



Welcome to the **Woods!**

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A Guide for New Virginia Woodland Owners



**Virginia
Cooperative
Extension**

Virginia Tech • Virginia State University



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Welcome to the Woods!

More than half of Virginia is forested, and more than half of these woodlands is owned by individuals and families like you. If you find this statement hard to believe, that's OK, but it is true. As a woodlot owner, you play an important role in keeping Virginia's forests healthy and productive. This is a big responsibility because our forests not only provide timber, they also provide benefits such as wildlife habitat, biodiversity, flood mitigation, carbon storage, and improved water quality and quantity.

While these provisions are nice, you are probably interested in personal benefits for you and your family. So what can you do to

- Increase your family's enjoyment of the property?
- Make your woods a better home for wildlife?
- Ensure your trees are healthy?
- Protect soils and water?
- Increase income opportunities?
- Be a good land steward?

The Virginia Forest Landowner Education Program and its partners are here to help. We provide numerous inexpensive educational opportunities for woodlot owners, covering topics such as

- Woodlot management (1-10,000 acres).
- Wildlife management.
- Nontimber forest products (mushrooms, herbs, etc.).
- Conservation strategies.
- Legacy planning.
- Investing in your land.
- Timber harvesting.
- Taxes.
- Cost-share programs.

And much more!

And this publication is a great place to get started. Please visit our website, <https://forestupdate.frec.vt.edu>, contact us at 540-231-6391, or return the postage-paid postcard on the back page to learn more about our programs.

We look forward to hearing from you!

Jennifer Gagnon
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Your Woods Are Working for Everyone

We all depend on and benefit from the woods every day, whether we know it or not. The trees, shrubs, plants, animals, and soil that make up your woods provide you, your neighbors, and your region with a host of environmental, social, and economic benefits.

Environmental Benefits

Clean Air

The plants that make up what we generally refer to as woods or forests clean the air. The leaves of trees and shrubs create shade and reduce air temperatures. The lower temperatures reduce chemical reactions that form ozone pollution. Plants also remove other air pollutants such as dust, smoke, and ash.


Through photosynthesis, your woods remove carbon from the atmosphere and provide long-term carbon storage. The amount of carbon stored in the commonwealth's 15.9 million acres of woods is approximately 1.2 billion metric tons, which is equivalent to 37 years of Virginia emissions! While the trees are alive, they continue to store carbon. In addition, if they are harvested and made into a long-lasting product, such as a house or furniture, the carbon stays stored in the wood.

Clean Water

Your woods improve water quality by removing pollutants before they enter nearby streams. Leaves — both live leaves on branches and dead leaves on the ground — reduce the momentum of rainfall. This minimizes soil disturbance and prevents soil particles from dislodging and moving into streams. The roots of trees and other woodland vegetation also slow the movement of water, reducing soil erosion and increasing infiltration. Water in the soil is either used by plants or recharges groundwater supplies.

Trees that line streams are particularly important for protecting water quality. These buffer trees keep the water cool for aquatic wildlife, stabilize stream banks, and provide habitat.

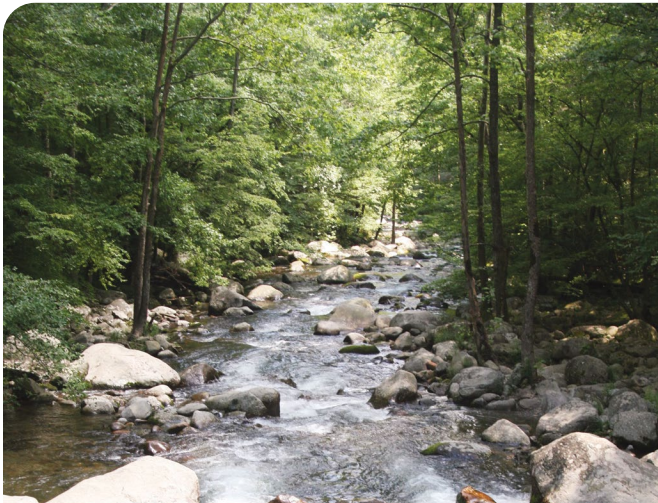
Cleaner water means safer and more enjoyable recreational activities too.



“The planting of trees shows faith in the future.”

— Charles Schultz

Photo by David Stephens, Bugwood.org.



Trees growing along streams can help protect water quality by reducing erosion and intercepting pollutants. They also maintain cooler water temperatures, which is important for aquatic habitats. Photo by Chris Evans, Illinois Wildlife Action Plan, Bugwood.org.

Wildlife Habitat

Many wildlife species depend on woods like yours for food, water, shelter, and space. Your woods may provide some or all of these elements. However, even if they don't, your woods are part of a larger system that crosses property boundaries. Adjacent woodlands can provide the wildlife habitat elements that may be missing on your property. The exact mix of birds, mammals, fish, and other critters will vary from one property to the next depending on many factors, including the type and age of trees in your woods, the acreage of woods, and the characteristics of neighboring properties.

These environmental benefits, along with others, are sometimes called ecosystem services. In Virginia, they are estimated to be worth billions of dollars annually.

Social Benefits

Humans are inherently connected to the natural landscape. Some of the social benefits of trees are obvious. They provide fruit and nuts, create shade, reduce glare, and are aesthetically pleasing. Trees provide less obvious benefits as well. Green space in urban areas can lower health care costs by encouraging physical activity. It can promote a sense of community as people see each other and interact more. Studies also show surgery patients with a view of trees heal faster than those without. And proximity to green space can increase property values.



Green spaces in urban areas facilitate outdoor activity and community interaction. Photo by Virginia Tech University Relations.

Economic Benefits

In addition to environmental and social benefits, your woods provide economic benefits. Forestry is the third-largest industry in Virginia, contributing \$21 billion a year to the economy and approximately 108,000 jobs. Forestry accounts for 3 percent of employment and 3 percent of the gross domestic product in Virginia. Virginia landowners sell more than \$350 million of standing timber annually.



Trees harvested from woodlands in Virginia are made into boards, plywood, paper, packaging materials, wood pellets, pallets, and much more. Photo by Jennifer Gagnon.

Welcome to Your Woods

As a new landowner, what do you need to know to have healthy and productive woodlands that provide all of these benefits? What follows are the top 10 items the Virginia Forest Landowner Education Program and its natural resource partners think would be most helpful for you. We've included a glossary of terms you may be unfamiliar with, and information for obtaining all the resources mentioned in the text is provided in appendix A.

1. How Do Your Woods Work?

Composition

In terms of composition, the woods of Virginia are very diverse. Hardwood and hardwood-softwood mix forest types make up more than 79 percent of the commonwealth's woods. Hardwood is an informal term that usually refers to broad-leaf tree species like oaks, yellow-poplar, and maples. Most hardwoods drop their leaves in autumn as the weather becomes colder, and moisture and sunlight are less available. Their growth and development pause until favorable conditions return in late winter and early spring.

Softwood dominated forests represent approximately 20 percent of Virginia's woodlands. Softwood usually refers to species that have their seeds in cones and have needle-like or scale-like leaves. Examples of softwood or coniferous trees include pines, firs, spruces, cedars, and cypresses. Most of these retain foliage throughout the year. Planted pine accounts for almost 63 percent of the softwood acreage in Virginia. The most commonly planted pine species include loblolly and white, although there is a resurgence in planting both shortleaf and longleaf. Other pine species found in Virginia woodlands include pitch, Table Mountain, and Virginia.

The Virginia Department of Forestry publishes the annual "State of the Forest Report" that provides additional details about Virginia's forests.

The trees, shrubs, and other plants that compose Virginia's woods vary dramatically depending on location. In fact, someone travelling across the southern portion of Virginia will encounter five separate geologic landforms that greatly impact species composition.



Woodlands in Virginia grow a mixture of softwoods (loblolly pine seedling, left) and hardwoods (white oak seedling, right).
Photo by Jennifer Gagnon.

The five geologic landforms in Virginia include the Cumberland Plateau, Ridge and Valley, Blue Ridge, Piedmont, and Coastal Plain. The characteristics of these landforms affect local climates, moisture, and soil types and offer a diversity of growing conditions. Each typically supports a plant community with similar growth requirements. Therefore, a maple-beech-birch (northern hardwoods) association, which provides the most vibrant autumn colors, occurs in the cooler and higher elevations of western Highland County in the Ridge and Valley region but is rare on the more humid Coastal Plain. A loblolly-shortleaf pine association is common in low-lying areas of the Coastal Plain but absent in the Cumberland Plateau. The most common woodland type in Virginia is the oak-hickory forest association. It contains many species of oak trees, including white oak, northern red oak, black oak, and chestnut oak, along with a variety of hickory species like shagbark and pignut. You'll likely find a plethora of other trees, shrubs, and herbs growing in this forest type, including tulip-poplar, red maple, dogwood, eastern redbud, blueberry, mountain laurel, Solomon's seal, and mayapple.



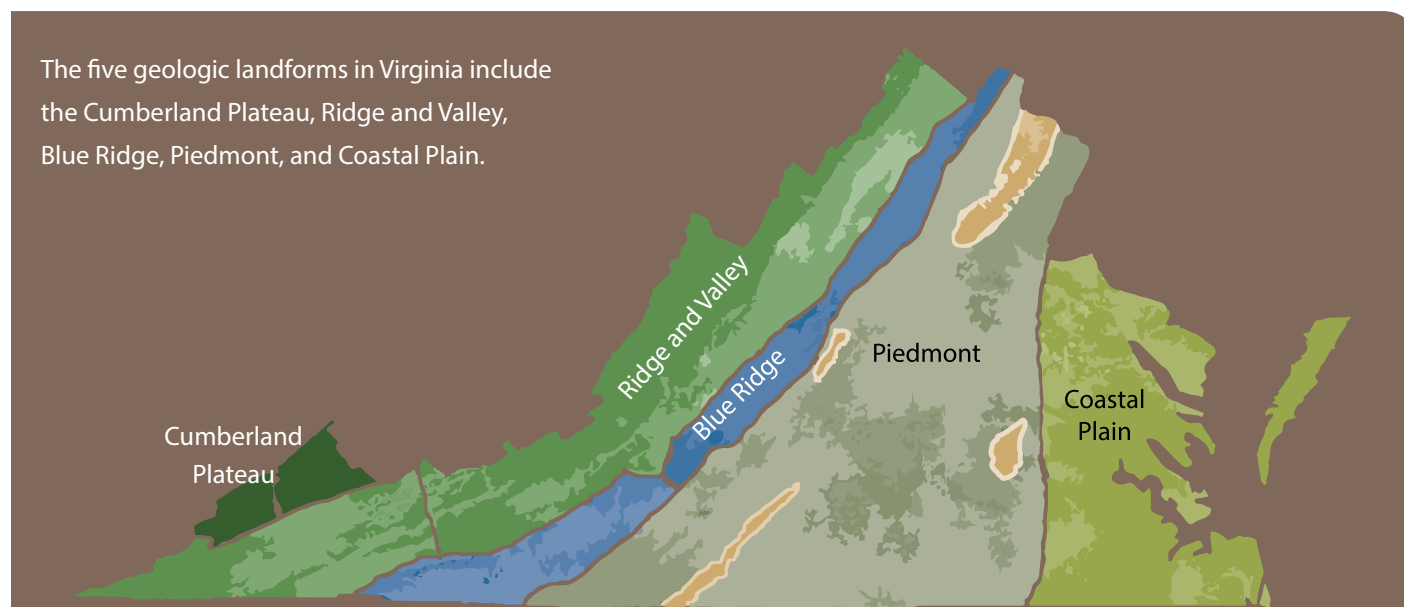
Ecology

All plants need basic resources to live: light, water, nutrients, and growing space. The plants in your woods are constantly competing with each other for these resources. Those that lose this competition will die off. Most forest plants would probably grow quite well on moist, well-drained, fertile soils with adequate sunlight and growing space, similar to plants in a well-tended garden or a greenhouse. On these ideal, productive sites, however, competition is fierce and species that are best at growing fast out-compete slower-growing species. Any given site can support only a limited amount of vegetation.

Many plants in our woods have developed adaptations to help them better tolerate the incessant competition

In your woods, the trees in the upper canopy that shade the ground have won the long-standing competition for light. However, woodlands are dynamic, and this canopy dominance may not last for long. Although you may not see it on a regular basis, change is always happening in your woods.

Succession is one of the most important changes in our woodlands. Succession is the replacement of one plant community by another over time. This concept explains why your woods look one way today and why they will look different in the future, even if you don't do anything. Succession in eastern U.S. forests is mainly influenced by the vegetation's ability to grow under various levels of light.



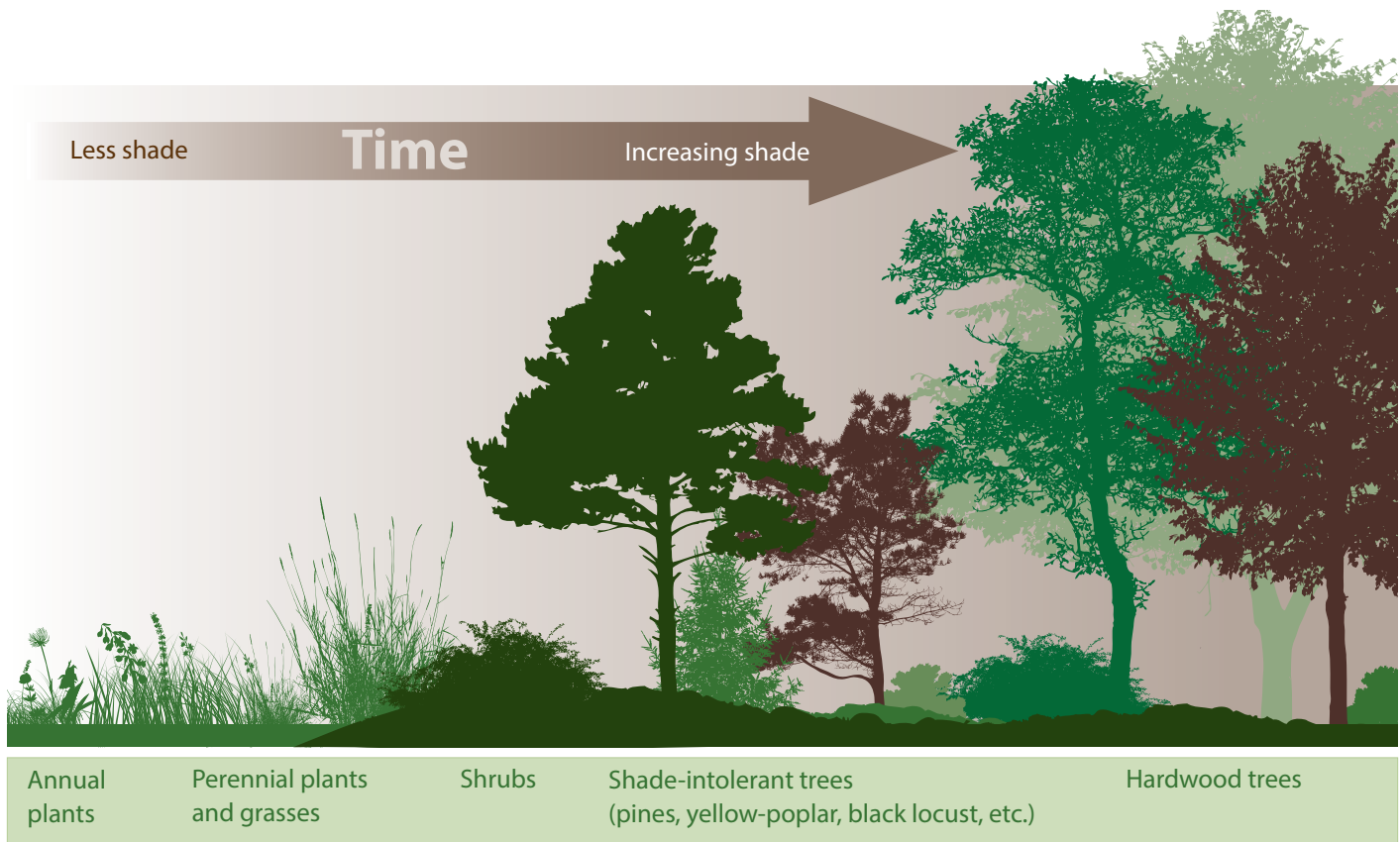
Source: The Geology of Virginia, William & Mary Department of Geology, <http://geology.blogs.wm.edu/>

for resources. For example, red maple, the most common tree in Virginia, can develop and grow in low levels of light under the shade of a forest canopy. Longleaf pine can tolerate dry, sandy soils. Bald cypress can tolerate flooded and wet soils. Under these conditions, these species are strong competitors.

In eastern forests in the U.S., the most-needed resource is light. In general, the more light your trees get, the faster they can photosynthesize (make food) and grow. As trees grow, they need to generate more food resources to maintain and support this new and existing tissue. Therefore, they need to expand their crown to capture more sunlight.

At one time, your Virginia woodland was likely a farm field. Once farming ceased, the natural succession process began. Initially, fast-growing plants that take advantage of full sunlight (pioneer species) invaded the field. In the first few years, these fast-growing species would have included short-lived grasses and small, flowering plants, but perennial plants and woody shrubs soon replaced them. Fast-growing, shade-intolerant trees also took advantage of the light. These trees eventually shaded out the early shrubs and plants as the canopy closed and significantly reduced light to the ground.

Growing along with these shade-intolerant trees, however, were trees that can tolerate partial and



The progression of succession from field to pioneer species such as Atlantic red cedar to mixed hardwoods and pine to a mixed hardwood forest. In the absence of disturbance, this mixed hardwood forest will persist. Illustration by Communications and Marketing, College of Agriculture and Life Sciences, Virginia Tech.

significant shade. These species tend to use their food resources more efficiently to survive with less light, but they grow more slowly. (Shade tolerance is not always constant in a species. Many trees like oaks, maples, and eastern white pine become more intolerant of shade as they age.) Eventually, the short-lived, shade-intolerant trees died and created gaps or openings in the canopy that allowed these intermediate and shade-tolerant tree species to flourish with the additional sunlight. These trees tend to live longer and — once in the canopy — can persist. Shade-tolerant species can regenerate and grow under their own shade, so they can continually replace the canopy. When this occurs, succession has reached a climax, and the forest is considered mature. No further succession is possible without a disturbance. Stability, of sorts, takes hold, as long as the environment doesn't change.

But of course, the environment does change. Fires, storms, droughts, insect infestations, diseases, or human activities can disturb woodland structure. These events have always been a part of our landscape, periodically creating canopy gaps. In these gaps, new plants grow and existing plants expand. Our plant and wildlife communities have come to depend on gaps, which are critical for maintaining diversity.

Even a climax woodland is not a static woodland. Small changes are occurring 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.



Small, frequent disturbances, such as the death of a tree, create openings (gaps) in the forest canopy that increase the amount of light reaching the ground. In these gaps, you will typically find a flush of regeneration, such as the pine seedlings in this photo. Photo by Brian Lockhart, USDA Forest Service, Bugwood.org.

How does wildlife fit in?

When you purchased or inherited your woodlands, you also inherited a host of wild critters. Wildlife viewing is an increasingly popular activity, and hopefully you'll have many opportunities to appreciate your land's inhabitants.

The type of wildlife you should expect to see in your woods depends on the food, water, cover, and space your land provides. During early forest succession, the grass/flowering-plant stage will attract wildlife that feeds on tender plants and seeds (like insects, meadow voles, or eastern cottontail rabbits). As perennial plants and woody shrubs become established, they attract additional species like bobwhite quail and woodcock. Early successional woods will also attract animals like American kestrels, red-tailed hawks, and foxes that hunt their prey in open fields but need cover in trees.

Mature woodlands may provide acorns, hickory nuts, and wild cherries, with a more diverse vertical structure — from small flowering plants on the forest floor, to shrubs, to the crown of the tallest tree. Mature woodlands should have standing dead trees with nesting cavities that can support a whole host of birds and mammals. Some species require large tracts of mature woods to breed successfully and maintain viable populations. These include barred owls, scarlet tanagers, and wood thrush, which seek cover deep in the woods in order to protect their eggs and young from the predators found along woodland edges.

The habitat needs of many species also vary at different times of the year or at different stages in their lives. Eastern wild turkeys, for example, rely on both early successional fields and mature woods, while their young feed almost exclusively on insects, which are abundant in open fields.



Well-managed forests may improve water quality. Wildlife, such as this blue heron, relies on clean water. Photo by Steven Katovich, USDA Forest Service, Bugwood.org.

The woods within your property lines will not completely account for the wildlife you see there because wildlife often depends on the resources of a broad area. Ten acres of woods surrounded by agricultural land or subdivisions will attract different animals than 10 acres that are part of a larger, contiguous woodland. Think about how your woods fit into the surrounding landscape. Does your land provide a unique need for wildlife? If not, could it? Ideas for integrating wildlife into your woodland management are available from the Virginia Department of Wildlife Resources and Virginia Cooperative Extension.

Now that you understand a bit about how your woods work, it's time to think about how you hope to benefit from them.

2. Why Do You Own Property?

This may seem like a silly question, but it's one that many landowners don't think about in concrete terms. In order to maximize the benefits you and your family receive from your woodlands, it's important to think about why you bought them in the first place (i.e., what are your goals for your property?). A goal is simply a vision for the future. A goal might also be described as the big picture or a general statement about someone's desire for a future condition. Goals explain how we want something to be, but don't say how we plan to get there.

Many people think that production of timber is the overwhelming goal of woodland owners and that the science and practice of forestry is only about growing timber. This could not be further from the truth. The fact is, landowners have numerous goals for their woodlands.

Some common goals include:

- Creating wildlife habitat.
- Enjoying beauty or scenery.
- Passing land on to children or other heirs.
- Privacy.
- Protecting nature and biological diversity.
- Investment.
- Hunting or fishing.
- Recreation.
- Production of timber products.
- Production of firewood or biofuel.
- Cultivating or collecting nontimber forest products.

Your goals should be realistic and consider biological, economic, and social constraints. Biological constraints are the physical conditions influencing your woods and include the productivity of soils on your property, past land-use practices, terrain and the direction your slope



Spending time with family in your woodlands can facilitate discussions about values and management goals. This family time also creates lasting memories and helps younger generations develop close ties to the land.



Aspect plays a major role in the composition of woodlands. South-facing slopes are typically dry, poor-quality sites; north-facing slopes are typically moist, productive sites. Photo by Gerald Holmes, California Polytechnic State University, Bugwood.org.

faces (called “aspect”), average temperatures, annual rainfall and site-specific water resources, and existing plant and animal species. Most biological constraints are difficult, or even impossible, to control. For example, if your goal is to grow sugar maple for syrup production, your woods had better be located in Highland County, not Brunswick County. Producing maple syrup in Brunswick County is not biologically feasible because of the cooler climate requirements of sugar maple.

Economic constraints include such things as proximity to markets for forest products, demand for products, time, labor, skills, knowledge, money and capital investments, and equipment. A classic example of a combined economic-biological constraint is high-quality timber in an inaccessible location. The timber may be straight, free of branches, and highly desired by local markets, but because of steep slopes, cost of extraction, and transportation, it has limited market value. While economic and physical constraints may prevent the landowner from realizing timber value, these trees undoubtedly provide other value, including wildlife habitat, aesthetic quality, shade for cooling streams, and erosion control.

Social constraints include things you do (or don't do) to respect others and maintain good relationships with others, as well as federal laws and regulations, like the Endangered Species Act and Clean Water Act; state laws and regulations, like the Virginia Burning Law and Chesapeake Bay Act; local ordinances, such as zoning; and neighborhood restrictions, such as home owner associations. While these things affect the management of all woodlands, they become especially pronounced in the management of publicly owned lands, such as national forests, because the wishes and expectations of many diverse groups must be addressed on any given tract. On privately owned woodlands, the goals of the individual or family guide the management decisions. However, even within the family context, you may still encounter social limitations.

Once you've identified any constraints, talk to your family and spend time thinking about your goals. Write them down on paper, but keep in mind that they are only written on paper — not in stone — which is fortunate because your family's goals may change over time. You may use the worksheet in appendix B to help you and your family work through the goal-setting process. Once you have done this, consider consulting with a professional forester (see No. 10 for more on working with a professional forester) about how you can achieve your goals.

3. Get to Know Your Property

Now that you have a basic understanding of how woodlands work and what you want, the next step is to become familiar with your own property. Learning about your woodlands can be a fun experience for the whole family. But where should you begin?

Maps

Maps and aerial photos are useful tools for locating your property's boundary lines, learning about the soils, and understanding how your property fits into the larger landscape. With today's technology, acquiring these tools has never been easier. There are numerous mapping programs and high-quality photographs available for little or no charge. Google Earth Pro, the Web Soil Survey, and InForest are good places to start.

Once you've acquired these tools, use them to explore and familiarize yourself with your property.



Well-marked boundary lines help prevent trespassing and timber theft; they also facilitate many woodland management activities. Take time to mark and maintain your property boundaries. Photo by David Stephens, Bugwood.org.

Boundary Lines

One of the most important steps a new landowner can take is to find and mark the property boundaries. Properly marked boundaries are particularly important (and in some cases required) in the event of a timber sale or other forest management activities or a subdivision or property transfer. Additionally, well-marked boundary lines can aid in compliance with covenants and restrictions that dictate setbacks for fences and buildings. And, perhaps most importantly, they can help reduce the incidences of trespass, timber theft, and adverse possession.

Locating a property's boundaries entails more than simply finding the entrance or the corners of the parcel. Identifying your boundary lines will be easiest if the property has been recently surveyed. If the property hasn't been surveyed in a long time, it could require some significant detective work. However, it is well worth the effort. Contact the Virginia Forest Landowner Education Program for details on how to obtain a legal property description from your county courthouse and use it to identify and mark your property boundaries.

Plant Species

As you explore your land, try to identify the different types of trees and plants you encounter. This information will help you determine what types of woodlands you have. The books "Common Native Trees of Virginia" and "Common Native Shrubs and Woody Vines of Virginia,"



Virginia is rich with history. Old cemeteries, home sites, and evidence of abandoned farms can be found on many privately owned woodlands. Additionally, you may find interesting or rare plants and habitats. Look for these special places on your property and learn how to protect them. Photo (top) by Jennifer Gagnon.

from the Virginia Department of Forestry, the Virginia Tech Dendrology website, and the Virginia Tech smartphone app, vTree, are useful resources for learning how to identify trees.

Your woodlands may have one or more forest types on it. As you walk your property, try to mark these different forest types on your photo or map.

Special Places

Many properties in Virginia have waterfalls, caves, exposed rock outcrops, cemeteries, or historically significant sites. The commonwealth also has a number of significant natural communities, which are rare and/or provide habitat for rare, threatened, or endangered plants, animals, and insects. To find a listing of these species and how to identify and locate them, contact the Virginia Department of Conservation and Recreation's Natural Heritage Program. Because of their significance and sensitivity, many landowners set these areas aside and manage them solely for their unique features. In fact, one of these special places may be what attracted you to your particular piece of land. Mark the location of these special sites on your photo or maps, so you can take care to protect them while planning any woodland management activities.

As you get to know your property better and develop a working map, continue to walk the boundaries and interior. As noted, your woods are always changing and things can start to look different very quickly. Being familiar with how your woods look can help you spot any changes, some of which could indicate a woodland health issue. The sooner damaging issues are identified, the easier they are to address. The next section of this guide examines some of these issues.



Extra care should be taken to protect special places on your property, such as waterfalls. Photo by Virginia Tech University Relations.

4. What Are the Challenges to Good Woodland Management?

As a new landowner, you may face challenges as you try to keep your woodlands healthy and productive. This section will describe some of the most common challenges and the resources available to help you.

Non-native Invasives

These are plants, animals, insects, and diseases that have been introduced to our region both intentionally and unintentionally. They are well-adapted to grow in their new environment and generally out-compete native species while providing little value to wildlife or other ecosystem services. Non-native invasives species in your woods threaten the existing vegetation as well as future regeneration of the woods. To protect your property, talk to your local VDOF forester about common non-native invasives in your area. Follow up by monitoring and controlling them, if present. The Center for Invasive Species and Ecosystem Health's website has photos, field guides, and mobile apps to help you identify and control common non-native invasive species.

Insects and Diseases

Both native and non-native species can cause insect and disease problems. The southern pine beetle is an example of a native insect that kills trees. Southern pine beetle problems are more likely to occur in overcrowded pine forests, where the trees are under stress from too much competition with their neighbors. Proper planting density and timely thinning can help keep these insects at bay.

The chestnut blight is an example of a non-native disease that kills American chestnut. In the early 20th century, approximately 25 percent of the hardwoods found in eastern forests were American chestnut, but the majority of these has been killed by the disease. Researchers are developing blight-resistant varieties of chestnut, but commercial availability of these trees is still years away.

The U.S. Forest Service has a series of leaflets that deal with the identification and control of common native insect and disease problems.

Walk your property regularly and look for changes. The sooner you identify a problem, the easier it may be to handle. Keep in mind, not all changes indicate a problem.



In the fall, male deer will remove the velvet on their antlers by vigorously rubbing them against small trees. This also serves as a mechanism to mark their territory and attract does.

Photo by David Stephens, Bugwood.org.

Human/Wildlife Interactions

White-tailed deer have long been a part of Virginia. In fact, their Latin name, *Odocoileus virginianus*, translates to Virginia deer. They were quite rare in Virginia 100 years ago due to unregulated hunting and habitat loss. Now their numbers have exploded in most of the state due to conservation efforts, loss of natural predators, and their ability to thrive in a fragmented landscape. Deer are herbivores and, in large populations, can denude a woodland of most vegetation within their reach. In addition, they also damage agricultural crops and landscape plantings.

Deer are just one of the species of wildlife that may cause problems in your yard and woodland. Wild hogs, known for rooting up agricultural crops, fields, and young seedlings, are established in parts of Virginia. Groundhogs (woodchucks) burrow under buildings, skunks spray dogs, beavers harvest your trees; you get the picture. In response, Virginia Cooperative Extension and other Virginia state agencies developed the Center for Human-Wildlife Conflict

Resolution. This site provides information on how you can safely and legally handle wildlife problems.

High-Grade Harvesting

Timber harvesting is important to Virginia's economy. Sustainable harvesting practices can also be used to improve forest health and meet your ownership goals. Some harvesting, however, does more harm than good. High-grading is a harvesting practice that removes the highest-valued trees from the woods without regard to the present condition or future composition of the woods. It is sometimes described as "cutting the best and leaving the rest." Unfortunately, many acres in Virginia have undergone this type of harvesting, resulting in less healthy, less productive woodlands. A professional forester can advise you on how to improve your woodland's health and productivity.

Summary of Challenges

Recognizing and dealing with threats to your woodlands can be challenging. Caring for your woods with specific goals in mind, as discussed in No. 1, is a pragmatic approach to dealing with these challenges. Don't become discouraged if you find you are facing several of these challenges. There are many natural resource professionals in Virginia who can provide you with information and advice on how to manage these challenges.

5. Safe Landowners

Peace and quiet, privacy, beautiful vistas, exercise. Living in the country and being outdoors sure have their benefits. However, there are also hazards in the woods. To maximize your family's enjoyment, here are some safety considerations.

Firewise

Your woodlands can provide an idyllic setting for your home. However, woodlands in all parts of Virginia are susceptible to wildfires. Wildfires play a historically significant role in the succession of our woodlands. They reduce built-up debris and litter, return nutrients to the soil, and help prepare a suitable seedbed for regeneration. However, they do not mix well with residential areas. If you build a home in your woodlands, there are precautions you can take to reduce risk.

The U.S. Forest Service has developed a toolkit for landowners living near woodlands, called FireWise. The FireWise program promotes wise landscape design as the means to decrease the chances of a wildfire destroying your home. Key concepts include removing flammable plants from near your home, creating a defensible space around your home (a well-maintained lawn that can serve as a firebreak as well as a safety zone for firefighting crews), and pruning yard trees appropriately. You can learn about FireWise Virginia from the Virginia Department of Forestry.

In addition, the Southern Group of State Foresters developed a free tool called SGSF Wildfire Risk Assessment Portal that landowners can use to assess their wildfire risk. This tool also links directly to information on how to reduce your property's wildfire risk.

Chainsaws

Chainsaws can be extremely useful tools for everything from removing hazard trees to cutting firewood to heat your home. However, if used improperly, they can also be extremely dangerous. Make sure you've read the owner's manual, and always wear appropriate personal protective equipment. This includes chainsaw chaps, ear protection, hardhat, safety glasses with a side shield, and steel-toed shoes. It is inadvisable to cut down large standing trees unless you are experienced with tree-felling techniques. This publication cannot provide in-depth training. However, a good rule of thumb is if you can't keep both feet on the ground while running your chainsaw, hire a professional for the job.

The Virginia SHARP Logger Program offers online chainsaw safety training videos. The eXtension Foundation website also has a wealth of reliable chainsaw safety information, including instructional videos.

Ticks and Mosquitoes and Poison Ivy – Oh My!

These itchy, bitey things keep some folks inside instead of outside enjoying their property. While they can certainly cause discomfort, and in some cases even disease, there are simple things you can do to reduce your risk.

Ticks

Ticks can be active year-round, and you should take special care in spring and early summer when the nymphs are very small.

Ticks

- Avoid areas where ticks live — moist and humid environments, grassy areas, dead logs.
- Wear a hat and light-colored clothing so you can easily spot ticks.
- Use repellants containing 20 to 30 percent DEET (or pretreat boots and clothing with permethrin or permethrin).
- Check your skin and clothes for ticks every time you go in the woods.
- Shower as soon as possible after being outdoors.
- Know how to properly remove a tick that is attached.
- Know the signs of tick-borne illnesses; early detection and medical treatment are important.

You can also take some actions that can reduce the number of ticks around your home. For example, remove leaf litter and clear tall grasses away from your yard, discourage deer by removing vegetation that attracts them, and control ticks on your pets.

Mosquitoes

In addition to removing any sources of shallow standing water, you can take many of the same steps to reduce mosquito populations as you did to reduce ticks. Both bats and purple martins can help control mosquito populations. Place bat houses in wooded areas and purple martin birdhouses in open areas.

Poison Ivy

The best defense against poison ivy is to avoid it by knowing what it looks like. You may recognize the saying, "Leaves of three, let it be!" This is sage advice. Poison ivy has a trifoliate leaf, so three leaflets per leaf. Other species, such as blackberry, have trifoliate leaves as well, but are easy to discern from poison ivy. If contact is unavoidable, there are commercial products that can help block the oil from your skin. The clothing recommendations for avoiding tick bites can protect you from poison ivy as well. The Virginia Cooperative Extension publication, "Poison Ivy: Leaves of Three? Let It Be!" provides additional information on this plant.



Knowing how to identify poison ivy can go a long way toward preventing an uncomfortable rash. Notice the leaves that consist of three leaflets. Photo courtesy of Virginia Tech Department of Forest Resources and Environmental Conservation.

If you do come into contact with poison ivy, there are commercial products which, when used immediately after exposure, can remove the toxic oils from your skin. Simply washing with soap and warm water is not effective and may even make the problem worse by spreading the oil. These products can also be used to wash affected clothing. In some serious exposure cases, medical treatment may be required.

6. Financial Considerations

It may be dawning on you that there are more expenses associated with owning land than the initial buying price. From insurance to property taxes to maintaining roads (and the tractor you need to get this done), costs can add up. Fortunately, your woodlands can provide opportunities for generating income and defraying taxes. Additionally, there are state and federal cost-share programs that can help mitigate management expenses.

Some opportunities, such as a timber harvest, can result in significant income. While this could be used to cover life

expenses, a portion should be reinvested into the property. Other opportunities, such as enrolling in a cost-share program, can provide enough money to help pay for the cost of planting trees. In this section, we'll explore some popular options for earning income, defraying taxes, and reducing management expenses.

Income

When you think about earning income from woodlands, you may think of harvesting timber. This can be a great opportunity if it fits in with your management goals. However, even if timber harvesting isn't a priority, your land can provide you with other income earning options. This section will explore both timber and nontimber income opportunities.

Timber

There are many options for producing periodic income from the trees on your property by selling wood. Harvesting timber will not threaten your woods if you work with a professional forester and follow a written management plan. In fact, strategically cutting trees can actually help create wildlife habitat and encourage the healthiest trees to grow. The income generated by a timber harvest will depend on a variety of factors. Many of these are covered in the sidebar.

Timber valuation and sales are complex if you are not involved in the business on a regular basis. In addition, if you are not well-versed in forest management science, or silviculture, there is a potential for the timber harvest to damage the soil, water, and remaining trees. For this reason, we recommend using the guidance of a professional forester.

Professional foresters can provide numerous services (see No. 10). Depending on the type of forester you work with, there may be a fee or commission. If fees are involved in the timber sales process, studies have shown that they are usually offset by the increased sales price a forester helps obtain. That is, professional foresters usually make more money for the landowner, even after subtracting out their fees. This is especially true for high-value forest tracts. On low-value tracts, the forester may end up costing the landowner some money, but still provides the landowner with timber sale services, monitoring the work of the logger, and reforestation assistance.

When landowners ask, “How much is my timber worth?” the answer is always, “It depends.” While this may be a frustrating reply, it’s the truth. The value of your timber will depend on:

- Amount of wood harvested.
- Current market prices.
- Tree species – Some kinds of trees have more valuable wood.
- Size of individual trees.
- Quality of trees – How straight are they? Do they have rot?
- Parcel size – Typically, the larger the parcel size, the more attractive it is to buyers.
- Accessibility – Slope, number of stream crossings, existing roads.
- Soil type – A tendency for flooding or mud affects access for machinery and potential harvesting window.
- Proximity to markets – The farther your wood has to be shipped, the lower the profit.
- Available markets for specialty or high-value wood products – If you have wood that is of high enough quality for products like veneer, utility poles, furniture, etc., you might get a higher price, but only if there are buyers of wood for those products who are located near enough to you.
- Mill inventory – Occasionally, weather or other factors will cause a particular mill to have too much or too little wood on hand for their business to work efficiently. In these cases, that particular mill may be paying less or more than prevailing market prices.

Since the market for wood products fluctuates, so will the value of your timber, even if all other factors remain constant. A professional forester can assist you with optimizing the income from your timber sale while meeting your other management objectives.



Virginia woodland owners receive more than \$350 million annually for their timber. The value of your timber will vary depending on a number of factors. Top photo by Virginia Tech University Relations; bottom photo by David Stephens, Bugwood.org.

Other Income Opportunities

There are other ways to generate more frequent income while enjoying your woods at the same time. Even a small amount of annual income from your woods can help offset your annual costs of ownership, such as insurance or taxes. Even if you do not sell any goods from your woods, you might offset your personal costs, for instance, by harvesting firewood to heat your home. Following are some enterprises you might consider.

- Lease your land to a hunter or hunting club (this can also help keep deer populations under control).
- Cultivate and collect wild forest foods including mushrooms, greens, fruits and berries, nuts, and others.
- Grow or collect traditional medicinal plants. These may be used at home or sold. Medicinals include American ginseng, goldenseal, bloodroot, black cohosh, and many others.
- Cut firewood to heat your home. This can serve a dual purpose by also helping you reach some of your management goals, such as creating wildlife openings or removing damaged trees. Keep in mind: Moving firewood is responsible for the spread of numerous insect and disease problems, so use your firewood locally.



Nontimber forest products, such as (a) shiitake mushrooms, (b) firewood, and (c) Christmas trees, can provide additional sources of income for woodland owners. Photos by (a) Grateful Growers Farm LLC, www.ggfarm.com; (b) Robert Trickel, North Carolina Forest Service, Bugwood.org; (c) Eric R. Day, Virginia Tech, Bugwood.org.

Agroforestry brings trees back into our agriculture and appropriate crop production back into our woodlands in ways that meet multiple land management objectives. The six commonly accepted agroforestry practices offer nontimber income opportunities for landowners in Virginia and include the following:

Silvopasture intentionally combines the management of trees, livestock, and forages on the same piece of land to improve forage growth, protect livestock from heat and wind, and provide the opportunity for timber and nontimber production.

Multifunctional riparian buffers are bands of trees planted next to creeks and rivers to protect and enhance our water, soils, and wildlife habitat while also providing opportunities for production through the planting of native fruits, nuts, and woody florals.

Forest farming is the cultivation of shade-tolerant and, often, native crops on the forest floor, such as ginseng, goldenseal, and shiitake mushrooms grown on logs. Forest farming can provide an income from forestlands not actively managed for timber, or it can provide shorter-term income possibilities while timber matures.

- Create decorations, crafts, and other products from woodland items such as galax for floral arrangements and pine cones and mistletoe for Christmas decorations.
- Landscaping or ornamental plants and products. Many places in the U.S. South harvest pine straw as landscaping mulch. Small evergreen trees may be sold as Christmas trees.

As you consider these various options for income from your woods, you should also think about how they may fit in with your management goals.

Taxes

Sometimes, the best way to increase income is to reduce costs. Local, state, and federal governments have programs to help you reduce your property tax burden.

In many Virginia counties, if you own 5 acres of agricultural land or 20 acres of woods, you may be eligible for the Use Value Taxation Program through your local commissioner of the revenue office. This program can reduce your property tax bill by allowing your land to be taxed based on its actual land use rather than its potential highest-value use. This can result in significant annual savings.

Alternatively, many Virginia counties allow the formation of Agricultural and Forestal Districts. Properties enrolled in one of these districts are also taxed based on their

actual use. An Agricultural and Forestal District must be composed of a minimum of 200 acres of land in rural use. However, multiple contiguous properties of various sizes can be grouped to meet this minimum acreage requirement. While it is in existence, an Agricultural-Forestal District guarantees members use value taxation rates but limits some land uses.

For more information on Virginia's Use Value Taxation Program or Agricultural and Forestal Districts, contact your local commissioner of the revenue's office.

There are also significant tax benefits available for permanently protecting your woods from development through a conservation easement. An easement allows you to retain ownership of the land and authority to make decisions about its management, but you forever give up most or all of the rights to develop and subdivide the land. This reduces the potential value of the land. In exchange, you receive local, state, and federal tax breaks. The Virginia Outdoors Foundation or the Virginia Department of Forestry can provide you with more information about conservation easements.

Timber Sale Tax

If you do sell your timber, the profit you make from the sale is considered either a capital gain or an ordinary income gain. Either way, you will have to pay taxes on

Alley cropping is the combination of agricultural or horticultural crops with rows of trees that can shelter and provide nutrients to crops while producing useful products like fruits or nuts. Alley cropping can also be a way to utilize the ground in an orchard for crops when trees are establishing.

Forest gardening is the design and establishment of gardens that mimic forest ecosystems and often start from a blank slate, such as an open field or lawn, and plant useful tree and shrub species, such as fruits, nuts, and medicinals. Forest gardens can range in size from a backyard to an entire forested area.

Windbreaks are linear rows of trees planted to protect crop fields, livestock, and farm structures from wind and snow and can also provide a space for planting species for income opportunities, wildlife habitat, and pollination.



Agroforestry is receiving greater attention at national, state, and local levels, and opportunities are emerging for greater support and assistance to establish these systems. To find out about opportunities in your area, contact your local NRCS office, Virginia Cooperative Extension office, or county forester. You can also visit the USDA's National Agroforestry Center website (www.nac.unl.edu).

Information supplied by Katie Trozzo, Ph.D. candidate, Department of Forest Resources and Environmental Conservation, Virginia Tech.

Certain forest management activities may qualify for cost-share assistance. Some common programs used by Virginia landowners include:

- **Reforestation of Timberlands** – The RT Program provides cost-share assistance to landowners who plant pine (loblolly, Virginia, shortleaf, white, pitch-loblolly, or longleaf) on their property. Depending on the species you choose, funds are available for preparing the site for planting and competition control.



Certain cost-share programs may be available to help you cover the costs of reforestation, such as site preparation, seedlings, and planting. Photo courtesy of USDA, Natural Resources Conservation Service.

- **Environmental Quality Incentive Program** – EQIP offers cost-share and technical assistance to woodland owners who implement conservation practices on their land. Qualifying practices will improve water and air quality, promote water conservation, reduce soil erosion, and create or improve wildlife habitat.
- **Conservation Reserve Enhancement Program** – The goal of CREP is to improve water quality and increase wildlife habitat in riparian and wetland areas used for agriculture. The program provides cost-share to farmland owners registered with the Farm Service Agency who implement practices such as fencing livestock out of riparian buffers and waterways, planting hardwoods along riparian buffers, and restoring wetlands.

A complete listing of cost-share programs is available from the Virginia Department of Forestry website. Any professional forester you work with will be familiar with these programs.

this income. Capital gains are taxed at a lower rate than ordinary income, so it is advantageous to have your sale be categorized that way. As long as you own your land as an investment, the timber sale will typically qualify as capital gains. Each particular case is different, so you should speak to an accountant knowledgeable about timber sales (not all are) about your specific circumstances.

You can reduce the total amount of your income gain (thus reducing your tax liability) by subtracting out your cost basis. Cost basis is the proportion of the amount of the original purchase you spent on timber. The best time to establish cost basis is when you acquire your property. However, if necessary, a professional forester can back-calculate the cost basis at the time of a timber sale.

The National Timber Tax Website has a calculator to help you determine your cost basis. Taking some time to complete this exercise can save you a significant amount on your taxes after a timber sale. Even if timber harvesting is not currently one of your ownership goals, this is still a useful exercise to complete. Circumstances may change.

Cost-Share

You may need to invest upfront in certain management practices, such as planting trees, to meet some of your goals. Depending on your acreage and its condition, this could be costly. Currently, a variety of state and federal cost-share programs are available that can help offset expenses for some practices. See the sidebar for details.

Other Financial Considerations

Higher Property Values

Maintaining healthy trees and woods on your property is a good investment. Houses on wooded lots sell for 7 percent more than equivalent houses on open lots. Similarly, 83 percent of Realtors believe that mature trees have a “strong or moderate impact” on the salability of homes listed for less than \$150,000; on homes listed for more than \$250,000, this perception increases to 98 percent. Landscaping can add approximately 10 to 20 percent more value to a property — especially landscaping that incorporates mature trees.

Lower Energy Bills

Strategically planting trees around your home can also help lower your energy bills. By casting shade in summer and blocking winter winds, trees can lower a home's annual energy costs by 25 percent. The Arbor Day Foundation reports that the net cooling effect of a young, healthy tree is equivalent to 10 room-size air conditioners operating 20 hours a day. For more information on trees and energy, visit <https://impact.extension.org>.

7. Woodland Certification

If you live in a rural area, you may have noticed Tree Farm signs on woodland properties as you've driven by. These signs indicate that the property has been enrolled in the American Tree Farm System. For many of these properties, it also means the land has been certified as being sustainably managed. Certification is a means of independently verifying that woodland management practices are being conducted such that they meet the needs of the present (i.e., timber, clean water, wildlife) in a way that will also allow future generations to meet their needs. The American Tree Farm System is an internationally recognized woodland certification program. Other certification programs available to Virginia landowners include the Forest Stewardship Council and the Sustainable Forestry Initiative. Look for their logos on any number of products made from trees. Examples may include your paper bank receipt, cardboard boxes, lumber products, and even mousetraps!

Woodland certification is a voluntary process. Landowners may certify their woodlands for recognition of good stewardship or to increase access to markets for their wood. There are some expenses associated with certification. These may include obtaining a written management plan, implementing portions of the plan, and annual auditing and/or membership fees. The exact costs and amounts vary depending on the specific certification system and your property. You can learn more about woodland certification from the individual certification programs.

8. Planning for the Future of Your Property

Management Planning

This may seem like a lot of information to process, especially if you recently acquired your land. Fortunately, there is a good way to organize all of these concepts, maps, and goals into a single document. This is a written forest management plan. Plans come in all shapes and sizes. If you want a comprehensive document — one that will qualify you for cost-share and woodland certification programs — three types of plans are suggested. These are:

- **Forest Stewardship Management Plans** – These plans are written by a VDOF forester or a consulting forester. There is a \$1.50 per acre charge (with a minimum cost of \$200 per plan).
- **Conservation Activity Plans (CAP 106 Plans)** – A consulting or industry forester registered as a Technical Service Provider can write a CAP 106 Plan for your property. Although the cost will vary by forester, there is cost share available that can cover up to 75 percent.
- **Tree Farm Plans** – Written by either a consulting or an industry forester; the cost will vary depending on whom you hire.

In Virginia, these types of plans are considered equal and interchangeable. In other words, a Tree Farm Plan will qualify you to participate in all of the same programs as a CAP 106 or a Stewardship Plan and vice versa.

If you've spent time working through the goals section of the Family Resource Inventory worksheet in appendix B, you will be able to provide your forester with a lot of useful information. This will not only expedite the plan-writing process, it will also help ensure the plan meets your needs. Keep in mind: Management plans are living documents. As your resources and circumstances change, your goals may also change. It's a good idea to review your management plan at least every few years. In fact, some programs, such as the American Tree Farm System, require your plan to be updated every 10 years.



Legacy Planning

Another important type of planning, and one that is easy to put off and sometimes difficult for families to discuss, is legacy planning. What will become of your land and your legacy after you are gone? Will your children keep the land? Do they want it? If so, do they have the capacity to continue its care? Will they be able to afford inheritance taxes and other expenses? You can answer these questions ahead of time with proper legacy planning. Doing so now may be the best gift you can give your heirs. A resource to help families initiate this process is *Legacy Planning: A Guide for Virginia Landowners. Intact, In Family, and In Forest.*



Talking with your heirs about the future of your woodlands can help ensure the property remains intact and in the family. It will also help them understand your goals and values.

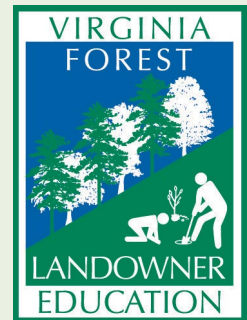
9. Educational Opportunities

We strongly encourage all new woodland owners to take advantage of the numerous educational opportunities offered throughout Virginia each year. Understanding the basics of woodland management may increase enjoyment and satisfaction of ownership and can help you better communicate with natural resource professionals. You may even obtain the skills you need to conduct many woodland management activities on your own. Attending educational programs can help you keep abreast of new research and new cost-share opportunities as they become available.

The Virginia Forest Landowner Education Program is a Virginia Cooperative Extension program. The VFLEP

develops and delivers educational materials and programs for private woodland owners. Educational materials include the Virginia Forest Landowner Update website and free quarterly newsletter, as well as publications on a wide variety of woodland management topics. Educational programs include short courses, the Fall Forestry & Wildlife Field Tour Series and Landowner Weekend Retreats. Learn more about these programs by visiting <https://forestupdate.frec.vt.edu> or calling the VFLEP coordinator at 540-231-6391.

The Virginia Forest Landowner Education Program provides numerous educational programs to private woodland owners throughout the commonwealth. Programs include the Fall Forestry & Wildlife Field Tours, Landowner Weekend Retreats, Online Woodland Options for Landowners short course, and the award-winning Virginia Forest Landowner Update newsletter.



“The sheer knowledge and professionalism displayed by each representative present at this event has been phenomenal. Never before have I experienced such persons with a passion for their careers as I have this weekend.”

— Landowner Weekend Retreat participant

“Thanks again for offering this course. I would highly recommend it to anyone new to owning timberlands or as a refresher.”

— Online Woodland Options for Landowners participant

“I want to say ‘thank you’ for continuing to send me updates concerning the program you offer to landowners. This has proven to be a valuable education resource with entertainment and social benefits.”

— Virginia Forest Landowner Update newsletter subscriber



Professional foresters can help you meet your management goals. Photo by Virginia Department of Forestry.

10. Is Assistance Available for New Woodland Owners?

Indeed! In Virginia, we are fortunate to have many professional foresters who are willing and able to help woodland owners.

Professional foresters typically graduate from a forestry program at a four-year university. They have a deep understanding of the biology, ecology, and economics of the woods and can provide a variety of services. There are four types of foresters in Virginia who work directly with landowners.

- **VDOF area foresters** are employed by the Virginia Department of Forestry and are located throughout Virginia. Area foresters are typically the first point of contact for new woodland owners. They can walk your property with you and discuss opportunities and concerns, and they will be knowledgeable about pertinent cost-share programs. These services are free. Forest Stewardship Plans may be written by area foresters as well, although there is a fee associated with this service. Because these foresters are public employees, they cannot estimate timber values or be involved in timber sales on private property.
- **Consulting foresters** are independent, professional foresters whom you can hire for a variety of services. Like VDOF foresters, they can assess your property as well as write a management plan (most consulting foresters can

write Forest Stewardship Plans; many can also write Tree Farm and CAP 106 plans). They can appraise timber and assist you with timber sales. Consulting foresters work for you and should incorporate your interests and goals in their management recommendations. Consulting foresters charge a fee for their services.

- **Industry foresters** work for businesses in the forest products industry, like sawmills and paper companies. They work with private landowners to purchase timber or pulp for their employer. Industry foresters provide many of the same services as consulting foresters. Typically, there is no fee for their services if you plan to sell your timber to their company.
- **Extension foresters** are employed by Virginia Tech and Virginia State University. Their main role is to provide private landowners with woodland education and outreach based on sound science. If you have a question about managing your woodlands or are wondering how to get started, these are the folks to contact.

In addition to professional foresters, there are many other natural resource professionals who can assist you. For instance, if your main goal is to enhance wildlife habitat, you may consider working with a wildlife biologist from the Virginia Department of Wildlife Resources. Alternatively, if you are most concerned about improving water quality, a professional from the Natural Resources Conservation Service or the local Soil and Water Conservation Office may be able to assist you. All of Virginia's natural resource agencies are listed in appendix A.

So, there you have them, the top 10 things the Virginia Forest Landowner Education Program and its partners think you should know about owning woodlands in Virginia. Keeping your woods healthy and productive can be a lot of work, but we hope it's a labor of love.

While all the information in this publication is useful, the most important thing we'd like you to remember is that we are here to help you. We sincerely hope to hear from you — either with questions via email, social media, and telephone — or to see you at one of our educational programs.

Thanks for taking the time to read this guide. We wish you all the best and remember to have fun!

Glossary*

Aspect – The compass direction toward which a slope faces.

Canopy – The continuous cover formed by tree crowns in a forest.

Coniferous – Any tree that produces seeds in cones; also referred to as softwoods.

Consulting forester – An independent professional who manages forests and markets forest products for private woodland owners. Consulting foresters do not have direct connections with firms that buy wood products but are retained by woodland owners as their agents.

Cooperative Extension Service – A partnership between the USDA and land-grant universities in each state that links university research to people who can benefit from it.

Crown – The uppermost branches and foliage of a tree.

Cruise (timber cruise) – A forest survey used to obtain inventory information and develop a management plan.

Cull – A sawtimber-sized tree that has no timber value as a result of poor shape or damage from injury, insects, or disease.

Deciduous – Shedding or losing leaves annually; the opposite of evergreen. Trees such as maple, ash, cherry, and larch are deciduous.

Ecosystem – Community of living organisms and the physical factors that make up their environment.

Edge – The boundary between two ecological communities; for example, field and woodland. Edges provide wildlife habitat.

Endangered species – Any species or subspecies in immediate danger of becoming extinct throughout all or a significant portion of its range.

Evergreens – Plants that retain foliage year-round.

Forest – A biological community dominated by trees and other woody plants.

Forest types – Associations of tree species that have similar ecological requirements. These include loblolly-shortleaf, oak-gum-cypress, oak-hickory, oak-pine, and many others.

Forester – A degreed professional trained in forest management.

Forestry – The management of forests to generate benefits.

Habitat – The ecosystem in which a plant or animal lives. Habitats ideally provide all the elements needed for life and growth: food, water, cover, and space.

Hardwoods – A general term, which when used in the U.S. South, encompasses broadleaf, deciduous trees.

High-grade – To remove all mature, good-quality trees from a stand and leave inferior species and individuals.

Industrial forester – A professional employed by a wood-using industry, usually a mill, who purchases timber from private woodland owners. Many industrial foresters offer free forest management or marketing services to the landowners who sell timber to the forester's employer.

Intolerance (shade intolerance) – A characteristic of certain tree species that does not permit them to survive in the shade of other trees.

Invasive species – Flora and fauna species, usually introduced, that have few natural predators and out-compete other species, thereby tending to become a dominant feature of the landscape.

Logger – An individual who harvests timber for a living.

Merchantable timber – Trees of saleable size; will vary depending on markets.

Pruning – The act of sawing or cutting branches from a living tree. In forest management, pruning is done to promote the growth of clear, valuable wood on the tree bole.

Pulpwood – Wood suitable for use in paper manufacturing.

Regeneration – The process by which a forest is reseeded and renewed. Advanced regeneration refers to regeneration that is established before the existing forest stand is removed.

Sawlog – A log large enough to be sawed economically on a sawmill. Sawlogs are usually at least 8 inches in diameter at the small end.

Silviculture – The art and science of managing a group of trees to meet specific objectives.

Site – The combination of biotic, climatic, topographic, and soil conditions of an area.

Site preparation – Treatment of an area prior to reestablishment of a forest stand. Site preparation can include mechanical clearing, burning, or chemical (herbicide) vegetation control.

Succession – The natural replacement of one plant (or animal) community by another over time in the absence of disturbance.

Threatened species – A species or subspecies whose population is so small or is declining so rapidly that it may become endangered in all or a significant portion of its range.

Timber – Trees to be used for wood products.

Timber theft – Intentional or unintentional taking of a tree or stand of trees without the landowner being compensated fairly.

Tolerance (shade tolerance) – A tree species' capacity to grow in shade.

Trespass – Intentionally or unintentionally crossing onto private property without verbal or written permission.

Understory – The layer of vegetation beneath the forest canopy.

Veneer log – A high-quality log of a desirable species suitable for conversion to veneer. Veneer logs must be large, straight, of minimum taper, and free from defects.

Watershed – A region defined by patterns of stream drainage. A watershed includes all the land that contributes water to a particular stream or river.

Wetlands – Areas where water covers the soil or is present at or near the surface.

Woodland – See "forest."

*Adapted from Glossary of Forestry Terms, Maryland Department of Natural Resources (2003), <https://dnr.maryland.gov/forests/Pages/gloss.aspx>

Appendix A. Resources

This guide is intended as an introduction to complex topics. There are numerous resources available for those of you interested in learning more about any of the topics covered. Following are lists of agencies, publications, and websites that can further your understanding of woodland management.

Agencies

American Tree Farm System

c/o American Forest Foundation
2000 M Street, NW
Washington, DC 20036
202-765-3660
www.treefarmssystem.org

The American Tree Farm System is a private program of the American Forest Foundation with the mission to promote growth of renewable forest resources on private lands while protecting environmental benefits and increasing public understanding of all benefits of productive forestry. State ATFS committees bring foresters, consultants, and government agency officials together with experienced tree farmers to plan and administer each state ATFS program. The ATFS is a nationally recognized certification system and the oldest certification system in the world.

USDA Forest Service

1400 Independence Ave., SW
Washington, D.C.
20250
800-832-1355
<https://www.fs.usda.gov/>

Science-based information on forest health issues such as invasive species, insects, and diseases.

USDA National Agroforestry Center

University of Nebraska-Lincoln East Campus
1945 North 38th St.
Lincoln, NE 68583
402-437-5178
<https://www.fs.usda.gov/nac/>

The NAC promotes agroforestry practices through research, technology, tools demonstrations, and training.

USDA Natural Resources Conservation Service

www.nrcs.usda.gov

NRCS assists private landowners with conserving their soil, water, and forests. Although NRCS works mostly with farmers, the agency also offers natural resource assistance and cost-share programs to private (nonindustrial) woodland owners.

Virginia Cooperative Extension and Virginia Tech Department of Forestry

313 Cheatham Hall (0324)

Blacksburg, VA 24061

540-231-5483

<https://ext.vt.edu>

<https://forestupdate.frec.vt.edu>

sharplogger.vt.edu

These state agencies administer the Virginia Forest Landowner Education Program and the SHARP Logger Program training, and they provide basic forestry, wildlife, and natural resource management information to forest landowners, farmers, and the general public. Extension forest resource personnel conduct educational tours, meetings, and short courses on a variety of forestry and wildlife topics. They publish numerous natural resource Extension publications, including the Virginia Forest Landowner Update, a quarterly newsletter. All Virginia counties have local cooperative Extension offices; see the blue pages in your phone book under State Government.

Virginia Department of Conservation and Recreation

600 East Main Street

24th Floor

Richmond, VA 23219

804-786-6124

www.dcr.virginia.gov

www.dcr.virginia.gov/natural-heritage/

The Department of Conservation and Recreation is a state agency that works with Virginians to conserve, protect, and enhance their lands and improve the quality of the Chesapeake Bay and rivers and streams. The DCR promotes the stewardship and enjoyment of natural, cultural, and outdoor recreational resources (e.g., state parks), coordinates statewide nonpoint source pollution control, ensures the safety of Virginia's

dams, and, via the Land Conservation Office, provides statewide land conservation information. The Natural Heritage Program, which is administered by DCR, protects land for conservation of biodiversity; manages the habitats of rare, threatened, and endangered species; protects significant natural communities, geologic sites, and other natural features; and provides information on invasive species.

Virginia Department of Forestry

Fontaine Research Park

900 Natural Resources Drive, Suite 800

Charlottesville, VA 22903

434-977-6555

www.dof.virginia.gov

The Virginia Department of Forestry is a state agency that provides basic forest management planning and forestry information, seedlings and seed mixes for reforestation and wildlife, and best management practices guidance, and it enforces water quality, seed tree, and burning laws. The VDOF administers cost-share programs and maintains lists of private forestry consultants, contractors, and timber buyers by county. The agency cooperates closely with other state and private resource agencies and companies to conduct education programs for loggers and landowners.

Most counties have local offices; see the blue pages in your phone book under State Government or visit the website.

Virginia Department of Wildlife Resources

P.O. Box 90778

Henrico, VA 23228

804-367-1000

<https://dwr.virginia.gov/>

The Department of Game and Inland Fisheries is a state agency that provides information, education, and technical assistance on wildlife management to forest landowners. The DGIF monitors wildlife populations, enforces hunting and fishing regulations, and provides technical assistance to federal agencies on cost-share programs for wildlife management practices on private lands. The agency is currently developing a comprehensive strategy for managing wildlife, including threatened and endangered species. In addition, they publish the long-standing Virginia Wildlife magazine and the Outdoor Report, a free electronic newsletter.

Virginia Forestry Association

3808 Augusta Ave.
Richmond, VA 23230-8733
804-278-8733
www.vaforestry.org

This private, nonprofit membership organization represents Virginia's broad forestry community. The Virginia Forestry Association is active in legislative and regulatory issues affecting forestry and forest management, works with the media on forestry issues, sponsors forestry and environmental camps for school-age youth, provides general forestry and forest industry information, and assists member landowners and others in interpreting regulatory requirements relative to forestry. The VFA publishes Virginia Forests, a quarterly magazine on forest management and issues.

Virginia Outdoors Foundation

www.vof.org

The Virginia Outdoors Foundation is a state agency charged with the preservation of cultural and heritage lands in Virginia. VOF works with private landowners to establish voluntary conservation easements to protect farm and forestland. The VOF easement program has grown to more than 2,000 properties (860,000 acres). Find the regional office nearest you by visiting the website.

Virginia Soil and Water Conservation Districts

7308 Hanover Green Drive, Suite 100
Mechanicsville, VA 23111
www.vaswcd.org

The Soil and Water Conservation Districts of Virginia are political subdivisions of the commonwealth. They work with local, state, and federal authorities as well as the private sector to address the soil and water conservation needs in every municipality.

Virginia State University

P.O. Box 9081
Petersburg, VA 23806
www.agriculture.vsu.edu

Virginia State University is Virginia Tech's partner in Virginia Cooperative Extension. Through VCE they provide educational programs on agriculture and natural resource topics. These science-based programs are offered to individuals, families, organizations and communities.

Publications

Printed copies of these publications, as available, can be provided by any of this guide's authors.

Bromley, P. T., J. Starr, J. Sims, and D. Coffman. 2009. *Landowner's Guide to Wildlife Abundance Through Forestry*. Virginia Cooperative Extension publication 420-138. http://pubs.ext.vt.edu/420/420-138/420-138_pdf.pdf.

Gagnon, J.L., A.D. Downing, M. Santucci, and T. Mountain. In Review. *Legacy Planning: A Guide for Virginia Landowners. Intact, In Family, and In Forest*. Virginia Cooperative Extension publication.

Goerlich, D. L., and J. Latimer. 2009. *Poison Ivy: Leaves of Three? Let It Be!* Virginia Cooperative Extension publication 426-109. <http://pubs.ext.vt.edu/426/426-109/426-109.html>.

Paul, A. 2011. *The Economic Benefits of Natural Goods and Services: A Report for the Piedmont Environmental Council*. www.pecva.org/library/documents/Resources-Publications/Reports/Land-Conservation/2011-the-economic-benefit-of-natural-services-report.pdf.

Rephann, T. J. 2017. *The Economic Impact of Agriculture and Forest Industries in Virginia*. Charlottesville: Weldon Cooper Center for Public Service, University of Virginia. www.dof.virginia.gov/infopubs/_outside-pubs/The-Economic-Impact-Of-Agriculture-And-Forestry_2017_outpub.pdf.

Virginia Department of Forestry. 2016. *Common Native Shrubs and Woody Vines of Virginia*. Identification Guide. Publication VDOF P00027. Charlottesville: VDOF. http://www.dof.virginia.gov/infopubs/Native-Shrub-ID-spreads_2016_pub.pdf.

Virginia Department of Forestry. 2020. *Common Native Trees of Virginia Tree Identification Guide*. Publication VDOF P00026. Charlottesville: VDOF. http://www.dof.virginia.gov/infopubs/Native-Tree-ID_2020.pdf.

Virginia Department of Forestry. 2019. *2019 State of the Forest*. Annual Report on Virginia's Forests. Publication P00129. Charlottesville: VDOF. http://www.dof.virginia.gov/infopubs/_sof/SOF-2019_pub.pdf.

Websites

Arbor Day Foundation

www.arborday.org

Learn about the benefits of trees and how to identify them. You may also purchase trees.

Centers for Disease Control and Prevention

www.cdc.gov

Get the latest information about protecting yourself and your family from ticks, mosquitoes, poison ivy, and more.

Center for Human-Wildlife Conflict Resolution

<https://www.humanwildlife.cmi.vt.edu/>

Deer eating your garden? Black bears digging through your trash? Learn how minimize negative wildlife encounters legally and safely.

Center for Invasive Species and Ecosystem Health, University of Georgia

www.bugwood.org

A collection of publically available images, publications, websites, and apps to identify, control, and report invasive species.

Dendrology at Virginia Tech

<http://dendro.cnre.vt.edu/dendrology/main.htm>

Have a tree you want to identify? This website provides keys, factsheets, and smartphone apps to help you.

eXtension Foundation

<https://impact.extension.org/>

Find credible information on natural resource topics such as agroforestry and invasive species. Resources include webinars, publications, and the ability to “ask an expert.” Of particular interest to forest landowners may be the Forest Farming and Trees for Energy Conservation communities.

FireWise Landscapes Inc.

www.firewise.net/

Use the information from this site to help protect your home and property from wildfire.

Forest Stewardship Council

<https://www.fsc.org/en>

The Forest Stewardship Council is an internationally recognized forest certification program that promotes sustainable forest management across the globe

Google Earth

<http://google.com/earth>

Free user-friendly mapping program. Draw your boundary lines, calculate your acreage, and much more.

Habitat at Home

<https://www.dgif.virginia.gov/wildlife/habitat/>

This Virginia Department of Game and Inland Fisheries Program provides innovative ideas for creating wildlife habitat in and around your yard.

International Society of Arboriculture

www.isa-arbor.com

ISA is the professional society for urban foresters. Use this site to find a reputable arborist to help you maintain the health of individual trees in your yard.

National Timber Tax Website

www.timbertax.org

This site, hosted by the U.S. Forest Service and Purdue University, provides up-to-date tax information for woodland owners, including tax forms. Additionally, there are several articles about calculating the basis of woodland.

SouthWRAP

www.southernwildfirerisk.com

This mapping tool from the Southern Group of State Foresters helps woodland owners determine and reduce their property's wildfire risk.

Sustainable Forestry Initiative

<https://www.sfiprogram.org/>

The Sustainable Forestry Initiative is an internationally recognized forest certification program that promotes sustainable forest management in North America.

The Woods in Your Backyard

<http://extension.umd.edu/woodland/woods-your-backyard>

Many forestry programs are targeted to owners of larger parcels. If you own less than 20 acres, this resource was designed for you. Find ideas on decreasing lawn, increasing natural areas, and creating wildlife habitat.

Ties to the Land

www.tiestotheland.org

What will happen to your woodland after you pass? Learn about succession planning to help ensure the future of your land.

TreesAreGood

www.treesaregood.org

This website, hosted by the International Society of Arboriculture, provides information on the benefits of trees, a tree owner's manual, and information on trees in general.

Virginia Department of Conservation & Recreation Natural Heritage Program

www.dcr.virginia.gov/natural-heritage

Learn what threatened and endangered species may be living in your woods. Find out about Virginia's natural communities as well.

Virginia Department of Forestry InForest

<http://inforest.frec.vt.edu>

Use this tool to create property maps and calculate the value of the ecosystem services your woodland is providing.

Web Soil Survey

<http://websoilsurvey.sc.egov.usda.gov>

This free site from the USDA Natural Resources Conservation Service enables you to create maps of the soils on your property. Information on the different soil types is also provided.

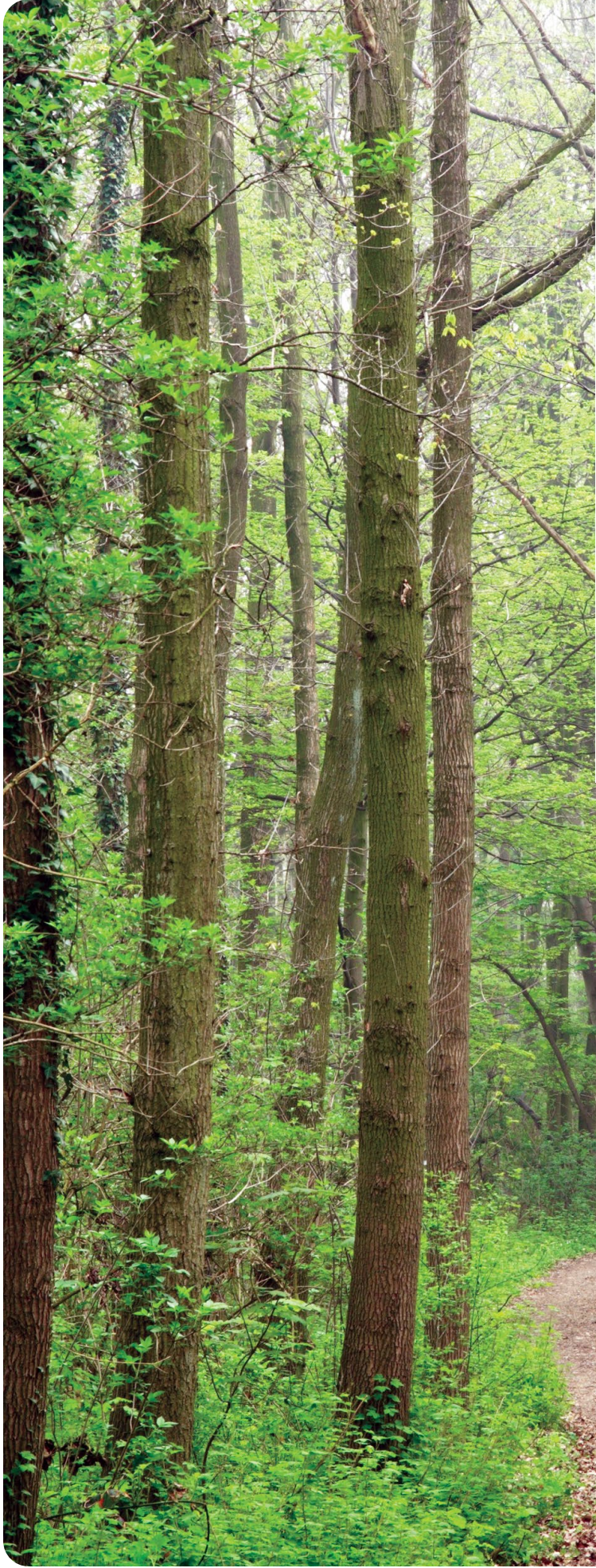
Appendix B. Family Resource Inventory Worksheet

Setting goals for your property can help ensure you and your family and other stakeholders maximize the utility and enjoyment of your property. Use this worksheet, adapted from the Virginia Forest Landowner Educations Program's Online Woodland Options for Landowners short course, to help guide you through the process of developing realistic property goals. Remember, a goal is a desired future condition, but doesn't specify how you are going to achieve it. Once your goals are set, you should consider working with a natural resource professional to help you reach them.



Your woodlands are an important part of the 16 million acres of forest in Virginia. Photo by Jennifer Gagnon.





Virginia Forest Landowner Education Program

Helping Virginians keep their woodlands healthy and productive.

YES! I would like to learn more about my woods and woodlot management.

Please sign me up to receive the free quarterly newsletter:

The Virginia Forest Landowner Update.

<http://forestupdate.frec.vt.edu>

Name

Street

City

e-mail

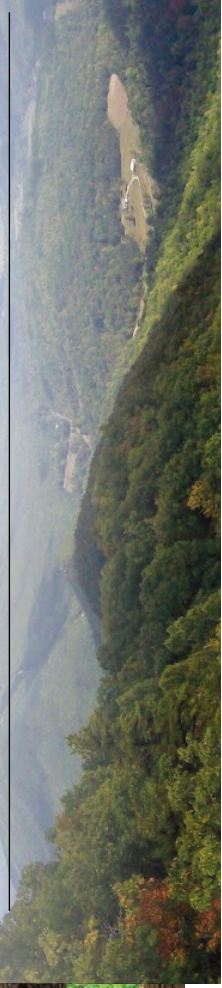
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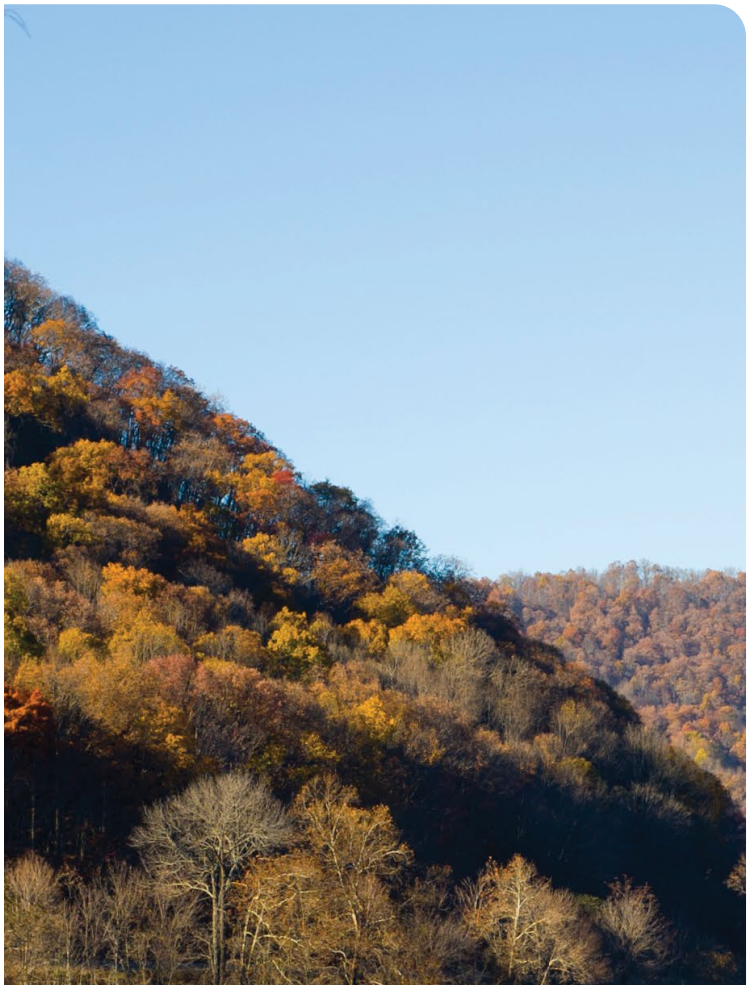
ZIP

County your woodlands are in

Wooded acres

Total acres





Virginia Forest Landowner Education Program
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Virginia Tech 228 Cheatham (0324)
Blacksburg, VA 24063-9960

