

FINAL REPORT

Submitted: January, 1988

Period Covered: September 1986 - January 1988

MAR-27

FLORA OF RICHMOND NATIONAL
BATTLEFIELD PARK
(BEAVER DAM CREEK, MALVERN HILL,
AND PARKER'S BATTERY UNITS)

W. JOHN HAYDEN, Department of Biology, University of Richmond,
Richmond, Virginia 23173

MELANIE L. HASKINS, Department of Biology, University of
Richmond, Richmond, Virginia 23173

MILES F. JOHNSON, Department of Biology, Virginia Commonwealth
University, Richmond, Virginia 23298

Cooperative Agreement CA4000-6-8013

Table of Contents

Abstract	1
Introduction	2
Methods	2
Results	
Beaver Dam Creek	3
Malvern Hill	6
Parker's Battery	9
Checklist of Species	11
Literature Cited	34

Abstract

Three units of Richmond National Battlefield Park were surveyed during the fall of 1986 and the spring and summer of 1987 in order to complete an inventory of the vascular flora for the park which was initiated in 1985. Each site was visited at three to four week intervals and species were recorded as they were encountered or collected for later study. This report includes descriptions and maps of vegetation zones of the park units studied and a checklist indicating the occurrence of each species by unit. The checklist includes 544 species and 885 individual records of species per particular park unit. Native plants make up 79 percent of the species in the checklist; the remaining 21 percent are exotics, largely adventive from Eurasia. No state of federal rare, threatened, or endangered species were located.

Introduction

Richmond National Battlefield Park consists of eleven non-contiguous units located in Chesterfield, Hanover, and Henrico counties plus the city of Richmond. Nine of these units include areas of natural vegetation; these nine units comprise a total area of about 763 acres. In 1985, inventories of the vascular flora were compiled for six units of the Park (Fort Harrison, Cold Harbor, Fort Darling [Drewery's Bluff], Watt House, Chickahominy Bluffs, and Garthright House) (Hayden & Johnson 1986). This report, covering the Beaver Dam Creek, Malvern Hill, and Parker's Battery units completes the flora inventory for Richmond National Battlefield Park. Collectively, the three units covered in this report constitute about 155 acres, or 20 percent of the park's total acreage. All three are located in the upper coastal plain of Virginia.

Methods

Procedures for field work, collection of specimens, record keeping, and production of the report followed those reported in Hayden & Johnson (1986) which may be consulted for full details. Sites were surveyed every two or three weeks during September and October of 1986 and April through September of 1987. As they were encountered, species were recorded on a master list of taxa which could be expected to occur in central Virginia based on the data of Harvill et al. (1986). Specimens which could not be sight identified were collected for dissection and identification in the laboratory. Nomenclature largely follows Radford et al. (1968). Specimens collected have been deposited in the herbaria of the University of Richmond and Virginia Commonwealth University.

Results

BEAVER DAM CREEK UNIT

The Beaver Dam Creek unit is a small parcel of land (approximately 14 acres) centering on a short stretch of Beaver Dam (Bell's) Creek at what was formerly the site of a mill and mill pond. Presently, the only obvious evidence of the milling operation is the now mostly dry millrace extending along the eastern border of the unit and extending as a narrow arm to the north of state route 156. Habitat zones within the unit (Map 1) may be defined as the creek and adjacent swampy banks, some of which are shallow beaver impoundments, wooded edges of the stream along the old millrace and at the northwest corner, and the grassy area surrounding the parking lot and interpretive display. In addition, a small patch of "parkland" (scattered trees with underbrush periodically mowed) is present between the undisturbed woods and the lawn.

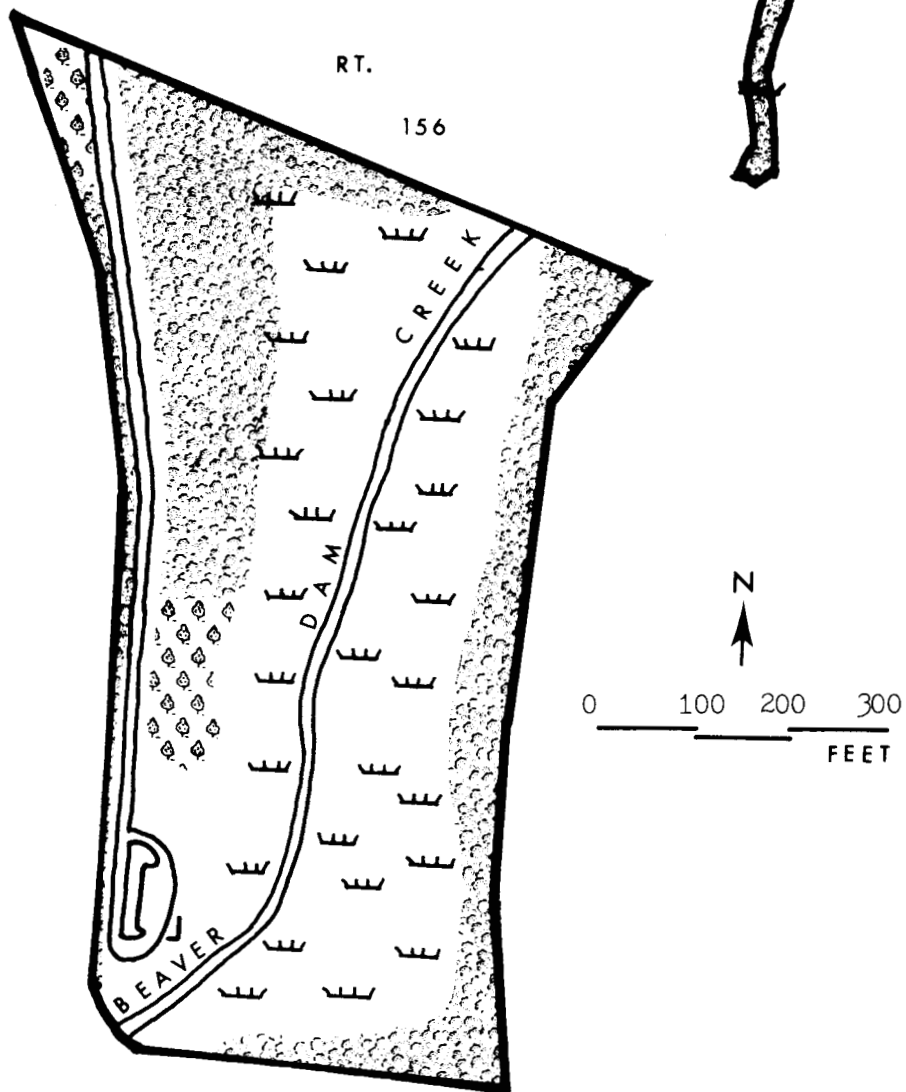
Photographs of the area taken in the 1950's depict a different physiography from that of the present. What are now wide swampy areas with near-surface or standing water were formerly grassy lawn-like areas with scattered trees. The transformation may reasonably be attributed to the activity of beavers and siltation of their shallow impoundments. The resulting rise in water level and saturation of the soil led to the death of most of the trees on either side of the creek. Many of these dead trees are still standing and offer a haven to various woodpeckers and other cavity-nesting birds. Presently the swampy areas are dominated by Carex spp. (sedges), Leersia spp. (cut grass), Peltandra virginica (arrow arum), Pontederia cordata (pickerel weed), Juncus spp. (rushes) and Boehmeria cylindrica. Other notable, but less abundant species of this area include Aneilema keisak, Scirpus cyperinus (bullrush), Heteranthera reniformis, Potamogeton epihydrous (pondweed), Sparganium americanum (burreed), Typha latifolia (cattail), Hydrocotyle ranunculoides, Impatiens capensis (touch-me-not), Callitriche heterophylla (water starwort), Cuscuta spp. (dodder), Utricularia spp. (bladderwort), Decodon verticillatus, Ludwigia spp., Ranunculus pusillus, Cephalanthus occidentalis (buttonbush), Itea virginica (Virginia willow), Gratiola neglecta, and Lindernia dubia. Vallisneria americana (tapegrass) was found growing in the creek channel.

The wooded border is populated with tree species such as Acer rubrum (red maple), Liquidambar styraciflua (sweet gum), Liriodendron tulipifera (tulip poplar), Quercus spp. (oaks).

The grassy area surrounding the parking lot and interpretive display is characterized by weedy species that withstand periodic mowing; a large proportion of these are exotic Eurasian weeds. Notable species include Anthoxanthum

odoratum, Festuca obtusa (tall fescue), Phleum pratense (timothy), Viola rafinesquii (Confederate violet), Lamium amplexicaule and L. purpurea (henbits), Taraxacum officinale (dandelion), Hypochoeris radicata (cat's ear), Geranium molle (dove's foot), Scleranthus annuus (knawel), Stellaria media (chickweed), Cardamine hirsuta, Plantago spp. (plantains), Trifolium spp. (clovers), Lespedeza stipulacea (Korean clover) and L. striata (Japanese clover). At the bottom of the slope below the interpretive display the moist soil near the creek's edge yielded several distinctive species, including Oldenlandia uniflora, Cyperus tenuifolius, and Myosotis discolor (forget-me-not).

Map 1. Vegetation zones at Beaver Dam Creek,
Richmond National Battlefield Park



-  lawns, edge of road
-  swamp, beaver impoundments
-  forest
-  "parkland"

MALVERN HILL UNIT

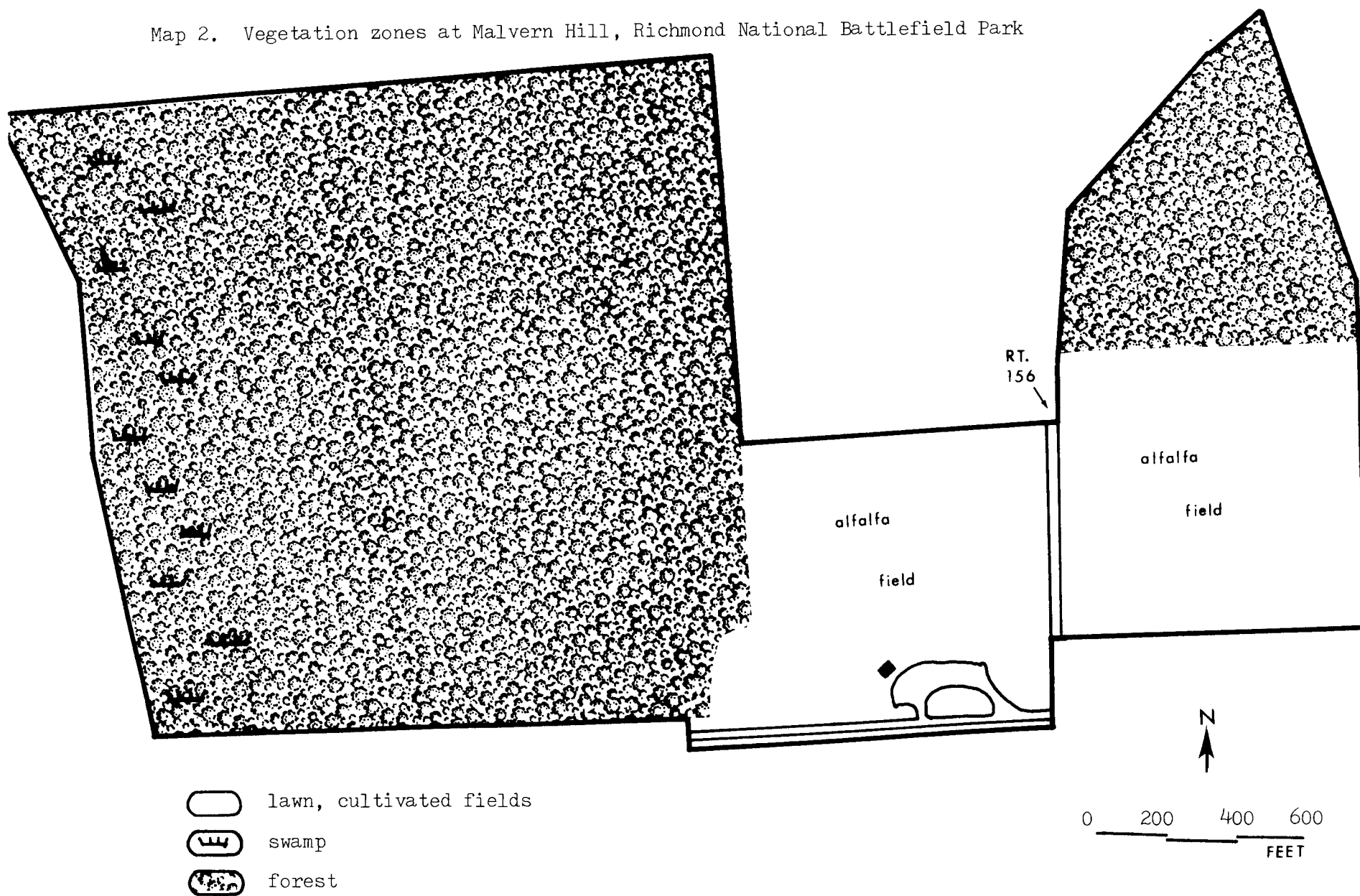
The Malvern Hill unit, at 131 acres, is one of the largest units of the park. Habitats (Map 2) range from a dry hilltop which is partly open field and partly forested, a series of wooded sloping hillsides, and a moist wooded bottom along the western border of the unit.

The open hilltop areas of the Malvern Hill unit possess many of the same species noted for the lawn area at Beaver Dam Creek, although the larger area and greater variation in terrain and maintenance regimes is correlated with the occurrence of several additional species. For example, the cultivated field (in alfalfa at the time of the study) included a number of crucifers such as Brassica napus (rape), Raphanus raphanistrum (radish), and Calepina irregularis as well as several species of Cyperus. Roadsides adjacent to the cultivated fields yielded Phyllanthus caroliniensis, Bromus japonicus (brome grass), and Cassia obtusifolia (sicklepod).

The wooded areas of Malvern Hill represent a transitional stage in the succession from pine woods to hardwood forest. Throughout the wooded areas large Pinus taeda (loblolly pine) appear to be near the end of their life span, and many have fallen in recent years. The hardwood complement of these forested areas is composed largely of Quercus spp. (oaks), Carya tomentosa (mockernut), Fagus grandifolia (beech), Nyssa sylvatica (sourgum), Liriodendron tulipifera (tulip poplar), and Liquidambar styraciflua (sweet gum); the latter two species are especially common in the moist bottomland forest at the western portion of the unit where they are joined by Quercus palustris (pin oak) and Fraxinus profunda (pumpkin ash). Understory elements include Ilex opaca (American holly), Cornus florida (dogwood), and Vaccinium spp. in hilltop and slope areas. Understory in the moist bottom forest is a sparse population of Lindera benzoin, including a few Ilex decidua (possum haw) and Clethra alnifolia (sweet pepperbush). The herb layer of the dry hilltop forests is characteristically poorly developed, consisting of scattered individuals of species such as Chimaphila maculata (pipsissewa), Mitchella repens (partridge berry), Tipularia discolor (crane fly orchid), and Cypripedium acaule (pink lady's slipper). One exceptional area for herb layer diversity is located along the northern border of the unit in the slope region between the hilltop forest to the east and the bottomland forest to the west; apparently the combination of water seepage from the slope and the greater insolation from the logged area north of the park unit combine to foster a rich and diverse herb layer. In this area Lycopodium flabelliforme (running cedar) forms large colonies, with smaller growths of Lycopodium lucidulum (shining clubmoss). Between these clubmosses, the inconspicuous Malaxis unifolia (green adder's tongue orchid) and the showy Goodyera

pubescens are fairly abundant. This region also included three individuals of Liparis lilifolia (lily-leaved twayblade) and at least two other species of orchid which were not observed in flowering condition (Habenaria spp.?). The herb layer of the moist bottomland forest is also richly developed, although dominated by the exotic and rampantly invasive grass Microstegium vimineum. Other herbs occupying spots without Microstegium include Phryma leptostachya (droopseed), Circaea lutetiana ssp. canadensis (enchanters' nightshade), various Carex spp. (sedge), Glyceria striata, Cinna arundinacea (wood reed), Penthorum sedoides (ditch stonecrop), and Lycopus spp. (water horehound). Mimulus alatus (monkey flower), Saururus cernuus (lizard tail), and Pluchea camphorata (marsh fleabane) were observed only at the ditch which marks the extreme western border of the unit.

Map 2. Vegetation zones at Malvern Hill, Richmond National Battlefield Park



PARKER'S BATTERY UNIT

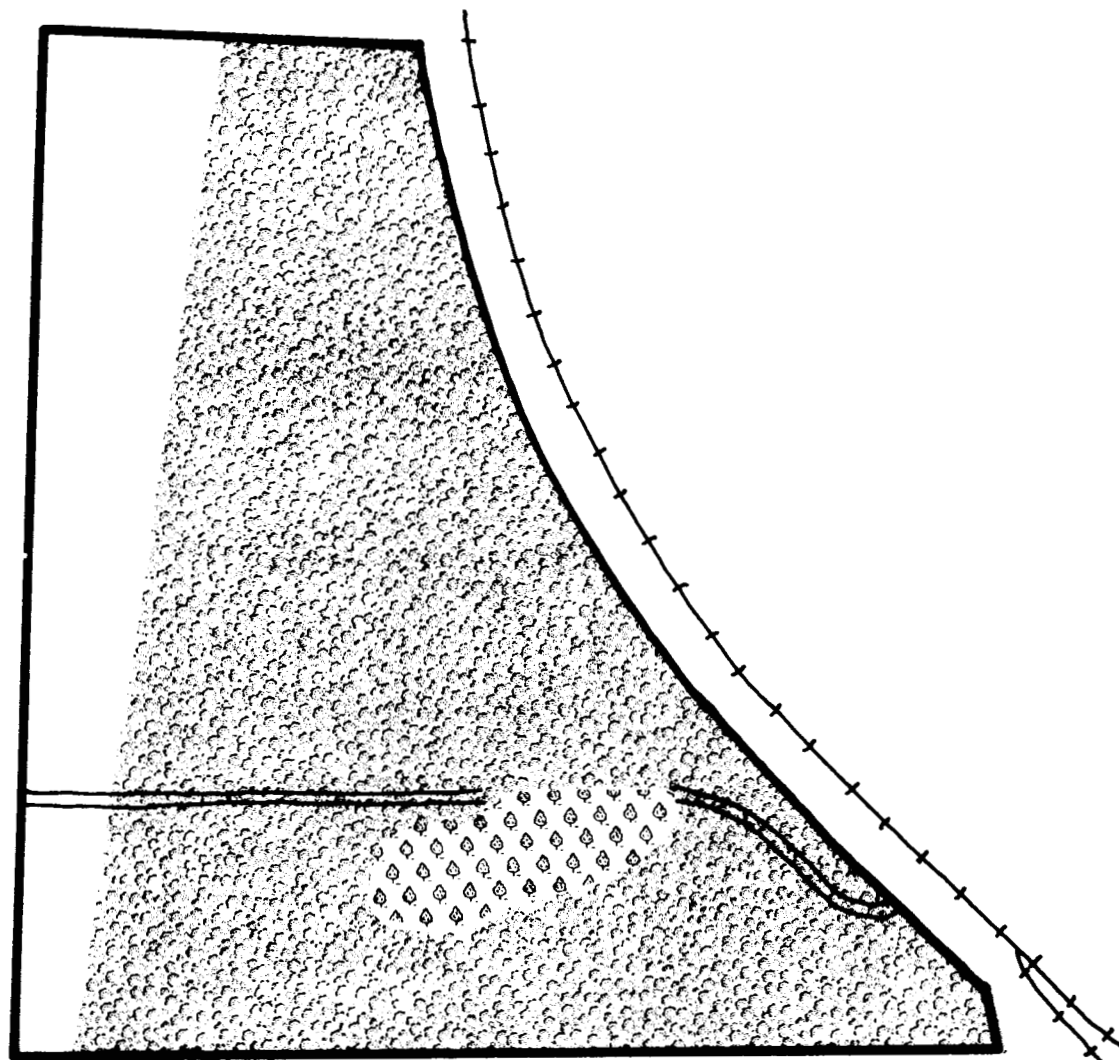
Parker's Battery unit is a small (10 acres) flat area consisting of two major habitats (Map 3), the dry woods occupying the eastern two-thirds of the unit, and the cleared area under the power transmission lines at the western third of the unit. Other distinctive small areas within the two major zones include the southeast corner of the unit and the border of the woods along the Seaboard Coastline Railroad tracks.

Composition of the woods at Parker's Battery is very much like that of the hilltops at Malvern Hill, with old Pinus taeda (loblolly pine) being replaced with the same assortment of hardwoods and understory plants. In addition to the species listed for Malvern Hill, Parker's Battery also includes scattered trees of Celtis occidentalis (hackberry) and two specimens of Symplocos tinctoria (sweetleaf), an understory shrub not encountered in any of the other units of Richmond Battlefield Park. The herb layer, too, is composed of many of the same species as the dry woodlands at Malvern Hill. The somewhat more moist southeast corner differed in the presence of Ilex decidua (possum haw), Eupatorium serotinum (thoroughwort), and a small population of Microstegium vimineum.

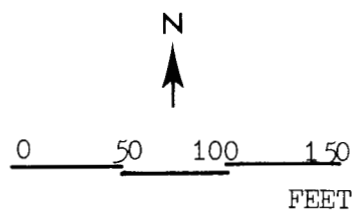
The cleared area under the electric power transmission lines is dominated by the stump shoots of forest trees, mostly various oaks with some Sassafras albidum (sassafras), Rhus copallina (shining sumac), and Rhus glabra (smooth sumac). These woody plants are periodically bush-hogged. Diverse herbaceous plants occur between these stump shoots, e.g., Pteridium aquilinum (bracken fern), Silphium compositum, Erianthus contortus (plume grass), Eupatorium spp. (thoroughworts), Asclepias tuberosa (butterfly weed), Andropogon virginicus (broomsedge), Andropogon scoparius (little blue stem), Teesdalia nudicaulis, and Rhus radicans (poison ivy).

The open edge of the woods along the railroad tracks supports a distinctive assemblage of plants. Two notable shrubs in this area are Crataegus uniflora, and Ilex ambigua, both of which within the park as a whole are unique to this unit. Herbaceous plants of this area include Helianthemum canadense (frostweed), Euphorbia corollata (flowering spurge), and Asclepias amplexicaulis (milkweed), as well as such common weeds as Cassia fasciculata (partridge pea), Hypericum gentianoides (pinweed), Erigeron canadensis (fleabane), and Diodia teres. A few individuals of Tragia urens were present near the northern end of this area; this species was encountered previously in this study only at Cold Harbor.

Map 3. Vegetation zones at Parker's Battery, Richmond National
Battlefield Park



-  power line right-of-way
-  forest
-  "parkland"



CHECKLIST OF SPECIES

The following checklist details the occurrence of all taxa encountered in the units studied. Each unit has been coded as follows: BD = Beaver Dam Creek; MH = Malvern Hill; PB = Parker's Battery. A total of 544 different species were recorded, of which 116, or 21 percent, are naturalized exotics. The vast majority of the exotics encountered are naturalized from Eurasia. An asterisk (*) indicates exotic species in the checklist. Overall, the checklist includes 885 individual records of species occurring in particular park units.

The list is arranged by family in the following order: fern allies, ferns, conifers, monocots, and dicots. Within the monocots and dicots, families are listed alphabetically. Scientific and common names generally follow Radford et al. (1968). For genera in which several species are known by the same common name, that common name follows the last species of the genus. The checklist also indicates collectors and collection numbers for the 249 herbarium specimens prepared in the course of the study. Collection numbers preceded by "JH" belong to Johnson and Hayden's series, those preceded by "H" belong to Hayden's series. The University of Richmond herbarium has a complete set of herbarium specimens; some duplicates are deposited at the Virginia Commonwealth University herbarium.

None of the plant species encountered in Richmond National Battlefield Park were determined to be rare or endangered, according to the published lists in Linzey (1979) nor do they appear on Fish and Wildlife Service (1980, 1983) lists, nor on the Virginia Natural Heritage Program's lists. It should be noted, however, that the name Vaccinium corymbosum in the following list is applied in the broad sense to a widespread complex of closely related forms that are sometimes segregated as distinct species. When these segregates are accorded the status of species, the name V. corymbosum is applied to an element found in Virginia only in the mountains, and is justifiably considered rare within the state. None of the species of Vaccinium in Richmond National Battlefield Park, however, could be considered rare or endangered.

NAME LOCALITIES: BD .. MH .. PB .. 12

FERN ALLIES

LYCOPODIACEAE

<u>Lycopodium flabelliforme</u> (Fernald) Blanchard (Running Pine)	BD	..	MH	..	..	..
<u>Lycopodium lucidulum</u> Michaux (Shining Clubmoss)	..	..	MH	..	..	..
<u>Lycopodium obscurum</u> L. (Groundpine)	..	..	MH	..	..	..

FERNS

OPHIOGLOSSACEAE

<u>Botrychium dissectum</u> Sprengel (Common Grapefern)	BD	..	MH	..	..	..
<u>Botrychium virginianum</u> (L.) Swartz (Rattlesnake Fern)	..	..	MH-JH274	..	..	..

OSMUNDACEAE

<u>Osmunda cinnamomea</u> L. (Cinnamon Fern)	BD	..	MH	..	..	..
<u>Osmunda regalis</u> L. (Royal Fern)	..	..	MH	..	..	..

POLYPODIACEAE

<u>Asplenium platyneuron</u> (L.) Oakes (Ebony Spleenwort)	BD	..	MH	..	..	..
<u>Athyrium asplenoides</u> (Michaux) A. Eaton (Southern Lady Fern)	BD	..	MH-JH224	..	..	..
<u>Dryopteris marginalis</u> (L.) Gray (Marginal Shield Fern)	..	..	MH	..	..	..
<u>Onoclea sensibilis</u> L. (Sensitive Fern)	BD	..	MH	..	..	..
<u>Polystichum acrostichoides</u> (Michaux) Schott (Christmas Fern)	BD	..	MH	..	PB	..
<u>Pteridium aquilinum</u> (L.) Kuhn (Bracken)	..	..	MH	..	PB-H1889	..
<u>Thelypteris noveboracensis</u> (L.) Nieuwland (New York Fern)	..	..	MH-H1841	..	..	..
<u>Woodwardia areolata</u> (L.) Moore (Netted Chain Fern)	BD	..	MH	..	..	..

CONIFERS

CUPRESSACEAE

<u>Juniperus virginiana</u> L. (Red Cedar)	BD	..	MH	..	PB	..
---	----	----	----	----	----	----

PINACEAE

<u>Pinus echinata</u> Miller (Short-Leaf Pine)	..	..	MH	..	PB	..
<u>Pinus taeda</u> L. (Loblolly Pine)	BD	..	MH	..	PB	..

NAME	LOCALITIES:	BD	..	MH	..	PB	..	13
<u>Pinus virginiana</u> Miller (Scrub Pine)		..	..	MH	..	PB	..	
MONOCOTS								
ALISMATACEAE								
<u>Alisma subcordatum</u> Raf. (Water-Plantain)		..	..	MH	..	..	..	
<u>Sagittaria latifolia</u> Willdenow (Arrowhead, Duck Potato)		BD	..	MH	..	..	..	
AMARYLLIDACEAE								
<u>Hypoxis hirsuta</u> (L.) Coville (Yellow Star-Grass)		..	..	MH-H1852	..	..	..	
* <u>Narcissus pseudonarcissus</u> L. (Daffodil)		BD	..	..	..	..	..	
ARACEAE								
<u>Arisaema triphyllum</u> (L.) Schott (Jack in the Pulpit, Indian Turnip)		..	..	MH	..	..	..	
<u>Peltandra virginica</u> (L.) Schott & Endlicher (Arrow Arum)		BD	..	..	..	..	..	
COMMELINACEAE								
<u>Aneilema keisak</u> Hasskarl		BD	..	..	..	..	..	
* <u>Commelina communis</u> L.		BD	..	MH	..	PB	..	
<u>Commelina diffusa</u> Burman f.		BD-JH253		MH-H1972	..	..	..	
<u>Commelina virginica</u> L. (Dayflower)		BD-H1697	..	..	..	..	..	
<u>Tradescantia virginiana</u> L. (Spiderwort)		BD	..	..	..	..	..	
CYPERACEAE								
<u>Bulbostylis capillaris</u> (L.) Clarke		..	..	MH-H1847	..	..	..	
<u>Carex alata</u> Torrey		..	..	MH-JH282	..	..	..	
<u>Carex caroliniana</u> Schweinitz		..	..	MH-JH285	..	..	..	
<u>Carex complanata</u> Torrey & Hooker		..	..	MH-H1839	..	..	..	
<u>Carex crinita</u> Lam.		BD	..	MH	..	..	..	
<u>Carex debilis</u> Michaux		BD-H1805	..	..	..	..	..	
<u>Carex flaccosperma</u> Dewey		BD-H1806		MH-JH290, H1842	..	..	..	
<u>Carex intumescens</u> Rudge		BD-H1799	..	..	..	..	..	
<u>Carex laevivaginata</u> (Kukenthal) Mackenzie		BD	..	..	..	..	..	
<u>Carex lupulina</u> Willdenow		BD-H1798	..	..	..	..	..	
<u>Carex lurida</u> Wahlenberg		BD-H1739		MH	..	..	..	
<u>Carex nigromarginata</u> Schweinitz		..	..	MH-JH258		PB-H1767	..	
<u>Carex normalis</u> Mackenzie		BD-H1801	..	..	PB	..	..	
<u>Carex stipata</u> Muhl. ex Schkuhr.		BD-H1797		MH-JH280, H1845	..	..	..	
<u>Carex swanii</u> (Fernald) Mackenzie		BD	..	MH-JH226, JH281	PB	..	..	
<u>Carex tribuloides</u> Wahlenberg		BD-H1800, H1811		MH-H1848	..	..	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	14
<u>Carex typhina</u> Michaux		..	..	MH-JH227, JH284	..	..		
<u>Carex vulpinoidea</u> Michaux (Sedge)		..	..	..	..	PB-H1829		
* <u>Cyperus compressus</u> L.		..	..	..	..	PB-H1686		
<u>Cyperus erythrorhizos</u> Muhl.		BD-JH250, H1967	..	..	..	..		
<u>Cyperus filiculmis</u> Vahl		BD-H1864	..	..	..	PB-H1686, H1836		
* <u>Cyperus iria</u> L.		..	..	..	..	PB-H1880		
<u>Cyperus lancastricensis</u> Porter		BD-H1865	..	..	..	PB-H1685, H1884		
<u>Cyperus odoratus</u> L.		..	..	MH-JH222	..	..		
<u>Cyperus ovularis</u> (Michaux) Torrey		..	..	MH-H1900	..	PB-H1894		
<u>Cyperus polystachyos</u> Rottboell var. <u>texensis</u> (Torrey) Fernald		BD-JH254	..	..	..	..		
<u>Cyperus retrorsus</u> Chapman		BD-JH244	..	..	..	..		
<u>Cyperus strigosus</u> L.		BD-JH249	..	..	..	..		
<u>Cyperus tenuifolius</u> (Steudel) Dandy (Sedge)		BD-H1968, JH255	..	..	..	..		
<u>Dulichium arundinaceum</u> (L.) Britton (Three-Way Sedge)		BD	..	MH	..	..	..	
<u>Eleocharis obtusa</u> (Willdenow) Schultes (Spike Rush)		BD-H1866	..	..	..	..		
<u>Fimbristylis autumnalis</u> (L.) R. & S.		BD-H1969	..	..	..	..		
<u>Scirpus atrovirens</u> Willdenow		..	..	MH-H1846	..	..		
<u>Scirpus cyperinus</u> (L.) Kunth (Bullrush)		BD	..	..	..	..	..	
DIOSCOREACEAE								
<u>Dioscorea villosa</u> L. (Wild Yam)		BD	..	..	..	PB	..	
HYDROCHARITACEAE								
<u>Vallisneria americana</u> Michaux (Tape Grass)		BD-H1870	..	..	..	..		
IRIDACEAE								
* <u>Iris germanica</u> L. (Bearded Iris)		..	..	MH	..	..	..	
<u>Sisyrinchium angustifolium</u> Miller (Blue-Eyed Grass)		..	..	MH	..	..	..	
JUNCACEAE								
<u>Juncus acuminatus</u> Michaux		BD-JH241, H1802	..	..	..	..		
<u>Juncus biflorus</u> Ell.		..	..	MH-H1843	..	..		
<u>Juncus bufonius</u> L.		..	..	MH-JH278	..	..		
<u>Juncus coriaceus</u> Mackenzie		BD	..	MH-H1844	..	..		
<u>Juncus effusus</u> L.		BD	..	MH	..	PB	..	
<u>Juncus tenuis</u> Willdenow (Rush)		BD-H1803	MH	..	PB	..		
<u>Luzula echinata</u> (Small) Hermann		..	..	..	..	PB-JH271		

NAME	LOCALITIES:	BD	..	MH	..	PB	..	15
<u>Luzula multiflora</u> (Retzius) Lejune (Wood Rush)		BD-H1768	..	..	..	PB	..	
LEMNACEAE								
<u>Spirodela polyrrhiza</u> (L.) Schleiden (Duckweed)		BD	..	..	..	..	..	
LILIACEAE								
* <u>Allium vineale</u> L. (Field Garlic)		BD	..	MH	..	PB	..	
* <u>Asparagus officinalis</u> L. (Asparagus)		BD	..	MH	..	PB	..	
* <u>Hemerocallis fulva</u> (L.) L. (Daylily)		BD	..	..	..	..	..	
<u>Medeola virginiana</u> L. (Indian Cucumber Root)		..	..	MH	..	..	..	
* <u>Muscari racemosum</u> (L.) Miller (Grape Hyacinth)		..	..	MH	..	..	..	
<u>Polygonatum biflorum</u> (Walter) Ell. (Solomon's Seal)		BD	..	..	..	PB	..	
<u>Smilacina racemosa</u> (L.) Desf. (False Solomon's Seal)		BD	..	MH	..	PB	..	
<u>Smilax bona-nox</u> L.		..	..	MH	..	PB	..	
<u>Smilax glauca</u> Walter		BD-H1729	..	..	..	PB-H1892	..	
<u>Smilax rotundifolia</u> L. (Greenbrier, Catbrier)		BD	..	MH	..	PB	..	
<u>Uvularia perfoliata</u> L. (Bellwort)		..	..	MH	..	..	..	
ORCHIDACEAE								
<u>Cypripedium acaule</u> Aiton (Pink Lady's Slipper)		..	..	MH	..	PB	..	
<u>Goodyera pubescens</u> (Willdenow) R. Brown (Downy Rattlesnake Plantain)		..	..	MH-JH232, H1906	..	..	..	
<u>Liparis lilifolia</u> (L.) Lindley (Lily-Leaved Twayblade)		..	..	MH	..	..	..	
<u>Malaxis unifolia</u> Michaux (Adder's Mouth Orchid)		..	..	MH	..	..	..	
<u>Tipularia discolor</u> (Pursh) Nuttall (Crane-Fly Orchid)		BD	..	MH	..	PB	..	
POACEAE								
<u>Agrostis perennans</u> (Walter) Tucker (Bent Grass)		..	..	MH-H1978	..	..	..	
<u>Agrostis stolonifera</u> L. (Redtop)		..	..	MH	..	PB-H1683	..	
* <u>Aira caryophyllea</u> L. (Hair Grass)		BD-H1794	..	..	..	PB	..	
<u>Andropogon scoparius</u> Michaux (Little Bluestem)		..	..	MH-JH228	..	PB-H1748	..	
<u>Andropogon ternarius</u> Michaux (Beard Grass, Broom-Straw)		..	..	..	..	PB-H1749	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	16
<u>Andropogon virginicus</u> L. (Broom Sedge)		BD-JH243		MH	..	PB	..	
* <u>Anthoxanthum odoratum</u> L. (Sweet Vernal Grass)		BD	..	MH	..	PB	..	
<u>Aristida curtissii</u> (Gray) Nash (Three Awn Grass)		..	..	..	..	PB-H1687		
* <u>Bromus inermis</u> Leysser		BD-H1810		..	..	..	..	
* <u>Bromus japonicus</u> Murray (Brome Grass)		..	..	MH-JH277		PB-H1830		
<u>Chasmanthium laxum</u> (L.) Yates		BD	..	MH	..	PB	..	
<u>Cinna arundinacea</u> L. (Wood Reed)		BD-JH248,		MH-JH230,	..	..		
		H1962		H1979				
* <u>Cynodon dactylon</u> (L.) Persoon (Bermuda Grass)		BD	..	MH	..	..	..	
* <u>Dactylis glomerata</u> L. (Orchard Grass)		BD	..	MH	..	..	..	
<u>Danthonia sericea</u> Nuttall		BD	..	MH	..	PB	..	
<u>Danthonia spicata</u> (L.) R. & S. (Oat Grass)		..	..	MH	..	PB	..	
<u>Dichanthelium boscii</u> Poiret		..	..	MH-H1855	..	..		
<u>Dichanthelium clandestinum</u> (L.) Gould		BD-H1804		..	..	..	..	
<u>Dichanthelium dichotomum</u> (L.) Gould		BD	..	MH-JH279		PB	..	
<u>Dichanthelium laxiflorum</u> (Lam.) Gould		..	..	MH-JH287		PB-H1831		
<u>Dichanthelium linearifolium</u> (Scribn.) Gould		..	..	..	..	PB-JH273,		
						H1891		
<u>Dichanthelium scoparium</u> (Lam.) Gould (Panic Grass)		..	..	MH-JH286	..	..		
* <u>Digitaria sanguinalis</u> (L.) Scopali (Crab Grass)		BD	..	MH	..	PB	..	
<u>Echinochloa crusgalli</u> (L.) Beauvois		..	..	MH	..	PB-H1886		
* <u>Eleusine indica</u> (L.) Gaertner (Barnyard Grass)		BD-H1699		MH	..	PB-H1882		
<u>Elymus virginicus</u> L. (Wild Rye Grass)		BD-H1861		..	..	..	..	
<u>Eragrostis capillaris</u> (L.) Nees		BD	..	MH	..	PB	..	
* <u>Eragrostis curvula</u> (Schrader) Nees		BD-H1793		..	..	..	..	
* <u>Eragrostis pilosa</u> (L.) Beauvois		..	..	..	..	PB-H1881		
<u>Eragrostis spectabilis</u> (Pursh) Steudel (Love Grass)		..	..	MH-H1726		PB	..	
<u>Erianthus contortus</u> Ell. (Beard Grass, Plume Grass)		..	..	..	..	PB-H1885		
<u>Festuca obtusa</u> Biehler		BD-H1868		MH	..	PB	..	
* <u>Festuca ovina</u> L. (Fescue)		..	..	MH	..	..	..	
<u>Glyceria striata</u> (Lam.) Hitchcock (Manna Grass)		BD-H1732		MH-JH288	..	..		
* <u>Holcus lanatus</u> L. (Velvet Grass)		BD-H1808		..	..	..	..	
* <u>Hordeum vulgare</u> L. (Barley)		..	..	MH-JH276		PB	..	
<u>Leersia oryzoides</u> (L.) Swartz		BD-JH247		MH	..	..	..	
<u>Leersia virginica</u> Willdenow (Cut Grass)		BD	..	MH	..	PB-H1692		

NAME	LOCALITIES:	BD	..	MH	..	PB	..	17
* <u>Lolium multiflorum</u> Lam. (Rye Grass)		..	..	MH-JH275	..	..		
* <u>Microstegium vimineum</u> (Trinius) A. Camus		BD-JH252		MH	..	PB-H1752		
<u>Muhlenbergia schreberi</u> J. F. Gmelin (Muhly)		..	..	MH-JH229	..	..		
<u>Panicum agrostoides</u> Sprengel		BD	..	MH	..	..	..	
<u>Panicum anceps</u> Michaux		..	..	MH	..	PB-H1693,		
						H1887		
<u>Panicum dichotomiflorum</u> Michaux (Panic Grass)		..	..	MH	..	PB	..	
<u>Paspalum ciliatum</u> Michaux		BD-H1698		MH	..	..	..	
<u>Paspalum floridanum</u> Michaux		BD-JH242		MH-H1898	..	..	..	
<u>Paspalum laeve</u> Michaux		BD	..	MH	..	PB-H1688		
* <u>Phleum pratense</u> L. (Timothy)		BD-H1867	..	..	..	..	..	
* <u>Poa annua</u> L.		BD	..	..	..	..	..	
* <u>Poa compressa</u> L.		..	..	MH	..	PB-H1834		
<u>Poa pratensis</u> L. (Blue Grass)		BD-H1795		MH-JH262		PB	..	
* <u>Setaria faberi</u> W. Hermann		BD-H1965		MH-H1909	..	..		
<u>Setaria geniculata</u> (Lam.) Beauvois		..	..	MH-H1899	..	..		
* <u>Setaria glauca</u> (L.) Beauvois (Foxtail Grass)		BD	..	MH	..	PB-H1689		
* <u>Sorghum halepense</u> (L.) Persoon (Johnson Grass)		..	..	MH	..	..	..	
<u>Sphenopholis intermedia</u> (Rydberg) Rydberg		..	..	..	..	PB-JH270		
<u>Sphenopholis obtusata</u> (Michaux) Scribner (Wedge Grass)		..	..	MH-JH289		PB-JH272		
<u>Stipa avenacea</u> L. (Needle Grass)		..	..	..	..	PB	..	
<u>Tridens flavus</u> (L.) Hitchcock (Tall Redtop)		BD	..	MH	..	PB	..	
* <u>Triticum aestivum</u> L. (Wheat)		BD	..	..	..	..	..	
PONTEDERIACEAE								
<u>Heteranthera reniformis</u> R. & P. (Mud-Plantain)		BD-H1869	..	..	..	..		
<u>Pontederia cordata</u> L. (Pickerel-Weed)		BD-H1702	..	..	..	..		
POTAMOGETONACEAE								
<u>Potamogeton epihydrous</u> Raf. (Pondweed)		BD-H1705,	..	..	..	..		
		H1873						
SPARGANIACEAE								
<u>Sparganium americanum</u> Nuttall (Burr-Reed)		BD-H1703	..	..	..	..		
TYPHACEAE								
<u>Typha latifolia</u> L. (Cat-Tail)		BD	..	..	..	..	..	

NAME

LOCALITIES:

BD .. MH .. PB .. 18

DICOTS

ACANTHACEAE

Ruellia caroliniensis (Walter) Steudel

BD

ACERACEAE

Acer negundo L.
(Box Elder, Ash-Leaved Maple)

BD .. MH

Acer rubrum L.
(Red Maple)

BD .. MH .. PB ..

Acer saccharinum L.
(Silver Maple)

BD

AIZOACEAE

*Mollugo verticillata L.
(Carpet Weed)

BD .. MH

AMARANTHACEAE

*Amaranthus hybridus L.
(Pigweed)

.. .. MH

ANACARDIACEAE

Rhus copallina L.
(Dwarf Sumac, Winged Sumac)

BD .. MH .. PB ..

Rhus glabra L.
(Smooth Sumac, Common Sumac)

BD PB ..

Rhus radicans L.
(Poison Ivy)

BD .. MH .. PB ..

Rhus toxicodendron L.
(Poison Oak)

.. PB-H1961

APIACEAE

*Daucus carota L.
(Queen Anne's Lace)

BD .. MH .. PB ..

Hydrocotyle ranunculoides L.f.
(Water-Pennywort)

BD-H1796

Sanicula canadensis L.
(Snakeroot)

BD .. MH .. PB ..

APOCYNACEAE

Apocynum cannabinum L.
(Indian Hemp)

BD .. MH .. PB ..

Trachelospermum difforme (Walter) Gray

.. .. MH-H1851

AQUIFOLIACEAE

Ilex ambigua (Michaux) Torrey
(Mountain Holly)

.. PB-H1678

Ilex decidua Walter
(Possum Haw)

.. .. MH-H1849 PB-JH269

Ilex opaca Aiton
(Holly)

BD .. MH .. PB ..

NAME	LOCALITIES:	BD	..	MH	..	PB	..	19
ARALIACEAE								
<u>Aralia spinosa</u> L. (Hercules' Club)		BD	..	..	..	PB	..	
ARISTOLOCHIACEAE								
<u>Hexastylis virginica</u> (L.) Small (Heart Leaf, Wild Ginger)		BD	..	..	..	..	..	
ASCLEPIADACEAE								
<u>Asclepias amplexicaulis</u> Smith (Milkweed)		..	..	MH	..	PB	..	
<u>Asclepias incarnata</u> L. (Swamp Milkweed)		BD	..	..	..	..	..	
<u>Asclepias syriaca</u> L. (Milkweed)		..	..	MH	..	..	..	
<u>Asclepias tuberosa</u> L. (Butterfly Weed)		..	..	..	..	PB	..	
<u>Asclepias viridiflora</u> Raf. (Milkweed)		..	..	MH-H1902		PB	..	
<u>Cynanchum laeve</u> (Michaux) Persoon (Black Swallow-Wort)		BD	..	..	..	..	..	
ASTERACEAE								
* <u>Achillea millefolium</u> L. (Milfoil, Yarrow)		BD	..	MH	..	PB	..	
<u>Ambrosia artemisiifolia</u> L. (Ragweed)		BD	..	MH	..	PB	..	
<u>Antennaria plantaginifolia</u> (L.) Richardson (Pussy-toes)		..	..	MH	..	PB	..	
* <u>Anthemis cotula</u> L. (Dogfennel, Chamomile)		..	..	MH	..	..	..	
* <u>Arctium minus</u> Schkuhr (Common Burdock)		..	..	MH	..	..	..	
<u>Aster paternus</u> Cronquist		..	..	..	..	PB-H1828		
<u>Aster patens</u> Aiton		..	..	..	..	PB-H1741		
<u>Aster simplex</u> Willdenow (Aster)		BD-JH239, JH240		MH	..	PB	..	
<u>Bidens bipinnata</u> L.		..	..	MH-H1970	..	..		
<u>Bidens discoidea</u> (T. & G.) Britton		..	..	MH	..	..	..	
<u>Bidens frondosa</u> L. (Beggar Ticks)		BD	..	MH	..	..	..	
* <u>Centaurea cyanus</u> L. (Bachelor's Button, Cornflower, Raggedy Sailors)		..	..	MH	..	..	..	
* <u>Chrysanthemum leucanthemum</u> L. (Ox-Eye Daisey)		..	..	MH	..	PB	..	
* <u>Cichorium intybus</u> L. (Chicory)		BD	..	..	..	..	..	
<u>Cirsium discolor</u> (Willdenow) Nuttall		..	..	..	..	PB	..	
* <u>Cirsium vulgare</u> (Savi) Tenore (Thistle)		..	..	MH	..	..	..	
<u>Conoclinium coelestinum</u> (L.) DC. (Mist Flower)		..	..	MH	..	..	..	
<u>Eclipta alba</u> (L.) Hasskarl		..	..	MH-H1976	..	..	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	20
<u>Elephantopus carolinianus</u> Raeusch		..	..	MH	..	..	..	
<u>Elephantopus tomentosus</u> L. (Elephant's Foot)		..	..	MH	..	..	..	
<u>Erechtites hieracifolia</u> (L.) Raf. (Fireweed)		BD	..	MH	..	PB	..	
<u>Erigeron annuus</u> (L.) Persoon (Daisy Fleabane)		BD	..	MH	..	..	..	
<u>Erigeron canadensis</u> L. (Horseweed, Hogweed, Butterweed)		BD	..	MH	..	PB	..	
<u>Erigeron strigosus</u> Willdenow (Daisy Fleabane)		..	..	..	..	PB	..	
<u>Eupatoriadelphus dubius</u> (Willd.) K. & R.		BD	..	..	..	..	..	
<u>Eupatoriadelphus purpureus</u> (L.) K. & R. (Joe-Pye-Weed)		BD	..	..	..	..	..	
<u>Eupatorium album</u> L.		..	..	..	..	PB-H1888		
<u>Eupatorium capillifolium</u> (Lam.) Small (Dog Fennel)		BD	..	..	..	PB	..	
<u>Eupatorium godfreyanum</u> Cronq.		..	..	MH	..	..	..	
<u>Eupatorium hyssopifolium</u> L. (Thoroughwort)		BD	..	MH	..	PB	..	
<u>Eupatorium perfoliatum</u> L. (Boneset)		BD	..	MH	..	..	..	
<u>Eupatorium pilosum</u> Walter		..	..	..	..	PB	..	
<u>Eupatorium rotundifolium</u> L.		..	..	MH	..	PB	..	
<u>Eupatorium serotinum</u> Michaux (Thoroughwort)		..	..	..	..	PB-H1751, H1960		
<u>Gnaphalium obtusifolium</u> L. (Rabbit Tobacco, Everlasting)		BD	..	MH	..	PB	..	
<u>Gnaphalium purpureum</u> L. (Cudweed)		BD	..	MH	..	PB	..	
<u>Heterotheca graminifolia</u> (Michaux) Shinnars		..	..	..	..	PB	..	
<u>Heterotheca mariana</u> (L.) Shinnars (Golden Aster)		..	..	..	..	PB	..	
<u>Hieracium gronovii</u> L. (Hawkweed)		..	..	MH	..	PB	..	
<u>Hieracium venosum</u> L. (Rattlesnake Weed)		..	..	MH	..	PB	..	
* <u>Hypochoeris radicata</u> L. (Cat's Ear)		BD	..	MH	..	..	..	
<u>Krigia virginica</u> (L.) Willdenow (Dwarf Dandelion)		..	..	..	..	PB	..	
<u>Lactuca canadensis</u> L. (Wild Lettuce)		BD	..	MH	..	PB	..	
* <u>Lactuca scariola</u> L. (Prickly Lettuce)		BD	..	MH	..	..	..	
<u>Liatris graminifolia</u> (Walter) Willdenow (Blazing Star)		..	..	..	..	PB	..	
* <u>Matricaria matricarioides</u> (Lessing) Porter (Pineapple Weed)		BD	..	..	..	..	..	
<u>Mikania scandens</u> (L.) Willdenow (Climbing Hempweed)		BD	..	..	..	..	..	
<u>Pluchea camphorata</u> (L.) DC. (Marsh Fleabane)		..	..	MH-H1974	..	..	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	21
<u>Rudbeckia hirta</u> L. (Black-Eyed Susan)		..	..	MH	..	..	..	
<u>Senecio smallii</u> Britt. (Groundsel, Ragwort)		..	..	MH	..	PB	..	
<u>Silphium compositum</u> Michaux (Rosin Weed)		..	..	..	..	PB	..	
<u>Solidago erecta</u> Pursh		..	..	..	..	PB-H1753		
<u>Solidago gigantea</u> Aiton		BD	..	MH	..	..	..	
<u>Solidago graminifolia</u> (L.) Salisbury		BD	..	MH	..	PB	..	
<u>Solidago nemoralis</u> Aiton		..	..	..	..	PB-H1747		
<u>Solidago odora</u> Aiton		..	..	..	..	PB	..	
<u>Solidago rugosa</u> Miller (Goldenrod)		BD-JH246, H1734		MH-JH233	..	..		
* <u>Taraxacum erythrospermum</u> Besser (Red-Seeded Dandelion)		..	..	MH	..	..	..	
* <u>Taraxacum officinale</u> Wiggers (Dandelion)		BD	..	MH	..	..	..	
* <u>Tragopogon pratensis</u> L. (Goat's Beard)		BD	..	..	..	..	..	
<u>Verbesina occidentalis</u> (L.) Walter (Crownbeard, Wingstem)		..	..	MH-H1724	..	..		
<u>Vernonia noveboracensis</u> (L.) Michaux (Ironweed)		BD	..	..	..	..	..	
* <u>Xanthium strumarium</u> L. (Cocklebur)		BD	..	MH	..	..	..	
BALSAMINACEAE								
<u>Impatiens capensis</u> Meerburg		BD	..	MH	..	..	..	
<u>Impatiens pallida</u> Nuttall (Touch-Me-Not)		..	..	MH	..	..	..	
BERBERIDACEAE								
* <u>Berberis thunbergii</u> DC. (Barberry)		..	..	MH	..	..	..	
BETULACEAE								
<u>Alnus serrulata</u> (Aiton) Willdenow (Tag Alder)		BD	..	MH	..	..	..	
<u>Betula nigra</u> L. (River Birch)		BD	..	MH	..	..	..	
<u>Carpinus caroliniana</u> Walter (Ironwood)		BD	..	MH	..	PB	..	
BIGNONIACEAE								
<u>Campsis radicans</u> (L.) Seeman (Trumpet Vine, Cow-Itch Vine)		BD	..	MH	..	PB	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	22
BORAGINACEAE								
* <u>Lithospermum arvense</u> L. (Corn Gromwell)		..	..	MH	..	..	..	
* <u>Myosotis discolor</u> Persoon (Forget-Me-Not)		BD-H1769	..	..	..	..	..	
BRASSICACEAE								
* <u>Arabidopsis thaliana</u> (L.) Heynhold (Mouse-Ear Cress)		BD	..	MH-JH260	PB	..	..	
<u>Arabis laevigata</u> (Willdenow) Poiret (Rock Cress)		..	..	MH	..	..	..	
* <u>Barbarea verna</u> (Miller) Ascherson (Winter Cress)		BD	..	MH	..	..	..	
* <u>Brassica napus</u> L. (Turnip, Rape)		..	..	MH-JH261	..	..	..	
* <u>Calepina irregularis</u> (Asso) Thellung		..	..	MH-JH259	..	..	..	
* <u>Capsella bursa-pastoris</u> (L.) Medicus (Shepherd's Purse)		..	..	MH	..	..	..	
* <u>Cardamine hirsuta</u> L. (Bitter Cress)		BD	..	MH	..	PB	..	
* <u>Draba verna</u> L. (Whitlow Grass)		..	..	MH	..	..	..	
<u>Lepidium virginicum</u> L. (Poor Man's Pepper, Pepper Grass)		BD	..	MH	..	..	..	
* <u>Raphanus raphanistrum</u> L. (Wild Radish)		..	..	MH	..	..	..	
* <u>Teesdalia nudicaulis</u> (L.) R. Brown (Shepherd-Cress)		..	..	..	..	PB-H1766	..	
* <u>Thlaspi arvense</u> L. (Penny Cress)		..	..	MH	..	..	..	
CALLITRICHACEAE								
<u>Callitriche heterophylla</u> Pursh (Water Starwort)		BD-H1728	..	..	..	..	..	
CAMPANULACEAE								
<u>Lobelia cardinalis</u> L. (Cardinal Flower)		BD	..	MH	..	..	..	
<u>Lobelia inflata</u> L. (Indian Tobacco)		..	..	MH	..	..	..	
<u>Lobelia puberula</u> Michaux		..	..	MH	..	..	..	
<u>Triodanis perfoliata</u> (L.) Nieuwland (Venus' Looking Glass)		BD	..	MH	..	PB	..	
CAPRIFOLIACEAE								
* <u>Lonicera japonica</u> Thunberg (Japanese Honeysuckle)		BD	..	MH	..	PB	..	
<u>Lonicera sempervirens</u> L. (Trumpet Honeysuckle)		..	..	MH	..	..	..	
<u>Sambucus canadensis</u> L. (Elderberry)		BD	..	MH	..	PB	..	
<u>Symphoricarpos orbiculatus</u> Moench (Coral Berry, Indian Currant)		..	..	..	..	PB	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	23
<u>Viburnum dentatum</u> L. (Arrow-Wood)		BD	..	..	..	PB	..	
<u>Viburnum nudum</u> L. (Possum Haw)		BD-H1809		MH	..	..	..	
<u>Viburnum prunifolium</u> L. (Black Haw, Nanny-Berry)		..	..	MH	..	..	..	
CARYOPHYLLACEAE								
* <u>Cerastium glomeratum</u> Thuillier (Mouse-Ear Chickweed)		BD	..	MH	..	..	..	
* <u>Dianthus armeria</u> L. (Deptford Pink)		BD	..	MH	..	PB	..	
* <u>Scleranthus annuus</u> L. (Knewel)		BD	..	MH	..	..	..	
* <u>Stellaria media</u> Cyrillo (Chickweed)		BD	..	MH	..	..	..	
CELASTRACEAE								
<u>Euonymus americanus</u> L. (Strawberry Bush)		BD	..	MH	..	..	..	
CHENOPODIACEAE								
* <u>Chenopodium album</u> L. (Pigweed, Lamb's Quarters)		BD	..	MH	..	..	..	
* <u>Chenopodium ambrosioides</u> L. (Mexican Tea)		..	..	MH	..	PB	..	
CISTACEAE								
<u>Helianthemum canadense</u> (L.) Michaux (Rockrose, Frostweed)		..	..	..	..	PB-H1680		
<u>Lechea racemulosa</u> Michaux		..	..	MH-H1725	..	..		
<u>Lechea tenuifolia</u> Michaux (Pinweed)		..	..	..	..	PB-H1837		
CLETHRACEAE								
<u>Clethra alnifolia</u> L. (Sweet Pepperbush, White Alder)		BD	..	MH	..	..	..	
CONVOLVULACEAE								
<u>Cuscuta campestris</u> Yuncker (Field Dodder, Love-Vine)		BD-H1740	..	..	..	..		
<u>Cuscuta gronovii</u> R. & S. (Compact Dodder, Love-vine)		BD-JH251, H1735	..	..	..	..		
* <u>Ipomoea hederacea</u> Jacquin		BD	..	MH	..	PB	..	
<u>Ipomoea lacunosa</u> L. (Morning Glory)		BD	..	MH	..	..	..	
<u>Ipomoea pandurata</u> (L.) Meyer (Man-Root)		BD	..	MH	..	PB	..	
* <u>Ipomoea purpurea</u> (L.) Roth (Morning Glory)		..	..	MH	..	..	..	

NAME LOCALITIES: BD .. MH .. PB .. 24

CORNACEAE

Cornus florida L. BD .. MH .. PB ..
(Flowering Dogwood)

EBENACEAE

Diospyros virginiana L. MH .. PB ..
(Persimmon)

ELAEAGNACEAE

*Elaeagnus umbellata Thunberg BD

ERICACEAE

Chimaphila maculata (L.) Pursh MH .. PB-H1825
(Spotted Wintergreen)

Gaylussacia baccata (Wang.) K. Koch PB-H1826
(Huckleberry)

Kalmia latifolia L. MH
(Mountain Laurel)

Lyonia mariana (L.) D. Don MH
(Stagger-Bush)

Monotropa hypopithys L. MH-JH223
(Pinesap)

Monotropa uniflora L. MH .. PB ..
(Indian Pipes)

Rhododendron nudiflorum (L.) Torrey BD .. MH
(Wild Azalea, Pinxter-Flower)

Vaccinium corymbosum L. MH .. PB ..
(Highbush Blueberry)

Vaccinium pallidum Aiton MH-JH283 PB ..
(Low Blueberry, Early Sweet Blueberry, Sugar Huckleberry)

Vaccinium stamineum L. MH .. PB ..
(Squaw-Huckleberry, Gooseberry, Deerberry)

EUPHORBIACEAE

Acalypha gracilens Gray PB ..
Acalypha rhomboidea Raf. BD .. MH .. PB ..
(Three-Seeded Mercury)

Croton glandulosus var. septrionalis
Mueller-Arg. PB ..

Euphorbia corollata L. PB ..
(Flowering Spurge)

Euphorbia maculata L. BD .. MH
(Milk Purslane)

Euphorbia nutans Lagasca BD-JH245 MH
(Wartweed)

Phyllanthus caroliniensis Walter MH-JH221, ...
H1980

Tragia urens L. PB-H1681

FABACEAE

*Albizia julibrissin Durazzini BD PB ..
(Mimosa)

Amphicarpa bracteata (L.) Fernald MH
(Hog Peanut)

NAME	LOCALITIES:	BD	..	MH	..	PB	..	25
<u>Apios americana</u> Medicus (Wild Bean, Ground Nut)		BD-JH256	..	..	..	..	..	
<u>Baptisia tinctoria</u> (L.) R. Brown (Wild Indigo)		..	..	..	..	PB	..	
<u>Cassia fasciculata</u> Michaux (Partridge Pea)		BD	..	..	..	PB	..	
<u>Cassia nictitans</u> L. (Wild Sensitive Plant)		BD	..	..	..	..	..	
<u>Cassia obtusifolia</u> L. (Sicklepod)		..	..	MH	..	..	..	
<u>Clitoria mariana</u> L. (Butterfly Pea)		..	..	MH	..	PB	..	
<u>Crotalaria sagittalis</u> L. (Rattlebox)		..	..	..	..	PB-H1742		
<u>Desmodium glabellum</u> (Michaux) DC.		..	..	MH	..	..	..	
<u>Desmodium laevigatum</u> (Nuttall) DC.		..	..	..	..	PB	..	
<u>Desmodium nudiflorum</u> (L.) DC.		..	..	MH	..	..	..	
<u>Desmodium obtusum</u> (Willdenow) DC.		..	..	..	..	PB-H1682		
<u>Desmodium tenuifolium</u> T. & G.		BD	..	..	..	..	..	
<u>Desmodium viridiflorum</u> (L.) DC. (Beggar Lice, Beggar's Ticks)		BD	..	..	..	..	..	
<u>Galactia volubilis</u> (L.) Britton (Milk Pea)		..	..	..	..	PB-H1895		
* <u>Gleditsia triacanthos</u> L. (Honey Locust)		..	..	MH	..	..	..	
<u>Lathyrus hirsutus</u> L. (Vetchling, Wild Pea)		BD	..	MH	..	..	..	
* <u>Lespedeza cuneata</u> (Dumont) G. Don		BD-JH237	MH	..	..	PB	..	
<u>Lespedeza hirta</u> (L.) Hornemann		..	..	..	..	PB	..	
<u>Lespedeza procumbens</u> Michaux		..	..	..	..	PB	..	
<u>Lespedeza repens</u> (L.) Barton (Bush Clover)		..	..	..	..	PB	..	
* <u>Lespedeza stipulacea</u> Maxim. (Korean Clover)		BD	..	MH	..	..	..	
* <u>Lespedeza striata</u> (Thunberg) H. & A. (Japanese Clover)		BD-JH238	MH	..	..	..	..	
<u>Lespedeza stuevei</u> Nuttall		..	..	..	..	PB	..	
<u>Lespedeza virginica</u> (L.) Britton (Bush Clover)		..	..	MH	..	PB	..	
* <u>Melilotus officinalis</u> (L.) Lam. (White Sweet Clover)		BD	..	..	..	..	..	
<u>Robinia pseudo-acacia</u> L. (Black Locust)		BD	..	..	..	PB	..	
<u>Strophostyles helvola</u> (L.) Elliott		BD-H1966	..	..	..	..	..	
<u>Strophostyles umbellata</u> (Willd.) Britton (Wild Bean)		..	..	..	..	PB-H1684, H1890		
<u>Stylosanthes biflora</u> (L.) BSP. (Pencil-Flower)		..	..	..	..	PB	..	
<u>Tephrosia spicata</u> (Walter) T. & G. (Goat's Rue)		..	..	..	..	PB-H1833		
* <u>Trifolium arvense</u> L. (Rabbit Foot Clover)		BD	..	..	..	..	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	26
* <u>Trifolium dubium</u> Sibthorp (Low Hop Clover)		BD	..	MH	..	..	..	
* <u>Trifolium pratense</u> L. (Red Clover)		BD	..	MH	..	..	..	
* <u>Trifolium repens</u> L. (White Clover)		BD	..	MH	..	..	..	
* <u>Vicia angustifolia</u> L.		BD	..	MH	..	PB	..	
<u>Vicia grandiflora</u> Scopoli		BD-JH264	..	..	..	..	..	
<u>Vicia tetrasperma</u> (L.) Moench. (Vetch)		BD-JH265	..	..	..	..	..	

FAGACEAE

<u>Castanea dentata</u> (Marshall) Borkh. (Chestnut)	..	..	..	..	PB-H1750	
<u>Fagus grandifolia</u> Ehrhart (Beech)	BD	..	MH	..	..	..
<u>Quercus alba</u> L. (White Oak)	BD	..	MH	..	PB	..
<u>Quercus coccinea</u> Moenchh. (Scarlet Oak)	..	..	MH	..	..	..
<u>Quercus falcata</u> Michaux (Spanish Oak, Southern Red Oak)	BD	..	MH	..	PB	..
<u>Quercus garlandensis</u> Palm. (Hybrid Oak, <u>Q. falcata</u> X <u>nigra</u>)	..	..	..	..	PB-H1743	
<u>Quercus michauxii</u> Nuttall (Swamp Chestnut Oak)	..	..	MH	..	..	..
<u>Quercus nigra</u> L. (Water Oak)	..	..	..	..	PB-H1744, H1745, JH-268	
<u>Quercus palustris</u> Muenchh. (Pin Oak)	..	..	MH-H1973	..	..	
<u>Quercus phellos</u> L. (Willow Oak)	BD	..	MH	..	PB	..
<u>Quercus prinus</u> L. (Chestnut Oak)	..	..	MH	..	PB	..
<u>Quercus rubra</u> L. (Red Oak)	..	..	MH	..	..	..
<u>Quercus stellata</u> Wang. (Post Oak)	BD	..	MH	..	PB	..
<u>Quercus velutina</u> Lam. (Black Oak)	BD	..	MH	..	PB	..

GENTIANACEAE

<u>Bartonia virginica</u> (L.) BSP.	..	..	MH-H1905	..	..	
<u>Sabatia quadrangula</u> Wilbur (Marsh Pink)	..	..	MH-H1904	..	..	

GERANIACEAE

<u>Geranium carolinianum</u> L. (Crane's Bill, Wild Geranium)	BD	..	MH	..	PB	..
* <u>Geranium molle</u> L. (Dove's Foot, Crane's Bill)	BD	..	MH	..	..	..

NAME

LOCALITIES:

BD .. MH .. PB .. 27

HAMAMELIDACEAE

Liquidambar styraciflua L.
(Sweet Gum)

BD .. MH .. PB ..

HYPERICACEAE

Hypericum canadense L.

BD .. MH

Hypericum gentianoides (L.) BSP.
(Pineweed)

.. PB ..

Hypericum hypericoides (L.) Crantz
(St. Andrew's Cross)

BD .. MH .. PB ..

Hypericum mutilum L.

BD-H1737 MH-JH225

*Hypericum perforatum L.
(St. John's Wort)

.. .. MH-H1908

Hypericum punctatum Lam.

.. .. MH-H1901 PB ..

Hypericum stragalum Adams & Robson
(St. Andrew's Cross)

BD .. MH .. PB ..

Hypericum virginicum L.

BD

(Marsh St. John's Wort)

Hypericum walteri Gmelin

BD

(Marsh St. John's Wort)

JUGLANDACEAE

Carya glabra (Miller) Sweet
(Pignut Hickory)

BD .. MH

Carya tomentosa Nuttall

BD .. MH-H1854 PB ..

(Mockernut, White-Heart Hickory)

Juglans nigra L.

.. .. MH .. PB ..

(Black Walnut)

LAMIACEAE

*Glechoma hederacea L.
(Ground Ivy)

BD

*Lamium amplexicaule L.

BD .. MH

*Lamium purpureum L.

BD .. MH

(Henbit, Dead Nettle)

Lycopus americanus Barton

BD .. MH

Lycopus virginicus L.

BD .. MH

(Bugle-Weed, Water-Horehound)

*Nepeta cataria L.

.. .. MH

(Catnip)

*Perilla frutescens (L.) Britton

.. .. MH

Pycnanthemum tenuifolium Schrader

.. .. MH

(Mountain-Mint)

Salvia lyrata L.

.. .. MH .. PB ..

(Lyre-Leaved Sage)

Satureja calamintha var. nepeta (L.)

Briquet

.. .. MH

(Basil-Thyme)

Scutellaria elliptica Muhl.

.. .. MH

Scutellaria integrifolia L.

.. .. MH

Scutellaria lateriflora L.

.. .. MH-H1977

(Skullcap)

NAME	LOCALITIES:	BD	..	MH	..	PB	..	28
<u>Trichostema dichotomum</u> L. (Bluecurls)		..	..	..	..	PB	..	
LAURACEAE								
<u>Lindera benzoin</u> (L.) Blume (Spicebush)		..	..	MH	..	..	..	
<u>Sassafras albidum</u> (Nuttall) Nees (Sassafras)		BD	..	MH	..	PB	..	
LENTIBULARIACEAE								
<u>Utricularia biflora</u> Lam.		BD-H1704,	..	..	..	..	..	
		H-1872						
<u>Utricularia gibba</u> L. (Bladderwort)		BD-H1871	..	..	..	..	..	
LOGANIACEAE								
<u>Polypremum procumbens</u> L.		BD-H1696	..	..	..	PB	..	
LYTHRACEAE								
<u>Decodon verticillatus</u> (L.) Ell. (Water-Willow)		BD-H1963	..	..	..	..	..	
MAGNOLIACEAE								
<u>Liriodendron tulipifera</u> L. (Tilip Poplar, Yellow Poplar, Tulip Tree)		BD	..	MH	..	PB	..	
* <u>Magnolia grandiflora</u> L. (Bull Bay)		..	..	..	..	PB-H1824		
<u>Magnolia virginiana</u> L. (Sweet Bay)		BD	..	MH	..	..	..	
MALVACEAE								
* <u>Abutilon theophrasti</u> Medicus (Velvet Leaf)		..	..	MH	..	..	..	
* <u>Hibiscus syriacus</u> L. (Rose of Sharon)		..	..	MH	..	..	..	
* <u>Sida spinosa</u> L. (Prickly Mallow)		..	..	MH	..	..	..	
MELASTOMATACEAE								
<u>Rhexia mariana</u> L. (Meadow Beauty)		..	..	MH	..	..	..	
MENISPERMACEAE								
<u>Menispermum canadense</u> L. (Moonseed)		..	..	MH	..	..	..	
MORACEAE								
* <u>Broussonetia papyrifera</u> (L.) Vent. (Paper Mulberry)		BD	..	MH-H1910	..	..	..	
* <u>Morus alba</u> L. (White Mulberry)		BD	..	MH	..	..	..	
<u>Morus rubra</u> L. (Red Mulberry)		..	..	MH	..	PB	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	29
MYRICACEAE								
<u>Myrica cerifera</u> L. (Wax Myrtle)		..	..	MH	..	PB	..	
NYSSACEAE								
<u>Nyssa sylvatica</u> Marshall (Black Gum)		BD	..	MH	..	PB	..	
OLEACEAE								
<u>Fraxinus americana</u> L. (American Ash, White Ash)		..	..	MH	..	..	..	
<u>Fraxinus profunda</u> (Bush) Bush (Pumpkin Ash)		..	..	MH-H1971	..	..	..	
* <u>Ligustrum sinense</u> Loureiro (Privet)		BD	..	MH	..	..	..	
ONAGRACEAE								
<u>Circaea lutetiana</u> ssp. <u>canadensis</u> (L.) A. & M. (Enchanters' Nightshade)		..	..	MH	..	..	..	
<u>Epilobium coloratum</u> Biehler (Willow-Herb)		BD-H1733	..	..	..	..	..	
<u>Ludwigia alternifolia</u> L.		BD	..	MH	..	..	..	
<u>Ludwigia decurrens</u> Walter		BD	..	..	..	..	..	
<u>Ludwigia palustris</u> (L.) Elliott		BD	..	MH	..	..	..	
<u>Oenothera biennis</u> L.		..	..	MH	..	PB	..	
<u>Oenothera laciniata</u> Hill. (Evening Primrose)		BD	..	..	..	..	..	
OXALIDACEAE								
<u>Oxalis dillenii</u> Jacquin		BD	..	MH	..	PB-H1677	..	
<u>Oxalis florida</u> Salisbury		BD	..	MH	..	..	..	
<u>Oxalis violacea</u> L. (Sorrel)		..	..	MH	..	..	..	
PASSIFLORACEAE								
<u>Passiflora incarnata</u> L. (Maypops, Passion Flower)		..	..	..	..	PB	..	
<u>Passiflora lutea</u> L. (Passion Flower)		BD	..	..	..	..	..	
PENTHORACEAE								
<u>Penthorum sedoides</u> L. (Ditch Stonecrop)		..	..	MH-H1975	..	..	..	
PHRYMACEAE								
<u>Phryma leptostachya</u> L. (Lop-Seed)		..	..	MH	..	..	..	
PHYTOLACCACEAE								
<u>Phytolacca americana</u> L. (Poke, Pokeweed, Pigeonberry)		BD	..	MH	..	PB	..	

NAME	LOCALITIES:	BD	..	MH	..	PB	..	30
PLANTAGINACEAE								
<u>Plantago aristata</u> Michaux		..	..	MH	..	PB	..	
* <u>Plantago lanceolata</u> L.		BD	..	MH	..	..	..	
* <u>Plantago major</u> L.		..	..	MH	..	..	..	
<u>Plantago rugelii</u> Dcne.		BD	..	MH	..	PB	..	
<u>Plantago virginica</u> L. (Plantain)		BD	..	MH	..	PB	..	
PLATANACEAE								
<u>Platanus occidentalis</u> L. (Sycamore)		BD	..	MH	..	..	..	
POLYGONACEAE								
<u>Polygonum arifolium</u> L.		BD	..	..	..	..	..	
* <u>Polygonum aviculare</u> L.		..	..	MH	..	..	..	
* <u>Polygonum cespitosum</u> Blume		BD	..	MH	..	..	..	
<u>Polygonum coccineum</u> Muhl. ex Willd.		BD	..	..	..	..	..	
<u>Polygonum pensylvanicum</u> L.		..	..	MH	..	..	..	
* <u>Polygonum persicaria</u> L.		BD	..	MH	..	PB-H1883		
<u>Polygonum punctatum</u> Elliott		..	..	MH-H1907	..	..	..	
<u>Polygonum sagittatum</u> L.		BD	..	..	..	..	..	
<u>Polygonum scandens</u> L.		..	..	..	..	PB	..	
<u>Polygonum setaceum</u> Elliott (Knotweed, Smartweed)		BD-H1731	..	..	..	..	..	
* <u>Rumex acetosella</u> L. (Sheep Sorrel, Sour Grass)		BD	..	MH	..	PB	..	
* <u>Rumex crispus</u> L. (Dock)		..	..	MH	..	..	..	
<u>Tovara virginiana</u> (L.) Raf. (Jumpseed)		..	..	MH	..	..	..	
PRIMULACEAE								
* <u>Anagallis arvensis</u> L. (Scarlet Pimpernel)		..	..	MH	..	..	..	
<u>Lysimachia quadrifolia</u> L. (Whorled Loosestrife)		..	..	MH	..	..	..	
RANUNCULACEAE								
<u>Clematis virginiana</u> L. (Virgin's Bower)		BD	..	..	..	..	..	
<u>Ranunculus abortivus</u> L.		BD	..	MH	..	..	..	
* <u>Ranunculus bulbosus</u> L. (Buttercup)		BD	..	MH	..	..	..	
<u>Ranunculus pusillus</u> Poiret (Spearwort)		BD-JH263	..	..	..	..	..	
* <u>Ranunculus sardous</u> Crantz		BD	..	MH	..	..	..	
RHAMNACEAE								
<u>Ceanothus americanus</u> L. (New Jersey Tea)		..	..	..	..	PB-H1832		

NAME LOCALITIES: BD .. MH .. PB .. 31

ROSACEAE

<u>Agrimonia parviflora</u> Aiton	..	..	MH	..	..	..
(Agrimony, Cocklebur, Harvest Lice)						
* <u>Alchemilla microcarpa</u> Boissier & Reuter	BD	..	..	..	..	..
<u>Amelanchier arborea</u> (Michaux f.) Fernald	..	..	..	..	PB-H1764	
(Juneberry, Shadbush, Serviceberry)						
<u>Aronia arbutifolia</u> (L.) Elliott	..	..	MH	..	..	..
(Chokeberry)						
<u>Crataegus uniflora</u> Muenchh.	..	..	..	..	PB-H1679	
(Hawthorn)						
* <u>Duchesnea indica</u> (Andrz.) Focke	BD	..	MH	..	..	..
(Indian Strawberry, Mock Strawberry, Snakeberry)						
<u>Fragaria virginiana</u> Duchesne	..	..	MH	..	PB	..
(Wild Strawberry)						
<u>Geum canadense</u> Jacquin	..	..	MH-H1840	..	..	..
(Avens)						
<u>Potentilla canadensis</u> L.	BD	..	MH	..	PB	..
* <u>Potentilla recta</u> L.	..	..	MH	..	..	..
(Cinquefoil, Five-Fingers)						
* <u>Prunus domestica</u> L.	..	..	MH-JH257	..	..	..
(Plum)						
<u>Prunus serotina</u> Ehrhart	BD	..	MH	..	..	..
(Wild Black Cherry)						
* <u>Pyrus communis</u> L.	..	..	MH	..	..	..
(Pear)						
<u>Rosa carolina</u> L.	BD	..	MH	..	PB	..
* <u>Rosa multiflora</u> Thunberg	BD	..	..	..	..	..
(Wild Rose)						
<u>Rubus flagellaris</u> Willdenow	..	..	MH	..	..	..
<u>Rubus hispidus</u> L.	..	..	..	..	PB	..
<u>Rubus occidentalis</u> L.	BD	..	MH	..	PB	..
(Blackberry)						

RUBIACEAE

<u>Cephalanthus occidentalis</u> L.	BD	..	MH	..	..	..
(Button Bush)						
<u>Diodia teres</u> Walter	BD	..	MH	..	PB	..
<u>Diodia virginiana</u> L.	BD	..	MH	..	PB	..
(Buttonweed)						
<u>Galium aparine</u> L.	..	..	MH	..	..	..
<u>Galium asprellum</u> Michaux	BD	..	..	..	..	..
<u>Galium circaeazans</u> Michaux	..	..	MH-JH234	PB	..	..
<u>Galium obtusum</u> Bigelow	..	..	MH-H1853	..	..	..
<u>Galium pilosum</u> Aiton	BD-H1862	..	..	..	PB-H1691	..
<u>Galium triflorum</u> Michaux	..	..	MH-JH235	..	..	..
(Bedstraw)						
<u>Houstonia caerulea</u> L.	..	..	MH	..	..	..
(Bluets)						
<u>Houstonia longifolia</u> Gaertner	..	..	..	..	PB-H1690	..
<u>Houstonia purpurea</u> L.	..	..	MH	..	..	..
<u>Mitchella repens</u> L.	BD	..	MH	..	..	..
(Partridge Berry)						
<u>Oldenlandia uniflora</u> L.	BD-H1706	..	..	..	..	..

NAME

LOCALITIES:

BD .. MH .. PB .. 32

SALICACEAEPopulus deltoides Marshall
(Cottonwood)

BD

Populus grandidentata Michaux
(Big-Tooth Aspen)

.. PB-JH267

Salix alba L.

BD-H1863

Salix humilis Marshall
(Willow).. PB-H1765,
H1838**SAURURACEAE**Saururus cernuus L.
(Lizard's Tail)

BD-H1730 MH

SAXIFRAGACEAEHeuchera americana L.
(Alumroot)

.. .. MH

Itea virginica L.
(Virginia Willow)

BD-H1964

SCROPHULARIACEAEAgalinus purpurea (L.) Pennell
(Gerardia)

.. .. MH

Aureolaria virginica (L.) Pennell
(False Foxglove)

.. .. MH

Gratiola neglecta TorreyBD-H1701, ...
H1807Gratiola virginiana L.
(Hedge Hyssop)

.. .. MH-JH236

Linaria canadensis (L.) Dumont
(Toad-Flax)

BD .. MH .. PB ..

Lindernia dubia (L.) Pennell
(False Pimpernel)BD-H1700, ...
H1736Mimulus alatus Aiton
(Monkey-Flower)

.. .. MH

*Verbascum blattaria L.
(Moth Mullein)

.. PB ..

*Verbascum thapsus L.
(Mullein)

.. .. MH .. PB ..

*Veronica arvensis L.

BD .. MH

*Veronica hederæfolia L.

BD .. MH

Veronica officinalis L.

.. .. MH-H1850

*Veronica persica Poiret

BD .. MH

*Veronica serpyllifolia L.
(Speedwell)

BD-JH266

SIMAROUBACEAE*Ailanthus altissima (Miller) Swingle
(Tree-of-Heaven)

BD .. MH .. PB ..

SOLANACEAEPhysalis pubescens L.

.. PB ..

Physalis virginiana Miller
(Ground Cherry)

.. PB-H1835

NAME	LOCALITIES:	BD	..	MH	..	PB	..	33
<u>Solanum carolinense</u> L. (Horse Nettle)		BD	..	MH	..	PB	..	
SYMPLOCACEAE								
<u>Symplocos tinctoria</u> (L.) L'Her. (Sweetleaf)		..	..	..	..	PB-H1694		
ULMACEAE								
<u>Celtis occidentalis</u> L. (Hackberry, Sugarberry)		BD	..	MH	..	PB	..	
<u>Ulmus alata</u> Michaux (Winged Elm)		..	..	MH	..	PB	..	
<u>Ulmus americana</u> L. (White Elm, American Elm)		..	..	MH	..	PB	..	
<u>Ulmus rubra</u> Muhl. (Slippery Elm)		BD	..	MH	..	..	..	
URTICACEAE								
<u>Boehmeria cylindrica</u> (L.) Swartz (False Nettle)		BD-H1738		MH	..	..	..	
<u>Pilea pumila</u> (L.) Gray (Clearweed)		BD	..	MH	..	..	..	
VALERIANACEAE								
* <u>Valerianella locusta</u> (L.) Betcke		BD	..	MH	..	..	..	
<u>Valerianella radiata</u> (L.) Dufr. (Corn Salad)		BD	..	..	..	..	..	
VERBENACEAE								
<u>Verbena urticifolia</u> L. (Vervain)		..	..	MH-H1903	..	..		
VIOLACEAE								
<u>Viola palmata</u> L. (Wood Violet)		..	..	..	..	PB	..	
<u>Viola papilionacea</u> Pursh (Common Blue Violet, Meadow Violet)		BD	..	MH	..	..	..	
<u>Viola primulifolia</u> L. (Primrose-Leaved Violet)		..	..	MH	..	..	..	
* <u>Viola rafinesquii</u> Greene (Wild Pansy, Confederate Violet)		BD	..	MH	..	PB	..	
VITACEAE								
<u>Parthenocissus quinquefolia</u> (L.) Planchon (Virginia Creeper)		BD	..	MH	..	PB	..	
<u>Vitis aestivalis</u> Michaux (Summer Grape)		BD	..	..	..	PB	..	
<u>Vitis cinerea</u> Engelm. ex Millardet		..	..	MH	..	PB	..	
<u>Vitis labrusca</u> L. (Fox Grape)		BD	..	..	..	..	..	
<u>Vitis rotundifolia</u> Michaux (Muscadine)		BD	..	MH	..	PB	..	

Literature Cited

- FISH AND WILDLIFE SERVICE. 1980. Endangered and threatened wildlife and plants: review of plant taxa for listing as endangered or threatened species. Federal Register 45(242): 82480-82569.
- FISH AND WILDLIFE SERVICE. 1983. Endangered and threatened wildlife and plants; supplement to review of plant taxa for listing; proposed rule. Federal Register 48(229): 53640-53670.
- HAYDEN, W. J., AND M. F. JOHNSON. 1986. Flora of Richmond National Battlefield Park (Chickahominy Bluffs, Cold Harbor, Fort Darling, Fort Harrison, Garthright House and Watt House units). National Park Service, Mid-Atlantic Region Research/Resources Management Report #16. 40 pp.
- LINZEY, D. W., ed. 1979. Proceedings of the symposium on endangered and threatened plants and animals of Virginia. Center for Environmental Studies - Virginia Polytechnic and State University, Blacksburg.
- RADFORD, A. E., H. E. AHLES, and C. R. BELL. 1968. Manual of the vascular flora of the Carolinas. University of North Carolina Press, Chapel Hill.