptica</i>	x	x					x	x	
<i>Ranunculus abortivus</i>	x	x			x	x	x	x	
<i>Ranunculus fascicularis</i>		x	x				x	x	
<i>Ranunculus hispidus</i> v. <i>nitidus</i>	x	x		x	x				x
<i>Ranunculus recurvatus</i>	x	x			x	x			x



SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Solidago hispida</i>	x	x			x	x	x		
<i>Solidago juncea</i>		x	x			x	x	x	lp
<i>Solidago missouriensis</i> 1			x		x	x	x	x	lp
<i>Solidago nemoralis</i>		x	x			x	x	x	lp
<i>Solidago ptarmicoides</i> 1		x	x			x	x	x	lp
<i>Solidago riddellii</i> 1			x	x	x				x
<i>Solidago rigida</i>			x	x	x	x	x	x	lp
<i>Solidago speciosa</i>		x	x			x	x	x	
<i>Solidago ulmifolia</i>	x	x				x	x	x	
<i>Spiranthes cernua</i>		x	x	x	x	x			x
<i>Stachys palustris</i>			x	x	x				
<i>Taenidia integerrima</i>		x			x	x			
<i>Talinum rugospermum</i> 1		x	x					x	
<i>Tephrosia virginiana</i>		x	x				x	x	
<i>Teucrium canadense</i>	x	x	x		x	x	x		x
<i>Thalictrum dasycarpum</i>		x	x	x	x	x			x
<i>Thaspium trifoliatum</i> * 1		x	x		x	x			
<i>Thelypteris palustris</i>	x	x	x	x	x				x
<i>Tomanthera auriculata</i> = <i>Agalinis auriculata</i>									
<i>Tovara virginianum</i> = <i>Polygonum virginianum</i>									
<i>Tradescantia ohiensis</i>		x	x	x	x	x	x	x	lp
<i>Trillium recurvatum</i> 1	x	x				x	x		
<i>Triosteum aurantiacum</i>		x			x	x	x		
<i>Triosteum perfoliatum</i>		x			x	x	x		lp
<i>Uvularia grandiflora</i>	x	x				x	x		x
<i>Uvularia sessilifolia</i> 1	x	x					x	x	
<i>Verbena hastata</i>		x	x	x	x				
<i>Verbena stricta</i>			x			x	x	x	lp
<i>Verbena urticifolia</i>		x	x	x	x	x			
<i>Vernonia fasciculata</i>			x	x	x	x			
<i>Veronicastrum virginicum</i>		x	x	x	x	x	x		
<i>Vicia americana</i>		x	x	x	x	x			
<i>Vicia caroliniana</i>	x	x				x	x	x	
<i>Viola adunca</i>		x	x				x	x	
<i>Viola cucullata</i>	x	x		x	x	x			
<i>Viola palmata</i> v. <i>pedatifida</i>		x	x			x	x	x	lp

SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Viola pedata</i>		x	x			x	x	x	lp
<i>Viola pedatifida</i> = <i>V. palmata</i> v. <i>pedatifida</i>									
<i>Viola sagittata</i>		x	x		x	x			
<i>Viola septentrionalis</i>	x	x			x	x	x		
<i>Viola sororia</i>	x	x			x	x	x		
<i>Zigadenus elegans</i>		x	x		x	x	x	x	x
<i>Zizia aptera</i> l		x	x		x	x	x		
<i>Zizia aurea</i>	x	x	x	x	x	x	x		
<b>Shrubs</b>									
<i>Amelanchier arborea</i>	x	x				x	x	x	
<i>Amelanchier laevis</i>	x	x				x	x	x	
<i>Amelanchier sanguinea</i>	x	x				x	x		
<i>Amorpha canescens</i>		x	x		x	x	x	x	lp
<i>Aronia melanocarpa</i>		x	x				x	x	lp
<i>Ceanothus americanus</i>		x	x		x	x	x	x	lp
<i>Ceanothus herbaceus</i> l		x					x	x	
<i>Ceanothus ovatus</i> = <i>C. herbaceus</i>									
<i>Celastrus scandens</i>	x	x				x	x	x	lp
<i>Clematis virginiana</i>	x	x	x	x	x				x
<i>Cornus amomum</i>	x	x		x	x				x
<i>Cornus obliqua</i> = <i>C. amomum</i>									
<i>Cornus racemosa</i>		x	x	x	x	x	x	x	lp
<i>Cornus sericea</i>		x	x	x	x	x			x
<i>Cornus stolonifera</i> = <i>C. sericea</i>									
<i>Corylus americana</i>	x	x		x	x	x	x	x	lp
<i>Crataegus calpodendron</i>		x			x	x			
<i>Crataegus chrysocarpa</i>	x	x			x	x	x		
<i>Crataegus coccinea</i>		x	x		x	x			
<i>Crataegus crus-galli</i>		x				x	x	x	lp
<i>Crataegus flabellata</i>	x	x				x	x	x	
<i>Crataegus macrosperma</i> = <i>C. flabellata</i>									
<i>Crataegus mollis</i>	x	x	x	x	x	x			x



SPECIES	LIGHT			LOW-LAND		UPLAND			Ca
	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Crataegus pedicellata</i> = <i>C. coccinea</i>									
<i>Crataegus pensylvanica</i> = <i>C. coccinea</i>									
<i>Diervilla lonicera</i>	x	x				x	x	x	
<i>Lonicera dioica</i>	x	x			x	x	x		x
<i>Lonicera prolifera</i>	x	x			x	x	x		x
<i>Malus ioensis</i> = <i>Pyrus ioensis</i>									
<i>Menispermum canadense</i>	x	x		x	x	x			
<i>Parthenocissus quinquefolia</i>	x	x			x	x	x	x	lp
<i>Parthenocissus vitacea</i>	x	x			x	x	x	x	
<i>Physocarpus opulifolius</i>		x	x	x	x		x	x	x
<i>Potentilla fruticosa</i>		x	x	x	x				
<i>Prunus americana</i>	x	x	x		x	x	x		
<i>Prunus pensylvanica</i>		x	x				x	x	
<i>Prunus pumila</i>		x	x				x	x	x
<i>Pyrus ioensis</i>		x	x		x	x	x	x	lp
<i>Rhus aromatica</i> l		x	x				x	x	
<i>Rhus copallina</i> l	x	x					x	x	
<i>Rhus glabra</i>		x	x		x	x	x	x	lp
<i>Rhus radicans</i> = <i>Toxicodendron radicans</i>									
<i>Rhus typhina</i>		x	x				x	x	
<i>Ribes americanum</i>	x	x		x	x	x			x
<i>Ribes Cynosbati</i>	x	x			x	x	x		
<i>Ribes missouriense</i>	x	x				x	x	x	
<i>Rosa blanda</i>		x	x	x	x	x		x	lp
<i>Rosa carolina</i>		x	x				x	x	lp
<i>Rosa setigera</i>		x	x		x	x	x	x	lp
<i>Rubus allegheniensis</i>	x	x			x	x	x	x	x
<i>Rubus flagellaris</i>		x	x				x	x	
<i>Rubus idaeus</i>	x	x			x	x	x	x	x
<i>Rubus occidentalis</i>	x	x				x	x	x	x
<i>Rubus strigosus</i> = <i>R. idaeus</i>									
<i>Salix discolor</i>			x	x	x	x			
<i>Salix humilis</i> l		x	x	x	x	x	x		lp
<i>Sambucus canadensis</i>		x	x	x	x				

	LIGHT			LOW-LAND		UPLAND			Ca
SPECIES	SH	PS	SU	Wet	W-M	Mesic	D-M	Dry	
<i>Spirea alba</i>			x	x	x				
<i>Symphoricarpos occidentalis</i>		x	x			x	x	x	lp
<i>Toxicodendron radicans</i>	x	x	x	x	x	x	x	x	lp
<i>Vibrunum lentago</i>	x	x		x	x	x			
<i>Viburnum rafinesquianum</i>	x	x				x	x	x	x
<i>Viburnum trilobum</i>	x	x			x	x			
<i>Vitis aestivalis</i>	x	x	x		x	x	x	x	
<i>Vitis riparia</i>	x	x	x	x	x	x	x	x	lp
<i>Zanthoxylum americanum</i>	x	x		x	x	x	x		lp