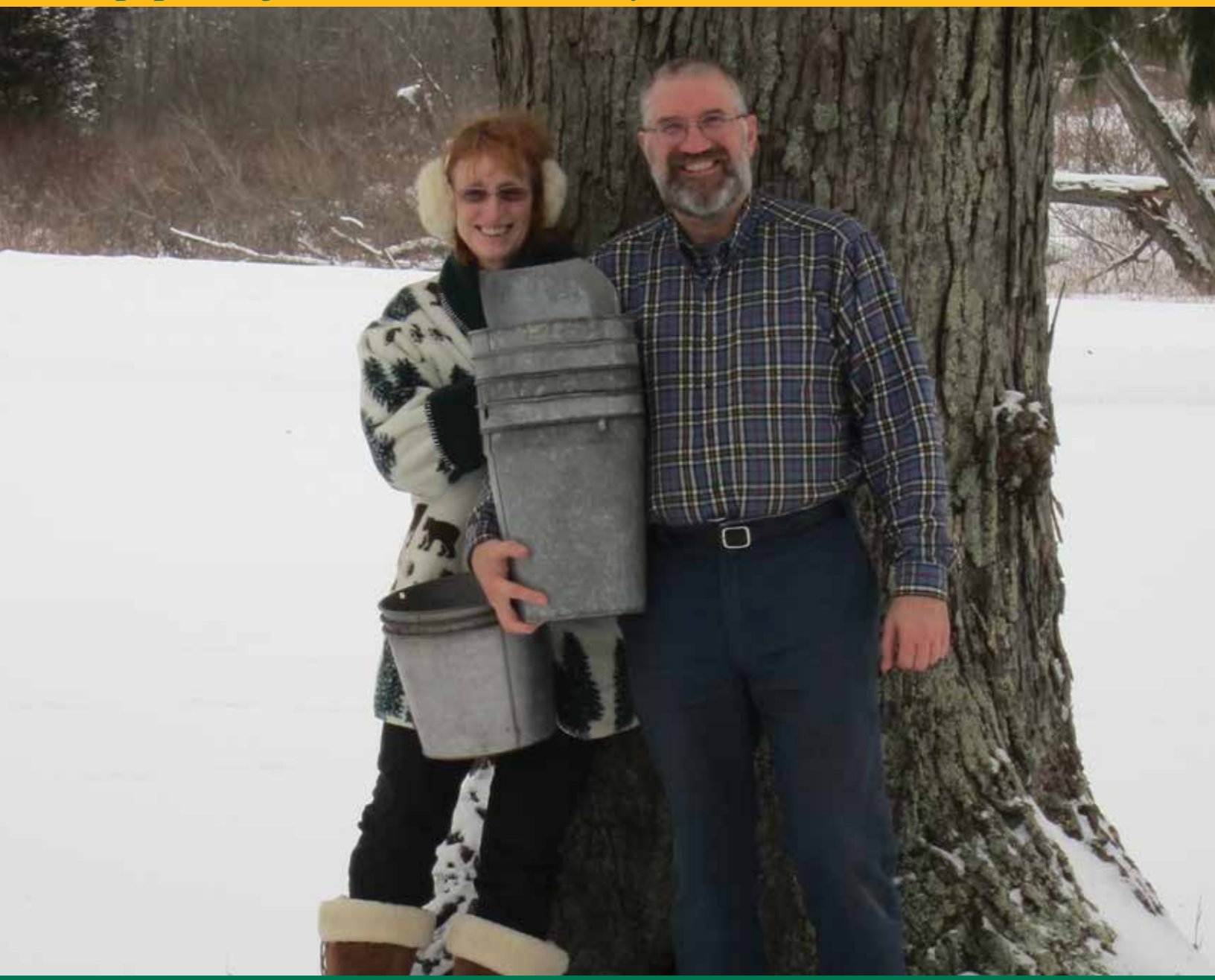
The New York Forest Owner

A Publication of The New York Forest Owners Association

For people caring about New York's trees and forests

July/August 2015



Members Profile: Peg Coleman and Ed Neuhauser

Volume 53 Number 4

NEW YORK FOREST OWNERS ASSOCIATION
People Caring About NY's Trees and Forests

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www.nyfoa.org

In This Issue . . .

The New York
Forest Owner

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Volume 53, Number 4

The New York Forest Owner is a bi-monthly publication of The New York Forest Owners Association, PO Box 541, Lima, NY 14485. 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 September/October issue is August 1, 2015.***

Please address all membership fees and change of address requests to PO Box 541, Lima, NY 14485. 1-800-836-3566. Cost of family membership/subscription is $45.

This publication is printed on Finch Opaque, Smooth, 70 lb. text paper. Located in the beautiful Adirondacks, Finch has long understood that the viability of our business relies on the wise use—and reuse—of resources. Finch papers are made with renewable energy, post-consumer recycled fiber and elemental chlorine-free pulps. In addition, Finch Paper was the first integrated paper mill in the US to received both the Forest Management and Chain of Custody certifications from the Forest Stewardship Council and the Sustainable Forestry Initiative.

www.nyfoa.org

Cover: Peg Coleman and Ed Neuhauser with Ed's Christmas gift of new sap buckets. For member profile see page 21. Photo courtesy of Peg Coleman.

From The President

The NYFOA-sponsored April 25th symposium, "The Future of New York Forests at Risk – Working Toward a Comprehensive Solution," was a huge success. The topics and presenters were outstanding and there was a sellout crowd representing a wide spectrum of organizations and viewpoints. The SUNY College of Environmental Science & Forestry's beautiful Gateway Center was a perfect venue. Many thanks to Jerry Michael who headed the organizing committee, Dr. Dave Newman for hosting and moderating the symposium, and to our cosponsoring organizations — Audubon New York, Catskill Forest Association, Cornell University College of Agriculture & Life Sciences, Empire State Forest Products Association, NYS Department of Environmental Conservation, New York Farm Bureau, NY Society of American Foresters, SUNY College of Environmental Science & Forestry, and The Nature Conservancy.

All of the symposium presentations are available on the NYFOA.org website through a link on the "Restore New York Woodlands" panel on the home page, and I encourage you to take a look. An article about the Symposium will appear in a future *Forest Owner*. The symposium committee will be meeting soon to analyze the exit surveys and plan the next steps. NYFOA certainly will continue to be a leading advocate for healthy and sustainable forests in New York.

NYFOA members were recently notified via our website that proposed changes to our state's building codes would ban the use of rough cut lumber in construction projects. The New York State Fire Prevention and Building Code Council had considered adopting International Residential Code standards that would have required lumber used for load-bearing purposes in construction to be graded and marked by a lumber grading or inspection agency. However, last month it was reported in newspapers across upstate New York that The Council decided to continue allowing the use of rough-cut lumber in building construction by adopting a state Uniform Fire Prevention and Building Code. The code must be signed by Governor Andrew M. Cuomo for final approval.

Please share this magazine with a neighbor and urge them to join NYFOA. By gaining more members, NYFOA's voice will become stronger!

The March/April *Forest Owner* magazine had two articles discussing major changes that were proposed to the 480-a Forest Tax Law. These proposed changes met with wide opposition. The NYS Department of Environmental Conservation (DEC) Division of Lands and Forests says they have revised the original proposals, in response to concerns, and will submit new proposals to the governor. These new proposals have not been made public. Your board of directors has asked a group of

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The mission of the New York Forest Owners Association (NYFOA) is to promote sustainable forestry practices and improved stewardship on privately owned woodlands in New York State. NYFOA is a not-for-profit group of people who care about NYS's trees and forests and are interested in the thoughtful management of private forests for the benefit of current and future generations.

Join!

NYFOA is a not-for-profit group 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 helps the interested public to appreciate the importance of New York's forests.

Join NYFOA today and begin to receive its many benefits including: six issues of ***The New York Forest Owner***, woodswalks, chapter meetings, and statewide meetings.

( ) I/We own _____acres of woodland.
( ) I/We do not own woodland but support the Association's objectives.

Name: _____
Address: _____
City: _____
State/ Zip: _____
Telephone: _____
Email: _____
County of Residence: _____
County of Woodlot: _____
Referred by: _____

Regular Annual Dues:
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( ) Subscription to Northern Woodlands $15 (4 issues)

NYFOA is recognized by the IRS as a 501(c)(3) tax-exempt organization and as such your contribution my be tax deductible to the extent allowed by law.

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New Member Snapshots

Clay & Emily Anderson; Baily (5) and Saro (2).
Forest Land: 15 acres, Chenango Cty.
Objectives: Recreation, Hunting, Sawtimber, Wildlife

The Anderson Forest borders the family lands of William and Marilyn Anderson who own nearly 50 acres of forestland. The family enjoys being outdoors and being a part of NYFOA, which helps them promote stewardship of the land, giving their children a sense of respect for the forest. Baily (5) and Saro (2) enjoy running off into the woods to play in the water and find birch trees and sticks to create bows and arrows. Emily and Clay promote growth of the hardwoods through active management to include harvesting. Clay is developing a sugarbush to produce maple syrup for friends and family.

Emily works at Cornell Cooperative Extension and earned a degree in environmental studies from the University of Maine. Clay graduated from Morrisville State College with a degree in computer science and is perusing the idea of a family farm and homestead.

Ann Higbee, Autumn, Connor, and Katy.
Forest Land: 80 acres, Stueben Cty.
Objectives: Recreation, Hunting, Sawtimber, Firewood, Wildlife

The Higbee Forest includes groomed trails to accommodate hiking and ATV travel along with a campsite for the Higbee family. Fishing and berry picking are preferred activities along with exploring nature and observing wildlife. Ann and her three children, Autumn, Connor and Katy, actively manage their forestland and would like to improve the trail network and enhance wildlife habitat. Ann, who currently works in a human services field, takes a long-term view of her land and plans to keep it in the family for generations to come.

Brittany Hastings and Eric Jenks.
Forest Land: 3 acres, Washington Cty.
Objectives: Maple Syrup, Firewood, Recreation

Brittany and Eric manage their woodlot for maple syrup production and firewood. They currently have 72 taps and are regenerating maple seedlings by thinning out damaged trees for firewood. They are planting black locust, which will be harvested for fencing, and planting additional sugar maples for syruping. They both love the outdoors and plan to build a lean-to as a small retreat to appreciate the surrounding beauty.

Brittany has worked alongside her father, John Hastings, producing maple syrup since she was big enough to "help" (taste test!). She earned a BA from Wheaton College and a certificate in sustainable agriculture from UVM. She is currently an editor with Morning Ag Clips. Eric Jenks earned a Bachelors degree in environmental studies from Skidmore College and works as a photojournalist. He grew up helping his father with a firewood business and is excited to get into maple sugaring.

Call for Nominations: NYFOA Board of Directors

CHARLES STACKHOUSE

As a woodlot owner you have much to gain from NYFOA. Your membership provides you with opportunities to accomplish your visions of healthy, productive and diverse private woodlots throughout New York. The NYFOA board of directors, people like you, each share this passion for sustainable woodlands.

NYFOA's board of directors has two vacancies, and we would like you or someone you know to consider serving the organization with either a 2 or 3-year term on the board. Whether your interests lie in seeking ways for the state organization to support and strengthen chapters, or in retaining and growing NYFOA membership, in improving our website, in better using Internet-based technology to support our mission, in improving our relations with kindred organizations, or in developing and reviewing policy statements to articulate our positions with Albany legislators, your help is needed.

To qualify as a candidate for the NYFOA board of directors, one must be a member of NYFOA and be willing to give time and energy to help enhance and achieve the goals of NYFOA. The board meets three times a year, on a Saturday.

If you are interested in serving on the NYFOA board or in nominating someone, please contact Charles Stackhouse by email (*president@nyfoa.org*) or call (315) 536-9482.

From the President (continued)

knowledgeable members to expeditiously review these revised proposals for us when they are made public. We want to be able to react quickly to them, educating and informing our members of these proposed changes, listing their pros and cons, and suggesting ways that any unpalatable features could be changed. Please stay tuned.

As always, we welcome all of our new members and want to encourage them to join us at both state and chapter level events. Come out to a woodswalk or chapter meeting and meet your fellow woodlot owners. Go to our website and view some of the presentations from our April symposium if you were not able to attend. Read about and join in the Northeast Timber Growing Contest. You and your woods will be glad you did.

–Charles Stackhouse
NYFOA President

Welcome New Members

We welcome the following new members (who joined since the publishing of the last issue) to NYFOA and thank them for their interest in, and support of, the organization:

Name	Chapter	Name	Chapter
David Beattie	NAC	John Rybinski	CNY
Donald Bosworth	SOT	Gregg Sargis / The Nature Conservancy	WFL
James Brands	LHC	Olin Stratton	CNY
Thomas Gecsedi/ Shirewoods LLC	SOT	Darryl Wood	SOT
Jonathan Miller	NAC	Joseph A. Zanini	LHC
Peter Quanz	AFC		

NYFOA STORE

Show your support for the Association! All items display the NYFOA logo.

1. Sweatshirt.....$20.00
   Green M, L, XL
   Grey M, L, XL

2. Long Sleeve T-Shirt.....$14.00
   Green M, L, XL
   Grey M, L, XL

3. Short Sleeve T-Shirt.....$10.00
   Green M, L, XL
   Grey M, L, XL

All shirts are heavy weight cotton with white lettering on the green and green lettering on the grey.

4. Baseball Style Cap.....$14.00
   Green with Tan logo, one size

5. NYFOA Member Sign.....$ 3.00
   12x12 Heavy Gauge Plastic
   Yellow with green lettering

6. Cutting Boards.....$ 5.00
   Wood, 5 ½ x7 inches

Item#	Description	Size	Qty	Price	Total
Shipping and handling: $6.00					
NYS Sales Tax – add 8%					
Total:					

Name:_____
Address:_____
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Credit Card No.
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Expiration Date _____V-Code_____
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Make check payable to NYFOA. Send the completed form to: NYFOA, P.O. Box 541, Lima, New York 14485. Questions? Call 800-836-3566

Ask A Professional

Peter Smallidge

Peter Smallidge

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.forestconnect.info

Vegetation Management Treatment Methods

Question: American beech has taken over much of my woods. I want to try to control its abundance before I eventually have a harvest to regenerate the woods. What treatments do you recommend to control beech? (Ken Z., NAC)

Response: American beech and many other native and non-native woody plants can dominate a woodland, exclude or limit the regeneration of desired plant species, and limit the biodiversity of the site. Often these interfering species gain dominance because of selective deer browsing of desired plant species, and prolonged deer pressure can create a legacy effect that persists even if deer impacts are controlled.

In all forest vegetation management situations, not exclusive to beech, you should start with a plan that details the interfering species, the desired plant species, the costs, how the interfering vegetation will be treated, and how the site will be re-vegetated. Webinar archives detailing the vegetation management planning process are available at *www.youtube.com/ForestConnect*. The word "treatment" is used here to describe the manner in which the vegetation is manipulated, often with the goal of killing the stems causing the interference. The treatment has two attributes – the method and the mode. Method is typically mechanical or chemical and mode is either broadcast or selective. Biocontrol methods are not described here. Each treatment can be described by a method and a mode. First we will review some principles, then consider some examples.

Which Method and Which Mode?

Both mechanical and chemical methods have useful applications. Often the choice depends on the attitude of the owner, the time of year, the terrain, or the equipment. For some circumstances, a mechanical method is followed by a chemical method. Mechanical methods might include hand-pulling, brush saws and chain saws, timber ax and Fecon mowers, or livestock. Timber ax and Fecon mowers are specialized rotary mowers designed to work in rough terrain on large woody vegetation. Chemical treatments are herbicides, a type of pesticide that targets plants.

The decision about whether to use chemical methods may be decided by the owner's attitudes and comfort with the use of herbicides. Some owners, such as maple producers who are certified organic, are restricted from using most conventional herbicides. Herbicides are regulated by the EPA through authority given to the NYS DEC. The regulatory process helps inform users about the known ways that the active ingredients will behave in the environment. If an owner uses an herbicide, they should carefully follow the label. Home recipes of chemical concoctions should never be used.

Mode is selected depending on the desired specificity of the treatment to individual or groups of stems. A selective treatment affects individual stems and a broadcast treatment affects all stems in an area. If an interfering species is mixed with a high percentage of a desired species, a selective treatment may be used to reduce injury to the desired species. Selectivity is possible through physically isolating one stem from others, by using a treatment that only affects a certain species, or by applying a treatment at a specific time of year when desirable species are not susceptible. If the interfering species predominates, or financial or logistical constraints preclude a selective treatment then a broadcast treatment would be applied.

Girdling, such as the flame treatment being used on this buckthorn, kills the phloem and vascular cambium and starves the roots. Girdling at the base of the tree may result in suckers emerging at ground level.

Cut stump treatments are used to control stump or root sprouting that occurs on some species. Personal protective equipment for both chainsaw use and herbicide use need to be utilized.

The abundance of undesired stems is often a good place to start when considering whether to use a selective or broadcast mode. The principle to consider here is the fixed cost to visit each stem in a selective treatment. If there are too many stems per acre that means (1) the cost per acre will become prohibitive and (2) because there are a fixed number of stems per acre the interfering stems have likely displaced the desirable stems and a broadcast treatment would have limited relative collateral damage. Although not widely studied, the threshold between selective and broadcast is about 400 stems per acre. Each owner's situation is a bit different, so this threshold should be used as a guide.

Selective Manual

- Types of treatments include pulling, girdling or cutting.
- Pulling treatments are best applied in circumstances of small plants, where the interfering plant has only recently been established and there is little potential for subsequent seed input from that plant. Pulling has the potential negative consequence that the soil is disturbed and the exposed mineral soil may provide a suitable seedbed for some other undesirable species.
- Girdling severs the phloem and vascular cambium just inside the bark. Girdling can be accomplished with an ax, saw, or flame torch; chemical girdling is called basal bark and described below. Girdling has the advantage of more quickly treating the stems as compared to cutting and not needing to immediately address the downed stem. Stem size matters because a large dead tree may become a hazard in the future. This treatment can be combined with a frill herbicide application (see "hack-n-squirt" below) as an integrated strategy.
- Cutting uses a saw to sever the stem and fully disconnect the foliage from the roots. Traditional timber stand improvement with firewood as a product is an example of this treatment. Special safety concern is warranted for those who use a chainsaw. Also, in most hardwoods and shrubs, cutting will stimulate stump sprouting, and also root sucker sprouts from beech and tree-of-heaven. Shade intolerant species such as black locust and aspen may develop root sucker thickets after cutting if enough light is available. This treatment can be combined with an herbicide application to the cut surface (see "cut-stump" below) as an integrated strategy to prevent sprouting.

Selective Chemical

- Types of treatments include foliar, hack-n-squirt (AKA injection), cut-stump, and basal bark.
- Treatments can be quick, cost-effective and reduce or typically eliminate the potential for post-treatment sprouting from stumps or roots.
- Treatments require the use of a chemical, but the chemical is used on individual stems to reduce the potential for collateral damage.
- Information about all herbicides that are legal for use in NY is available at *www.pims.psur.cornell.edu*
- Foliar treatments are applied to individual plants. Applications of foliar sprays on tall or broad plants may result in overspray and a heightened potential for drift onto adjacent plants. Foliar treatments are commonly a low concentration of glyphosate (e.g., Roundup) or triclopyr (e.g., Garlon 4 ultra) perhaps mixed with imazapyr (e.g., Arsenal, Polaris AC) or sulfometuron methyl (e.g., Oust). The herbicide labels will describe mixing ratios. Foliar treatments can be applied following a mechanical cutting, after stems sprout new foliage, thus allowing for the use of less chemical and greater control.
- Hack-n-squirt treatments use a hatchet or similar tool to expose the phloem, vascular cambium and outer most xylem tissues in the wood to a fairly concentrated (25% to 50% active ingredient) application of glyphosate. Imazapyr might also be used to control some species. The role of the hatchet is to expose the inner wood; other tools might include a portable drill or divots made by a chainsaw. The objective is to make multiple relatively small wounds that receive an application of the herbicide.
- Cut-stump treatments are appropriate when the stem is severed, but without additional treatment the stump or roots will sprout. Herbicides might include glyphosate or triclopyr. Glyphosate is mobile in the root system and will be translocated from the stump to root sprouts that are controlled. Triclopyr is less mobile than glyphosate. Follow label details, but herbicides are typically applied to the outer 2 inches of the freshly cut stump surface or to the entire surface and sides of the stump. Recent research on glyphosate (J. Kochenderfer, USFS) found that glyphosate could be applied up to 72 hours after the beech tree was cut with minimal reduction in control of root sprouting.
- Basal bark treatments use an herbicide, typically triclopyr, in an oil-based carrier to chemically girdle a stem. As with mechanical girdling, the full circumference must be treated. Treated stems seldom if ever sprout. Details are provided in the link below, but lower doses and broader seasonal opportunities exist than were previously considered.

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Brush saws can be used as a selective mechanical treatment, or combined with a herbicide to the freshly cut stump to limit sprouting. Personal protective safety equipment is essential.

Homestead Woodlot

Hands-on, low-tech approaches to working with your woodland

JEFF JOSEPH

SPALT

Wood rots. This is a fact of life in the forest—sometimes a welcome one, as when woody debris returns to (and enriches) the soil, or when we are able to harvest a bumper crop of edible mushrooms from a log or stump on the forest floor. We are generally not so pleased when we see signs of decay in our standing timber, but trees, much like ourselves, incur wounds, are infested with insects, lose vigor as they age, or otherwise fall prey to infection regularly. While I get a sinking feeling when I see cankers or shelf fungi popping out on my best crop trees, as a woodworker I have to admit to a certain pleasure in the new-found possibility of finding some interesting spalting in the lumber of those trees.

Spalt-forming shelf fungus on aspen.

Spalt is defined as any discoloration in wood that is due to fungal activity. While **all** species of wood will eventually be consumed by fungi, for all practical purposes, if you are looking for some useful or interesting spalted wood, confine your search to our hardwoods, and particularly our pale-colored, non-resistant woods such as the maples, birches, aspens, and beech. There are three basic types of spalting: pigmentation, white rot, and zone lines, which occur more or less sequentially as wood decays.

Pigmentation, also known as sap stain, occurs as fungal hyphae work their way through the outer sapwood of a tree's trunk. The "stain" is the mycelium itself, in high enough concentration to be visible as a discoloration in pale woods. This is the dreaded "blue stain," which can seemingly show up overnight in logs cut in the summer, but it can actually create a variety of different colors depending upon fungal species and wood substrate. While all too quick to form during the warmer months, this type of spalting is generally superficial, as these fungal species target readily available sugars within medullary rays, leaving the cellular structure of the wood intact.

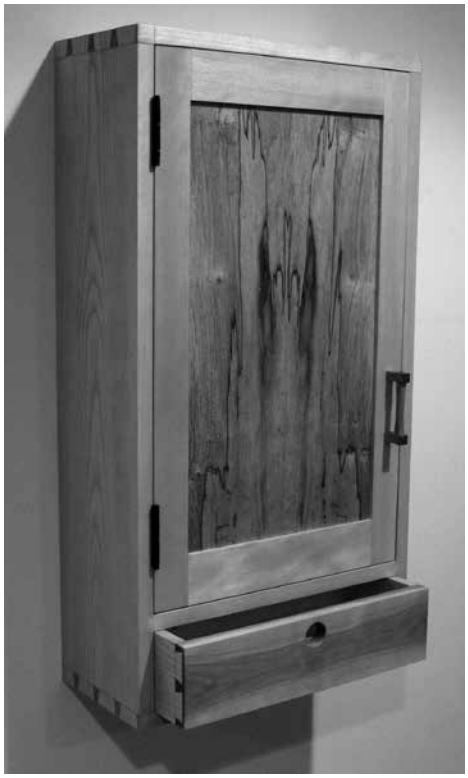
White rot occurs as fungal hyphae consume the lignin **and** cellulose in wood—actually eating the cell walls at this point—but preferentially, with more lignin digested in the early stages, bleaching it white in the process, and leaving the wood fibers—at least at first—softened but structurally sound.

As fungal mycelium continues to colonize the wood, the most dramatic and fascinating form of spalt begins to form. Zone lines, which are dark streaks (most often brown or black) of highly concentrated mycelium that look like the work of a calligrapher's pen, or maybe an abstract artist's brush, occur as a result of competition between two or more species of fungi, as they are an attempt by one or both species to monopolize their food source. Battle lines are quite literally drawn. So in addition to their often striking beauty, zone lines allow us a unique glimpse into the "military history" written within a decaying log or board.

While it's probably easiest to access spalted wood from standing or freshly felled trees that already show signs of active fungi (mature quaking aspen with visible shelf fungi are *very* common in our region, and so would be a good place to start, as they very readily form zone lines), it is also possible to "make" your own spalted lumber, by artificially creating the conditions that favor decay, but in a controlled environment. Doing it this way allows you some control over the process of decay, as you can inoculate the wood with specific species of fungi, and can periodically test it for being 'done' (spalted but still structurally sound enough to work with), but much like making home brew with wild/natural yeast, you never really know what you'll end up with until the end, which I suppose is part of the fun.

For more information, including instructions on how to spalt your own lumber, visit www.northernspalting.com.

Jeff Joseph is a woodworker and co-chair of NYFOA's editorial committee.



Cabinet with bookmatched, spalted maple door panel.

Fenced Out!

SAC and SOT Chapters awarded NYFOA Grants

Jerry Michael

Final step, attaching the RNYW interpretive sign.

Aldo Leopold warned us 65 years ago about the environmental impact of excessive deer populations in his famous book "A Sand County Almanac." Unfortunately, his warning nearly coincided with Walt Disney's release of "Bambi," and America's subsequent love affair with deer overshadowed Leopold's warnings. Fast forward to 2015, where we find most of our northeastern forests in the last third of their natural life cycles, with no regeneration on the ground, or even possible under current conditions.

NYFOA kicked off our "Restore New York Woodlands" initiative in 2013 to bring the regeneration crisis to the attention of all forest stakeholders, including the general public whose support for solutions will be necessary. One very effective way to influence public opinion about the deer problem is to demonstrate what natural forest regeneration can look like in the absence of heavy deer browsing. Last year NYFOA offered a $250 grant to Chapters for the construction of small demonstration deer exclosure fences in forested parks or other areas receiving a lot of public traffic. The Southern Adirondack (SAC) and Southern Tier (SOT) Chapters completed fence projects last year, and more are planned for 2015.

SAC installed their fence at a 4-H Training Center provided by Cornell Cooperative Extension of Saratoga County. Twenty one enthusiastic volunteers from SAC, Capitol/Mohawk Partnerships for Regional Invasive Species Management (PRISM) and 4-H Clubs erected their fence around an area of approximately 2,000 square feet in about half a day. The PRISM organization also provided an intern from Paul Smiths College to inventory and record all of the plants growing within the fenced area for future tracking and analysis. SAC also received a small grant from the American Wildlife Conservation Association to supplement the $250 grant from NYFOA.

SOT constructed their demonstration fence along a busy trail at the IBM Glen Forest Preserve, now owned by the Waterman Conservation Education Center. The site had some red oak natural regeneration, browsed by deer to a height of about one foot, plus a lot of invasive vegetation, mainly honeysuckle. Site preparation included cutting the invasive plants at soil level and painting the stumps with a 15% concentration of glyphosate. Several small cull trees were cut down as well, to provide sufficient sunlight for the shade-intolerant oak seedlings to thrive. Ten SOT members, assisted by an intern loaned by Cornell Cooperative Extension of Broome County, finished their 30' by 50' deer exclosure in about three hours.

Both Chapters reported that their fence building projects were a lot of fun and a great team-building exercise for their membership. They also realized a sense of satisfaction in knowing that, at least in their corner of the state, public understanding of the challenges facing the future of our forests will be enhanced. The NYFOA "Grants for Fences" program is ongoing, and we hope that additional chapters will take advantage of it in this year and future years.

Attaching the fence to a steel rebar post.

SOT Group photo in front of their completed fence.

SAC members in front of their completed fence.

Jerry Michael is Secretary of the NYFOA Board of Directors.

Wild Things in Your Woodlands

By Kristi Sullivan

Common Snapping Turtle (*Chelydra serpentina*)

The common snapping turtle is our largest and most widely distributed freshwater turtle. It has a long stegosaurus-like tail with a jagged upper surface, a stout head with a sharp hooked beak, an olive-green to black carapace that is jagged toward the tail end and prominent claws on all four feet. These turtles can be large, exceeding 14 inches straight-line carapace (upper shell) length and weighing up to 45 pounds. On the underside, the plastron is yellow or grayish, and quite narrow relative to other turtles, frequently giving the appearance that the turtle has outgrown its shell. Although adult males tend to be slightly larger than females, they can be difficult to distinguish. Male snapping turtles can reach sexual maturity at the age of 4 or 5 years, while females may take several years longer. Average adult life spans of 20 to 30 years have been recorded in several studies, with some females living as long as 40 years.

During the summer months, common snapping turtles often can be seen moving from their freshwater habitats to upland areas in search of nesting sites. When egg-laying is complete, these turtles move back into water at which time they can be difficult to spot. Snapping turtles often remain partially submerged in the mud with only their eyes and nostrils protruding above the surface. In this position, their head resembles the head of a basking frog, except darker and more pointed. Unlike other aquatic turtles, snappers are seldom seen basking out of the water. Instead they usually are only seen with their head and sometimes upper carapace visible at the surface.

Similar to most turtles, snappers usually do not bite if stepped on underwater, nor do they bother swimmers. In fact, if you do not actually see a snapper, the chances are good that you will never know it is there. The reason for their name is obvious, however, when encountered on land. Unlike all other turtles in our region, they can be very aggressive, lunging their heads forward and biting with the slightest provocation (or sometimes just as a warning). With their sharp claws and fierce jaws, large individuals can do much damage and are best left alone.

Common snapping turtles live in any body of freshwater, small to large, from sea level to altitudes up to 1600 ft in the Northeast. They occur throughout New York State, even in Central Park. Although some individuals enter coastal brackish waters, snapping turtles prefer slow-moving freshwater areas, with muddy bottoms and emergent vegetation that provide good foraging and escape cover. The common snapping turtle is omnivorous and eats just about anything, live or dead. Its most frequent food items are aquatic plants and non-game fish, but it also eats insects, small mammals, young waterfowl, amphibians and other reptiles. Snappers feed throughout the warmer months, but fast during the winter, remaining dormant and burrowed in the pond bottom or in the banks.

Breeding begins soon after snapping turtles emerge from dormancy in the spring, and mating may take place from April to November. The nesting period for females lasts around 3 weeks, from May through June, with a peak at the beginning of June. Females prefer to lay their eggs on rainy afternoons and evenings (heavy rains may help wash away scents that lead predators to the nests). They generally choose open sites near wetlands, with well-drained sandy or loamy soils. They also nest in forest clearings or agricultural fields, and on bare soil banks or road embankments. The nesting female first digs a nest chamber with her rear feet and claws, then fills the underground chamber with eggs. Eggs are spherical and pliable, like soft ping-pong balls that bounce around in the nest chamber. A single nest may contain from 20 to 40 eggs, exceptionally as many as 83. Successful eggs hatch from September through October. As with many other turtles, the length of incubation can vary by several weeks, depending on location and temperature.

Like many other reptiles, the sex of the hatchlings is determined by temperature of the eggs while they are in the nest. Under warmer conditions (above 85° F) only

female turtles are produced; at intermediate temperatures (from 75° to 85° F) males are produced; and in nests colder than that, females are produced. Interestingly, in some nests, the heat of the sun from above causes eggs in the upper nest to be warmer than eggs down deeper. This differential heating creates females near the top of the nest and males near the bottom. So, for sex determination, there is an element of luck involved in whether an egg was dropped into the nest early or late, or in some cases the way in which the egg bounced as it fell. This environmentally controlled mechanism is called temperature-dependent sex determination.

Common snapping turtles generally are abundant throughout their range, but in some areas are very sparse due to several pressures. As in many other reptile species, snappers are highly vulnerable to predation at early life stages. Predation of nests in many areas is high, ranging from 30% to 100% of the nests in some studies. Main predators of the eggs such as raccoons, crows, and dogs, are frequently associated with high human populations. Also, with increased development often comes loss of wetland and nesting habitat, which are both essential for snapping turtles. Some local populations have been severely depleted by over-harvesting for their meat and this decline is a concern. Because of the diet and the habits of snapping turtles, they may accumulate high concentrations of contaminants, such as PCB and mercury, in their tissues. This could pose a health hazard to people who eat snapping turtle meat.

Landowners can enhance habitat for snapping turtles by maintaining the natural hydrology of wetlands and preventing unnatural drainage. Because snapping turtles frequent emergent vegetation for feeding and resting cover, maintaining native vegetation in and throughout shallow wetlands and around the margins of large, deep ponds will benefit this species (and other turtles as well). Provide a buffer zone of natural vegetation of 100 feet or more surrounding ponds and wetlands. Turtles, as well as other animals such as frogs and salamanders, require both wetland habitats and surrounding upland habitat to remain healthy. By maintaining open areas with loose soil near aquatic habitats, landowners can also ensure that these turtles have adequate nesting sites. Old log landings, maintained as open habitat, can make suitable nesting sites. By focusing on both upland and wetland habitat, landowners can attract and provide for snapping turtles and a wide diversity of other wildlife.

Adapted from "Hands-On Herpetology: Exploring Ecology and Conservation" by R. L. Schneider, M. E. Krasny, and S. J. Morreale.

Kristi Sullivan co-directs the Conservation Education Program at Cornell's Arnot Forest and is Director of the NY Master Naturalist Volunteer Program. More information on managing habitat for wildlife can be found at arnotconservation.info

MISSING: Past Issues of the *Forest Owner*

NYFOA is looking for various issues of the *New York Forest Owner* from the 1970s-1990s.
If you have any extra copies please contact Liana Gooding at:
lgooding@nyfoa.org

Restoration of a Species

The American Chestnut Foundation (TACF)

Ruth Gregory and Sara Fitzsimmons

Once the mighty giant of the eastern forest, the American chestnut (*Castanea dentata*) stood up to 100 feet tall and numbered in the billions. This iconic tree provided abundant food for wildlife and was a vital component of the rural economy, from Maine to Florida and from the Piedmont west to the Ohio Valley. In the beginning of the 20th century, the fungal pathogen responsible for chestnut blight (*Cryphonectria parasitica*) was accidentally imported from Asia and spread rapidly through the eastern forests. By 1950, the fungus had eliminated the American chestnut as a mature forest tree.

In 1983, a committed group of scientists formed The American Chestnut Foundation (TACF) to address this ecological disaster while the species could still be saved. They initiated a complex breeding program to transfer genes containing disease resistance from Asian chestnut species to American chestnut. In just 20 years, these talented scientists and volunteers began to produce the first generation of trees that are 96% American chestnut but contain Asiatic genes for blight resistance. Now supported by more than 5,000 members and hundreds of volunteers in 23 states, the organization is planting and testing offspring of those trees as it continues to build and improve its breeding population. With the aid of many partner organizations, TACF is leading the restoration of an iconic species once on the brink of extinction.

American Chestnut Leaves. Photo courtesy of American Chestnut Foundation.

Restoration Efforts

Currently, there are several efforts underway to restore the American chestnut involving traditional breeding methods, simple conservation strategies, methods that would reduce the virulence of the blight fungus, as well as modern gene-transformation techniques. TACF works in each of these areas, but its primary focus is on classical breeding techniques. While the broadest goal is to restore the American chestnut species, the organization focuses on two major objectives: (1) introducing the genetic material responsible for the blight resistance of the Chinese tree into the American chestnut; and (2) preserving the genetic heritage of the American chestnut species by planting and grafting native germplasm before it disappears.

Each chestnut species — of which there are about seven – varies with regard to blight-resistance. Blighted North American chestnut species usually die, while blighted Asiatic chestnuts typically suffer only cosmetic damage. With that in mind, Chinese and Japanese chestnuts offer a potential solution to the American tree's susceptibility to chestnut blight through hybridization.

It is thought that chestnut blight resistance is controlled by a three-gene system acting in an incompletely dominant fashion. Based upon that assumption, a breeding system to create a true breeding, blight-resistant American chestnut population would require a minimum of six generations. The first generation crosses an American and a resistant species. The next three looks to increase American character with crosses back to American chestnuts. And the final two generations work to increase resistance.

To avoid inbreeding and to maximize inclusion of regionally-adapted genetic complexes, TACF backcrosses different American chestnut trees from each of our sources of blight resistance at multiple locations throughout the eastern United States. As a result, each generation of planting material requires that thousands of trees be properly screened and tested.

Plant pathogens frequently evolve to overcome plant defenses. Although the blight fungus is not known to have overcome the defenses of the numerous Chinese chestnut trees planted in the U.S, a future "breakdown" of resistance in blight-resistant chestnut trees is possible. To minimize this possibility, the TACF breeding program uses genetic material from different Chinese and Japanese trees, each creating a potential new source of resistance.

Trees are tested for blight resistance by actually taking the blight, putting it in the trees, and then seeing how the trees resist the infection. Trees that fight well are then control-pollinated by volunteers and resulting progeny are subsequently planted in Chapter orchards with volunteer growers.

TACF is well into the sixth-generation of its breeding program. As long as the material passes extensive testing, wide-scale distribution should follow in about 5-10 years. However, the work is far from over. Offspring must be continuously tested and improved for all traits. Restoration of a species is the ultimate goal and TACF needs as much diversity in its breeding program as possible. As the organization moves forward, it is vital to incorporate more American chestnuts, more Chinese and Japanese chestnuts, as well as different types of breeding strategies to create a self-sustaining American chestnut population for generations to come.

For additional information about TACF and its restoration efforts, please visit: *acf.org*.

Ruth Gregory is the Director of Communications, TACF and Sara Fitzsimmons is Regional Science Coordinator Supervisor, TACF.

The American Chestnut Tree

Transitioning from Research to Restoration

By William A. Powell, Charles A. Maynard, and Andrew Newhouse

When was the last time you walked through an American chestnut forest? Unless you are one of our most senior citizens, you've probably never had this pleasure. Sadly, the once-great chestnut forests are no more. In 1854, Henry Thoreau wrote descriptively of the then-common American chestnut in his book "Walden," in the chapter called House-Warming:

> "When chestnuts were ripe I laid up half a bushel for winter. It was very exciting at that season to roam the then boundless chestnut woods of Lincoln -- they now sleep their long sleep under the railroad -- with a bag on my shoulder, and a stick to open burs with in my hand, for I did not always wait for the frost, amid the rustling of leaves and the loud reproofs of the red squirrels and the jays, whose half-consumed nuts I sometimes stole, for the burs which they had selected were sure to contain sound ones. Occasionally I climbed and shook the trees. They grew also behind my house, and one large tree, which almost overshadowed it, was, when in flower, a bouquet which scented the whole neighborhood, but the squirrels and the jays got most of its fruit; the last coming in flocks early in the morning and picking the nuts out of the burs before they fell, I relinquished these trees to them and visited the more distant woods composed wholly of chestnut. These nuts, as far as they went, were a good substitute for bread."

This passage addresses many of the values of the American chestnut tree. It talks about the boundless chestnut woods, sometimes even in pure stands. The American chestnut was once one of the most common trees of the eastern oak-chestnut forest covering an estimated 84 million acres from Maine to Georgia. The passage mentions the squirrels and jays eating the nuts, but many wild creatures relied on the chestnut to fatten up for the winter, including bear, wild turkey, deer, and others. People also loved the nuts, as evidenced by Thoreau's efforts to collect them, and they were nutritious. He describes them as a suitable substitute for bread. These trees can grow very large, like the one he describes overshadowing his home. The wood of the American chestnut was also valued for its rot-resistant qualities, as shown by its use as railroad ties. The American chestnut was truly a magnificent tree.

All this was lost more than a century ago when people started importing Asian species of chestnut trees. Along with these imports, an exotic blight-causing fungus was introduced, against which the American chestnut had no defense. Within 50 years of the blight's discovery, between 3 and 5 *billion* American chestnut trees died, leaving only a remnant of the population surviving at the stumps. The stumps can continue to send up shoots from the root collar but, while these shoots grow vigorously for several years, they are rarely able to produce nuts before being killed back down to the ground. Much research has been done over the past 110 years to save the American chestnut tree. This year marks a sea change in this research because blight resistance has finally been accomplished.

Because the American chestnut was a keystone species in our forests, had great economic value, is important to our heritage, and is numbered among the sacred for Native Americans, it is critical to develop a blight-resistant American chestnut that retains its natural characteristics. The precision tools of genetic engineering have allowed us to enhance blight resistance while maintaining the essential character of the American chestnut trees.

Today, the most widely planted chestnut trees are various hybrid chestnuts made by crossing up to five species that have evolved on opposite sides of the world in different ecosystems. The many hybrids available today can be anywhere from 0 percent to 50 percent American chestnut, therefore they can contain approximately 22,500 or more foreign genes. It is unlikely that any of these widely planted trees can fully replace the function of the American chestnut tree in our forest ecosystem. Backcross (B3F3) American chestnut trees are much better, and are on average 93.75 percent American chestnut but still contain an estimated 2,800 foreign genes. Our

Healthy American Chestnut. Photo courtesy of American Chestnut Foundation.

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genetically engineered "Darling" lines of blight-resistant American chestnut trees are 99.996 percent American chestnut, with only two new genes added to the approximately 45,000 native genes in the chestnut genome. Metabolomic data on these trees from colleagues at the Oak Ridge National Labs support our findings that genetic engineering makes much smaller changes to the tree than the traditional breeding methods mentioned. All of these methods are useful in some way. However, if we are to maintain the character of the American chestnut tree while enhancing blight resistance and reducing the risk of unintended consequences, the very small changes produced by precision genetic engineering has the greatest chance of maximizing the benefits to our forests.

It is interesting that Thoreau wrote that chestnuts were "a good substitute for bread." It turns out the resistance-enhancing gene we used (called oxalate oxidase) comes from wheat, so many people already eat it every day. The small grain crops like wheat were among the first plant species to be domesticated, so oxalate oxidase has effectively been evaluated in "human trials" for the last 10,000 years. Oxalate oxidase is completely unrelated to gluten proteins or other wheat allergens, so it is not a concern for people with celiac disease or similar sensitivities. The nuts from these genetically engineered American chestnut trees are safe for consumption by celiac patients and those on gluten-free diets.

Because of the long lifespan of these trees, some have asked about the sustainability of the blight resistance. In fact, durability of resistance was one of the reasons we selected the oxalate oxidase gene. First, the oxalate oxidase does not kill the fungus, it only detoxifies the acid produced by the fungus when it attacks the tree. Therefore it changes the lifestyle of the fungus from a pathogen to a saprophyte on the bark of the tree, reducing any selective pressure to overcome the resistance. This means the fungus no longer kills the tree tissue directly, but rather "waits" until a part of the tree dies from some other cause, and then feeds on that already-dead tissue. The same blight fungus currently lives in this fashion on some oak trees and other species. The fact that the chestnut blight fungus already survives on other species provides refugia, diluting out mutations in the fungus, again reducing the possibility the fungus will overcome the American chestnut's newly acquired resistance. In addition to detoxifying the acid produced by the fungus, oxalate oxidase likely has additional defense mechanisms, including enhancing lignification and helping to induce the tree's natural defenses at the infection site. Lastly, we hope to use the oxidase along with other chestnut defense genes. All these factors will help ensure the sustainability of the blight resistance.

After 25 years of research at the SUNY College of Environmental Science and Forestry, we now have the blight-resistant "Darling" American chestnut trees. But there is more work ahead. Genetic engineering is the only tool of genetic modification that is highly regulated. To prepare for this, we are collaborating with colleagues in many fields of study to complete environmental impact studies. We still have an estimated five years of review by the U.S. Department of Agriculture, Environmental Protection Agency, and Food and Drug Administration before we can distribute these trees to the public. Even then, the restoration program that follows will likely span a century or more. Without help, the American chestnut does not spread quickly. For example, it was one of the last major tree species to repopulate the north after the last ice age. However, it is a tree that thrives around humans and it will take human intervention to help get this tree established again. Therefore, the restoration of the American chestnut tree is a project for the ages, starting with you, then your children, and then your grandchildren. Will you help us bring back the American chestnut?

To learn more about the restoration of the American chestnut, please visit www.esf.edu/chestnut/

William A. Powell, Professor; Charles A. Maynard, Professor; and Andrew Newhouse, Senior Research Support Specialist, SUNY College of Environmental Science & Forestry.

Woodland Health

A column focusing on topics that might limit the health, vigor and productivity of our private or public woodlands

Coordinated by Mark Whitmore

New Forest Pests: Spotted Lanternfly and Southern Pine Beetle

By Dan Gilrein

Every year seems to bring with it new threats to our forests from pests and plant diseases. Two insects in particular are noteworthy. Spotted lanternfly (SLF, *Lycorma delicatula*) was found in September 2014 on trees in Berks County, PA east of Reading. Around the same time, southern pine beetle (SPB, *Dendroctonus frontalis*) was detected in pines on Long Island. Both are unwelcome, damaging pests; SPB has already killed thousands of trees on Long Island. SLF can build to high numbers, leaving heavy honeydew deposits followed by sooty mold and possibly leading to tree mortality though the biggest impact may be from quarantines.

SLF is a planthopper native to Asia, unusually large (adults reach about 1") and distinctively colored (see photos of adult and immature stages). Nymphs hatch in spring to feed on plants such as grape, Virginia creeper or smaller tree branches, later focusing on trees and especially trunks as they reach adult stage from mid-summer onwards. Host preference seems to shift later in the season; tree-of-heaven (*Ailanthus altissima*) in particular appears to be favored. Planthoppers feed by piercing plant tissue and removing sap, which for SLF can result in bleeding spots on bark and mats of sooty mold growing on honeydew deposits around the base of trees. Ants, wasps, hornets and bees are attracted to tree sap and honeydew around areas where SLF has been active, which can sometimes help in detection. Adult SLF are poor fliers, but all stages are strong hoppers. Eggs masses, produced in fall, are described as 'globs of glue,' slightly shiny and covered with a grey, mud-like material. They can be laid on bark, rocks, chairs, grills, recreational vehicles and other objects around host trees, so in the current PA quarantine many outdoor household articles are included with wood, wood crates, plants and plant materials, firewood, and logs. There is one generation a year. Besides grape and various fruit trees, in PA SLF has been seen feeding on black walnut, willow, black locust, maples, and many other trees including landscape ornamentals. A host list with more details can be found at: *http://extension.psu.edu/pests/spotted-lanternfly/news/2015/host-plants-used-by-spotted-lanternfly*. Since the original detection was around a stone yard, inspections are continuing there and in nearby towns as well as in areas around where stone shipments were sent. Although at the present time SLF detections and the quarantine are in eastern Berks County, forest owners elsewhere might note photos of the adult and immature stages of SLF and keep an eye out for them. Notify Cooperative Extension or State Dept. of Agriculture staff of any suspect sightings. Samples are especially important if possible to obtain.

Adult Spotted lanternfly, Lycorma delicatula. *Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org*

Southern pine beetle is native to the southeastern US, advancing northwards in recent years and now established in southern NJ. We have been expecting it to appear on Long Island, where our extensive areas of dense pitch pines are highly vulnerable. SPB kills its hosts and relies on mass attacks to overcome defenses. Pines in general are very susceptible, including white, red and Scots, but Norway spruce has emerged as a new and apparently attractive host in NJ and on Long Island. There is at least one report of hemlock being attacked (in NJ) but it does not seem to be preferred. After the initial Long Island detection last fall, follow-up surveys found infestations to be quite widespread in forest areas around central and western Suffolk County and it was recently found in southern CT. There is concern it may now spread east to RI and the Cape, possibly west into the lower Hudson Valley and beyond. In southern forest areas where SPB is a threat to pulp and lumber production management is tailored accordingly including pheromone trap monitoring to assess levels of both SPB and its main predator, the 'dubious checkered beetle' (*Thanasimus dubius*) (conveniently attracted to the same lure), and felling newly infested trees to slow progression of the population. On Long

Pitch tubes on pitch pine due to southern pine beetle. Pitch masses are about the size of a dime. Those made by turpentine beetles are much larger, around quarter-sized.

Island forests are not used for commercial harvest, but valued for open space, recreation, wildlife habitat, native plant preserves, groundwater recharge and the privacy they afford to landowners. Besides the impact of tree mortality on all these, large areas of dead pines (one estimate is 75% of pines in Connetquot State Park have been killed) pose a fire risk in an already fire-prone environment, a significant issue in our highly populated area. SPB levels were quite high in many areas last summer, apparently 'spilling over' into managed landscape sites around Suffolk and eastern Nassau Counties where amenity trees have been killed. Outbreaks have advanced even in forests where pines are sparsely intermixed with oak – to the surprise of forest entomologists who associate it more often with monoculture pine lands.

In response to these threats both pests were covered extensively during last winter's educational programs for state and regional arborists, including SPB management information for landscape trees directed to both professionals and to homeowners. Dr Matt Ayres, Professor of Biological Sciences, Dartmouth College, gave an excellent presentation and discussion on SPB to arborists on Long Island last February. NYS DEC Forestry staff have conducted extensive aerial and ground surveys on Long Island for SPB and are coordinating a response team with specialists from USDA Forest Service, Cornell, the Pine Barrens Commission, and others. A website has also been established (http://www.dec.ny.gov/animals/99331.html). Mitigation activities this past winter and early spring included felling infested trees by NYS DEC Forestry staff on State and Suffolk County property, US Fish and Wildlife Service at the Wertheim National Wildlife Refuge, and US National Park Service at the Fire Is. National Seashore. Brookhaven National Lab (US Dept of Energy) staff have also surveyed Lab property in detail for trees showing signs of SPB attack. NYS DEC Forestry has set up pheromone traps at many sites in Suffolk County and is coordinating SPB monitoring. There is some good news: thanks to record low winter temperatures, SPB populations appear to have sustained high mortality on Long Island. Early evidence from several traps indicates some SPB did survive, but levels of their main predator are also high, suggesting any comeback will be slow and difficult. It does appear, however, SPB is here to stay and we'll need to learn to live with it.

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Dan Gilrein is an Extension Entomologist with Cornell Cooperative Extension of Suffolk County

Mark Whitmore is a forest entomologist in the Cornell University Department of Natural Resources and the chair of the NY Forest Health Advisory Council.

Foliar spray treatment of large plants has the potential for overspray onto nearby plants. Be alert to the proximity of desired plants. The treatment pictured is of glyphosate; the personal protective equipment (PPE) exceeds label recommendations, but can use additional PPE. Picture by L. Merle

Broadcast Manual

- In woodland settings, there are few options for broadcast manual treatments. These include rotary brush heads on small tracked machines and management intensive grazing.
- Small tracked machines (e.g., Fecon, Timber Ax) can maneuver in many wooded settings and clear vegetation in the lower strata. Depending on the operator, these have some ability for selectively avoiding some desired stems. As with selective manual, this treatment may stimulate root and stump sprouting.
- Management intensive grazing is grazing strategy often used in silvopasture systems. It requires a high level of grazier awareness and understanding. Management intensive grazing might be preceded by a rotary mower as described above.

Broadcast Chemical

- Broadcast chemical treatments are only used when interfering stems fully and almost exclusively dominate the site, and the foliage is at a height where it is accessible to spray equipment.
- Because broadcast chemical treatments opens the entire understory, care must be taken to monitor the species that re-occupy the site to assure other interfering species don't assume dominance.
- A few isolated desired species can often be protected by clipping them at ground level just before spraying. The lack of foliage protects the clipped stems and most will resprout.
- Broadcast chemical treatments are essentially foliar treatments, but done with equipment that sprays broad areas rather than selective targets. In some situations, this treatment is the most efficient and provides the best control of interfering species. Both backpack and tractor/skidder mounted sprayers are available.

Online support to further understand and visualize treatments include the following:

- A good internet source to understand forest vegetation management is provided by Penn State Cooperative Extension at www.extension.psu.edu/fvm.
- Chemical selective treatments www.youtube.com/ForestConnect
- Manual herbicide application methods http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs96.pdf
- Silvopasture (i.e., sustainable woodland grazing) http://www2.dnr.cornell.edu/ext/info/pubs/MapleAgrofor/Silvopasturing3-3-2011.pdf

Response by: Peter J Smallidge, NY Extension Forester, Cornell University Cooperative Extension, Department of Natural Resources, Ithaca, NY. Pjs23@cornell.edu, 607/592-3640. Support for ForestConnect is provided by USDA NIFA and the Cornell University College of Agriculture and Life Sciences.

Member Profile:
Peg Coleman and Ed Neuhauser

Jeff Joseph

Ed Neuhauser is a native New Yorker. While he was born and raised on Long Island, and briefly worked on Wall Street as a runner as a youth, Ed says that he knew from a very young age that city life was not for him. This draw toward the natural world was reflected in his educational path, as he attended the College of Forestry (now SUNY-ESF) in Syracuse, graduating with a BS in 1973 (majoring in forest biology) and with a Ph.D in 1978, with a focus on the biochemistry of lignin degradation by soil macroinvertebrates.

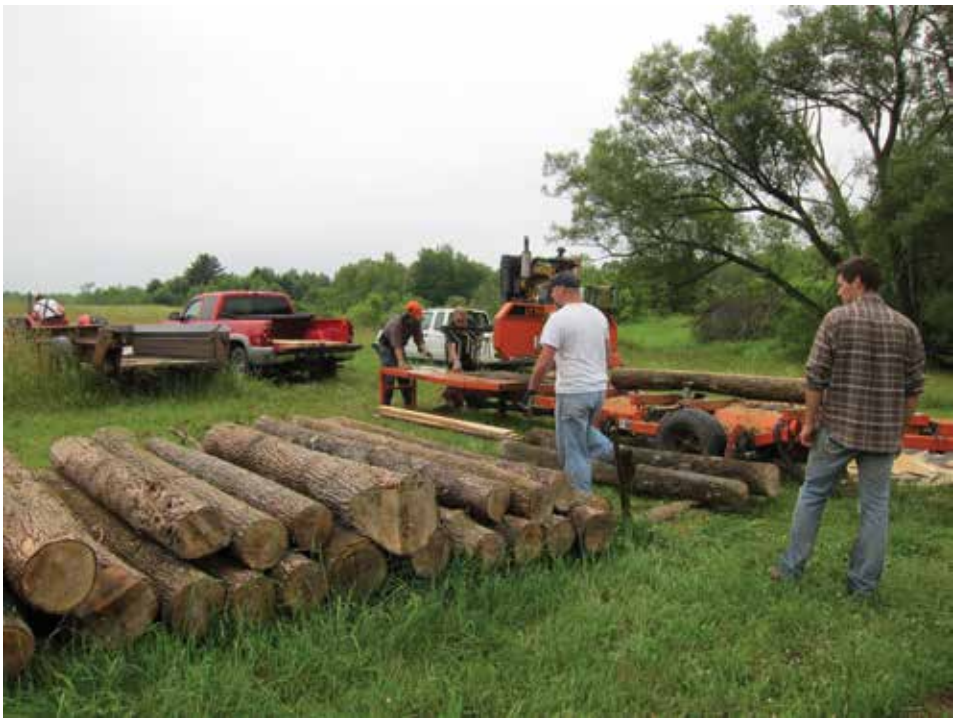
Following his graduation, he worked at the Department of Agricultural Engineering at Cornell University until 1986, at which time he took a position at Niagara Mohawk Power Corporation (now National Grid) in Syracuse, where he remained until retiring in 2012. While at Niagara Mohawk Ed worked in research and development, and later in environmental affairs.

While his career choice required him to work in the city, it did not require that he live there, and accordingly Ed bought a 39 acre rural property in West Groton (Tompkins County) in 1981, figuring that the daily commute of 100 miles round-trip would be well worth it to be able to come home to his eventual retirement home at the end of each day. In the succeeding years, Ed has purchased additional land surrounding the original parcel, and today he owns and manages a total of 132 contiguous acres, which are a mix of open fields, swamp, and about 75 acres of woodland.

Having gained a solid foundation in forest management during his college years, Ed has enjoyed being very hands-on in his woodlot over the years, and cites the assistance of the DEC and private consulting foresters, as well as participation in NYFOA meetings and events as being instrumental in his learning process. A unique—and quite impressive—aspect to Ed's 'style' of working in his woodlot is the involvement of others, making it a collective enterprise to share both the workload, and the benefits, of active woodlot management. For 30 years running, Ed has worked with 5 or 6 local families to cut firewood from his stands as a means of releasing the residual timber from the competition of lesser quality cull trees. Ed marks the trees to be cut in advance, which allows the work to continue in his absence. He requires that all chainsaw-wielding helpers complete the Game of Logging training for safety, as well as to ensure a degree of skill in felling in order to protect the surrounding crop trees. Other volunteers run the wood splitter, or take part in delivering the processed firewood to participants. Ed says that working 1-2 acres per year supplies 35-40 pickup truck loads of firewood.

In addition to the firewood, occasional cull logs that are of sufficient size and quality are milled with a portable bandsaw mill, and are air-dried on site before being turned into tongue and grooved strip flooring; Ed has used

A large garden provides sweet corn to share with friends.



With several neighbors contributing logs, the annual sawmilling day becomes a community effort.

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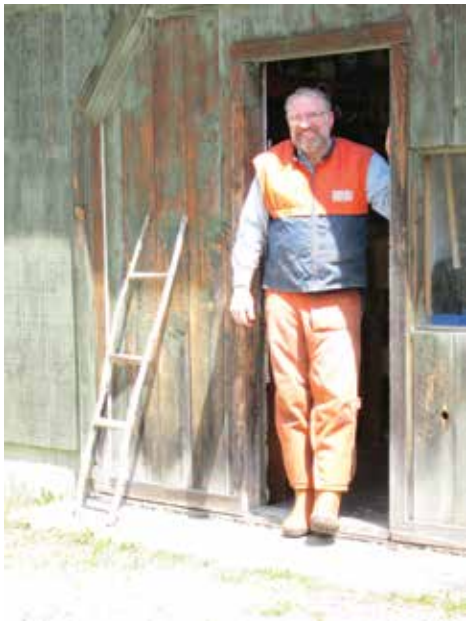
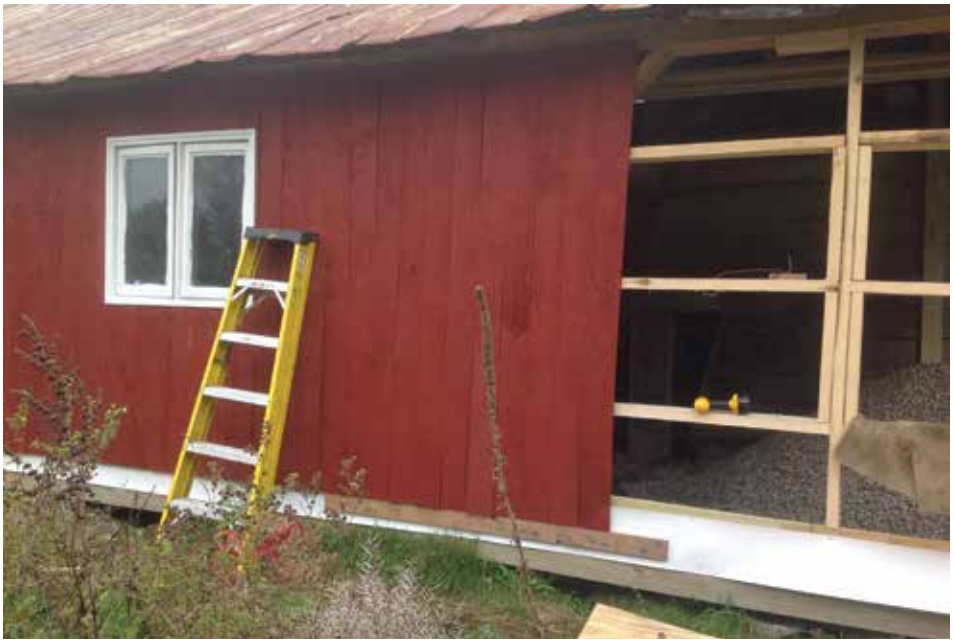


Getting ready to safely cut firewood.

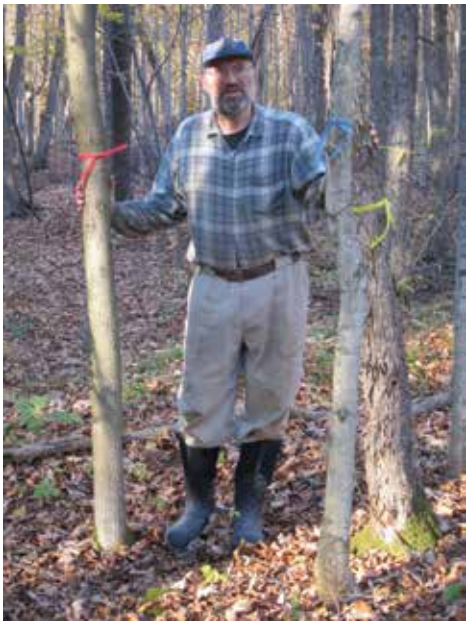
ash, beech, cherry, elm, and locust for this purpose. Ed also graciously allows trusted neighbors and friends to hunt his land—ideally taking does before bucks—again as a means of sharing the labor (controlling the deer herd) with the benefits (the venison, and the enjoyment of hunting).

As for Ed's relationship with NYFOA, he has been a member for 15 years, and a very active one at that, having served on the Southern Finger Lakes (SFL) steering committee for over 10 years, including a stint as chapter president. He is currently serving his third term on the state board of directors, and is the sitting vice-president of NYFOA. Another significant contribution Ed has made to NYFOA over the years has been his hosting of numerous woodswalks on his property. Ed has utilized the advice and assistance of fellow NYFOA members (and professional extension foresters) Pete Smallidge and Brett Chedzoy in developing the topics and demonstrations for the events, which have allowed many NYFOA members to see his various woodlot endeavors being put into practice. Ed also expresses his enjoyment in attending the woodswalks and events hosted by other members and NYFOA chapters.

A current—and major—project that Ed is involved with is designing and building a 3 acre pond on his property that incorporates a seasonal stream. Because of the scope and scale of the project, Ed hired a local engineering firm to design the pond and associated dam, as well as to help him with the required submittals to the DEC and the Army Corps of Engineers (this is a *serious* pond). The engineering drawings are currently being reviewed, and Ed hopes to break ground on the project in the near future. In the meantime, he has been clearing trees from the proposed site and processing them into either firewood or lumber.



Rebuilding the barn with wood obtained from the property.



Marking trees for thinning. The red tape are trees to be cut and the blue tape are crop trees for future management.

Asked for his thoughts and observations after nearly 35 years of woodlot ownership and management, Ed offered the following:

- "The biggest and most satisfying change that I have seen over the years is the increased growth response of the high quality trees after thinning;"
- "Never select trees to cut during TSI thinning with a chainsaw in your hand; make a seperate trip into the woods for marking in advance."
- "Forest management allows me to make the best use of the resource that I have been lucky enough to be able to manage during my tenure on the land. As good stewards of the land, we need to prepare the land for 2 to 3 generations from now. One of the very nice things about forest management is that it allows you to think about the future generations that will come many years after you."

As for any last pieces of advice or observations from Ed, if I had to boil it down to one parting thought or phrase it would undoubtedly be "Get out in your woods!" In this regard, there is no question that Ed leads by example, and that he has a great time doing it.

Jeff Joseph co-chairs NYFOA's editorial committee.

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