Look for small maples, sourwoods, and beeches in the understory. These deciduous trees are more shade-tolerant and will gradually out-compete other species in the forest canopy. The older pines will eventually die, and new pine seedlings will be unable to replace them as they cannot tolerate shade.

As the species and composition of the trees change, so do the species of wildlife. This area provides ideal wildlife habitat because it has variation in tree size, an abundance of hard mast, is close to water, and provides good cover. Wildlife residents include bear, deer, songbirds, small mammals, reptiles, and insects – all finding their niche in this ecosystem.

**Stop 11**
In this rich cove are some very fine examples of northern red oak. In general, oak species are the most important tree group in the Appalachians, providing acorns and shelter for wildlife and a variety of wood products. Northern red oak, however, also provides some of the highest quality lumber, used for making cabinets, furniture, and flooring. On a good site, northern red oak grows tall and straight and reaches maturity in 70 to 80 years. The largest northern red oak in Virginia is in Washington County and has a circumference of 24 inches and is 116 feet tall.

**Stop 12**
Shade tolerant species can regenerate and grow under their own shade, so they can continually replace the canopy. When this occurs, the forest is considered to have reached maturity or a climax. In Appalachian coves, American beech and sugar maple are considered climax species. In this location, in the absence of disturbance, American beech will remain the dominant species. However, even a climax forest is not static. Small changes occur every day, whether it is a branch falling off a tree or a seed germinating. Larger changes, like acres of trees being blown over in a hurricane, occur less frequently but still play a major role in succession.

Beech is a long-lived tree reaching ages over 300 years. A prickly woody bur matures in the fall providing beechnuts, an important food source for wildlife. Early settlers recognized that the tree was a sign of fertile soil and removed them to plant crops

**Stop 13**
The tree in front of you is a white oak. White oak is one of the most widespread and important oaks in Virginia. The largest known white oak in the nation is in Brunswick County, Virginia. White oak can be found in all regions of the commonwealth and can live for hundreds of years. White oak can grow into a large, majestic shade tree and their acorns are a preferred mast for wildlife. Additionally, its lumber is prized for furniture, flooring, and cooperage. Despite its importance, there is concern over declining levels of quality white oak across the landscape. Foresters have an important role in ensuring a sustainable supply of quality white oak.

Silviculture, the art and science of managing forests, provides foresters with tools for ensuring a sustainable supply of white oak, while protecting other aspects of the ecosystem, such as water quality and wildlife. These tools may include increasing white oak regeneration, improving the quality of stems, increasing growth rates, removing undesirable species (such as nonnative invasives), among other practices.

Silviculture is not only practiced in oak forests. Different forest types have unique characteristics that lend themselves to different management strategies and foresters must adapt accordingly. There is no one size fits all prescription in forest management. Through sound, science-based management, foresters can help ensure Virginia's forests continue to benefit all.

**FORESTERS TRAIL INTERPRETIVE HIKE**

For additional hikes and exploration opportunities, see the visitor center or call Explore Park at 540-427-1800.

More information on the Park can be found here: www.ExplorePark.org.

Explore Park is operated by Roanoke County Parks, Recreation and Tourism.

ROANOKE COUNTY VA
PARKS, RECREATION & TOURISM

# FORESTERS TRAIL

## A HIKE THROUGH TIME

EXPLORE PARK
ROANOKE COUNTY VA

**This trail was built and is maintained through a partnership with the Society of American Foresters**

SAF

## Introduction

*Welcome to the Foresters Trail! This trail was built and is maintained through a partnership with the Blue Ridge Chapter of the Society of American Foresters. Formed in 1900, SAF's mission is to advance sustainable management of forest resources through science, education, and technology; to enhance the competency of its members; to establish professional excellence; and to use our knowledge, skills, and conservation ethic to ensure the continued health, integrity, and use of forests to benefit society in perpetuity.*

*Forestry is the 3rd largest industry in Virginia, after agriculture and tourism, and it drives many facets of the economy, both directly and indirectly.*

### Stop 1
The Foresters Trail is in the oak-chestnut forest region of the Blue Ridge. Originally, this area was characterized by various species of oaks and American chestnut. Following the elimination of the American chestnut as an overstory tree by the chestnut blight fungus around 1940, this region is now better described as an oak-hickory-pine forest.

As you hike the trail, look for signs that identify trees commonly found in the Blue Ridge and their uses by people and wildlife.

### Stop 2
Nutrients continuously cycle in natural forest ecosystems. Living trees remove nitrogen, phosphorus, and other nutrients from the soil and store them in their cells. Dead trees slowly decay and return these nutrients to the soil, which provides nutrition for the next generation of trees.

In 1993, severe winds uprooted the trees in this area. Look for humps where a fallen tree's roots once entered the soil.

### Stop 3
At this stop, you are near a  den tree, also called a snag. These trees have broken tops or are dead but still standing. They provide cover for a variety of wildlife species, perches for predatory birds such as hawks, sources of insects for woodpeckers, a place for nesting and food storage, and recycle nutrients back to the soil as they decay. Without snags, an important component of wildlife habitat would be lost.  At this same spot are several sourwood trees. Both useful and beautiful, yet perhaps best known for sourwood honey – a bright tasting treat.

This tree is also useful because of its hard wood and was once used regularly for sled runners. During the summer, sourwood trees have beautiful white lily-like blooms; in the fall, their leaf color ranges from crimson to hot pink.

### Stop 4
Up to now, you have been walking on a logging road that was used until 1970. In 1990, this area was clearcut. No trees were planted, so the new forest regenerated naturally. Hardwoods regenerate naturally by stump sprouts, seeds (such as acorns), and root suckers. There are roughly 10 tree species growing in this small area, many of which are large enough to produce acorns and nuts (called hard mast). Over time, the fastest growing trees will overtop their neighbors, and species that require full sun will become shaded and die.

### Stop 5
Streams are an integral part of the forest. Streams originate uphill at a seep or spring. Several smaller streams meet to form larger streams which then flow into the Roanoke River. The land that contributes water to this system of drainage is called a watershed.

Evaporation of water from the streams adds moisture to the air. This moisture, and the corresponding cooler temperatures, create mini-ecosystems or habitats.

### Stop 6
The sleek, tall trees with the gray bark are called yellow-poplar or tulip-poplar. Common in the Appalachian Mountains, it is the tallest hardwood tree in North America, Yellow-poplar reaches height of 140' or more. The fruit is showy resembling a large tulip and the leaves resemble the outline of a tulip. Part of the Magnolia family, this tree is used for plywood, oriented strand board and furniture grade lumber.

### Stop 7
The impacts of nonnative invasive species have been devastating to forests and other ecosystems worldwide. The remnants in front of you are from a white ash that was killed by the emerald ash borer (EAB), a nonnative invasive insect. Like most invasive species, in Asia, its native habitat, EAB poses little threat to ash trees because it is naturally controlled by controlled by other insects, diseases, and natural host tree defenses. However, ash trees in Europe and North America do not have these protections.

Since EAB was introduced in Michigan in 2002, it has it has killed hundreds of millions of ash trees. EAB larvae feed on the living tissue directly below the bark, leaving tunnels, which over time starves ash trees of resources needed survive.

### Stop 8
Riparian buffers, or streamside management zones (SMZs), are areas where you will find water in a forest. The water can be as obvious as a creek or river, as you see here, or as inconspicuous as a seep or spring. Seeps and springs are areas where water comes to the surface of the forest floor, moistening the soil. Seeps and springs can be perennial or ephemeral (short lived). Foresters can identify these areas, even when they are dry, by changes in tree species. During a timber harvest, foresters exclude riparian areas to protect the water from sedimentation and damage to channel integrity. Riparian buffers are an excellent place to look for amphibians and reptiles during your forest exploration.

Notice the numerous large – leafed pawpaw trees. Pawpaw prefers moist floodplains and does not grow well along dry upper ridges.

### Stop 9
Much of the grass you see in this riparian area is an invasive species called Japanese stiltgrass, or Nepalese browntop. Native to Asia, this species was accidentally introduced to the United States around 1920 and poses several threats to native ecosystems. First, it is a prolific seeder and forms a deep thatch layer, allowing it to out-compete native plants for light and nutrients. Second, its tolerance to shade allows it to not only occupy drainages and other wet areas, but also to spread into the forest understory. Finally, this grass can change the fire dynamics of a forest by introducing or increasing fine, flashy fuels that cause fire to spread more quickly.

### Stop 10
Shortleaf pine is common in pure and mixed species forests on dry uplands. These pines, along with other pioneer species, need direct sunlight to grow. This area was probably an open field that was abandoned around the time of the Depression in the 1930s. These pines were able to take advantage of the sunlight and occupy the opening.