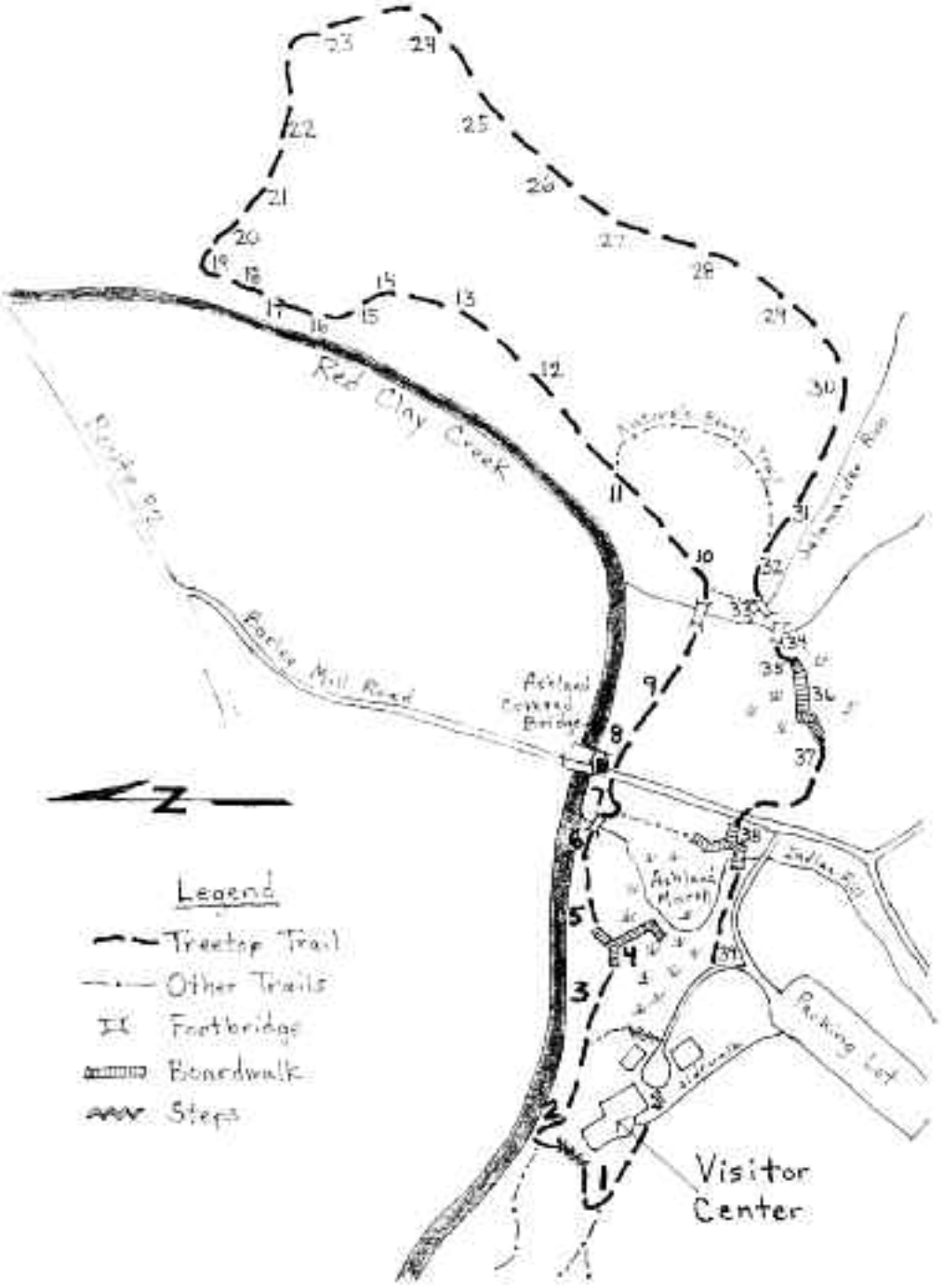

Treetop
An Ashland Nature Center Trail

Treetop Trail



About the Trail

This trail has been designed as an introduction to forest plants and forest ecology of the Piedmont physiographic province of the Mid-Atlantic region. The trail begins along the floodplain below the Visitor Center building and leads across Barley Mill Road and up into a large oak-beech-tulip forest on the hillside overlooking the Red Clay Creek.

As you walk the trail, you will encounter 39 green numbered markers denoting interesting features along the way. You will be introduced to many of the trees, shrubs, and smaller forest plants that are common in the Mid-Atlantic region. Please note that the beginning and end of the Treetop Trail coincide with the Nature's Bounty Trail so you will need to follow the green markers carefully.

Enjoy your walk!

Treetop Trail

Trail Length - 1.25 miles

Difficulty: Moderately strenuous

Approx. Walking Time (w/booklet) - 1 hour

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1 **What is a tree?** A tree is a woody plant, usually with a single erect stem (trunk), growing to a height of 10 feet or more. Shrubs are also woody, but they tend to have two or more stems growing in a clump and they do not grow as large as trees. All trees have leaves, stems, roots, flowers, and seeds, although they come in a wide variety of shapes and sizes.

To the right of the path is a grove of **sassafras** trees. Notice the curved shape of the trunks and branches that is typical of this species. Sassafras trees produce yellow flowers in April and shiny, dark blue berries in the fall. The leaves are unusual because on an individual tree they often come in four different shapes: oval, right- and left-handed mitten shapes, and three lobed. How many different shapes can you find?

Sassafras Leaf

2 You are now on the **floodplain** of the Red Clay Creek. From here you can see evidence of past floods, including fallen trees, exposed tree roots, and eroding streambanks. Severe floods in 2003 and 2004 brought several hundred times the average flow of water through this valley, and the water level on the floodplain where you are standing rose to more than 8 feet above ground level!

3 Trees play an important role in **protecting the health of the creek**. Roots of trees and other plants help prevent erosion by holding the soil in place and they help filter pollutants out of surface water. Trees also provide shade for the creek, thereby keeping the water cooler and improving water quality for fish and other aquatic organisms.

Over the years, many young, native trees have been planted in the floodplain of the Red Clay Creek in an effort to create a protective, vegetative buffer along the length of the waterway (termed a "**riparian buffer**"). As you walk along the floodplain, you may see some colored flags marking where young trees or shrubs have been planted, or you may see wire cages or plastic tree tubes around young trees to protect them from browsing White-tailed Deer.

4 A walk out the boardwalk takes you into the heart of Ashland's freshwater wetland known as **Ashland Marsh**. The soil here is too wet for most native trees to survive — instead, this area is dominated by herbaceous (non-woody) plants. This wetland is used every year from late February through May as a breeding area for many hundreds of adult frogs of several species, including Wood Frog, Northern Spring Peeper, Eastern American Toad, and Pickerel Frog, and to a lesser extent by the Northern Green Frog and American Bullfrog from mid spring well into summer. Imagine you are here on a warm, rainy night in early spring when hundreds of male frogs are making their breeding calls – you might have to cover your ears because the sound of hundreds of "peeps", "trills", "clucks", and/or "snores" can be quite deafening! The female frogs lay their eggs (each encased in a gelatinous envelope) in the water either singly, in masses, or in long strands, depending on the species. The eggs hatch into tiny tadpoles within a few days to several weeks, and then grow

Black Willow

rapidly, feeding on algae and other plant material, until they are ready to metamorphose into frogs.

Black Willow Leaves

Another kind of amphibian that breeds in the marsh in the spring is the Red-spotted Newt, the only salamander in this region that, as an adult, has lungs and is aquatic. The marsh is also home to the Eastern Snapping Turtle and several non-venomous snakes, including the commonly seen Northern Watersnake (often misidentified as a Copperhead because of its blotchy markings) and the uncommon Queen Snake (a slender snake that feeds primarily on crayfish).

One kind of tree that thrives in wet soil is **black willow** – many of which grow near the end of the boardwalk. Black willows are characterized by dark, deeply furrowed, shaggy bark and long, slender, finely-toothed leaves. A water-loving tree, the black willow is often found along stream banks where its roots help hold the soil in place. Look for more black willows as you continue along the Red Clay Creek.

5

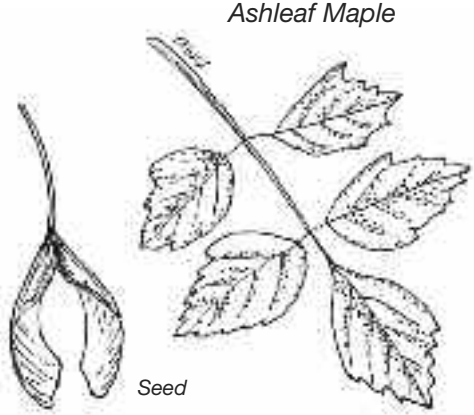
Don't touch! The "hairy" vine climbing up the tree to the left of the path is **poison ivy** - a plant that all outdoor enthusiasts should learn to recognize and avoid. All parts of the plant, including the fibrous, aerial roots on mature vines, contain skin-irritating oil that can cause an itchy rash upon contact. Besides growing as a vine, this common plant may also be found in woods and fields growing on a hairless, woody stem typically about 1 foot tall. Poison ivy is best recognized by its three-parted leaves, which are variably toothed (notched), with the end leaflet growing on a longer stalk than the two side leaflets. The

Poison Ivy

new leaves are often quite shiny and reddish when they emerge in the spring, usually becoming green and duller before summer. In the fall the leaves turn yellow, orange, or red. Mature plants produce small, greenish flowers in the spring and whitish berries in the fall. Although this plant is a nuisance to humans, its berries are an important fall and winter food source for small songbirds such as Yellow-rumped Warblers.

During the late spring and summer, **orange** and **yellow jewelweeds** can also be found growing in this part of the floodplain. The hollow, tube-like stems contain a watery sap which can be used to relieve the itch of poison ivy or the sting of stinging nettle.

6 Two trees that are common in the lowlands along the Red Clay Creek are the **green ash** and the **ashleaf maple** (also called box elder). Both trees have furrowed bark and opposite, compound leaves. (A compound leaf, as opposed to a "simple" leaf, is divided into 3 or more smaller leaflets. All leaves, whether simple or compound, come from a single bud found at the junction of leaf and stem.)



Ashleaf Maple

To distinguish between these two species of trees, compare the following:

<u>green ash</u>
7 to 9 leaflets
lower branches die & fall off
no small "sucker" branches
single-winged seeds
furrowed bark

<u>ashleaf maple</u>
3 to 5 leaflets
lower branches live through maturity
often many small "sucker" branches
double-winged seeds (like all maples)
smoother, less furrowed bark

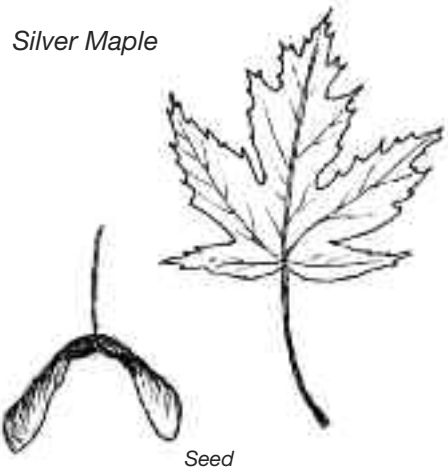

Green Ash

(Note: the leaves of the ashleaf maple and poison ivy look very similar).

7 The **Ashland Bridge**, listed in the National Register of Historic Places, is one of a few wooden covered bridges remaining in Delaware. It was built between 1850 and 1865 and restored in 1983 and 2008. As part of the 2008 restoration, the deck was completely rebuilt using African Bongossi timber, a super-strong, fire-resistant wood.

8 You have no doubt also noticed the numerous **plastic tubes** sticking up on the floodplain here! In 2006, thousands of tree seedlings were planted on the floodplain to help establish a forested buffer along the Red Clay Creek. The plastic tubes allow sunlight to penetrate, while protecting the young trees from being browsed by White-tailed Deer, Eastern Cottontails, and other animals.

9 From here, you can see two more species of trees that are typical of river banks and floodplains. The large, multi-trunked **silver maple** near the bank of the Red Clay Creek is characterized by its scaly, grayish bark and deeply five-lobed leaves. Also growing near the creek are several **sycamores**, easily recognized by their unusual bark. Mottled coloring results when the old brown bark peels off to reveal yellowish or whitish underbark. Both the silver maple and the sycamore grow best in low-lying, moist areas, so you will not see them growing naturally in the upland forest.



10 Now you have entered the upland forest. Different kinds of trees grow here than on the floodplain below, due to the drier conditions on this hillside. This part of the forest is dominated by beech and oak.

American Beech Leaf & Nuts

To the left of the path is an **American beech** with its distinctive smooth, light-gray bark and elliptical, coarse-toothed leaves. It is a shade-tolerant species, and it retains its lower branches while most other trees lose theirs. Over the years, people have carved their names in the bark of this tree, perhaps not realizing that their actions make the tree more susceptible to the harmful effects of insects and fungi, not to mention unsightly.

About 10 feet further up the trail (also on the left) is a **red oak**, another tree common in this forest. The red oak has medium-dark gray bark with vertical stripes of lighter gray, and it has deeply lobed, pointed leaves.

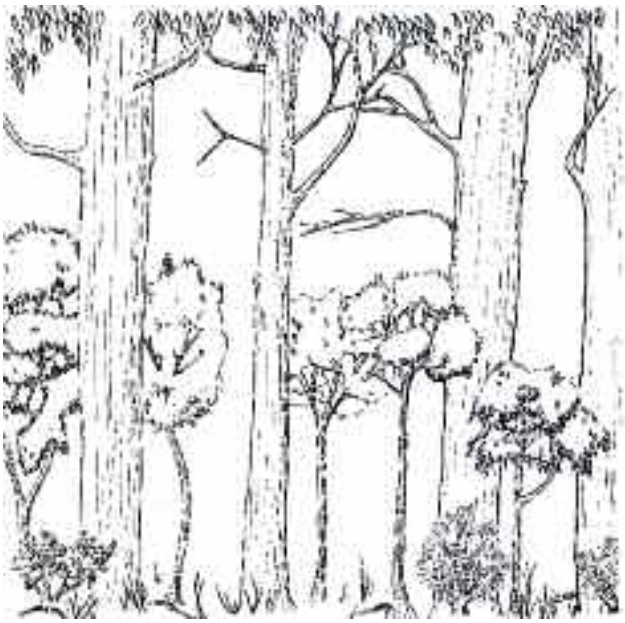
To the right of the trail is a larger **black oak**. The black oak also has lobed, pointed leaves but the leaves are usually somewhat thickened and glossy above. The bark also lacks vertical stripes.

Red Oak Leaf & Acorn

The nuts from oak trees (acorns) and beech trees (beechnuts) are an important food for many forest animals. Can you find any nuts on the ground?

11 A healthy, mature forest like this one consists of several distinct **layers of vegetation**: 1) the forest "canopy" is formed by the intermingling crowns of the mature dominant trees, such as beech, oak, tuliptree, and hickory; 2) the "understory" is made up of younger trees and smaller species over ten feet in height , such as ironwood and flowering dogwood; 3) the "shrub layer" is composed mainly of shrubs like the mountain laurel, maple-leaved

viburnum, southern arrowwood viburnum, and spicebush; 4) the "wildflower/fern" layer contains mostly herbaceous plants such as wildflowers, ferns, and clubmosses; and 5) the "ground layer" consists of true mosses and fungi (including mushrooms). Can you identify the different forest layers around you?



Canopy

Understory

Shrub Layer

Wildflower/fern Layer

Ground Layer

12 The tall, evergreen shrubs along the trail are **mountain laurel**. Their thick leaves contain a toxic substance, which contributes to their leathery appearance and assures their protection from foraging wildlife. Unlike deciduous trees and shrubs, which lose their leaves in the fall and remain dormant through the winter, evergreens retain green leaves throughout the year. Therefore evergreens are able to make food from sunlight, water, and carbon dioxide by the process of photosynthesis throughout the year, including during the winter while the deciduous trees are resting.

Mountain Laurel

13 Have you seen any **animals** while you've been in the forest? Many different kinds of animals live here — both vertebrates (animals with backbones) and invertebrates (animals without backbones). The vertebrates that live here include mammals (such as the White-tailed Deer, Red Fox, Raccoon, Striped Skunk, and Eastern Gray, Red, and Southern Flying Squirrels), birds (see marker #25 for some examples), reptiles (Eastern Box Turtle and several species of non-venomous snakes), and amphibians (such as Eastern Red-backed Salamander and Eastern American Toad). The invertebrates include thousands of species of insects, spiders, millipedes, snails, slugs, worms, etc.

Although most of the larger forest animals are wary and stay well hidden from humans, if you are patient and take a few minutes to explore the forest close up, you are sure to find some of the many invertebrates that live here. Even when there is snow on the ground, insects such as winter stoneflies, snow scorpionflies, and snow fleas can be found moving on the surface of the snow.

You can also look for the **Eastern Red-backed Salamander,** the most commonly encountered salamander in northern Delaware. It is most easily found by carefully turning over logs, rocks, or other cover in woodlands, and looking on the moist soil underneath. (If you do turn over logs or other objects, please place them back carefully in their original position). In high-quality woodland habitats the Eastern Red-backed Salamander can reach very high population levels and is often the dominant vertebrate predator of the forest floor, eating a wide variety of small invertebrates.

Eastern Red-backed Salamander

14 In this area you can examine some of the smaller plants that grow in the forest.

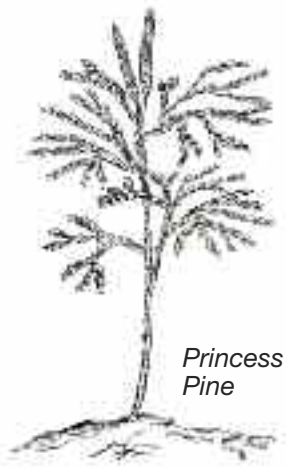

Partridgeberry

Partridgeberry, a low-growing, creeping groundcover with small, roundish, paired, evergreen leaves, can be found on the forest floor around this trail post throughout the year (although sometimes it is hidden by fallen leaves). If you look closely in the spring, you may be able to find a few small, pink or white flowers in joined pairs at the end of the creeping stems. Each flower pair produces a single red berry in the fall (although in this particular location the plant apparently rarely produces flowers or berries).

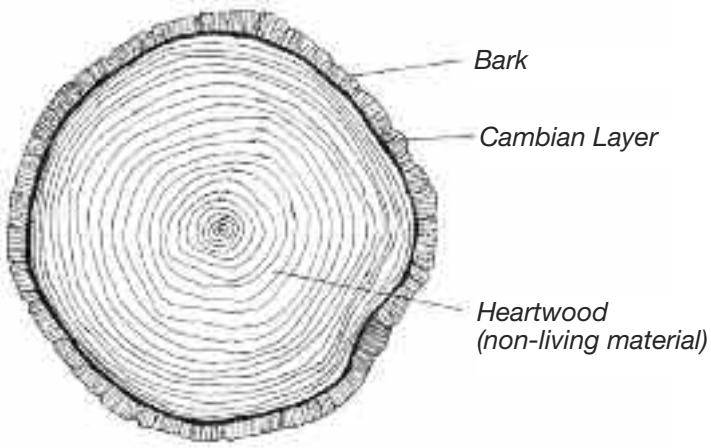

New York Fern

In the spring and summer, two species of **ferns** can also be seen in this area. To the right of the trail, near the trail post, is hay-scented fern; and about 10 to 15 feet further along the trail, on both sides of the trail, grows New York fern. Instead of developing seeds, these flowerless plants form tiny spore cases on the undersides of the leaflets, which burst open when ripe to release dust-like spores.

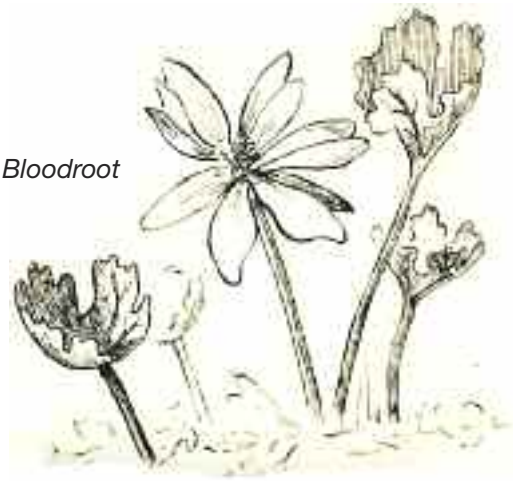
15 **Clubmoss** is another kind of non-flowering, spore-bearing plant that grows in these woods. Two species of these low-growing evergreens can be seen here. The clubmoss which looks like a small pine tree is called tree clubmoss or princess-pine. Another species of clubmoss found here is the shining clubmoss, so-called because of its small, shiny green leaves (Note: only one small clump was seen here in 2007, to the right of the trail).


Princess Pine

16 The large red oak to the right of the path which is partly split open allows you to see some of the insides of the trunk. The **heartwood**, the inner, non-living material which serves as support for the tree, is decaying. The growing portion of the tree, or cambium, is relatively thin and is located just underneath the outer bark. Notice also the unusual growth of the American beech here. How many trunks/major branches does this tree have? One? Two? Three?



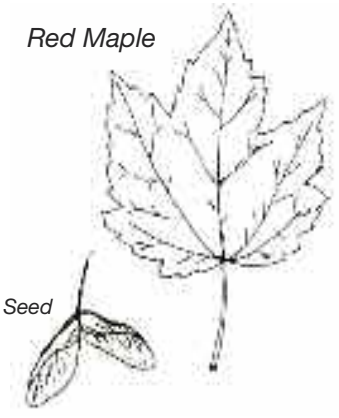
17 **Witch-hazel** is a shrub or small tree with unusual characteristics: 1) its straggly yellow flowers appear in fall, making it the last flower to bloom in this area during the calendar year; 2) its seeds are ejected from the seed capsules, landing up to 20 feet away; and 3) the wavy-toothed leaves are uneven at the base. According to folklore, a forked witch-hazel branch can serve as a divining rod to indicate the location of underground water or even veins of gold.


Bloodroot

In the spring, many **native wildflowers** can be observed in this area, including: bloodroot (short-lived flower with 8 to 12 showy, white petals and distinctive, irregularly lobed, rounded leaves); trout

lily (drooping, bell-like, yellow flower with 6 petals and 2 broad, mottled, basal leaves); spring beauty (5 white or pink petals with darker pink veins and narrow, grass-like leaves); and common blue violet (5 bluish-purple petals and heart-shaped leaves). In the late summer and early fall, white wood aster is the most common native wildflower blooming here. On the other hand, Christmas fern, a dark green fern with glossy, leathery fronds, is visible here throughout the year.

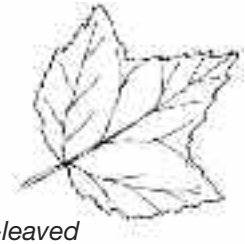
18 The **red maple** growing by the marker is a common tree of both lowland and upland forests, although it prefers wetlands and swamps. It can be identified in winter by its light gray bark, opposite branching, and red buds; in early spring by its red flowers (on mature trees); in late spring and summer by its reddish leafstalks, and tri-lobed, toothed, smooth (hairless) leaves; and in fall by its red leaves and winged seedpods.



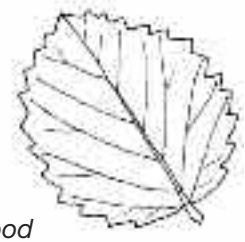
19 A common understory tree in this forest is the **ironwood** or American hornbeam. Its bark is smooth and light-gray, like that of the American beech, but it also has a distinctive rippled, sinewy appearance and is sometimes called "musclewood". Ironwood is most often found in the deep, rich soil along the borders of swamps and streams, although it will grow in drier locations on hillsides, if well shaded.

Evidence of North America's largest rodent – **the Beaver** – has also been found along this part of the trail. In swift, larger waterways like the Red Clay Creek, Beaver often burrow in the bank to make a den rather than building its trademark stick dam or lodge. Spending most of the time in the water, Beaver climb ashore to forage for twigs and bark. Look for gnawed tree trunks and wood chips on the ground.

20 Two members of the viburnum family, **southern arrowwood** and **maple-leaved viburnum**, can be seen along this section of the trail. Both are shrubs with opposite branches, and both bear white flowers in the late spring and dark blue berries in the fall. They are best distinguished by the shape of their leaves. Southern arrowwood has roughly heart-shaped, toothed leaves and long, straight shoots. Maple-leaved viburnum is so named because its leaves are shaped much like those of the red maple, although the viburnum leaves are covered with soft hairs that make it feel soft and "fuzzy".



Maple-leaved Viburnum



Arrowood

21 Brown stalks of **beechdrops** (8 to 12 inches high) may be found growing underneath American beech trees in this forest throughout the year. Beechdrops are parasites, feeding off the roots of beech trees. They lack green chlorophyll and have no leaves except occasional scales along the reddish or yellowish-brown stems. Beechdrops are most noticeable in the late summer and early fall when they produce small whitish flowers with violet-red accents.

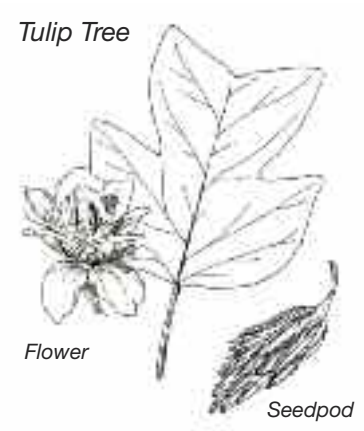
Also growing on the forest floor are numerous native **wildflowers**, such as the green, umbrella-like mayapple and jack-in-the-pulpit with its green flap-like spathe enclosing a club-shaped spadix in the spring. Both Solomon's-seal and false Solomon's-seal grow here as well. Solomon's-seal bears its flowers and berries along the stem underneath the leaves, whereas false Solomon's-seal has its flowers and berries in a cluster at the end of the stem.

Beechdrops

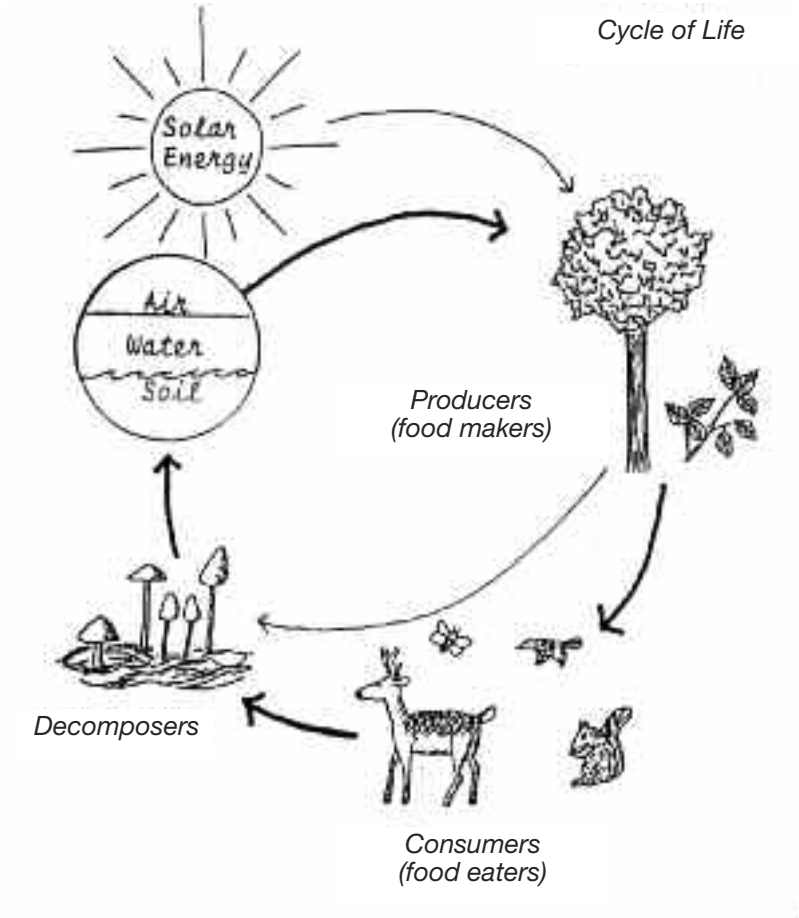
Jack-in-the-Pulpit

22 You no doubt have noticed the **steep slope** of the land. Why is it so hilly here? The hills and valleys of northern Delaware have been carved by the power of flowing water in streams and rivers, over millions of years. During the Pleistocene Ice Age (lasting from approximately 2 million to 10,000 years ago), glacial ice sheets periodically advanced and retreated over North America, reaching southward into the northern United States (but never into Delaware itself). Water from the melting glaciers flowed down major river valleys, such as the Delaware River, towards the ocean. Because sea level and the river levels were lower than present during these glacial periods, the smaller streams that feed into the Delaware (such as Red Clay Creek) had a steep slope to flow down to reach the river. This steep slope forced the streams to cut deeper as they adjusted to the lower sea level. The result of this down-cutting is the hilly landscape that we see today. The erosion of these hills continues today as bits of rock and soil are carried downhill by storm water runoff, and the Red Clay Creek and other waterways carry the sediments downstream towards the ocean.

23 The giant **tuliptree** near the marker has a circumference of more than 13 feet, making it the largest tree in these woods. Based on its size, it is estimated to be approximately 150 years old. Note the tall, straight trunk and the lack of low branches, indicating that the tuliptree is not tolerant of the shade. The tree bears large, tulip-shaped, orange and green flowers in May and June (you may see pieces of them on the ground in the spring). All trees have flowers, though most are much smaller than those of the tuliptree.



24 If you come back in a few years, the **fallen trees** in this area will no doubt look different. Bacteria, fungi, and insects all aid in the decay of dead organic matter and help return it to the soil where its smallest parts (molecules and atoms) can be used again. This is part of the "Cycle of Life", which is nature's way of recycling and replenishing the finite resources of the earth system.



The diagram shows how the PRODUCERS use sunlight, air, water, and soil to make food, which is eaten by the CONSUMERS. The DECOMPOSERS break down dead organic material, return it to the soil, and the cycle is repeated.

In this forest, the PRODUCERS are all of the trees, shrubs, and smaller green plants. The CONSUMERS are all of the animals, including mammals, birds, reptiles, amphibians, insects, spiders, and other invertebrates. The DECOMPOSERS are mushrooms, lichen, and bacteria.

25 Listen for a moment to the **sounds of the forest**. Do you hear any birds? More than 100 different species of birds use this forest, although not all at the same time of year. The Ovenbird, for example, lives here only during its breeding season in

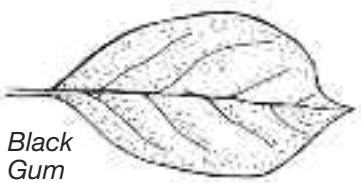
spring and summer. It can be heard from May to July as it sings its loud, piercing song that sounds like "teacher, TEACHER, TEACHER". The Black-throated Green Warbler migrates through this area in the spring and fall, feeding on insects in the forest canopy. Listen for its buzzy breeding song in the spring. The Brown Creeper, on the other hand, spends only the winter here. It makes a very high-pitched, thin, quavering "seee" call, as it creeps up the trunks of large trees, searching for insects. And then there are other birds, such as the Downy, Hairy, Red-bellied, and Pileated Woodpeckers, that live here year-round. They are often heard tapping their bills on the bark of dead or dying wood while foraging for insects, or "drumming" on wood to communicate with other woodpeckers.

Pileated Woodpecker

This forest is important for nesting birds that need a fairly large interior forest space, such as Wood thrush, Veery, Ovenbird, Scarlet Tanager, and Pileated Woodpecker. If the forest were cut and made smaller, these birds might have trouble successfully rearing young here.

26

One of the first trees with fall foliage is the **black or sour gum** which has leaves of yellow-orange to brilliant burgundy. The branches tend to grow perpendicular to the trunk and the bark forms square, gray plates. Black gum wood resists splitting and is useful for tool handles and rollers.



Black Gum

27 **Alien invasion**: in this part of the forest grow many plants that are non-native, or alien, to Delaware. They have escaped from gardens or other landscaped areas and many species have now become established in the woods. Some of the invasive aliens found in this forest are: Norway maple, privet, multiflora rose, winged burning-bush, and Japanese barberry. Alien plants crowd out native species and, in addition, are usually not eaten by deer, which results in fewer and fewer natives and more and more aliens.

Norway Maple

Seed

28 Near the trail post is a large **shagbark hickory,** named for its shaggy-looking, light gray bark which peels off in rough strips or plates. This characteristic easily distinguishes it from other species of hickory trees you may see in this forest. The leaves of the shagbark hickory are alternate and compound, with five to seven broad, toothed leaflets.

Shagbark Hickory

Further up the trail to the right is a **deer stand** used by licensed hunters at designated times during the fall and winter when trails are closed. Hunting is necessary here in order to control the White-tailed Deer population. White-tailed Deer have no natural predators in this area and therefore their numbers have grown significantly. Too many deer are damaging to the forest because they eat up the undergrowth, destroying food and habitat for other woodland animals, and preventing young trees and wildflowers from reaching maturity.

29 The **flowering dogwood** is an understory tree that grows well in moderate shade and rarely attains a height of more than 30 feet. It can be recognized at all times of the year by its scaly bark and dark purple twigs. Large, white, flower-like bracts appear in late April and bright red berries develop in the fall. Many birds eat the high-fat berries, giving them important energy for their fall migrations and/or helping sustain them through the winter. Dogwood leaves decay quickly and have a high calcium content, an important mineral in the forest soil. Unfortunately, many flowering dogwoods in our area are dying due to a fungal disease called Dogwood Anthracnose. Those growing in the shade are more susceptible to the fungus and die more quickly. Can you see any dying or dead dogwoods in these woods?

Flowering Dogwood

30 The rocks in this area are **metamorphic rocks** called gneisses (pronounced nIses). Notice the swirling lines and folds that are indicative of metamorphic rocks formed under high heat and pressure deep within the earth. These gneisses formed in the core of an ancient mountain range that stood here more than 400 million years ago. Those mountains were as high then as the Rockies are today. Over hundreds of millions of years, the tall mountains have gradually eroded away, exposing these gneisses that were once buried miles beneath the mountain peaks.

Looking closely at the rocks, you may see crystals of several different minerals, including: shiny black mica; glassy, gray or white quartz; whitish or pinkish feldspar; and glassy, dark reddish-brown garnet. Rusty-colored iron stains are also present, and in places you may see patches of grayish-green lichen growing on the rocks. The lichen aids in breaking down the rocks into individual grains.

31 The prickly evergreen leaves of the **American holly** make it an easy tree to recognize. Delaware's state tree, it is unusual because the male and female flower parts are on different trees. In the winter, mature "female" trees are adorned with red berries. This tree is very common in forests on the Coastal Plain of Delaware.

Just up ahead on the left is a large **white oak**. Its bark is light gray-brown and slightly furrowed and the leaves are round-lobed (as opposed to pointy-lobed like the red and black oaks). The bark on mature white oak trees like this one often becomes very shaggy towards the top of the tree. This tree is estimated to be about 175 years old.

American Holly

UP AHEAD THE TREETOP TRAIL JOINS WITH THE NATURE'S BOUNTY TRAIL. FOLLOW THE GREEN MARKERS CAREFULLY.

32 Can you tell how much a tree has grown in the last year? Look closely at a twig of the nearby beech tree and you will see "**growth rings**" – several lines or rings close together near the tip of the twig. The growth rings were left when last year's terminal bud fell off. Now look for the next set of rings, which mark the end of the twig two years ago. Starting at the tip of the twig, count the sets of growth rings along its length to determine the age of the twig.

Previous Year's Growth *Last Year's Growth*

33 **Salamander Run** is the name given to this rocky creek which has its source in a groundwater spring located on the hillside about 500 feet upstream from here. Several species of salamanders live in this stream, including Northern Dusky, Northern Two-lined, and Northern Red Salamanders. These small, chiefly nocturnal predators feed on invertebrates in and around the stream.

34 **Forested floodplain:** Looking around, notice the lack of American beech and oak trees in this area. Instead, the canopy is dominated by green ash and red maple – both species that grow best in lowland areas. The soil here on the floodplain is very different than the soil on the upland slopes, and therefore different plants grow here.


Spicebush with berries

35 Well below the canopy of ash and maple, **spicebush** is the dominant plant of the shrub layer here on the moist floodplain. Spicebush is so named because its leaves, twigs, and buds have a strong spicy scent when crushed. In early spring, its vivid yellow flowers contrast sharply with the dark, finely-speckled bark. In the fall it bears fat-rich, red berries that are an important food for birds. The berries ripen just as the leaves turn bright yellow, which attracts songbirds to feed on them. This is called foliar fruit flagging.

36 This **freshwater marsh** supports a unique array of plants and animals adapted to a wetland habitat. Skunk cabbage, whose broken leaves gives off a heavy, unpleasant odor, is one of the first herbaceous plants to be seen growing in the new year. A speckled brownish-purple spathe enclosing the flower appears in late January or February, sometimes poking up through the snow. By late April, its large leaves have spread into 1- 2 feet high, tufted arrangements. Other herbaceous plants in the marsh include stinging nettle, jewelweed, great bulrush, broadleaf cattail, sweetflag, and sensitive fern.

The marsh also harbors a variety of wildlife, including five species of frogs (Eastern American Toad, Northern Spring Peeper, Northern Green Frog, Pickerel Frog, and Wood Frog), two species of non-venomous snakes (Northern Watersnake and Eastern Gartersnake), and a variety of birds including Red-winged Blackbirds, Common Yellowthroats, and Green Herons.


Skunk Cabbage Flower

37 The **black cherry** is a common tree of the wood edge and of the forest understory. Young trees and branches have smooth bark marked with horizontal lines while larger trees and branches develop cracked, scaly bark. In the spring you may see numerous small, reddish, fingerlike projections on the upper surface of the tree's long, oval, fine-toothed leaves. These projections are cherry pouch galls, caused by the egg-laying activity of tiny mites, and are harmless to the tree. Drooping clusters of small white flowers appear in May, developing into cherries (edible but bitter) through the summer. The cherry seeds are spread by birds and other animals that eat the fruit and pass the seeds unharmed through their digestive systems.


Black Cherry

THE TRAIL SOON CROSSES BARLEY MILL ROAD. PLEASE CROSS CAREFULLY TO THE BOARDWALK.

38 **Silky dogwood** is abundant growing in this wetland area along the boardwalk. Like the flowering dogwood, this native shrub has opposite branches and leaves. Clusters of small, white flowers appear in late spring, maturing into bluish berries by fall that are popular with birds and other wildlife.


Silky Dogwood

You have reached the end of the Treetop Trail. On your walk, you have been introduced to a wide variety of trees, shrubs, and smaller plants growing within the upland forest, floodplain, and freshwater wetland. It is important that we protect these plants within their natural environment. Plants provide a source of beauty and enjoyment for humans. They also play an important ecological role by holding the soil in place and preventing erosion, by retaining water and helping prevent floods, by replenishing the earth's oxygen supply, and by providing food and shelter for many kinds of wildlife. Look for the plants you saw today in your own neighborhood, in parks, and in natural areas.

We hope you have enjoyed this trail and will come back again to visit the Ashland Nature Center. Please deposit $1.00 in the box if you would like to keep this guide; otherwise return the guide to its box.

SCIENTIFIC NAMES OF SPECIES MENTIONED IN TEXT
(common names of plants are not standardized so they are not capitalized)

TREES: (in order by Ashland checklist)
Ashleaf maple (or box elder) (*Acer negundo*)
Norway maple (*Acer platanoides*) -Alien
Red maple (*Acer rubrum*)
Silver maple (*Acer saccharinum*)
American holly (*Ilex opaca*)
Ironwood (*Carpinus caroliniana*)
Flowering dogwood (*Cornus florida*)
American beech (*Fagus grandifolia*)
White oak (*Quercus alba*)
Red oak (*Quercus rubra*)
Black oak (*Quercus velutina*)
Shagbark hickory (*Carya ovata*)
Sassafras (*Sassafras albidum*)
Tuliptree (*Liriodendron tulipifera*)
Black gum (*Nyssa sylvatica*)
Green ash (*Fraxinus pennsylvanica*)
Sycamore (*Platanus occidentalis*)
Black cherry (*Prunus serotina*)
Black willow (*Salix nigra*)

SHRUBS and VINES:
Poison ivy (*Toxicodendron radicans*)
Japanese barberry (*Berberis thunbergii*) –Alien
Maple-leaved viburnum (*Viburnum acerifolium*)
Southern arrowwood viburnum (*Viburnum dentatum*)
Winged burning-bush (*Euonymus alatus*) -Alien
Silky Dogwood (*Cornus amomum*)
Mountain laurel (*Kalmia latifolia*)
Witch-hazel (*Hamamelis virginiana*)
Spicebush (*Lindera benzoin*)
Privet (*Ligustrum spp*.) - Alien
Multiflora rose (*Rosa multiflora*) - Alien

FERNS & FERN ALLIES:
Hay-scented fern (*Dennstaedtia punctilobula*)
Sensitive fern (*Onoclea sensibilis*)
Christmas fern (*Polystichum acrostichoides*)
New York fern (*Thelypteris noveboracensis*)
Shining clubmoss (*Huperzia lucidula*)
Tree clubmoss (or princess-pine) (*Lycopodium obscurum*)

OTHER HERBACEOUS PLANTS:
Great bulrush (*Schoenoplectus tabernaemontanae*)
Sweetflag (*Acorus calamus*)
Jack-in-the-pulpit (*Arisaema triphyllum*)
Skunk cabbage (*Symplocarpus foetidus*)
White wood aster (*Aster divaricatus*)
Orange jewelweed (*Impatiens capensis*)
Yellow jewelweed (*Impatiens pallida)*
Mayapple (*Podophyllum peltatum*)
Trout lily (*Erythronium americanum*)
Solomon's seal (*Polygonatum biflorum*)
False Solomon's seal (*Smilacina racemosa*)
Beechdrops (*Epifagus virginiana*)
Bloodroot (*Sanguinaria canadensis*)
Spring beauty (*Claytonia virginica*)
Partridgeberry (*Mitchella repens*)
Broadleaf cattail (*Typha latifolia*)
Stinging nettle (*Urtica dioica*) -Alien
Common blue violet (*Viola sororia*)

AMPHIBIANS:
Northern Dusky Salamander (*Desmognathus fuscus*)
Northern Two-lined Salamander (*Eurycea bislineata*)
Eastern Red-backed Salamander (*Plethodon cinereus*)
Northern Red Salamander (*Pseudotriton r. ruber*)
Red-spotted Newt (*Notophthalmus viridescens viridescens*)
Eastern American Toad (*Bufo americanus americanus*)
Northern Spring Peeper (*Pseudacris c. crucifer*)
American Bullfrog (*Rana catesbeiana*)
Northern Green Frog (*Rana clamitans melanota*)
Pickerel Frog (*Rana palustris*)
Wood Frog (*Rana sylvatica*)

REPTILES:
Eastern Snapping Turtle (*Chelydra serpentina serpentina*)
Eastern Box Turtle (*Terrapene c. carolina*)
Northern Watersnake (*Nerodia s. sipedon*)Queen Snake (*Regina septemvittata*)
Eastern Gartersnake (*Thamnophis s. sirtalis*)

BIRDS:
Green Heron (*Butorides virescens*)
Red-bellied Woodpecker (*Melanerpes carolinus*)
Downy Woodpecker (*Picoides pubescens*)
Hairy Woodpecker (*Picoides villosus*)
Pileated Woodpecker (*Dryocopus pileatus*)
Brown Creeper (*Certhia americana*)
Veery (*Catharus fuscescens*)
Wood Thrush (*Hylocichla mustelina*)
Yellow-rumped Warbler (*Dendroica coronata*)
Black-throated Green Warbler (*Dendroica virens*)
Ovenbird (*Seiurus aurocapilla*)
Common Yellowthroat (*Geothlypis trichas*)
Scarlet Tanager (*Piranga olivacea*)
Red-winged Blackbird (*Agelaius phoeniceus*)

MAMMALS:
Eastern Gray Squirrel (*Sciurus carolinensis*)
Southern Flying Squirrel (*Glaucomys volans*)
Red Squirrel (*Tamiasciurus hudsonicus*)
Beaver (*Castor canadensis*)
Red Fox (*Vulpes fulva*)
Raccoon (*Procyon lotor*)
Striped Skunk (*Mephitis mephitis*)
White-tailed Deer (*Odocoileus virginiana*)

ABOUT THE DELAWARE NATURE SOCIETY

People of all ages learn about nature and the environment through the Delaware Nature Society's programs at Ashland & Abbott's Mill Nature Centers, Coverdale Farm, Cooch-Dayett Mills and the new DuPont Environmental Education Center at the Wilmington riverfront. DNS hashelped preserve thousands of acres of land and advocates for conservation of our natural resources. We own or manage more than 1000acres of wildlife habitat for education and biodiversity and DNS is the Delaware affiliate of the National Wildlife Federation.

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