In These Woods

Cornell Cooperative Extension
Columbia and Greene Counties

Issue Six: 2023

Timber **Management**

You have likely come to the realization that your woods are constantly changing. Severe storms, pests & diseases and on-the-ground decisions all contribute to a shifting ecosystem. Changes can be site specific and immediate, like ice storm damage. Change can also happen over time. These long-term impacts, whether positive or negative, can alter your woods more significantly and at a slower pace. Sustainable timber management can be a bridge between near-term circumstance and long-term condition. A forester helps you make decisions today with an eye for tomorrow. This issue covers a few important lessons in timber management that can help guide you to the right decisions for you and your forest.

2023 Issues:

About Us

The mission of Cooperative Extension is to enable people to improve their lives and communities through partnerships that put experience and research knowledge to work. Extension staff and trained volunteers deliver education programs, conduct applied research, and encourage community collaborations. Our educators connect people with the information they need on topics such as commercial and consumer agriculture; nutrition and health; youth and families; finances; energy efficiency; economic and community development; and sustainable natural resources. Our ability to match university resources with community needs helps us play a vital role in the lives of individuals, families, businesses, and communities in our region.

You can learn more about the programs and services we provide on our website. You can also contact us directly to help overcome a challange, share stories and gather tools to help you achieve your goals. Below is the contact information for our two offices. We look forward to hearing from you.

Acra (Greene County)

Agroforestry Resource Center
6055 Route 23
Acra, New York 12405
(518) 622-9820

Hudson (Columbia County)

Extension Education Center
479 Route 66
Hudson, New York 12534
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In These Woods Woodland Stewardship Series is a collaboration among Cornell Cooperative Extension of Columbia & Greene Counties, New York City DEP, USDA Forest Service, and the Watershed Agricultural Council's Forestry Program

Cover photo by Hans Isaacson. National Association of State Foresters. Siuslaw Model Forest. 2021

CCE Columbia & Greene's

Agroforestry Resource Center

Cornell Cooperative Extension's Agroforestry Resource Center (ARC) was established in 2003 to help sustain the vast, privately-held forest resources in the Hudson Valley, Catskill Mountains and surrounding region. It is home to the Agriculture and Natural Resources team who focus on regional education and outreach in all woodland and working landscape subject areas.

Agroforestry is defined as the combination of agriculture and forestry practices that create integrated, productive and sustainable land-use systems. These practices can include ginseng, mushrooms, maple and other high-value products.

Through a variety of programs and partnerships, CCE offers land stewards economically viable and ecologically sustainable practices to help preserve and manage woodlands. The ARC includes a diverse and talented group of natural resource educators, an interactive indoor space and a 142-acre model forest that supports an outdoor "laboratory" for demonstration, research and hands-on workshops.

To learn more about the Agroforestry Resource Center, visit:
Agroforestry Resource Center

Siuslaw Model Forest

Siuslaw (Sy-use-luh) Model Forest is our 142-acre living classrom. It's one of our greatest educational resources and sits right across the street from the Agroforestry Resource Center in Acra. Our Natural Resources team and its partners manage this diverse property for all to experience. It's home to innovative demonstration sites, habitat, trails, and real-world examples of woodland stewardship principles and best management practices.

Siuslaw as a Model

In 2007, Siuslaw was designated a NYC Department of Environmental Protection Model Forest. Siuslaw is one of four model forests in the region that all demonstrate the importance of sustainable land stewardship, forest health and water quality protection through education.

Today, Cornell Cooperative Extension hosts many public education programs in the forest and partners with researchers, ecological monitors, and other institutions and organizations like SUNY ESF and the Watershed Agricultural Council's Forestry Program to bring these resources to the community.

The Siuslaw Model Forest is open to the public during our regular business hours (8:30-4:00 Mon-Fri). There are miles of trails for non-motorized recreation and many interpretive signs that educate around best management practices and activities you can bring home to your woods.

Agroforestry

Check out our tree and understory crop demonstrations, along with the shiitake and oyster mushroom laying yard - great inspiration for your backyard or small commerical operation.

Timber Stand Improvement (TSI)

See the different stages of growth and practices employed to restore habitat or thin dense stands of trees to encourage healthy forest conditions.

Best Management Practices (BMP)

Walk the woods roads and learn about open topped culverts, broad based dips, water bars and other techniques for preventing erosion and protecting water.

Enhancements

There are bird nesting boxes, pollinator houses, American chestnut restoration planting, habitat thinnings and plenty of tree identification markers to keep you learning!

Achieving Your Timber Management Goals

The term “timber management” is often associated with a financial motivation to harvest trees for sale, plain and simple. While this is a reasonable goal in itself, the motivations behind timber management can be much more diverse. It can be a stewardship strategy that enhances wildlife habitat, water quality forest health and even carbon storage. Managing timber effectively usually happens when a landowner is informed and working with professional that can help them meet the challenges and opportunities they see in their woods both today and down the line.

Here are a few simple things you can do to protect your resources and get the most of our your woods (some of these will be discussed in more detail later on):

Learn what you can

It is difficult to create goals for timber management if you are not sure what you have on your property!

- Measure Your Trees: Learn how big your trees are, how quickly they’re growing using simple tree-measuring techniques. Using tools like a basal area angle gauge, diameter tape, and the NYS Department of Environmental Conservations’ semi-annual stumpage price report can give you a sense of the value of the trees in your woodlot.
- Have a knowledgeable landowner visit your property: Master Forest Owners are landowners trained by Cornell University to help you care for your woodlot. They visit landowners, walk the land with them, and share knowledge and experiences all without charge.
- Have a State Forester visit your woodlot: The New York State Department of Environmental Conservation has foresters who will visit your property for free and provide personalized advice about harvesting your trees.

Invest in Your Trees

After discovering what you might have in your woods, you may have found out that harvesting your trees immediately might not be your best option. Here are some goals you can pursue to

- Get a written forest management plan (FMP): An FMP is a written plan by a forester that provides professional guidance for managing your woodlot over 10-15 years. If you intend to harvest trees, a plan may be helpful for you. Make sure to include your goals for wildlife, recreation, and other forest goals and explain to your forester what you want your property to be like at the end of the process.
- Do a woodlot improvement cut: Tree species, size, and quality all affect how much a logger will pay for your timber. Like weeding a garden, you can boost the future income of your woodlot by cutting poorly growing trees to give higher-value ones more room to grow.
- Prune your trees: Cutting the lower branches of some trees can increase their value over time. Pruning technique, timing and which species you prune are all critical to enhancing its value. Visit MyWoodlot to find a great how-to video for successful crop tree pruning.

Harvest Trees

Are you and your property ready to harvest timber for sale? The following are common steps which you might take throughout the process.

- Hire a Consulting forester: a consulting forester is a professional who can walk you through the steps and sometimes challenges of harvesting trees. Don't know where to start? Review the list of DEC Cooperating Consulting Foresters or the Watershed Agricultural Council's list of Watershed Qualified Foresters.
- Mark my timber: Once you've selected a forester and discussed what you want from your harvest, your forester will mark trees, typically with paint, that should be cut to achieve your goals. This will ensure that loggers will only remove trees that are supposed to be removed during the timber sale.
- Make the sale: Foresters typically bid timber out to multiple sawmills to get the best price. Working with your forester can help to make sure that a responsible bidder is chosen. Get a timber sale contract: A written contract is essential to a good timber harvest. It lays out who will do what, which trees will be cut, how the work will be done, how much you'll be paid, how clean up will occur, and what should happen if something goes wrong.
- Carry out the harvest: With a buyer chosen and a contract signed, you're ready for a logger to start cutting. Your forester will monitor the harvest periodically to ensure that the contract terms are carried out.
- Clean up after the harvest: When the cutting finishes, your woodlot can look like a mess. Under direction from your forester, your logger should clean up the site in accordance with your timber sale contract and best practices to protect your woodlot and water quality.

Ready to implement some of these steps? Visit MyWoodlot.com to learn more about these timber management options and find specific activities that you can do to work toward timber management on your property.

This Thing Called Forest Management: Does it Really Differ From Gardening?

By Peter J. Smallidge. State Extension Forester, Cornell Cooperative Extension, Department of Natural Resources, Cornell University, Ithaca. From the series, Getting Started with Forestry. November 1996.

New York is over 60% forested, and many people have noticed the growing activity associated with forestry and forest management. We think about the importance of forestry, for local economies and environmental concerns. While many people are interested in forest management, most do not realize exactly what is involved nor how it relates to other familiar activities.

For my purposes here, let me characterize forest management as a process focused on the care and tending of forest vegetation, water quality, and the associated wildlife communities. This begins by recognizing landowner's objectives, identifying plans for short and long term accomplishments, and includes ample consultation with qualified professionals. This process also necessitates decision making about how to accomplish objectives within the numerous constraints of economics, soil suitability, and the surrounding forest areas. As such, forestry and forest management involve many of the same considerations as gardening. But, as you will see, they also differ.

Gardening is truly a rewarding experience. This applies to all types of gardens, from vegetable gardens to flower gardens and butterfly gardens. You spend considerable time during the year thinking about the steps you must take to establish your garden. You think about the crops you want to produce, how each plant can be arranged in your garden to allow for it best growth and development, and the fertility of your soils. Towards the end of the summer, you start thinking about the timing of harvests to collect your produce before frost. At times, you may also have to deal with other factors such as insect pests, weeds, and disease. The planning you complete for your garden is, in many respects, similar to forest management planning.

Forest management is also a truly rewarding experience. Forestry requires you spend time planning, thinking, and decision making. Like gardens, properly managed forests are capable of producing numerous benefits all from the same acre of ground. Efforts to use forests to attain multiple objectives, such as wildlife, water quality, recreational opportunities, aesthetic qualities, soil fertility, and timber production are known as forest stewardship. Historically, forests were seen only for their timber production value, but this is not consistent with our current understanding of forest stewardship.

The activities and rewards you enjoy from your forest are numerous, but the first step requires you recognize your objectives. A professional forester, or a Cornell Cooperative Extension volunteer such as a Master Forest Owner, can help you think through your objectives. If you want only to enjoy the solitude of walks through your forest then your objectives and planning will differ substantially from someone who enjoys bird watching, turkey hunting, and revenue from an occasional well planned timber harvest that helps pay property taxes.

Forest road in Siuslaw Model Forest.

Just like garden plots, forest stands, or areas of forest having similar characteristics, are capable of producing renewable crops. However, different from gardens, forest "crops" can be much more varied, and produce throughout the year (think about cross country skiing in December, maple syrup in the spring, and the beautiful fall foliage) when managed with a stewardship ethic. Many of these crops are never really harvested or removed, others can be harvested every year, while some, like timber, may be harvested only infrequently ranging from every few years to several decades depending on your management plan.

In gardens, you must plan ahead, arranging your plants to ensure your corn does not shade your tomatoes and that your carrots have sufficient room to expand. Similarly, in forests, trees need adequate resources to allow for adequate growth. The way that trees are arranged in your forest partially determines the type and abundance of the crops and benefits you can enjoy. Forests that are thick and crowded may be suitable for some types of wildlife, while forests that have been thinned may suit other types of wildlife plus your needs for timber production and/or large crowned sugar maple that provides you with brilliant orange fall foliage and abundant sap production.

With gardens, we frequently have the opportunity to test the soil for its nutrient levels, and provide additives like fertilizer or compost to compensate for deficiencies. By amending the soil in gardens, we can grow plants that would otherwise not survive. We can test forest soils, but due to their greater extent and the economics of investing in a crop that may be decades from realizing a return, soil amendments are less commonly used. Rather, foresters are trained to match tree and shrub species with the appropriate soil types. For example, oaks may be best suited for droughty soils, cottonwood on stream banks, sugar maple and white ash on well drained fertile loams, and Norway spruce on heavy or clay soils that are less well drained. Also, while many gardening "mistakes" can be corrected the following year, "mistakes" in forestry may take decades to correct. All the more need to work with a professional forester.

With the fall harvest just past, many of us have seen or been involved in the harvesting of numerous crops from our gardens. Gardens are typically harvested on an annual rotation. This cycle is based on the developmental stages and physiology of garden plants. Similarly with forests, many of us have seen either the harvesting of a forest or logs on trucks bound for the mill. Your garden looks quite different following the removal of your vegetables, and forests look quite different after trees have been removed. In both gardens and forests, we harvest crops knowing that we depend on plants for food, shelter, and numerous other qualities. Think about the quality of our lives if we didn't have tomatoes, potatoes, green peppers, black cherry, sugar maple, or white pine. We can appreciate the harvesting of gardens and forests knowing that we will replace or regenerate them in the next growing season. For forests, the changes following harvests will also benefit an entirely new suite of wildlife species not found in mature forests. Just as our gardens, our forests can be harvested and regenerated to produce the future crops and benefits we desire.

I hope I have provided some insights into the process of forest management. Forest management is similar in many respects to gardening, but because of the size of forests and the duration we manage them, our strategies are different. Forests are a wonderful renewable resource, some need to be preserved but others need to be professionally managed so we can all enjoy their many benefits. P lease f eel f ree t o contact your county association of Cornell Cooperative Extension office, NYS DEC office, or professional consulting forester if you would like more information on forest management.

Sawtimber Management

The following article was written by Gary Goff and Peter Smallidge, Department of Natural Resources, Cornell University, Ithaca, NY and updated with information in the March/April; 2014 Forest Owner, a publication of the New York Forest Owners Association.

Managing your woodlot for sawtimber is the principle focus of this article and provides a basic understanding of financial considerations involved with saw timber management. Sawtimber is defined as a log or tree that is large enough (usually 10 to 12 inches in diameter- measured at 4.5 from the ground) to be sawed into lumber. Minimum log length is typically 8 feet.

Tree Value: A Basis for Woodland Management

Sawtimber from private woodlands can provide significant opportunity for income to the owner As with most endeavors, there is a right and wrong way to approach sawtimber production. Growing and harvesting your sawtimber needs to be coupled, ultimately, with appropriate efforts to ensure the successful regeneration of the next forest of equally high value trees.

Volume and value have a connection. Volume is the amount of wood in the tree, and for sawtimber is measured in board feet. Value is how much each tree is worth, and is influenced by numerous factors including the volume per acre, species, distance from road, accessibility, and more. Hardwoods tend to have more value per tree than conifers, but a well managed conifer stand can have significantly more volume per acre. On average hardwood management will typically produce more value than softwood management. On an average acre most of the value of hardwood saw timber will occur in 50 to 75 of the best trees.

Although relatively few forest owners state that financial gain from sawtimber sales is the primary reason for owning forestland, virtually ALL private forests are harvested for sawtimber sooner or later! Therefore, it is generally financially advantageous for forest owners to manage their stands for the potential of an eventual sale. Often, sawtimber management activities are quite compatible, even complementary, to other ownership objectives, such as wildlife enhancement. Appropriate and timely silvicultural practices often will double the eventual sales revenue while simultaneously improving wildlife habitat, enhancing biodiversity and promoting sustainable production.

Creator: Jason Koski (UREL)

The final goal of timber management is the harvest and sale of trees suitable for lumber or veneer. Harvesting and selling timber is the pay-off for years of timber management or, at the very least, the culmination of decades of forest growth. It is important to plan and proceed carefully. It may be many years before a forest recovers from improper harvesting practices.

When to Harvest - As soon as a tree has enough wood fiber to meet the costs of felling, limbing, bucking (the process of cutting a felled and delimbed tree into logs), skidding, (to haul, roll, or drag logs along a trail), loading, transporting, and processing, it has a positive dollar value to the forest owner and is merchantable. However, just because you can harvest the tree, doesn't mean you should harvest the tree. It is usually financially unwise to harvest trees as soon as they reach the minimum merchantable size, however, because

38 DBH red oak by Theresa Lahnen

they are not yet at their optimum value. Some loggers will "come calling" as soon as they see trees that will meet their expenses and provide an adequate profit margin for their work. Profits for forest owners increase greatly as the trees continue to grow from 12 to at least 18 inches D.B.H. (Table 1 illustrates a number of important timber management considerations):

¨ At 12 to 14 inches DBH, hardwoods have a low value, but the rate at which they are increasing in value is high, especially for fast-growing trees with proper growing space. This is a good size to think about thinning (removing) the low quality trees to concentrate growth on these higher quality trees, whether for mast production or sawtimber.

¨ As a sugar maple tree increases in diameter from 14 to 24 inches, it may increase 33 percent in merchantable height, increase 4 times in volume (110 to 458 Board foot), and increase more than 10-fold in dollar value ($44 to $458). If the tree is veneer quality its value would be substantially more.

¨ At 14 to 18 inches DBH, hardwoods may nearly double in value for each 2 inches of growth in diameter as log grade improves with size and as height growth continues. At a growth rate of 2 inches in diameter every 10 years (10 growth rings/inch), a tree will double in value in 10 years (a compound growth rate of 7 percent, not including inflation). Tree value increases as trees grow because (1) they attain a larger volume, (2) they often shift into the next better log grade and are worth more per board foot, and (3) the price of sawtimber has typically increased with inflation.

¨ At 20 to 24 inches DBH, hardwoods increase substantially on a dollar basis, but because the grade has peaked, the rate at which their value is increasing may slow to a compound growth rate of 3 percent or less. The increase in dollar value is mostly the result of the increase in volume. Growth rate is also slowing, and the risk of natural disturbances is greater.

¨ At 24 to 28 inches DBH, the dollar value continues to increase, but change in grade and height are unlikely. Also, growth in diameter is typically slower as the tree reaches biological maturity. These two factors could reduce the compound growth rate to 2 percent or less.

Table 1 illustrates the potential value of high-quality 14 to 20-inch crop trees in 1998. These trees were merchantable but definitely not "financially" mature. They are the true money makers in a woodland and, therefore should not be harvested during this prime growth period unless they are crowded. Not all trees in a stand will show this kind of value growth. The majority of trees should, over time, be removed from the favored crop trees. Firewood is a good market for such trees. Note that because firewood trees do not improve in grade, their value is tied directly to volume growth only. Consequently, their annual compound value growth rate is only about 1.5%.

Table 1. Stumpage Value of Sugar Maple Trees based on Size and Grade

DBH[a] (inches)	No. of 16-foot logs	Volume[b] (bd.ft.)	Grade[c]	Dollar value MBF[d]	Age of tree	Dollar Firewood	Value/tree Sawtimber	Annual Compound growth rate[e]
12	1.0	58	2 to 3	300	50	2	17	8.5% (1/10" growth ring)
14	1.5	110	2 to 3	400	60	3	44	" "
16	1.5	146	2	500	70	5	73	" "
18	2.0	240	1 to 2	850	80	7	204	3% (1/10" growth ring)
20	2.0	305	1 to 2	850	90	9	259	" "
24	2.0	458	1	1,000	110	13	458	1.5% (1/12" growth ring)
28	2.0	635	1	1,000	134	17	635	" "

[a]Diameter at breast height or 4 1/2 feet above ground.

[b]International 1/4-inch rule.

[c]Grade classification of butt log: 1= highest value. These are typical grade changes with size.

[d]Based on the quality of expected yield of one-inch lumber, 1998 NYS stumpage value. These change based on consumer demand.

[e]Does not include inflation, but quality saw timber value generally matches or exceeds the inflation rate.

R.J Anderson/www.CCE.Cornell.edu

In summary, the timber value of individual trees, regardless of species, logging costs and current market trends, is largely a function of the total amount of wood fiber they contain and the quality of their lumber or veneer. Log grade is determined by size (diameter and length), form and the presence or absence of defects such as knots, ingrown bark, and worm holes. In general, as a tree increases in size, its logs increase in grade; as grade and size increase, so does value. Diseased trees in contrast may lose value and degrade faster then they grow in volume. A timber harvest should therefore occur when the rate of tree growth and value have peaked.

Hardwoods such as sugar maple, on good sites, reach financial maturity (the age at which a tree is no longer increasing in value at a profitable rate) at about 20 to 24 inches. Whereas, on poor sites it may be reached at 16 to 20 inches. As indicated in Table 2, the age at which trees reach financial maturity varies significantly depending on species, site quality, damage from insect and disease attacks, and management history. Typically, active management will shorten the time to financial maturity.

Table 2. Average age at which timber species reach financial maturity (24 inches DBH*) in managed stands** on good sites.

65-75 years	75-95 years	95-124 years	125 years or more
White pine	Black oak	Hemlock	White oak
Tulip poplar	Black cherry	Sugar maple	Chestnut oak
Red oak	White ash	Red maple	
Red pine	Basswood	Yellow birch	
		Hickory	
		Beech	

*DBH = Diameter at breast height, or DBH, is a standard method of expressing the diameter of the trunk or bole of a standing tree, usually at 4 1/2 feet above ground
**Growth rate may be a third less in unmanaged stands.

LOGS TO LUMBER: Wise Use of a Sustainable Resource

Peter Smallidge, NYS Extension Forester and Director, Arnot Teaching and Research Forest, Department of Natural Resources, Cornell University Cooperative Extension, Ithaca, NY 14853.

A common feature of managed woods, and an aspect that has made them popular among farmers, woodlot owners and maple producers is the potential to harvest logs and produce boards. Managing your woods for lumber involves consideration of the logs for lumber, but also cultivating the woods to ensure future produc-tivity and healthy trees. If the woods are mined rather than tended, future options and opportunities may be eliminated.

An Internet search for "lumber from local woodlots" will yield access to a free publication on the ForestConnect publications page that addresses types of trees and wood properties, measuring trees, harvesting plans, and matching lumber supply with building needs. In this article I will share information on manipulating the woods, harvesting, and utilization. Additional resources are listed at the end of the article.

Manipulating The Woodlot – What You Take & What You Leave

The starting point for harvesting trees is to have a clear and full understanding of your ownership objectives. Obtaining lumber is one objective, but you may also be interested in maple sap and syrup, aesthetics, trails, wildlife habitat and more. A written management plan will help you obtain these varied objectives.

If a harvest removes trees that are large enough to provide lumber, the owner will benefit from involving a forester. The forester can write a plan for the owner, and can also mark trees that will be removed in the harvest. The forester can identify trails the owner can use for skidding the logs, or the forester can administer a commercial sale if the logs are sold. If the harvest is commercial, it is in the owner's interest to sell the standing trees in a lump sum sale. It is rarely advantageous for an owner to harvest trees and then sell the logs roadside. Th e owner might also designate specifi c trees to retain as logs for personal use, or buy back some logs from the logger. Discuss these options before signing a timber harvest contract.

The strategy for harvesting will fall into one of two broad categories. One category, called "intermediate treatments" is intended to improve and enhance the existing woods, or residual trees left behind. Intermediate treatments are analogous to weeding your garden. The other strategy is a "regeneration treatment" and is intended to grow the next forest. Based on the condition of your woods and the specifics of your objectives, your forester can develop a harvesting plan to suit your needs.

A harvest is a good opportunity to adjust the composition, the mixture of species, in your woods. For owners with a high percentage of white or green ash, harvesting will allow you to utilize some ash and concentrate growth on other desirable species. Harvesting should not attempt to eliminate ash, but the harvest may diminish its abundance. Ideally this process happens before the emerald ash borer (EAB) is close, and you can avoid crisis management as part of forest management. The ForestConnect site (see resources below) has a fact sheet on silviculture for invasive insects. Owners and their forester might plan for several sequential but small-scale harvests the owner conducts every few years to provide lumber at the timing and quantity you can manage while avoiding an abrupt change in the forest.

Except in special circumstances such as created by the emerald ash borer or hemlock woolly adelgid, harvesting should generally maintain the mixture of species that have naturally established on the site. Of course there will be changes as forest succession proceeds, but the species naturally established are likely (but not always) matched to the soils and will perform well.

A temptation when harvesting trees for use as lumber is to cut the biggest and straightest trees and leave the rest. This harvesting strategy is effectively a diameter-limit cut and also known as a high-grade. The removal of only the biggest trees and those most easily turned into boards can result in a degraded woodlot with predominately trees of low value, poor form, undesired species, and slow growth. Owners who heat with wood, or sell firewood, have distinct advantages in being able to utilize the cull trees Figure 1. The smaller trees are most often similarly aged "runts", and are not younger trees that need to be released. A forester can help you select trees that ensure you obtain the logs you need for lumber, cull the woods, and leave a residual forest (the trees that remain after harvesting) that will be healthy and productive.

Figure 1. Thinning, an intermediate treatment, should remove stems that allow the best trees to grow until the final harvest. In this picture, two oak stems are marked for harvest and concentrate growth on the better quality stems. Both marked trees could produce lumber.

Harvesting and Processing

Either the owner or someone contracted by the owner can harvest trees for use as logs. Harvesting trees, regardless of size, is potentially dangerous to the owner and can damage the residual trees.

The person felling the trees should have completed Game of Logging (GOL) training levels I and II, and hopefully level III. Game of Logging is an educational program that originated for loggers to increase productivity and safety. It has been adapted for and found great favor with woodlot owners. The GOL teaches owners how to use PPE (personal protective equipment) and also PPB (personal protective behavior). For someone with adequate training, felling a tree can be straightforward. However, trees under tension (AKA spring poles), root balls of windthrown trees that may tip back into their hole Figure 2, and hung trees are relatively common and warrant special consideration to avoid personal injury or death.

Figure 2. Although this tree would produce lumber, cutting the tree would include the double hazard of the stem under tension and the likely re-settling of the root ball. Some trees are better left uncut.

The equipment used to move logs is an important consideration. Professional loggers use skidders and forwarders to move logs; this equipment is designed specifically to work in forest settings. Most owners will use a tractor or an ATV to move logs. These machines can move logs, but they need special attachments and special attention. Logs moved by tractor or ATV need to ensure that the front end of the log is elevated off the ground. Without elevation, the log may catch on stumps or rocks with the potential for damage to the machine and injury to the operator.

Special attachments for ATV and tractors, shown here with a winch, increase safety and productivity. Care is needed if these types of machines are used for small scale logging.

Further, the center of gravity on a tractor or ATV is usually higher than for skidders, so special care must be used to avoid operating on side-slopes where the machine might roll sideways. A vari-ety of 3-point hitch skidding winches are available for tractors and arches are available for ATVs. Look for a training course and use considerable caution; every year there are tragic accidents that involve woodlot owners, maple producers and farmer.

A common source of damage to residual trees is when an owner or someone they contract uses equipment that isn't quite adequate to do the job. The wrong tool for the job seldom works well, and often results in increased risk of damage or injury.

The time of year trees are harvested can influence the need for additional actions. For ash, summer harvesting can result in significant length-wise splitting of logs to the point they cannot be sawn into boards. The splitting of ash logs can be reduced or eliminated by cool weather logging from late fall through early spring (before the ground thaws). The added advantage of winter logging is that dragging logs on frozen and snow-covered ground will reduce dirt and rock in the bark that dulls chain saws and band saw blades. In the spring, roughly late March through mid to late June, the bark of trees is "loose" and more likely to peel away in large sections if bumped by a tractor or skidder. Also, soft and wet ground in the spring can result in signifi cant rutting.

The grade of logs, an assessment of quality, may change depending on the duration and conditions of their storage before milling. Hardwood logs of light color (e.g., maple) cut during the summer will quickly start to lose grade because microorganisms will spread in the wood and change its color. In this case, the change in grade is based on wood color and not wood structure. For some owners the change in color is desirable and adds aesthetic complexity to an otherwise ordinary board. The volume of each log may decline as they lose moisture and shrink. Logs may also check, split on the ends, which can reduce the usable length of the logs. Control of these concerns is accomplished by processing hardwood logs quickly, usually within a month, keeping

the logs under a sprinkler system as done in many industrial log yards, or by coating the ends of the logs with an end-grain sealant.

Felled trees should be bucked into log lengths that optimize straightness and reduce taper. Skidding shorter logs typically causes less damage to residual trees than skidding long logs. Regarding taper, there might be a straight 16 foot log, but the log's diameter may change by 2 to 4 inches or more and cause a significant loss of lumber in slab wood. By convention, logs are usually cut 4 to 6 inches longer than the final product to allow for end trimming after the boards have dried. Logs can be sawn immediately. There is usually no advantage to wait, although some logs may sit for several weeks or months before being sawn. Logs should be stacked on a pair of sacrificial logs to allow for air circulation, reduce dirt in the logs and increase the ease of movement of the logs.

Adequate space for storage of logs after harvest is necessary. A commercial sale will require a landing that can be accessed by a log truck. If logs will be milled on-site, plan for the location of the portable sawmill, moving logs onto the mill, access with trucks or wagons to move lumber, and how slab wood and sawdust will be disposed Figure 4.

Figure 4. Advance planning will allow arranging logs in a manner to more easily load the sawmill. Creating a cut bank or using a gentle slope makes easy work of loading logs if the sawmill lack hydraulics.

Storing and Using Lumber

Select a custom sawyer who has experience. An experienced sawyer can help you fully prepare for the sawing and storage of lumber. Use your local personal networks, or resources listed below to find a sawyer. Consult with the sawyer before harvesting to make sure any special needs are known, how the logs should be arranged, and to ensure the sawyer is available.

Sawn lumber needs to be stickered as soon as it is cut Figure 5. Drying the lumber in a stable rack will reduce twist, cupping, and splitting of the boards. Stickering is the process of stacking the lumber in a pile with several small wooden strips, usually about 1 x 1 inch, between each layer of boards.

Figure 5. Lumber should be stickered immediately after sawing, ideally as the boards come off the mill. Indoor storage, as illustrated, is ideal if space is available.

Spacing between stickers is usually 18 to 24 inches. Stickers are an inexpensive investment in a potentially high quality product. Piles of stickered lumber should be elevated on a sturdy foundation of block about 12" to 16" above ground. Usually, boards of different thickness and length will be stacked in different piles. Position those stickers near the ends of the boards, as close to the end as possible, to reduce end checking. Cover the piles of lumber with old metal roofing or plywood. Plastic coverings tend to collect water and may not allow adequate air flow.

The utility of a species will depend on the project. In many utilitarian projects, the lumber that is available is the lumber that is used. One consideration is the strength of the wood especially for structural or load bearing uses. Internet resources are available to guide the type, quantity and dimension of lumber used for rafters and joists. Your local building code officer may also have resources. A second consideration is durability. If wood is kept dry, the board will resist decay. Other than rot resistant wood such as black locust, white cedar, white oak or larch, wood exposed to the elements will benefit from a preservative. Several preservative treatments are commercially available and owners should consult online reviews and with local vendors and builders for suggestions on brands.

Who can help?

Understanding, managing and using your woodlands can be a complicated process. Help is available. Wood-land owners, maple producers and farmers can request a visit from a Cornell Master Forest Owner volunteer. Volunteers are trained at Cornell and work through Cornell Cooperative Extension to help other owners better enjoy and use their woods. Your MFO Regional Director can connect you with a volunteer; visit www. CornellMFO.info or contact your local office of Cornell Cooperative Extension to connect with your Regional Director.

Other resources

1. Numerous publications are available via www.ForestConnect.com A social network is also accessible for owners at www.CornellForestConnect.ning.com and includes an events page, blogs, questions and answers, and a place to post pictures of what you are doing in your woods

2. Some of the manufacturers of portable bandsaw mills maintain lists of sawyers. Look on the Internet for sawyers in your area from company webpages for Woodmizer, Baker, Timberking, or Norwood.

3. The discussion boards at www.forestryforum.com have numerous topics related to small scale harvesting, sawmill operation, lumber handling and timber framing.

Tree Measurement

It is easy to get caught-up in the idea of receiving money from the sale of your trees… especially when someone knocks on the door and offers a fist-full of cash! Then the question becomes how to find out what your trees are really worth. Hire a forester or measure them yourself are two options. Both options can start with a call to the Cornell Master Forest Owner program.

This peer-to-peer program can send a local volunteer to your property for a free visit. These volunteers have had some training in how to measure a tree and may be able to help you do it yourself. They are non-technical folks able to provide you with resources to start down the path of informed woodland management leading to positive outcomes. These volunteers may have experience in managing and selling their own timber and can inform you as to what and who worked well in their situation. Many of these volunteers got their start by accessing the resources of their local NYS DEC Lands and Forests forester. Using a professional forester has many benefits throughout the process of managing your woodlands. But, for the fun of it, let's measure some trees.

The least expensive instrument available to measure trees, is your own two ocular estimators. Calibration of these devices using rudimentary tools will increase your accuracy.The Biltmore stick (shown in photo along with a diameter tape) can be used to measure a tree's diameter at breast height (DBH) (4.5 feet above the ground) and merchantable height (number of 16 foot logs) leading to calculation of the number of board feet.

Even if you are not interested in figuring out the relative values of your trees, the ability to measure trees can be helpful in the management of your woods. The concept of putting the growth potential of a given acre of woods on to the best trees (best as defined by your goals of ownership) can be documented by measurable increases in tree diameter in response to precommercial (Sapling size) and intermediate thinnings (Pole sized). See the discussion by Peter Smallidge and Gary Goff on how diameter growth impacts timber values exponentially. Maximizing growth on the best timber quality stems ensures that the carbon stored over time will become locked up in long-lived wood products that may be substituted for other building materials that have much larger carbon footprints. Save the planet by managing and measuring your woods!

Determining the age of your trees can assist in understanding the potential for growth of a site or site index. Site index is the height of a tree at 50 years of age. Better sites grow taller trees at 50 years of age. The age can be measured using an increment borer to extract a core sample from the tree at DBH and counting the annual rings. Generally, add 5 years to your count to account for height growth to your sampling spot. This tree was planted in 1945 and is 6 inches DBH. Trees with access to light are 20.5 inches DBH. Smaller diameter trees are usually the losers.

Regeneration

When thinking about managing the timber in your woods, it is easy to focus on what you currently have standing in front of you, rather than considering what you might have in your woods in the future. Even timber management plans do this and it can leave a big gap, maybe one you can literally see in the woods!

Growing new trees that will become the future forest is called regeneration. Regeneration is something that use to and should just happen in our woods as long as it has a few characteristics that all seedlings need, to some degree- trees that produce shade or protection, some sunlight, and soils with enough moisture for a seedling to survive its first few vulnerable years. Unfortunately, just assuming that regeneration will happen is no longer a safe bet because of a few threats that we are facing now or will in the future.

Deer

The Problem:

If you have been following this letter series, then you would have read the article on deer impacts in Letter 4 on Wildlife and Recreation. In short, high deer populations make it extremely difficult to regenerate hardwood trees that they like to eat (oaks and maples). Without doing something about this problem, the understory will be nearly removed of seedlings they eat, leaving no new trees to replace the old.

The Solution:

Less deer! Easier said than done. Hunting helps but data has shown us that this action alone does not lower the deer population. Protecting your woods from deer with exclosures or fencing is a promising option. Now, of course, you can't fence deer out of all of your woods but exclosures are a helpful solution if your regeneration efforts are targeted to small areas of your woods. The location of a blow down or a small patch cut are examples of where you might want to focus your efforts. If you're interested in a deer exclosure for your property, check out the Cornell Smalls Farms blog on design and construction.

Deer Exclosure Demonstrations at the Siuslaw Model Forest

At the Agroforestry Resource Center, we value our model forest for its ability to demonstrate actions other landowners could adopt. It is for this reason that we have 5 different deer exclosures, all of which have different styles and materials so a landowner could identify one that might work for their woods. We also like to practice what we preach and understand that these exclosures are needed so we can regenerate a diversity of tree species.

Climate Change

The Problem:

With climate change comes precipitation and temperature shifts. If you have ever started a plant from seed, you have learned firsthand that baby plants need consistent moisture and temperatures that change gradually so they can adjust. With so much uncertainty on the ground it can be difficult for seedlings needs to be met.

The Solution:

Build resiliency into your woods! Many climate change impacts are felt currently, like increased storm severity as well as those longer-term pressures that are nearly impossile to reverse on a single property. You can combat this by focusing on forest health. Work with a forester to help your woods adapt to changes. Right now, you can think of tree diversity in terms of age, species and conditions. Keep competion down and encourage those native, resilient species.

Interfering Vegetation

The Problem:

Interfering vegetation is a term used for both native and non-native species that can out-compete native plants you might want to be growing or should be growing in your woods. These plants, usually invasive species, are able to begin their growing season early and continue to grow later in the season. Additionally, they are generally not browsed by deer and are sometimes all that is left in an under-story heavily impacts by high deer populations.

The Solution:

By becoming familiar with these types of plants (which include ones like Japanese barberry, multi-flora rose and garlic mustard) you can learn to identify them on your land. Luckily, these plants cannot run and hide like deer so once you know where they are, you can plan your attack. It is helpful to focus in on areas of your woods where you are trying to increase regeneration success, such as an area that has been opened up in some way. Removing plants that are already there and reducing the likelihood of introducing new species is your best bet. More on invasive species to come in future letters.

(Left) White-tailed fawn browsing under canopy opening. See small saplings completely leafless with less desirable species growing. (Right) Checking a tree tube that protecs young trees against deer browse and competing vegetation. Photos by Connor Young, Siuslaw Model Forest. 2021.

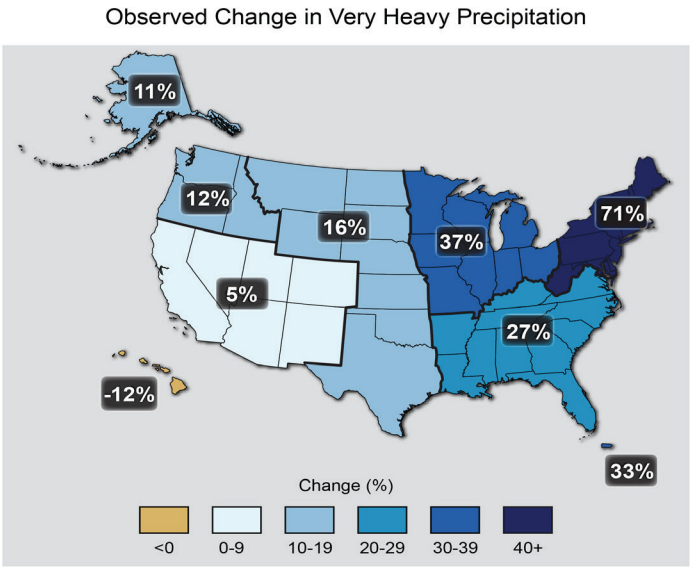
Climate Change Adaptation & Healthy Forests

Our climate is changing more rapidly than ever recorded. Climate change has resulted in significant changes to weather, precipitation patterns and increasing temperatures. In the Northeast US, seasonal precipitation patterns have shifted with higher amounts falling in heavy events that are occurring more often. The episodic nature of these events have increased the occurrences of localized flooding that are contrasted by periods of drought. Increasing temperatures have led to shorter more mild winters and longer growing seasons. Higher water temperatures are causing sea level rise and warming weather is altering the water cycle. Climate is one of the main factors in shaping forest ecosystems and the forests in our region have and will continue to be affected by climate change during this century.

Forest ecosystems will respond to the impacts of climate change in a variety of ways. These responses may have beneficial or negative impacts to forest health, productivity, distribution and composition. The changes in weather, precipitation and temperature are some of the variables that effect forests in our region. Increased risk of drought and more variable soil moisture are factors that may cause stress and a decline in moisture sensitive species. Forest pests and diseases as well as invasive species have been found to benefit and become more damaging, capitalizing on the disturbances to the environment.

Changes to habitat conditions can also impact tree health and range. Northern ranging species such as black spruce, red spruce, northern white-cedar, paper birch, quaking aspen and white spruce are likely to decline with only slight warming. A reduction in suitable habitat is also expected to affect many of the more common species such as bigtooth aspen, black cherry, sugar maple, and yellow birch. Declines in these species which play important roles in the forest may have significant impacts on the ecosystem.

Alternatively, scarlet oak, black walnut, shagbark hickory, pin oak, and southern red oak found mainly in warmer more southern regions may benefit from expanding suitable habitat for oak and hickory. Northward range expansion may also occur in very rare species, although this may be inhibited by other factors like habitat fragmentation, increased impervious cover and limited dispersal.



The fluctuations in environment will also impact tree establishment, growth and species composition. Germination and seedling survival are highly sensitive to the environmental conditions and changes in precipitation, soil moisture and temperature can effect these processes. Similarly, tree growth and productivity can be impacted by climate change. Growth is expected to slow in species adapted to colder northern areas with relatively slight warming. These species include balsam fir, quaking aspen, red spruce, and yellow birch.

Projections under more dramatic climate change scenarios indicate declines in northern red oak, black cherry, and sugar maple that is likely related seedling/sapling sensitivity.

The unprecedented speed at which the climate is changing could impact the normally slow pace of broad shifts in forest composition. The most noticeable shifts will probably occur

*The map shows percent increases in the amount of precipitation falling in very heavy events (defined as the heaviest 1% of all daily events) from 1958 to 2012 for each region of the continental United States. *From the Climate Change Response Framework*

Choosing a Forester

In addition to timber harvest work, professional foresters can also help with non-harvest questions, like forest trail design, appraisals, tax basis determination, advice about forest property tax programs, and managing for wildlife.

Definition of a Forester

In New York, there is no legal definition of a forester, so very qualified and less qualified individuals use the title, leaving forest owners confused about competency. Unfortunately, if someone calls himself or herself a forester, there is still a lot you do not know about them. Check their credentials.

What To Look For In A Forester

Education and training

A professional forester should have a 2 or 4-year degree in a science field, usually forestry, from a college recognized for its excellence. In New York, SUNY Environmental Science and Forestry, and Paul Smith's College are both accredited forestry schools. Graduates of forestry schools have both theoretical and field experiences to help guide the choices you will make.

Professional affiliation

Your forester should be a current member of the Society of American Foresters (SAF), New York Institute of Consulting Foresters (NYICF), or the Association of Consulting Foresters of America (ACF). These organizations provide standards of professional conduct, training opportunities, and conferences for additional learning. A forester who belongs to these groups is demonstrating their willingness to learn more and more.

Certification

The Society of American Foresters has a certification program (SAFCF), which requires that foresters meet the profession's educational requirements, have five or more years of professional forestry experience, adhere to standards of professional practice, pass a rigorous competency exam, and participate in continuing education. The SAF notes, "You can be assured you are hiring a qualified forester if you hire a CF." Most forest owners have no idea that such competent foresters live and work in their region.

Experience and referrals

A professional forester should be happy to direct you a list to satisfied clients, even bringing you to recent jobs that bear the marks of good forestry. Ask your forester about past work, and follow up with some references to see if their circumstances are similar to yours.

Special agreements

Dozens of foresters in New York work with the NYS Department of Environmental Conservation as Cooperating Consulting Foresters. These foresters have agreed to maintain ethical and educational standards, in compliance with the New York Cooperating Forester Program policy.

Where To Find A Forester

- Ask fellow forest owners
- Review the list of DEC Cooperating Consulting Foresters
- Contact timber management companies or foresters listed in telephone directories and web pages
- Contact the NYS DEC regional office in your area, Cornell Cooperative Extension.

Questions To Ask Before You Hire Them:

- How long have you worked as a professional forester?
- Where have you been working and with what kinds of forests?
- What is your educational background?
- Are you a current member of Society of American Foresters (SAF), New York Institute of Consulting Foresters (NYICF), or the Association of Consulting Foresters of America (ACF)?
- What training have you attended recently?
- What are your fees and what services do you provide?
- Are you associated with a saw mill or wood products firm?
- Can you provide references from previous clients?
- Would you sign a contract that details the services you will provide?

Forest Management Plans and NYS Forest Tax Law 480-A

Ron Frisbee

Many cost share programs require the woodland owner to have a forest management plan for their property prepared by a professional forester. Each state in the Northeast and the various federal programs have their own definitions for who qualifies as a forester. In New York, academic standards are applied. In the NYC Watershed, a list of foresters is maintained by the Watershed Ag Council's (WAC) Forestry Program who are qualified to be engaged to administer activities to be cost shared. The WAC has been promoting the NYS Forest tax Law 480-A for many years by cost sharing the preparation of the required FMP and 5 Year Updates.

The photo above shows a type map that the forester uses to depict the location of the various stands or management units. The specifications for the FMP are quite rigorous and must promote the management of timber as the primary goal of ownership. In return for committing at least 50 acres of forest land to 15 years of management activities leading to the production of a forest crop (narrowly defined) , the WO receives approximately a 80 % reduction in the property taxes on that committed acreage only. For more information go to the DEC website.

An annual commitment form is filed with the assessor and after the first 5 years, the work plan is to be followed for minimum of 10 years. There is a substantial penalty for conversion of the committed acreage to non-forested use and the deed is encumbered as the next owner must honor the plan. The NYS DEC is currently working with stakeholders to improve the administration of 480-A to make it "user-friendly" and to reduce staff time devoted to enforcement actions. Research by the WAC Forestry program has linked better water multiple benefits of working with a forester to conceive and execute a FMP, only a very small percentage of eligible ownerships have taken advantage of NYS 480-A. The rigor of the oversight is balanced by the opportunity to update the plan every 5 years and to file for amendments to the plan if woodland conditions change or opportunities develop. Given that adherence to the work plan is required, some folks appreciate the active management that ensues as opposed to the FMP residing passively on the coffee table and time and opportunities pass them by. The end game for 480-A FMP is depicted in the photo below. These same folks could also be managing the woods for maple syrup, ginseng, shiitake mushrooms, or other agroforestry pursuits as long as timber management goals are not precluded be these other activities. This ash harvest under 480-A, has made their trails safer, the woods more healthy through infestation avoidance, and the potential for regeneration of sugar maple has increased. All the disturbed soil will be reseeded and critical areas on steep slopes and at the stream crossing will be mulched with cost-share support from the WAC BMP Program. Good outcomes follow informed planned decisions.

Trained Logger Certification & Water Quality Protection

New York Logger Training

In NYS, anyone can call themselves a logger. There are no requirements for this profession, unlike other nearby states. As a landowner, looking for someone to assist in meaningful and large scale management, this is important to know and consider. There are however, voluntary programs loggers can choose to take part in that improves their ability to work safely in the woods, while maintaining and improving the health of our woodlands.

Statewide educational opportunities are available to loggers. New York Logger Training, Inc. (NYLT) provides educational trainings for the forest products industry. NYLT is a cooperative effort between timber harvesters, foresters, industry professionals, woodland owners, government and educators working together to learn and practice environmentally sound logging practices and improved woods skills. This effort is aimed at developing safer work environments, increased productivity and profits, and a better quality of life for everyone involved in the profession, especially loggers..

Head to newyorkloggertraining.org to learn more about NYLT.

Trained Logger Certification

Locally, additional support is offered to loggers through the Watershed Agricultural Council's (WAC) Forestry Program. In partnership with the New York City DEP, Cornell Cooperative Extension of Columbia and Greene Counties, and New York Logger Training, Inc., the WAC Forestry Program works with regional loggers to provide the three courses necessary to earn "Trained Logger Certification" (TLC).

The classes – Forest Ecology & Silviculture, First Aid/CPR/AED, and Chainsaw Safety – must be completed in order to earn the voluntary TLC. In addition to promoting the certification of new loggers, the WAC Forestry Program also offers credit to loggers who participate in continuing education courses in addition to the core Trained Logger Certification curriculum. In order to meet this goal, loggers much complete two additional workshops covering topics such as wetlands in the woods (identifying wetlands using common plant species), logger rescue and many others. The core and continuing education classes are held annually, primarily in the spring and fall to meet the busy summer season.

Follow this link to learn more and see a list of certified loggers in the Catskill region.

Catskills Region: A Focus on Water Quality

One of the main focuses of these local trainings is water quality protection. Throughout a timber harvest, the potential to negatively impact our waterways is there. Fortunately, many measures can be taken to ensure this impact is reduced. Best Management Practices (BMP's) are techniques to limit these impacts during the coures of a harvest. They can be learned and implemented so working in the woods doesn't have to come with negative consequences. BMP's mainly focus on keeping sediment out of the waterways that might run through a forested property. This can be done with bridges or crossings to keep equipment and logs out of the water. It can also be done with techniques that divert runoff away from the streams so that sediment doesn't land there. BMP's also help loggers maintain the roads that they rely on by reducing the potential for erosion.

The WAC Forestry Program offers a BMP cost-sharing program that certified loggers can access to help offset some of the costs of these efforts. The BMP Program provides money, materials and technical support to help loggers plan and apply water quality Best Management Practices in the New York City Watershed. This is one way loggers help protect the drinking water for 9 million New Yorkers.

Loggers installing, working over and the outcomes of effective of BMPs. Copyright, WAC Forestry Program

Voluntary Best Management Practices for Water Quality: A NYS Guide

A comprehensive field guide for Voluntary Best Management Practices for Water Quality can be a great tool for you, as a landowner, to review what might work for your woods. It's also helpful to foresters when working with loggers on harvest planning and terms. This is available for free by downloading a copy and can even by access by smart phone app to use in the field.

Click here to learn more and get the guide!

Forest Resources

Watershed Agricultural Council Forestry Program:

The WAC Forestry Program provides many resources on their programs as well as a list of resources on forest management planning, qualified loggers and more:
nycwatershed.org/forestry

Foresters:

CCE Columbia & Greene – Choose a Forester:
ccecolumbiagreene.org/natural-resources-and-the-environment/choosing-a-forester

NYS DEC – Find a Cooperating Forester:
dec.ny.gov/lands/5230.html

Loggers:

New York Logger Training:
newyorkloggertraining.org/

NYS DEC – Find a Cooperating Forester:
dec.ny.gov/lands/5230.html

Woodlot Management Resources:

This link includes articles on developing stewardship plans, improving your woodlot for firewood, managing small woodlots and more.
ccecolumbiagreene.org/natural-resources/forestry/agroforestry-resource-center/woodlot-management/woodland-stewardship/woodlot-management

DEC Forest Utilization Program:
https://www.dec.ny.gov/lands/4963.html

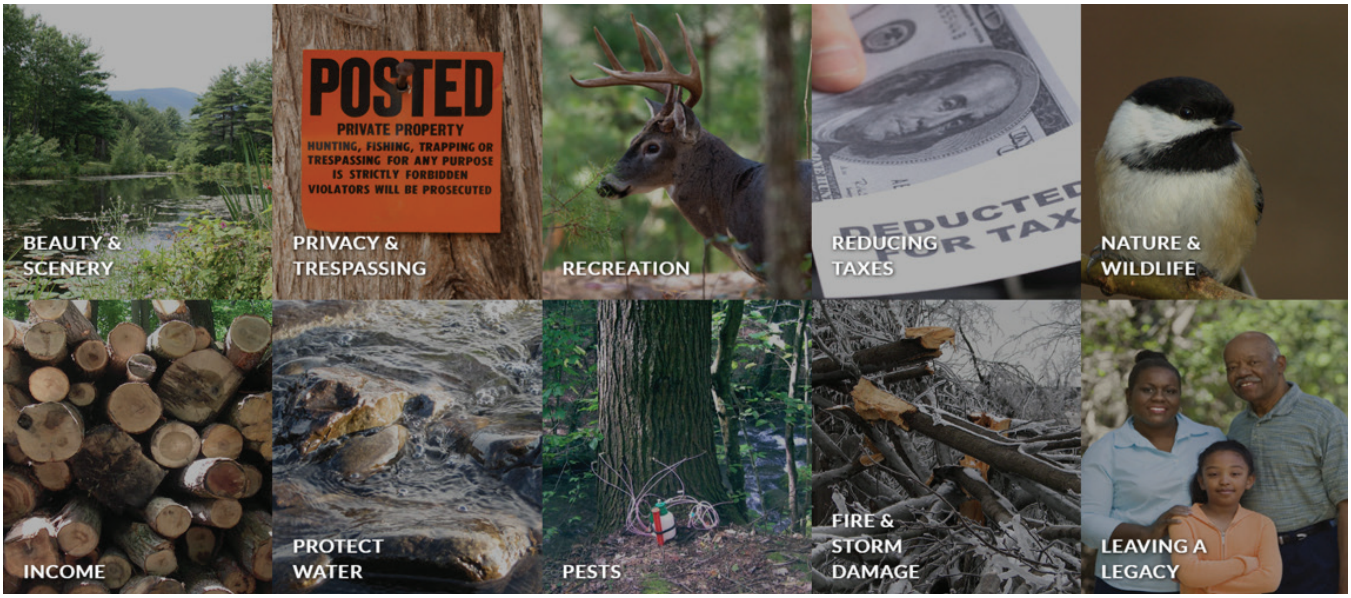
The US Forest Service Eastern Region State and Private Forestry resources:
fs.usda.gov/naspf/

Climate Change Response Framework:

Keep Forests Healthy Scorecard:
forestadaptation.org/learn/resource-finder/ny-checklist

Tree Species Risk Projections:
forestadaptation.org/assess/tree-species-risks

Resource Collections



MyWoodlot

As highlighted above, MyWoodlot offers a wide selection of resources on woodlands. There are activities and blogs from professionals and other landowners that highlight projects and ideas that you can actually implement. The activities broadly include beauty and scenery, privacy and trespassing, recreation, reducing taxes, nature and wildlife, income, protecting water, pest, fire and storm damage, and leaving a legacy.

Create your MyWoodlot profile for free to save and organize activities and resources that match your goals. Follow the link below to begin exploring all these resources and keep up to date with new activities that are added weekly!

Visit MyWoodlot

ForestConnect

A Cornell University resource to connect woodland users to the knowledge and resource needed to ensure sustainable production and ecological function on private woodlands. The site houses information for woodland stewards, educational resources and offers countless webinars on a wide variety of woodland topics.

Visit ForestConnect

CCE Columbia & Greene

Visit our site to find resources and more information on upcoming events. Our Natural Resoures Team is also ready to support you in all your woodland stewardship goals. Please reach out if you're looking for specific information, have questions about your woods, or need assistance in determing next steps.

Woodland Owner Networks

Women Owning Woods

We are a group of women landowners and natural resource professionals from the Catskills and the Hudson Valley region of New York. We've organized this group of professionals and landowners as a way to foster learning experiences and discussions about forest property. Details about gatherings will be sent out via email in our eNewsletter. To subscribe to that list you can email wow@nycwatershed.org to join.
Follow us on Facebook to stay connected, share your stories, and learn from your peers.

Find WOW on Facebook

Master Forest Owner Volunteers

The Master Forest Owner (MFO) program provides private woodland owners of New York State with the information and encouragement necessary to manage their forest holdings wisely. Since its inception in 1991, MFOs of Cornell Cooperative Extension have helped over 1,000 landowners. The term "Master" Forest Owner implies education as in "School-Master". Experienced and highly motivated volunteer MFOs are available statewide, ready to assist neighbor woodland owners with the information needed to start managing their woodlands, through free site visits to landowners properties. The training volunteers receive complements their experience as forest owners.

Learn more about the MFO Program

Catskill Forest Association

The Association was formed for the purpose of promoting knowledge and understanding of forest ecology and economics; to promote long-term forest management; to educate the public and enhance the economy of the Catskill region; to demonstrate economically feasible and environmentally sound forest practices: to serve as a source of information about forest management; to serve private landowner rights; and to identify and manage private forest lands dedicated to the demonstration and practices of high standards of forestry.

Learn more about the CFA

New York Forest Owners Association (NYFOA)

The mission of the New York Forest Owners Association (NYFOA) is to promote sustainable forestry practices and stewardship on privately owned woodlands in New York State.

Learn more or join NYFOA

Cornell Cooperative Extension
Columbia and Greene Counties

Agroforestry Resource Center
6055 Route 23
Acra, New York 12405

Postage

Connect

Website: ccecolumbiagreene.org
Email: columbiagreene@cornell.edu
Phone: 518-622-9820

@CCEColumbiaGreene

@ccecgc

Mission

Cornell Cooperative Extension Columbia and Greene Counties puts knowledge to work in pursuit of economic vitality, ecological sustainability, and social well-being. We bring local experience and research-based solutions together, helping Columbia and Greene County families and communities thrive in our rapidly changing world.

CCE Columbia and Greene Counties is a registered 501(c)(3) nonprofit.