

Original Research Paper

Vascular Flora of the Yew Mountain Center, Pocahontas County, West Virginia

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Abstract: A baseline floristic study was conducted on the 500 acre Yew Mountain Center (YMC) in Pocahontas County, West Virginia. The YMC is a non-profit educational center providing programs emphasizing Appalachian ecology, culture, and arts, with one of its goals being the development of field research and study opportunities for outside researchers and students. Field work conducted in 2019-2021 resulted in 383 recorded vascular plant taxa, with 25 new additions to the known Pocahontas County flora (possibly as many as 83 total new taxa have been found by the author in the county). The majority of the new additions were not unexpected. Two taxa (*Juglans cinerea* and *Prunus alleghaniensis* var. *alleghaniensis*) are significant occurrences tracked by the West Virginia Natural Heritage Program. Approximately 85% of the taxa are historical natives, as compared to 75% native flora for West Virginia as a whole. The primarily forested YMC harbors a diverse assemblage of Mixed Mesophytic, Mixed Hardwood and Appalachian Oak forest communities that is relatively free of exotic invasive and noxious weed infestations. The study demonstrates how a moderately-intensive examination of a small area can result in a significant increase in floristic knowledge of a region.

Keywords: Yew Mountain Center, Pocahontas County, floristics.

Introduction

The Yew Mountain Center (YMC) is a recently organized (2017) non-profit organization located on 500 remote acres in southern Pocahontas County, West Virginia (WV), near the community of Lobelia. Its mission is to be an educational center providing programs emphasizing Appalachian ecology, culture, and arts. The Center offers courses, workshops, retreats, facilities for meetings, lodging, resources for teachers, and field trip opportunities (www.yewmountain.org), with one of its goals being the development of a field research and study center suitable for outside researchers and graduate students utilizing the YMC property and the other outstanding biological and ecological resources that Pocahontas County offers.

This study began with only casual botanizing to gather some observational data for use by YMC administrators and with no intention of developing a

comprehensive work. The project soon evolved into a more deliberate and thorough effort to assist the development of floristic data about the biota of the YMC, to provide a preliminary baseline understanding of the vascular flora in support of future projects, and to provide information in a form that would be helpful and useful to lay managers and administrators of the YMC.

Unlike many of the more glamorous and botanically exciting areas in Pocahontas County that have received a lot of attention by botanists and ecologists over the years, the YMC is located in a section that may be considered rather ordinary. The YMC lies on the western edge of the Valley and Ridge physiographic province, at the boundary of the Allegheny Mountain physiographic province, between the Allegheny Front and the typical Valley and Ridge physiography. Elevation ranges from 2600-3800 ft above msl. Topography generally consists of narrow and broad ridges, oriented perpendicular to the highest cross-ridgeline. Slopes vary from gentle to steep above

shallow and deep ravines. The acidic soils are derived from Paleozoic strata, mostly sandstones and siltstones on ridges and slopes and some shales in narrow valleys and ravines. Limestone based soils do not appear to be present on the YMC; however, large areas of karst topography exist just below the eastern boundary and some limestone-derived soils are mapped in that area (Flegel 1998). Much of the landscape is very stony. Two intermittent to perennial streams drain most of the YMC watershed and disappear into sinkholes short distances outside the boundary. The drainage pattern of the region is primarily dendritic, but much of the streamflow occurs underground before reaching the Greenbrier River.

The vegetation is primarily forested (90%), consisting mostly of variants of older second-growth Mixed Mesophytic Forest, Mixed Hardwood Forest, and Appalachian Oak Forest (Clarkson 1966; Core 1966; Stephenson 2013). Drier upper ridgelines and slopes are oak and hickory dominated, while lower slopes and ravines are dominated by mesic assemblages. The widespread open mid-slopes are occupied by variations of subserice to submesic montane mixed oak forest, oak-hickory forest, and mixed hardwood forest. Forests with pines abundant or dominant are not present. Hydric and bottomland forests are poorly developed and essentially absent. Examples of canopy dominance in individual stands include the following: Chestnut Oak; White Oak; White Oak/Black Oak/hickory; Shagbark Hickory; Sugar Maple/mixed oak-hickory; Red Oak/hickory/Yellow Poplar/American Beech/Mountain Basswood/White Ash; Sugar Maple/hickory; Black Cherry; Yellow Buckeye; Sugar Maple with small component Mountain Basswood, Yellow Poplar, White Ash, and American Beech. Some of these forests are relatively young, being former pastures or crop lands abandoned within the last 50 years. Bogs and other wetlands are essentially non-existent, except for seeps and small areas in a few broader ravines and in riparian areas associated with several man-made ponds on the property. There are some small areas of rock outcroppings on the highest cross-ridgeline and along some of the deeper ravines. Numerous old fields in various early successional stages are present. There are many disturbed areas around the structures, developed areas, roads, and trails.

Materials and Methods

This checklist of the vascular flora of the YMC is the result of field work conducted from late March through early October in 2019 (10 visits), 2020 (7 visits), and 2021 (1 visit). Visits consisted of several-hour to all-day investigations throughout the YMC.

Traverses through the area primarily followed the many existing hiking trails and roads and old logging and skid ways, with explorations off-route where interest dictated; however, several traverses were conducted through sections lacking trails. Special effort was expended to explore the complete variety of habitats and topographic settings on the YMC. A preliminary checklist was produced in November 2019. Identifications were primarily based on Strausbaugh and Core (1977), Weakley et al. (2012), and Weakley (2020). Taxonomic names follow Weakley (2020).

Harmon et al. (2006) was the primary source of distributional data used for WV plants. Supplemental distributional information was sourced from The Plants Database (USDA 2021) and SERNEC (Southeastern Regional Network of Expertise and Collections, Data Portal 2021). Nativity (origin) information follows Harmon et al. (2006) and Weakley (2020). Family treatments follow Weakley (2020). Equivalent and synonymous names (including family names) used in Strausbaugh and Core (1977, [S & C]), the classic standard treatment of the WV flora, are given in brackets when they differ from Weakley (2020); however, minor orthographic errors and subspecific nomenclatural differences (particularly when subspecies and varieties can be assumed) are not noted. Varieties (var.) and subspecies (ssp.) are given if nomenclaturally recognized and identified during the field work. Common names are those preferred by the author as selected from those used in modern manuals.

All taxa recorded here were personally observed by the author unless otherwise noted. Taxa are identified to species and sub-specific categories as far as possible. Enigmatic specimens are noted with aff. (closely matches). Nativity is noted, as well as state rare taxa tracked by the WV Natural Heritage Program (WVDNR 2020). A notation on abundance and frequency on the YMC is given when it can be stated with a fair degree of confidence; this determination is subject to refinement with additional field work. Taxa discovered to be new records for Pocahontas County based on distributional information in Harmon et al. (2006) are noted. Voucher collections were made for nearly one-third of the taxa, including most of the county records; collected specimens are indicated following the name. Abbreviations and symbols for all notations are given below at the beginning of the checklist. Specimens will be deposited at the herbaria CATU (Catawba College) and WVA (West Virginia University).

Results and Discussion

A total of 383 taxa were identified for the YMC during this study (338 in 2019, 41 in 2020, 4 in 2021).

This is approximately 29% of the 1320 taxa known for Pocahontas County (author's unpublished data). Of these, up to 25 taxa are new additions to the published known county flora; 20 are new discoveries and five had previously been found elsewhere in Pocahontas County by the author. Additional study would likely yield few new taxa but could illuminate the identities of the few listed taxa requiring further observation to confirm or determine identity because they were not seen in the proper condition for conclusive identification. Most sections of the YMC were explored, but there are a few small pockets of unexplored terrain that could yield additional taxa.

The greater number of the new records (12) are taxa that are widely distributed in WV (19-45 reported counties in Harmon et al. 2006) and whose occurrence in Pocahontas County is an expected gap fill or expansion at the edge of the WV range. Examples are *Andropogon virginicus* var. *virginicus* that appears to be an extension into the high mountain counties; *Heuchera americana*; *Penstemon digitalis*; *Salix nigra*; *Solidago altissima*; *Symphytotrichum lowrieianum*.

Four of the new taxa are not widely distributed (10-13 reported counties in Harmon et al. 2006) but represent gap fills or range extensions into high mountain counties. These are *Bromus latiglumis*, *Cardamine parviflora* var. *arenicola*, *Convolvulus species 4* [= *angulata*], and *Panicum philadelphicum* ssp. *philadelphicum*.

Five of the records are taxa with few known occurrences in the state (4-8 counties reported in Harmon et al. 2006). These include *Castanea mollissima*, *Geranium robertianum*, *Ligustrum obtusifolium* var. *obtusifolium*, *Symphytotrichum pilosum* var. *pringlei*, and *Viola labradorica*.

Because Harmon et al. (2006) lump some named varieties into species without recognition and they or USDA (2021) do not map these varieties that have recently been elevated to species by Weakley (2020), two taxa (*Juncus anhelatus* and *Symphytotrichum firmum*) are putatively considered to be county records pending a thorough specimen survey. *Vitis aestivalis* var. *aestivalis* is considered to be undocumented as part of the WV flora by Harmon et al. (2006), and it is not mapped at the county level in The Plants Database (USDA 2021); it can thus be considered a county record as well as a state record. However, a specimen search in SERNEC (Data Portal 2021) revealed some additional insight into record status: six county occurrences (not Pocahontas County) for *J. anhelatus*, five occurrences for *S. firmum* (including Pocahontas County), and two occurrences for *V. aestivalis* var. *aestivalis* (Hampshire and Morgan Counties).

Three taxa found on the YMC are tracked by the WV Natural Heritage Program which lists conservation

status ranks, but only two are significant occurrences. *Pinus resinosa* (critically imperiled, S1 conservation status) occurs naturally only in Hardy and Pendleton Counties; it is introduced and naturalized on the YMC and, therefore, of no distributional significance. *Juglans cinerea* is widely distributed in the state, but it is suffering severe and steep decline due to a canker disease and is considered to be imperiled (S2 conservation status); the population on the YMC appears to be healthy and disease-free. *Prunus alleghaniensis* var. *alleghaniensis* is here reported as a new county record; it is considered vulnerable (S3 conservation status) and is previously reported from 10 counties (Harmon et al. 2006), mostly in the mountains.

Several taxa previously documented for Pocahontas County are noteworthy in that they have limited distributions in WV (Harmon et al. 2006). These are *Carex appalachica* (six mountain counties), *Galeopsis bifida* (eight mostly northern mountain counties), *Gentianella quinquefolia* var. *quinquefolia* (10 northern mountain counties), and *Trifolium dubium* (seven widely scattered counties in the eastern half of the state).

Moderate to significant incongruence in the sources of distributional data was noted. When the three different sources (Harmon et al. 2006; SERNEC, Data Portal 2021; The Plants Database, USDA 2021) were consulted for particular distributional data, in only a few cases was there essential agreement in county occurrences among the sources.

This study contributes to the distributional knowledge of the flora of WV. Clarkson's (1966) work on the flora of the Monongahela National Forest and collecting activity over the years by many botanists have resulted in most of what is currently known about the flora of Pocahontas County. Much of the historic work was documented in Strausbaugh and Core's *Flora of West Virginia* (1977) and many papers published in *Castanea*, with most specimens deposited at WVA. Harmon et al. (2006) produced dot maps illustrating the occurrences of all the taxa documented by voucher collections and reliable citations, reports, and other evidence. Applying the latest nomenclature from Weakley (2020) to the names in Harmon et al. (2006) yielded 1237 taxa for Pocahontas County, which is one of the largest counties in WV at 602,600 acres (942 mi²). To date, through only random explorations in Pocahontas County, the author has recorded potentially as many as an additional 83 taxa that have not been previously reported in the literature, increasing the total number for Pocahontas County by nearly 7% to 1320 taxa. This report documents 25 of these records on the YMC, demonstrating how an even moderately-intensive investigation (such as this study) of a small area (only 500 acres) can reveal much new floristic

information about a region. It is suggested that thorough studies of other selected small areas in Pocahontas County and elsewhere would likely show similar significant increases in the number of taxa and help increase floristic knowledge.

Approximately 2500 vascular plant taxa occur in the wild in WV (Harmon 2006; WVDNR 2020); of these, approximately 25% are generally considered to be historically non-native, including 18% exotic taxa. This field study found only 15% (59 of 383 taxa) of the YMC flora to be non-native (58 exotics, one introduced, no adventives), thus revealing a moderately more natural flora than the state as a whole.

The WV Division of Natural Resources classifies non-native exotic invasive plants into three categories and maintains a list of those plants in the state (WVDNR 2009). Of those, highly invasive plants are major disruptors of ecosystem processes and community composition and structure, spreading rapidly and readily establishing themselves. Moderately invasive plants have lesser impacts and typically need minor disturbances to become established. Occasionally invasive plants may out-compete natives in severely disturbed areas but spread slowly if at all. Of the exotic invasives present on YMC, eight are considered to be highly invasive and 15 are considered moderately invasive. Another 20 or so are only occasionally invasive. Four species considered to be noxious weeds by the WV Department of Agriculture are present on the YMC (WVDA 2006); these are *Elaeagnus umbellata*, *Lonicera morrowii*, *Microstegium vimineum*, and *Rosa multiflora*. Highly invasive and noxious exotics do not currently manifest as large-scale infestations on the YMC; eradication or reduction of existing populations should be standard practice on the YMC. All other exotic invasive taxa should be constantly monitored to ensure that they do not reach problematic population levels.

Synopsis of the Flora

The numerical distribution of taxa represented in the YMC flora is as follows:

	<u>Families</u>	<u>Genera</u>	<u>Species</u>
Clubmosses	1	3	3
Ferns	13	19	23
Gymnosperms	2	4	6
Lower Angiosperms	3	5	6
Monocots	14	41	78
Dicots	<u>63</u>	<u>75</u>	<u>267</u>
	96	147	383

Unsurprisingly, the three largest families represented are Asteraceae (49 taxa), Poaceae (29 taxa)

and Cyperaceae (23 taxa). *Carex* is the largest genus with 18 species on the YMC.

Future Work

Past work in Pocahontas County has focused on unique and outstanding botanical areas and the national forest. This study documents the flora of a previously understudied and underappreciated part of the county and the state, providing a baseline inventory of botanical data that can be refined and useful in future investigations. It demonstrates that there is much to be revealed through study of areas that are out of the mainstream of botanical interest. The YMC is shown to be an area of high botanical and ecological diversity with good natural integrity, in spite of the lack of uncommon, rare, or unique communities. Future studies can elaborate floristic knowledge and answer additional questions about plant distributions, here and elsewhere. This study provides an important foundation for creating and developing additional research, educational, and experiential opportunities at YMC and in the region.

Symbology

Abundance/occurrence frequency: Al = Abundant locally; Aw = Abundant and widespread; Cl = Common locally; Ct = Commonly encountered throughout; F = Frequently encountered; O = Occasional (infrequently encountered); R = Rare (rarely encountered, one or very few specimens noted); P = Present (presence noted, no determination of abundance and frequency of occurrence).

Nativity: N = Native (historically occurring naturally in WV); E = Exotic (not native to North America north of Mexico) and naturalized; E^p = Exotic and persistent or questionably naturalized.

Other notations: Eⁱ¹ = Highly invasive exotic; Eⁱ² = Moderately invasive exotic; n = Noxious exotic weed; * = State rare taxon tracked by the WV Natural Heritage Program; PCN = Pocahontas County New record; PCP = Pocahontas County Previous record; + = Specimen collected.

Checklist of the Flora

LYCOPHYTES (CLUBMOSES)

Lycopodiaceae (Clubmoss family)

Huperzia lucidula (Michx.) Trevisan [*Lycopodium lucidulum* Michx.], Shining Clubmoss. N, O.

Dendrolycopodium obscurum (L.) A. Haines
[*Lycopodium obscurum* L. var. *obscurum*],
Common Ground-pine. N, R.

Diphasiastrum digitatum (Dillenius ex A. Braun)
Holub [*Lycopodium flabelliforme* Blanch.],
Common Running-cedar. N, Cl.

PTERIDOPHYTES (FERNS)

Aspleniaceae (Spleenwort family)

Asplenium montanum Willd., Mountain Spleenwort. N,
R, +.

Asplenium platyneuron (L.) B.S.P. [*A. platyneuron*
Oakes], Ebony Spleenwort. N, R.

Asplenium rhizophyllum L. [*Camptosorus rhizophyllum*
(L.) Link], Walking Fern. N, P. (Based on
iNaturalist confirmed image)

Athyriaceae (Lady Fern family)

Athyrium asplenioides A. Eaton, Southern Lady Fern.
N, Ct.

Deparia acrostichoides (Swartz) M. Kato [*Athyrium*
thelypteroides (Michx.) Desv.], Silvery Glade
Fern. N, F.

Cystopteridaceae (Bladder Fern family)

Cystopteris tenuis (Michx.) Desv. [*C. fragilis* (L.)
Bernh., misidentified]. Fragile Fern. N, O, +.

Dennstaedtiaceae (Bracken family)

Dennstaedtia punctilobula (Michx.) Moore, Hay-
scented Fern. N, Al.

Pteridium latiusculum (Desv.) Hieronymus [*P.*
aquilinum (L.) Kuhn var. *latiusculum* (Desv.)
Underwood ex Heller], Eastern Bracken Fern. N,
O.

Diplaziopsidaceae (Glade Fern family)

Diplaziopsis pycnocarpa (Spreng.) M.G. Price
[*Athyrium pycnocarpon* (Sprengel) Tidestr.],
Glade Fern. N, R.

Dryopteridaceae (Wood Fern family)

Dryopteris carthusiana (Vill.) H. P. Fuchs [*D.*
spinulosa (O. F. Muell.) Watt], Spinulose Wood
Fern. N, O, +.

Dryopteris intermedia (Muhl. ex Willd.) Gray [*D.*
intermedia Gray], Evergreen Wood Fern. N, O.

Dryopteris marginalis (L.) Gray, Marginal Wood Fern.
N, Ct.

Polystichum acrostichoides (Michx.) Schott, Christmas
Fern. N, Ct.

Onocleaceae (Sensitive Fern family)

Onoclea sensibilis L., Sensitive Fern. N, R.

Ophioglossaceae (Adder's-tongue family)

Botrypus virginianus (L.) Michx. [*Botrychium*
virginianum (L.) Swartz], Rattlesnake Fern.
N, O.

Sceptridium dissectum (Spreng.) Lyon [*Botrychium*
dissectum Spreng], Cutleaf Grapefern. N, R.

Osmundaceae (Royal Fern family)

Claytosmunda claytoniana (L.) Metzgar & Rouhan
[*Osmunda claytoniana* L.], Interrupted Fern. N,
O.

Osmundastrum cinnamomeum (L.) C. Presl [*Osmunda*
cinnamomea L.], Cinnamon Fern. N, R.

Polypodiaceae (Polypody family)

Polypodium virginianum L., Common Rockcap Fern.
N, R.

Pteridaceae (Maidenhair Fern family)

Adiantum pedatum L., Northern Maidenhair Fern. N, O.

Thelypteridaceae (Marsh Fern family)

Phegopteris hexagonoptera (Michx.) Fée [*P.*
hexagonoptera Fée], Broad Beech Fern. N, O.

Parathelypteris noveboracensis (L.) Ching [*Thelypteris*
noveboracensis Nieuwl.], New York Fern. N, F.

Woodsiaceae (Lady Fern family)

Woodsia obtusa (Spreng.) Torr. ssp. *obtusa*, Common
Cliff Fern. N, O, +.

GYMNOSPERMS

Cupressaceae (Cypress family)

Juniperus virginiana L. var. *virginiana*, Eastern Red
Cedar. N, R.

Pinaceae (Pine family)

Picea abies (L.) Karst., Norway Spruce. E, Cl.

Picea rubens Sargent, Red Spruce. N, R.

Pinus resinosa Aiton, Red Pine. N in WV *, introduced
in YMC, Cl.

Pinus strobus L., Eastern White Pine. N, Cl.

Tsuga canadensis (L.) Carrière, Eastern Hemlock. N,
O.

MAGNOLIIDS and PRIMITIVE ANGIOSPERMS

Aristolochiaceae (Birthwort family)

Asarum canadense L., Wild Ginger. N, R.

Isotrema macrophyllum (Lam.) C.F. Reed
[*Aristolochia macrophylla* Lam.], Dutchman's
Pipe. N, F.

Lauraceae (Laurel family)

Sassafras albidum (Nutt.) Nees, Sassafras. N, O.

Magnoliaceae (Magnolia family)

Liriodendron tulipifera L., Yellow Poplar. N, Ct.
Magnolia acuminata (L.) L. [*M. acuminata* L.],
Cucumber Tree. N, O.
Magnolia fraseri Walt., Fraser Magnolia. N, O.

MONOCOTYLEDONAE (MONOCOTS)

Alliaceae (Onion family)

Allium tricoccum Aiton, Ramps. N, Ct, +.

Araceae (Arum family)

Arisaema triphyllum (L.) Schott, Jack-in-the-pulpit. N,
O.

Colchicaceae (Meadow Saffron family)

Uvularia perfoliata L., Perfoliate Bellwort. N, Ct.
Uvularia grandiflora J.F. Smith, Large-flowered
Bellwort. N, R.

Cyperaceae (Sedge family)

Carex appalachica J. Webber & P.W. Ball [not in S &
C], Appalachian Sedge. N, O, +.
Carex atlantica L. Bailey [*C. incomperta* Bickn.],
Prickly Bog Sedge. N, O, +.
Carex baileyi Britt., Shortbeak Sedge. N, O, +.
Carex blanda Dewey, Eastern Woodland Sedge. N, O.
Carex communis Bailey, Fibrous-rooted Sedge. N, R,
+.
Carex hirsutella Mack., Fuzzy Sedge. N, R, +.
Carex laxiflora Lam., Broad Loose-flowered Sedge. N,
R, +.
Carex lurida Wahl., Sallow Sedge. N, F, +.
Carex pensylvanica Lam., Pennsylvania Sedge. N, F,
+.
Carex plantaginea Lam., Searsucker Sedge. N, O, +.
Carex platyphylla Carey, Broadleaf Sedge. N, O.
Carex radiata (Wahl.) Small [*C. radiata* (Wahl.)
Dewey], Eastern Star Sedge. N, R, +.
Carex scabrata Schwein., Eastern Rough Sedge. N, R,
+.
Carex scoparia Schkuhr ex Willd. [*C. scoparia*
Schukr], Broom Sedge. N, R, +.
Carex squarrosa L., Squarrose Sedge. N, R, +.
Carex swanii (Fern.) Mack., Swan's Sedge. N, Cl, +.
Carex virescens Muhl. ex Willd. [*C. virescens* Muhl.],
Ribbed Sedge. N, R, +.

Carex vulpinoidea Michx., Foxtail Sedge. N, R, +.
Eleocharis tenuis (Willd.) J.A. Schultes var. *tenuis*,
Slender Spikerush. N, O, +.
Rhynchospora capitellata (Michx.) Vahl, Brownish
Beaksedge. N, Cl, +.
Schoenoplectus tabernaemontani (C.C. Gmel.) Palla
[*Scirpus validus* Vahl var. *creber* Fern.], Softstem
Bulrush. N, Cl, +.
Scirpus atrovirens Willd. [*S. atrovirens* Muhl.], Black
Bulrush. N, P, +. (var. not determined)
Scirpus expansus Fern., Woodland Bulrush. N, P.

Dioscoreaceae (Yam family)

Dioscorea villosa L., Wild Yam. N, P, +.

Iridaceae (Iris family)

Sisyrinchium angustifolium P. Mill., Narrow-leaved
Blue-eyed Grass. N, O, +.

Juncaceae (Rush family)

Juncus acuminatus Michx., Sharp-fruited Rush. N, R,
+.
Juncus antheratus (Wieg.) R.E. Brooks [*J. tenuis* var.
antheratus], Large Path Rush. N, O, +, PCN.
Juncus effusus L. ssp. *solutus* (Fern. & Wieg.) Hämet-
Ahti, Soft Rush. N, O, +.
Juncus tenuis Willd., Path Rush. N, O, +.
Luzula multiflora (Ehrh.) Lej. var. *multiflora* [*L.*
multiflora (Retz.) Lej.], Common Woodrush.
N. R.

Liliaceae (Lily family)

Erythronium umbilicatum Parks & Hardin ssp.
umbilicatum, Dimpled Trout Lily. N, Cl.
Medeola virginiana L., Indian Cucumber-root. N, O.

Orchidaceae (Orchid family)

Goodyera pubescens (Willd.) R. Br., Downy
Rattlesnake Plantain. N, O.
Platanthera clavellata (Michx.) Luer [*Habenaria*
clavellata (Michx.) Spreng.], Small Green Wood
Orchid. N, Cl, +.
Platanthera orbiculata (Pursh) Lindl. [*Habenaria*
orbiculata (Pursh) Torr.], Large Round-leaved
Orchid. N, R.
Spiranthes cernua (L.) L.C. Richard, Nodding Ladies'
Tresses. N, O, +.
Spiranthes lacera (Raf.) Raf. var. *gracilis* (Bigelow)
Luer [*S. gracilis* (Bigelow) Beck], Southern
Slender Ladies' Tresses. N, O, +.

Poaceae (Grass family) [Gramineae]

Agrostis perennans (Walt.) Tuckerman, Autumn
Bentgrass. N, O, +.

Andropogon virginicus L. var. *virginicus*, Broomsedge. N, O, +, PCP.

Anthoxanthum odoratum L. ssp. *odoratum*, Sweet Vernal Grass. E, P.

Arrhenatherum elatius (L.) Palisot de Beauv. ex J. & K. Presl. var. *elatius* [*A. elatius* (L.) Mert. & Koch.], Tall Oatgrass. E, O, +.

Bromus latiglumis (Schear) Hitchc., Auricled Brome. N, R, +, PCN.

Dactylis glomerata L., Orchard Grass. E, Al.

Danthonia compressa Aust. ex Peck, Mountain Oatgrass. N, O, +.

Danthonia spicata (L.) Palisot de Beauvois ex Roemer & J.A. Schultes [*D. spicata* (L.) Beauv.], Poverty Oatgrass. N, F, +.

Dichanthelium acuminatum (Swartz) Gould & C.A. Clark var. *fasciculatum* (Torr.) Freckmann [*Panicum lanuginosum* Ell.], Slender-stemmed Witchgrass. N, F, +.

Dichanthelium commutatum (J.A. Schultes) Gould var. *commutatum* [*Panicum commutatum* J.A. Schultes], Variable Witchgrass. N, F, +.

Dichanthelium dichotomum (L.) Gould var. *dichotomum* [*Panicum dichotomum* L.], Bushy Panic Grass. N, R.

Dichanthelium latifolium (L.) Harvill [*Panicum latifolium* L.], Broad-leaved Witchgrass. N, R.

Elymus hystrix L. var. *hystrix* [*Hystrix patula* Moench], Common Bottlebrush Grass. N, O.

Festuca aff. *rubra* L. ssp. *rubra*, Red Fescue. N, P.

Festuca trachyphylla (Hackel) Krajina [*F. ovina* L.], Hard Fescue. E, R, +.

Glyceria striata (Lam.) A.S. Hitchc. var. *striata*, Fowl Mannagrass. N, O, +.

Holcus lanatus L., Velvet Grass. E², Al.

Leersia oryzoides (L.) Swartz [*L. oryzoides* (L.) Sweet], Rice Cutgrass, N, Al.

Microstegium vimineum (Trin.) A. Camus [not in S & C], Japanese Stilt Grass. E¹n, Ct.

Panicum philadelphicum Benth. ex Trin. ssp. *philadelphicum* [*P. philadelphicum* Bernh.], Woodland Panic Grass. N, R, +, PCN.

Phleum pratense L., Timothy Grass. E, Cl.

Poa annua L., Annual Bluegrass. E, P.

Poa cuspidata Nutt., Early Bluegrass. N, O, +.

Poa palustris L., Fowl Bluegrass. N, O.

Poa pratensis L. ssp. *pratensis*, Kentucky Bluegrass. E², O, +.

Poa sylvestris Gray, Woodland Bluegrass. N, F, +.

Poa trivialis L. ssp. *trivialis*, Rough Bluegrass. E², O, +.

Setaria pumila (Poir.) Roemer & J.A. Schultes [*S. glauca* (L.) Beauv.], Yellow Foxtail. E, R, +.

Sphenopholis intermedia (Rydb.) Rydb. [*S. intermedia* Rydb.], Slender Wedgegrass. N, F, +.

Ruscaceae (Ruscus family)

Maianthemum canadense Desf., Canada Mayflower. N, O.

Maianthemum racemosum (L.) Link [*Smilacina racemosa* (L.) Desf.], False Solomon's Seal. N, F.

Polygonatum biflorum (Walt.) Ell. var. *biflorum*, Common Solomon's Seal. N, F.

Polygonatum pubescens (Willd.) Pursh, Downy Solomon's Seal. N, R, +.

Smilacaceae (Greenbrier family)

Smilax rotundifolia L., Common Greenbrier. N, Ct.

Trilliaceae (Trillium family)

Trillium erectum L. var. *erectum*, Wake-robin. N, F.

Trillium grandiflorum (Michx.) Salisb., Large-flowered Trillium. N, F.

Typhaceae (Cattail family)

Typha latifolia L., Common Broadleaf Cattail. N, Cl.

EUDICOTYLEDONAE (EUDICOTS)**Aceraceae** (Maple family)

Acer pensylvanicum L., Striped Maple. N, Ct, +.

Acer rubrum L. var. *rubrum*, Red Maple. N, Aw.

Acer saccharum Marsh. var. *saccharum*, Sugar Maple. N, Aw.

Acer spicatum Lam., Mountain Maple. N, O, +.

Anacardiaceae (Cashew family)

Rhus typhina L., Staghorn Sumac. N, O.

Toxicodendron radicans (L.) Kuntze var. *radicans* [*Rhus radicans* L.], Poison Ivy. N, Cl.

Apiaceae (Carrot family) [Umbelliferae]

Cicuta maculata L. var. *maculata*, Water Hemlock. N, P. (Based on iNaturalist confirmed image)

Cryptotaenia canadensis (L.) DC., Honewort. N, F.

Daucus carota L. ssp. *carota*, Queen Anne's Lace. E², Al.

Heracleum maximum Bartr., Cow Parsnip. N, F.

Osmorhiza claytonii (Michx.) C.B. Clarke, Hairy Sweet Cicely. N, F.

Osmorhiza longistylis (Torr.) DC., Smooth Sweet Cicely. N, O, +.

Sanicula canadensis L. var. *canadensis*, Black Snakeroot. N, F.

Taenidia integerrima (L.) Drude, Yellow Pimpernel. N, Cl, +.

Apocynaceae (Dogbane family) (includes Asclepiadaceae)

Apocynum cannabinum L., Indian Hemp. N, Cl.
Asclepias exaltata L., Poke Milkweed. N, Cl.
Asclepias quadrifolia Jacq., Four-leaved Milkweed. N,
 F.
Asclepias syriaca L., Common Milkweed. N, F.

Aquifoliaceae (Holly family)

Ilex montana Torr. & Gray ex Gray [*I. montana* Torr.
 & Gray], Mountain Holly. N, P. (Based on
 iNaturalist confirmed image)

Araliaceae (Ginseng family)

Aralia racemosa L., Spikenard. N, O.
Nanopanax trifolius (L.) Haines [*Panax trifolius* L.],
 Dwarf Ginseng. N, R.
Panax quinquefolius L., Ginseng. N, O.

Asteraceae (Sunflower family) [Compositae]

Achillea gracilis Raf. [*A. millefolium* L.], Eastern
 Yarrow. N, F.
Ageratina altissima (L.) King & H.E. Robins. var.
altissima [*Eupatorium rugosum* Houtt.], White
 Snakeroot. N, Ct.
Ambrosia artemisiifolia L., Common Ragweed. N, F.
Antennaria parlinii Fern. ssp. *parlinii* [*A.*
plantaginifolia (L.) Richards var. *arnoglossa*
 (Greene) Cronquist], Plantainleaf Pussytoes. N,
 O.
Arctium minus Bernhardt [*A. minus* (Hill) Bernh.],
 Burdock. E², O.
Artemisia vulgaris L., Common Mugwort. E, Al, PCN.
Bidens frondosa L., Devil's Beggar-ticks. N, O.
Cichorium intybus L., Chicory. E, O.
Cirsium discolor (Muhl. ex Willd.) Spreng. [*C. discolor*
 (Muhl.) Spreng.], Field Thistle. N, Cl.
Crepis capillaris (L.) Wallr., Smooth Hawksbeard. E,
 O.
Erechtites hieraciifolia (L.) Raf. ex DC., Fireweed. N,
 O.
Erigeron annuus (L.) Pers., White-top Fleabane. N, Cl.
Erigeron pulchellus Michx., Robin's Plantain. N, R.
 (var. not determined)
Erigeron strigosus Muhl. ex Willd. var. *strigosus* [*E.*
strigosus Muhl.], Common Rough Fleabane. N,
 Cl.
Eupatorium perfoliatum L., Boneset. N, F.
Eurybia divaricata (L.) Nesom [*Aster divaricatus* L.],
 White Wood Aster. N, O, +.
Euthamia graminifolia (L.) Nutt. var. *graminifolia*
 [*Solidago graminifolia* L.], Grass-leaved
 Goldenrod. N, F.
Eutrochium fistulosum (Barratt) E.E. Lamont
 [*Eupatorium fistulosum* Barratt], Hollowstem Joe-
 pye-Weed. N, O.
Helenium autumnale L., Yellow Sneezeweed. N, O.

Helenium flexuosum Raf., Southern Sneezeweed. N, O.
Hieracium scabrum Michx., Rough Hawkweed. N, R.
Hieracium venosum L., Rattlesnake Weed. N, O.
Lactuca canadensis L., Wild Lettuce. N, F.
Leucanthemum vulgare Lam. [*Chrysanthemum*
leucanthemum L.], Ox-eye Daisy. E², F.
Nabalus Cassini sp. [*Prenanthes* L. sp.], Rattlesnake
 Root. N, F.
Packera aurea (L.) A. & D. Löve [*Senecio aureus* L.],
 Golden Ragwort. N, Ct.
Pilosella caespitosa (Dumortier) P.D. Sell & C. West
 [*Hieracium pratense* Tausch.], Field Hawkweed.
 E, O.
Pilosella officinarum F.W. Schultz & Schultz
 'Bipontinus' [*Hieracium pilosella* L.], Mouse-ear
 Hawkweed. E, R, +.
Rudbeckia laciniata L. var. *laciniata*, Green-headed
 Coneflower. N, P.
Smallanthus uvedalius (L.) Mackenzie ex Small
 [*Polymnia uvedalia* L.], Yellow-flowered
 Leafcup. N, R. (tentative identification)
Solidago altissima L. var. *altissima*, Tall Goldenrod.
 N, O, +, PCN.
Solidago bicolor L., Silverrod. N, Cl, +.
Solidago curtisii Torr. & Gray, Curtis's Goldenrod. N,
 O, +.
Solidago nemoralis Aiton var. *nemoralis*, Oldfield
 Goldenrod. N, F, +.
Solidago rugosa P. Mill. [*S. rugosa* Aiton], Wrinkled-
 leaved Goldenrod. N, Cl. (var. not determined)
Symphotrichum cordifolium (L.) Nesom [*Aster*
cordifolius L.], Blue Wood Aster. N, F, +.
Symphotrichum dumosum (L.) Nesom var. *dumosum*
 [*Aster dumosus* L.], Long-stalked or Bushy Aster.
 N, O, +.
Symphotrichum firmum (Nees) Nesom [*Aster puniceus*
 L. var. *firmus*], Shining Aster. N, R, +, PCN.
Symphotrichum lateriflorum (L.) A. & D. Löve [*Aster*
lateriflorus (L.) Britt.], Starved Aster. N, F, +.
Symphotrichum lowrieianum (Porter) Nesom [*Aster*
lowrieianus Porter], Smooth Heart-leaved Wood
 Aster. N, O, +, PCP.
Symphotrichum pilosum (Willd.) Nesom var. *pringlei*
 (A. Gray) Nesom [*Aster pilosus* Willd. var.
pringlei Gray], White Old-field Aster. N, F, +,
 PCN.
Symphotrichum prenanthoides (Muhl. ex Willd.)
 Nesom [*Aster prenanthoides* Muhl.], Crooked
 Stem or Zigzag Aster. N, O, +.
Symphotrichum puniceum (L.) Nesom var. *puniceum*
 [*Aster puniceus* L. var. *puniceus*], Purple-stem
 Aster. N, O, +.

Symphotrichum racemosum (Ell.) Nesom var. *racemosum* [*Aster vimineus* Lam.], Small White Aster. N, O, +.

Symphotrichum undulatum (L.) Nesom [*Aster undulatus* L. var. *loriformis* Burgess], Wavyleaf Aster. N, R, +.

Taraxacum officinale G.H. Weber ex Wiggers [*T. officinale* Weber], Common Dandelion. E, Cl.

Tussilago farfara L., Coltsfoot. E, Cl.

Verbesina alternifolia (L.) Britt. ex Kearney, Common Wingstem. N, Cl.

Vernonia noveboracensis (L.) Michx., New York Ironweed. N, F.

Balsaminaceae (Touch-me-not family)

Impatiens capensis Meerb., Orange or Spotted Jewelweed. N, P.

Impatiens pallida Nutt., Yellow Jewelweed. N, Aw, +.

Berberidaceae (Barberry family)

Berberis thunbergii DC., Japanese Barberry. E¹, O, +.

Caulophyllum thalictroides (L.) Michx., Common Blue Cohosh. N, F, +.

Podophyllum peltatum L., Mayapple. N, F.

Betulaceae (Birch family)

Betula alleghaniensis Britt., Yellow Birch. N, O.

Betula lenta L. var. *lenta*, Sweet or Black Birch. N, Ct.

Carpinus caroliniana Walt. ssp. *virginiana* (Marsh.) Fernald [*C. caroliniana* Walt. var. *virginiana* (Marsh.) Fernald], Ironwood. N, F.

Corylus americana Walt., American Hazelnut. N, R.

Ostrya virginiana (P. Mill.) K. Koch, Hop Hornbeam. N, F.

Boraginaceae (Borage family)

Echium vulgare L., Viper's Bugloss. E², O.

Brassicaceae (Mustard family) [Cruciferae]

Alliaria petiolata (Bieb.) Cavara & Grande [*A. officinalis* Andr.], Garlic Mustard. E¹, F.

Barbarea vulgaris Aiton [*B. vulgaris* R. Br.], Common Winter Cress. E², F.

Borodinia laevigata (Muhl. ex Willd.) P.J. Alexander & Windham [*A. laevigata* (Muhl.) Poir.], Smooth Rockcress. N, F, +.

Cardamine angustata O.E. Schulz [*Dentaria heterophylla* Nutt.], Slender Toothwort. N, O.

Cardamine concatenata (Michx.) O. Schwarz [*Dentaria laciniata* Muhl.], Cutleaf Toothwort. N, O.

Cardamine diphylla (Michx.) Wood [*Dentaria diphylla* Michx.], Two-leaved Toothwort. N, O.

Cardamine hirsuta L., Hairy Bittercress. E, O.

Cardamine parviflora L. var. *arenicola* (Britt.) O.E. Schulz [*C. arenicola* Britt.], Small-flowered Bittercress. N, R, +, PCN.

Cardamine pensylvanica Muhl. ex Willd., Pennsylvania Bittercress. N, R.

Campanulaceae (Bellflower family)

Lobelia inflata L., Indian Tobacco. N, O.

Lobelia puberula Michx., Downy Lobelia. N, O, +.

Caprifoliaceae (Honeysuckle family)

Lonicera morrowii Gray, Morrow's Honeysuckle. E¹n, F.

Caryophyllaceae (Pink family)

Cerastium fontanum Baumg. ssp. *vulgare* (Hartman) Greuter & Burdet [*C. vulgatum* L.], Common Mouse-ear Chickweed. E, Cl.

Dianthus armeria L. ssp. *armeria*, Deptford Pink. E, O.

Paronychia canadensis (L.) Wood, Canada Whitlow-wort. N, O, +.

Saponaria officinalis L., Soapwort. E, R.

Stellaria longifolia Muhl., Longleaf Stitchwort. N, O.

Stellaria media (L.) Vill. [*S. media* (L.) Cyrillo], Common Chickweed. E², Cl.

Stellaria pubera Michx., Giant or Star Chickweed. N, O.

Convolvulaceae (Morning Glory family)

Convolvulus species 4 [= *angulata*] [*Calystegia sepium* L. var. *repens* (L.) A. Gray], Northwestern Bindweed. N, R, PCN.

Cuscuta gronovii Willd. ex Roemer & J.A. Schultes var. *gronovii* [*C. gronovii* Willd.], Common Dodder. N, O, +.

Cornaceae (Dogwood family)

Benthamidia florida (L.) Spach [*Cornus florida* L.], Flowering Dogwood. N, Cl.

Swida alternifolia (L. f.) Small [*Cornus alternifolia* L. f.], Alternate-leaved Dogwood. N, O.

Crassulaceae (Stonecrop family)

Sedum ternatum Michx., Whorled Stonecrop. N, F.

Dipsacaceae (Teasel family)

Dipsacus fullonum L. [*Dipsacus sylvestris* Huds.], Common Teasel. E², R.

Elaeagnaceae (Oleaster family)

Elaeagnus umbellata Thunb., Autumn Olive. E¹n, O.

Ericaceae (Heath family)

- Chimaphila maculata* (L.) Pursh [*C. maculata* (L.) Gray], Pipsissewa. N, O.
Gaultheria procumbens L., Teaberry or Wintergreen. N, O.
Gaylussacia baccata (Wang.) K. Koch, Black Huckleberry. N, Cl.
Kalmia latifolia L., Mountain Laurel. N, R. (Based on reliable personal communication)
Monotropa uniflora L., Indian Pipes. N, O.
Rhododendron perichlymenoides (Michx.) Shinnery [*R. nudiflorum* (L.) Torr.], Pinxterflower. N, F.
Vaccinium erythrocarpum Michx., Mountain Cranberry. N, P. (Based on iNaturalist confirmed image)
Vaccinium pallidum Aiton, Late Lowbush or Dryland Blueberry. N, Cl, +.
Vaccinium stamineum L. var. *stamineum*, Deerberry. N, Cl.

Fabaceae (Legume family) [Leguminosae]

- Amphicarpaea bracteata* (L.) Fern., Hog Peanut. N, F. (var. not determined)
Lespedeza cuneata (Dum.-Cours.) G. Don [*L. cuneata* Michx.], Sericea Lespedeza. E¹, O.
Robinia pseudoacacia L., Black Locust. N, F.
Trifolium campestre Schreb., Hop Clover. E, P.
Trifolium dubium Sibth., Small Hop Clover. E, P.
Trifolium pratense L., Red Clover. E, Cl.
Trifolium repens L., White Clover. E, Cl.

Fagaceae (Beech family)

- Castanea mollissima* Blume [not in S & C], Chinese Chestnut. E^p, R, +, PCN.
Fagus grandifolia Ehrh., American Beech. N, Ct.
Quercus alba L., White Oak. N, Cl.
Quercus coccinea Muenchh., Scarlet Oak. N, O.
Quercus montana Willd. [*Q. prinus* L.], Chestnut Oak. N, F.
Quercus rubra L. var. *rubra*, Red Oak. N, Aw.
Quercus velutina Lam., Black Oak. N, O.

Fumariaceae (Fumitory family)

- Dicentra canadensis* (Goldie) Walpers, Squirrel Corn. N, Cl.
Dicentra cucullaria (L.) Bernh., Dutchman's Britches. N, Cl.

Gentianaceae (Gentian family)

- Gentiana saponaria* L., Soapwort Gentian. N, R, +.
Gentianella quinquefolia (L.) Small var. *quinquefolia* [*Gentiana quinquefolia* L.], Appalachian Gentianella. N, Cl, +.

Geraniaceae (Geranium family)

- Geranium* aff. *columbinum* L., Long-stalked Cranesbill. E, P. (Based on iNaturalist image to be confirmed)
Geranium robertianum L., Herb Robert. N, O, PCN.

Grossulariaceae (Gooseberry family)

- Ribes cynosbati* L., Prickly Gooseberry. N, R, +.

Hamamelidaceae (Witch-hazel family)

- Hamamelis virginiana* L. var. *virginiana*, Witch-hazel. N, F.

Hippocastanaceae (Horse-chestnut family)

- Aesculus flava* Aiton [*A. octandra* Marsh.], Yellow Buckeye. N, O.

Hydrangeaceae (Hydrangea family)

- Hydrangea arborescens* L., Wild Hydrangea. N, F.

Hydrastidaceae (Goldenseal family)

- Hydrastis canadensis* L., Goldenseal. N, R.

Hydrophyllaceae (Waterleaf family)

- Hydrophyllum canadense* L., Broad-leaved Waterleaf. N, Ct.
Hydrophyllum virginianum L. var. *virginianum*, Virginia Waterleaf. N, O.
Phacelia dubia (L.) Trel. var. *dubia* [*P. dubia* (L.) Trel.], Appalachian Phacelia. N, P. (Based on iNaturalist confirmed image)

Hypericaceae (St. John's-wort family) [Guttiferae]

- Hypericum densiflorum* Pursh, Mountain Bushy St. John's-wort. N, R.
Hypericum mutilum L. var. *mutilum*, Common Dwarf St. John's-wort. N, O.
Hypericum perforatum L., European St. John's-wort. E², F.
Hypericum prolificum L., Shrubby St. John's-wort. N, F, +.
Hypericum punctatum Lam., Spotted St. John's-wort. N, O.

Juglandaceae (Walnut family)

- Carya cordiformis* (Wang.) K. Koch, Bitternut Hickory. N, O, +.
Carya ovalis (Wang.) Sarg., Red Pignut Hickory. N, F, PCP.
Carya ovata (Mill.) K. Koch, Shagbark Hickory. N, Cl.
Juglans cinerea L., Butternut or White Walnut. N, Cl, *, +.
Juglans nigra L., Black Walnut. N, R.

Lamiaceae (Mint family) [Labiatae]

Blephilia hirsuta (Pursh) Benth., Hairy Wood Mint. N, F, +.

Clinopodium vulgare L. [*Satureja vulgaris* (L.) Fritsch], Wild Basil. N, O, +.

Collinsonia canadensis L. [*C. canadensis* Nutt.], Richweed. N, O.

Galeopsis bifida Boenn. [*G. tetrahit* L. var. *bifida* (Boenn.) Lej. & Court.], Bifid Hemp Nettle. E, P, +.

Glechoma hederacea L., Ground-ivy. Eⁱ², O.

Lycopus virginicus L., Virginia Bugleweed. N, O.

Monarda didyma L., Scarlet Beebalm or Oswego Tea. N, R.

Monarda fistulosa L. var. *fistulosa*, Appalachian Bergamot. N, O, +.

Prunella vulgaris L. var. *vulgaris*, Self-heal or Heal-all. E, F, +.

Pycnanthemum verticillatum (Michx.) Pers., Whorled Mountain Mint. N, R, +.

Linaceae (Flax family)

Linum striatum Walt., Ridged Yellow Flax. N, R, +.

Malvaceae (Mallow family) (includes Tiliaceae)

Tilia americana L. var. *heterophylla* (Vent.) Loud. [*T. heterophylla* Vent.], Mountain or White Basswood. N, F.

Montiaceae (Montia family)

Claytonia caroliniana Michx., Carolina Spring Beauty. N, O.

Nyssaceae (Tupelo family)

Nyssa sylvatica Marsh, Black Gum. N, R.

Oleaceae (Olive family)

Fraxinus americana L., White Ash. N, F.

Ligustrum obtusifolium Sieb. & Zucc. var. *obtusifolium* [not in S & C], Border Privet. Eⁱ², R, +, PCN.

Ligustrum vulgare L., Common Privet. Eⁱ¹, R, +, PCP.

Onagraceae (Evening-primrose family)

Circaea canadensis (L.) Hill [*C. quadrisulcata* (Maximowicz) Franchet & Sava. var. *canadensis* (L.) Hara], Enchanter's Nightshade. N, O.

Ludwigia palustris (L.) Ell., Marsh Purslane. N, O.

Oenothera biennis L., Common Evening-primrose. N, O.

Oenothera perennis L., Little Sundrops. N, O

Orobanchaceae (Broomrape family) (includes much of traditional Scrophulariaceae)

Aureolaria laevigata (Raf.) Raf. [*Gerardia laevigata* Raf.], Entire-leaved Yellow Foxglove. N, Cl.

Conopholis americana (L.) Wallr. [*C. americana* (L. f.) Wallr.], Squawroot or Bearcorn. N, P.

Epifagus virginiana (L.) Bart., Beechdrops. N, P.

Melampyrum lineare Desr. [*M. lineare* Desr. var. *latifolium* Bart.], Cow-wheat. N, Cl, +.

Pedicularis canadensis L., Eastern Lousewort or Wood-betony. N, O.

Oxalidaceae (Wood-sorrel family)

Oxalis corniculata L., Creeping Lady's-sorrel. E, R, +, PCN.

Oxalis stricta L. [*O. europaea* Jord.], Common Yellow Wood-sorrel. N, F.

Papaveraceae Poppy family)

Sanguinaria canadensis L., Bloodroot. N, O.

Phrymaceae (Lopseed family)

Mimulus ringens L. var. *ringens*, Common Monkey-flower. N, O.

Phryma leptostachya L., American Lopseed. N, R, +.

Phytolaccaceae (Pokeweed family)

Phytolacca americana L., Pokeweed. N, O.

Plantaginaceae (Plantain family) (includes much of traditional Scrophulariaceae)

Penstemon digitalis Nutt. ex Sims [*P. digitalis* Nutt.], Tall White Beardtongue. N, Cl, +, PCN.

Plantago lanceolata L., English Plantain. E, P.

Plantago rugelii Dcne., Broad-leaved Plantain. N, P.

Veronica americana Schwein. ex Benth. [*V. americana* (Raf.) Schwein.], American Brooklime. N, R, +.

Veronica arvensis L., Corn Speedwell. E, O.

Veronica officinalis L., Common Speedwell. E, O, +.

Veronica serpyllifolia L. ssp. *serpyllifolia*, Thyme-leaved Speedwell. E, O.

Polemoniaceae (Jacob's-ladder family)

Phlox stolonifera Sims, Creeping Phlox. N, R.

Polygonaceae (Smartweed family)

Fallopia cristata Engelm. & A. Gray [*Polygonum cristatum* Engelm. & A. Gray], Crested Climbing Buckwheat. N, R, +.

Persicaria longiseta (de Bruijn) Kitagawa [*Polygonum caespitosum* Blume var. *longisetum* (de Bruyn) A.N. Steward], Asiatic Long-bristled Smartweed. Eⁱ², F.

Persicaria sagittata (L.) Gross ex Nakai [*Polygonum sagittatum* L.], Arrowleaf Tearthumb. N, Cl.

Persicaria virginiana (L.) Gaertner [*Tovara virginiana* (L.) Raf.], Jumpseed. N, Ct.

Rumex obtusifolius L., Broadleaf Dock. E, O.

Primulaceae (Primrose family)

Lysimachia quadrifolia L., Whorled Loosestrife. N, O, +.

Ranunculaceae (Buttercup family)

Actaea pachypoda Ell., Dolls' Eyes or White Baneberry. N, O, +.

Actaea podocarpa DC. [*Cimicifuga americana* Michx.], Late Black Cohosh. N, O, +.

Actaea racemosa L. [*Cimicifuga racemosa* (L.) Nutt.], Early or Common Black Cohosh. N, F, +.

Anemone lancifolia Pursh, Lanceleaf Anemone. N, O, +.

Anemone quinquefolia L., Wood Anemone. N, F.

Anemone virginiana L. var. *virginiana*, Thimbleweed. N, R, +.

Clematis virginiana L., Virgin's-bower. N, F.

Hepatica acutiloba DC., Sharp-lobed Hepatica. N, O.

Ranunculus abortivus L., Kidneyleaf Buttercup. N, F.

Ranunculus allegheniensis Britt., Allegheny Buttercup. N, O, +.

Ranunculus hispidus Michx., Hispid Buttercup. N, O, +.

Ranunculus recurvatus Poir. var. *recurvatus*, Hooked Buttercup. N, F.

Thalictrum dioicum L., Early Meadowrue. N, O.

Rosaceae (Rose family)

Agrimonia parviflora Aiton, Small-flowered Agrimony. N, F.

Amelanchier arborea (Michx. f.) Fern., Common or Downy Serviceberry. N, O.

Crataegus macrosperma Ashe, Variable Hawthorn. N, O.

Crataegus punctata Jacq., Dotted Hawthorn. N, O, +.

Fragaria virginiana P. Miller [*F. virginiana* Duchesne], Wild Strawberry. N, O.

Geum canadense Jacq., White Avens. N, F, +.

Geum vernum (Raf.) Torr. & Gray, Spring Avens. N, R, +, PCP.

Malus pumila P. Mill [*Pyrus malus* L.], Common Apple. EP, O.

Potentilla recta L., Upright Cinquefoil. E, R.

Potentilla simplex Michx., Common Cinquefoil. N, O.

Prunus alleghaniensis Porter var. *alleghaniensis*, Allegheny Plum. N, R, *, +, PCN.

Prunus pensylvanica L. f., Fire or Pin Cherry. N, O.

Prunus serotina Ehrh. var. *serotina*, Black Cherry. N, Aw.

Rosa carolina L. ssp. *carolina*, Pasture or Carolina Rose. N, O.

Rosa multiflora Thunb. ex Murr. [*R. multiflora* Thunb.], Multiflora Rose. E¹n, O.

Rubus hispidus L., Bristly Dewberry. N, O, +.

Rubus occidentalis L., Black Raspberry. N, O.

Rubus pensilvanicus Poir. [*R. laudatus* Berger], Pennsylvania Blackberry. N, F.

Rubiaceae (Madder family)

Galium aparine L., Common Bedstraw or Cleavers. N, O.

Galium circaezans Michx., Forest Bedstraw. N, F.

Galium concinnum Torr. & Gray, Shining Bedstraw. N, O, PCN.

Galium pilosum Aiton, Hairy Bedstraw. N, O, +.

Galium triflorum Michx., Sweet-scented Bedstraw. N, O, +.

Houstonia L. sp., Bluets. N, P.

Mitchella repens L., Partridge Berry. N, O.

Salicaceae (Willow family)

Populus grandidentata Michx., Bigtooth Aspen. N, R.

Populus ×jackii Sarg. [*×Populus gileadensis* Rouleau], Balm-of-Gilead. N, R, +.

Salix nigra Marsh., Black Willow. N, R, PCN.

Salix sericea Marsh., Silky Willow. N, Cl.

Saxifragaceae (Saxifrage family)

Heuchera americana L., American Alumroot. N, O, +, PCN.

Micranthes micranthidifolia (Haworth) Small [*Saxifraga micranthidifolia* (Haw.) Britt.], Brook-lettuce. N, O.

Mitella diphylla L., Miterwort. N, R.

Tiarella cordifolia L., Foamflower. N, O.

Scrophulariaceae (Snapdragon family)

Scrophularia marilandica L., Eastern Figwort. N, R, +.

Verbascum thapsus L. ssp. *thapsus*, Woolly Mullein. E², O.

Solanaceae (Nightshade family)

Solanum carolinense L. var. *carolinense*, Horse-nettle. N, F.

Ulmaceae (Elm family)

Ulmus rubra Muhl., Slippery Elm. N, F.

Urticaceae (Nettle family)

Laportea canadensis (L.) Wedd., Wood-nettle. N, Al.

Pilea pumila (L.) Gray, Clearweed. N, Al, +.

Verbenaceae (Verbena family)

Verbena urticifolia L., White Vervain. N, F.

Viburnaceae (Viburnum family)

Sambucus canadensis L., Common Elderberry. N, F.
Sambucus racemosa L. var. *pubens* (Michx.)
Trautvetter & C.A. Meyer [*S. pubens* Michx.],
Red Elderberry. N, O.
Viburnum acerifolium L., Mapleleaf Viburnum. N, O.

Violaceae (Violet family)

Viola cucullata Aiton, Marsh Blue Violet. N, O.
Viola hastata Michx., Halberd-leaf Yellow Violet. N,
F.
Viola labradorica Schrank [*V. conspersa* Reichenb.],
American Dog Violet. N, O, PCN.
Viola palmata L. var. *triloba* (Schwein.) de
Gingins ex DC. [*V. triloba* Schwein.], Northern
Three-lobed Violet. N, R.
Viola pubescens Aiton, Hairy Yellow Forest Violet. N,
O, +.
Viola rostrata Pursh, Long-spurred Violet. N, R.
Viola rotundifolia Michx., Roundleaf Yellow Violet.
N, F.
Viola sororia Willd. var. *sororia* [*V. papilionacea*
Pursh], Common Blue Violet. N, Ct.

Vitaceae (Grape family)

Parthenocissus quinquefolia (L.) Planch., Virginia
Creeper. N, F.
Vitis aestivalis Michx. var. *aestivalis*, Summer Grape.
N, F, +, PCN.

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