The New York Forest Owner

A Publication of The New York Forest Owners Association

For people caring about New York's trees and forests

September/October 2023

Revisiting NYFOA's Restore New York Woodlands Initiative with Jerry Michael

Volume 61 Number 5

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In This Issue . . .

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Jeff Joseph, Managing Editor
Mary Beth Malmsheimer, Editor

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; direct all questions and/or comments to jeffjosephwoodworker@gmail.com. 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, 2023.***

Please address all membership fees and change of address requests to PO Box 541, Lima, NY 14485 or lgooding@nyfoa.org. 1-800-836-3566. Cost of family membership/subscription is $55.

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Cover: Now that is what healthy regeneration looks like! Jerry Michael inspecting a future oak forest. See story on page 4. Photo courtesy of author.

From The President

Summer and fall traditionally are the busiest times for NYFOA chapters. The tone and tenor of a chapter is typically set by our chapter chairs.

I am part of NYFOA's Southern Tier chapter (SOT) and Steve Kutney serves as our chair. Steve is a long-term member of NYFOA and has devoted countless hours to SOT over the years. I think members will find Steve has led an interesting life as an outdoor enthusiast who has taken the long view of how he manages his woodlot. I would like to share a paragraph Steve wrote for the current SOT newsletter. I believe the experiences Steve mentions, starting as a young man through today, will resonate with many of our members.

From Steve:

"…through NYFOA my dad learned of a New York State program that paid $40 per acre to any landowner who did timber stand improvement. To a 17-year-old, that was an opportunity. I agreed to do the work for the $40 per acre. A New York State forester marked four acres of trees. I girdled them with a hatchet. We didn't have a chainsaw that worked very well. It took a lot longer than I thought it would. The Forester then required me to spray the girdled trees with a chemical. I'm not sure of the name of the chemical but I'm confident that it's outlawed today. While doing the work it occurred to me that I was working on my retirement because I knew it would take many years for these trees to grow to a harvestable size. I did several TSI projects of ten acres when I was in my early twenties using a Homelite Super 2 chainsaw to girdle the trees. I was not required to use chemicals. About 1995 I had a small timber cut to help me finance the purchase of my house. I have not had that retirement harvest. The trees are looking good and continue to grow…."

Steve and the SOT steering committee have planned several events this year. For details, check out the SOT newsletter on the NYFOA website, *https://www.nyfoa.org/news/southern-tier-news/sot-newsletter-fall-2023*. Also, please check the website and chapter newsletter for upcoming events near you.

At the state level, we are planning four regional meetings this fall, rather than the traditional format of one big members meeting in central NY. The state board has consulted with chapter leadership and all agreed that the regional meeting format will be much more accessible to our members and serve to enhance our association's program offerings. The regional meetings are an experiment, and I am confident participants will benefit from a range of programs we will offer. The plan is to have a day of lectures, field tour options, lunch, and time to interact with your fellow participants.

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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.

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The Ongoing Challenge of Forest Regeneration:

Looking Back at NYFOA's Restore New York Woodlands Initiative

By Jerry Michael

Can the regeneration of our hardwood forests remain a realistic expectation heading into the future?

Background

NYFOA announced the Restore New York Woodlands (RNYW) initiative in 2013, to highlight our association's 50th anniversary. The purpose of the initiative was to focus attention on the forest regeneration crisis through press releases, a series of articles in the NY Forest Owner magazine, a dedicated section of the NYFOA website, and chapter woods walks with a forest regeneration theme. Over the next two years, each NYFOA chapter conducted as many as four such woods walks, which were attended by more than 600 forest owners and other interested parties. NYFOA also sponsored numerous workshops on forest regeneration for consulting and service foresters, conducted by faculty from Cornell and SUNY ESF Syracuse.

In 2015, NYFOA organized and sponsored a Symposium entitled "The Future of NY Forests at Risk – Working Toward a Comprehensive Solution" at SUNY ESF Syracuse. Distinguished speakers from academia, the US Forest Service, the DEC, and the NYS Assembly discussed issues concerning the sustainability of New York forestlands and potential solutions with an audience of almost 200 participants.

By 2018 the NYFOA board had decided to focus the RNYW initiative on the one forest regeneration issue that individual woodlot owners have the least control over– whitetail deer. The issue, and NYFOA's strategy for dealing with it was introduced in an article I wrote for the September-October 2018 issue of the NY Forest Owner entitled "The Elephant in the Room is the Deer in The Woods". NYFOA organized a coalition of stakeholder organizations that developed and presented numerous recommendations for the management of the deer population to DEC executives in December, 2018. An update article entitled "The Deer Impact Initiative" was published in the March-April 2019 issue of this magazine.

The Good News

The DEC is fully aware of challenges facing the sustainability of our state's forested landscape. Their "NY State Forest Action Plan, 2020-2030" thoroughly describes the many issues that prevent successful forest regeneration, including invasive vegetation and deer impacts. Their "Management Plan for White Tail Deer, 2021-2030" includes many new initiatives, some of which were encouraged by NYFOA and our coalition partners during our meetings with them in 2018. Here are some of the highlights:

- The DEC is prioritizing forest ecosystem health in managing deer populations. The hunter-dominated focus group approach to gathering public opinion about deer population has been replaced with surveys directed to a broader group of stakeholders. The DEC is also considering data from the US Forest Service and the Cornell/SUNY ESF Syracuse - developed "Assessing Vegetation Impacts of Deer" (AVID) system that indicate the level of regeneration failure caused by deer impacts in discrete areas of the state. Where regeneration failure is considered to be unacceptable, DEC is attempting to reduce deer populations through increased allocations of deer management permits (DMPs), regardless of input from public surveys. Other regulatory changes to increase the antlerless deer harvest in targeted Wildlife Management Units (WMU) include extended & special seasons and hunting hours, and special provisions to encourage youth hunters.
- In some WMU's, the available supply of Deer Management Permits (DMPs) exceeds hunter demand for them, and statewide, only 13% of issued DMPs are filled and reported. The DEC has contracted with Cornell University to conduct a survey of licensed hunters throughout the state this fall to determine hunter values and motivations regarding the taking of antlerless deer. It is hoped that the results of this survey can point the way toward additional regulatory changes, communications programs, and possibly incentives to increase the yield from the DMP program (Note: I participated in one of several ZOOM focus group sessions intended to inform the design of the coming survey. One of the ideas discussed was to legalize the commercial sale of venison).
- For several years, NYFOA and our coalition partners pressed the DEC and the NY Legislature for a cost-share program to assist forest landowners in managing for regeneration. Perhaps the greatest achievement of the RNYW initiative was the DEC announcement of the "Regenerate New York" grant program in 2020. Over the past two years, 36 private forest landowners have received almost one million dollars in benefits from this program and the DEC has announced that $850,000 in grants are available for 2023. The program reimburses 75% of the cost for practices such as the management of invasive vegetation, tree planting, and the construction of deer exclosure fencing or slash walls.

Issues & Concerns

• Based largely on U.S. Forest Service (USFS) plot samples taken 10-15 years ago, the DEC considers "regeneration debt" (failure) to be "low" or "moderate" in most of the state south of the NY Thruway. It is considered "severe" on Long Island and part of Niagara County, and not a problem in most of the Adirondacks.

As a Master Forest Owner volunteer for Cornell Cooperative Extension, I have cruised more than 200 forested properties in Broome, Chenango, Delaware, and Otsego Counties and have found no regeneration whatsoever on more than 90% of them. The exceptions were properties where windthrow events in pine plantations had protected seedlings and saplings until they grew out of the reach of deer, or where the forest owner had employed tree shelters, fencing, or slash walls to exclude deer.

So, based on my personal observations, the data the DEC is using to assess forest regeneration significantly understates the problem, at least in the Southern Tier. I think that AVID data could eventually provide a more accurate picture, but many more test plots will need to be established and maintained in diverse areas of the state in order for AVID data to significantly influence deer management decisions by the DEC (Want to help? Check out http://AVIDdeer.com and set up a test plot on your own woodlot).

• The forest understory has been largely devoid of desirable regeneration since the deer population exploded in the 1960's. I have seen this first hand, and therefore agree with those academics and professionals who feel that, under these legacy conditions, an extremely small deer population can prevent any regeneration of the of the canopy-level species we value the most.

TIME Magazine, December 9, 2013. Photograph by Daniel J Cox / Getty Images.

• The DEC is of the opinion that, with continual "fine tuning" of regulations, deer populations in most of the state can be adequately managed through recreational hunting. But, if the available data understates the problem, and if WMU's where few, if any DMP's are issued are still not regenerating then, in my personal opinion, more than just "fine tuning" the regulations will be required.

A Pessimistic Outlook

Our current second growth forests are about 100 years old, give or take a decade or two. They were established when vast areas of agricultural land were being abandoned and there was plenty of sunlight to encourage the regeneration of the natural hardwood forest. At that time, if you wanted to see a deer south of Old Forge, you had to visit a zoo. And globalization had not yet introduced a flood of invasive plants and insects to North America.

This combination of conditions will not be available to us as we attempt to establish a third-generation forest. The mortality of the current forest will provide necessary

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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 influence 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

Managing for oak: ecological and social values. Part II

Editor's Note: *Due to the length of this article, it has been presented in two parts. The first part appeared in the July/August issue of* The New York Forest Owner*; what follows below is part two.*

Question: I don't have much oak in my woods, but I've heard that oak in general is in trouble. Is this another pest issue, or what's going on with oak? (Jen, CNY)

Management for the persistence and abundance of oak

The ecological attributes of oaks rightfully lead to the conclusion that managing for oaks to dominate in future woodlands is a process, not an event. Owners need the patience and resolve, and managers need to implement actions that allow for the establishment and arrival of acorns, the formation of robust root systems, the development of saplings, and the growth of saplings into the canopy. The oak regeneration process will take several years.

The presence of oaks as a dominant part of a woodland canopy is often associated with a past history of moderate- to large-scale disturbance. Disturbance is needed to provide sunlight for oaks that are typically moderately or fully intolerant of shade and maybe out-competed by other hardwoods. Current forests offer a different disturbance regime than likely existed when current oak-dominated forests were established. Current eastern forest disturbances tend to be small, infrequent, and include abundant deer that selectively browse oak and other species. These conditions favor species other than oak, such as maple, birch, beech, and yellow-poplar, with differing tolerances to shade and browse, but all are sensitive to fire.

Disturbance reduces oak competition with other hardwood species for sunlight. Some of these historic disturbances may have been low-

Figure 7. Oaks will respond well to thinning, even small sawlog sized trees increase growth when they are released from competition for sunlight. White oak, as pictured, tends to be slower growing than northern red oak, but also responds to release.

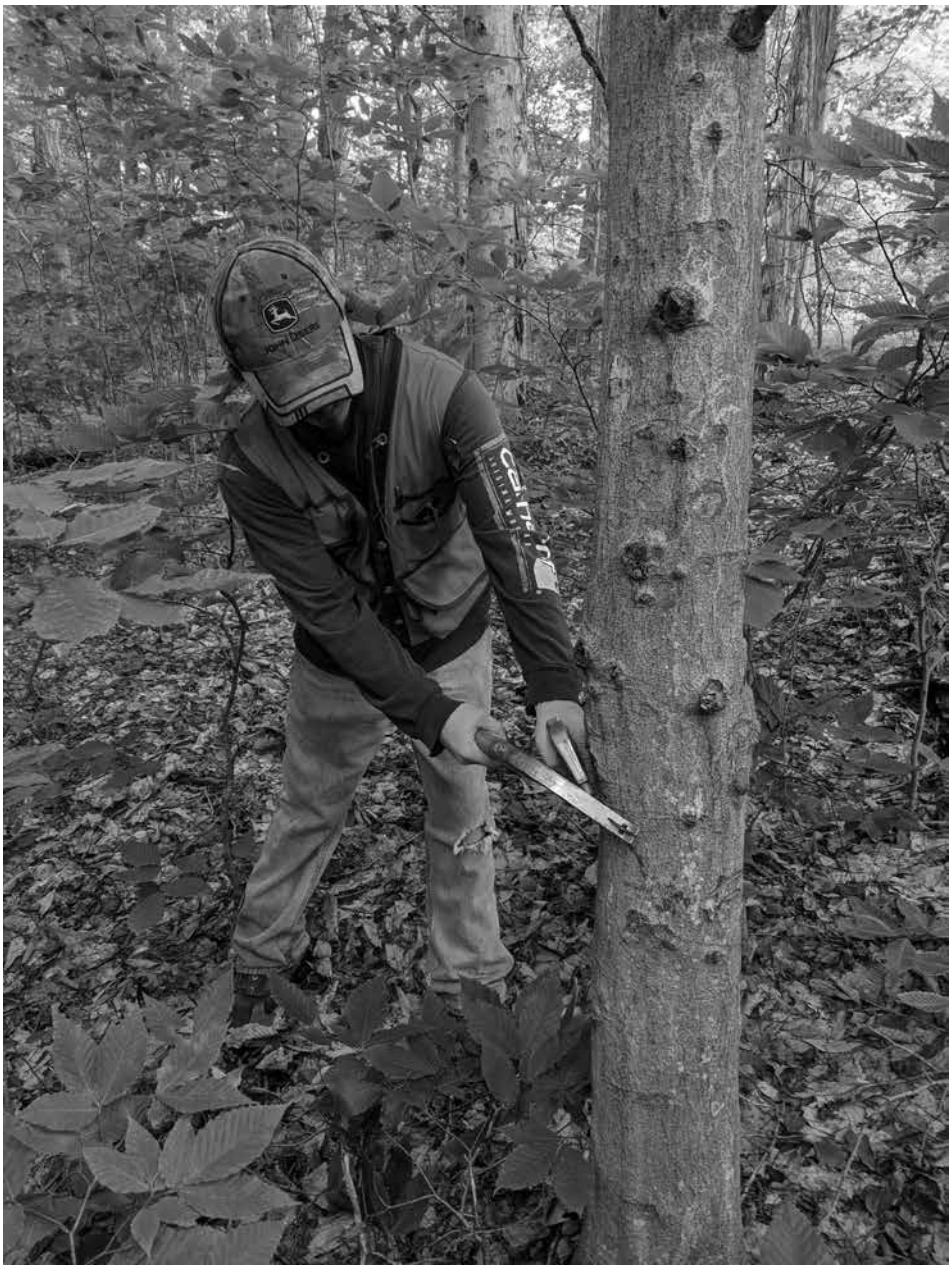

Figure 8. The number of mid-canopy stems per acre is often less than a few hundred, which are efficiently treated with single-stem selective herbicides such as this example of hack-and-squirt to a diseased American beech.

intensity and chronic such as livestock grazing or fire. In other cases the disturbance was episodic and impacted the canopy, such as timber harvesting, windstorms, or the historic loss of American chestnut that co-occurred with oaks. In each case, the success of oak depends on it being well-established as a seedling or sapling with a vigorous root system. The types of disturbances that might previously have favored oaks are less common in today's forests.

Management of existing oak-dominated woodlands to maintain health and productivity is similar to management practices recommended for other types of forests. Oak trees respond well to thinning, especially those in the upper canopy (Figure 7). Several federal, state, and university resources are available to inform oak management.

Forest managers who are working with owners to perpetuate or increase oak abundance in future forests use a variety of management practices that favor oak establishment, survival, and growth. These management practices mimic natural or historic disturbances that are associated with oak success. The White Oak Initiative describes several of these management practices in their *Landowners for Oaks* series. Some of the practices include options for harvesting to help fund the restorative practices, and many practices can be combined or used in sequence for an optimized outcome. The White Oak Initiative region may not struggle as much with deer impact as in NY and southern New England, so evaluate the execution of these practices in the context of our higher levels of deer browsing. These practices include:

- **Enhancement (enrichment) planting** – In some woodlands suitable for oak, there is no or little oak present as seedlings or mature trees to produce acorns. The goal is to ensure there are hundreds of seedlings per acre. In these examples of low acorn availability, plant oak seedlings selected such that the species matches the soil and site conditions. Protect seedlings from deer browsing if necessary. Control low-growing shrubs, ferns or mid-canopy trees to provide sufficient sunlight to allow the growth of the seedlings.
- **Soil scarification** – Acorns germinate better and are less vulnerable to winter freezing conditions if on mineral soil and then covered with foliage. Acorns usually drop before leaves drop. Soil scarification or soil mixing will ideally coincide with a bumper crop of acorns because most acorns in years of normal production are consumed by insects. Scarification might happen with logging equipment used to harvest lower canopy stems, or be done specifically with root rakes on bulldozers, some types of well-managed livestock, or small tractors in mostly level stands. Timing the scarification 5 to 15 years before a significant disturbance such as an overstory harvest will provide time for oak seedlings to establish robust root systems and the capacity to attain prominence in the seedling and sapling layer of the forest.

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Figure 9. After three growing seasons of protection by a slash wall at the Arnot Forest, these red oak seedlings are well established. The November 2019 harvest coincided with a bumper acorn crop that was mixed into the soil with logging equipment. Note the maple stump sprout, of which there are many, and likely will require some amount of control.

• **Mid-canopy removal** – The mid-canopy species, those below the main canopy, cast a denser shade than the main canopy simply because they are closer to the ground. Reduction or removal of the mid-canopy allows an increase in light, but not so much light as to favor early succession shade-intolerant species such as aspens, yellow-poplar, or pin cherry. The mid-canopy layer often has little economic value, so the management technique might most effectively be an individual stem herbicide treatment (Figure 8) or mechanical treatments of girdling or cutting.

• **Site preparation for regeneration** – Before, during or after a sawlog harvest, the presence of live residual woody stems of any size or other interfering vegetation needs to be reduced or eliminated to allow adequate sunlight for natural or planted oak seedlings to develop. While some of the residual stems might have value for firewood, unless this treatment occurs as part of a harvest the action will require some investment of time and/or money.

• **Prescribed fire** – A challenge in NY and northeastern forests, unlike south-central, midwestern and mid-Atlantic states is the infrequency of weather and fuel conditions conducive to prescribed fire. These controlled burns reduce competing vegetation, allow oaks to resprout, and prepare mineral soil seedbeds. Because of the ecological attributes of oak versus other hardwoods as previously described, correctly managed controlled fire is selective and benefits oak seedlings. A favorable prognostication of climate change might be more favorable conditions in NY for the use of prescribed fire as a management tool. Additional research will be needed to determine if targeted herbicide techniques or management intensive grazing with livestock might function in a similar way as prescribed fire to favor oak seedling development.

• **Crop tree release** – This practice helps ensure that oak saplings (stems 1 to 5" dbh) and poles (5" – 11" dbh) are released from the competition attributable to neighboring trees. Some people now refer to "crop tree release" or "crop tree management" as "best" tree management to reduce misunderstanding that the "crop tree" is cut rather than retained. The oak tree crowns that are released will increase their growth following removal of competition on at least three sides. That increased growth obviously increases tree volume (and all the associated benefits), but also increases the quality of the stem by compartmentalizing and healing over wounds and branch scars. The volume of wood increases and the value per unit of volume increases.

• **Group/Gap Openings** – Correctly sized gaps, those about 150 feet in diameter, offer enough sunlight to allow oak seedlings to develop but not so much light to favor early successional species. Beyond the edge of the gap, into the forest perimeter, the partial dappled light is conducive to oak seedling establishment and early development. As with other of these management practices, be alert to the presence of undesirable low canopies that will shade the oak seedlings. In NY, these small openings can also concentrate deer impacts because deer are drawn to the flush of growth that responds to the increased sunlight.

• **Two-aged deferment harvest** – This practice is a bit similar to a final act of desperation, or being careful to not "throw the (last) baby out with the bath water." Stands that have no oak advance reproduction and little or no oak in the canopy have few options. If the stand is planned for harvest, retain all or most of the oak, with the intention of allowing them to grow and produce acorns until the future harvest of the soon to regenerate forest. These retained canopy oaks will have many decades to produce and disperse acorns that may grow beneath the young forest of other hardwood seedlings likely to respond to the harvest. As the young forest develops, other practices mentioned here (e.g., mid-canopy removal) can favor the oak seedlings for future success.

• **Shelterwood Establishment Harvest** – This common silvicultural practice, if properly implemented with attention to the needs of oak, can help already established oak develop. In NY and the Northeast, this regeneration system would include three entries for harvest. The first would prepare for seedling establishment by reducing or removing the mid-canopy with soil scarification to allow existing oak seedlings to develop. Control of competing species would likely be required. In the absence of existing oak seedlings, the USFS SILVAH-oak (see

Figure 10. A portion of the CAFRI research team inspects regrowth of an oak dominated forest after one growing season inside a slash wall.

link below) protocol to optimize seedling establishment removes about 25% of the canopy stems (specifically "relative density") from the mid and lower canopy. In practice this is accomplished when the site index (the height of a tree at age = 50, usually 55 to 75 for oak) plus the basal area removed equals 100. Deer pressure, in the short term, helps control some of the browse sensitive hardwoods such as maple and birch. As the developing seedlings gain sufficient size to require more light a shelterwood cut would reduce the overstory canopy by about 50% (Figure 9), plus begin the exclusion of deer. Finally, when oak seedlings had root collars approaching 0.75" diameter, the overstory canopy could be removed. When the seedlings grow into sapling sizes (1 – 5" dbh) and the young canopy starts to close, a best tree release (see above) should be evaluated.

• **Afforestation** – There are approximately 1.5 million acres of open rural land in New York that is not used in support of agriculture. This acreage is minimally useful for wildlife because it is commonly dominated by golden-rod, or worse, increasingly dominated by invasive shrubs. Some acorns may disperse from adjacent oak woodlands, but successful conversion to oak will require planting. The priorities for afforestation are to match the species to the soil and site conditions, prepare the planting locations by removing competing vegetation, and protect seedlings from deer. The variety of oak species provides some species for almost any site. Although more expensive and difficult to acquire, one-year old containerized seedlings will likely offer the greatest success. Vegetation management and browse control will be required for 3 to 5 years after planting.

Oaks are a fascinating and important species. The risk to the loss of oak isn't due to insects or pathogens, but depends on resolve and investment by owners and managers who commit to ensuring this symbol of eastern hardwood forest endures. Foresters should explore the use of the USFS program SILVAH-oak (https://www.fs.usda.gov/research/nrs/products/dataandtools/software/silviculture-allegheny-hardwoods-silvah-8).

As a result of the ecological and social values of oak and hardwood forests, support for a pilot study of oak, particularly NY white oak for locally produced wine and spirit barrels, was provided by NY Departments of Agriculture and Markets and Environmental Conservation through the NY Wood Products Development Council to the Climate and Applied Forest Research Institute (CAFRI) of SUNY ESF and Cornell College of Agriculture and Life Sciences (CALS) (Figure 10). A literature database on the ecology and silviculture of white oak is available through the author; the database was developed by Cornell CALS graduate students Tess Canino and Ogden Olivas.

Peter Smallidge, NYS Extension Forester and Director, Arnot Teaching and Research Forest, Department of Natural Resources, Cornell University Cooperative Extension, Ithaca, NY 14853. Contact Peter at pjs23@cornell.edu, or (607) 592 – 3640. Visit his website www.ForestConnect.info, and webinar archives at www.youtube.com/ForestConnect. *Support for ForestConnect is provided by the Cornell University College of Agriculture and Life Sciences and USDA NIFA through McIntire-Stennis, Smith-Lever and the Renewable Resources Extension Act.*

Wild Things in Your Woodlands

By Devon Davis and Kristi Sullivan

Virginia Opossum (*Didelphis americana*)

The Virginia opossum (Didelphis americana) is the only native marsupial in North America north of Mexico. They are house cat-sized, with short, black legs, a pointed snout, and sharp claws. Their white-gray fur is coarse and thick and slightly ranges in coloration. Their ears are prominent, thin, and round, providing them with an acute sense of hearing. A long, hairless prehensile tail provides them with excellent climbing skills. Males tend to be slightly larger than females and breed with several females during the mating season, which ranges from January to August (depending on climate). Twelve to 13 days after mating, females give birth to 4-25 honeybee-sized young that climb into her pouch and nurse for about 50-70 days. Within the next few weeks, the young are weaned and climb onto the mother's back, becoming independent shortly after. Females can have between 1-3 litters per year, depending on climate. Besides mating, Virginia opossums live a strictly solitary life. Most die in their first year, and their average lifespan in the wild is 1.5-2 years.

Marsupials are one of the oldest types of mammals, and opossum-like animals existed in North America approximately 55 million years ago. Virginia opossums are sometimes referred to as "living fossils" due to their close resemblance to primitive marsupials, based on fossil evidence. As marsupials, Virginia opossums have a small pouch in their under-belly where their young are nursed for around 2 months. Their prehensile tail is almost the entire length of their bodies, and though they do not sleep hanging from their tails, their tails help them be skilled and agile climbers. They also use their tails to carry nesting materials and other items. Virginia opossums have 50 teeth, more than any mammal in North America.

Despite their name, Virginia opossums are found throughout Central and North America. Their range extends from Mexico down to Costa Rica, along the west coast of the United States, east of the Rocky Mountains into states throughout the eastern United States, and into the southern border of Ontario, Canada. Their range is currently expanding due to their ability to thrive in urban areas and in warmer climates. Virginia opossums are found entirely throughout New York State.

Their extensive range reflects their ability to survive in a wide variety of habitats. Virginia opossums tend to prefer forested areas near sources of water, such as streams, swamps, marshes, ponds, and lakes. They also frequent highly developed areas, such as farmland, parks, urban areas, and along the forest edge. The mortality rate for Virginia opossums increases during the winter, as their fur does not provide optimal insulation. In colder regions, they will retreat to their dens which are usually in old trees, abandoned burrows from other animals, rock crevices, wood piles, and even in human structures.

Just as they are habitat generalists, Virginia opossums are opportunistic feeders, eating a wide variety of prey. Depending on the season, habitat, and region, they will eat small mammals, worms, plants, fruits, seeds, birds, eggs, insects, crustaceans, reptiles, and amphibians. They will also eat carrion and are notorious for feeding on garbage and pet food.

The conservation status of Virginia opossums is considered "least concern," and their populations are expanding, though they do have many sources of mortality. They have several predators, including dogs, foxes, coyotes, bobcats, and birds of prey. When threatened, they tend to hiss and show their teeth, but they are non-aggressive, and attempt to hide to avoid predation. Young opossums may also play dead to trick predators. Virginia opossums are resistant to many viruses common in other mammals, and they rarely transmit rabies, but they still die from parasites and disease. Collisions with vehicles affect opossum populations

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and are relatively common due to their preference for urban areas.

Though, at times, the Virginia opossum may be bothersome due to some of their pesky eating habits, there are easy actions landowners can take to minimize negative interactions and maximize positive ones. Keeping garbage covered, fencing your garden, and strategically lighting up spaces that may attract opossums (as they prefer darkness) are all simple ways to prevent them from negatively impacting your property. However, they are highly effective at reducing populations of other dangerous and unwanted pests. Virginia opossums love to eat ticks, cockroaches, mice, rats, slugs, and mosquitoes. To attract Virgnia opossums and take advantage of this free pest control, landowners can leave out woodpiles and other debris that can be used as dens. They are a very interesting species, and with a bit of consideration, landowners can make their relationship with Virginia opossums a mutually beneficial one!

Devon Davis is a Program Assistant for the New York State Master Naturalist Program, Directed by Kristi Sullivan at Cornell University's Department of Natural Resources. More information on managing habitat for wildlife, and the NY Master Naturalist Volunteer Program, can be found at https://blogs.cornell.edu/nymasternaturalist/ Photo taken by Josh More.

Would you like to see an article about a particular topic we haven't covered?

Please send your suggestions to:
Mary Beth Malmsheimer, editor at mmalmshe@syr.edu
or
Jeff Joseph, managing editor at jeffjosephwoodworker@gmail.com

NYFOA 2023 REGIONAL CONFERENCES

NYFOA is excited to bring to you four regional conferences to be held across the state this fall that will be accessible to all members (and non-members – tell a friend). If you prefer to stay close to home, one will be held nearby, or you may live where you can choose from more than one; but if you're looking for a reason to get away or can't make the one nearest you, you can choose from any of the other conferences to attend instead.

Hudson Valley Region – September 9th
Columbia-Greene Community College - Hudson, NY

Adirondack Region – September 30th
Tupper Lake High School - Tupper Lake, NY

Central New York Region – October 14th
LaFayette High School – LaFayette, NY

Western New York Region – November 4th
Pioneer High School – Yorkshire, NY

The agenda will be similar for each conference, featuring presentations on:

- *Bears of New York* – Hudson Valley, CNY, & WNY Conferences
- *Moose of New York* - Adirondack Conference only
- *Estate Planning for the Forest Owner*
- *Timber Market Panel Discussion*
- *Planting for Pollinators*
- *Forest Carbon Market Opportunities for the Small Private Landowner*
- *Dept. Env. Conservation – NY Forestry Update to include Regenerate NY Cost Sharing*
- *Woods Walk and The Forest Resiliency Score Card Field Demonstration*

The agenda, location details, and registration information will be available on the NYFOA website at ***www.nyfoa.org/events/statewide-events***
To register on line, or to request this information be mailed to you please contact the NYFOA office by email at info@nyfoa.org or call 607-365-2214 or 716-237-0880. We hope to see you there!

Managing Forests at Scale for Biodiversity and Climate Outcomes

By John Bartow

Over the past few years, New York has enacted some very ambitious legislation that has significant implications for New York's forests and ecosystem, particularly in regard to their biodiversity and climate benefits. With a total of 18.6 million acres of forestland in New York, 75% or 14 million acres of which are privately owned, this legislation brings significant impacts and opportunities for private family forest landowners. In this article, we will be highlighting three of the most crucial pieces of legislation that are affecting these private forest lands, as well as assessing the importance of private forest landowners engaging in active sustainable forest management.

1. Climate Leadership & Community Protection Act (CLCPA)- In 2019, the CLCPA was enacted in New York. This legislation calls for a reduction of greenhouse gas emissions- 40% by 2030, and 85% by 2050 with net zero emissions. This net zero is where the demand on our forests is greatest. The CLCPA will affect almost every facet of our energy economy in the coming years, and it will heavily depend on our forests to deliver an abundance of climate benefits.

2. Green Amendment- In 2021, New York's voters approved an environmental rights amendment to the Bill of Rights in the New York State Constitution by a margin of more than 2-1. Article I Section 19 reads: "Environmental Rights. Each person shall have a right to clean air and water, and a healthful environment." While not directly noting forests, this "Green Amendment" depends upon our forests for providing clean air, clean water, and a healthy environment on both public and private forest lands. The Green Amendment could add to the force of Section 7.2 of the CLCPA, which requires all state agencies to consider whether their decisions are inconsistent with the attainment of the statewide greenhouse gas emissions limits, including net zero.

3. 30 x 30 - In 2022, Governor Hochul signed legislation that set the goal to support and contribute to national efforts to conserve at least 30% of U.S. land and water by 2030 (30 x 30). According to the Governor and Legislature, this will promote biodiversity and preserve New York's wildlife, forests, and clean water sources, which are all essential to New York's health and economy. This law requires the Department of Environmental Conservation (DEC) and the Office of Parks, Recreation, and Historic Preservation (OPRHP) to develop strategies and a methodology to achieve the goal while collaborating with a broad group of stakeholders. Depending how DEC defines "conserved land", private forest lands could be a large part of 30 x 30.

While there have been other conservation laws enacted that both benefit or encumber private forest lands, these three put in place a framework that calls upon the State to significantly scale up the benefits that forests have on biodiversity and climate. It will inevitably rely on our forests that are privately owned, including the 50% (9.3 million acres) of family forests over ten acres. More importantly, if we are to achieve these goals and ambitions, **we must find ways to engage all private forest landowners in active sustainable forest management.**

The Importance of Forests and Forest Management

Our forests deliver biodiversity benefits at scale. Within a forest, biodiversity includes everything that is both flora and fauna. New York's forests are home to a variety of wildlife including 163 species of birds, 49 species of mammals, and 40 species of amphibians and reptiles. However, not all species can live in the same forests. Tree species, tree age, terrain, climate, shade, water resources, and many other factors create very different types of habitats to support different species. Some species of wildlife depend on early successional forests of smaller younger trees, while others require older, interior forests containing large trees with complex canopy structure. **What is certain for forest biodiversity is the necessity of a mix of forests that are healthy and regenerative. This is achieved through sustainable forest management.**

Private forests deliver climate benefits at scale. In New York, private forests encompass 75% of all forestlands. At the same time, these forests account for nearly 80% of net forest sequestration, removing more carbon from the atmosphere than is emitted by all passenger cars in the state in a year. Additionally, private forests also store more than 60% of the carbon stored in all New York forests. While it may sound counterintuitive to those unfamiliar with modern forestry, the data shows that sustainably managed forests can yield economic and climate benefits. As stated by the Intergovernmental Panel on Climate Change, "In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber or energy from the forest, will generate the largest sustained mitigation benefit."

Private forests also deliver economic benefits at scale. In New York private forests provide approximately 95% of the timber and fiber harvested for forest

products. The combined forest products sectors in New York account for 7% of all manufacturing value and 9% of all manufacturing employment. The forest sector employs nearly 100,000 New Yorkers and has $23 billion in direct and indirect economic benefits. Timber sales also convey about $250 million annually to forest landowners. These economic benefits are a major driver of forest landowner stewardship.

If New York intends to meet the ambitious goals of State policy, there is a lot more that our forests must do. That also means that **State policy needs to induce, not regulate, private forest landowners to engage in active sustainable forest management to enable our forests to deliver at yet a larger scale.** Regulation does not yield results for sustainable forest management. Too often regulation results in no action or conversion of forest lands. In addition, forest stewardship is a landowner's responsibility, and their right to engage or not engage.

State Policies and Programs

In the State Wildlife Action Plan (2016) and the Climate Scoping Plan (2022), there have been several state policies and programs identified that could help induce private sustainable forest management resulting in landscape scale benefits for biodiversity and climate. In addition, there are several federal programs and programs administered by private environmental and conservation organizations (e.g., land trusts) that can benefit private forest management. The following is a summary of these policies/programs:

- **Regenerate New York –** up to a 75% State cost share to support the regeneration of forests so they may continue to deliver vital services such as mitigating climate change, protecting air and water quality, and supporting the economy.
- **Forest Conservation Easement for Land Trusts -** funding is available for DEC to award eligible, accredited land trusts to purchase conservation easements on private forested land for the purpose of protecting these lands from future development. The goal of the grant program is to increase the pace of forest land conservation to keep forests as forests and combat climate change.
- **Buffer in a Bag Program -** qualifying private and public landowners may apply for a free bag of 25 tree and shrub seedlings for planting near streams, rivers, or lakes to help stabilize banks, protect water quality, combat climate change, and improve wildlife habitat.
- **Forest Preservation on Ag Land for Carbon Sequestration –** eligible farmlands to institute practices on farm woodlots for improved carbon sequestration.

New York has also had forest Real Property Tax Law provisions for 80% reduction of local property taxes. Section 480A of the Real Property Tax Law has for years provided tax relief to forest landowners who enroll and commit to manage their forests for fiber and timber production. The final Climate Scoping Plan also recommends amendments to 480A to streamline the program for both DEC and forest landowners. The plan also recommends adopting two new provisions of forest tax law: 480B for forest biodiversity and forest retention benefits; and 480C for forest carbon storage and sequestration benefits.

Enrollment in 480A has been historically low with less than 12% of eligible lands enrolled and less than 7% of eligible landowners enrolled. There are a lot of reasons for not enrolling in 480A and we need to understand what changes, if any, would attract greater participation. The overriding goal must be a simpler program to use and fewer inconsistencies in administration.

The Climate Scoping Plan also calls for increased technical assistance to forest landowners to engage them in the use of programs and financial resources to help them manage their forests. Discussions have focused on the use of additional DEC foresters and the use of County Cooperative Extension and Soil & Water Conservation Districts. In any of these instances, we need to know if forest landowners want such assistance and whether they would leverage the resources these entities can bring.

There are several federal programs that provide financial and technical assistance to forest landowners. For example, the U.S. Natural Resource Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) provides technical and financial assistance to forest landowners. NRCS works one-on-one with forest landowners to develop a conservation plan that outlines conservation practices and activities to help solve forest management issues. Though once again, there is limited funding and participation.

Conclusion

As the state rolls out the Climate Scoping Plan and updates biodiversity goals under 30 x 30 work at DEC and OPRHP, we need family forest landowners to engage in the stakeholder outreach so that programs and policies that are beneficial to forest landowners are designed in a way that will bring landowner participation to scale. We need to design these programs to attract much greater levels of participation than our existing programs. We also need funding at levels that will have landscape level impacts. Finally, we need to meet forest landowners where they are regarding their forest stewardship objectives.

The role of New York's forests in biodiversity and climate are too important to not get this right. We need forest landowners to speak up through organizations such as NYFOA and to help design the programs and policies that are attractive to them and will enable them to engage at scale. We also need our forests to yield economic benefits to forest landowners to enable them to keep their forests as forests. Wood product markets are a major part of that equation, and we would also ask forest landowners of every scale to work with us at ESFPA to help define those markets and sustainable forest practices that excite landowners to enter into those market opportunities.

Over the next several months, as we prepare for the 2024 State Legislative Session, we encourage everyone to let their voices be heard so that we can deliver forest management at scale!

John Bartow is the executive director of the Empire State Forest Products Association.

The NYFOA Scholarship at SUNY ESF

By Ed Neuhauser

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. Part of the way that the Association completes this mission is through all of the meetings, seminars, and woods walks that are held throughout the state. My participation at many of these events over the years has been very valuable in helping me more effectively manage my woodlot.

NYFOA has always been a forward-looking organization, and one of the ways that we have promoted the education of future foresters is by the establishment of a scholarship to support resources management students at the SUNY College of Environmental Science and Forestry. The NYFOA Scholarship at ESF was established by some NYFOA members to support the education of future foresters. This scholarship supports 3rd year resource management students to assist them in continuing their education.

In an effort to make NYFOA members more aware of the existence and value of the NYFOA scholarship at ESF, NYFOA has teamed up with ESF faculty to provide a mailing to NYFOA members describing how the scholarship works and how NYFOA members can help support it. Donations to this scholarship are deposited in an endowment, which supplies scholarship assistance to students by using the earnings from the endowment each year to fund the scholarship. This way the donation that a NYFOA member makes to the scholarship continues to work for many years to provide student aid.

NYFOA members can expect a letter this fall from NYFOA and SUNY ESF providing information about the scholarship and how members can donate to provide support for future forestry education. After receiving this letter and reviewing the information, NYFOA members are encouraged to make a donation to the scholarship fund to support the education of future foresters.

From the President (continued)

The dates and venues of these meetings are:

- September 9: Catskill, NY
- September 30: Tupper Lake, NY
- October 14: Lafayette, NY
- November 4: Arcade, NY

We will provide specifics about the respective regional programs soon. Please look for details and plan to support our association by taking part.

Liana Gooding has served as NYFOA's office administrator for nearly 20 years and has been a real asset to our members and a source of continuity to board members. On September 1st, Liana will begin a well-earned retirement. In June, the state board took on the daunting task of finding a qualified replacement for Liana. The search team included Executive Director Craig Vollmer, board members Mike Arman, Harmon Hoff, and myself. We identified a number of really excellent candidates, conducted Zoom interviews, and contacted references of our top candidates. I am pleased to report that we selected Claire Kenney for the position. Claire lives in Naples, NY and brings a wealth of experience in education, human resource administration, budgeting, and database management along with a personal interest in woodlot management. She is a great fit for NYFOA and is highly motivated to take on the challenges of this important position. Claire and Liana will overlap for the month of August and Claire will run solo when Liana leaves on September 1st. A big welcome to Claire and our heartfelt thanks and Godspeed to Liana and her husband Mark.

On a sad front, Dick Starr, a friend and long serving chair of NYFOA's Western Finger Lakes chapter, passed away peacefully at home on July 14th. Dick was a brilliant teacher, writer, family man, outdoorsman, and an energetic chapter leader. We will all miss Dick's inclusive leadership style, sense of humor, and his devotion to our association. Sincere condolences from everyone in NYFOA to the Starr family.

In what has become my M.O. for this report, I will end on a personal note. Our son Joe is a U.S. State Department diplomatic courier. Recently he began a tour in Casablanca, Morocco — a very interesting place. Joined by his significant other, Suzy, the consulate assigned Joe to an apartment close to the center of town complete with huge balconies. Suzy has a PhD in botany and overnight the balconies magically became a forest of flowers, small trees, and bushes. The good news is that there is absolutely no evidence of interfering vegetation or deer browse in this balcony oasis and I suggested Suzy and Joe join NYFOA as a sustained source of 'balcony management.'

–Stacey Kazacos
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
Johann Baycura	SOT
Ken Langlieb	SOT
Carolyn Lerum	CNY
Paul Lesefske	AFC
Theresa Perotti	WFL
Michael Rauh	NFC
Joshua Spicka	WFL

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

White Pines, Colossal in Many Ways, Now at Risk

By Paul Hetzler

The eastern white pine (*Pinus strobus*) isn't a crop-bearing tree, but it has borne priceless "fruit" for American democracy. Physically as well as culturally massive, there are credible accounts from the early 1800s of white pines over 200 feet tall, and unverified claims of giants up to 300 feet.

The current U.S. champion white pine stands 180 feet, 10 inches in Pennsylvania's Cook Forest State Park. Sadly, one of New York's tallest white pines (nearly 161') toppled in 2021 in a patch of old-growth woods near Paul Smith's College. In today's second- and third-growth forests, the average mature white pine is often between 90-130 feet tall, with diameters of 25-35 inches.

The official tree of Maine and Michigan, white pine is easily identified, apart from its unmatched height. It's the only native pine in the East with needles in groups of five. Its branches often swoop gracefully upwards toward their ends, and its 8-16" cones have resin-tipped scales.

Like eastern hemlock, white pine is a foundational species. Its canopy cools the soil and lessens the impact of violent downpours, limiting erosion and runoff. Many songbirds rely on its seeds for food, and owls, osprey, eagles, and other bird species nest in its branches.

White pine is renowned for clear, light-colored lumber used in flooring, panelling, and sheathing, as well as for

White pine needle loss. Mark Whitmore, Cornell University. August 2023.

White pine neede disease. Univ of New Hampshire Extension. August 2023.

structural timber. Much of New England was built on white pine, and in some old homes, original pine floorboards 20+ inches wide can still be found.

As impressive as its lumber is, white pine's most precious gifts are intangible. In his book *Forgotten Founders*, Bruce E. Johansen documents the link between modern Western democracy and the Haudenosaunee (Iroquois) Confederacy, symbolized by the white pine.

According to Haudenosaunee oral history, over 1000 years ago in what's now upper NY State, five nation-states were convinced by a prophet known as the Peacemaker (Dekanawidah) that they'd benefit by joining in a federation. (Some non-Native historians have placed this event as late as 1660, despite the fact that's nearly 50 years *after* a seminal Haudenosaunee treaty with the Dutch government)

The Peacemaker presented the white pine, with its five needles attached at the base, as an apt symbol for the unique federal structure he proposed. Originally, it comprised five nations: Seneca, Oneida, Onondaga, Cayuga, and Mohawk (a sixth nation, the Tuscarora, joined the Confederacy in 1722 after being driven from their homeland in present-day North Carolina).

Each nation controls its internal affairs. Matters involving two or more nations are decided at the federal level, where fifty elected chiefs sit in two legislative houses, the Elder Brothers and Younger Brothers. A single elected Grand Chief (Adodarhoh) acts as a tie-breaker in the event the legislative bodies disagree.

These and other tenets of governance are codified in The Great Law of Peace, or Kaianere'kó:wa. As an oral constitution, traditional chiefs must know it by heart. I had the good fortune to have attended the first recitation of The Great Law ever done in English. It was in 1992 on Six Nations Grand River Territory in Ontario, and took nine days for Oneida Snipe Clan Chief Jake Thomas to recite it from memory.

Though ravaged by colonization, The Great Law is still alive. Only women can vote under this structure, which confounded European men, and was one reason colonizers worked hard to subvert it and install pliant, male-only councils. Haudenosaunee elder women or clan mothers can depose a chief not acting in the public interest. They also can veto laws they deem short-sighted, a further check against abuses of power.

The white pine remains an enduring emblem of Haudenosaunee culture. As described in The Great Law, a bald eagle sits at its top, a bundle of five arrows in its talons denoting strength in unity. The sharp-sighted bird is there to watch for perils that could threaten the government – namely greed and selfishness, as Chief Thomas explained in 1992.

As Donald A. Grinde lays out in his book *Exemplar of Liberty: Native America and the Evolution of Democracy*, key colonial figures such as Thomas Jefferson, John Adams, James Madison, and especially Benjamin Franklin, admired The Great Law. They invited Haudenosaunee chiefs to address the Continental Congress as America's Founding Fathers drafted the Constitution. The US Constitution is directly based on The Great Law, the symbol of which is the white pine.

Among the earliest US flags were a series of Pine Tree flags, and the white pine on Vermont's state seal has 13 branches, nods to the importance of The Great Law in American history. The bald eagle from the white pine's summit became our official bird, appearing on US currency with a bundle of 13 arrows in its talons to symbolize strength in unity, *E Pluribus Unum*.

Women's-rights pioneers of the 1800s, particularly Matilda Jocelyn Gage, credit Haudenosaunee women as their inspiration for demanding equal rights. In her book *Women, Church and State*, Gage underscores this link. She was amazed that women could walk alone at night through Seneca villages without fear of sexual assault, in contrast to the experience of women in "civilized" society. It's no accident that Seneca Falls, NY – virtually the center of Haudenosaunee territory – is home to The Women's Rights National Historical Park. Thus, the white pine is fundamentally linked to women's rights, as well as to Western democracy.

Given its ecological, economic, and cultural importance, it's deeply troubling that white pine is gripped by a worsening

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decline throughout its range since about 2010. Multiple foliar pathogens, as well as white-pine bast scale and *Caliciopsis* trunk canker, are involved in what can only be described as an epidemic. Since these agents are all believed to be native and opportunistic, the real culprit is the change in our weather patterns in the past few decades.

Frequent severe droughts (e.g., 2012, 2016, 2018) have weakened all tree species and left them more vulnerable to secondary agents. On top of that, unusually warm, wet springs /early summers (e.g., 2013, 2017, 2019) have been ideal for fungi to invade and infect needles, starting in the lower canopy and spreading up the tree due to rain splash. Once infected, needles turn yellow the following April and May, and they become brown and drop off from mid-June to late July.

Premature needle loss deprives trees of nitrogen they'd normally be able to withdraw from needles in the fall. Also, the current year's growth is stunted and sparce, leaving pines with very little photosynthetic base. By the second year, resin droplets can be seen along the trunks of infected trees, a nonspecific sign of advanced stress known as resinosis.

At least six fungi are known to cause the constellation of symptoms of what is being called white pine needle disease (WPND). The suite of pathogens varies from site to site, but *Lecanosticta acicula* (brown spot blight) and *Septorioides strobi* are the most prevalent agents.

On the plus side, the scant foliage remaining on white pines becomes more efficient at photosynthesis. The trade-off is that basal-area growth declines by 40-70 percent. Lower branches begin to die, but overall mortality is reportedly low on good soils.

That said, I saw extensive dieback along NYS Route 30 north of Paul Smith's College in 2010, and by 2016, in undisturbed forest near SUNY-Canton. A dash-cam video sent to me last year shows miles of dead white pine along I-87 south of Glens Falls, as well.

According to Jessica Cancelliere, NYSDEC Research Scientist, and Rob Cole, NYSDEC Forester (NESAF White Pine Symposium, 2022), infected stands had an average live-crown ratio of 26%, below the widely accepted minimum value of 30%, and well under the 60% minimum suggested for urban trees. Crown transparency was 53%, in contrast with 15-25% historically seen in healthy stands. They also found white pine regeneration was "poor" at 57% of the plots sampled. The worst needle damage was seen in NYSDEC Regions 6, 7, 5, and 1 respectively.

Land managers should thin white pine stands to expedite needle drying and reduce competition for water, nutrients, and light. Sources agree that fungicides are neither effective nor practical, but the UMass Extension Landscape, Nursery and Urban Forestry Program suggests that stands may benefit from nitrogen applications. Contact your local CCE or NYSDEC office for more details on managing WPND.

Paul Hetzler has been an ISA Certified Arborist since 1996. His three volumes of nature essays, including his latest one, Birds of Happiness Aren't Blue, are available on amazon.com. https://www.amazon.com/dp/B0CCZSY8N9.

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

sunlight but, without the elimination or exclusion of deer, the open spaces will continue to be filled with vegetation that deer will not eat.

If the commercial sale of venison was legalized, the market economy could serve to significantly reduce deer population. But, as noted above, a "significant reduction" is probably not enough to reestablish the forest on a landscape, statewide scale. So, I regret to say that I think most of the state's forestlands will revert to what has been referred to as "The Green Lie". It will be green, but will not provide as much carbon sequestration, sawtimber, mast for wildlife, maple syrup, or attraction for residents and tourists.

Representative stands of the forest we know and depend on today will exist wherever individual forest owners, institutions, or government agencies have the will and resources to establish them. By the end of this century, regenerated public forestland is likely to be a popular destination for people who miss, or never had the chance to experience the forest we know today. And regenerated private forestland will be valued according to its relative scarcity.

Is There a Solution?

Yes, but it is probably impossible to implement. It would require courageous politicians to persuade the public that deer are incompatible with a sustainable forest ecosystem and that they, like their natural predators, need to be restricted to zoos or fenced-in preserves. Forest owners who love their trees and love the sport of deer hunting would have a difficult choice to make. And so would the public and the politicians.

So, Did RNYW Accomplish Anything?

The initiative certainly served to focus the attention of our membership on the forest regeneration issue. I wish we had been more successful in reaching forest owners who are not NYFOA members, as well as the general public. The Symposium we held at SUNY ESF Syracuse set the stage for assembling a coalition of ten kindred organizations to consider solutions. I would like to think that the efforts of this coalition influenced the current DEC strategic plans to some extent. And I know for a fact that the efforts of our partners from The Nature Conservancy, Audubon, and the Empire State Forest Products Association (ESFPA) were key in obtaining funding for the Regenerate New York grant program.

Although the RNYW initiative has been on the back burner for a few years, I understand the NYFOA board is considering a partnership with Northern Woodlands to present a symposium on slash walls next year. With funding for slash walls available from NRCS/EQIP as well as the Regenerate New York grant program, we should see more of our woodlots regenerated than would otherwise have been economically possible.

Contributors

The RNYW initiative was a huge effort for NYFOA, and involved dozens of chapter members planning and leading woods walks with a regeneration theme. Major contributors to the state-wide effort included Cornell faculty members Peter Smallidge, Gary Goff, and Paul Curtis, who wrote a multi-year series of articles about regeneration issues for the NY Forest Owner magazine and taught workshops for consulting and service foresters; the late Jim Minor, a past-President of NYFOA, who designed and maintained RNYW content for the NYFOA website; former NYFOA board member Kelly Smallidge; SUNY ESF Syracuse faculty member David Newman, who helped plan and hosted the 2015 Symposium at ESF; Sloane Crawford from the DEC (now retired); the representatives from the ten kindred organizations that joined our coalition for action, most notably Chris Zimmerman from The Nature Conservancy; Suzanne Treyger from Audubon; and John Bartow, executive director of the Empire State Forest Products Association (ESFPA). And last but not least, NYFOA President Stacey Kazacos and past-President Art Wagner, who were instrumental in making our case before the DEC.

Jerry Michael served four terms on NYFOA's board of directors and was chair of the RNYW committee from 2013-2018.

Talking Regeneration with Jerry Michael

By Jeff Joseph

Jerry Michael has long been NYFOA's champion in the fight to ensure that the regeneration crisis currently affecting our woodlands receives the attention it merits. Though he prefers to downplay his role in favor of highlighting the contributions of others, the founding of the Restore New York Woodlands (RNYW) initiative was largely due to his vehemence about and passion for the subject. RNYW was just one of Jerry's many notable achievements with NYFOA, and in the field of forestry education and advocacy for sustainable forestry practices in general. To expand on the information provided in his RNYW update article that appears in this issue, and to provide some context as to what led him down this path, I contacted Jerry with some questions—our lightly edited conversation appears below. On a personal note, I would like to mention that Jerry has regularly offered constructive feedback and encouragement for my efforts with this magazine (and has always been ***particularly*** *pleased when the topic of regeneration has been a focus)—for that I am grateful.*

—Jeff

Hi Jerry. Thanks for taking the time to answer a few questions on a topic that I know to be very close to your heart. When did you first get involved with woodland management, and what spurred your initial interest? How long have you been a woodlot owner? Could you give us some details about the location, size, and composition of your woodlot?

My wife and I purchased our 40-acre property in northern Broome County from my parents in 1972. It consisted of about 20 acres of mixed hardwood forest, 15 acres of plantation red pine, and five acres of Christmas trees, planted by my father, but untended. Also in 1972, I joined a hunting club that owns a large forested parcel in Delaware County that we enrolled in the Forest Tax Law 480a program in 1979.

When did you first get involved with NYFOA, and which chapter are you affiliated with? How long have you been a volunteer with the Master Forest Owner (MFO) program, and

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how many woodlot owners have you visited and/or consulted with during that time?

When my career brought us back to the Binghamton area in 1989, an adjoining woodlot owner invited me to attend a meeting of the NYFOA Southern Tier chapter. Shortly after that, I attended a NYFOA statewide meeting at SUNY ESF in Syracuse, where a seminar on crop tree management was presented. I would say that seminar was what kick-started my interest in learning all I could about silviculture. After I retired, I signed up for the Master Forest Owner (MFO) volunteer program in 1995, initially just to further my own knowledge about forest management. But, after doing a few MFO assignments, I found the activity so gratifying that my wife accused me of making a "second career" out of it. I have cruised more than 200 woodlots with their owners and their appreciation for the help has been very motivational for me. The Cornell Cooperative Extension office in Broome County also refers all "tree calls" to me so I give a lot of advice, and referrals to tree services on the phone, and occasionally make a "house call" concerning yard trees.

For as long as I have been involved with NYFOA, I have known you to be a committed and vocal advocate for silviculture-based forest management, with a particular focus on highlighting the many barriers to regeneration that plague the woodlands of our state. When did you first become aware that forest regeneration was failing on such a broad scale? What factors in particular drew your awareness to this issue?

Since around 1980, DEC and consulting foresters had been telling me and the other members of my hunting club that we would have to get rid of both the hay-scented fern and the deer if we wanted to have a forest there in the future. That is a hard sell for a hunting club, but it caused me to consider the issue in my own woodlot and in the woodlots I visited as an MFO. As I came to appreciate the enormity of the problem, I began researching and testing solutions in my woodlot, with lots of coaching from NY State Extension Forester Peter Smallidge.

To a casual observer, the woodlands around us seem as full of trees as ever (the 'green lie') ---in a very real sense, the regeneration crisis is largely invisible to the vast majority of New Yorkers. What are we losing, and why should this be an issue of concern not just for woodlot owners or those with a stake in the timber industry, but for ALL residents of our state?

Japanese honeysuckle, multiflora rose, hay-scented fern, and beech brush are all green, but they will not provide sawtimber, mast for wildlife, maple syrup, or tall trees to hug in the future. Nor will they sequester nearly as much carbon as is being planned for in either state or national climate remediation initiatives.

Having spent substantial time on the ground as an MFO volunteer, can you give an example of what failed regeneration actually looks like? What is missing, and what might be there in its place?

According to the US Forest Service, adequate stocking for regeneration is either 550 saplings or 9,000 seedlings of desirable tree species per acre. I have only seen that kind of regeneration on 6 out of the 217 MFO visits I have completed to date. What I see instead is a barren forest floor, with nothing but last year's dead leaves visible or, if there is some sunlight, a collection of invasive shrubs and fern that deer will not eat.

Could you briefly outline what you see as the primary causes of regeneration failure as you see them?

When deer began returning to abandoned farmland in the 1940's, regulatory agencies in the northeastern states failed to understand the dynamics of deer population increases or the impacts of deer browsing on forest regeneration. In the absence of their natural predators, deer populations expanded far, far beyond the carrying capacity of forestlands, and desirable regeneration was eliminated and replaced by invasive and interfering vegetation that deer will not eat. So, the origins of today's problem go back about 70 years and that is why it is sometimes referred to as a "legacy" issue.

The regeneration issue is complex, and was many decades in the making, so it is no surprise that any systemic, lasting solutions to the problem will also be complex, expensive, and as there are competing interests involved, politically charged. In your view, what will it REALLY take to avert the long-term effects of regeneration failure? Regardless of what action the State takes (or doesn't), what can your average woodlot owner do to set the stage to ensure a full spectrum of regeneration in their own woodlot?

We know, and have been able to demonstrate what it takes to regenerate a hardwood forest on a limited scale. But to accomplish it on a statewide basis, involving 700,000+ private owners of forested property here in New York, would require political action and funding that seems impossible to achieve. So, I am not optimistic about that as a goal.

Certainly, any committed individual forest owner can regenerate their own woodlot. All of the technical knowledge required to do so is available on the Forest Connect website (https://blogs.cornell.edu/cceforestconnect/) and in archived issues of the NY Forest Owner magazine. Most of the expenses for regeneration practices can be recovered from the NRCS/EQIP or Regenerate New York programs. But I did use the adjective "committed" above.

Seeing all you've seen in your many decades of consulting, advocacy, and management of your own woodlot, and knowing full well how extensive the regeneration problem is, how do you maintain your enthusiasm for continuing to engage with this issue, and optimism about the future? What advice would you offer to a young person considering becoming a woodlot owner?

I sustain my motivation to continue working on this issue through local action. I have held at least a dozen woods walks on my property for NYFOA and other environmental groups to demonstrate the results of the various regeneration techniques I have utilized. I also share my experiences during MFO visits and am gratified when my former "clients" report back to me about their successes.

If I were a lot younger, I would shop for a suitable and reasonably-priced piece of vacant land, I would install an eight-foot fence around the entire parcel, and plant it with a wide variety of northern hardwoods, taking into consideration the species that may thrive in a gradually warming climate. I might intersperse the future sawtimber trees with locust or Christmas trees that could serve as "nurse trees" for the hardwoods and could be harvested periodically for income. After five years, when the sawtimber saplings are out of the reach of deer, I'd move the fence to another parcel and repeat the process. Such land, with such a crop growing on it will become increasingly scarce toward the end of this century and should turn out to be a very good investment for our descendants. Not everybody will be satisfied with IKEA furniture or plastic flooring.

Jeff Joseph is the managing editor of this magazine.

The Wood in Your Woods: Serviceberry

By Jeff Joseph

One of the many benefits of owning a woodlot is that you have the opportunity to get to know a variety of wood types that you would never find in the marketplace.

If there's one thing I've learned in my 20+ years of working with 'homegrown' lumber it's that market value and use value are two very different measures of the merits of any given species of wood. Case in point: serviceberry.

Also known as Juneberry and/or shadbush, serviceberry is a generic name for the variety of trees and shrubs found in the *Amelanchier* genus. There are about 25 species worldwide, with eight or more native to New York state. While they are all known to hybridize, making botanical identification a challenge, for our purposes here, I will limit the discussion to the two tree-sized species found hereabouts: common or downy serviceberry (*A. arborea*), and Allegheny or smooth serviceberry (*A. laevis*), each of which has a broad distribution throughout the eastern U.S. and Canada.

Even the largest serviceberry trees are rather modest, generally topping out at about 40' tall and up to about 16" in diameter. Most often trunk size is much smaller though, with stems ranging to no larger than 8-10" DBH. As they are in the rose family (rosaceae), the serviceberries have alternate, toothed leaves and 5-petaled white flowers which are quite similar to apple foliage and flowers. The showy flowers are very conspicuous in early spring, as they are one of our earliest blooming trees, which can aid in identifying this easily overlooked species. The trees are monoecious/self-fertile, having both male and female flowers, so you only need one (and some pollinators, as the flowers are insect pollinated) to ensure a steady crop of fruit.

The bark is grey and smooth when young, but develops very distinctive, elongated, nearly continuous vertical stripes of a darker grey that begin to develop into fissures with age, showing a contrasting rusty brown color in the fissures, and that grow progressively deeper low on the trunk as it expands. The fruits are of course the tree's namesake, and are smallish berries that ripen in mid-summer, and are favored by a variety of wildlife (including *Homo sapiens*).

As for the wood of these timber-sized serviceberries, it is both hard and heavy. Weighing in at 52# per cubic foot, serviceberry is nearly 20% heavier than sugar maple (!), making it one of our heaviest domestic timbers. On the Janka hardness scale it rates at 1800 lbs. of force (24% harder than sugar maple), and its modulus of elasticity (a measure of a wood's stiffness and structural strength) is 1,880,000 lbs./sq. inch (just higher than sugar maple). Clearly a wood to be reckoned with.

In terms of shrinkage in drying, which is also a measure of a wood's stability in use when subjected to fluctuating temperatures and humidity, serviceberry is somewhat less stable than sugar maple (which itself can be a challenge), and can be prone to distortion and checking when drying, so extra care is required to minimize waste when drying the lumber of this species.

Being diffuse-porous, and finely grained, at a glance the wood of serviceberry looks quite similar to sugar maple, with blonde sapwood contrasted by a narrower band of rich chocolate brown heartwood (Figure 1). The wood has no odor, either when

Figure 1. While heavier and harder, the wood of serviceberry is visually fairly similar to that of sugar maple. Images provided by author.

Figure 2. A closeup view of the flatsawn grain of a serviceberry board with numerous pith flecks present.

freshly cut or when dry. A unique and identifying feature of serviceberry lumber is the common presence of *pith flecks*, which are small spots and/or streaks that are the result of cambium damage caused by fly larvae that tunnel through the bark to feed on the cambium layer (Figure 2). The tree then fills the voids with the scar tissue that we see as 'flecks' in the grain. These are cosmetic in nature, and have no effect on the structural stability of the wood. Similar pith flecks are also seen in maple, birch, basswood, cherry, aspen, and other hardwood species.

From a woodworking perspective, serviceberry has many virtues. The hard, dense wood is suitable for a variety of woodwork, mainly being limited by the small size of the stems. The workability is great, as the grain is relatively straight, and it machines and planes with minimal tearout. I took a handplane to a small board and was able to take some gossamer thin shavings, leaving a lustrous, highly polished surface ready for finish. Traditionally, serviceberry lumber has been used for tool handles, spoons, basketry, fishing poles, bows, and arrow shafts. To date I have only really used it for carving small items like door handles, but have enjoyed working with it.

As stated earlier, some extra care is needed in drying the lumber---sealing the endgrain, ensuring stacks are kept flat, properly stickered and covered, with good airflow around the sides. While I could not find any data on this, I presume that the sapwood of serviceberry has minimal rot resistance, and is perhaps comparable to sugar maple in this regard, so it should be limited to indoor/protected use.

In considering the regeneration of this species, serviceberry is known to be adaptable to a variety of soil types, excepting poorly drained sites. The literature often describes it as intermediate in shade tolerance, but in practice (and in horticultural references) I believe what this really means is that it can get by if it is able to receive at least four hours of *direct* sun per day in the growing season. As serviceberry is not a tall tree, it is readily outcompeted by other hardwoods, leaving it to languish in the understory with no direct sun exposure. This at least has been my experience on my own property, where I have observed my scattered population of serviceberry mostly declining and dying over time.

I did choose my best remaining stem as a crop tree, and liberated the crown on all four sides in hopes of initiating some regeneration, but as the fruits are highly valued by wildlife, and the seedlings are a preferred deer food, this seems unlikely. They do show signs of stump sprouting when under stress (most of my remaining trees are ringed with sprouts), so perhaps I will have to live with a multi-stemmed, coppiced version of serviceberry in the future, and should fell more cull trees in the vicinity of these sprouting stems to allow more light to reach the forest floor. In the meantime, I will continue to keep my eye out for more of its useful, harder-than-hard-maple lumber.

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