



United States  
Department of  
Agriculture

Forest Service

**Northeastern  
Research Station**

General Technical  
Report NE-291



# 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

DARLENE M. MADARISH is a biological science technician, JANE L. RODRIGUE is a forestry and wildlife technician, and MARY BETH ADAMS is Project Leader and supervisory soil scientist with the Northeastern Research Station's Timber and Watershed Laboratory at Parsons, West Virginia.

---

Manuscript received for publication 27 November 2000.

---

Published by:

USDA FOREST SERVICE  
11 CAMPUS BLVD SUITE 200  
NEWTOWN SQUARE PA 19073-3294

April 2002

For additional copies:

USDA Forest Service  
Publications Distribution  
359 Main Road  
Delaware, OH 43015-8640  
Fax: (740)368-0152

---

Visit our homepage at: <http://www.fs.fed.us/ne>

## 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 Ellick 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 Ellick 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 1m. 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 9°C with reported extremes of -29.4° and 37.2°C (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 bitternut hickory (*Carya cordiformis* [Wangenh.] K. Koch). American chestnut (*Castanea dentata* [Marsh.] Borkh.) was a major component of the Forest prior to the chestnut blight (*Cryphonectria 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	<i>Lycopodium annotinum</i> L.
Running pine	<i>Lycopodium clavatum</i> L.*
Northern ground cedar	<i>Lycopodium complanatum</i> L.*
Southern ground cedar	<i>Lycopodium digitatum</i> Dillen.*
Shining clubmoss	<i>Lycopodium lucidulum</i> Michx.*
Ground pine	<i>Lycopodium obscurum</i> L.*

#### Class Isoetopsida

##### Order Selaginellales

##### Family Selaginellaceae

Meadow spikemoss	<i>Selaginella apoda</i> (L.) Spring
------------------	--------------------------------------

### DIVISION EQUISETOPHYTA

##### Family Equisetaceae

Common horsetail	<i>Equisetum arvense</i> L.*
------------------	------------------------------

### DIVISION POLYPODIOPHYTA

##### Order Ophioglossales

##### Family Ophioglossaceae

Lace-frond grape-fern	<i>Botrychium dissectum</i> Spreng*
Rattlesnake-fern	<i>Botrychium virginianum</i> (L.) Swartz*
Adder's-tongue	<i>Ophioglossum vulgatum</i> L.*

##### Order Polypodiales

##### Family Osmundaceae

Cinnamon-fern	<i>Osmunda cinnamomea</i> L.*
Interrupted fern	<i>Osmunda claytoniana</i> L.*

##### Family Polypodiaceae

Common polypody	<i>Polypodium virginianum</i> L.*
-----------------	-----------------------------------

Family Dennstaedtiaceae

Hay-scented fern  
Bracken fern

*Dennstaedtia punctiloba* (Michx.) Moore\*  
*Pteridium aquilinum* (L.) Kuhn\*

Family Adiantaceae

Northern maidenhair fern

*Adiantum pedatum* L.\*

Family Aspleniaceae

Mountain spleenwort  
Ebony spleenwort  
Walking fern  
Lady fern  
Glade-fern  
Silvery glade-fern  
Mountain wood-fern  
Toothed wood-fern  
Goldie's wood-fern  
Fancy wood-fern  
Marginal wood-fern  
Oak-fern  
Christmas fern  
Broad beech-fern  
New York fern  
Marsh fern  
Massachusetts fern

*Asplenium montanum* Willd.  
*Asplenium platyneuron* (L.) Oakes\*  
*Asplenium rhizophyllum* L.\*  
*Athyrium felix-femina* (L.) Roth\*  
*Athyrium pycnocarpon* (Sprengel) Tidestrom\*  
*Athyrium thelyptroides* (Michx.) Desv.\*  
*Dryopteris campyloptera* Clarkson\*  
*Dryopteris carthusiana* (Villars) H. P. Fuchs\*  
*Dryopteris goldiana* (Hook.) A. Gray\*  
*Dryopteris intermedia* (Muhl.) A. Gray\*  
*Dryopteris marginalis* (L.) A. Gray\*  
*Gymnocarpium dryopteris* (L.) Newman  
*Polystichum acrostichoides* (Michx.) Schott\*  
*Thelypteris hexagonoptera* (Michx.) Weatherby\*  
*Thelypteris noveboracensis* (L.) Nieuwl.\*  
*Thelypteris palustris* Schott\*  
*Thelypteris simulata* (Davenp.) Nieuuwl.

Family Onocleaceae

Sensitive fern

*Onoclea sensibilis* L.\*

DIVISION PINOPHYTA

Class Pinopsida

Order Pinales

Family Pinaceae

Norway spruce  
Red spruce  
White pine  
Eastern hemlock

*Picea abies* (L.) Karst.  
*Picea rubens* Sarg.\*  
*Pinus strobus* L.\*  
*Tsuga canadensis* (L.) Carr.\*

DIVISION MAGNOLIOPHYTA

Class Magnoliopsida

Family Magnoliaceae

Tulip-poplar  
Cucumbertree  
Umbrella-tree

*Liriodendron tulipifera* L.\*  
*Magnolia acuminata* (L.) L\*.  
*Magnolia fraseri* Walt.\*

Family Lauraceae

Spicebush  
Sassafras

*Lindera benzoin* (L.) Blume\*  
*Sassafras albidum* (Nutt.) Nees\*

Family Aristolochiaceae

Dutchman's pipe  
Wild ginger  
Heart-leaf

*Aristolochia macrophylla* Lam.\*  
*Asarum canadense* L.\*  
*Hexastylis shuttleworthii* (Britten & Baker) Small

Family Ranunculaceae

White monkshood  
Doll's eyes  
Lance-leaved anemone  
Wood anemone  
Thimbleweed  
Anemone (unidentified)  
Canada columbine  
Black cohosh  
Virgin's bower  
Sharp-lobed hepatica  
Goldenseal  
Small-flowered buttercup  
Hispid buttercup  
Hooked buttercup  
Cursed buttercup  
Buttercup (unidentified)  
Purple meadow-rue  
Early meadow-rue

*Aconitum reclinatum* A. Gray  
*Actaea alba* (L.) Mill.\*  
*Anemone lancifolia* Pursh\*  
*Anemone quinquefolia* L.\*  
*Anemone virginiana* L.\*  
*Anemone* sp.  
*Aquilegia canadensis* L.\*  
*Cimicifuga racemosa* (L.) Nutt.\*  
*Clematis virginiana* L.  
*Hepatica acutiloba* DC.\*  
*Hydrastis canadensis* L.\*  
*Ranunculus abortivus* L.\*  
*Ranunculus hispidus* Michx.\*  
*Ranunculus recurvatus* Poir.\*  
*Ranunculus scleratus* L.\*  
*Ranunculus* sp.  
*Thalictrum dasycarpum* Fischer & Ave-Lall  
*Thalictrum dioicum* L.\*

Family Berberidaceae

Japanese barberry  
Blue cohosh  
May-apple

*Berberis thunbergii* DC.\*  
*Caulophyllum thalictroides* (L.) Michx.\*  
*Podophyllum peltatum* L.\*

Family Papaveraceae

Bloodroot

*Sanguinaria canadensis* L.\*

Family Fumariaceae

Short-spurred corydalis  
Squirrel-corn  
Dutchman's breeches

*Corydalis flavula* (Raf.) DC.\*  
*Dicentra canadensis* (Goldie) Walp.\*  
*Dicentra cucullaria* (L.) Bernh.\*

Family Platanaceae

Sycamore

*Platanus occidentalis* L.

Family Hamamelidaceae

Witch-hazel

*Hamamelis virginiana* L.\*

Family Ulmaceae

American elm  
Slippery elm

*Ulmus americana* L.\*  
*Ulmus rubra* Muhl.\*

Family Urticaceae

Wood nettle  
False nettle  
Clearweed

*Boehmeria cylindrica* (L.) Swartz\*  
*Laportea canadensis* (L.) Webb\*  
*Pilea pumila* (L.) A. Gray\*



Family Juglandaceae

Bitternut hickory  
Pignut hickory  
Shellbark hickory  
Shagbark hickory  
Mockernut hickory  
Butternut  
Black walnut

*Carya cordiformis* (Wangenh.) K. Koch\*  
*Carya glabra* (Mill.) Sweet\*  
*Carya laciniosa* (Michx. f.) Loud.\*  
*Carya ovata* (Mill.) K. Koch\*  
*Carya tomentosa* (Poir.) Nutt.\*  
*Juglans cinerea* L.  
*Juglans nigra* L.

Family Fagaceae

American chestnut  
American beech  
White oak  
Scarlet oak  
Chestnut oak  
Northern red oak  
Black oak

*Castanea dentata* (Marsh.) Borkh.\*  
*Fagus grandifolia* Ehrh.\*  
*Quercus alba* L.\*  
*Quercus coccinea* Muenchh.\*  
*Quercus prinus* L.\*  
*Quercus rubra* L.\*  
*Quercus velutina* Lam.\*

Family Betulaceae

Smooth alder  
Yellow birch  
Black birch  
American hornbeam  
Eastern hophornbeam

*Alnus serrulata* (Ait.) Willd.\*  
*Betula alleghaniensis* Britton\*  
*Betula lenta* L.\*  
*Carpinus caroliniana* Walt.\*  
*Ostrya virginiana* (Mill.) K. Koch\*

Family Phytolaccaceae

Pokeweed

*Phytolacca americana* L.\*

Family Amaranthaceae

Smooth pigweed

*Amaranthus hybridus* L.\*

Family Portulacaceae

Spring beauty

*Claytonia virginica* L.\*

Family Caryophyllaceae

Clammy chickweed  
Mouse-ear chickweed  
Fire-pink  
Campion (unidentified)  
Common chickweed  
Star chickweed

*Cerastium viscosum* L.\*  
*Cerastium vulgatum* L.  
*Silene virginica* L.\*  
*Silene* sp.  
*Stellaria media* (L.) Villars\*  
*Stellaria pubera* Michx.\*

Family Polygonaceae

Buckwheat  
Water-pepper  
False water-pepper  
Lady's thumb  
Arrow-leaved tearthumb  
False buckwheat  
Jumpseed  
Smartweed (unidentified)  
Red sorrel  
Curly dock

*Fagopyrum esculentum* Moench\*  
*Polygonum hydropiper* L.\*  
*Polygonum hydropiperoides* Michx.\*  
*Polygonum persicaria* L.\*  
*Polygonum sagittatum* L.  
*Polygonum scandens* L.\*  
*Polygonum virginianum* L.\*  
*Polygonum* sp.  
*Rumex acetosella* L.\*  
*Rumex crispus* L.

Dock (unidentified)	<i>Rumex</i> sp.
Family Clusiaceae	
St. John's-wort	<i>Hypericum densiflorum</i> Pursh *
St. John's-wort	<i>Hypericum mutilum</i> L. *
Spotted St. John's-wort	<i>Hypericum punctatum</i> Lam. *
Marsh St. John's-wort	<i>Triadenum virginicum</i> (L.) Raf. *
Family Tiliaceae	
American basswood	<i>Tilia americana</i> L. *
Family Malvaceae	
Hibiscus (unidentified)	<i>Hibiscus</i> sp. *
Family Violaceae	
Sweet white violet	<i>Viola blanda</i> Willd. *
Tall white violet	<i>Viola canadensis</i> L. *
Blue marsh-violet	<i>Viola cucullata</i> Aiton
Spear-leaved violet	<i>Viola hastata</i> Michx. *
Wild white violet	<i>Viola macloskeyi</i> F. Lloyd *
Wood-violet	<i>Viola palmata</i> L. *
Yellow forest-violet	<i>Viola pubescens</i> Ait. *
Round-leaved yellow violet	<i>Viola rotundifolia</i> Michx. *
Dooryard-violet	<i>Viola sororia</i> Willd. *
Creamy violet	<i>Viola striata</i> Ait. *
Violet (unidentified)	<i>Viola</i> sp.
Family Salicaceae	
Bigtooth aspen	<i>Populus grandidentata</i> Michx.
Balm-of-Gilead	<i>Populus x jackii</i> Sarg.
Quaking aspen	<i>Populus tremuloides</i> Michx. *
Black willow	<i>Salix nigra</i> Marsh. *
Family Brassicaceae	
Garlic-mustard	<i>Alliaria petiolata</i> (Bieb.) Cavara & Grande *
Yellow rocket	<i>Barbarea vulgaris</i> R. Br.
Appalachian toothwort	<i>Cardamine angustata</i> O. E. Schultz *
Five-parted toothwort	<i>Cardamine concatenata</i> (Michx.) O. Schwartz *
Broad-leaved toothwort	<i>Cardamine diphylla</i> (Michx.) A. Wood *
Hoary bitter-cress	<i>Cardamine hirsuta</i> L. *
Spring-cress	<i>Cardamine rhomboidea</i> (Pers.) DC. *
Family Ericaceae	
Trailing arbutus	<i>Epigaea repens</i> L. *
Teaberry	<i>Gaultheria procumbens</i> L. *
Black huckleberry	<i>Gaylussacia baccata</i> (Wangenh.) K. Koch
Mountain-laurel	<i>Kalmia latifolia</i> L. *
Minnie-bush	<i>Menziesia pilosa</i> (Michx.) Juss.
Sourwood	<i>Oxydendrum arboreum</i> (L.) DC. *
Flame-azalea	<i>Rhododendron calendulaceum</i> (Michx.) Torr. *
Great rhododendron	<i>Rhododendron maximum</i> L. *
Pinkster-flower	<i>Rhododendron periclymenoides</i> (Michx.) Shinn. *
Common lowbush-blueberry	<i>Vaccinium angustifolium</i> Ait.
Hillside-blueberry	<i>Vaccinium pallidum</i> Ait. *

Deerberry	<i>Vaccinium stamineum</i> L.*
Southern blueberry	<i>Vaccinium tenellum</i> Ait.*
Family Pyrolaceae	
Spotted wintergreen	<i>Chimaphila maculata</i> (L.) Pursh *
Shinleaf	<i>Pyrola</i> sp.*
Family Monotropaceae	
Indian pipe	<i>Monotropa uniflora</i> L.*
Family Primulaceae	
Fringed loosestrife	<i>Lysimachia ciliata</i> L.*
Moneywort	<i>Lysimachia nummularia</i> L.*
Smooth loosestrife	<i>Lysimachia quadrifolia</i> Sims*
Starflower	<i>Trientalis borealis</i> Raf.*
Family Hydrangeaceae	
American hydrangea	<i>Hydrangea arborescens</i> L.*
Family Grossulariaceae	
Dogberry	<i>Ribes cynosbati</i> L.*
Gooseberry	<i>Ribes hirtellum</i> Michx.*
Gooseberry (unidentified)	<i>Ribes</i> sp.
Family Crassulaceae	
Stonecrop	<i>Sedum ternatum</i> Michx.*
Family Saxifragaceae	
Common arrow-root	<i>Heuchera americana</i> L.*
Maple-leaved alum-root	<i>Heuchera villosa</i> Michx.*
Bishop's cap	<i>Mitella diphylla</i> L.*
Lettuce-saxifrage	<i>Saxifraga micranthidifolia</i> (Haw.) Steudel*
Foam-flower	<i>Tiarella cordifolia</i> L.*
Family Rosaceae	
Common agrimony	<i>Agrimonia gryposepala</i> Wallr.*
Southern agrimony	<i>Agrimonia parviflora</i> Ait.*
Downy serviceberry	<i>Amelanchier arborea</i> (Michx. f.) Fern.*
Smooth serviceberry	<i>Amelanchier laevis</i> Wieg.*
Goat's beard	<i>Aruncus dioicus</i> (Walter) Fern.*
Cockspur-thorn	<i>Crataegus crus-galli</i> L.*
Washington-thorn	<i>Crataegus phaenopyrum</i> (L. f.) Medikus*
Hawthorn (unidentified)	<i>Crataegus</i> sp.
Thick-leaved wild strawberry	<i>Fragaria virginiana</i> Duchesne*
Rough avens	<i>Geum laciniatum</i> Murray*
Cream-colored avens	<i>Geum virginianum</i> L.*
Mountain Indian-physic	<i>Porteranthus trifoliatus</i> (L.) Britton*
Running cinquefoil	<i>Potentilla canadensis</i> L.*
Old-field cinquefoil	<i>Potentilla simplex</i> Michx.*
Cinquefoil (unidentified)	<i>Potentilla</i> sp.
Pin cherry	<i>Prunus pensylvanica</i> L. f.*
Wild black cherry	<i>Prunus serotina</i> Ehrh.*
Multiflora rose	<i>Rosa multiflora</i> Thunb.*

Common blackberry	<i>Rubus allegheniensis</i> T. C. Porter*
Purple-flowering raspberry	<i>Rubus odoratus</i> L.*
Wineberry	<i>Rubus phoenicolasius</i> Maxim.
Blackberry (unidentified)	<i>Rubus</i> sp.
Raspberry (unidentified)	<i>Rubus</i> sp.
American mountain-ash	<i>Sorbus americana</i> Marsh.*
Family Fabaceae	
Hog-peanut	<i>Amphicarpaea bracteata</i> (L.) Fern.
Common ground-nut	<i>Apios americana</i> Medikus*
Naked tick-trefoil	<i>Desmodium nudiflorum</i> (L.) DC.*
Bush-clover	<i>Lespedeza</i> sp.
Yellow sweet clover	<i>Melilotus</i> sp.
Black locust	<i>Robinia pseudoacacia</i> L.*
Pinnate hop-clover	<i>Trifolium campestre</i> Schreber
Alsike clover	<i>Trifolium hybridum</i> L.
Crimson clover	<i>Trifolium incarnatum</i> L.*
Red clover	<i>Trifolium praetense</i> L.*
White clover	<i>Trifolium repens</i> L.
Running buffalo-clover	<i>Trifolium stoloniferum</i> Muhl.*
Family Elaeagnaceae	
Autumn olive	<i>Elaeagnus umbellata</i> Thunb.*
Family Thymelaeaceae	
Leatherwood	<i>Dirca palustris</i> L.
Family Onagraceae	
Alpine enchanter's nightshade	<i>Circaea alpina</i> L.*
Common enchanter's nightshade	<i>Circaea lutetiana</i> *L.
Eastern willow-herb	<i>Epilobium coloratum</i> Biehler*
Small-flowered evening-primrose	<i>Oenothera parviflora</i> L.*
Family Cornaceae	
Alternate-leaf dogwood	<i>Cornus alternifolia</i> L. f.*
Silky dogwood	<i>Cornus amomum</i> Miller*
Flowering dogwood	<i>Cornus florida</i> L.*
Blackgum	<i>Nyssa sylvatica</i> Marsh.*
Family Celastraceae	
American bittersweet	<i>Celastrus scandens</i> L.*
Strawberry-bush	<i>Euonymus americanus</i> L.*
Family Aquifoliaceae	
Bigleaf holly	<i>Ilex montana</i> (T.&G.) A. Gray*
American holly	<i>Ilex opaca</i> Ait.*
Family Vitaceae	
Virginia creeper	<i>Parthenocissus quinquefolia</i> (L.) Plachon*
Summer grape	<i>Vitis aestivalis</i> Michx.*
Muscadine grape	<i>Vitis rotundifolia</i> Michx.*
Grape (unidentified)	<i>Vitis</i> sp.

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)	<i>Apocynum</i> sp.
Family Asclepiadaceae	
Milkweed (unidentified)	<i>Asclepias</i> sp.
Family Convolvulaceae	
Morning-glory (unidentified)	<i>Ipomoea</i> sp.
Family Cuscutaceae	
Common dodder	<i>Cuscuta gronovii</i> Willd.*
Family Polemoniaceae	
Forest phlox	<i>Phlox divaricata</i> L.*
Crawling phlox	<i>Phlox stolonifera</i> Sims*
Family Hydrophyllaceae	
Maple-leaved waterleaf	<i>Hydrophyllum canadense</i> L.*
Eastern waterleaf	<i>Hydrophyllum virginianum</i> L*.
Phacelia (unidentified)	<i>Phacelia</i> sp.*
Family Boraginaceae	
Eastern bluebell	<i>Mertensia virginica</i> (L.) Pers.*
Family Verbenaceae	
White vervain	<i>Verbena urticifolia</i> L.
Family Lamiaceae	
Hairy wood-mint	<i>Blephila hirsuta</i> (Pursh) Benth.*
Northern horse-balm	<i>Collinsonia canadensis</i> L.*
Hemp-nettle	<i>Galeopsis tetrahit</i> var. <i>tetrahit</i> (L.) L.*
Hemp-nettle	<i>G. tetrahit</i> var. <i>bifida</i> (Boenn.) Lej & Courtois
Gill-over-the-ground	<i>Glechoma hederacea</i> L.*
Red dead-nettle	<i>Lamium purpureum</i> L.*
Virginia water-horehound	<i>Lycopus virginicus</i> L.
Peppermint	<i>Mentha x piperata</i> L.
Basil bee-balm	<i>Monarda clinopodia</i> L.*
Oswego-tea	<i>Monarda didyma</i> L.*
Horse-mint	<i>Monarda punctata</i> L.
Catnip	<i>Nepeta cataria</i> L.
Self-heal	<i>Prunella vulgaris</i> L.*
Mountain mint (unidentified)	<i>Pycnanthemum</i> sp.
Lyre-leaved sage	<i>Salvia lyrata</i> L.
Forest skullcap	<i>Scutellaria ovata</i> Hill*
Family Plantaginaceae	
English plantain	<i>Plantago lanceolata</i> L.*
Common plantain	<i>Plantago major</i> L.*
American plantain	<i>Plantago rugelii</i> Decne.*

Family Oleaceae

White ash  
Green ash

*Fraxinus americana* L.\*  
*Fraxinus pennsylvanica* Marsh.\*

Family Scrophulariaceae

Downy false foxglove  
White turtlehead  
Wood-betony  
Common mullein  
Corn speedwell

*Aureolaria virginica* (L.) Pennell\*  
*Chelone glabra* L.\*  
*Pedicularis canadensis* L.\*  
*Verbascum thaspus* L.  
*Veronica arvensis* L.\*

Family Orobanchaceae

Squaw-root  
Beech-drops

*Conopholis americana* (L.) Wallr.\*  
*Epifagus virginiana* (L.) Barton\*

Family Campanulaceae

Tall bellflower  
Indian tobacco  
Great-flowered lobelia

*Campanula americana* L.\*  
*Lobelia inflata* L.\*  
*Lobelia siphilitica* L.

Family Rubiaceae

Cleavers  
Rough bedstraw  
Northern bedstraw  
Forest bedstraw  
Wide-leaved bedstraw  
Bedstraw  
Sweet-scented bedstraw  
Bluets  
Partridge-berry

*Galium aparine* L.\*  
*Galium asprellum* Michx.\*  
*Galium boreale* L.\*  
*Galium circaezans* Michx.\*  
*Galium latifolium* Michx.\*  
*Galium pilosum* Ait.\*  
*Galium triflorum* Michx.\*  
*Hedyotis caerulea* (L.) Hook.\*  
*Mitchella repens* L.\*

Family Caprifoliaceae

Bush honeysuckle  
Common elderberry  
Red-berried elderberry  
Maple-leaf viburnum  
Hobble-bush

*Lonicera morrowii* A. Gray\*  
*Sambucus canadensis* L.\*  
*Sambucus racemosa* L.\*  
*Viburnum acerifolium* L.\*  
*Viburnum alnifolium* Marsh.\*

Family Asteraceae

Common yarrow  
Common ragweed  
Field pussytoes  
Great burdock  
Common burdock  
Common white heart-leaved aster  
Long-stalked aster  
Clasping aster  
Zigzag aster  
Tall flat-topped white aster  
Aster (unidentified)  
Devil's beggar-ticks  
Ox-eye daisy  
Bull-thistle  
Forest tickseed

*Achillea millefolium* L.\*  
*Ambrosia artemisiifolia* L.\*  
*Antennaria neglecta* Greene\*  
*Arctium lappa* L.  
*Arctium minus* Schk.\*  
*Aster divaricatus* L.\*  
*Aster dumosus* L.  
*Aster patens* Ait.  
*Aster prenanthoides* Muhl.\*  
*Aster umbellatus* Mill.\*  
*Aster* sp.  
*Bidens frondosa* L.\*  
*Chrysanthemum leucanthemum* L.\*  
*Cirsium vulgare* (Savi) Tenore\*  
*Coreopsis major* Walter\*

Hawk's beard  
 Fireweed  
 Annual fleabane  
 Philadelphia daisy  
 Robin's plantain  
 Hollow-stemmed joe-pye weed  
 Purple-node joe-pye weed  
 White snakeroot  
 Joe-pye weed (unidentified)  
 Common flat-topped goldenrod  
 Common quickweed  
 Forest sunflower  
 Sunflower  
 Yellow king-devil  
 Panicked hawkweed  
 Veiny hawkweed  
 Lettuce (unidentified)  
 Orange dwarf dandelion  
 Rattlesnake-root  
 Tall white lettuce  
 Black-eyed Susan  
 Heart-leaved groundsel  
 Northern meadow-groundsel  
 Axillary goldenrod  
 Wrinkle-leaved goldenrod  
 Elm-leaved goldenrod  
 Goldenrod (unidentified)  
 Prickly sow-thistle  
 Common dandelion  
 Coltsfoot  
 Wingstem

*Crepis capillaris* (L.) Wallr.\*  
*Erechtites hieracifolia* (L.) Raf.\*  
*Erigeron annuus* (L.) Pers.\*  
*Erigeron philadelphicus* L.\*  
*Erigeron pulchellus* Michx.\*  
*Eupatorium fistulosum* Barratt\*  
*Eupatorium purpureum* L.\*  
*Eupatorium rugosum* Houttuyn\*  
*Eupatorium* sp.  
*Euthamia graminifolia* (L.) Nutt\*.  
*Galinsoga quadriradiata* Ruiz & Pavon\*  
*Helianthus decapetalus* L.\*  
*Helianthus x laetiflorus* Pers.\*  
*Hieracium caespitosum* Dumort\*  
*Hieracium paniculatum* L.\*  
*Hieracium venosum* L.\*  
*Lactuca* sp.  
*Krigia biflora* (Walter) S. F. Blake\*  
*Prenanthes alba* L.\*  
*Prenanthes altissima* L.\*  
*Rudbeckia hirta* L.\*  
*Senecio aureus* L.\*  
*Senecio pauperculus* Michx.\*  
*Solidago caesia* L.\*  
*Solidago rugosa* Mill.\*  
*Solidago ulmifolia* Muhl.\*  
*Solidago* sp.  
*Sonchus asper* (L.) Hill\*  
*Taraxacum officinale* Weber\*  
*Tussilago farfara* L.\*  
*Verbesina alternifolia* (L.) Britton\*

## Class Liliopsida

### Family Araceae

Jack-in-the-pulpit  
 Skunk cabbage

*Arisaema triphyllum* (L.) Schott\*  
*Symplocarpus foetidus* (L.) Nutt.\*

### Family Commelinaceae

Virginia spiderwort

*Tradescantia virginiana* L.\*

### Family Juncaceae

Soft rush  
 Path-rush  
 Wood-rush

*Juncus effusus* L.\*  
*Juncus tenuis* Willd.\*  
*Luzula multiflora* (Retz.) Lej.\*

### Family Cyperaceae

Sedge  
 Sedge  
 Sedge  
 Sedge  
 Sedge  
 Sedge  
 Sedge  
 Sedge  
 Sedge

*Carex aestivalis* M. A. Curtis\*  
*Carex albursina* Sheldon\*  
*Carex appalachica* J. M. Webber & P. Ball\*  
*Carex blanda* Dewey\*  
*Carex crinita* Lam.\*  
*Carex debilis* Michx.\*  
*Carex digitalis* Willd.\*  
*Carex gracillima* Schwein\*  
*Carex grayi* Carey\*



Sedge	<i>Carex intumescens</i> Rudge*
Sedge	<i>Carex laxiculmis</i> Schwein.*
Sedge	<i>Carex laxiflora</i> Lam.*
Sedge	<i>Carex leptonevia</i> (Fern.) Fern.*
Sedge	<i>Carex lupulina</i> Muhl.*
Sedge	<i>Carex pensylvanica</i> Lam.*
Sedge	<i>Carex plantaginea</i> Lam.*
Sedge	<i>Carex platyphylla</i> Carey*
Sedge	<i>Carex prasina</i> Wahlenb.*
Sedge	<i>Carex rosea</i> Schk.*
Sedge	<i>Carex scabrata</i> Schwein*
Sedge	<i>Carex sparganioides</i> Muhl.*
Sedge	<i>Carex stipata</i> Muhl.*
Sedge	<i>Carex stricta</i> Lam.*
Sedge	<i>Carex swanii</i> (Fern.) Mackenzie*
Sedge	<i>Carex trisperma</i> Dewey.*
Sedge	<i>Carex vulpinoidea</i> Michx.*
Sedge (unidentified)	<i>Carex</i> sp.
Flat nutsedge	<i>Cyperus strigosus</i> L.*
Black bulrush	<i>Scirpus atrovirens</i> Willd.*
Wool-grass	<i>Scirpus cyperinus</i> (L.) Kunth*

#### Family Poaceae

Autumn bent-grass	<i>Agrostis perennans</i> (Walter) Tuckerman*
Creeping bent-grass	<i>Agrostis stolonifera</i> L.*
Sweet vernal grass	<i>Anthoxanthum aristatum</i> Boiss.*
Oats (unidentified)	<i>Avena</i> sp.*
Grass	<i>Brachyelytrum erectum</i> (Schreber) P. Beauv.*
Orchard-grass	<i>Dactylis glomerata</i> L.*
Wild oatgrass	<i>Danthonia compressa</i> Austin*
Smooth crab-grass	<i>Digitaria ischaemum</i> (Schreber) Muhl.*
Barnyard grass	<i>Echinochloa crusgalli</i> (L.) P. Beauv.*
Bottle brush-grass	<i>Elymus hystrix</i> L.*
Northern mannagrass	<i>Glyceria striata</i> (Lam.) A. Hitchc.*
Ryegrass	<i>Lolium perenne</i> L.*
Forest muhly	<i>Muhlenbergia sylvatica</i> (Torr.) Torr.*
Panic-grass	<i>Panicum boscii</i> Poir.*
Panic-grass	<i>Panicum clandestinum</i> L.*
Panic-grass	<i>Panicum commutatum</i> Schultes*
Panic-grass	<i>Panicum dichotomum</i> L.*
Panic-grass	<i>Panicum latifolium</i> L.*
Panic-grass	<i>Panicum lanuginosum</i> Elliot*
Panic-grass (unidentified)	<i>Panicum</i> sp. L.
Feathertop	<i>Pennisetum villosum</i> R. Br.*
Canada bluegrass	<i>Poa compressa</i> L.*
Forest bluegrass	<i>Poa sylvestris</i> A. Gray*
Bluegrass (unidentified)	<i>Poa</i> sp. L.
Green foxtail-grass	<i>Setaria viridis</i> (L.) P. Beauv.*

#### Family Typhaceae

Common cat-tail	<i>Typha latifolia</i> L.
-----------------	---------------------------

#### Family Liliaceae

Nodding onion	<i>Allium cernuum</i> Roth*
Ramps	<i>Allium tricoccum</i> Ait.*
Field-garlic	<i>Allium vineale</i> L.
Bead lily	<i>Clintonia borealis</i> (Ait.) Raf.*

Bead lily	<i>Clintonia umbellulata</i> (Michx.) Morong.*
Fairy-bells	<i>Disporum lanuginosum</i> (Mich.) Nicholson*
Trout-lily	<i>Erythronium americanum</i> Ker Gawler*
Wild yellow lily	<i>Lilium canadense</i> L.*
Turk's-cap lily	<i>Lilium superbum</i> L.*
Canada mayflower	<i>Maianthemum canadense</i> Desf.*
Indian cucumber-root	<i>Medeola virginiana</i> L.*
Solomon's seal	<i>Polygonatum biflorum</i> (Walter) Elliot*
Solomon's seal	<i>Polygonatum pubescens</i> (Willd.) Pursh*
False Solomon's seal	<i>Smilacina racemosa</i> (L.) Desf.*
Twisted stalk	<i>Streptopus roseus</i> Michx.
Purple trillium	<i>Trillium erectum</i> L.*
Bent trillium	<i>Trillium flexipes</i> Raf.*
Big white trillium	<i>Trillium grandiflorum</i> (Michx.) Salisb.*
Painted trillium	<i>Trillium undulatum</i> Willd.*
Bellwort	<i>Uvularia grandiflora</i> J. E. Smith*
Bellwort	<i>Uvularia perfoliata</i> L.*
Bellwort	<i>Uvularia puberula</i> Michx.*
Bellwort	<i>Uvularia sessifolia</i> L.*
False hellebore	<i>Veratrum viride</i> Ait.*
Family Smilacaceae	
Greenbrier	<i>Smilax ecirrhata</i> (Engelm.) S. Wats.*
Greenbrier	<i>Smilax glauca</i> Walter*
Greenbrier	<i>Smilax herbacea</i> L.*
Greenbrier	<i>Smilax hispida</i> Muhl.*
Greenbrier	<i>Smilax rotundifolia</i> L.*
Family Dioscoreaceae	
Wild yam	<i>Dioscorea quaternata</i> (Walter) J. F. Gmelin*
Colic-root	<i>Dioscorea villosa</i> L.*
Family Iridaceae	
Blue-eyed grass	<i>Sisyrinchium angustifolium</i> Mill.*
Family Orchidaceae	
Moccasin-flower	<i>Cypridium acaule</i> Ait.*
Downy rattlesnake-plantain	<i>Goodyera pubescens</i> (Willd.) R. Br.*
Purple fringed orchid	<i>Habenaria psycodes</i> (L.) Sprengel*
Showy orchis	<i>Orchis spectabilis</i> L.
Crane-fly orchid	<i>Tipularia discolor</i> (Pursh) Nutt.*

# 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	<i>Gammarus minus</i> Say
Order Isopoda	
Family Asellidae	
Aquatic sowbug	<i>Asellus racovitzai</i>
Class Diplopoda	
Millipedes (unidentified)	
Class Chilopoda	
Centipedes (unidentified)	
Class Insecta	
Order Collembola	
Family Entomobryidae	
Collembola (unidentified)	
Order Ephemeroptera	
Family Baetidae	
Mayfly	<i>Baetis</i> sp.
Mayfly	<i>Diphetero</i> sp.
Mayfly	<i>Procleon</i> sp.
Family Ephemerellidae	
Mayfly	<i>Drunella</i> sp.
Mayfly	<i>Ephemerella dorothea</i>
Mayfly	<i>Euryophella funeralis</i> McDunnough
Family Ephemeridae	
Mayfly	<i>Ephemera</i> sp.
Mayfly	<i>Litobranchea</i> sp.
Family Heptageniidae	
Mayfly	<i>Cinygmula</i> sp.
Mayfly	<i>Epeorus latifolium</i>
Mayfly	<i>Heptagenia</i> sp.
Mayfly	<i>Leucrocuta</i> sp.
Mayfly	<i>Stenonema meririvulanum</i>
Mayfly	<i>Stenacron carolina</i>
Family Leptophlebiidae	
Mayfly	<i>Habrophlebia</i> sp.
Mayfly	<i>Habrophleboidea</i> sp.
Mayfly	<i>Paraleptophlebia</i> sp.

Family Siphonuridae	
Mayfly	<i>Ameletus</i> sp.
Order Odonata	
Family Calypterygidae	
Black-winged Damselfly	<i>Calopteryx maculata</i> Beauvais
Family Coenagrionidae	
Damselfly (unidentified)	
Family Cordulegastridae	
Dragonfly	<i>Cordulegaster</i> sp.
Family Gomphidae	
Dragonfly	<i>Lanthus parvulus</i>
Order Orthoptera	
Family Acrididae	
Grasshopper (unidentified)	
Family Gryllacrididae	
Cricket (unidentified)	
Family Tettigoniidae	
Katydid	<i>Microcentrum</i> sp.
Order Isoptera	
Family Rhinotermitidae	
Termite (unidentified)	
Order Plecoptera	
Family Capniidae	
Stonefly	<i>Allocapnia frisoni</i> Ross and Ricker
Stonefly	<i>Paracapnia angulata</i> Hanson
Family Chloroperlidae	
Stonefly	<i>Alloperla aracoma</i> Harper and Kirchner
Stonefly	<i>Alloperla usa</i> Ricker
Stonefly	<i>Haploperla</i> sp.
Stonefly	<i>Suwalia marginata</i> Banks
Stonefly	<i>Sweltza lateralis</i> Banks
Stonefly	<i>Sweltza onkos</i> Ricker
Family Leuctridae	
Stonefly	<i>Leuctra alexanderi</i> Hanson

Stonefly	<i>Leuctra grandis</i> Banks
Stonefly	<i>Leuctra ferruginea</i> Walker
Stonefly	<i>Leuctra sibleyi</i> Claassen
Stonefly	<i>Leuctra tenella</i> Provancher
Stonefly	<i>Leuctra truncata</i> Claassen
Stonefly	<i>Leuctra</i> sp.
Stonefly	<i>Paraleuctra sara</i> Claassen
Family Nemouridae	
Stonefly	<i>Amphinemura nigritta</i> Provancher
Stonefly	<i>Amphinemura wui</i> Claassen
Stonefly	<i>Ostrocerca complexa</i> Claassen
Stonefly	<i>Ostrocerca truncata</i> Claassen
Stonefly	<i>Prostoia</i> sp.
Stonefly	<i>Soyedina washingtoni</i> Claassen
Family Peltoperlidae	
Stonefly	<i>Peltoperla arcuata</i> Needham
Stonefly	<i>Tallaperla maria</i> Needham and Smith
Family Perlodidae	
Stonefly	<i>Isoperla slossonae</i> Banks
Stonefly	<i>Isoperla</i> sp.
Stonefly	<i>Malirekus hastatus</i> Banks
Stonefly	<i>Remennus bilobatus</i> Needham and Claassen
Stonefly	<i>Yugus bulbosus</i> Frison
Family Perlidae	
Stonefly	<i>Acroneuria carolinensis</i> Banks
Family Pteronarcidae	
Giant stonefly	<i>Pteronarcys proteus</i> Newman
Giant stonefly	<i>Pteronarcys biloba</i> Newman
Family Taeniopterygidae	
Stonefly	<i>Strophopteryx appalachia</i> 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	<i>Hesperocorxa</i> sp.
Family Gerridae	
Water strider	<i>Metrobates</i> sp.
Family Miridae	
Leaf bug (unidentified)	
Family Phymatidae	
Ambush Bug	<i>Phymata</i> sp.
Family Tingidae	
Lace bug (unidentified)	
Family Veliidae	
Riffle bug	<i>Microvelia</i> sp.
Riffle bug	<i>Rhagovelia</i> sp.
Order Homoptera	
Family Aphididae	
Aphid (unidentified)	
Family Cicadidae	
Periodical cicada	<i>Magicicada septendecim</i> L.
Family Eriosomatidae	
Wooly aphid (unidentified)	
Family Membracidae	
Treehopper (unidentified)	
Family Psyllidae	
Psyllid (unidentified)	
Order Neuroptera (Megaloptera)	
Family Corydalidae	
Hellgrammite (dobsonfly)	<i>Nigronia</i> sp.
Family Sialidae	
Alderfly	<i>Sialis</i> sp.
Order Coleoptera	
Family Cantharidae	

Soldier Beetle	<i>Chauliognathus pennsylvanicus</i> De Geer
Family Carabidae	
Ground beetle (unidentified)	
Family Chrysomelidae	
Leaf beetle (unidentified)	
Family Coccinellidae	
Two-spotted ladybird beetle	<i>Adalia bipunctata</i> L.
Family Curculionidae	
Snout beetle (unidentified)	
Family Dryopidae	
Long-toed water beetle	<i>Helichus</i> sp.
Family Elmidae	
Riffle beetle	<i>Optioservus</i> sp.
Riffle beetle	<i>Oulimnus latiusculus</i>
Family Gyrinidae	
Whirligig Beetle	<i>Dineutus</i> sp.
Family Helodidae	
Marsh beetle	<i>Prionocyphon</i> sp.
Family Hydraenidae	
Minute moss beetle (unidentified)	
Family Hydrophilidae	
Water scavenger beetle	<i>Enochrus</i> sp.
Water scavenger beetle	<i>Helophorus</i> sp.
Water scavenger beetle	<i>Hydrochus</i> sp.
Water scavenger beetle	<i>Laccobius</i> sp.
Family Lampyridae	
Firefly (unidentified)	
Family Leiodidae	
Round Fungus Beetle	<i>Anisotoma horni</i> Wheeler
Family Lycidae	
Net-winged beetle	<i>Calopteron</i> sp.
Family Meloidae	
Blister beetle	<i>Meloe</i> sp.



Family Psephenidae

Water-penny beetle  
Water-penny beetle

*Ectopria nervosa*  
*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  
Caddisfly

*Adicrophleps hitchcocki* Flint  
*Micrasema rusticum* Hagen

Family Glossosomatidae

Caddisfly  
Caddisfly

*Agapetus* sp.  
*Glossoma nigrior* Banks

Family Hydropsychidae

Caddisfly  
Caddisfly  
Caddisfly  
Caddisfly  
Caddisfly  
Caddisfly  
Caddisfly

*Diplectronea modesta* Banks  
*Hydropsyche morose* Hagen  
*Hydropsyche orientalis*  
*Hydropsyche sparna* Ross  
*Hydropsyche ventura* Ross  
*Homoplecta monticola* Flint  
*Parapsyche apicalis* Banks

Family Hydroptilidae

Caddisfly  
Caddisfly

*Palaeagapetus celsus* Ross  
*Stactobiella delira* Ross

Family Lepidostomatidae

Caddisfly  
Caddisfly  
Caddisfly

*Lepidostoma griseum* Banks  
*Lepidostoma togatum* Hagen  
*Lepidostoma vernale* Banks

Family Leptocercidae

Caddisfly  
Caddisfly

*Oecetis cinerascens* Hagen  
*Triaenodes* sp.

Family Limnophilidae

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

Family Molannidae

Caddisfly	<i>Molanna ulmerina</i> Navas
-----------	-------------------------------

Family Philopotamidae

Caddisfly	<i>Dolophiloides distinctus</i> Walker
Caddisfly	<i>Wormaldia moesta</i> Banks

Family Phryganeidae

Caddisfly	<i>Ptilostomis ocellifera</i> Walker
-----------	--------------------------------------

Family Psychomyiidae

Caddisfly	<i>Lype diversa</i> Banks
-----------	---------------------------

Family Polycentropodidae

Caddisfly	<i>Phylocentropus lucidus</i> Hagen
Caddisfly	<i>Polycentropus cinereus</i> Hagen
Caddisfly	<i>Polycentropus maculatus</i> Banks

Family Rhyacophilidae

Caddisfly	<i>Rhyacophila banksi</i> Ross
Caddisfly	<i>Rhyacophila carolina</i> Banks
Caddisfly	<i>Rhyacophila carpenteri</i> Milne
Caddisfly	<i>Rhyacophila fuscula</i> Walker
Caddisfly	<i>Rhyacophila glaberrima</i> Ulmer
Caddisfly	<i>Rhyacophila nigrita</i> Banks
Caddisfly	<i>Rhyacophila vibox</i> Milne

Family Uenoidae

Caddisfly	<i>Neophylax aniqua</i> Ross
Caddisfly	<i>Neophylax wigginsi</i> Sykora and Weaver

Order Lepidoptera

Family Arctiidae

Delicate cynia	<i>Cyenia tenerea</i> Hbn.
Fall webworm	<i>Hyphantria cunea</i> Drury

Family Gelechiidae

Gelechiid moth (unidentified)	
-------------------------------	--

Family Geometridae

Fall cankerworm	<i>Alsophila pometaria</i> Harris
-----------------	-----------------------------------

Linden looper	<i>Erannis tiliaria</i> Harris
Lesser maple spanworm	<i>Itame pustularia</i> Gueneé
Gray spring moth	<i>Lomographa glomeraria</i> Grote
White spring moth	<i>Lomographa vestaliata</i> Gueneé
Canadian melanolophia	<i>Melanolophia canadaria</i> Gueneé
Family Hesperidae	
Skipper (unidentified)	
Family Lasiocampidae	
Eastern tent caterpillar	<i>Malacostoma americanum</i> Fabricus
Family Liparidae	
Gypsy moth	<i>Lymantria dispar</i> L.
Family Lycaenidae	
Common blue	
Family Noctuidae	
Greater red dart	<i>Abagrotis alternata</i> Grote
Hemina pinion moth	<i>Lithophane hemina</i> Grote
Confused woodgrain moth	<i>Morrisonia confusa</i> Hubner
Speckled green fruitworm moth	<i>Orthosia hibisci</i> Gueneé
Ruby quaker	<i>Orthosia rubescens</i> Walker
Fluid arches moth	<i>Polia latex</i> Gueneé
Family Nymphalidae	
Question mark	<i>Polygonia</i> sp.
Great spangled fritillary	<i>Speyeria cybele</i> Fabricus
Red admiral	<i>Vanessa atalanta</i> L.
Family Papilionidae	
Tiger swallowtail	<i>Papilio glaucus</i> L.
Pipevine swallowtail	<i>Battus philenor</i>
Family Pieridae	
Cabbage butterfly	<i>Pieris rapae</i> L.
Sulphur butterfly	<i>Pieris</i> sp.
Family Saturnidae	
Luna moth	<i>Actias luna</i> L.
Family Sesiidae	
Peach tree borer	<i>Synanthedon exitiosa</i> Say
Lesser peach tree borer	<i>Synanthedon pictipes</i> Grote and Robinson
Family Tortriidae	
Webworm	<i>Archips</i> sp.
Family Tortricidae	

Spruce budworm moth	<i>Choristoneura fumiferana</i> Clemens
Order Diptera	
Family Agromyzidae	
Cherry cambium miner	<i>Phytobia pruni</i> Gross
Family Athericidae	
Snipe fly	<i>Atherix</i> sp.
Family Ceratopogonidae	
Biting midge	<i>Atrichopogon</i> sp.
Biting midge	<i>Bezzia</i> sp.
Biting midge	<i>Ceratopogon</i> sp.
Biting midge	<i>Culicoides</i> sp.
Biting midge	<i>Probezzia</i> sp.
Family Chironomidae	
Subfamily Chironominae	
Midge	
Subfamily Orthocladiinae	
Midge	
Subfamily Tanypodinae	
Midge	
Family Dixidae	
Dixid midge	<i>Dixa</i> sp.
Family Empididae	
Dance fly	<i>Chelifera</i> sp.
Dance fly	<i>Clinocerca</i> sp.
Dance fly	<i>Clinocerca</i> sp.
Dance fly	<i>Hemerodromia</i> sp.
Family Muscidae	
Muscid fly (unidentified)	
Family Mycetophilidae	
Fungus gnat (unidentified)	
Family Psychodidae	
Moth fly	<i>Pericoma</i> sp.
Family Ptychopteridae	
Phantom crane fly	<i>Bittacomorpha</i> sp.

Family Simuliidae

Black fly *Prosimulium* sp.  
Black fly *Simulium* sp.

Family Stratiomyidae

Soldier fly *Nemotelus* 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 Apiadae

Bumblebee *Megabombus pennsylvanicus* 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 Ellick Run dam. Only stream species have been studied (Angradi 1996). At one time, the portion of Ellick 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	<i>Salvelinus fontinalis</i> (Mitchell)	stream and reservoir
-------------	---	----------------------

Family Cyprinidae

Blacknose dace	<i>Rhinichthys atratulus</i> (Hermann)	stream
----------------	--	--------

Family Catostomidae

White sucker	<i>Catostomus commersoni</i> (Lacepede)	reservoir
--------------	---	-----------

Family Centrarchidae

Green sunfish	<i>Lepomis cyanellus</i> Rafinesque	reservoir
---------------	-------------------------------------	-----------

Family Cottidae

Mottled sculpin	<i>Cottus bairdi</i> 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

#### Family Ambystomatidae

Spotted salamander *Ambystoma maculatum* (Shaw)

#### Family Salamandridae

Red-spotted newt *Notophthalmus viridescens viridescens* (Rafinesque)

#### Family Plethodontidae

Northern dusky salamander *Desmognathus fuscus fuscus* (Green)  
Mountain dusky salamander *Desmognathus ochrophaeus* Cope  
Appalachian seal salamander *Desmognathus monticola monticola* Dunn  
Redback salamander *Plethodon cinereus* (Green)  
Slimy salamander *Plethodon glutinosus glutinosus* (Green)  
Wehrle's salamander *Plethodon wehrlei* Fowler and Dunn  
Northern spring salamander *Gyrinophilus porphyriticus porphyriticus* (Green)  
Northern red salamander *Pseudotriton ruber ruber* (Latreille)  
Northern two-lined salamander *Eurycea bislineata bislineata* (Green)  
Longtail salamander *Eurycea longicauda longicauda* (Green)

### Order Salienta

#### Family Bufonidae

Eastern American toad *Bufo americanus americanus* Holbrook

#### Family Hylidae

Northern spring peeper *Hyla crucifer crucifer* Wied  
Gray treefrog *Hyla chrysoscelis* Cope

#### Family Ranidae

Green frog *Rana clamitans melanota* (Rafinesque)  
Pickerel frog *Rana palustris* LeConte  
Wood frog *Rana sylvatica* LeConte

## 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

#### Family Terrapene

Eastern box turtle *Terrapene carolina carolina* (Linnaeus)

### Order Squamata

#### Suborder Serpentes

Family Colubridae

Northern redbelly snake	<i>Storeria occipitomaculata occipitomaculata</i> (Storer)
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i> (Linnaeus)
Northern ringneck snake	<i>Diadophis punctatus edwardsii</i> (Merrem)
Black rat snake	<i>Elaphe obsoleta obsoleta</i> (Say)
Eastern milk snake	<i>Lampropeltis triangulum triangulum</i> (Lacépède)

Family Viperidae

Northern Copperhead	<i>Agkistrodon contortrix mokasen</i> (Daudin)
Timber rattlesnake	<i>Crotalus horridus</i> (Linnaeus)

**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	<i>Cathartes aura</i> (Linnaeus)	year round
----------------	----------------------------------	------------

Order Anseriformes

Family Anatidae

Subfamily Anatinae

Wood duck	<i>Aix sponsa</i> (Linnaeus)	breeding
-----------	------------------------------	----------

Order Falconiformes

Family Accipitridae

Subfamily Accipitrinae

Sharp-shinned hawk	<i>Accipiter striatus</i> Vieillot	year round
Cooper's hawk	<i>Accipiter cooperii</i> (Bonaparte)	year round
Red-tailed hawk	<i>Buteo jamaicensis</i> (Gmelin)	year round
Red-shouldered hawk	<i>Buteo lineatus</i> (Gmelin)	year round
Broad-winged hawk	<i>Buteo platypterus</i> (Vieillot)	breeding

Order Galliformes

Subfamily Tetraoninae

Family Tetraonidae

Ruffed grouse	<i>Bonasa umbellus</i> (Linnaeus)	year round
---------------	-----------------------------------	------------

Subfamily Meleagridinae

Family Meleagridae

Wild turkey	<i>Meleagris gallopavo</i> (Linnaeus)	year round
-------------	---------------------------------------	------------



Order Columbiformes		
Family Columbidae		
Mourning dove	<i>Zenaida macroura</i> (Linnaeus)	year round
Order Cuculiformes		
Family Cuculidae		
Subfamily Coccyzinae		
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i> (Wilson)	breeding
Yellow-billed cuckoo	<i>Coccyzus americanus</i> (Linnaeus)	breeding
Order Strigiformes		
Family Strigidae		
Eastern screech owl	<i>Otus asio</i> (Linnaeus)	year round
Great horned owl	<i>Bubo virginianus</i> (Gmelin)	year round
Barred owl	<i>Strix varia</i> Barton	year round
Order Apodiformes		
Family Apodidae		
Subfamily Chaeturinae		
Chimney Swift	<i>Chaetura pelgica</i> (Linnaeus)	breeding
Family Trochilidae		
Subfamily Trochilinae		
Ruby-throated hummingbird	<i>Archilochus colubris</i> (Linnaeus)	breeding
Order Coraciiformes		
Family Alcedinidae		
Subfamily Cerylinae		
Belted kingfisher	<i>Ceryle alcyon</i> (Linnaeus)	year round
Order Piciformes		
Family Picidae		
Subfamily Picinae		
Pileated woodpecker	<i>Dryocopus pileatus</i> (Linnaeus)	year round
Red-bellied woodpecker	<i>Melanerpes carolinus</i> (Linnaeus)	year round
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i> (Linnaeus)	winter
Downy woodpecker	<i>Picoides pubescens</i> (Linnaeus)	year round
Hairy woodpecker	<i>Picoides villosus</i> (Linnaeus)	year round
Order Passeriformes		
Family Tyrannidae		

Subfamily Fluvicolinae

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

Subfamily Tyranninae

Great crested flycatcher	<i>Myiarchus crinitus</i> (Linnaeus)	breeding
--------------------------	--------------------------------------	----------

Family Vireonidae

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

Family Corvidae

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

Family Paridae

Black-capped chickadee	<i>Parus stricapillus</i> Linnaeus	year round
Tufted titmouse	<i>Parus bicolor</i> Linnaeus	year round

Family Sittidae

Subfamily Sittinae

White-breasted nuthatch	<i>Sitta carolinensis</i> Latham	year round
Red-breasted nuthatch	<i>Sitta canadensis</i> Linnaeus	winter

Family Certhiidae

Subfamily Certhiinae

Brown creeper	<i>Certhia americana</i> Bonaparte	year round
---------------	------------------------------------	------------

Family Troglodytidae

Carolina wren	<i>Thryothorus ludovicianus</i> (Latham)	year round
Winter wren	<i>Troglodytes troglodytes</i> (Linnaeus)	year round

Family Regulidae

Golden-crowned kinglet	<i>Regulus satrapa</i> Lichtenstein	winter
------------------------	-------------------------------------	--------

Family Sylviidae

Subfamily Sylviinae

Blue-gray gnatcatcher	<i>Poliophtila caerulea</i> (Linnaeus)	breeding
-----------------------	--	----------

Family Turdidae

American robin	<i>Turdus migratorius</i> Linnaeus	year round
Hermit thrush	<i>Catharus guttatus</i> (Pallas)	breeding
Veery	<i>Catharus fuscescens</i> (Stephens)	breeding

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

## 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).

### Order Didelphimorphia

#### Family Didelphidae

Virginia opossum *Didelphis virginiana virginiana* Kerr

### Order Insectivora

#### Family Soricidae

Long-tail shrew *Sorex dispar blitchii* Schwartz  
Masked shrew *Sorex cinereus fontinalis* Kerr  
Smokey shrew *Sorex fumeus fumeus* Miller  
Southern water shrew *Sorex palustris punctulatus* Hooper  
Northern short-tailed shrew *Blarina brevicauda kirtlandi* (Say)

#### Family Talpidae

Hairy-tailed mole *Parascalops breweri* (Bachman)  
Star-nosed mole *Condylura cristata cristata* (Linnaeus)

### Order Chiroptera

#### Family Vespertilionidae

Eastern small-footed myotis *Myotis leibii* (Audubon and Bachman)  
Little brown myotis *Myotis lucifugus lucifugus* (LeConte)  
Northern myotis *Myotis septentrionalis* (Trouessart)  
Indiana myotis *Myotis sodalis* Miller and Allen  
Silver-haired bat *Lasionycteris noctivagans* (LeConte)  
Eastern pipistrelle *Pipistrellus subflavus* (F. Cuvier)  
Big brown bat *Eptesicus fuscus fuscus* (Beauvois)  
Eastern red bat *Lasiurus borealis borealis* Müller  
Hoary bat *Lasiurus cinereus cinereus* (Palisot de Beauvoir)  
Townsend's big-eared bat *Corynorhinus townsendii virginianus* Handley

### Order Lagomorpha

#### Family Leporidae

Eastern cottontail *Sylvilagus floridanus floridanus* (Allen)  
Allegheny cottontail *Sylvilagus obscurus* Chapman et al.  
Snowshoe hare *Lepus americanus virginianus* Harlan

### Order Rodentia

#### Family Sciuridae

Eastern chipmunk *Tamias striatus hysteri* (Linnaeus)  
Woodchuck *Marmota monax* (Linnaeus)  
Eastern gray squirrel *Sciurus carolinensis pennsylvanicus* Ord  
Fox squirrel *Sciurus niger vulpinus* Gmelin  
Red squirrel *Tamiasciurus hudsonicus abieticola* (Howell)  
Southern flying squirrel *Glaucomys volans volans* (Linnaeus)

Family Castoridae	
American beaver	<i>Castor canadensis</i> (Kuhl)
Family Dipodidae	
Woodland jumping mouse	<i>Napaeozapus insignis</i> (Miller)
Family Muridae	
White-footed mouse	<i>Peromyscus leucopus noveboracensis</i> (Rafinesque)
Deer mouse	<i>Peromyscus maniculatus</i> Wagner
Red-backed vole	<i>Clethrionomys gapperi carolinensis</i> (Merriam)
Southern Appalachian rock vole	<i>Microtus chrotorrhinus carolinensis</i> Komarek
Meadow vole	<i>Microtus pennsylvanicus pennsylvanicus</i> Ord
Common muskrat	<i>Ondatra zibethicus zibethicus</i> (Linnaeus)
Southern bog lemming	<i>Synaptomys cooperi stonei</i> Rhoads
Order Carnivora	
Family Canidae	
Coyote	<i>Canis latrans latrans</i> Say
Red fox	<i>Vulpes vulpes fulva</i> (Desmarest)
Common gray fox	<i>Urocyon cinereoargenteus cinereoargenteus</i> (Schreber)
Family Ursidae	
American black bear	<i>Ursus americanus americanus</i> (Pallas)
Family Procyonidae	
Common raccoon	<i>Procyon lotor lotor</i> (Linnaeus)
Family Mustelidae	
Fisher	<i>Martes pennanti pennanti</i> (Erxleben)
Long-tail weasel	<i>Mustela frenata noveboracensis</i> [author?]
Least weasel	<i>Mustela nivalis</i> Linnaeus
Mink	<i>Mustela vison vison</i> Schreber
Family Mephitidae	
Striped skunk	<i>Mephitis mephitis</i> (Schreber)
Family Felidae	
Bobcat	<i>Lynx rufus</i> (Schreber)
Order Artiodactyla	
Family Cervidae	
White-tailed deer	<i>Odocoileus virginianus virginianus</i> (Zimmerman)

## Literature Cited

- Adams, Mary Beth; Kochenderfer, James N.; Wood, Frederica; Angradi, Ted R.; Edwards, Pamela J. 1994. **Forty years of hydrometeorological data from the Fernow Experimental Forest, West Virginia.** Gen. Tech. Rep. NE-184. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station.
- American Ornithologists' Union. 2000. **Check-list of North American birds, 7th ed.** [<http://pica.wru.umt.edu/AOU/birdlist.html>.]
- Angradi, Ted R. 1999. **Fine sediment and macroinvertebrate assemblages in Appalachian streams: a field experiment with biomonitoring applications.** *Journal of North American Benthological Society*. 18(1): 49-66.
- Angradi, Ted R. 1997. **Hydrologic context and macroinvertebrate community response to floods in an Appalachian headwater stream.** *American Midland Naturalist*. 138: 371-386.
- Angradi, Ted R. 1996. **Inter-habitat variation in benthic community structure, function, and organic matter storage in 3 Appalachian headwater streams.** *Journal of North American Benthological Society*. 15(1): 42-63.
- Aulick, Staci D. S. 1993. **Vascular flora of three watersheds in the Fernow Experimental Forest and factors influencing species composition of the herbaceous layer.** Huntington, WV: Marshall University. M.S. thesis.
- Barrett, Barbara A. 1996. **Herpetofaunal diversity and forest succession in the Monongahela National Forest.** Washington, DC: Howard University. M.S. thesis.
- Braun, E. Lucy. 1950. **Deciduous forests of eastern North America.** Philadelphia: Blakiston Co.
- Butler, Linda; Chrislip, Gregory A. 1997. **Canopy arthropods of an experimentally acidified watershed.** Bull. 716-1997. Morgantown WV: West Virginia University, Agricultural and Forestry Experiment Station.
- Butler, Linda; Chrislip, Gregory A.; Kondo, Vicki A.; Townsend, Edwin C. 1997. **Effect of diflubenzuron on nontarget canopy arthropods in closed, deciduous watersheds in a central Appalachian forest.** *Journal of Economic Entomology*. 90(3): 784-794.
- Cromer, Jack I.; Smith, H. Clay. 1968. **Sufficient deer browse produced by a wide range of cutting practices.** In: Transactions of the northeastern fish and wildlife conference; 1968 January 14-17; Bedford, NH. [Place of publication unknown]: [Publisher name unknown]: 25-33.
- DeMeo, Thomas E. 1999. **Forest songbird abundance and viability at multiple scales on the Monongahela National Forest, West Virginia.** Morgantown, WV: West Virginia University. Ph.D. dissertation.
- DeMeo, Thomas E.; Wright, L. 1995. **Landtype associations of the Monongahela National Forest.** 1:250,000; UTM map projection. [Place of publication unknown]: U. S. Department of Agriculture, Forest Service, Monongahela National Forest.
- Dougherty, Robert L. 1982. **Effects of herbicide application on a passerine bird community.** Morgantown, WV: West Virginia University. MS thesis.
- Dubey, Tara; Stephenson, Steven L.; Edwards, Pamela J. 1991a. **A preliminary study of the mycoflora of West Virginia mountain streams.** *Mycological Society of America Newsletter*. 42: 12.
- Dubey, Tara; Stephenson, Steven L.; Edwards, Pamela J. 1991b. **A preliminary study of the possible effects of acidification on the mycoflora of West Virginia mountain streams.** In: Keller, E. C., Jr., ed. *Proceedings of the West Virginia Academy of Science*; 1991 April 6; Montgomery, WV. Montgomery, WV: West Virginia Institute of Technology. 63(1): 21. Abstract.
- Dubey, Tara; Stephenson, Steven L.; Edwards, Pamela J. 1994. **Effect of pH on the distribution and occurrence of aquatic fungi in six West Virginia mountain streams.** *Journal of Environmental Quality*. 23: 1271-1279.
- Dubey, Tara; Stephenson, Steven L.; Edwards, Pamela J. 1995. **Dimilin effects on leaf-decomposing aquatic fungi on the Fernow Experimental Forest, West Virginia.** In: Gottschalk, Kurt W.; Fosbroke, Sandra L. C. eds. *Proceedings, 10th central hardwood forest conference*; 1995 March 5-8; Morgantown, WV. Gen. Tech. Rep. NE-197. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station: 421-429.
- Gleason, Henry A.; Cronquist, Arthur. 1991. **Manual of vascular plants of northeastern United States and adjacent Canada.** 2nd ed. Bronx, NY: New York Botanical Garden.
- Green, N. Bayard; Pauley, Thomas K. 1987. **Amphibians and reptiles in West Virginia.** Pittsburgh, PA: University of Pittsburgh Press.

- Griffith, Michael B.; Barrows, Edward M.; Perry, Sue A. 1996. **Effects of aerial application of diflubenzuron on emergence and flight of adult aquatic insects.** *Forest Entomology*. 89(2): 442-446.
- Griffith, Michael B.; Perry, Sue A.; Perry, William B. 1995. **Macroinvertebrate communities in headwater streams affected by acidic precipitation in the central Appalachians.** *Journal of Environmental Quality*. 24(2): 233-238.
- Griffith, Michael B.; Perry, Sue A.; Perry, William B. 1994. **Secondary production of macroinvertebrate shredders in headwater streams with different baseflow alkalinity.** *Journal of North American Benthological Society*. 13(3): 345-356.
- Griffith, Michael B.; Perry, Sue A. 1993a. **Colonization and processing of leaf litter by macroinvertebrate shredders in streams of contrasting pH.** *Freshwater Biology*. 30: 93-103.
- Griffith, Michael B.; Perry, Sue A. 1993b. **The distribution of macroinvertebrates in the hyporheic zone of two small Appalachian headwater streams.** *Archives of Hydrobiology*. 126(3): 373-384.
- Griffith, Michael B.; Perry, Sue A.; Perry, William B. 1993. **Growth and secondary production of *Paracapnia angulata* Hanson (Plecoptera; Capniidae) in Appalachian streams affected by acid precipitation.** *Canadian Journal of Zoology*. 71: 735-743.
- Griffith, Michael B.; Perry, Sue A. 1992a. **Plecoptera of headwater catchments in the Fernow Experimental Forest, Monongahela National Forest, West Virginia.** *Proceedings of the Entomological Society of Washington*. 94(2): 282-287.
- Griffith, Michael B.; Perry, Sue A. 1992b. **Trichoptera of headwater streams in the Fernow Experimental Forest, Monongahela National Forest, West Virginia.** *Entomology Newsletter*. 103(4): 110-116.
- Griffith, Michael B.; Perry, Sue A. 1991. **Leaf pack processing in two Appalachian mountain streams draining catchments with different management histories.** *Hydrobiologia*. 220: 247-254.
- Hood, Robert W. 1997. **Vertical, longitudinal, and seasonal variation in the benthic fauna at the Fernow Experimental Forest, Parsons, West Virginia.** Huntington, WV: Marshall University. M.S. thesis.
- Hurd, Martin K.; Perry, Sue A.; Perry, William B. 1996. **Nontarget effects of a test application of diflubenzuron to the forest canopy on stream macroinvertebrates.** *Environmental Toxicology and Chemistry*. 15(8): 1344-1351.
- Iskra, A.; Binion, P.; Gundrum, P.; Stephenson, S. L. 1995. **Decomposer and ectomycorrhizal fungi.** In: Reardon, R. C., ed. *Effects of Diflubenzuron on non-target organisms in broadleaf forested watersheds in the Northeast.* FHM-NC-05-95. Morgantown, WV: U.S. Department of Agriculture, Forest Service, Center of Forest Health Management: 106-120.
- Landholt, J. C.; Stephenson, S. L. 1995. **Soil bacteria and fungi.** In: Reardon, R. C., ed. *Effects of Diflubenzuron on non-target organisms in broadleaf forested watersheds in the Northeast.* FHM-NC-05-95. Morgantown, WV: U.S. Department of Agriculture, Forest Service, Center of Forest Health Management: 93-105.
- Little, Elbert L., Jr. 1979. **Checklist of United States trees (native and naturalized).** *Agric. Handb.* 541. Washington, DC: U.S. Department of Agriculture.
- Marcum, Conley, Jr. 1994. **Ecology and natural history of four plethodontid species in the Fernow Experimental Forest, Tucker County, West Virginia.** Huntington, WV: Marshall University. M.S. thesis.
- Maurer, Brian A.; Whitmore, Robert. 1980. **Foraging changes by canopy birds in a clearcut forest.** *West Virginia Forestry Notes*. (8): 7-12.
- McNab, W. H.; Avers, P. E. 1994. **Ecological subregions of the United States: section descriptions.** Publ. WO-WSA5. Washington, DC: U.S. Department of Agriculture, Forest Service.
- Muzika, R. M.; Stephenson, S. L.; Adams, H. S.; Lawrence, D. M.; Miller, G. W. 1999. **Patterns of composition in the tree stratum of the Fernow Experimental Forest and adjacent portions of the Otter Creek Wilderness Area.** In: Eckerlin, R. P., ed. *Proceedings of the Appalachian biogeography symposium, Spec. Publ. 7.* Blacksburg, VA: Virginia Museum of Natural History: 35-44.
- Pan, C.; Tajchman, S. J.; Kochenderfer, J. N. 1997. **Dendroclimatological analysis of major forest species of the central Appalachians.** *Forest Ecology and Management*. 98: 77-87.
- Pauley, Thomas; Little, Michael; Edwards, Pamela J.; Kochenderfer, James. 1990. **The effects of the 1988 drought on surface abundance of terrestrial salamanders.** In: *Proceedings, West Virginia Academy of Science, 65th annual session; 1990 April 7; Shepherdstown, WV.* Montgomery, WV: West Virginia Institute of Technology: 62(1): 19. Abstract.
- Reger, David B.; Price, W. Armstrong; Tucker, R. C. 1923. **West Virginia geological survey: Tucker County.** [Place of publication unknown]: West Virginia Geological Survey Commission.

- Rexrode, C. O.; Smith, H. C. 1990. **Occurrence of gum spots in black cherry after partial harvest cutting.** Res. Pap. NE-634. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station.
- Schuler, Thomas M.; Gillespie, Andrew R. 2000. **Temporal patterns of woody species in a central Appalachian forest from 1856 to 1997.** *Journal of the Torrey Botanical Society*. 127(2): 149-161.
- Stephenson, Steven L.; Kumar, Ashok; Bhatt, Rajendra; Dubey, Tara; Landolt, John C.; Adams, Mary Beth. 1994a. **Preliminary checklist of fungi of the Fernow Experimental Forest.** Gen. Tech. Rep. NE-182. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station.
- Stephenson, Steven L.; Studlar, Susan Moyle; Edwards, Pamela J.; Ruggles, Kimberly K. 1991. **The possible effects of acidification on stream bryophyte communities.** In: Keller, E. C., Jr., ed. *Proceedings of the West Virginia Academy of Science*; 1991 April 6; Montgomery, WV. Montgomery, WV: West Virginia Institute of Technology. 63(1): 21. Abstract.
- Stephenson, Steven L.; Studlar, Susan Moyle; Edwards, Pamela J. 1990. **Composition and structure of the communities of bryophytes associated with West Virginia mountain streams.** In: *Proceedings, West Virginia Academy of Science, 65th annual session*; 1990 April 7; Shepherdstown, WV. Montgomery, WV: West Virginia Institute of Technology. 62(1): 21. Abstract.
- Stephenson, S. L.; Wheeler, Q. D; McHugh, J. V; Fraissinet, P. R. 1994b. **New North American associations of Coleoptera with Myxomycetes.** *Journal of Natural History*. 28: 921-936.
- Taylor, Stephen B. 1999. **Geomorphic controls on sediment-transport efficiency in the central Appalachians: a comparative analysis of three watersheds underlain by the Acadian clastic wedge.** Morgantown, WV: West Virginia University. Ph.D. dissertation.
- Trimble, George R. 1977. **A history of the Fernow Experimental Forest and the Parsons Timber and Watershed Laboratory.** Gen. Tech. Rep. NE-28. Upper Darby, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station.
- Turrill, Nicole L. 1993. **Factors influencing herbaceous layer vegetation of a central Appalachian hardwood forest ecosystem.** Huntington, WV: Marshall University. M.S. thesis.
- 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].
- Whitaker, John O., Jr.; Hamilton, William J., Jr. 1998. **Mammals of the eastern United States.** Ithaca, NY: Cornell University Press.
- Yokum, Kevin A.; Angradi, Ted R; Tarter, Donald C. 1995. **Ecology of *Peltoperla arcuata* and *Tallaperla maria* (Plecoptera: Peltoperlidae) at the Fernow Experimental Forest, Tucker County, West Virginia.** *Psyche*. 102(3-4): 151-168.
- Yokum, K. A.; Johnson, B. R.; Tipton, R. C.; Angradi, T. R. 1994. **Leaf species selection by the shredding stoneflies *Peltoperla arcuata* and *Tallaperla maria* (Plecoptera: Peltoperlidae).** In: Taylor, R. W., ed. *Proceedings of the West Virginia Academy of Science: 1994 papers of the 69th annual session*. 1994 April 23, Fairmont, WV. Huntington, WV: Marshall University: 66(2-4): 34-42.

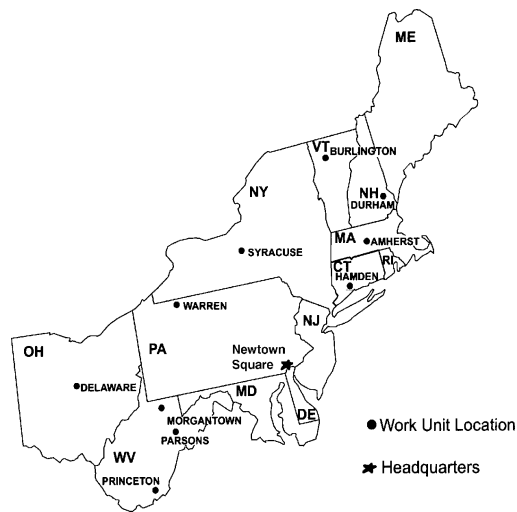


Madarish, Darlene M.; Rodrigue, Jane L.; Adams, Mary Beth. 2002. **Vascular flora and macroscopic fauna on the Fernow Experimental Forest.** Gen. Tech. Rep. NE-291. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 37 p.

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





---

---

**Headquarters of the Northeastern Research Station is in Newtown Square, Pennsylvania. Field laboratories are maintained at:**

**Amherst, Massachusetts, in cooperation with the University of Massachusetts**

**Burlington, Vermont, in cooperation with the University of Vermont**

**Delaware, Ohio**

**Durham, New Hampshire, in cooperation with the University of New Hampshire**

**Hamden, Connecticut, in cooperation with Yale University**

**Morgantown, West Virginia, in cooperation with West Virginia University**

**Parsons, West Virginia**

**Princeton, West Virginia**

**Syracuse, New York, in cooperation with the State University of New York, College of Environmental Sciences and Forestry at Syracuse University**

**Warren, Pennsylvania**

---

---

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at (202)720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue SW, Washington, DC 20250-9410, or call (202)720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

*“Caring for the Land and Serving People Through Research”*