

SHENANDOAH NATIONAL PARK
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VASCULAR PLANTS OF THE MEADOW AT BIG MEADOWS

SHENANDOAH NATIONAL PARK, VIRGINIA

Emily E. Baxter
Biology Department
James Madison University
Harrisonburg, VA 22807

89700P

1979 ✓

This study was limited to the area bordered on the north by the Skyline Drive, on the west and south by Rapidan Road, and on the south and east by the forest.

The following abbreviations indicate general location in the meadow, and times for flowering or maturing of fern and clubmoss sporangia.

N = north part

S = south part

E = east part

W = west part

T = throughout; in 3 or
more parts of meadow,
drained habitats

* = in poorly-drained habitats.

Ap = April

Ma = May

Je = June

Jy = July

Au = August

Se = September

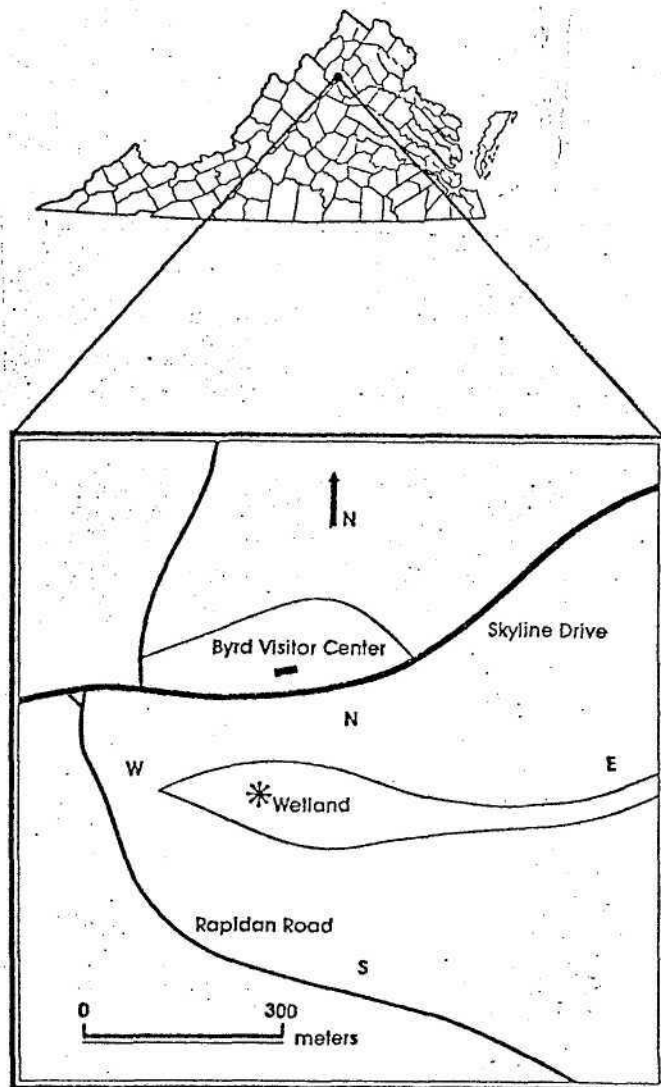


Figure 1. Map of meadow site at Big Meadows. The area included in this study is bounded on the north by Skyline Drive, on the west and south by Rapidan Road, and on the east and southeast by the forest. The following abbreviations on the map are used in the plant list to designate general locations: N=north part; S=south part; E=east part; W=west part, *=wetland, poorly drained habitat; T=throughout drained meadow C in 3 or more parts of meadow).

LYCOPODIACEAE - Clubmoss Family

Lycopodium flabelliforme (Fern.) Blanchard - ground pine; T,Au

L. obscurum L. var. dendroideum (Michx.) D. C. Eat, - ground pine; T,Au

OPHIOGLOSSACEAE - Adder's Tongue Family

Botrychium dissectum Spreng. - grape-fern; *,T,Au,Se

B. dissectum Spreng. var. oblignum (Muhl.) Clute - grape-fern; T,Au,Se

B. multifidum (Gmel.) Rupr. var. intermedium (D. C. Eat.) Farw. -

leather grape-fern; T,Au

B. virginianum L. - rattlesnake fern; S,E,Je

OSMUNDACEAE - Royal Fern Family

Osmunda cinnamomea L. - cinnamon fern; *,S,Ma,Je

O. claytoniana L. - interrupted fern; *,T,Ma,Je

POLYPODIACEAE - Fern Family

Asplenium platyneuron (L.) Oakes - ebony spleenwort; T,Jy

Dennstaedtia punctilobula (Michx.) Moore - hay-scented fern; *,T,Jy

Onoclea sensibilis L. - sensitive fern; *,Au,Se

Polystichum acrostichoides (Michx.) Schott, - Christmas fern; SE,W,Je,Jy,Au

Pteridium aquilinum (L.) Kuhn - bracken fern; *,T,Au

Thelypteris noveboracensis Nienwl. - New York fern; *,S,Je

PINACEAE - Pine Family

Abies balsamea (L.) Mill. - balsam fir; E

Pinus pungens Lamb. - table mountain pine; E

P. rigida Mill. - pitch pine; T

P. strobus L. - white pine; E

P. virginiana Mill. - scrub pine; T

CUPRESSACEAE - Cypress Family

Juniperus virginiana L. - red cedar; S,E

GRAMINEAE - Grass Family

Agropyron repens (L.) Beauv. - quackgrass; *,E,Jy

Agrostis alba L. - redtop; W,Jy,Au

A. tenuis Sibth. - colonial bent grass; *,T,Jy

Andropogon scoparius Michx. - little bluestem; N,S,Au,Se

Anthoxanthum odoratum L. - sweet vernal grass; *,E,Ma

Arrhenatherum elatius (L.) Mert. & Koch. - tall oatgrass; E,Je

Calamagrostis canadensis (Michx.) Nutt. - bluejoint; *,T,Jy

Dactylis glomerata L. - orchard grass; N,S,Je

Danthonia spicata (L.) Beauv. - poverty oatgrass; *,T,Je,Jy

Deschampsia flexuosa (L.) Trin. - crinkled hairgrass; E,Je

Dichanthelium lanuginosum (Ell.) Gould - hairy panic grass; *,S,Jy

D. latifolium (L.) Harvill - T,Je

D. linearifolium (Scribn.) Gould - low panic grass; T,Je,Jy

Festuca elatior L. - meadow fescue; T,Je

F. ovina L. - sheep fescue; E,Je

F. rubra L. - red fescue; S,E,Ma

Glyceria striata (Lam.) Hitchc. - fowl mannagrass; *,Jy

Leersia oryzoides (L.) Sw. - rice cutgrass; *,Au

Muhlenbergia frondosa (Poir.) Fernald - wirestem muhly; S,Au

Panicum capillare L. - old witch grass; N,E,Au

Phleum pratense L. - timothy; T,Jy,Au

P. compressa L. - Canada bluegrass; *,W,Jy
P. palustris L. - fowl bluegrass; S,Je
P. pratensis L. - Kentucky bluegrass; T,Je

CYPERACEAE - Sedge Family

Carex argyrantha Tuckerm. - *,T,Ma,Je
C. buxbaumii Wahlenb. - *,Ma,Je
C. connoidea Schk. - *,Ma,Je •
C. laxiflora Lam. - S,Je
C. molesta Mack. - *,S,Jy
C. normalis Mack. - S,Je
C. pennsylvanica Lam. - *,T,Ap,Ma
C. radiata (Wahl.) Dewey - *,Ma
C. trisperma Dewey - W,Je •
Eleocharis obtusa (Willd.) Schultes. - *,Jy,Au

ARACEAE - Arum Family

Arisaema triphyllum (L.) Schott - Jack-in-the-pulpit; *,S,Ma

JUNCACEAE - Rush Family

Juncus acuminatus Michx. - *,Je
J. effusus L. - common rush; *,Ma,Je
J. tenuis Willd. - path rush; *,Je,Jy
Luzula bulbosa (Wood) Rydb. - *,T,Ma

LILIACEAE - Lily Family

Allium cernuum Roth - wild onion; *,T,Jy,Au
Amianthium muscaetoxicum (Walt.) Gray - fly-poison; *,T,Je,Jy
Chamaelirium luteum (L.) Gray - devil's bit; *,N,Je
Hemerocallis fulva L. - common day lily; E,Jy
Lilium superbum L. - Turk's-cap lily; *,T,Jy,Au
Melanthium latifolium Desr. - crisped bunch flower; N,S,Au
Polygonatum biflorum (Walt.) Ell. - common Solomon's seal; S,Je
Smilacina racemosa (L.) Desf. - false Solomon's seal; S,W,Je
Smilax herbacea L. - carrion flower; T,Je
S. rotundifolia L. - green greenbrier; *,Je
Trillium grandiflorum (Michx.) Salisb. - large flowered trillium; T,Ma
Uvularia perfoliata L. - mealy bellwort; N,S,Ma
U. sessilifolia L. - merrybells; *,T,Ma
Veratrum viride Ait. - white hellebore; *,Je

DIOSCOREACEAE - Yam Family

Dioscorea quaternata (Walt.) J. F. Gmel. - four-leaved wild yam; N

AMARYLLIDACEAE - Amaryllis Family

Hypoxis hirsuta (L.) Coville - yellow star grass; *,N,E,Je,Jy
Narcissus poeticus L. - poet's narcissus; E,Ma
N. pseudo-narcissus L. - daffodil; E,Ma

IRIDACEAE - Iris Family

Sisyrinchium angustifolium Mill. - blue-eyed grass; *,T,Je,Jy

ORCHIDACEAE - Orchid Family

Habenaria lacera (Michx.) Lodd. - ragged fringed orchid; S,Au
Spiranthes cernua (L.) Richard. - nodding ladies' tresses; S,Se

SALICACEAE - Willow Family

Salix discolor Muhl. - glaucous willow; *,N,Ma
S. tristis Ait. - dwarf upland willow; *,Ma

MYRICACEAE - Bayberry Family

Comptonia peregrina (L.) Coult. - sweet fern; *,Ma,Je

JUGLANDACEAE - Walnut Family

Carya ovalis (Wang.) Sarg. - red hickory; E

CORYLACEAE - Hazel Family

Betula lenta L. - sweet birch; N,NE
B. populifolia Marsh. - gray birch; *,SE,Ma
Corylus americana Walt. - hazelnut; *,N,S,Je
C. cornuta Marsh. - beaked hazelnut; N,S,SE,Je

FAGACEAE - Beech Family

Castanea dentata (Marsh.) Borkh. - American chestnut; N
Quercus alba L. - white oak; N,S
Q. rubra L. - red oak; *,N, S

POLYGONACEAE - Buckwheat Family

Polygonum cespitosum Blume - Asiatic water pepper; *,Au
P. convolvulus L. - black bindweed; S,SW,Jy,Au
P. persicaria L. - lady's thumb; *
P. sagittatum L. - arrowleaf tearthumb; *,Au
Rumex acetosella L. - sheep sorrel; *,T,Ma,Je, Jy

CHENOPODIACEAE - Goosefoot Family

Chenopodium album L. - lamb's quarters; N

CARYOPHYLLACEAE - Pink Family

Cerastium vulgatum L. - common mouse-ear chickweed; *,T,Je,Jy
Dianthus armeria L. - Deptford pink; *,T, Jy,Au
Saponaria officinalis L. - soapwort; E,Au
Silene pensylvanica Michx. - wild pink; T,Ma
S. stellata (L.) Ait.f. - starry campion; T,Jy,Au
Stellaria pubera Michx. - great chickweed; T,Ma

RANUNCULACEAE - Crowfoot Family

Anemone quinquefolia L. - wood anemone; *,T,Ma
A. virginiana L. - thimbleweed; T,Je
Aquilegia canadensis L. - wild columbine; *,T,Je,Jy,Au
Cimicifuga racemosa L. - black snakeroot; T,Jy
Clematis virginiana L. - virgin's bower; *,T,Au
Ranunculus abortivus L. - kidney-leaf crowfoot; S,Ma
R. hispidus Michx. - hispid buttercup; *,T,Ma •
Thalictrum dioicum L. - early meadowrue; S,E,Ma
T. polygamum Muhl. - tall meadowrue; *,Jy
Trautvetteria caroliniensis (Walt.) Vail - tassellrue; *,Jy,Au

BERBERIDACEAE - Barberry Family

Berberis thunbergii DC. - Japanese barberry; E, Ma

LAURACEAE - Laurel Family

Sassafras albidum (Nutt.) Nees - white sassafras; T

PAPAVERACEAE - Poppy Family

Sanguinaria canadensis L. - bloodroot; S, W, Ap, Ma

CRUCIFERAE - Mustard Family

Alliaria officinalis Andr. - garlic mustard; N, Ma

Arabis canadensis L. - sicklepod; S, Je, Jy

Barbarea vulgaris R.Br. - winter cress; *, T, Ma

SAXIFRAGACEAE - Saxifrage Family

Ribes rotundifolium Michx. - smooth gooseberry; *, T, Ma

HAMAMELIDACEAE - Witch-hazel. Family

Hamamelis virginiana L. - witch-hazel; E, Fall

ROSACEAE - Rose Family

Agrimonia striata Michx. - striate agrimony; S, Au

Crataegus macrocarpa Ashe - variable hawthorn; *, T, Ma

Fragaria virginiana Duchesne - Virginia strawberry; *, T, Ma, Je

Gillenia trifoliata (L.) Moench. - bowman's root; *, S, Je, Jy

Potentilla canadensis L. - Canada cinquefoil; *, T, Ma, Je, Jy

Prunus serotina Ehrh. - wild black cherry; *, T, Ma, Je

P. virginiana L. - choke cherry; *, T, Ma

Pyrus americana (Marsh.) DC. - mountain ash; S, E, Je

P. arbutifolia (L.) L.f. - red chokeberry; *, T, Ma

P. coronaria L. - wild crabapple; *, Ma

P. melanocarpa (Michx.) Willd. - black chokeberry; *, N, E, Ma, Je

Rosa Carolina L. - pasture rose; *, T, Jy

R. eglanteria L. - sweetbrier; E, Je

Rubus allegheniensis Porter - Allegheny blackberry; *, T, Je

R. flagellaris Willd. - dewberry; *, T, Je, Jy

R. hispidus L. - groundberry; *, Jy

Sanguisorba canadensis L. - burnet; *, Je, Jy, Au

Spiraea latifolia (Ait.) Borkh. - broadleaf meadowsweet; *, Jy, Au

LEGUMINOSAE - Pulse Family

Baptisia tinctoria (L.) R.Br. - wild indigo; *, T, Jy, Au

Desmodium rotundifolium DC. - S, E, Au

Melilotus alba Desr. - white sweet clover; S, E, Jy, Au

M. officinalis (L.) Lam. - yellow 'sweet clover; E, Jy

Robinia pseudo-acacia L. - black locust; T, Je

Trifolium agrarium L. - yellow hop clover; T, Je, Jy, Au

T. campestre Schreber - low hop clover; N, E, Au

T. pratense L. - red clover; T, Je, Jy, Au

T. repens L. - white clover; T, Je, Jy, Au

OXALIDACEAE - Wood Sorrel Family

Oxalis europaea Jord. - yellow wood sorrel; *, T, Je, Jy, Au

UMBELLIFERAE - Carrot Family

Angelica venenosa (Greenway) Fernald - hairy angelica; *,Au
Cicuta maculata L. - water hemlock; *,Au
Daucus carota L. - wild carrot; *,T,Jy,Au
Pastinaca sativa L. - parsnip; E,Jy
Thaspium trifoliatum (L.) Gray - woodland meadow-parsnip: ' *,T,'Ma

CORNACEAE - Dogwood Family

Cornus alternifolia L.f. - alternate-leaved dogwood; E,Je
C. florida L. - flowering dogwood; E,Ma
C. racemosa Lam. - panicle dogwood; *,Jy

PYROLAGEAE

Pyrola rotundifolia L. - round-leaved American wintergreen; N,Jy

ERICACEAE - Heath Family

Gaylussacia baccata (Wang.) K. Koch. - black huckleberry; N,E,Je
Kalmia latifolia L. - mountain laurel; E,Je
Lyonia ligustrina (L.) DC. - maleberry; *,T,Jy,Au
Menziesia pilosa (Michx.) Juss. - Allegheny menziesia; E,Ma
Rhododendron roseum (Loesel.) Rehd. - rose azalea; N,W,Ma,Je
Vaccinium angustifolium Ait. - early low blueberry; T,Ma,Je
V. stamineum L. - deerberry; N,S,Ma,Je
V. stamineum L. var. neglectum (Small) Deam - smooth deerberry; N,Ma,Je
V. vacillans Torr. - late low blueberry; T,Je

PRIMULACEAE - Primrose Family

Lysimachia ciliata L. - fringed loosestrife; *,E,W,Jy
L. quadrifolia L. - whorled loosestrife; *,T,Jy

OLEACEAE - Olive Family

Syringa vulgaris L. - lilac; E,Ma

GENTIANACEAE - Gentian Family

Gentiana quinquefolia L. - five-flowered gentian; T,Se

APOCYNACEAE - Dogbane Family

Apocynum androsaemifolium L. - spreading dogbane; N,E,Je,Jy,Au
A. cannabinum L. - Indian hemp; *,T,Jy

ASCLEPIADACEAE - Milkweed Family

Asclepias exaltata L. - poke milkweed; *,T,Jy
A. quadrifolia Jaquin - four-leaved milkweed; N,Je
A. syriaca L. - common milkweed; *,T,Jy,Au
A. tuberosa L. - butterfly weed; T,Jy,Au

CONVOLVULACEAE - Morning-glory Family

Convolvulus sepium L. - hedge bindweed; *,T,Je,Jy
C. spithameus L. - upright bindweed; T,Je,Jy

LABIATAE - Mint Family

Lycopus virginicus L. - bugleweed; *,S,Au
Monarda clinopodia L. - basil balm; N,S,Jy,Au
Nepeta cataria L. - catnip; S,Au
Prunella vulgaris L. - bumblebee weed; *,T,Jy,Au
Pycnanthemum pycnanthemoides (Leavenw.) Fernald - southern mountain mint: S,Au
Satureja vulgaris (L.) Fritsch - field basil; *,T,Jy,Au

GERANIACEAE - Geranium Family

Geranium columbinum L. - long-stalked crane's-bill; N,E,Jy

G. maculatum L. - wild geranium; *,T,Ma,Je,Jy

RUTACEAE - Rue Family

Ptelea trifoliata L. - hoptree; *,Jy

CALLITRICHACEAE - Water Starwort Family

Callitriche heterophylla Pursh - larger water starwort; *,Ma

ANACARDIACEAE - Cashew Family

Rhus copallina L. - shining sumac; SE,Jy,Au

R. glabra L. - smooth sumac; T,Jy

R. radicans L. - poison ivy; S

R. typhina L. - staghorn sumac; E,Jy

AQUIFOLIACEAE - Holly Family

Ilex montana T. & C. - mountain holly; N,E,Je

I. verticillata (L.) Gray - black alder; *,E,Jy

CELASTRACEAE - Stafftree Family

Celastrus orbiculata Thunb. - bittersweet; S,E,Je

ACERACEAE - Maple Family

Acer pensylvanicum L. - striped maple; NE,NW

A. rubrum L. - red maple; *,T,Ap

VITACEAE - Grape Family

Farthenocissus quinquefolia (L.) Planch. - Virginia creeper; S

MALVACEAE - Mallow Family

Abutilon theophrasti Medic. - velvetleaf; N

GUTTIFERAE - St. John's-wort Family

Hypericum multilum L. - small-flowered St. John's-wort; *,Jy,Au

H. perforatum L. - common St. John's-wort; *,T,Jy,Au

H. punctatum Lam. - dotted St. John's-wort; *,Jy,Au

VIOLACEAE - Violet Family

Viola cucullata Ait. - marsh blue violet; *,Ma

V. palmata L. x V. papilionaceae Pursh. - early wood violet x common violet;
S,E,Ma

V. papilionaceae Pursh. - common violet; T,Ma

V. pensylvanica Michx. - smooth yellow violet; SW,Ma

V. sagittata Ait. - arrow-leaf violet; T,Ma

ONAGRACEAE - Evening-primrose Family

Epilobium angustifolium L. - fireweed; S,W,Jy

E. leptophyllum Raf. - linear-leaved willow-herb; *,Au

Oenothera fruticosa L. - narrow-leaved sundrops; NW,Jy

O. parviflora L. - northern evening primrose; *,S,E,Au,Se

ARALIACEAE - Ginseng Family

Aralia nudicaulis L. - wild sarsaparilla; N,Ma

SOLONACEAE - Nightshade Family

Solanum carolinense L. - horse-nettle; N,S,Jy

SCROPHULARIACEAE - Figwort Family

Gratiola neglecta Torr. - clammy hedge-hyssop; *,Au

Linaria vulgaris Hill. - toadflax; N,Jy,Au

Pedicularis canadensis L. - common lousewort; T,Ma

Penstemon hirsutus (L.) Willd. - hairy beardtongue; *,T,Je,Jy

P. laevigatus Soldan. ex Ait. - smooth beardtongue; SE,Je

Scrophularia lanceolata Pursh - hare figwort; T,Je,Jy

Verbascum thapsus L. - great mullein; S,E,Jy,Au

Veronica officinalis L. - common speedwell; N,Je

Veronicastrum virginicum (L.) Farwell - culver's-root; *,Au

PLANTAGINACEAE - Plantain Family

Plantago lanceolata L. - buckhorn plantain; N,Je,Jy

P. rugelii Dene. - common plantain; E,Jy

RUBIACEAE - Madder Family

Diodia teres Walt. - rough buttonweed; N,E,Au

Houstonia caerulea L. - bluets; *,T,Ma,Je,Jy

H. longifolia Gaertn. - long-leaved summer bluets; T,Jy,Au •

CAPRIFOLIACEAE - Honeysuckle Family

Symphoricarpos orbiculatus Moench. - Indian current; N,E,Au

Triosteum perfoliatum L. - tinker's weed; *,T,Je,Jy

Viburnum recognitum Fernald - smooth arrowwood; *,E,Je

LOBELIACEAE - Lobelia Family

Lobelia inflata L. - Indian tobacco; S,Au

COMPOSITAE - Composite Family

Achillea millefolium L. - yarrow; *,T,Jy,Au

Ambrosia artemisiifolia L. - common ragweed; *,T,Au

Antennaria neglecta Greene - field pussytoes; T,Ma

A. plantaginifolia (L.) Richards. - plantainleaf everlasting; T,Ma

Arctium minus (Hill) Bernh. - common burdock; N

Aster dumosus L. - bushy aster; *,T,Au,Se

A. paternus Cronq. - white-topped aster; E,Jy

A. radula Ait. - low rough aster; *,Se

A. umbellatus Mill. - flat-top white aster; *,S,Au

A. undulatus L. - wavy-leaf aster; *,T,Au,Se

Bidens frondosa L. - beggar-ticks; *,Se

Cacalia atriplicifolia L. - pale Indian plantain; *,T,Jy,Au

Centaurea maculosa Lam. - spotted knapweed; T,Jy,Au,Se

Chrysanthemum leucanthemum L. - ox-eye daisy; *,T,Jy,Au

Cichorium intybus L. - chickory; N,Au

Cirsium pumilum (Nutt.) Spreng. - pasture thistle; T,Jy,Au

C. vulgare (Savi) Tenore - common thistle; *,T,Au,Se

Erechtites hieracifolia (L.) Raf. - fireweed; S,Se

Erigeron annuus (L.) Pers. - white-top; *,T,Jy,Au

E. strigosus Muhl. - daisy fleabane; N,Je

Eupatorium perfoliatum L. - boneset; *,Au

E. rugosum Houtt. - white snakeroot; S,Au

Gnaphalium obtusifolium L. - cudweed; S,Se

G. uliginosum L. - low cudweed; *,Au
Hieracium pilosella L. - mouse-ear hawkweed; N,Je
H. pratense Tausch. - king devil; *,T,J'e,Jy
H. scabrum Michx. - rough hawkweed; N,S,Au,Se
H. venosum L. - rattlesnake-weed; *,N,Jy
Lactuca canadensis L. - wild lettuce; *,T,Jy
Parthenium integrifolium L. - American feverfew; N,Se
Rudbeckia hirta L. - black-eyed Susan; T,Jy,Au
R. laciniata L. - tall coneflower; *,Au
Senecio aureus L. - golden ragwort; *,T,Ma,Je
S. smallii Britt. - Small's ragwort; SE,SW,Jy
Solidago bicolor L. - silverrod; *,T,Au,Se
S. canadensis L. - Canada goldenrod; S,Se
S. gigantea Ait. - late goldenrod; S,E,Se
S. graminifolia (L.) Salisb. - grass-leaved goldenrod; S,SW,Au,Se
S. juncea Ait. - early goldenrod; *,T,Jy,Au,Se
S. nemoralis Ait. - oldfield goldenrod; *,N,S,Au,Se
S. rugosa Ait. - wrinkled-leaf goldenrod; *,Au,Se
S. squarrosa Muhl. - squarrose goldenrod; N,Au,Se
Taraxacum officinale Weber, - common dandelion; *,T,Ma
Tragopogon major Jacq. - goat's beard; T,Je
Vernonia noveboracensis (L.) Michx. - New York ironweed; *,Au,Se

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REFERENCES CITED

Baxter, Emily E. 1978. Plant composition responses to single and repeated prescribed Burns at Big Meadows, Shenendoah National Park. Master's thesis, James Madison University, Harrisonburg, Va.

Baxter, Emily E. 1980. Vascular plants of the meadow at Big Meadows. Shenendoah National Park. James Madison University, Harrisonburg, Va.

Fernald, M. 1950. Gray's manual of botany, 8th ed. American Book Co., New York.

Gleason, H. A. 1952. New- Britton and Brown illustrated flora of the northeastern United States- and adjacent Canada, 3 vols, MacMillan Publishing Co., New York.

Strausbaugh, P. D., and E. L. Core, 1970-1977, Flora of West Virginia, introduction and parts I-IV. West Virginia University, Morgantown, W. Va. and Seneca Books, Grantsville, W. VA.

James Madison University
Biology Department
Harrisonburg, VA 22807