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Forestry

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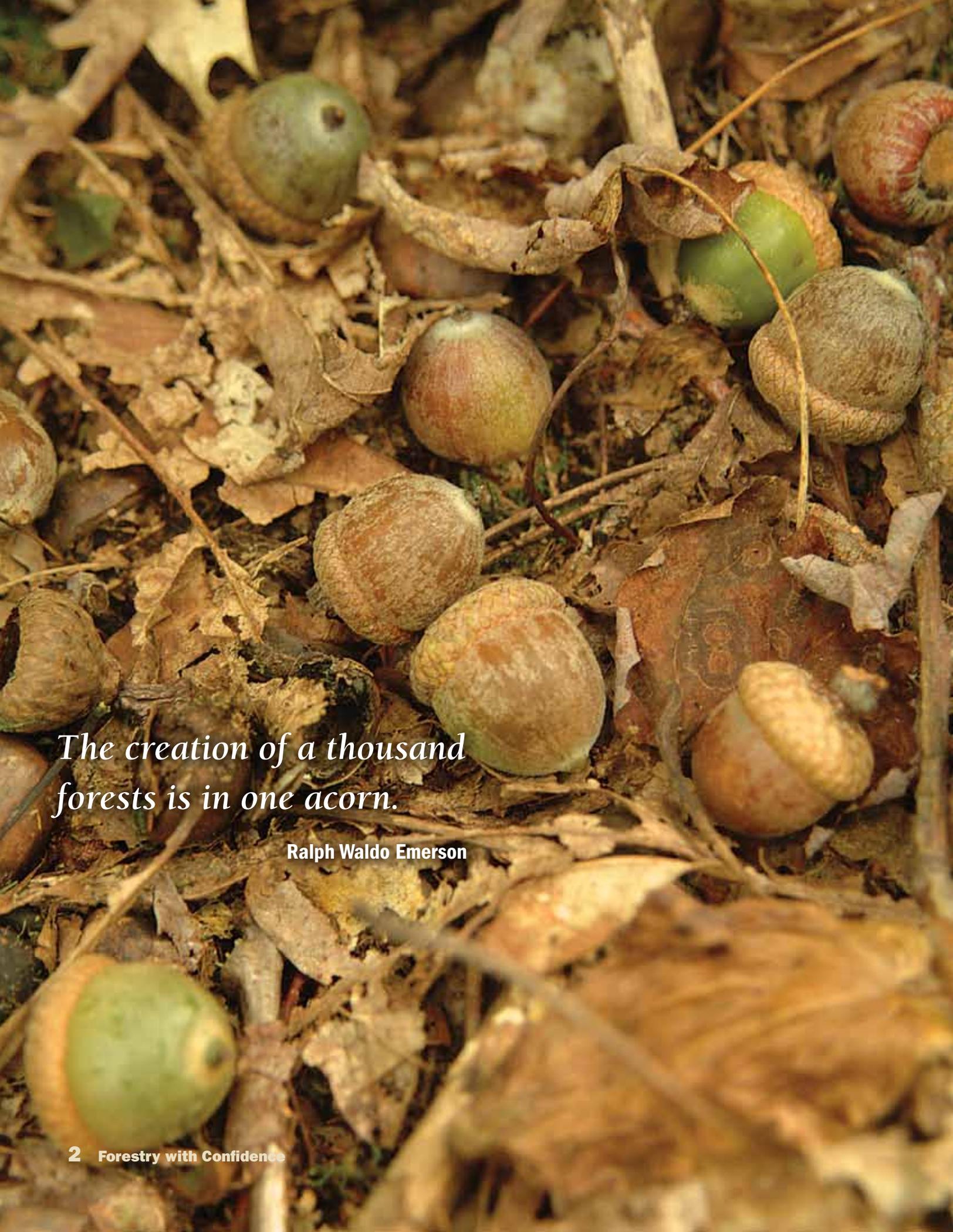
A GUIDE FOR WOODLAND OWNERS



PENNSTATE



Cooperative Extension
College of Agricultural Sciences



*The creation of a thousand
forests is in one acorn.*

Ralph Waldo Emerson

Millions of Americans just like you own woodlands.

In Pennsylvania, 70 percent of the woodland belongs to private individuals, more than 730,000 owners. Woodlands provide enjoyment for hunters, nature lovers, hikers, campers, and picnickers. These lands provide valuable habitat for wildlife and plants, filter our water, protect soils from erosion, and improve air quality. Woodlands also provide direct economic benefits, such as wood for housing, furniture, books, newspapers, and many other products we use every day. The sale of timber provides woodland owners with hundreds of millions of dollars in revenue annually. As a woodland owner, you do not have to choose between these benefits—they are often compatible. ● However, many woodland owners could obtain added benefits from their woods. Generally, private lands could grow more timber if tended properly. Other woodland values, such as wildlife habitat, recreational opportunities, and water quality, could also be enhanced. Woodlands are complex living things, and like all living things, they are subject to a natural cycle of growth, death, and renewal. Fortunately, trees are renewable and respond well to management techniques to keep them growing, healthy, and valuable for whatever the reason. ● This publication will help you examine your woodlands and answer the following questions: Am I getting all the benefits my woods can provide? Are my woods as healthy and valuable as I would like them to be? Am I taking advantage of the assistance available to me? ● With proper stewardship, your woodland can provide the kinds of things you own your land for, including more wildlife viewing and hunting opportunities, increased timber income, and additional recreational opportunities. ● The next several pages present questions asked by woodland owners who want to enhance the benefits from their woods. The first few, however, you must answer for yourself.



Ask yourself how you and your family use your woodland. What woods activities do you enjoy? What are your long-range hopes for the land? What are your long-term woodland-management objectives? Have you considered the future of your woodland? Would you like to:

- Enhance wildlife habitat?
- Improve the health of your woodlands?
- Create a more valuable estate for your family or heirs?
- Grow better quality trees?
- Generate additional income from proper timber harvesting?
- Have a reserve of “money in the bank” for emergencies or future use?

These are just some of the things woodland owners want and work toward when caring for their woods. Many of these benefits can be obtained simultaneously. Most of them are easily affordable.

What About Forest Management?

Do I Have a Forest?

If you own land with trees on it, then you may own a forest. The U.S. Forest Service defines a forest as an area at least one acre in size (120 feet wide) not maintained as

Forest management

Identifying objectives and taking deliberate steps to achieve them

lawn and 10 percent stocked with trees. Even open land, such as an unused pasture, is generally suitable for growing trees and establishing a new forest. No matter how large or small your holdings, you can do things to keep the forest healthy, productive, and attractive to wildlife.

What Is Forestry?

Forestry is the science and art of taking care of and managing trees and forests. Usually we hear of forestry in terms of growing timber for wood products such as lumber, plywood, and paper. Proper forest management can provide many other benefits at the same time, such as improved wildlife habitat, enhanced recreational opportunities, and clean water.

Why Should I Manage My Forest?

You should manage your forestland so it provides more of the benefits you want. Nature will manage your forest just as it manages an untended lawn or garden. Chances are great that the quality and mix of trees and shrubs nature puts on your land will be far less valuable and less attractive than what you could have with a little work. Good management usually makes your forest more valuable, safe, accessible, and attractive for wildlife and recreational uses.

Consider, too, that you pay taxes on the land whether it is working for you or not. Consider the loss of income and other benefits when the land is unmanaged. Would you allow money to sit in a bank account without collecting interest?

Generally, managed forestland is:

- Stocked with healthier, higher quality, desirable trees
- More attractive for wildlife and recreation
- Less susceptible to natural hazards such as insects, diseases, and fire





Is Something Wrong with My Forest?

No, not necessarily, but many private forestlands could be healthier and grow more vigorously if they received proper care. These forests could also be more accessible for recreation and provide better habitat for wildlife. Management allows you to improve your forest for the future, and you may receive more benefits from the land while doing so.

What Does Forest Management Involve?

Growing trees for timber is much like growing a crop. Depending on the condition of your woodland, the following may benefit you:

- Planting or naturally regenerating a new forest to replace trees that have died or were harvested or to enhance food and shelter for wildlife or other values
- Thinning to increase the growth rate of the remaining trees
- Weeding out undesirable trees or plants to restore health and vigor
- Harvesting mature trees to generate income

Very simply, management is identifying objectives and taking deliberate steps to achieve them.

Does Forest Management Have Risks?

There are risks—just as there are with growing other crops or making other financial decisions. These include storms, drought, insects, diseases, wildlife damage, and wildfire; however, the odds are in your favor. Thousands of landowners are tending forests to meet their objectives, and their gains far exceed their losses. In many cases, doing nothing with your land comes with greater risk.

Can I Manage a Small Tract Profitably?

You can almost always do things to make your forest healthier, more attractive, and more profitable. Parcels as small as 5–10 acres can yield periodic income. Even careful firewood cutting can improve your woods and generate income.



Management plan

A guide for your activities

Can I Manage My Forest Myself?

With the guidance of natural resource professionals (foresters and other specialists) and a forest management plan, you and your family can do a lot to tend and cultivate your forest. For instance, you might do your own tree planting, road maintenance, firewood cutting, food plot plantings, and weeding out unwanted trees and other vegetation.

What Is the Difference Between a Forester and a Logger?

Pennsylvania does not have a forester licensing or registration program; however, foresters generally have professional training in either a two- or four-year accredited forestry program. They may belong to a professional organization, such as the Society of American Foresters or the Association of Consulting Foresters, which requires continuing-education training. Loggers are skilled technicians with experience in all phases of timber harvesting. In Pennsylvania, many loggers receive training in forestry principles, safety, first aid, and other areas from the state's Sustainable Forestry Initiative.

What Is a Management Plan?

A forest management plan is a written document that outlines the objectives you have for your forest and guides your activities. It provides descriptions and recommendations for management, serves as a record of your accomplishments, and documents your philosophy, practices, and plans for the future. Your plan should include the following:

- A statement of purpose: what you want to do with your forestland and why you want to do it
- A physical description of your forestland: the location of your property and number of acres owned; forest types and tree species, age, condition, and quality; soil types and productivity; land slope and limitations

- A list and timeline of management practices and recommendations: activities planned for each area and recommended completion schedule

The most important thing about a management plan is that it helps you think through your operations before you start. It can be as short or as long as you like, and you can make changes at any time. Management plans provide a starting point, a reference, and a goal for the future.

How Do I Get a Management Plan?

Natural resource professionals can help you develop a plan that suits your interests and your property's potential. A good first step is to contact your state service forester, who can help you gather background information and assist in determining your objectives for your land. You then select a private natural resource professional to develop the written plan. The plan will guide you step by step as you manage your forestland.

How Much Time Does Forest Management Take?

The time required for management work depends on what needs to be done and how much you want to do yourself. It can be less time consuming than taking care of livestock or field crops. Usually, the work can be scheduled at your convenience. For many forestland owners, forest management is a rewarding weekend activity. In many cases, private contractors and consultants can be hired to perform the work for you.

What About Harvesting?

Why Harvest Trees?

Harvesting trees can be the single most important tool you use to achieve your objectives. Done properly, harvesting trees can improve wildlife habitat, establish a new forest, allow for future harvests, and enhance forest health while also generating income.

Remember, too, that trees die from natural causes, including old age and overcrowding. Removing trees that are declining or thinning overcrowded trees improves forest



health. Also, harvesting may encourage natural regeneration and improve wildlife habitat.

What Should I Consider Before Selling Timber?

Before having a timber sale you should know what you have to sell—what species, how much, and its approximate value. Private consulting foresters are available to assist you in determining this information. Since trees aren't an annual crop, you may have some flexibility when scheduling harvests to take advantage of strong markets. You should also protect yourself and your property with a written timber sale contract.

What Protection Do I Need?

A contract is your best protection to ensure that your needs will be met through a timber harvest. It should include conditions such as the following, just to name a few:

- Clear description of the timber to be harvested and the trees to be left
- Method and amount of payment
- Specified time period to complete harvesting
- Description of best management practices to be followed

Best management practices

What Are Best Management Practices?

Best management practices (BMPs) are a set of recognized tools and methods designed to help landowners, natural resource professionals, and timber harvesters practice good forest management. They are proven methods used to lessen potential environmental damage from land-disturbing activities such as timber harvesting. BMPs outline ways to harvest timber while protecting soil productivity, stream water quality, wetlands, wildlife habitat, aesthetics, and forest sustainability.

By using BMPs, you carry out a critical stewardship role in preserving your right to use your land by discouraging further regulation that may limit your choices. A copy of the publication “Best Management Practices for Pennsylvania Forests” is available online or by contacting your local Penn State Extension office.

What Are Some Common Types of Timber Harvests?

Depending on the age and composition of your woodland, different harvesting schemes will best meet your objectives. In older, mature woodlands, a regeneration harvest may be appropriate. The objective of this type of harvest is to remove trees, creating light conditions suitable for establishing seedlings or releasing existing seedlings to start a new, productive forest. Three types of regeneration harvests are common in Pennsylvania: clear-cut, shelterwood, and selection (both group and individual tree).

If your woodland consists of younger trees that have not reached maturity, then it may benefit from an intermediate harvest. Intermediate harvests, often referred to as thinning or improvement cuts, encourage the growth and development of the remaining trees. Intermediate cuts typically thin a stand of trees by removing poorly formed individuals and/or low-value species. The focus is on leaving high-quality trees of desirable species, often called “crop” trees, at the proper spacing to grow into the future.

Methods to help landowners practice good forest management

Depending on the size and condition of your woodland, you will use different harvesting methods in different areas of your property. A well-planned harvest designed to meet your management objectives can provide financial return and ensure the long-term health and productivity of the forest for future generations.

What Is the Best Method of Harvesting?

Each method of harvesting has its good points. In deciding what method to use, you should consider the following:

- Your objectives
- Composition and age of your forest
- Value and distribution of timber you wish to remove
- Best recommendation for the site

The results are what count! A forester can be your best guide in deciding which method is most satisfactory. In all cases, you should focus on what trees are being left and how the next forest is going to be established.

Should I Cut All the Large Old Trees?

No, the larger diameter trees in a forest are often the same age as many of the smaller ones. The smaller trees may have been suppressed or may be a different species that grows more slowly. It is not a sustainable practice to harvest just large trees that are assumed to be old. Doing so would remove many of the most desirable trees that have the potential to become more valuable with time and provide an important seed source for regeneration.

There are many other reasons for leaving certain trees. Some trees may be rare or uncommon in your woodlot. You may want to save den trees and trees that provide food for wildlife. Many people save trees for sentimental

or aesthetic reasons. Water quality should be considered—tree roots help keep soil in place and tree canopies provide shade to keep water cool for trout and other aquatic life, so leaving trees along stream courses is important.

A Word of Caution about “Select” Cutting

Select cutting, also known as high-grading or diameter-limit cutting, is never recommended. It involves harvesting only the largest and most valuable trees. Sometimes this is referred to as “taking the best and leaving the rest.” The trees left following select harvests often have little potential for developing into quality trees, and the remaining forest will be ecologically and aesthetically degraded. Select harvests often leave your forest in a condition where it is no longer able to provide financial benefits in the future.

How Will a Harvest Affect My Land?

The most immediate, striking, and temporary effect of harvesting will be the appearance of your land. A logging

operation is seldom attractive. Fortunately, many methods can be employed to minimize the visual impacts of harvesting. The key is that a properly conducted harvest can meet your particular objectives as well as maintain a highly productive forest.

How Will Taxes Affect Me?

State and federal taxes are changing constantly. Those of major concern are income taxes, capital gains taxes, estate taxes, and depletion allowances. An accountant can advise you on tax treatment of your management expenses and income.

Should I Reforest My Land?

Assessing where the next generation of trees is going to come from before deciding to harvest is important. Most hardwood forests grow naturally from seedlings and sprouts. Planting trees is generally not necessary, except when establishing conifers; however, sometimes the for-





est is unable to regenerate itself because of competition from undesirable plants, overbrowsing by deer, and other site factors. A natural resource professional can help you determine threats to your forest and recommend appropriate actions to encourage the growth of a healthy new forest following a harvest.

What About Streams and Wetlands on My Land?

All timber-harvesting operations in Pennsylvania must have a plan to control erosion and stream sedimentation. Harvesting operations need to be sensitive to water quality and wildlife values of wetlands and watercourses. To minimize impacts on water quality, loggers and foresters need to implement BMPs to protect soil and water quality and meet regulatory requirements.

Areas on your property with unique or special characteristics might require additional considerations. These can be historical or biological in nature, such as old home sites or rare plant communities. Locating and mapping their location so they are not disturbed and the area is protected is always a good idea.

Can Timber Harvesting Benefit Wildlife?

Yes! Managed timber harvests imitate natural disturbances. As a result, a wide variety of plants and trees will colonize an area following a harvest. This diversity will encourage many species of wildlife to use the area. Timber harvesting also increases diversity by creating temporary clearings and young forest conditions. Many species of wildlife need young forest habitats and flourish in “edge” habitat—the area where two different habitat types meet, such as a where a young forest and a mature forest meet.

Dead standing trees, called “snags,” provide valuable nesting and feeding sites and are better left in place, unless removing them is necessary to maintain a safe environment. Live trees with cavities or holes in them also provide shelter for wildlife. Logs and limbs left on the ground after the harvest provide important cover for small mammals, reptiles, and amphibians. Tree tops can also help protect new seedlings and sprouts from deer browsing. After the harvest is completed, seeding log landings and main roads can provide wildlife with additional food

and cover. In summary, if done properly, timber harvesting can provide a diversity of habitats on your land.

What's Next?

How Can I Get Started?

Many sources of assistance and information are available to you, including the following:

- State forest or wildlife agencies, such as the Pennsylvania Department of Conservation and Natural Resources (DCNR) Bureau of Forestry or the Pennsylvania Game Commission offer services and assistance to help you apply forest and wildlife practices to your property. Ask your service forester or wildlife diversity biologist to visit your property and give you advice on getting started. This service is free, yet it can be very valuable.
- Your local Penn State Extension office can provide educational materials and programs on forest and wildlife management.
- Private consulting foresters provide a wide range of management services, advice, and assistance on a fee basis.
- Some forest products companies (such as sawmills and paper mills) have procurement foresters on staff who offer harvesting and management services.
- Other natural resource professionals, such as wildlife biologists, soil scientists, hydrologists, forest entomologists, fishery biologists, and other trained specialists, have specific technical expertise that may be of assistance to you for your particular management objectives.



A good first step is to invite your state service forester to visit your property and discuss your objectives with you. He/she can assist you in locating a reliable natural resource professional or forester to assist you in managing your property. Many states provide a list of foresters and plan writers that work in your county. It is always a good idea to discuss qualifications, such as education and experience, and check references before hiring any natural resource professional.

Where Can I Meet Other Forest Landowners?

Pennsylvania has many woodland owner associations (WOAs) interested in promoting sound forest management. WOAs are independent nonprofit organizations that can provide you with an opportunity to meet other woodland owners and participate in forest-related educational programs, woodland property tours, and other activities. Members can also introduce you to natural resource professionals with whom they have built relationships. Visit extension.psu.edu/private-forests/woodland-owners-associations to find a Pennsylvania WOA near your woodlands or home.

Following Through

The next step is up to you. You can obtain more enjoyment from your forestland, but you must decide to take action. Taxes will continue whether you manage your forest or not. Any improvements to your land will come much more slowly than they would with active management. And, natural deterioration rather than improvement is a real possibility. The time to start managing your forest for tomorrow is today. You'll get more benefits in the meantime, too. 

About This Publication

Portions of this booklet were originally published under the auspices of the Sustainable Forestry Initiative (SFI) of Pennsylvania. SFI is a nationally recognized industry-sponsored program committed to sustainable forestry and education of loggers, foresters, and landowners. Visit sflofpa.org for more information.

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Pennsylvania Bureau of Forestry

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Web: www.dcnr.state.pa.us/forestry/privatelands.aspx

Penn State Extension

Phone: 800-235-9473

Web: extension.psu.edu/private-forests

For a free copy of “Best Management Practices for Pennsylvania Forests,” go to pubs.cas.psu.edu/freepubs/pdfs/uh090.pdf or contact your local Penn State Extension office (visit extension.psu.edu/counties to find an office near you).

extension.psu.edu

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