Vascular Flora and Macroscopic Fauna on the Fernow Experimental Forest

Darlene M. Madarish
Jane L. Rodrigue
Mary Beth Adams
Abstract

This report is the first comprehensive inventory of the vascular flora and macroscopic fauna known to occur within the Fernow Experimental Forest in north-central West Virginia. The compendium is based on information obtained from previous surveys, current research, and the personal observations of USDA Forest Service personnel and independent scientists. More than 750 documents on Fernow-related research have been published. The earliest report on the vegetation on what is now the experimental forest dates back to 1856.

The Authors

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Contents

Introduction .............................................................................................................................. 1
The Fernow Experimental Forest .......................................................................................... 1
Vascular Flora of the Fernow Experimental Forest .............................................................. 3
Macroscopic Fauna of the Fernow Experimental Forest ...................................................... 16
Invertebrates ....................................................................................................................... 16
Vertebrates ......................................................................................................................... 27
  Fish .................................................................................................................................... 27
  Amphibians ....................................................................................................................... 28
  Reptiles .......................................................................................................................... 28
  Birds ............................................................................................................................... 29
  Mammals ....................................................................................................................... 33

Literature Cited ..................................................................................................................... 35
Introduction

In 1915, the U.S. Forest Service purchased 1,473 hectares (ha) of land near Parsons, West Virginia. Timber on this tract had been harvested heavily during the horse and railroad logging era (1903-11) (Trimble 1977). A forest inventory was initiated in 1922, and forest and watershed research began in 1933. In the following year, this land was designated as the Fernow Experimental Forest, after Bernhard E. Fernow, a German forester and pioneer of modern forestry methods in America. The Forest was expanded to 1,902 ha in 1974.

Initial research on the Fernow that began in 1949 examined the long-term effects of different timber-harvesting practices on forest stand quality and diversity. This silvicultural research continues today. In 1951, scientists began to monitor the effects of harvesting practices and other treatments on water quality and quantity in streams draining Fernow watersheds. More recently researchers have adopted a multidisciplinary approach as current research on the Fernow encompasses numerous cooperative studies conducted by scientists with the Northeastern Research Station and other governmental agencies, universities, and private organizations. This report is the first comprehensive inventory of the vascular flora and macroscopic fauna known to occur within the Fernow Experimental Forest in north-central West Virginia. The compendium is based on information obtained from previous surveys, current research, and the personal observations of USDA Forest Service personnel and independent researchers. More than 750 documents on Fernow-related material have been published. The earliest report on the vegetation on what is now the experimental forest dates back to 1856 (Schuler and Gillespie 2000). This inventory is not an inclusive list of all the organisms present on the Fernow Experimental Forest. Succession of organisms is a natural phenomenon, and new species are introduced to an area through wind and/or animal vectors or habitat expansion.

The Fernow Experimental Forest

The Fernow Experimental Forest is located in Tucker County in north-central West Virginia (39°03’N, 79°41’W). This region falls within the unglaciated Allegheny Plateau Province of the Central Appalachians, Allegheny Front Sideslopes subsection (Ba10) (DeMeo and Wright 1995). The Forest includes the entire Elklick Run watershed as well as portions of the Stonelick Run, Sugarcamp Run and Canoe Run watersheds. Elevations range from 533 to 1,112 m above sea level. Slopes range from 10 to 60 percent with most at 20 to 30 percent (Adams et al. 1994). Site aspects cover the full range including flat land but are dominated by north- through west- and southeast-facing slopes.

Bedrock geology consists of sandstone, siltstone, shale, and limestone, with thinly bedded coal found within a single formation (Reger et al. 1923; Taylor 1999). The oldest rocks are of the Foreknobs Formation of the Chemung Group (Devonian), exposed on the crest of Fork Mountain on the western boundary of the forest. The Allegheny Group (Pennsylvanian) comprises the youngest rock formation, and is seen on the crest of McGowan Mountain on the eastern boundary. The Pottsville Group and the Price Formation contain massive sandstones responsible for outcrops and boulder piles at higher elevations. The Hampshire Group, consisting of more thinly bedded sandstones, produces outcrops nearer the valley floor. The Greenbrier Limestone, on the east slope of Elklick Run, contains several small and one large cave formations.

Soils on the Fernow are predominantly of the Belmont and Calvin soil series (USDA Soil Conserv. Serv. 1967). The Belmont soils are derived from Greenbrier Limestone along with some nearby sandstones and shales. The limestone component buffers the soil against acidity and provides a moderately high natural fertility. The Calvin soil series is derived from sandstone and shale, and is more highly acidic and less fertile due to the lack of a limestone parent. This series occurs both above and below the Belmont soils, and is responsible for greater coverage than any other soil series on the Forest. Other soil types found in lesser amounts within the Fernow are the Brinkerton, Dekalb, Ernest, and Gilpin (all acidic with low fertility) and the Meckesville (acidic with moderate fertility). Nearly all soils are well-drained, medium-textured loams and silt loams, with an average depth of about 1 m. A high proportion of stone fragments is characteristic of these soils.
Mean precipitation is approximately 145 cm (Adams et al. 1994) and is distributed evenly throughout the year (Pan et al. 1997). Rainfall extremes during the first 100 years of data range from a low of 77 cm in 1930 to 179 cm in 1996. The mean temperature is approximately 9ºC with reported extremes of -29.4º and 37.2ºC (Adams et al. 1994). The growing season extends from May through October; the average frost-free period is 145 days.

The range of aspects, elevations, moisture levels, soils, and geology on the Fernow Experimental Forest give rise to numerous localized habitats. Deciduous, coniferous, and mixed forests are present. Understory types range from open understories to nearly impenetrable rhododendron and laurel thickets. Different silvicultural management techniques maintain varied forest structures and ages throughout the Fernow. Natural aquatic habitats include an elderberry (Sambucus canadensis L.), sedge (Carex spp.), and fern marsh adjacent to Elklick Run and first-through fourth-order coldwater streams. Manmade water features include a 250-m-long, 1-ha reservoir on Elklick Run created by a 5.5-m-high dam built by the Civilian Conservation Corps, and a small pond on Fork Mountain. Sandstone outcrops can be found at nearly every knob and stream valley, and boulder fields are common on sideslopes. Big Springs Cave as well as several smaller openings are within the Greenbrier Limestone Formation and provide a unique habitat for wildlife.

The experimental forest falls within the area classified as Allegheny Mountain Section of the Central Appalachian Broadleaf Forest (M221B) (McNab and Avers 1994), or mixed mesophytic forest (Braun 1950). The Fernow is primarily a hardwood forest, with a canopy of northern red oak (Quercus rubra L.), tulip-poplar (Liriodendron tulipifera L.), black cherry (Prunus serotina Ehrh.), sugar maple (Acer saccharum Marsh.), American beech (Fagus grandifolia Ehrh.), black birch (Betula lenta L.), red maple (A. rubrum L.), basswood (Tilia americana L.), white ash (Fraxinus americana L.), chestnut oak (Q. prinus L.), sassafras (Sassafras albidum [Nutt.] Nees), blackgum (Nyssa sylvatica Marsh.), and beitternutt hickory (Carya cordiformis [Wangenhi.] K. Koch). American chestnut (Castanea dentata [Marsh.] Borkh.) was a major component of the Forest prior to the chestnut blight (Cryptonectria parasitica [Murr.] Barr) in the 1920s. Eastern hemlock (Tsuga canadensis [L.] Carr.) and scattered red spruce (Picea rubens Sarg.) provide a natural conifer component. One area (Compartment 6) has been converted from a hardwood forest to a Norway spruce (Picea abies [L.] Karst.) stand to study the effects of forest-cover type on streamflow.

The Fernow contains a variety of invertebrate and vertebrate wildlife species that are endemic to the central Appalachians. Watersheds provide habitat for many aquatic species. Several bat and invertebrate species use Big Springs Cave. The diverse forest stand types and ages attract numerous species of songbirds throughout the year, and are home to many mammals, reptiles, and amphibians. Rock outcrops and boulder fields also are habitat for certain species. Healthy populations of game species provide excellent opportunities for the avid sportsperson as hunting, trapping, and fishing are permitted on the Fernow in accordance with state and federal laws.

This document does not list all of the organisms within the Fernow Experimental Forest. Succession of organisms is a natural phenomenon; additional species may be identified as research projects continue, and the introduction of new species through wind and/or animal vectors or habitat expansion is possible.
Vascular Flora of the Fernow Experimental Forest

Observations and collections by Robert Coxe, Steven L. Stephenson, Martin Schnittler (unpublished), Aulick (1993), Turrill (1993), Muzika et al. (1999), and Fernow personnel have been used to compile the list of flora. Plants are listed in alphabetical order by genus and species within the major taxonomic groups. Nomenclature follows the Manual of Vascular Plants of Northeastern United States and Adjacent Canada (Gleason and Cronquist 1991) or Checklist of United States Trees (Native and Naturalized) (Little 1979). Species followed by an asterisk are represented by voucher specimens.

The Fernow Experimental Forest staff does not inventory nonvascular plants on a regular basis. Inventories of these species have been published by Stephenson et al. (1990, 1991, 1994a,b), Dubey et al. (1991a,b, 1994, 1995), Landholt and Stephenson (1995), and Iskra et al. (1995).

DIVISION LYCOPODIOPHYTA

Class Lycopodiopsida

Family Lycopodiaceae

| Stiff clubmoss          | Lycopodium annotinum L. |
| Running pine            | Lycopodium clavatum L.* |
| Northern ground cedar   | Lycopodium complanatum L.* |
| Southern ground cedar   | Lycopodium digitatum Dillen.* |
| Shining clubmoss        | Lycopodium lucidulum Michx.* |
| Ground pine             | Lycopodium obscurum L.* |

Class Isoetopsida

Order Selaginellales

Family Selaginellaceae

Meadow spikemoss          Selaginella apoda (L.) Spring

DIVISION EQUISETOPHYTA

Family Equisetaceae

Common horsetail          Equisetum arvense L.*

DIVISION POLYPODIOPHYTA

Order Ophioglossales

Family Ophioglossaceae

Lace-frond grape-fern      Botrychium dissectum Spreng*
Rattlesnake-fern            Botrychium virginianum (L.) Swartz*
Adder’s-tongue             Ophioglossum vulgatum L.*

Order Polypodiales

Family Osmundaceae

Cinnamon-fern              Osmunda cinnamomea L.*
Interrupted fern            Osmunda claytoniana L.*

Family Polyodiaceae

Common polypody            Polypodium virginianum L.*
Family Dennstaedtiaceae

Hay-scented fern  *Dennstaedtia punctiloba* (Michx.) Moore*
Bracken fern  *Pteridium aquilinum* (L.) Kuhn*

Family Adiantaceae

Northern maidenhair fern  *Adiantum pedatum* L.*

Family Aspleniaceae

Mountain spleenwort  *Asplenium montanum* Willd.
Ebony spleenwort  *Asplenium platyneuron* (L.) Oakes*
Walking fern  *Asplenium rhizophyllum* L.*
Lady fern  *Athryium felix-femina* (L.) Roth*
Glade-fern  *Athryium pycnocarpon* (Sprengel) Tidestrom*
Silvery glade-fern  *Athryrum thelytroïdes* (Michx.) Desv.*
Mountain wood-fern  *Dryopteris campyl投影era* Clarkson*
Toothed wood-fern  *Dryopteris carthusiana* (Villars) H. P. Fuchs*
Goldie’s wood-fern  *Dryopteris goldiana* (Hook.) A. Gray*
Fancy wood-fern  *Dryopteris intermedia* (Muhl.) A. Gray*
Marginal wood-fern  *Dryopteris marginalis* (L.) A. Gray*
Oak-fern  *Gymnocarpium dryopteris* (L.) Newman
Christmas fern  *Polystichum acrostichoides* (Michx.) Schott*
Broad beech-fern  *Thelypteris hexagonoptera* (Michx.) Weatherby*
New York fern  *Thelypteris noveboracensis* (L.) Nieuwl.*
Marsh fern  *Thelypteris palustris* Schott*
Massachusetts fern  *Thelypteris simulata* (Davenp.) Nieuwl.

Family Onocleaceae

Sensitive fern  *Onoclea sensibilis* L.*

DIVISION PINOPHYTA

Class Pinopsida

Order Pinales

Family Pinaceae

Norway spruce  *Picea abies* (L.) Karst.
Red spruce  *Picea rubens* Sarg.*
White pine  *Pinus strobus* L.*
Eastern hemlock  *Tsuga canadensis* (L.) Carr.*

DIVISION MAGNOLIOPHYTA

Class Magnoliopsida

Family Magnoliaceae

Tulip-poplar  *Liriodendron tulipifera* L.*
Cucumbertree  *Magnolia acuminata* (L.) L.*
Umbrella-tree  *Magnolia fraseri* Walt.*

Family Lauraceae

Spicebush  *Lindera benzoin* (L.) Blume*
Sassafras  *Sassafras albidum* (Nutt.) Nees*
<table>
<thead>
<tr>
<th>Family Aristolochiaceae</th>
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<tbody>
<tr>
<td>Dutchman’s pipe</td>
<td>Aristolochia macrophylla Lam.*</td>
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<tr>
<td>Wild ginger</td>
<td>Asarum canadense L.*</td>
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<tr>
<td>Heart-leaf</td>
<td>Hexastylis shuttleworthii (Britten &amp; Baker) Small</td>
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<table>
<thead>
<tr>
<th>Family Ranunculaceae</th>
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<tr>
<td>White monkshood</td>
<td>Aconitum reclinatum A. Gray</td>
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<tr>
<td>Doll’s eyes</td>
<td>Actaea alba (L.) Mill.*</td>
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<tr>
<td>Lance-leaved anemone</td>
<td>Anemone lancifolia Pursh.*</td>
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<tr>
<td>Wood anemone</td>
<td>Anemone quinquefolia L.*</td>
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<tr>
<td>Thimbleweed</td>
<td>Anemone virginiana L.*</td>
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<tr>
<td>Anemone (unidentified)</td>
<td>Anemone sp.</td>
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<tr>
<td>Canada columbine</td>
<td>Aquilegia canadensis L.*</td>
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<tr>
<td>Black cohosh</td>
<td>Cimicifuga racemosa (L.) Nutt.*</td>
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<tr>
<td>Virgin’s bower</td>
<td>Clematis virginiana L.</td>
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<tr>
<td>Sharp-lobed hepatica</td>
<td>Hepatica acutiloba DC.*</td>
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<tr>
<td>Goldenseal</td>
<td>Hydrastis canadensis L.*</td>
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<tr>
<td>Small-flowered buttercup</td>
<td>Ranunculus abortivus L.*</td>
</tr>
<tr>
<td>Hispid buttercup</td>
<td>Ranunculus hispidus Michx.*</td>
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<tr>
<td>Hooked buttercup</td>
<td>Ranunculus recurvatus Poir.*</td>
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<tr>
<td>Cursed buttercup</td>
<td>Ranunculus scleratus L.*</td>
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<td>Buttercup (unidentified)</td>
<td>Ranunculus sp.</td>
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<tr>
<td>Purple meadow-rue</td>
<td>Thalictrum dasycarpum Fischer &amp; Ave-Lall</td>
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<tr>
<td>Early meadow-rue</td>
<td>Thalictrum dioicum L.*</td>
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<tr>
<th>Family Berberidaceae</th>
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<tbody>
<tr>
<td>Japanese barberry</td>
<td>Berberis thunbergii DC.*</td>
</tr>
<tr>
<td>Blue cohosh</td>
<td>Caulophyllum thalictroides (L.) Michx.*</td>
</tr>
<tr>
<td>May-apple</td>
<td>Podophyllum peltatum L.*</td>
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<table>
<thead>
<tr>
<th>Family Papaveraceae</th>
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<tbody>
<tr>
<td>Bloodroot</td>
<td>Sanguinaria canadensis L.*</td>
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<thead>
<tr>
<th>Family Fumariaceae</th>
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<tr>
<td>Short-spurred corydalis</td>
<td>Corydalis flavula (Raf.) DC.*</td>
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<tr>
<td>Squirrel-corn</td>
<td>Dicentra canadensis (Goldie) Walp.*</td>
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<tr>
<td>Dutchman’s breeches</td>
<td>Dicentra cucullaria (L.) Bernh.*</td>
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<tr>
<th>Family Platanaceae</th>
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<tr>
<td>Sycamore</td>
<td>Platanus occidentalis L.</td>
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<table>
<thead>
<tr>
<th>Family Hamamelidaceae</th>
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<tbody>
<tr>
<td>Witch-hazel</td>
<td>Hamamelis virginiana L.*</td>
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<table>
<thead>
<tr>
<th>Family Ulmaceae</th>
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<tbody>
<tr>
<td>American elm</td>
<td>Ulmus americana L.*</td>
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<tr>
<td>Slippery elm</td>
<td>Ulmus rubra Muhl.*</td>
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<tr>
<th>Family Urticaceae</th>
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<tbody>
<tr>
<td>Wood nettle</td>
<td>Boehmeria cylindrica (L.) Swartz*</td>
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<tr>
<td>False nettle</td>
<td>Laportea canadensis (L.) Webb*</td>
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<tr>
<td>Clearweed</td>
<td>Pilea pumila (L.) A. Gray*</td>
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Family Juglandaceae

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<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Bitternut hickory</td>
<td>Carya cordiformis (Wangenh.) K. Koch*</td>
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<td>Pignut hickory</td>
<td>Carya glabra (Mill.) Sweet*</td>
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<tr>
<td>Shellbark hickory</td>
<td>Carya laciniosa (Michx. f.) Loud.*</td>
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<tr>
<td>Shagbark hickory</td>
<td>Carya ovata (Mill.) K. Koch*</td>
</tr>
<tr>
<td>Mockernut hickory</td>
<td>Carya tomentosa (Poir.) Nutt.*</td>
</tr>
<tr>
<td>Butternut</td>
<td>Juglans cinerea L.</td>
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<tr>
<td>Black walnut</td>
<td>Juglans nigra L.</td>
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Family Fagaceae

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<tr>
<th>Common Name</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>American chestnut</td>
<td>Castanea dentata (Marsh.) Borkh.*</td>
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<tr>
<td>American beech</td>
<td>Fagus grandifolia Ehrh.*</td>
</tr>
<tr>
<td>White oak</td>
<td>Quercus alba L.*</td>
</tr>
<tr>
<td>Scarlet oak</td>
<td>Quercus coccinea Muenchh.*</td>
</tr>
<tr>
<td>Chestnut oak</td>
<td>Quercus prinus L.*</td>
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<tr>
<td>Northern red oak</td>
<td>Quercus rubra L.*</td>
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<tr>
<td>Black oak</td>
<td>Quercus velutina Lam.*</td>
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Family Betulaceae

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<th>Common Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Smooth alder</td>
<td>Alnus serrulata (Ait.) Willd.*</td>
</tr>
<tr>
<td>Yellow birch</td>
<td>Betula alleghaniensis Britton*</td>
</tr>
<tr>
<td>Black birch</td>
<td>Betula lenta L.*</td>
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<tr>
<td>American hornbeam</td>
<td>Carpinus caroliniana Walt.*</td>
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<td>Eastern hophornbeam</td>
<td>Ostryea virginiana (Mill.) K. Koch*</td>
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Family Phytolaccaceae

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<tr>
<td>Pokeweed</td>
<td>Phytolacca americana L.*</td>
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Family Amaranthaceae

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<th>Common Name</th>
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<tbody>
<tr>
<td>Smooth pigweed</td>
<td>Amaranthus hybridus L.*</td>
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Family Portulacaceae

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<th>Common Name</th>
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<tr>
<td>Spring beauty</td>
<td>Claytonia virginica L.*</td>
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Family Caryophyllaceae

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<th>Common Name</th>
<th>Scientific Name</th>
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<tr>
<td>Clammy chickweed</td>
<td>Cerastium viscosum L.*</td>
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<tr>
<td>Mouse-ear chickweed</td>
<td>Cerastium vulgatum L.</td>
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<tr>
<td>Fire-pink</td>
<td>Silene virginica L.*</td>
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<tr>
<td>Campion (unidentified)</td>
<td>Silene sp.</td>
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<tr>
<td>Common chickweed</td>
<td>Stellaria media (L.) Villars*</td>
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<tr>
<td>Star chickweed</td>
<td>Stellaria pubera Michx.*</td>
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Family Polygonaceae

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Buckwheat</td>
<td>Fagopyrum esculentum Moench*</td>
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<tr>
<td>Water-pepper</td>
<td>Polygonum hydropiper L.*</td>
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<tr>
<td>False water-pepper</td>
<td>Polygonum hydropiperoides Michx.*</td>
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<tr>
<td>Lady’s thumb</td>
<td>Polygonum persicaria L.*</td>
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<tr>
<td>Arrow-leaved tearthumb</td>
<td>Polygonum sagittatum L.</td>
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<tr>
<td>False buckwheat</td>
<td>Polygonum scandens L.*</td>
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<tr>
<td>Jumpseed</td>
<td>Polygonum virginianum L.*</td>
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<tr>
<td>Smartweed (unidentified)</td>
<td>Polygonum sp.</td>
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<tr>
<td>Red sorrel</td>
<td>Rumex acetosella L.*</td>
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<tr>
<td>Curly dock</td>
<td>Rumex crispus L.</td>
</tr>
</tbody>
</table>
Dock (unidentified) | *Rumex sp.*

**Family Clusiaceae**

- St. John's-wort | *Hypericum densiflorum* Pursh *
- St. John's-wort | *Hypericum mutilum* L.*
- Spotted St. John's-wort | *Hypericum punctatum* Lam.*
- Marsh St. John’s-wort | *Triadenum virginicum* (L.) Raf.*

**Family Tiliaceae**

- American basswood | *Tilia americana* L.*

**Family Malvaceae**

- Hibiscus (unidentified) | *Hibiscus sp.* *

**Family Violaceae**

- Sweet white violet | *Viola blanda* Willd.*
- Tall white violet | *Viola canadensis* L.*
- Blue marsh-violet | *Viola cucullata* Aiton
- Spear-leaved violet | *Viola hastata* Michx.*
- Wild white violet | *Viola macloskeyi* F. Lloyd*
- Wood-violet | *Viola palmata* L.*
- Yellow forest-violet | *Viola pubescens* Ait.*
- Round-leaved yellow violet | *Viola rotundifolia* Michx.*
- Dooryard-violet | *Viola sororia* Willd.*
- Creamy violet | *Viola striata* Ait.*
- Violet (unidentified) | *Viola sp.*

**Family Salicaceae**

- Bigtooth aspen | *Populus grandidentata* Michx.
- Balm-of-Gilead | *Populus x jackii* Sarg.
- Quaking aspen | *Populus tremuloides* Michx.*
- Black willow | *Salix nigra* Marsh.*

**Family Brassicaceae**

- Garlic-mustard | *Alliaria petiolata* (Bieb.) Cavara & Grande* *
- Yellow rocket | *Barbarea vulgaris* R. Br.
- Appalachian toothwort | *Cardamine angustata* O. E. Schultz*
- Five-parted toothwort | *Cardamine concatenata* (Michx.) O. Schwartz*
- Broad-leaved toothwort | *Cardamine diphyllea* (Michx.) A. Wood*
- Hoary bitter-cress | *Cardamine hirsuta* L.*
- Spring-cress | *Cardamine rhomboidea* (Pers.) DC.*

**Family Ericaceae**

- Trailing arbutus | *Epigaea repens* L.*
- Teaberry | *Gaultheria procumbens* L.*
- Black huckleberry | *Gaylussacia baccata* (Wangenh.) K. Koch
- Mountain-laurel | *Kalmia latifolia* L.*
- Minnie-bush | *Menziesia pilosa* (Michx.) Juss.
- Sourwood | *Oxydendrum arboreum* (L.) DC.*
- Flame-azalea | *Rhododendron calandulaceum* (Michx.) Torr.*
- Great rhododendron | *Rhododendron maximum* L.*
- Pinkster-flower | *Rhododendron periclymenoides* (Michx.) Shinn.*
- Common lowbush-blueberry | *Vaccinium angustifolium* Ait.
- Hillside-blueberry | *Vaccinium pallidum* Ait.*
Deerberry  
Southern blueberry

Family Pyrolaceae

Spotted wintergreen  
Shinleaf

Family Monotropaceae

Indian pipe

Family Primulaceae

Fringed loosestrife  
Moneywort  
Smooth loosestrife  
Starflower

Family Hydrangeaceae

American hydrangea

Family Grossulariaceae

Dogberry  
Gooseberry  
Gooseberry (unidentified)

Family Crassulaceae

Stonecrop

Family Saxifragaceae

Common arrow-root  
Maple-leaved alum-root  
Bishop's cap  
Lettuce-saxifrage  
Foam-flower

Family Rosaceae

Common agrimony  
Southern agrimony  
Downy serviceberry  
Smooth serviceberry  
Goat's beard  
Cockspur-thorn  
Washington-thorn  
Hawthorn (unidentified)  
Thick-leaved wild strawberry  
Rough avens  
Cream-colored avens  
Mountain Indian-physic  
Running cinquefoil  
Old-field cinquefoil  
Cinquefoil (unidentified)  
Pin cherry  
Wild black cherry  
Multiflora rose
<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common blackberry</td>
<td>Rubus allegheniensis T. C. Porter*</td>
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<tr>
<td>Purple-flowering raspberry</td>
<td>Rubus odoratus L.*</td>
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<tr>
<td>Wineberry</td>
<td>Rubus phoenicolasius Maxim.</td>
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<tr>
<td>Blackberry (unidentified)</td>
<td>Rubus sp.</td>
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<tr>
<td>Raspberry (unidentified)</td>
<td>Rubus sp.</td>
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<tr>
<td>American mountain-ash</td>
<td>Sorbus americana Marsh.*</td>
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**Family Fabaceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Common ground-nut</td>
<td>Amphicarpaea bracteata (L.) Fern.</td>
</tr>
<tr>
<td>Naked tick-trefoil</td>
<td>Apios americana Medikus*</td>
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<tr>
<td>Bush-clover</td>
<td>Lespedeza sp.</td>
</tr>
<tr>
<td>Yellow sweet clover</td>
<td>Melilotus sp.</td>
</tr>
<tr>
<td>Black locust</td>
<td>Robinia pseudoacacia L.*</td>
</tr>
<tr>
<td>Pinnate hop-clover</td>
<td>Trifolium campestre Schreber</td>
</tr>
<tr>
<td>Alsike clover</td>
<td>Trifolium hybridum L.</td>
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<tr>
<td>Crimson clover</td>
<td>Trifolium incarnatum L.*</td>
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<tr>
<td>Red clover</td>
<td>Trifolium praetense L.*</td>
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<tr>
<td>White clover</td>
<td>Trifolium repens L.</td>
</tr>
<tr>
<td>Running buffalo-clover</td>
<td>Trifolium stoloniferum Muhl.*</td>
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**Family Elaeagnaceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Autumn olive</td>
<td>Elaeagnus umbellata Thunb.*</td>
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**Family Thymelaeaceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>Leatherwood</td>
<td>Dirca palustris L.</td>
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**Family Onagraceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Alpine enchanter’s nightshade</td>
<td>Circaea alpina L.*</td>
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<tr>
<td>Common enchanter’s nightshade</td>
<td>Circaea lutetiana *L.</td>
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<tr>
<td>Eastern willow-herb</td>
<td>Epilobium coloratum Biehler*</td>
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<tr>
<td>Small-flowered evening-primrose</td>
<td>Oenothera parviflora L.*</td>
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**Family Cornaceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
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<tbody>
<tr>
<td>Alternate-leaf dogwood</td>
<td>Cornus alternifolia L. f.*</td>
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<tr>
<td>Silky dogwood</td>
<td>Cornus amomum Miller*</td>
</tr>
<tr>
<td>Flowering dogwood</td>
<td>Cornus florida L.*</td>
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<tr>
<td>Blackgum</td>
<td>Nyssa sylvatica Marsh.*</td>
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**Family Celastraceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
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<tbody>
<tr>
<td>American bittersweet</td>
<td>Celastrus scandens L.*</td>
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<tr>
<td>Strawberry-bush</td>
<td>Euonymus americanus L.*</td>
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**Family Aquifoliaceae**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Bigleaf holly</td>
<td>Ilex montana (T.&amp;G.) A. Gray*</td>
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<tr>
<td>American holly</td>
<td>Ilex opaca Ait.*</td>
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**Family Vitaceae**

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<thead>
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<th>Plant Name</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Virginia creeper</td>
<td>Parthenocissus quinquefolia (L.) Plachon*</td>
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<tr>
<td>Summer grape</td>
<td>Vitis aestivalis Michx. *</td>
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<tr>
<td>Muscadine grape</td>
<td>Vitis rotundifolia Michx. *</td>
</tr>
<tr>
<td>Grape (unidentified)</td>
<td>Vitis sp.</td>
</tr>
</tbody>
</table>
Family Staphyleaceae

American bladdernut  Staphylea trifolia L.*

Family Aceraceae

Striped maple  Acer pensylvanicum L.*
Red maple  Acer rubrum L.*
Sugar maple  Acer saccharum Marsh.*
Mountain maple  Acer spicatum Lam.*

Family Anacardiaceae

Smooth sumac  Rhus glabra L.*
Staghorn sumac  Rhus typhina L.*
Poison-ivy  Toxicodendron radicans (L.) Kuntze*

Family Simaroubaceae

Tree-of-heaven  Ailanthus altissima (Mill.) Swingle*

Family Oxalidaceae

Northern wood-sorrel  Oxalis acetosella L.*
Big yellow wood-sorrel  Oxalis grandis Small*
Common yellow wood-sorrel  Oxalis stricta L.*
Wood-sorrel (unidentified)  Oxalis sp.

Family Geraniaceae

Wild geranium  Geranium maculatum L.*

Family Balsaminaceae

Orange touch-me-not  Impatiens capensis Meerb.*
Yellow touch-me-not  Impatiens pallida Nutt.*

Family Araliaceae

Wild sarsaparilla  Aralia nudicaulis L.
Hercules’ club  Aralia spinosa L.*
American ginseng  Panax quinquefolium L.*
Dwarf ginseng  Panax trifolium L.

Family Apiaceae

Honewort  Cryptotaenia canadensis (L.) DC*
Wild carrot  Daucus carota L.*
Cow-parsnip  Heracleum lanatum Michx.*
Bland sweet cicely  Osmorhiza claytonii (Michx.) DC.*
Long-styled sweet cicely  Osmorhiza longistylis (Torr.) DC.*
Canada snakeroot  Sanicula canadensis L.*
Cluster sanicle  Sanicula gregaria E. Bickn.*
Black snakeroot  Sanicula marylandica L.*
Beaked snakeroot  Sanicula trifoliata E. Bickn.*
Yellow pimpernel  Taenidia montana (Mackenzie) Cronq.*
Bearded meadow-parsnip  Thaspium barbinode (Michx.) Nutt.*
Smooth meadow-parsnip  Thaspium trifoliatum (L.) A. Gray
Heart-leaved golden alexanders  Zizia aptera (A. Gray) Fern.*
Common golden alexanders  Zizia aurea (L.) Koch*
Mountain golden alexanders  Zizia trifoliata (Michx.) Fern.*
Family Apocynaceae
   Dogbane (unidentified)  Apocynum sp.

Family Asclepiadaceae
   Milkweed (unidentified)  Asclepias sp.

Family Convolvulaceae
   Morning-glory (unidentified)  Ipomoea sp.

Family Cuscutaceae
   Common dodder  Cuscuta gronovii Willd.*

Family Polemoniaceae
   Forest phlox  Phlox divaricata L.*
   Crawling phlox  Phlox stolonifera Sims*

Family Hydrophyllaceae
   Maple-leaved waterleaf  Hydrophyllum canadense L.*
   Eastern waterleaf  Hydrophyllum virginianum L.*.
   Phacelia (unidentified)  Phacelia sp.*

Family Boraginaceae
   Eastern bluebell  Mertensia virginica (L.) Pers.*

Family Verbenaceae
   White vervain  Verbena urchifolia L.

Family Lamiaceae
   Hairy wood-mint  Blephila hirsuta (Pursh) Benth.*
   Northern horse-balm  Collinsinia canadensis L.*
   Hemp-nettle  Galeopsis tetrahit var. tetrahit (L.) L.*
   Hemp-nettle  G. tetrahit var. bifida (Boenn.) Lej & Courtois
   Gill-over-the-ground  Glechoma hederacea L.*
   Red dead-nettle  Lamium purpureum L.*
   Virginia water-horehound  Lycopus virginicus L.
   Peppermint  Mentha x piperata L.
   Basil bee-balm  Monarda clinopodia L.*
   Oswego-tea  Monarda didyma L.*
   Horse-mint  Monarda punctata L.
   Catnip  Nepeta cataria L.
   Self-heal  Prunella vulgaris L.*
   Mountain mint (unidentified)  Pycnanthemum sp.
   Lyre-leaved sage  Salvia lyrata L.
   Forest skullcap  Scutellaria ovata Hill*

Family Plantaginaceae
   English plantain  Plantago lanceolata L.*
   Common plantain  Plantago major L.*
   American plantain  Plantago rugelii Decne.*
<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
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<tbody>
<tr>
<td>Oleaceae</td>
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<tr>
<td>White ash</td>
<td>Fraxinus americana L.*</td>
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<tr>
<td>Green ash</td>
<td>Fraxinus pennsylvanica Marsh.*</td>
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<tr>
<td>Scrophulariaceae</td>
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<tr>
<td>Downy false foxglove</td>
<td>Aureolaria virginica (L.) Pennell*</td>
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<tr>
<td>White turtlehead</td>
<td>Chelone glabra L.*</td>
</tr>
<tr>
<td>Wood-betony</td>
<td>Pedicularis canadensis L.*</td>
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<tr>
<td>Common mullein</td>
<td>Verbascum thaspus L.</td>
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<tr>
<td>Corn speedwell</td>
<td>Veronica arvensis L.*</td>
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<tr>
<td>Orobanchaceae</td>
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<tr>
<td>Squaw-root</td>
<td>Conopholis americana (L.) Wallr.*</td>
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<tr>
<td>Beech-drops</td>
<td>Epifagus virginiana (L.) Barton*</td>
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<tr>
<td>Campanulaceae</td>
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<tr>
<td>Tall bellflower</td>
<td>Campanula americana L.*</td>
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<tr>
<td>Indian tobacco</td>
<td>Lobelia inflata L.*</td>
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<tr>
<td>Great-flowered lobelia</td>
<td>Lobelia siphilitica L.</td>
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<tr>
<td>Rubiaceae</td>
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<tr>
<td>Cleavers</td>
<td>Galium aparine L.*</td>
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<tr>
<td>Rough bedstraw</td>
<td>Galium asprellum Michx.*</td>
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<td>Northern bedstraw</td>
<td>Galium boreale L.*</td>
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<tr>
<td>Forest bedstraw</td>
<td>Galium circueans Michx.*</td>
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<tr>
<td>Wide-leaved bedstraw</td>
<td>Galium latifolium Michx.*</td>
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<tr>
<td>Bedstraw</td>
<td>Galium pilosum Ait.*</td>
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<tr>
<td>Sweet-scented bedstraw</td>
<td>Galium triflorum Michx.*</td>
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<tr>
<td>Bluets</td>
<td>Hedyotis caerulea (L.) Hook.*</td>
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<tr>
<td>Partridge-berry</td>
<td>Mitchella repens L.*</td>
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<tr>
<td>Caprifoliaceae</td>
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<tr>
<td>Bush honeysuckle</td>
<td>Lonicera morrowii A. Gray*</td>
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<tr>
<td>Common elderberry</td>
<td>Sambucus canadensis L.*</td>
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<tr>
<td>Red-berried elderberry</td>
<td>Sambucus racemosa L.*</td>
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<tr>
<td>Maple-leaf viburnum</td>
<td>Viburnum acerifolium L.*</td>
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<tr>
<td>Hobble-bush</td>
<td>Viburnum alnifolium Marsh.*</td>
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<tr>
<td>Asteraceae</td>
<td></td>
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<tr>
<td>Common yarrow</td>
<td>Achillea millefolium L.*</td>
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<tr>
<td>Common ragweed</td>
<td>Ambrosia artemisiifolia L.*</td>
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<tr>
<td>Field pussytoes</td>
<td>Antennaria neglecta Greene*</td>
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<tr>
<td>Great burdock</td>
<td>Arctium lappa L.</td>
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<tr>
<td>Common burdock</td>
<td>Arctium minus Schk. Greene*</td>
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<tr>
<td>Common white heart-leaved aster</td>
<td>Aster divaricatus L.*</td>
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<tr>
<td>Long-stalked aster</td>
<td>Aster damosus L.*</td>
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<tr>
<td>Clasping aster</td>
<td>Aster patiens Ait.</td>
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<tr>
<td>Zigzag aster</td>
<td>Aster pegananthoides Muhl.*</td>
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<tr>
<td>Tall flat-topped white aster</td>
<td>Aster umbellatus Mill.*</td>
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<tr>
<td>Aster (unidentified)</td>
<td>Aster sp.</td>
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<tr>
<td>Devil’s beggar-ticks</td>
<td>Bidens frondosa L.*</td>
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<tr>
<td>Ox-eye daisy</td>
<td>Chrysanthemum leucanthemum L.*</td>
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<tr>
<td>Bull-thistle</td>
<td>Cirsium vulgare (Savi) Tenore*</td>
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<tr>
<td>Forest tickseed</td>
<td>Coreopsis major Walter*</td>
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<td>Plant Name</td>
<td>Scientific Name</td>
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<td>----------------------------------</td>
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<tr>
<td>Hawk's beard</td>
<td><em>Crepis capillaris</em> (L.) Wallr.*</td>
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<td>Fireweed</td>
<td><em>Erichtites hieracifolia</em> (L.) Raf.*</td>
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<tr>
<td>Annual fleabane</td>
<td><em>Erigeron annuus</em> (L.) Pers.*</td>
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<tr>
<td>Philadelphia daisy</td>
<td><em>Erigeron philadelphicus</em> L.*</td>
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<tr>
<td>Robin's plantain</td>
<td><em>Erigeron pulchellus</em> Michx.*</td>
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<tr>
<td>Hollow-stemmed joe-pye weed</td>
<td><em>Eupatorium fistulosum</em> Barratt*</td>
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<tr>
<td>Purple-node joe-pye weed</td>
<td><em>Eupatorium purpureum</em> L.*</td>
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<tr>
<td>White snakeroot</td>
<td><em>Eupatorium rugosum</em> Houttuyn*</td>
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<tr>
<td>Joe-pye weed (unidentified)</td>
<td><em>Eupatorium sp.</em></td>
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<tr>
<td>Common flat-topped goldenrod</td>
<td><em>Euthamia graminifolia</em> (L.) Nutt.*</td>
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<tr>
<td>Common quickweed</td>
<td><em>Galinsoga quadriradiata</em> Ruiz &amp; Pavon*</td>
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<td>Forest sunflower</td>
<td><em>Helianthus decapetalus</em> L.*</td>
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<td>Sunflower</td>
<td><em>Helianthus x laetiflorus</em> Pers.*</td>
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<tr>
<td>Yellow king-devil</td>
<td><em>Hieracium caespitosum</em> Dumort*</td>
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<td>Panicled hawkweed</td>
<td><em>Hieracium paniculatum</em> L.*</td>
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<tr>
<td>Veiny hawkweed</td>
<td><em>Hieracium venosum</em> L.*</td>
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<td>Lettuce (unidentified)</td>
<td><em>Lactuca</em> sp.</td>
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<td>Orange dwarf dandelion</td>
<td><em>Krigma biflora</em> (Walter) S. F. Blake*</td>
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<tr>
<td>Rattlesnake-root</td>
<td><em>Prenanthes alba</em> L.*</td>
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<tr>
<td>Tall white lettuce</td>
<td><em>Prenanthes altissima</em> L.*</td>
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<td>Black-eyed Susan</td>
<td><em>Rudbeckia hirta</em> L.*</td>
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<td>Heart-leaved groundsel</td>
<td><em>Senecio aureus</em> L.*</td>
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<tr>
<td>Northern meadow-groundsel</td>
<td><em>Senecio pauperculus</em> Michx.*</td>
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<td>Axillary goldenrod</td>
<td><em>Solidago caesia</em> L.*</td>
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<td>Wrinkle-leaved goldenrod</td>
<td><em>Solidago rugosa</em> Mill.*</td>
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<tr>
<td>Elm-leaved goldenrod</td>
<td><em>Solidago ulmifolia</em> Muhl.*</td>
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<td>Goldenrod (unidentified)</td>
<td><em>Solidago sp.</em></td>
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<tr>
<td>Prickly sow-thistle</td>
<td><em>Sonchus asper</em> (L.) Hill*</td>
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<tr>
<td>Common dandelion</td>
<td><em>Taraxacum officinale</em> Weber*</td>
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<tr>
<td>Coltsfoot</td>
<td><em>Tussilago farfara</em> L.*</td>
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<tr>
<td>Wingstem</td>
<td><em>Verbesina alternifolia</em> (L.) Britton*</td>
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**Class Liliopsida**

**Family Araceae**

- Jack-in-the-pulpit: *Arisaema triphyllum* (L.) Schott*
- Skunk cabbage: *Symplocarpus foetidus* (L.) Nutt.*

**Family Commelinaceae**

- Virginia spiderwort: *Tradescantia virginiana* L.*

**Family Juncaceae**

- Soft rush: *Juncus effusus* L.*
- Path-rush: *Juncus tenuis* Willd.*
- Wood-rush: *Luzula multiflora* (Retz.) Lej.*

**Family Cyperaceae**

- Sedge: *Carex aestivalis* M. A. Curtis*
- Sedge: *Carex albursina* Sheldon*
- Sedge: *Carex appalachica* J. M. Webber & P. Ball*
- Sedge: *Carex blanda* Dewey*
- Sedge: *Carex crinita* Lam.*
- Sedge: *Carex debilis* Michx.*
- Sedge: *Carex digitalis* Willd.*
- Sedge: *Carex gracillima* Schwein*
- Sedge: *Carex grayi* Carey*
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<tr>
<th>Family</th>
<th>Plant Name</th>
<th>Scientific Name</th>
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<td>Sedge</td>
<td>Carex intumescent Rudge*</td>
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<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex laxiculmis Schwein.*</td>
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<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex laxiflora Lam.*</td>
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<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex leptonervia (Fern.) Fern.*</td>
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<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex lupulina Muhl.*</td>
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<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex pensylvanica Lam.*</td>
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<td>Poaceae</td>
<td>Sedge</td>
<td>Carex plantaginea Lam.*</td>
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<td>Poaceae</td>
<td>Sedge</td>
<td>Carex platypylla Carey*</td>
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<td>Poaceae</td>
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<td>Carex prasina Wahlenb.*</td>
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<td>Carex rosea Schk.*</td>
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<td>Sedge</td>
<td>Carex scabrata Schwein*</td>
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<td>Poaceae</td>
<td>Sedge</td>
<td>Carex sparganioides Muhl.*</td>
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<td>Poaceae</td>
<td>Sedge</td>
<td>Carex stipata Muhl.*</td>
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<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex stricta Lam.*</td>
</tr>
<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex swanii (Fern.) Mackenzie*</td>
</tr>
<tr>
<td>Poaceae</td>
<td>Sedge</td>
<td>Carex trisperma Dewey.*</td>
</tr>
<tr>
<td>Poaceae</td>
<td>Sedge (unidentified)</td>
<td>Carex sp.*</td>
</tr>
<tr>
<td></td>
<td>Flat nutsedge</td>
<td>Cyperus strigosus L.*</td>
</tr>
<tr>
<td></td>
<td>Black bulrush</td>
<td>Scirpus atrovirens Willd.*</td>
</tr>
<tr>
<td></td>
<td>Wool-grass</td>
<td>Scirpus cyperinus (L.) Kunth*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Autumn bent-grass</td>
<td>Agrostis perennans (Walter) Tuckerman*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Creeping bent-grass</td>
<td>Agrostis stolonifera L.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Sweet vernal grass</td>
<td>Anthoxanthum aristatum Boiss.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Oats (unidentified)</td>
<td>Avena sp.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Grass</td>
<td>Brachyelytrum erectum (Schreber) P. Beauv.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Orchard-grass</td>
<td>Dactilis glomerata L.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Wild oatgrass</td>
<td>Danthonia compressa Austin*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Smooth crab-grass</td>
<td>Digitaria ischaemum (Schreber) Muhl.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Barnyard grass</td>
<td>Echinochloa crusgalli (L.) P. Beauv.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Bottle brush-grass</td>
<td>Elymus hystrix L.*</td>
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<td>Typhaceae</td>
<td>Northern mannagrass</td>
<td>Glyceria striata (Lam.) A. Hitchc.*</td>
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<tr>
<td>Typhaceae</td>
<td>Ryegrass</td>
<td>Lolium perenne L.*</td>
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<tr>
<td>Typhaceae</td>
<td>Forest muhly</td>
<td>Muhlenbergia sylvatica (Torr.) Torr.*</td>
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<tr>
<td>Typhaceae</td>
<td>Panic-grass</td>
<td>Panicum boscii Poir.*</td>
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<tr>
<td>Typhaceae</td>
<td>Panic-grass</td>
<td>Panicum clandestinum L.*</td>
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<tr>
<td>Typhaceae</td>
<td>Panic-grass</td>
<td>Panicum commutatum Schultes*</td>
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<tr>
<td>Typhaceae</td>
<td>Panic-grass</td>
<td>Panicum dichotomum L.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Panic-grass</td>
<td>Panicum latifolium L.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Panic-grass (unidentified)</td>
<td>Panicum lanuginosum Elliot*</td>
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<tr>
<td>Typhaceae</td>
<td>Panic-grass</td>
<td>Panicum sp. L.</td>
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<td>Typhaceae</td>
<td>Feathertop</td>
<td>Pennisetum villosum R. Br.*</td>
</tr>
<tr>
<td>Typhaceae</td>
<td>Canada bluegrass</td>
<td>Poa compressa L.*</td>
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<tr>
<td>Typhaceae</td>
<td>Forest bluegrass</td>
<td>Poa sylvestris A. Gray*</td>
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<td>Bluegrass (unidentified)</td>
<td>Poa sp. L.</td>
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<tr>
<td>Typhaceae</td>
<td>Green foxtail-grass</td>
<td>Setaria viridis (L.) P. Beauv.*</td>
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<tr>
<td>Liliaceae</td>
<td>Common cat-tail</td>
<td>Typha latifolia L.*</td>
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<tr>
<td>Liliaceae</td>
<td>Nodding onion</td>
<td>Allium cernuum Roth*</td>
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<tr>
<td>Liliaceae</td>
<td>Ramps</td>
<td>Allium tricoccum Ait.*</td>
</tr>
<tr>
<td>Liliaceae</td>
<td>Field-garlic</td>
<td>Allium vineale L.</td>
</tr>
<tr>
<td>Liliaceae</td>
<td>Bead lily</td>
<td>Clintonia borealis (Ait.) Raf.*</td>
</tr>
</tbody>
</table>
Bead lily
Fairy-bells
Trout-lily
Wild yellow lily
Turk's-cap lily
Canada mayflower
Indian cucumber-root
Solomon's seal
Solomon's seal
False Solomon's seal
Twisted stalk
Purple trillium
Bent trillium
Big white trillium
Painted trillium
Bellwort
Bellwort
Bellwort
False hellebore

Family Smilacaceae
Greenbrier
Greenbrier
Greenbrier
Greenbrier
Greenbrier

Family Dioscoreaceae
Wild yam
Colic-root

Family Iridaceae
Blue-eyed grass

Family Orchidaceae
Moccasin-flower
Downy rattlesnake-plantain
Purple fringed orchid
Showy orchis
Crane-fly orchid

*Common names and family assignments based on the text provided.
Macroscopic Fauna of the Fernow Experimental Forest

Invertebrates

Aquatic invertebrates on the Fernow have been the focus of far more research than terrestrial species. Observations and collections of these aquatic organisms have been made by Angradi (1996, 1997, 1999), Hood (1997), Griffith and Perry (1991, 1992a,b, 1993a,b), Griffith et al. (1993, 1994, 1995, 1996), Hurd et al. (1996), and Yokum et al. (1994, 1995). Lists of terrestrial invertebrates have been compiled by Butler and Chrislip (1997), Butler et al. (1997), Rexrode and Smith (1990), Stephenson et al. (1994b), and personal observations of the Fernow staff. Invertebrates are listed in alphabetical order by genus and species within the major taxonomic groups.

**PHYLUM PLATYHELMINTHES**

Class Turbellaria

Family Planariidae

Planaria

Turbellaria sp.

**PHYLUM NEMATODA**

Roundworms (unidentified)

**PHYLUM ANNELIDA**

Class Oligochaeta

Earthworms (unidentified)

Aquatic earthworms (unidentified)

**PHYLUM MOLLUSCA**

Class Pelecypoda

Bivalves (unidentified)

Class Gastropoda

Slugs (unidentified)

Snails (unidentified)

**PHYLUM ARTHROPODA**

Class Crustacea

Order Podocopa

Ostracods (unidentified)

Order Eucopepoda

Copepods (unidentified)

Order Decapoda

Family Cambaridae

Crayfish

Cambarus bartonii Fabricus

Order Amphipoda
Family Gammaridae

Freshwater shrimp  
*Gammarus minus* Say

Order Isopoda

Family Asellidae

Aquatic sowbug  
*Asellus racovitzai*

Class Diplopoda

Millipedes (unidentified)

Class Chilopoda

Centipedes (unidentified)

Class Insecta

Order Collembola

Family Entomobryidae

Collembola (unidentified)

Order Ephemeroptera

Family Baetidae

Mayfly  
*Baetis* sp.

Mayfly  
*Diphether* sp.

Mayfly  
*Procleon* sp.

Family Ephemerellidae

Mayfly  
*Drunella* sp.

Mayfly  
*Ephemera dorothea*

Mayfly  
*Euryophella funeralis* McDunnough

Family Ephemeridae

Mayfly  
*Ephemera* sp.

Mayfly  
*Litobrancha* sp.

Family Heptageniidae

Mayfly  
*Cinygmula* sp.

Mayfly  
*Epeorus latifolium*

Mayfly  
*Heptagenia* sp.

Mayfly  
*Leurocota* sp.

Mayfly  
*Stenonema meririvulanum*

Mayfly  
*Stenacron carolina*

Family Leptophlebiidae

Mayfly  
*Habrophlebia* sp.

Mayfly  
*Habrophleboides* sp.

Mayfly  
*Pareptophlebia* sp.
Family Siphlonuridae
  
  Mayfly  
  *Ameletus* sp.

Order Odonata
  
  Family Calyopterygidae
    
    Black-winged Damselfly  
    *Calopteryx maculata* Beauvais

Family Coenagrionidae
  
  Damselfly (unidentified)

Family Cordulegastridae
  
  Dragonfly  
  *Cordulegaster* sp.

Family Gomphidae
  
  Dragonfly  
  *Lanthus parvulus*

Order Orthoptera
  
  Family Acrididae
    
    Grasshopper (unidentified)

Family Gryllacrididae
  
  Cricket (unidentified)

Family Tettigoniidae
  
  Katydid  
  *Microcentrum* sp.

Order Isoptera
  
  Family Rhinotermitidae
    
    Termite (unidentified)

Order Plecoptera
  
  Family Capniidae
    
    Stonefly  
    *Allocapnia frisoni* Ross and Ricker
    Stonefly  
    *Paracapnia angulata* Hanson

Family Chloroperlidae
  
  Stonefly  
  *Alloperla aracoma* Harper and Kirchner
  Stonefly  
  *Alloperla usa* Ricker
  Stonefly  
  *Haploperla* sp.
  Stonefly  
  *Suvalia marginata* Banks
  Stonefly  
  *Sweltza lateralis* Banks
  Stonefly  
  *Sweltza onkos* Ricker

Family Leuctridae
  
  Stonefly  
  *Leuctra alexanderi* Hanson
Stonefly  
Leuctra grandis Banks  
Stonefly  
Leuctra ferruginea Walker  
Stonefly  
Leuctra sibleyi Claassen  
Stonefly  
Leuctra tenella Provancher  
Stonefly  
Leuctra tenella Provancher  
Stonefly  
Leuctra tenella Provancher  
Stonefly  
Leuctra sp.  
Stonefly  
Paraleuctra sara Claassen  

Family Nemouridae  
Stonefly  
Amphinemura nigrita Provancher  
Stonefly  
Amphinemura wui Claassen  
Stonefly  
Ostrocerca complexa Claassen  
Stonefly  
Ostrocerca truncata Claassen  
Stonefly  
Prostoia sp.  
Stonefly  
Soyedina washingtoni Claassen  

Family Peltoperlidae  
Stonefly  
Peltoperla arcuata Needham  
Stonefly  
Tallaperla maria Needham and Smith  

Family Perlodidae  
Stonefly  
Isoperla slossonae Banks  
Stonefly  
Isoperla sp.  
Stonefly  
Malirekus hastatus Banks  
Stonefly  
Remennus bilobatus Needham and Claassen  
Stonefly  
Yugus bulbosus Frison  

Family Perlidae  
Stonefly  
Acroneuria carolinensis Banks  

Family Pteronarcidae  
Giant stonefly  
Pteronarcys proteus Newman  
Giant stonefly  
Pteronarcys biloba Newman  

Family Taeniopterygidae  
Stonefly  
Strophopteryx appalachia Ricker and Ross  

Order Psocoptera  
Family Psocidae  
Barklice (unidentified)  
Family Polypsocidae  
Polypsocid (unidentified)  

Order Thysanoptera  
Family Phloeothripidae  
Tube-tailed thrip (unidentified)  

Order Hemiptera
Family Corixidae
  Water boatman  *Hesperocorxa* sp.

Family Gerridae
  Water strider  *Metrobates* sp.

Family Miridae
  Leaf bug (unidentified)

Family Phymatidae
  Ambush Bug  *Phymata* sp.

Family Tingidae
  Lace bug (unidentified)

Family Veliidae
  Riffle bug  *Microvelia* sp.
  Riffle bug  *Rhagovelia* sp.

Order Homoptera

Family Aphididae
  Aphid (unidentified)

Family Cicadidae
  Periodical cicada  *Magicicada septendecim* L.

Family Eriosomatidae
  Wooly aphid (unidentified)

Family Membracidae
  Treehopper (unidentified)

Family Psyllidae
  Psyllid (unidentified)

Order Neuroptera (Megaloptera)

Family Corydalidae
  Hellgrammme (dobsonfly)  *Nigronia* sp.

Family Sialidae
  Alderfly  *Sialis* sp.

Order Coleoptera

Family Cantharidae
Soldier Beetle \textit{Chauliognathus pennsylvanicus} De Geer

Family Carabidae

Ground beetle (unidentified)

Family Chrysomelidae

Leaf beetle (unidentified)

Family Coccinellidae

Two-spotted ladybird beetle \textit{Adalia bipunctata} L.

Family Curculionidae

Snout beetle (unidentified)

Family Dryopidae

Long-toed water beetle \textit{Helichus} sp.

Family Elmidae

Riffle beetle \textit{Optioservus} sp.

Riffle beetle \textit{Oulimmus latiusculus}

Family Gyrinidae

Whirligig Beetle \textit{Dineutus} sp.

Family Helodidae

Marsh beetle \textit{Prionocyphon} sp.

Family Hydraenidae

Minute moss beetle (unidentified)

Family Hydrophilidae

Water scavenger beetle \textit{Enochrus} sp.

Water scavenger beetle \textit{Helophorus} sp.

Water scavenger beetle \textit{Hydrochus} sp.

Water scavenger beetle \textit{Laccobius} sp.

Family Lampyridae

Firefly (unidentified)

Family Leiodidae

Round Fungus Beetle \textit{Anisotoma horni} Wheeler

Family Lycidae

Net-winged beetle \textit{Calopteron} sp.

Family Meloidae

Blister beetle \textit{Meloe} sp.
Family Psephenidae
  Water-penny beetle *Ectopria nervosa*
  Water-penny beetle *Psephenus sp.*

Family Scarabaeidae
  Japanese beetle *Popilla japonica* Newm.

Family Scolytidae
  Peach Bark Beetle *Phloeotribus limnaris* Harris

Family Staphlinidae
  Rove beetle *Pontamalota* sp.

Order Mecoptera
  Family Panorpidae
    Scorpionfly (unidentified)

Order Trichoptera
  Family Brachycentridae
    Caddisfly *Adicrophleps hitchcocki* Flint
    Caddisfly *Micrasema rusticum* Hagen

Family Glossosomatidae
  Caddisfly *Agapetus* sp.
  Caddisfly *Glossoma nigrior* Banks

Family Hydropsychidae
  Caddisfly *Diplectrona modesta* Banks
  Caddisfly *Hydropsyche morose* Hagen
  Caddisfly *Hydropsyche orientalis*
  Caddisfly *Hydropsyche sparna* Ross
  Caddisfly *Hydropsyche ventura* Ross
  Caddisfly *Homoplecta monticola* Flint
  Caddisfly *Parapsyche apicalis* Banks

Family Hydroptilidae
  Caddisfly *Palaeagapetus celsus* Ross
  Caddisfly *Stactobiella delira* Ross

Family Lepidostomatidae
  Caddisfly *Lepidostoma griseum* Banks
  Caddisfly *Lepidostoma togatum* Hagen
  Caddisfly *Lepidostoma vernale* Banks

Family Leptocercidae
  Caddisfly *Oecetis cinerascens* Hagen
  Caddisfly *Triaenodes* sp.
Family Limnophilidae

Caddisfly Goera stylata Ross
Caddisfly Hydatophylax sp.
Caddisfly Nemotaulius hostilis Hagen
Caddisfly Pseudostenophylax uniformis Betten
Caddisfly Pycnopsyche gentilis McLachlan
Caddisfly Pycnopsyche scabripennis Rambur

Family Molannidae

Caddisfly Molanna ulmerina Navas

Family Philopotamidae

Caddisfly Dolophiloides distinctus Walker
Caddisfly Wormaldia moesta Banks

Family Phryganeidae

Caddisfly Ptilostomis ocellifera Walker

Family Psychomyiidae

Caddisfly Lype diversa Banks

Family Polycentropodidae

Caddisfly Phylocentropus lucidus Hagen
Caddisfly Polycentropus cinereus Hagen
Caddisfly Polycentropus maculatus Banks

Family Rhyacophilidae

Caddisfly Rhyacophila banksi Ross
Caddisfly Rhyacophila carolina Banks
Caddisfly Rhyacophila carpenteri Milne
Caddisfly Rhyacophila fuscata Walker
Caddisfly Rhyacophila glaberrima Ulmer
Caddisfly Rhyacophila nigrita Banks
Caddisfly Rhyacophila vibox Milne

Family Uenoidae

Caddisfly Neophylax aniqua Ross
Caddisfly Neophylax wigginsi Sykora and Weaver

Order Lepidoptera

Family Arctiidae

Delicate cynia Cycnia tenerea Hbn.
Fall webworm Hyphantria cunea Drury

Family Gelechiidae

Gelechiid moth (unidentified)

Family Geometridae

Fall cankerworm Alsophila pometaria Harris
Linden looper
Lesser maple spanworm
Gray spring moth
White spring moth
Canadian melanolophia
Erannis tiliara Harris
Itame pustularia Gueneé
Lomographa glomeraria Grote
Lomographa vestaliata Gueneé
Melanolophia canadaria Gueneé

Family Hesperiidae
Skipper (unidentified)

Family Lasiocampidae
Eastern tent caterpillar
Malacostoma americanum Fabricus

Family Liparidae
Gypsy moth
Lymantria dispar L.

Family Lycaenidae
Common blue

Family Noctuidae
Greater red dart
Abagrotis alternata Grote
Hemina pinion moth
Lithophane hemina Grote
Confused woodgrain moth
Morrisonia confusa Hubner
Speckled green fruitworm moth
Orthosia hibisci Gueneé
Ruby quaker
Orthosia rubescens Walker
Fluid arches moth
Polia latex Gueneé

Family Nymphalidae
Question mark
Polygonia sp.
Great spangled fritillary
Speyeria cybele Fabricus
Red admiral
Vanessa atalanta L.

Family Papilionidae
Tiger swallowtail
Papilio glaucus L.
Pipevine swallowtail
Battus philenor

Family Pieridae
Cabbage butterfly
Pieris rapae L.
Sulphur butterfly
Pieris sp.

Family Saturniidae
Luna moth
Actias luna L.

Family Sesiididae
Peach tree borer
Synanthedon exitiosa Say
Lesser peach tree borer
Synanthedon pictipes Grote and Robinson

Family Tortiidae
Webworm
Archips sp.

Family Tortricidae
Spruce budworm moth  \textit{Choristoneura fumiferana} Clemens

Order Diptera

Family Agromyzidae

Cherry cambium miner \textit{Phytobia pruni} Gross

Family Athericidae

Snipe fly \textit{Atherix} sp.

Family Ceratopogonidae

Biting midge \textit{Atrichopogon} sp.
Biting midge \textit{Bezzia} sp.
Biting midge \textit{Ceratopogon} sp.
Biting midge \textit{Culicoides} sp.
Biting midge \textit{Probezzia} sp.

Family Chironomidae

Subfamily Chironominae

Midge

Subfamily Orthocladiinae

Midge

Subfamily Tanypodinae

Midge

Family Dixidae

Dixid midge \textit{Dixa} sp.

Family Empididae

Dance fly \textit{Chelifera} sp.
Dance fly \textit{Clinocerca} sp.
Dance fly \textit{Clinocerca} sp.
Dance fly \textit{Hemerodromia} sp.

Family Muscidae

Muscid fly (unidentified)

Family Mycetophilidae

Fungus gnat (unidentified)

Family Psychodidae

Moth fly \textit{Pericoma} sp.

Family Ptychopteridae

Phantom crane fly \textit{Bittacomorpha} sp.
Family Simuliidae
- Black fly: *Prosimulium* sp.
- Black fly: *Simulium* sp.

Family Stratiomyidae
- Soldier fly: *Nemotolus* sp.

Family Syrphidae
- Syrphid fly (unidentified)

Family Tabanidae
- Deer fly: *Chrysops* sp.
- Deer fly: *Merycomyia* sp.

Family Tipulidae
- Crane fly: *Antocha* sp.
- Crane fly: *Dicronota* sp.
- Crane fly: *Erioptera* sp.
- Crane fly: *Hexatoma* sp.
- Crane fly: *Leptotarsus* sp.
- Crane fly: *Limnophila* sp.
- Crane fly: *Limonia* sp.
- Crane fly: *Molophilus* sp.
- Crane fly: *Ormosia* sp.
- Crane fly: *Pedicia* sp.
- Crane fly: *Pseudolimnophila* sp.
- Crane fly: *Tipula abdominalis* Say

Order Hymenoptera

Family Apidae
- Bumblebee: *Megabombus pennisylvanicus* DeGeer

Family Formicidae
- Ant (unidentified)

Family Ichneumonidae
- Ichneumon wasp: *Ophion* sp.

Family Sphecidae
- Cicada killer: *Sphecius speciosus* Drury

Family Tenthredinidae
- Common sawfly: *Tenthredo fernowi* Goulet and Smith

Class Arachnidia

Order Phalangida
- Harvestmen (unidentified)
Order Hydrachnidia
   Watermite (unidentified)

Order Acarina
   Mite (unidentified)

Order Araneida
   Family Agelenidae
      Funnel-web spider (unidentified)
   Family Dictynidae
      Dictynid spider (unidentified)
   Family Theridiidae
      Comb-foot spider (unidentified)

**Vertebrates**

**Fish**

Fish inhabit the Fernow’s free-flowing forested streams and the 1-ha impoundment created by the Elklick Run dam. Only stream species have been studied (Angradi 1996). At one time, the portion of Elklick Run below the dam to the confluence with the Black Fork River was stocked, however, this practice no longer occurs. Reservoir fish are reported from personal observation by the authors. The reservoir was constructed as a supplemental water source for the town of Parsons and, therefore, was drained and dredged periodically. During these events, Forest Service personnel have observed “bluegill,” “catfish,” “brown trout,” and “creek chub” from the reservoir, although the accuracy of these sightings could not be verified. Other Forest Service personnel recall residents moving rainbow trout to the reservoir as well as attempted stockings with largemouth bass. However, none of these species was observed during recent attempts to document species present in the reservoir.

**CHORDATA**

**Class Osteichthyes**

**Family Salmonidae**
   Brook trout *Salvelinus fontinalis* (Mitchell) stream and reservoir

**Family Cyprinidae**
   Blacknose dace *Rhinichthys atratulus* (Hermann) stream

**Family Catostomidae**
   White sucker *Catostomus commersoni* (Lacepede) reservoir

**Family Centrarchidae**
   Green sunfish *Lepomis cyanellus* Rafinesque reservoir

**Family Cottidae**
   Mottled sculpin *Cottus bairdi* Girard stream and reservoir
**Amphibians**

Pauley et al. (1990), Marcum (1994), and Barrett (1996) have studied the natural history and other various aspects of amphibians on the Fernow. Nomenclature follows Green and Pauley (1987).

**Order Caudata**

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Ambystomatidae</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Spotted salamander</strong> Ambystoma maculatum (Shaw)</td>
</tr>
<tr>
<td>Family Salamandridae</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Red-spotted newt</strong> Notophthalmus viridescens viridescens (Rafinesque)</td>
</tr>
<tr>
<td>Family Plethodontidae</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Northern dusky salamander</strong> Desmognathus fuscus fuscus (Green)</td>
</tr>
<tr>
<td></td>
<td><strong>Mountain dusky salamander</strong> Desmognathus ochrophaeus Cope</td>
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<tr>
<td></td>
<td><strong>Appalachian seal salamander</strong> Desmognathus monticola monticola Dunn</td>
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<td></td>
<td><strong>Redback salamander</strong> Plethodon cinereus (Green)</td>
</tr>
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<td></td>
<td><strong>Slimy salamander</strong> Plethodon glutinosus glutinosus (Green)</td>
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<tr>
<td></td>
<td><strong>Wehrle’s salamander</strong> Plethodon wehrlei Fowler and Dunn</td>
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<tr>
<td></td>
<td><strong>Northern spring salamander</strong> Gyrinophilus porphyriticus porphyriticus (Green)</td>
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<tr>
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<td><strong>Northern red salamander</strong> Pseudotriton ruber ruber (Latreille)</td>
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<td><strong>Northern two-lined salamander</strong> Eurycea bislineata bislineata (Green)</td>
</tr>
<tr>
<td></td>
<td><strong>Longtail salamander</strong> Eurycea longicauda longicauda (Green)</td>
</tr>
</tbody>
</table>

**Order Salienta**

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Bufonidae</td>
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<tr>
<td></td>
<td><strong>Eastern American toad</strong> Bufo americanus americanus Holbrook</td>
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<tr>
<td>Family Hylidae</td>
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<td></td>
<td><strong>Northern spring peeper</strong> Hyla crucifer crucifer Wied</td>
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<tr>
<td></td>
<td><strong>Gray treefrog</strong> Hyla chrysoscelis Cope</td>
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<tr>
<td>Family Ranidae</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Green frog</strong> Rana clamitans melanota (Rafinesque)</td>
</tr>
<tr>
<td></td>
<td><strong>Pickerel frog</strong> Rana palustris LeConte</td>
</tr>
<tr>
<td></td>
<td><strong>Wood frog</strong> Rana sylvatica LeConte</td>
</tr>
</tbody>
</table>

**Reptiles**

There has been little research on reptiles on the Fernow apart from a study by Barrett (1996). Most reptile have been sightings by Forest Service personnel. Nomenclature follows Green and Pauley (1987).

**Order Testudines**

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
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<tbody>
<tr>
<td>Family Terrapene</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Eastern box turtle</strong> Terrapene carolina carolina (Linnaeus)</td>
</tr>
</tbody>
</table>

**Order Squamata**

**Suborder Serpentes**
Family Colubridae

Northern redbelly snake  
Eastern garter snake  
Northern ringneck snake  
Black rat snake  
Eastern milk snake  

Family Viperidae

Northern Copperhead  
Timber rattlesnake  

Birds

The Fernow Experimental Forest has been the site of several research projects (DeMeo 1999; Dougherty 1982; Maurer and Whitmore 1980) concerning forest management and its effects on songbirds. The species lists compiled during these studies has been supplemented by observations by Forest Service personnel. Nomenclature follows the Check-List of North American Birds (Am. Ornithol. Union 2000). The season of residency for each species follows the scientific name.

Order Ciconiiformes

Family Cathartidae

Turkey vulture  

Order Anseriformes

Family Anatidae

Subfamily Anatinae

Wood duck  

Order Falconiformes

Family Accipitridae

Subfamily Accipitrinae

Sharp-shinned hawk  
Cooper's hawk  
Red-tailed hawk  
Red-shouldered hawk  
Broad-winged hawk  

Order Galliformes

Subfamily Tetraoninae

Family Tetraonidae

Ruffed grouse  

Subfamily Meleagridinae

Family Meleagridae

Wild turkey  

---

Family Colubridae

Northern redbelly snake  
Storeria occipitomaculata occipitomaculata (Storer)

Eastern garter snake  
Thamnophis sirtalis sirtalis (Linnaeus)

Northern ringneck snake  
Diadophis punctatus edwardsii (Merrem)

Black rat snake  
Elaphe obsoleta obsoleta (Say)

Eastern milk snake  
Lampropeltis triangulum triangulum (Lacépède)

Family Viperidae

Northern Copperhead  
Agkistrodon contortrix mokasen (Daudin)

Timber rattlesnake  
Crotalus horridus (Linnaeus)

Birds

Order Ciconiiformes

Family Cathartidae

Turkey vulture  
Cathartes aura (Linnaeus)  
year round

Order Anseriformes

Family Anatidae

Subfamily Anatinae

Wood duck  
Aix sponsa (Linnaeus)  
breeding

Order Falconiformes

Family Accipitridae

Subfamily Accipitrinae

Sharp-shinned hawk  
Accipiter striatus Vieillot  
year round

Cooper's hawk  
Accipiter cooperii (Bonaparte)  
year round

Red-tailed hawk  
Buteo jamaicensis (Gmelin)  
year round

Red-shouldered hawk  
Buteo lineatus (Gmelin)  
year round

Broad-winged hawk  
Buteo platypterus (Vieillot)  
breeding

Order Galliformes

Subfamily Tetraoninae

Family Tetraonidae

Ruffed grouse  
Bonasa umbellus (Linnaeus)  
year round

Subfamily Meleagridinae

Family Meleagridae

Wild turkey  
Meleagris gallopavo (Linnaeus)  
year round
<table>
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<tr>
<th>Order</th>
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<th>Species</th>
<th>Status</th>
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<td>Columbidae</td>
<td><strong>Mourning dove</strong> Zenaida macroura (Linnaeus)</td>
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<td>Cuculiformes</td>
<td>Cuculidae</td>
<td><strong>Black-billed cuckoo</strong> Coccyzus erythropthalmus (Wilson)</td>
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<td><strong>Yellow-billed cuckoo</strong> Coccyzus americanus (Linnaeus)</td>
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<td>Strigiformes</td>
<td>Strigidae</td>
<td><strong>Eastern screech owl</strong> Otus asio (Linnaeus)</td>
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<td><strong>Great horned owl</strong> Bubo virginianus (Gmelin)</td>
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<td><strong>Barred owl</strong> Strix varia Barton</td>
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<tr>
<td>Apodiformes</td>
<td>Apodidae</td>
<td><strong>Chimney Swift</strong> Chaetura pelgica (Linnaeus)</td>
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<tr>
<td>Coraciiformes</td>
<td>Alcedinidae</td>
<td><strong>Belted kingfisher</strong> Ceryle alcyon (Linnaeus)</td>
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<td>Piciformes</td>
<td>Picidae</td>
<td><strong>Pileated woodpecker</strong> Dryocopus pileatus (Linnaeus)</td>
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<td><strong>Red-bellied woodpecker</strong> Melanerpes carolinus (Linnaeus)</td>
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<td><strong>Yellow-bellied sapsucker</strong> Sphyrapicus varius (Linnaeus)</td>
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<td><strong>Downy woodpecker</strong> Picoide pubescens (Linnaeus)</td>
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<td><strong>Hairy woodpecker</strong> Picoide villosus (Linnaeus)</td>
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<tr>
<td>Passeriformes</td>
<td>Tyrannidae</td>
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</table>
Subfamily Fluvicolinae

Eastern wood pewee  Contopus virens (Linnaeus)  breeding
Acadian flycatcher  Empidonax virescens (Vieillot)  breeding
Least flycatcher  Empidonax minimus (Baird and Baird)  breeding

Subfamily Tyranninae

Great crested flycatcher  Myiarchus crinitus (Linnaeus)  breeding

Family Vireonidae

Red-eyed vireo  Vireo olivaceus (Linnaeus)  breeding
Warbling vireo  Vireo gilvus (Vieillot)  breeding
Yellow-throated vireo  Vireo flavifrons Vieillot  breeding
Blue-headed vireo  Vireo solitarius (Wilson)  breeding

Family Corvidae

Common crow  Corvus brachyrhynchos Brehm  year round
Northern raven  Corvus corax Linnaeus  year round
Blue jay  Cyanocitta cristata (Linnaeus)  year round

Family Paridae

Black-capped chickadee  Parus stricapillus Linnaeus  year round
Tufted titmouse  Parus bicolor Linnaeus  year round

Family Sittidae

Subfamily Sittinae

White-breasted nuthatch  Sitta carolinensis Latham  year round
Red-breasted nuthatch  Sitta canadensis Linnaeus  winter

Family Certhiidae

Subfamily Certhiinae

Brown creeper  Certhia americana Bonaparte  year round

Family Troglodytidae

Carolina wren  Thryothorus ludovicianus (Latham)  year round
Winter wren  Troglodytes troglodytes (Linnaeus)  year round

Family Regulidae

Golden-crowned kinglet  Regulus satrapa Lichtenstein  winter

Family Sylviidae

Subfamily Sylviinae

Blue-gray gnatcatcher  Polioptila caerulea (Linnaeus)  breeding

Family Turdidae

American robin  Turdus migratorius Linnaeus  year round
Hermit thrush  Catharus guttatus (Pallas)  breeding
Veery  Catharus fuscescens (Stephens)  breeding
<table>
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<td>Hylocichla mustelina (Gmelin)</td>
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<td>Family Bombycillidae</td>
<td>Brown thrasher</td>
<td>Toxostoma rufum (Linnaeus)</td>
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<td>Gray catbird</td>
<td>Dumetella carolinensis (Linnaeus)</td>
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<td>Family Parulidae</td>
<td>Cedar waxwing</td>
<td>Bombycilla cedrorum Vieillot</td>
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<td>Northern Parula</td>
<td>Parula americana (Linnaeus)</td>
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<td>Black-throated green warbler</td>
<td>Dendroica virens (Gmelin)</td>
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<td>Black-and-white warbler</td>
<td>Mniotilta varia (Linnaeus)</td>
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<td>Black-throated blue warbler</td>
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<td>Cerulean warbler</td>
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<td>Canada warbler</td>
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<td>Chestnut-sided warbler</td>
<td>Dendroica pensylvanica (Linnaeus)</td>
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<td>Blackburnian warbler</td>
<td>Dendroica fusca (Müller)</td>
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<td>American redstart</td>
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<td></td>
<td>Hooded warbler</td>
<td>Wilsonia citrina (Boddaert)</td>
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<td>Worm-eating warbler</td>
<td>Helmitheros vermivorus (Gmelin)</td>
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<td>Golden-winged warbler</td>
<td>Vermivora chrysoptera (Linnaeus)</td>
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<td>Mourning warbler</td>
<td>Oporornis philadelphia (Wilson)</td>
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<td>Kentucky warbler</td>
<td>Oporornis formosus (Wilson)</td>
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<td>Common yellowthroat</td>
<td>Geothlypis trichas (Linnaeus)</td>
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<td>Louisiana waterthrush</td>
<td>Seiurus motacilla (Vieillot)</td>
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<td>Ovenbird</td>
<td>Seiurus aurocapillus (Linnaeus)</td>
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<td>Thraupidae</td>
<td>Scarlet tanager</td>
<td>Piranga olivacea (Gmelin)</td>
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<td>Emberizidae</td>
<td>Dark-eyed junco</td>
<td>Junco hyemalis (Linnaeus)</td>
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<td>Eastern towhee</td>
<td>Pipilo erythropthalmus (Linnaeus)</td>
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<td>Chipping sparrow</td>
<td>Spizella passerina (Bechstein)</td>
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<td></td>
<td>White-throated sparrow</td>
<td>Zonotrichia albicollis (Gmelin)</td>
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<tr>
<td></td>
<td>American tree sparrow</td>
<td>Spizella arborea (Wilson)</td>
<td>winter</td>
</tr>
<tr>
<td></td>
<td>Fox sparrow</td>
<td>Passerella iliaca (Merrem)</td>
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</tr>
<tr>
<td>Cardinalidae</td>
<td>Indigo bunting</td>
<td>Passerina cyanea (Linnaeus)</td>
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<td></td>
<td>Northern cardinal</td>
<td>Cardinalis cardinalis (Linnaeus)</td>
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</tr>
<tr>
<td></td>
<td>Rose-breasted grosbeak</td>
<td>Pheucticus ludovicianus (Linnaeus)</td>
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<td>Icteridae</td>
<td>Brown-headed cowbird</td>
<td>Molothrus ater (Boddaert)</td>
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</tr>
<tr>
<td>Fringillidae</td>
<td>Purple finch</td>
<td>Carpodacus purpureus (Gmelin)</td>
<td>year round</td>
</tr>
<tr>
<td></td>
<td>American goldfinch</td>
<td>Carduelis tristis (Linnaeus)</td>
<td>year round</td>
</tr>
<tr>
<td></td>
<td>Pine siskin</td>
<td>Carduelis pinus (Wilson)</td>
<td>winter</td>
</tr>
</tbody>
</table>
Mammals

Mammals on the Fernow have been studied by Cromer and Smith (1968) and Gordon Kirkland, Linda Thomasma, William M. Ford, and Craig Stihler (unpublished). Additional occurrence records are based on personal observations by Forest Service personnel. Nomenclature follows Mammals of the Eastern United States (Whitaker and Hamilton 1998).

<table>
<thead>
<tr>
<th>Order Didelphimorphia</th>
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<tr>
<td>Family Didelphidae</td>
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<tr>
<td>Virginia opossum</td>
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<tr>
<td><em>Didelphis virginiana virginiana</em> Kerr</td>
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<table>
<thead>
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<th>Order Insectivora</th>
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<tr>
<td>Family Soricidae</td>
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<tr>
<td>Long-tail shrew</td>
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<tr>
<td><em>Sorex dispar blitchii</em> Schwartz</td>
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<td>Masked shrew</td>
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<td><em>Sorex cinereus fontinalis</em> Kerr</td>
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<td>Smokey shrew</td>
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<td><em>Sorex fumeus fumeus</em> Miller</td>
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<td>Southern water shrew</td>
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<td><em>Sorex palustris punctulatus</em> Hooper</td>
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<td>Northern short-tailed shrew</td>
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<td><em>Blarina brevicauda kirtlandi</em> (Say)</td>
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<table>
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<td>Hairy-tailed mole</td>
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<td><em>Parascalops brewerii</em> (Bachman)</td>
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<td>Star-nosed mole</td>
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<td><em>Condylura cristata cristata</em> (Linnaeus)</td>
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<table>
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<th>Order Chiroptera</th>
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<td>Eastern small-footed myotis</td>
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<tr>
<td><em>Myotis leibii</em> (Audubon and Bachman)</td>
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<td>Little brown myotis</td>
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<td><em>Myotis lucifugus lucifugus</em> (LeConte)</td>
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<td>Northern myotis</td>
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<tr>
<td><em>Myotis septentrionalis</em> (Trouessart)</td>
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<tr>
<td>Indiana myotis</td>
</tr>
<tr>
<td><em>Myotis sodalis</em> Miller and Allen</td>
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<td>Silver-haired bat</td>
</tr>
<tr>
<td><em>Lasionycteris noctivagans</em> (LeConte)</td>
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<td>Eastern pipistrelle</td>
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<td><em>Pipistrellus subflavus</em> (F. Cuvier)</td>
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<td>Big brown bat</td>
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<td><em>Eptesicus fuscus fuscus</em> (Beauvois)</td>
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<td><em>Lasius borealis borealis</em> Müller</td>
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<td>Townsend’s big-eared bat</td>
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<td><em>Corynorhinus townsendii virginianus</em> Handley</td>
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<td><em>Lepus americus virginianus</em> Harlan</td>
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</tr>
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<td><em>Sciurus carolinensis pennsylvanicus</em> Ord</td>
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<td>Fox squirrel</td>
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<td><em>Sciurus niger vulpinus</em> Gmelin</td>
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<tr>
<td>Red squirrel</td>
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<tr>
<td><em>Tamiasciurus hudsonicus abieticola</em> (Howell)</td>
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<tr>
<td>Southern flying squirrel</td>
</tr>
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<td><em>Glaucomys volans volans</em> (Linnaeus)</td>
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</table>
Family Castoridae

American beaver  
*Castor canadensis* (Kuhl)

Family Dipodidae

Woodland jumping mouse  
*Napaeozapus insignis* (Miller)

Family Muridae

- White-footed mouse  
  *Peromyscus leucopus novoboracensis* (Rafinesque)
- Deer mouse  
  *Peromyscus maniculatus* Wagner
- Red-backed vole  
  *Clethrionomys gapperi carolinensis* (Merriam)
- Southern Appalachian rock vole  
  *Microtus chrotorrhinus carolinensis* Komarek
- Meadow vole  
  *Microtus pennsylvanicus pennsylvanicus* Ord
- Common muskrat  
  *Ondatra zibethicus zibethicus* (Linnaeus)
- Southern bog lemming  
  *Synaptomys cooperi stonei* Rhoads

Order Carnivora

Family Canidae

- Coyote  
  *Canis latrans latrans* Say
- Red fox  
  *Vulpes vulpes fulva* (Desmarest)
- Common gray fox  
  *Urocyon cinereoargenteus cinereoargenteus* (Schreber)

Family Ursidae

American black bear  
*Ursus americanus americanus* (Pallas)

Family Procyonidae

Common raccoon  
*Procyon lotor lotor* (Linnaeus)

Family Mustelidae

- Fisher  
  *Martes pennanti pennanti* (Erxleben)
- Long-tail weasel  
  *Mustela frenata novoboracensis* [author?]  
- Least weasel  
  *Mustela nivalis* Linnaeus
- Mink  
  *Mustela vison vison* Schreber

Family Mephitidae

Striped skunk  
*Mephits mephitis* (Schreber)

Family Felidae

Bobcat  
*Lynx rufus* (Schreber)

Order Artiodactyla

Family Cervidae

White-tailed deer  
*Odocoileus virginianus virginianus* (Zimmerman)
Literature Cited


U.S. Department of Agriculture, Soil Conservation Service. 1967. Soil survey of Tucker County, part of northern Randolph County, West Virginia. [Place of publication unknown]: [Publisher name unknown].


This report is the first comprehensive inventory of the vascular flora and macroscopic fauna known to occur within the Fernow Experimental Forest in north-central West Virginia. The compendium is based on information obtained from previous surveys, current research, and the personal observations of USDA Forest Service personnel and independent scientists. More than 750 documents on Fernow-related research have been published. The earliest report on the vegetation on what is now the experimental forest dates back to 1856.

**Keywords:** amphibians, reptiles, macroinvertebrates, birds, mammals, Appalachian vegetation
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