The New York Forest Owner

A Publication of The New York Forest Owners Association

September/October 2004



Frost Valley YMCA Model Forest project



Volume 42 Number 5

FOUNDED 1963

THE NEW YORK FOREST OWNERS ASSOCIATION

Volume 42, Number 5

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The New York

A Publication of The New York Forest Owners Association

The New York Forest Owner is a bi-monthly publication of The New York Forest Owners Association, P.O. Box 1055, Penfield, N.Y. 14526. Materials submitted for publication should be sent to: Mary Beth Malmsheimer, Editor, The New York Forest Owner, 134 Lincklaen Street, Cazenovia, New York 13035. Materials may also be e-mailed to mmalmshe@syr.edu. Articles, artwork and photos are invited and if requested, are returned after use. The deadline for submission for the November/December issue is October 1, 2004.

Please address all membership fees and change of address requests to P.O. Box 1055, Penfield, N.Y. 14526. 1-800-836-3566. Cost of family membership/ subscription is \$30.

www.nyfoa.org

Image shows Frost Valley staff member using an educational panel to explain the forest to visitors. For full story on the Frost Valley YMCA Model Forest project see page 14. Photo courtesy of JoAnne Castagna.

From President

Kids!

couple of years ago the NYFOA board recognized that if we are to be successful in our mission we needed to educate and involve more youth in our programs. We have made some good steps in that direction and now it's time to "go to the next level." During the next year we will focus more of our resources, both people and money, on developing the enlightened forest owners of the future.

As I have said before in this column, I am blessed with five wonderful grand-children. They are already learning the beauty, the diversity and the balance of



the woods and all of the great outdoors. Butterflies, snakes, hawks, tulip tree leaves, wood piles, chainsaws, drumlins, poison

ivy, red and black capped raspberries, woodland streams, cray fish, deer flies, multiflora rose, red and gray squirrels, pleated woodpeckers, bonfires, secret laughing places.... What a world of discovery awaits our children and grandchildren! It's up to us, both as individuals and as an organization, to assist and guide that discovery.

One of the most important lessons we can teach is the ongoing dynamic of renewable nature of our woodlands. Too often the people (and organizations) that influence the next generation have a view of nature and forest that is lacking in real hands-on knowledge or experience. One of the ways to help improve this is through a program that NYFOA recently helped to sponsor in the Adirondacks. This program assists secondary school teachers in getting an up close and personal look at the forests, the forest products industry and the academic institutes that support much of the industry. One teacher at a time we can help to "educate" those who educate our children and generations to come. This is just one of many ways we can help

involve our "kids." As a NYFOA member take your children and grandchildren on an organized wood walk or do your own. Offer to host local youth groups on your property and educate them with a tour. Boy and Girl Scouts, Cub Scouts, Brownie, elementary and junior high school classes, YMCA, church groups and many others are fertile grounds to plant our seeds of future forest stewardship. Plant some soon!

*

For the past several years NYFOA has had a not-for-profit 501(c)3 sister organization named New York Woodland Stewards. The two organization system was necessary to attract grants and gifts from some companies and foundations, and it also made possible tax-deductible gifts by individuals who wished to support our mission. Through this arrangement we have raised thousands and thousands of dollars to get out our message of enlightened forest stewardship.

After much debate and consideration the board voted to merge the two organizations into one, which for all intensive purposes would be identified as the current NYFOA — same bylaws, same board of directors, same mission. and have 501(c)3 charitable status. It really is the best of both worlds and will provide a single face to all of our constituencies. The name of the single surviving organization will likely be New York Woodland Stewards. The board, and many interested members have discussed our potential change and after much debate and input this is the likely choice. It appears that we are prohibited from using the old NYFOA name for a new 501(c)3. But maybe more importantly the newer name broadens our scope and more openly displays the most vital part of our goal and that is enlightened stewardship of our forests. I will keep you up to date on our upcoming changes as they develop. In the meantime have a wonderful Fall in your woods! -Geff Yancey

President

NYFOA is a not-forprofit group of NY State landowners promoting stewardship of private forests for the benefit of current and future generations. Through local chapters and statewide activities, NYFOA helps woodland owners to become responsible stewards and interested publics to appreciate the importance of New York's forests.

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ATV Log Cart

Congratulations to Mr. Starr for this great idea of an atv log cart. This could make a lot of small woodlot owners and woodworkers happy. I would caution however that many operators may underestimate the weight of the log and should be extremely careful on slopes. Most usable sawlogs will probably weigh more than the atv and operator combined.

-Steve Miller Cooperative Extension of Oneida County

NYFOA Name Change

I just got through reading the recent Executive Director's update concerning the Board of Directors decision to change the name of the New York Forest Owners Association. I feel that the proposed name change should be reconsidered. I can accept the need to remove the word "association" but why make a complete name change? Why not just change to "New York Forest Owners, Inc"? This will maintain a name that has been used for over 40 years and has resulted in state wide name recognition. Also, what is the cost of a complete name change? All the banners, new brochures, etc will be unusable and significant time will be needed to change newsletters, the Forest Owner magazine and various websites. Also, although "New York Woodlands Stewards" may be

"politically correct" and give people a "warm and fuzzy" feeling, I don't think it accurately portrays or reflects the membership. I think the common denominater is that we are all "forest owners." Woodland steward is a rather nebulous term which has different meanings to different individuals, and quite frankly, is misunderstood by many people.

Finally, I feel this is an issue that should be put out as a referendum to the members. Let the members decide what the name of the organization should be. It would be quite easy to put a ballot in the next *Forest Owner* that members could use to vote.

-John Hastings



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HOW TO: Maintain Forest Boundary Lines

SHAWN BAKER

he exact location of property bound-**L** aries can be a difficult and at times contentious problem. Just look at the arguments that have arisen over the Mason-Dixon line. Hopefully, your property won't require quite that much of a hassle, but it is certainly important that you establish the location of your boundary lines to ensure that any potential disputes are cleared up before they become problematic. There are many reasons to mark your property lines, but perhaps two of the best are to prevent others from accidentally trespassing on your property and possibly cutting your trees and to prevent you from accidentally trespassing on your neighbors' property.

Getting Started

Hopefully, when you bought your property, the lines had been clearly delineated by a licensed surveyor. If your lines were surveyed at some point, there should be some evidence of this in the woods. To mark your boundaries, all you have to do is track down this evidence. If they had not and still have not been located, you can attempt to locate your boundaries yourself. This requires a fair bit of work and some caution to make sure you don't permanently mark the boundaries in the wrong location. You could be held liable for any mistakes you make, so be very careful if you elect to locate them yourself.

Your first step is to locate a legal description of your property that describes the distances and bearings (compass directions) of each of your property boundaries. These data are usually associated with the current or perhaps previous deed for your property. Your deed is available at the office of the commissioner of revenue or circuit clerk in the county courthouse; the employees there can help you find it if you don't know how to track it down. In your deed there may be a written description of your property boundaries, a map of those boundaries, or both. Unfortunately, it is more likely that your deed references a previous deed with this information, so you may have to search back a few years (or decades) before you

find it. Once you track down the description—and a map, if possible—you are ready to get started locating your property lines in the woods.

Locating Lines in the Woods

Now that you have a deed, you should also obtain a few other pieces of equipment. A compass, some tree flagging tape, and a 100-ft. or longer fiberglass measuring tape will all be very helpful as you get started. Hopefully, you will be able to find at least one of your property corners along a road or at a well-established boundary with a neighboring property owner. Common corner markers include piles of rocks, iron or steel pipe, wooden stakes, trees with multiple "blazes" (cuts in the tree, often painted), and concrete posts. Unfortunately, on property that has not been surveyed for many decades, references in the deeds to old stumps and bizarre tree species are also common for corner markers. Locating some corners often requires a bit of detective work and a good deal of resolve. Once you have found one of the corner markers, you need to use a compass and measuring tape to measure the distance and direction to the next corner on your deed. For more information on proper use of a compass, contact your county extension agent. For an excellent discussion online, check out www.learnorienteering.org.

Once you've measured out the proper distance from your first corner, you probably won't be at another corner marker. Begin searching in concentric circles around your location for some indication of another corner marker. When you've located it, you can lay out a temporary boundary line between the two corners using some tree flagging. Now move on to the next corner, and continue working your way around your entire property. At this point, you should contact your neighbors and agree that the locations you've flagged are the actual boundaries. With luck, some or all of your lines will have evidence of previous boundary paint or blazes. After you've reached agreement

with your neighbors about the property lines, you can begin to paint your boundaries with an oil-based paint. Use an axe or machete to remove a section of the bark large enough to allow you to paint a 2" by 8" blaze on trees along your boundary. To get blazes close enough together for the boundary to be visible in the woods, you may need to select trees located just off the actual boundary. Make sure that you paint these trees so that the paint faces the boundary line. For example, trees painted on your side of the line will face your neighbor's property, and trees on your neighbor's side of the line will be painted facing your property. At corners, trees should be painted with three horizontal blazes to indicate that the line is changing direction. These blazes should point toward the corner location. It is important to use oil-based paints to ensure that the mark stays visible for several years, but markings will need to be refreshed on occasion. Plan to refresh the markings every five years or

These tips should help you locate and mark your property lines in the woods, but problems often arise, particularly if the boundaries have not been surveyed and official corner markers haven't been placed. When these problems arise, you should seek professional assistance.

Movement of a property corner is a crime, even when it appears to be incorrectly placed. Leave corrections to licensed professionals when problems arise, and you can ensure that your ownership will be a happy endeavor.

Conversion of measurements commonly found in deeds:

1 chain = 66 feet

1 rod, pole, or perch = 16.5 feet

1 link = 0.66 feet (7.92 inches)

1 acre = 43,560 square feet or 10 sq. chains

This article originally appeared in the July 2004 issue of "The Forestry Source" a publication of SAF. It is reprinted with their permission. Baker is editor of the Virginia Forest Landowner Update. This article, first appeared in the Spring 2004 (Vol. 18, No. 2) issue of the Virginia Forest Landowner Update.

Ask Professional

Landowner questions are addressed by foresters and other natural resources professionals. Landowners should be careful when interpreting answers and applying this general advice to their property because landowner objectives and property conditions will affect specific management options. When in doubt check with your regional DEC office or other service providers. Landowners are also encouraged to be active participants in Cornell Cooperative Extension and NYFOA programs to gain additional, often site-specific, answers to questions. To submit a question, email to Peter Smallidge at pjs23@cornell.edu with an explicit mention of "Ask a Professional." Additional reading on various topics is available at www.dnr.cornell.edu/ext/forestrypage

QUESTION:

What has happened to the price of white ash? Should I hold off harvesting mature ash in hope that the price will improve?

Answer:

Anytime there is a question regarding markets, a quick couple of questions do not beget quick answers. There are number of variables to consider such as: inventory levels (log and product), value of the dollar (i.e. export potential), consumer preferences (grain, color and price). All of these create the supply and demand of logs and end product that we are so familiar with (and frustrated by).

Toss into the mix the fact that the raw materials to manufacture the product is a natural resource owned by a million different private landowners with a million different goals and ideas. Spice things up with the fact that the natural resource needs to be managed, and extracted when the weather is cooperating.

So let's get down to business by

laying some groundwork: what are the characteristics of the wood and the forest it is growing in; what are it's uses in the market; a little history and finally, we can put it all together.

White Ash (Fraxinus Americana) Characteristics

Ash is a common species with its range covering all states east, and a

few west, of the Mississippi River. Ash is a shade intolerant species. Preferring to seed in old fields or laying in wait to take advantage of openings created by disturbances (such as wind storms or timber harvesting). Ash grows best on moderate well-drained soils, on a variety of topographic situations and in association with most northern hardwood species.

White ash is a desirable species for lumber (furniture), tool handles and baseball bats. Due to its strong terminal bud and natural pruning ability ash is a very straight-grained wood, which makes it a very desirable species for the above uses.

Once manufactured, White ash is an open grained wood very similar to red oak in appearance. The wood, when



White ash bark has interlacing ridges and furrows and a corky texture. The tree is common throughout NY and the Northeast, often associated with sugar and red maple, basswood, cherry, beech, and red oak.

dried, is very shock resistant and light. In commercial circles Ash is referred to as a "white wood," meaning the sapwood (which is bright white in color) is the desirable product. The heartwood is a brownish color and is acceptable for some markets, however, is not as valuable. The heart size varies widely, depending on age, site, stocking, ground moisture and genetics.

Market Value/Uses

Ash lumber is of high quality; It's early pruning of branches creates fewer knots and allows the production of more "clear" wood. Ash is popular for chair parts as well. Being flexible allows bending for chair backs and the straight grain is conducive to the manufacture of chair legs. A lot of furniture made from ash is used as a substitute for Red Oak. Their grains are very similar, but colors are different. Through staining, ash can be made to look like red oak (only an experienced lumberman can tell the difference). For this reason ash has generally mirrored (but not equaled) the pricing of red oak. As Red Oak goes, so goes Ash. When Red Oak pricing gets too high, manufacturers often look to Ash as a substitute to keep costs down.

The straight grain is also beneficial for the splitting of bolts for baseball bats and the spinning of handles. In the use of garden tool handles, long handles can be easily obtained and they bend but don't break. They also smooth over time with use. Ash is second only to hickory for handle production.

Historic Perspective

For a period, during the mid to late 1980's, the Japanese were very fond of white ash for furniture and interior trims of new construction. Whereas this market is still available, it has been significantly reduced due to the poor Japanese economy over the past decade or more. At the time of this "boom," White Ash equaled Red Oak in pricing for the only time any



A stack of ash wood that remains following removal of cores for baseball bats.

lumbermen I interviewed could remember. Currently, Red Oak is in strong demand due to a strong housing market (and subsequent cabinet and furniture sales). For the first time in a long time white ash is on somewhat of a resurgence.

Forest Management 101

Based on the information I have laid out, part two of the question should be answered by your forester. In the development of your management plan, activities are planned based on predicted levels of growth and stocking. Delay in implementing the Plan could affect your forest as a whole. Depending on the percentage of the overall species composition making up your forestland, it could be argued that holding off for a year or two will not negatively impact your overall goals. However, markets work slowly and are somewhat unpredictable. Planning your forest management activities around a "perceived" market can be occasionally rewarding, but more often frustrating. Another aspect to this question is size. As it turns out, Ash has a tendency to increase the ratio of heartwood to sapwood, as the tree gets older. To the best of my knowledge I have not seen a published

report of this phenomenon. But ask any forester and they should tell you, that as ash approaches 20"+; the heartwood expands (depending on site) at an increasing rate. Therefore, if your trees are approaching maturity (or over mature) the increase in dollars per board foot of your stumpage due to an improved market, may be offset by decreased dollars per board foot, based on percentage of whitewood. In the end I would recommend you stick with your management plan and harvest based on stocking and regeneration versus trying to guess at the when to catch every last dollar.

Good luck and happy managing.

Tom Gerow, CF is Head of Procurement for Wagner Lumber Company of Owego, NY and Wagner Hardwoods, LLC of Cayuta, NY. The Wagner Companies manufacture 35 million board feet of hardwood lumber annually between their two facilities, a majority of that being furniture grade. Their lumber is shipped all over the world, but the resource is found locally from private landowners and timber harvesters throughout New York and northern Pennsylvania.

Forest Owner Response to Spring and Summer Storms

PETER J. SMALLIDGE AND DOUGLAS C. ALLEN

isturbances in the forest occur naturally and often quite frequently. Small disturbances (like a single branch or tree falling) are fairly common. Large scale disturbances, though less common, do occur. Unlike the western United States where fires create large landscape-scale disturbances, the eastern United States is more likely to have large areas damaged as a result of storms. In New York and the eastern US, wind, ice, or hail storms that affect county or multicounty areas happen every few years. These storms may impact how a forest owner uses and benefits from their property.

Regardless of the type of storm, several important messages apply. Because foliage is present in the spring and summer, the damage can have a more significant effect on forest health than a winter storm. This occurs primarily because trees are dormant during winter. We reviewed winter ice storms previously (Allen, Smallidge, & Staats, 1998). Winter damage typically only affects the above ground portions of the tree. The root reserves remain intact and provide energy for the tree when it begins the recovery process in spring. Management guidelines to address a spring or summer storm are similar to winter storms, but require greater attention.

Three key considerations apply to any recovery effort following storm damage. The simple messages of safety, deliberate and non-hasty action, and use of trained professionals will protect the interests of forest owner.

• First, be safe. Wind, hail, and ice storms can break branches that may not fall for weeks or months. "Widow-makers" or "hangers", even small ones, can cause significant personal

injury even when the object falls a relatively short distance.

- Second, do not rush management decisions. Eastern forests tree species have adapted to these types of storms. Healthy trees can recover from significant damage.
- Third, forest owners should use competent foresters to help integrate their ownership objectives with storm damage conditions and local market opportunities. Similarly, use trained loggers with appropriate harvesting equipment.

Forest owners should consider several points to understand how to address a spring or summer storm. We present these considerations as background principles and management guidelines.

Background Principles

Owners should consider their management objectives before taking

any action. At first glance, damage may look ominous, but broken branches and downed leaves may have minimal impact when viewed in the context of why you own your land. Do not rush into a decision. All decisions should be made in consultation with a competent forester who can view the damage in person and appropriately integrate actions with objectives and opportunities.

Safety in the woods should be the primary concern. Wind may have broken some branches which have not yet fallen. Hard hats should always be worn, especially in storm damaged woods.

The ability of a tree to survive depends on its condition, especially root vigor, at the time the storm occurs. Unfortunately spring and early summer are the worst time of year to strip foliage and injure branch tips because the roots have just pumped



Some storm damage, like this early June 2004 hail storm in Washington County, NY, can have localized effects. Note the lack of foliage in the center of the picture. Refoliation started by late June.



Wind can damage large trees and leave debris hanging in the canopy or on the forest floor.

their reserves into fresh foliage. Trees adjacent to recent skid or tractor trails likely will suffer due to loss of roots from road building. Hardwood trees with healthy roots may refoliate the same summer of the storm. If trees do not refoliate within a few weeks of a spring or early summer storm they likely will not recover. Generally forest owners can be optimistic about hardwood refoliation, however, few conifers ever refoliate damaged portions of their crown.

Management Guidelines

- 1. Work with a forester to assess the actual extent and magnitude of damage. The damage may be more or less dramatic than it at first appears. Compare the level and type of damage to your goals and the work schedule defined in your forest stewardship plan. Gather educational resources about forest health and forest response to the specific disturbance you have experienced. If necessary, discuss and plan creative recovery options that will best facilitate your goals.
- 2. Salvage harvesting may help to recover some financial potential and should improve access if the harvest is

appropriately administered by your forester. However, there is no immediate need to salvage harvest, especially in hardwood stands. Large areas of severely damaged conifers may attract bark beetles and wood borers, but you have a few weeks at least before you need take any actions. The timing of salvage activities is not as critical in late summer and early fall. Decay in hardwoods takes a relatively long time to establish especially when wounds are small and restricted to outer branches. Decay expansion in hardwoods is about 12-18" in the first year and progresses more slowly each year thereafter as the decay organisms penetrate into tissue with less oxygen. Fungal infections that enter via branch tip damage take more than a decade to reach the merchantable butt log.

3. If financial recovery is not a concern, there are several reasons why it maybe unnecessary or inadvisable to undertake a salvage harvest. Fire risk is very low in most of the Northeast, especially following storms in the summer and fall. Salvage logging will not significantly reduce the likelihood of a forest fire in the year of the storm and fire risk will likely be back to

normal by the next year. Even though damaged trees will develop fungal and bacterial infections, these will not likely spread into neighboring trees. Thus, a salvage harvest will not necessarily improve forest health. Finally, wildlife won't be impeded by the branch and stem debris except in extreme cases. In fact, the resulting "mess" will provide cover for wildlife and new sources of food.

4. Trees that are partially or wholly knocked over will not recover and merchantable portions can be salvaged if and when a salvage harvest occurs. Avoid damage to roots of trees in the residual (surviving) stand because root damage predisposes a tree to more significant risk in the next storm. The majority of roots are within the drip line of the tree, but some important fine roots extend beyond the drip line. Minimize the number of skid trails installed and keep them as far as possible from desired residual trees.

continued on page 10

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Just because you can sell some salvageable trees does not mean you should. The damage you might do to future crop trees may be more than the value that is salvaged.

- 5. There is no ecological or pathological advantage to cleaning up the debris. The main advantages are aesthetic and access. However, if cherry branch were stripped, that fresh but torn foliage is toxic to livestock while it is in the process of wilting.
- 6. Any harvesting by non-family members should be done under a contract that protects the owner from liability. Wind blown debris is often twisted and under extreme tension. Only experienced operators should work in storm damaged areas. Recreational firewood cutters especially should avoid debris or slash that appears to be under tension. Forest owners would benefit by not cutting firewood for at least a year. During this time lag the firewood will season and some stems under tension will become more stable. Sale contracts will likely need to specify a sale price per unit volume harvested. The activity of log trucks should be noted for date and approximate volume, and ideally scaled on the

NYFOA Scholarship Fund

As of August 1, 2004, the NYFOA Endowed Scholarship Fund that is administered by the SUNY ESF College Foundation, Inc. has a fund balance of \$24,358.79.





Wind storm debris can be twisted and under tension. Only let experienced cutters with appropriate equipment work in storm damaged woods.

landing by the owner's forester. Mill slips should be forwarded to the owner. Under salvage conditions it is very difficult to estimate volume and value in the woods before the harvest.

Storm damage is an unfortunate but likely event in the tenure of many forest owners. Use common sense, prioritize safety, take your time, and work with competent professionals.

References

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guidelines for forest owners following the January ice storm. Cornell Cooperative Extension News Service. February 1998. (appeared in March/ April issue of NYFOA's Forest Owner)

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The Forest Nobody Knows

REBECCA G. NISLEY

We think we know our forests. But in Pennsylvania and many other parts of the Northeast, deer overabundance has changed our forests so much and for so long that we truly don't know how our forests would look without too many deer. I walk inside a fence that's been up for three or four years in the springtime, and I am amazed at the wildflowers and seedlings I find.

— Dr. Susan L. Stout, Forest Service research silviculturist (2003)

Deer have the capability of changing forest ecology, by changing the direction of forest vegetation development. It doesn't matter what forest values you want to preserve or enhance—whether deer hunting, animal rights, timber, recreation, or ecological integrity—deer are having dramatic, negative effects on *all* the values everyone holds dear.

— Dr. Stephen B. Horsley, Forest Service plant physiologist (2003)

The current density is producing devastating and long-term effect on forests. Foraging deer "vacuum up" the seedlings of highly preferred species, reducing plant diversity and in the extreme, creating near mono-cultures. It could take decades or even hundreds of years to restore forests.

— Dr. Stephen B. Horsley, Forest Service plant physiologist (2003)

... I have lived to see state after state extirpate its wolves. I have watched the face of many a newly wolfless mountain, ... and every edible bush and seedling browsed ... I have seen every edible tree defoliated... I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer.

— Aldo Leopold, an important advocate of nature and conservation and the "father of game management" came to the Allegheny Plateau to observe the deer herds in the 1930s; he wrote these words in his essay "Thinking like a mountain," page 130 of A Sand County Almanac (1948).

Since game management boiled down to its essentials is the control of game population density, it becomes apparent that an understanding of density limits is essential to successful practice.

- Aldo Leopold is quoted here on www.bowsite.com

he non-urban residents of the Northeast, who live in or close to the forests and woodlands, and the urban residents who live within several hours' drive of the mountains and spend recreation time there would be surprised by Dr. Stout's words. We think we know what a forest should look like. But according to her, very few people have ever seen examples of what our forests really could look like. We like to use terms such as "old-growth," "virgin," or "primeval" forest to describe our wilder forests, but most of us truly do not know what such forests were.

Most of the forests we see now are not old-growth (that is, never cut). The few scattered remnants of old-growth forest remaining have all been touched by chestnut blight, Dutch elm disease, butternut canker, and the gypsy moth. The northeastern forests reported by the early European colonists were cleared for agriculture long ago and have grown back at least once and maybe again after timber harvest.

But more than that, the forests of the Northeast have been under assault, not from humans or insects or diseases, but from the ever-increasing herd of deer. The ecological history of the Allegheny Plateau tells the story of the deer and the forests of northwestern Pennsylvania. Deer are ungulates, like cows—they can eat herbaceous plants plus the leaves and twigs of shrubs and tree seedlings and saplings. And eat they do. They are changing our lives and our forests. Our lives? If you are a gardener, or the friend or relative of a gardener, you know of the garden favorites (hosta, roses, daylilies, rhododendrons, etc.) eaten by deer. Farmers relate stories of crops (especially corn) eaten by deer, or cows mistaken

continued on page 12

for a deer during hunting season. Motorists meet deer on the road, and none of the participants come out well (about 40,000 deer are killed annually on the highways of Pennsylvania, for example). Children playing in the backyard can be bitten by a deer tick and develop Lyme disease and/or babesiosis. The newly appearing problem of chronic wasting disease, a spongiform encephalopathy of deer and elk that is related to mad cow disease and Creutzfeld-Jakob disease of humans, is moving eastward and has reached Wisconsin. It begins to sound grim.

The problem is that there are too many deer here in the Northeast. These white-tailed deer are beautiful, graceful, and a natural part of forestedge and clearing ecology. Unfortunately, a combination of historical and ecological occurrences has allowed deer populations in the Northeast to rise to levels that could result in more than just the human-centered problems listed above. Dr. Stephen Horsley, a scientist with the USDA Forest Service's Northeastern Research Station puts it thusly: "in the long term, deer have the capability of changing forest ecology, by changing the direction of forest vegetation development." Such changes could result not only in damage to the forest's ecological integrity but also to the humans who depend on it economically—for water quality, lumber, hunting, birding, etc.—and for recreation of all kinds.

In many parts of Pennsylvania, they have already changed the forests. Drs. Horsley and Stout work in a Forest Service laboratory in northwestern Pennsylvania, in the heart of the "deer belt"—the vast Allegheny Plateau, the north central and western part of the commonwealth that has little agriculture and an economy that depends heavily on deer hunting and logging. What they and other NE scientists have found is that, at the deer population levels occurring there, deer are producing long-term effects on both the amount and the kinds of vegetation



High deer populations in some areas result in stunted and bushy ash that may not regain a growth form desired for timber. Photograph courtesty of Peter Smallidge.

growing in the forests. In many places there is very little undergrowth left except plants that deer don't like. Wild flowers and the middle level of shrubs such as viburnums and small trees, which are home to many native songbirds, are no longer present and fewer of these birds are to be seen. There are no saplings of sugar maple, white ash, and pin cherry. (In Wisconsin, cedars, hemlocks, and yews are scarce and there are no seedlings.) In many places on the Allegheny Plateau, vast swaths of hay-scented and New York fern and striped maple dominate in so-called fern parks; in other places, black cherry dominates. Many areas that were clearcut in the 1960s did not regenerate into a forest as they did in years before but rather became grassy meadows—unless they were fenced to exclude deer, in which case a forest grew again.

We do know something of what northeastern forests could look like from exclusion studies, where deer were fenced out, and from natural areas were deer are excluded. Botanist Tom Rooney, now at the University of Wisconsin, discovered small natural "gardens" on top of large boulders in the Allegheny National Forest. When he examined these

gardens, he found that the plants growing on boulders tall enough to be out of reach of the deer grew three times more densely than those on the lower boulders, which were browsed by deer. Many of the threatened and endangered plants of the Northeast, including such beauties as lilies, trilliums, and orchids, are browsed by deer and are much reduced in size and abundance in many of their habitats.

Dealing with and even resolving the problem of too many deer is complicated and highly polarized. Stakeholders include hunters, animals rights groups, silviculturists, foresters, farmers, naturalists, wild flower advocates, gardeners, and park managers. Policymakers and land managers can make better decisions and members of the public can receive more accurate information if they have scientific studies of how deer affect ecosystems over time. Most scientific studies have used fencing to exclude deer from study plots. In such studies, however, the number of deer outside the plots is uncontrolled and their eating habits can be affected by outside factors.

Scientists at the USDA Forest Service's Northeastern Research Station's laboratory in Irvine, Pennsylvania, recently published the results of research that actually studied the effects of several controlled population densities of deer on various forest treatments. The researchers at this location have a long-term commitment to studying the effects of deer on forests. The Forest Service group's first publication on deer, in 1965, was based on research that was begun in 1942 and still continues today.

The most recent paper, published by Dr. Horsley, Dr. Susan Stout and Dr. David S. deCalesta, now retired, in the peer-reviewed journal *Ecological* Applications (2003: 13(1): 98-118), is carefully designed to test the effects of various levels of deer populations on the forest. The 160-acre plots were fenced to exclude local deer populations, then populated with deer at four specific levels: 10, 20, 38, and 64 per square mile. Each plot had 10% clearcut, 30% thinned, and 60% untreated forest. The scientists measured and analyzed the vegetation and found that deer affected the abundance and density of all plants; the horizontal and vertical structure of the forest; species abundance of wild flowers, shrubs, and birds; species composition and biodiversity of the forest understory and resilient versus deer-preferred foods. The deer densities studied represent the range that has been found in these forests from pre-European settlement days in the early to mid-1800s through the peak densities of the 1960s and 70s in the region. The average density of deer per forested square mile in Pennsylvania was 35 in 2001, according to the Pennsylvania Game Commission, and in some forested areas deer population can be much higher.

Four times during the study, which was conducted in the forests of northwestern Pennsylvania, the research team measured vegetation, including seedlings and herbaceous plants. Study results show that:

• The number of woody species decreased as deer density increased. Species preferred by deer were selectively removed by browsing.

- The percentage of the forest floor covered by ferns, grasses, and sedges species that interfere with the establishment and growth of tree regeneration increased with increasing deer density.
- The percentage of the forest floor covered by blackberry species, highly preferred as food by deer, decreased with increasing deer density.
- The height growth of many species was reduced in all harvest treatments.

At the highest deer density, 64 deer per square mile, black cherry dominated other woody species in both harvested and uncut study areas and this dominance increased over time. Fern cover was high. At 38 deer per square mile, black and yellow birch joined black cherry as important woody species in the harvested areas, and fern cover was still at high levels. At 20 and 10 deer per square mile, seedlings of most of the woody species found in the study areas persisted, and blackberries survived to combat the spread of fern.

Dr. Horsley pointed to the significance of the study: "The negative impacts of high deer densities are huge. Young plants of many preferred species are not surviving past the seedling stage, putting forests on the brink of tremendous loss of biological

diversity. This would affect the future species composition of the forest, and the forest would then, in turn, carry fewer, smaller, less healthy deer. Without intervention, this situation would not be good for the forest, the deer, the other animals and plants."

Dr. Stout added "These results should inform policy debates and decisions about remedial efforts throughout the eastern hardwood region. Whether an agency or landowner manages land for biological diversity, commercial production of timber or non-timber forest products, or recreation, deer affect the land manager's ability to achieve management objectives."

This article originally appeared in "Forest Science Review," a publication of the USDA Forest Service, Northeastern Research Station and was reprinted with their permission. Rebecca G. Nisley works for the USDA Forest Service, Communications Staff, Avon, CT.



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Path Leads Way to Pollution Protection of Water Supply

JoAnne Castagna, Ed.D.

Deep in the Catskill Mountains a new forest road has been formed. Along its path travelers are guided by signs that don't say stop or go, but the positives and negatives various forest management methods can have on the region that supplies drinking water to New York City residents and businesses.

This road is actually a 2-mile walking path that meanders through the Frost Valley YMCA Model Forest project, being funded by the Corps' New York District. The model forest is a "living classroom" that educates the public about forestry methods that yield economic benefits to foresters while protecting the region's water.

The 400-acre model forest is part of the Frost Valley YMCA, located in Claryville, N.Y.

The "Y" sits on 6,000 acres of high peak land in the Catskill Mountains and on top of the Neversink River Watershed that is part of the 2,000-square-mile New York City Watershed System that supplies half of New York State's population their drinking water.

"This water is potentially vulnerable to non-point source pollution caused by foresting methods and over 75% of the watershed is forested," said Douglas Leite, Project Manager, of the Corps' New York District.

"Non-point source pollution is contamination that is not directly placed in water. For example, in areas where timber is being harvested, rain can wash erodable sediments that contain nutrients, such as phosphorus, from the forest roads into mountain streams and eventually reservoirs," said Liete. "Algae can feed off these nutrients and deplete

the water's oxygen, adversely affecting the quality of the water. There are improved techniques for timber harvesting that can reduce the chance of non-point source pollution."

These improved techniques can be learned through public education. In 1998, under the Corps' New York City Watershed Environmental Assistance Program, the Frost Valley YMCA was chosen to be one of several watershed locations to host a model forest as a living classroom to serve two purposes - to educate forestland owners about how to implement voluntary practices to prevent non-point source pollution during timber harvests, and to keep forests working through management and sustainable harvesting so that people can afford to pay their taxes and hold large tracks of land. Large tracts of contiguous forestland prevent forest fragmentation, parcelization, sprawl and development.

The Frost Valley YMCA Model Forest sits on over 400-acres of the land owned and managed by the YMCA and is visited yearly by 31,000 landowners, foresters, timber harvesters, students, families and YMCA visitors who come to learn techniques that will help them to responsibly manage forested lands without degrading the habitat or water quality.

The model forest officially opened in the fall of 2003 and is being funded by the Corps' New York District.

The project continues to be developed by a team comprised of specialists from various partnering agencies including the manager of the project, the Watershed Agricultural Council, Frost Valley YMCA, State University of New York College of Environmen-



Students inside one of several educational kiosks that can be visited along the forest road.

tal Science and Forestry, U.S. Department of Agriculture Forest Service, U.S. Geological Survey, New York City Department of Environmental Protection, New York State Department of Environmental Conservation, Catskill Forest Association, and the Cornell Cooperative Extension.

Professionally guided tours for visitors are conducted along a 2-mile road through the forest where educational signs and panels are posted as well as kiosks. Visitors can also observe demonstrations while they are taken through a series of 16 experimental treatment blocks of land approximately 19 acres each, that are treated with various silvicultural prescriptions and sustainable forest management techniques that yield economic benefits.

In addition the land is being used to demonstrate best management practices and perform ecosystem research projects.

Best management practices on display at the model forest instruct visitors on how they can protect the watershed's water while foresting the watershed. This can be done through the use of temporary skidder bridges, water bars and culverts, said Kevin Brazill, Watershed Forestry Program Manager, Watershed Agricultural Council. He continued, "Three temporary skidder bridges have been installed in the forest so far and they are placed over streams to protect the water from pollution from vehicles. We also show water bars that are sculpted landscape on forest roads created to divert water away from the road so pollution from the road doesn't enter the water. Finally, we have culverts that are metal or plastic piping installed beneath a road to channel stream waters quickly and safely off the road into filtered areas." In addition, visitors learn why road layout is important during timber harvest and about heavy equipment used during timber harvest and the



Students walking through the Frost Valley YMCA Model Forest on its opening day in fall 2003. They are freshman and sophomore science students from the New York City School of the Future in Manhattan.

role a forester, logger, and landowner plays in decision-making.

Visitors are not only shown how to protect the environment but also how to have more profitable forestry through what is termed silvicultural prescriptions or the "art and science of managing a forest for economic benefit, aesthetic values, wildlife enhancement, water quality protection or any other landowner-driven objective," said Brazill.

Several on-going silvicultural prescriptions are being practiced in the model forest to see what effect

they have on the forest including — crop tree release and patch cut. "Crop tree release involves the removal of all stems in a given area with the exception of a few species with desirable phenotypes and genotypes, `crop trees,' said Brazill. He continued, "These crop trees drop their seed on the ground and they take root and grow into a new, healthy forest consisting of the desired species. The saplings are thinned out every 5-10 years with the best trees selected for growth. Over time, as the small trees

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Caterpillars of Some Common Giant Silkworms and Royal Moths

Douglas C. Allen

he Family Saturniidae (sat-urr-▲ knee-i-dee) contains the largest moths in the northeast and some of the largest lepidoptera in the world. Many forest owners have been treated to the sight of a luna moth or cecropia moth that was attracted to a light the previous night and then discovered the next morning resting on the side of a building or window frame. These two examples are not common insects, and their populations are very sparse compared to those of most other forest lepidoptera. Adults of some species in this group, though not nearly as spectacular as luna or cecropia moths, however, can become abundant enough to defoliate forested areas and shade trees.

One member of the family, the silkworm, is arguably the most economically important insect in the world. Silkworm rearing and the

recovery of silk from the insect's cocoon comprise an industry known as sericulture. This enterprise is dominated today by China and India, but several smaller countries in southeast Asia also raise these caterpillars for silk production.

The caterpillar (larval) stages of saturniids (sat-urr-knee-ids) that forest owners are most likely to encounter in the northeastern United States are large and brightly colored. Many are "armed" with spectacular looking spines and tubercles (small, knob-like or rounded protuberances). Larvae of most species feed on a wide variety of broadleaved plants, though some are relatively specific and will thrive only on a few closely related hosts.

One of the most spectacular caterpillars in this group is that of the **regal moth**. It appears in the northeast infrequently but is relatively

common in southern states. Regal moth caterpillars feed on hickory, walnut, butternut, and associated hardwoods. For obvious reasons, the larva is nicknamed the hickory horned devil (Fig. 1). The latter is basically greenish with bluish-green markings on the top and patches that are a mixture of white, black and gray on the sides of each segment. There is a cluster of four pronounced and curved, orange and black spines behind the head accompanied by four shorter black spines. Each abdominal segment has a transverse series of short, black spines on the back. When full grown in late summer or early fall, this caterpillar is 4 inches to 5 inches long when extended or crawling and is as big around as your thumb - a devilish looking creature indeed!

The **luna moth** larva is an attractive bright green with a yellow stripe



Figure 1. A hickory horned devil – the larval stage of the regal or royal walnut moth.

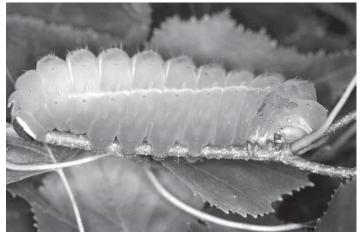


Figure 2. The luna moth caterpillar. Its head is on the right.

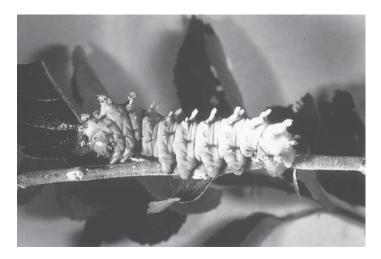


Figure 3. The cecropia moth caterpillar. The head is to the left.

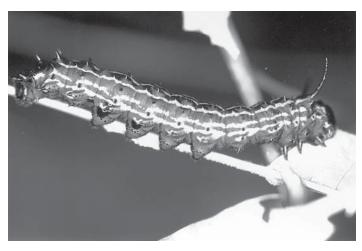


Figure 4. The orangestriped oakworm. The front of the insect is on the right.

on each side. Each body segment is ornamented with a series of red spots encircled in yellow and smaller yellow dots circled in red (Fig. 2). Many of the inter-segmental areas (locations where one body segment joins another) also are bright yellow. The fully grown caterpillar is 4 inches long and, again, about the diameter of one's thumb. Luna moths are at home in eastern hardwood stands where their larvae feed on beech, birch, oak, walnut, butternut, and several other species.

The **cecropia moth** adult is one of the most beautiful insects in the

eastern United States. Larvae feed on a wide variety of hardwoods, including maple, ash, cherry, birch, basswood, and apple. When feeding is completed, the caterpillar (Fig. 3) will approach 4 inches in length and is very thick. The body is pea green with black-spotted, orange protuberances behind the head, yellow ones on top of the abdomen and pale blue ones on the sides.

Periodically, the **orangestriped oakworm** (Fig. 4) is responsible for significant defoliation in oak stands throughout the northeast. Though considerably smaller than the species

mentioned above, this caterpillar is nonetheless distinctly marked and easy to recognize. Mature larvae are approximately 1.5 inches long and have a black body with eight longitudinal, orange to yellow stripes along the back and sides. A pair of conspicuous, black and blunt re-curved spines occurs behind the black head. Each body segment thereafter has several small, black spines.

The first recorded outbreak of oakworm in New York State occurred in 1858 when Asa Fitch, our earliest State Entomologist, reported heavy defoliation of oaks in a cem-

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Figure 5. Rosy maple moths. Dark areas on each front wing are pink and the remainder of the wings and the body are bright yellow. The wingspan of the female (on the right) is approximately 1.5 inches.

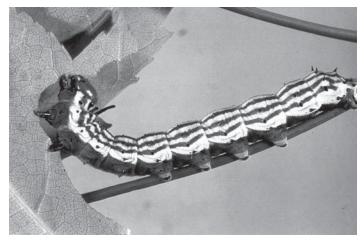


Figure 6. A rosy maple moth larva, called the greenstriped maple worm.

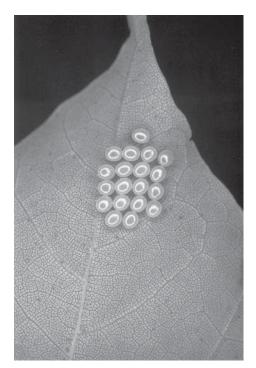


Figure 7. Cluster of rosy maple moth eggs. The widest dimension of each egg is approximately 1/16 of an inch.

etery in Saratoga. Since that time, periodic outbreaks have taken place in a number of counties in eastern New York State and on Long Island. Fitch's successor, Joseph Lintner, noted one occasion in the early 1880s when caterpillars of this species were so abundant the railroad tracks between Albany and Schenectady had to be sanded before the trains could run! At the turn of the last century, a wide scale outbreak in Pennsylvania "made the hillsides look as if scorched by fire."

The most frequently encountered example of a saturniid in northern hardwood stands is the **rosy maple moth** (Fig. 5). Caterpillars (called **greenstriped mapleworms**) are about the same length as oakworm larvae. When fully grown, they have a distinct chestnut colored to cherry red head and a pale to yellow green body with seven dark green, longitudinal stripes. Two prominent, slender, black spines occur immediately behind the head (Fig. 6).

Though mapleworm caterpillars will feed on a variety of hosts, their preferred food is foliage of red and sugar maple. Several widespread outbreaks and a number of local infestations of mapleworm were reported in eastern Canada and the northeastern United States during the 20^{th} century.

Outbreaks of both the oakworm and mapleworm usually last for two to three years and then the insect disappears. In our region, each of these native insects has one generation annually. Eggs are deposited in loosely organized clusters (Fig. 7), and for most of their early lives the larvae are gregarious. As larvae age, the colony tends to break up and by the time larvae are fully grown they are solitary feeders. Pupation takes place beneath litter or one to several inches in the soil where overwintering occurs. Neither species spins a cocoon like most members of the silkworm family. Both are late season feeders, which often helps to minimize their impact on the host.

This is the 76th in the series of articles contributed by Dr. Allen, Professor of Entomology at SUNY-ESF. It is possible to download this collection from the NYS DEC Web page at:http://www.dec.state.ny.us/website/dlf/privland/forprot/health/nyfo/index.html.

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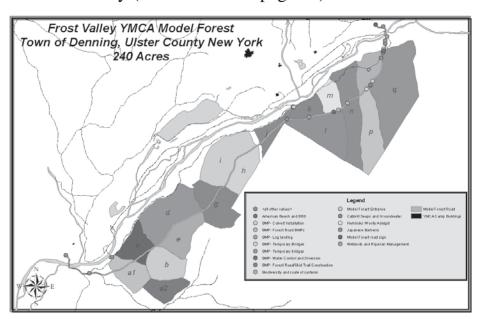
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Path Leads Way (continued from page 15)



Map of the Frost Valley area. Different colors indicate where various best management practices and silvicultural prescriptions are being performed (Please refer to the map's legend).

grow and the original parent trees age, the parent trees are harvested to give the younger trees sunlight, yielding economic benefit to the landowner, while the younger trees grow into merchantable timber."

Patch cut is another prescription being practiced. "Patch cutting involves cutting all trees from a thin, long acreage along the end of a forest," said Brazill. He added, "This vields a variety of benefits to the landowner including increased `forest edge' to attract deer and various songbirds, grouse, or turkey and this creates a new opening in the forest to enhance new growth for desired tree species along the edge of the forest."

In addition, several ecosystem research projects on water quality and timber harvesting are being conducted in the forests. For example, the SUNY College of Environmental Science and Forestry in cooperation with the U.S. Geological Survey have set up a weir in the forest.

It's collecting data on the nitrate levels, pH, 02 levels, temperature, sediment loads, and macroinvertebrate levels—before,

during and after timber is harvested. This provides scientists an idea of the impact harvesting has on water

flowing through the forest.

The creation of the model forest will never really end, said Brazill. "The forest road will be completed by the end of the summer of 2004. additional kiosks and interpretive signs are being created and posted and the data collection from the silvicultural prescriptions will continue for several years."

"The partnering agencies on this project are truly great to work with and the end result has been a wonderful place to learn

about forestry and conservation of private land," he added, "Thousands of school children from New York City come to the YMCA annually and we are confident that the model forest will help them to understand the importance of forested ecosystems as they relate to the water coming from their taps."

To learn more about the model forest please visit www.frostvalley.org or www.nycwatershed.org and to schedule a visit for an interpretive hike, landowner conference or selfguided hike, please call the Frost Valley YMCA in advance at 845-985-2291.

Dr. JoAnne Castagna, Ed.D. is a technical writer and editor with the U.S. Army Corps of Engineers, New York District. In this position, she informs the public about the district's civil work projects, including environmental projects and studies. She can be reached at Joanne.castagna@usace.army.mil

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NEWS & NOTES

Congratulations to everyone who helped us achieve this giant step forward!!

Today at the House Committee on Agriculture's hearing on FLEP, Mark Rev Undersecretary, Natural Resources and the Environment. Dept. of Agriculture announced that due to the overwhelming support from the forestry Community for FLEP, the administration has reconsidered its recommendation and will support funding through 2005 for \$15 million. We have come a long way since this time last week when the future existence of FLEP was in doubt. Following questioning from Committee Chairman Bob Goodlate (R - VA), Rey said that in addition to the \$15 million for FY 2005, the Department would work with the Committee to find ways to get FLEP back on track for full restoration of the funding through 2007.

During this morning's hearing Goodlatte maintained that he was encouraged by the Administration's new position when he said, "It is crucial that the Administration work with us to fully implement this \$100 million mandatory program. The Secretary is obligated to spend the full \$100 million made available in the Farm Bill. We are badly off track in implementing this mandate. I am pleased to hear that the Administration has made clear their intentions with regard to FLEP. The 2002 Farm Bill took important steps to streamline and modernize forest landowner assistance programs, but it also reaffirmed the partnership between the Forest Service and the State Foresters as the delivery mechanism for technical and

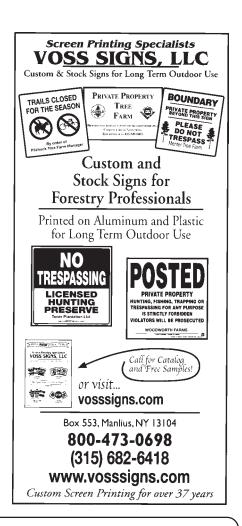
financial assistance. Full implementation of FLEP is critical to the priorities set forth during the Farm Bill."

ATFS was represented by Tree Farmer and Virginia Tree Farm Committee Chairman, John Burke. In his testimony Burke said, "We were dismayed to learn that the President's budget eliminated FLEP. Despite what others may tell you, it is not a redundant program. Virtually all other programs are designed primarily for agricultural operators - either by statute [the Conservation Security Program, for example] or through the manner in which they're administered [like EQUIP]. State rating systems for cost-share eligibility can make it very difficult for forest owners who aren't farmers to even be considered for funding. Among family forest owners, though, fewer than 1 in 10 are also farmers or ranchers. For the rest, FLEP was their best shot at gaining access to Federally-funded conservation programs." He and other panel members made it clear, that if there is no cash flow, there is no conservation.

Although the Department of Agriculture has said it would fund FLEP for FY 2005, there is still much work yet ahead of us before we can be assured that the program gets the funding it warrants. We are immediately beginning to work with the Senate so that they may understand the value and public benefits FLEP provides.

Again, thank you to all of you who worked so hard to have your members send letters and faxes to their representatives. This is a big victory for all of you. And an especially grateful thank you to Representative Bob Goodlatte and his staff for their strong support.

-Bob Simpson Director of American Tree Farm System



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http://geocities.com/snowhawke1/snowhawkeforestry.html

Woodlot Calendar

October 15, 2004 (Friday)

Introduction to Forest-based Berry Crops

Berry crops grown in forested conditions can add diversity and interest to a farm or rural woodlot. Although lignonberies, serviceberries, and huckleberries are harvested in very small quantities throughout Europe and North America, they are seldom cultivated.

This new class will introduce the wide range of small-scale berry crops that can be grown in light to moderate shade or managed forest clearings. Marvin Pritts, Peter Smallidge, and Bob Beyfuss will review berry characteristics, canopy management, and soil manipulation. This class includes lunch and a tour of the forest berry research plantings at MacDaniels Nut Grove, a short drive away. Please prepare for outdoor woodland conditions.

This class is hosted by the Cornell Cooperative Extension SCNY Agriculture Team, part of an ongoing introduction to agroforestry opportunities for NY forest owners.

Meet at the Cornell Plantation Building on the Cornell University campus, Ithaca, NY. Please pre-register and get a

map and directions by calling (607) 535-7161; class size limited.

The fee is \$30.00 per person, and includes lunch. Questions: Please contact Jim Ochterski at (607) 535-7161 or jao14@cornell.edu

July 17-19, 2005

2005 New York State Maple Tour scheduled in WNY
The 2005 New York State Maple Tour is scheduled to take place July 17, 18 and 19, 2005 in Western New York. The Batavia Holiday Inn, just off the Thruway Rt. 90 in the city of Batavia will be the host site for the tour. Tour stops will include Maple Sugar Houses in Genesee, Orleans and Wyoming counties. The tour also includes a trade show of maple equipment, supplies and related organizations. Registration materials and detailed tour information will be available in the near future. Plan now to attend in July of 2005. Questions contact Greg Zimpfer at 585 591-1190 or Stephen Childs at 585-786-2251

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Know Your Trees

RED PINE

NORWAY PINE

(Pinus resinosa Solander)

Red pine is a valuable, fast-growing timber tree less generally distributed than eastern white pine. It is found commonly on the sandy soils adjacent to the Adirondacks and frequently on dry benches in west-central New York. The wood is light, medium in texture, closegrained, pale red in color, and is often sold as white-pine lumber. Because of its rapid growth and relative freedom from insects and fungal diseases, it was commonly planted on many of the thousands of acres of idle land in the state. The tree is sensitive, however to poorly drained soils.

Bark-reddish brown in color, with shall, flat ridges separating into thin, flaky scales.

Twigs-coarse, reddish brown in color, roughened at base of year's growth.

Winter buds—rather inconspicuous, with pointed reddish brown scales.

Leaves-needle-like, in clusters of 2, from 3 to 6 inches long, dark green in color, slender, remaining on twigs from three to four years.

Fruit-a cone, 2 inches long, without stem, requiring two years to mature, light brown in color when ripe, staying on the tree into the next season. Cone scales—without spines or prickles. Seeds–2 under each scale, winged, light chestnut brown

in color, 1/8 inch long, ripening in September.

Outstanding features—needles in twos; needles break cleanly when bent; nearly round cone without prickles.

Scotch Pine (*Pinus sylvestris*) from Europe has been planted extensively throughout the state. Its blue-green, twisted flat needles in clusters of twos, tapering cone from 2 to 3 inches long with greenish scales, and the orangebrown bark on upper stem and branches are its main characters. It is used for pulpwood, framing lumber, ties, and Christmas trees.

Information originally appears in "Know Your Trees" by J.A. Cope and Fred E. Winch, Jr. and is distributed through Cornell Cooperative Extension.



Future Forest Consulting, Inc.

DEC Cooperating Forest Consultants Corey Figueiredo and Scott Graham

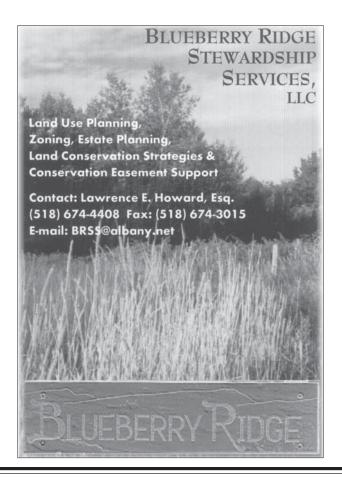
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MAGAZINE DEADLINE

Materials submitted for the November/December issue should be sent to Mary Beth Malmsheimer, Editor, *The New York Forest Owner*, 134 Lincklaen Street, Cazenovia, NY 13035, (315) 655-4110 or via e-mail at mmalmshe @syr.edu Articles, artwork and photos are invited and if requested, are returned after use.

Deadline for material is October 1, 2004.

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Display Ads (per insert) \$7 per column inch

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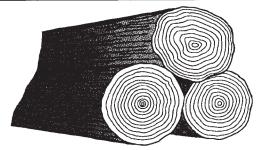
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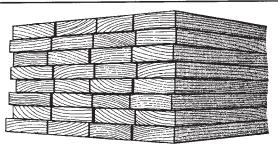


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