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 2015

Members Profile: Philip Di Benedetto

Volume 53 Number 5

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People Caring About NY's Trees and Forests
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In This Issue . . .

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Forest Owner

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Volume 53, Number 5

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 November/December issue is October 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.

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Cover: Phil and Susan Di Benedetto at the entrance to their property. For member profile see page 21. Photo courtesy of Phil Di Benedetto.

From The President

Recent news about proposed changes to the NYS 480-a forest tax law lead a number of forest landowners to contact me regarding property taxes. One landowner in Ulster County called and wrote several times on this issue. His taxes on 156 acres of forest land were $19.75 per acre for county and town and $61.78 per acre for school, for a total tax bill of $81.53 per acre. He has not enrolled in the 480-a Forest Tax program because of concerns with mandated work schedules and stiff penalties, and the difficulties of extricating from the program.

Another landowner in Allegany County wrote: "My wife and I own 95 acres of mostly forested land in Allegany county (town of Ward) that we have owned for 30 years. There is a small cabin (no water or electric), and a couple of small storage sheds on the property. The property has no road frontage, receives no services, and in fact we can not get there for several months during the winter. In 2013 our assessed value was $69,800. In 2014 a new assessment raised the value to $84,000. We recently received yet another letter stating our 2015 assessment is now $121,400….. Nothing has been added to the property in many years. Overall our assessment went up over 39% in two years!

I thought laws were in place to limit tax increases. I wonder how much our taxes will go up again this year with our new 2015 assessment?"

These property taxes can easily exceed the net annual timber growth rate that a landowner can expect and make the long-term stewardship of private forestland a losing proposition. Many landowners have been pressured to sell timber prematurely or to sell land, leading to forest degradation, parcelization, and conversion to non-forest uses.

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

In 2004, NYFOA published a position statement on forest property tax reform which can be found on our website in the Policy section and which I encourage NYFOA members to read. The situation described then has gotten worse:

"Property taxes in New York State make the long-term stewardship of private forestland increasingly unsustainable. Inflationary growth in the cost of municipal services and assessment procedures based on development potential create a property tax burden for the privately owned forests in New York State that is inconsistent with the social and environmental benefits these forests provide. Property taxes are being levied on forestland without consideration of the minimal cost of municipal services required by forested acreage."

In a 2015 issue sheet on forest property taxation, the Council of Forest Resource Organizations (of which NYFOA is a member) stated:

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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.

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State/ Zip: _____
Telephone: _____
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New Member Snapshots

Richard Hart
Forest Land: 55 acres, Schuyler County
Objectives: Hunting, Recreation, Wildlife

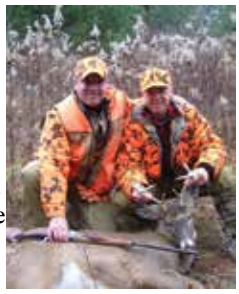
In 2008, NYFOA's past President Jim Minor and Rick teamed up to manage Jim's property, which encompasses 211 acres and includes 55 acres of timber land. The bulk of the open acreage is now filled with hedge rows, fruit trees, and lush green fields.

Before 2008, over a period of thirteen years, the property had become overgrown. The fields were filled with multiflora rose, saplings, and field brush. Then Rick and Jim met and struck a deal. Jim would permit Rick to hunt and develop food plots. In return, Rick would help him restore his property to its former glory. Jim purchased a tractor with a brush hog. When Jim wasn't on it, Rick was. Jim then hired Rick to design and construct a storage building.

Rick says, "I have always been an outdoors person. Anyone that has worked a piece of property knows the feeling of true accomplishment, watching your purpose come to light. Witnessing fawns playing in the fields together, and observing animals such as fox, bobcat, and coyotes all with a purpose in nature, is pure enjoyment!"

Rick worked for New York State for 28.5 years before retiring in 2013. He and his wife raised four children, all doing well. They vacation in the great outdoors, in areas ranging from Acadia National Park in Maine to the Grand Canyon.

Bob and Carol Worden
Forest Land: 95 acres, Steuben County
Objectives: Hunting, Recreation, Timber, Investment



Bob and Carol have owned their property on the ridge above Waneta Lake for over 25 years, and since Bob retired from Kodak in 2000, they have more time to enjoy it. It is convenient to their home on Keuka Lake and it's about 2/3 forested and 1/3 overgrown farm land. They keep an entrance road mowed and maintain a series of wandering trails through the fields. The woods are part oak, maple, hemlock and hickory, with a swampy pine and hawthorn area. Bob and Carol have conducted a single timber harvest, which consisted primarily of red oak.

Bob is a life-long hunter and access for the sport was the prime motivation for acquiring the land. Its mixed species have been appealing to the local deer herd as have adjacent active farming crops.

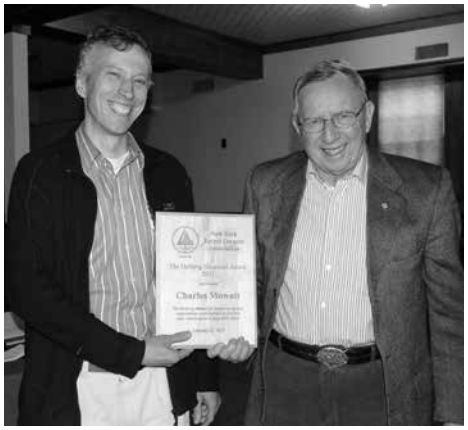
Bob and his son, Kurt, have shared deer hunting there for years, and now Kurt's son Connor shares the same tradition – initially accompanying them, and last year, at age 14, harvesting his first deer. When asked about their favorite experience, Bob, Kurt (pictured above) and Connor agree it is seeing the sun come up while sitting in a frosty tree stand.

Their future goals include deciding what to do about a field overgrown with white pine and fixing wet spots in their access road.

TRIBUTE: *CHARLIE MOWATT*

With the passing of Charlie Mowatt on June 10th, NYFOA and New York's forestlands lost one of our most dedicated and enthusiastic champions. Charlie enjoyed a distinguished 32-year career with the DEC, serving as supervising forester in both Regions 8 and 9. He was active with NYFOA's Allegany Foothills Chapter for decades, and was a founder and key organizer of the annual Rural Landowner Workshop in Yorkshire, an event that attracted hundreds of participants and was a model for the Forest Owner Workshops subsequently held around the state by Cornell's Extension Forestry department.

In retirement, Charlie continued to mentor aspiring woodlot owners as a Master Forest Owner Volunteer, and served in many Chapter and state-level offices. Charlie received the NYFOA Outstanding Service Award in 1998 and, in 2012, was presented with NYFOA's highest honor, the distinguished Heiberg Award.



Charlie Mowatt receiving the 2012 Heiberg Memorial Award from Mike Seager.

From the President (continued)

"With only 8 % of New York State's overall forests enrolled in the current 480a forest tax program administered by the DEC, 92% of all private forests are left vulnerable to the subdivision of land and overharvesting which leads to long-term degradation of the forest wildlife habitat and economic vitality.

New reforms to the State's forest tax program are needed to provide better incentives to encourage more forest landowners to enroll in these programs that encourage sustainable forest management. These reforms are crucial to improving the health of the State's forest resources, and the jobs, industries and ecosystem services they provide."

–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
Abigail Addington May	SOT	Bridget MacRae	SFL
John Armstrong	LHC	Kenneth Mantai	AFC
L. Dale Bingham	AFC	Joseph Moskie	LHC
Pat Carnell / Two Dog Timber	NAC	Keith Nehrke	WFL
Chris & Mary Dorman	AFC	Jim & Any Potter	SOT
Robert & Joan Gerring	SAC	Alan Schoonmaker	SOT
Tom & Ellene Jousma	AFC	Ken Stuart	SOT
Rick Kosinski	AFC	Tom & Joyce Tuffey	SAC
Jim Lickfeld	WFL	Mark Ward	SAC

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

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NYS Sales Tax – add 8%					
Total:					

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City:_____
State / Zip: _____
Telephone: _____
Form of Payment: ☐ Check ☐ Credit Card
Credit Card No.
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Expiration Date _____V-Code_____
Signature: _____
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

Figure 1: This white pine established on a former farm field and grew in open conditions creating a large crown. Later, sugar maple and white pine colonized the field with nicely formed stems. The large pine competes with the smaller stems, but would cause significant damage if felled. Girdled in 2008, the pine is still standing though branches have started to drop.

Girdling undesired stems

Question:

I have some undesirable trees on my property that are competing with desirable stems for sunlight. Can I girdle them? What should I consider? (multiple owners, SFL, WFL, NFC)

Answer:

Girdling a tree, in simple terms, is to disconnect the foliage from the roots. Foliage produces sugar as food through photosynthesis. The roots anchor the tree, and absorb water and minerals necessary for photosynthesis. The roots need sugar from the foliage to survive.

The layers of tissue on a tree, from the outside in, are bark, phloem, vascular cambium, and xylem. The bark, which we all see, protects the tree and is created by old layers of phloem. The phloem is a thin layer created by the vascular cambium that transports sugars from the foliage to the roots. The vascular cambium creates phloem to the outside and xylem to the inside. The newer xylem tissue transports water and minerals from the roots to the foliage. The xylem is the "wood" of the tree.

Given the definition used here to girdle, and knowing the layers of the tree, any action or agent that effectively severs or kills the phloem is a girdle. Girdling can be accomplished by mechanical, chemical or biological methods, but is selective in mode because individual stems are targeted. Because of the location and thickness of the phloem, the effects of girdling only need to extend a short distance past the inner bark. On thin barked trees such as beech and hornbeam, or saplings, the effective depth is less than 0.5 to 0.75 inches. Girdling can be used on small or large diameter trees, though the methods and the consequences vary some depending on tree size. Girdling has been used for centuries and documented for more than 100 years. It is one of the more common practices used by woodland owners who want a quick method to control undesired stems. Owners may wish to control undesired stems to reduce competition between crowns of adjacent stems, to increase sunlight available on the forest floor, or to limit the seed produced by a certain species.

One of the primary advantages of girdling is that it quickly treats the tree without the immediate need to deal with the stem and crown if the tree was felled. While felling the tree is certain, immediate, and dramatic, felling also results in a stem and crown that minimally must be negotiated as woody material (AKA, slash or debris) on the forest floor. The girdled tree will eventually reach the forest floor, but often gradually and in relatively small increments. In some woodland areas, there are large diameter and large

Figure 2: Flame torches provide an option for girdling through heat treatment of the phloem and vascular cambium. Flame girdles are most effective on trees with thin bark. Craig Vollmer demonstrates flame treatment of beech in early NY trials of this method of control.

Figure 3: A narrow though intact column of phloem can sustain a tree. Double girdling, as shown, is recommended to help avoid the bridging of tissue that is possible in fast growing trees, though double girdling is ineffective if both (or either) girdle is incomplete.

crown trees of limited value to the owner, yet they compete with smaller desired stems for sunlight. Felling the larger stem would cause significant damage to nearby desired stems. Girdling allows, potentially, for a slow death, where branches fall infrequently, allowing the desired stems to gain height (Figure 1). Another advantage of girdling is that the standing dead tree, especially for large diameter stems, creates a unique habitat for woodlands that lack standing dead stems. Woodpeckers use large dead trees, and create cavities that other wildlife use. Research from the southern states found mechanical girdling of oak preferable to 2,4 D herbicide treatments when trying to create woodpecker habitats. The mechanical girdle demonstrated slower decomposition of the tree providing a longer lasting habitat. Similar research with other herbicides and other species is warranted.

As the diameter of the tree increases, the potential for problems with girdling also increase. The reason follows from knowing that while you don't have to immediately deal with the stem and crown, at some point the tree falls. What is uncertain is how soon the tree falls and whether it falls in pieces or en masse. With small diameter trees, those smaller than the average diameter of trees in the woods where you're working, there is no significant concern for most owners. An exception is for maple syrup producers, where even a 4 inch or 5 inch diameter tree that falls on a tubing system during a sap flow can significantly reduce production. If the undesired stems you wish to control are large and near areas frequented by humans, in an area that will soon be part of a timber sale (think safety for loggers), or near property structures, then felling by someone competent with directional felling might be a more prudent course of action than girdling. If a chainsaw is used to girdle large stems, cutting too deeply will effectively result in a felled tree that will fall in an unknown but short period of time and without any of the control of directional felling. Directional felling allows you to control the direction and timing of the fall of the tree.

Another one of the limitations of girdling, and its variants, is the potential for delayed or incomplete control. Some mechanically girdled trees, more so than chemically girdled trees, will continue to produce foliage for 4 to 6 years after treatment. Pine and maple are notorious for this phenomenon. Aside from species, stem features such as included bark (an inner fissure) or tissue protected by a tight fork at the height of the girdle, may render a mechanical girdle ineffective. Delayed death may be advantageous or not depending on owner objectives. Felling is the option that provides certainty for control. One of the early reports of girdling showed evidence of a girdle of loblolly pine where the stem remained alive from 1906 to 1912. Similar patterns have been noted for northern species. Chemical girdling and injections are not without limitation. Some species, such as large diameter buckthorn (*Rhamnus cathartica*) often don't respond (i.e., die) except to a full frill that has been sprayed with concentrated glyphosate. Many of the maple species are somewhat insensitive to glyphosate and may respond better to other chemicals. However, some of these other herbicides, such as Imazapyr, are mobile in the soil and can affect non-target adjacent trees. Whereas Glyphosate is not mobil in the soil.

Mechanical methods to girdle a tree include using a chainsaw, ax, handsaw, or flame torch (Figure 2). Mechanical methods, just as chemical girdles, require that the treatment be applied to the entire circumference of the stem. Stems that are incompletely treated (Figure 3) will typically not control the tree. A relatively narrow but intact vertical column of phloem allows the crown to feed the roots. The advantages of mechanical girdles include the option to work in any season and weather, the simplicity of the method, and the options sought by some owners to avoid the use of herbicides. A characteristic of mechanical methods is the often slow response of the tree.

Girdling that uses only chemical methods is limited to basal bark treatments, and use the chemical Triclopyr (Garlon 4) in oil (Figure 4). Basal bark treatments are restricted to stems with a diameter less than 6 inches. This method has been widely used and recently researched by Penn State Cooperative extension (*http://extension.psu.edu/publica-*

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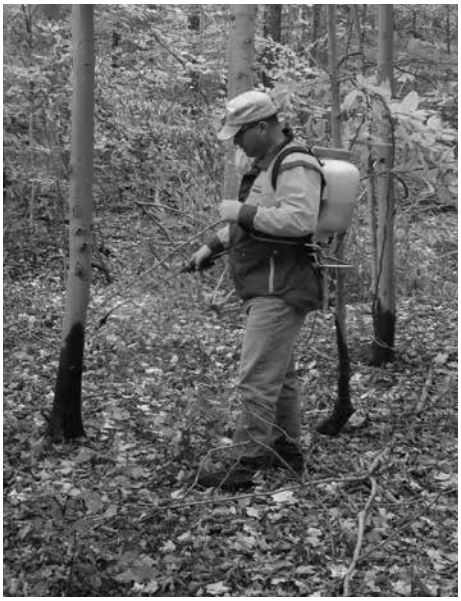

Figure 4: Basal bark treatments typically use Triclopyr as the Garlon 4 formulation, often in a vegetable oil. Treatments can be applied throughout the year, except when snow prevents application on the stem to ground level. Cold temperatures can limit the types of oil that can be used.

Allelopathy as a Regeneration Factor

Timothy Chick

As part of NYFOA's Restore New York's Woodlands initiative several previous articles have provided excellent information about dealing with the effects of deer browsing and interfering vegetation on the regeneration of desirable tree species (Smallidge 2013). Another vegetation interference factor that may affect seed germination, seedling growth and survival is called allelopathy. This factor refers to the chemical effects of one species upon another (Chick 2004).

The most common example of an allelopathic plant is black walnut as its toxins can damage or kill many different species. While the effects of walnut toxins are quite dramatic, there are numerous other species that are toxic to nearby plants as well. Some allelopathic plants can affect seed germination and tree growth in forest openings or in old field plantations.

Chemical waste products, called allelochemicals, which result from primary metabolic processes, must be disposed of by the plant. The disposal into the environment is done by leaching from leaves and plant parts, exudation through the root system or from plant decomposition.

Most allelochemicals are mediated in the soil where they are subjected to physical, chemical and microbial actions. The modified allelochemicals can then be taken up by the roots of nearby plants. Allelochemicals are species specific with some affecting only one plant while others, like goldenrod, affect a wide range of tree species.

Allelochemicals contacting seeds act as germination inhibitors while those taken up by seedlings or larger trees can affect many different physiological activities such as photosynthesis, cell division, and nutrient uptake. The uptake of nutrients and water by tree roots is facilitated by mycorrhizae which are fungi-root associations. There is evidence to suggest that some allelochemicals may damage or destroy root mycorrhizal attachments thereby limiting the tree's growth.

Planted hardwood and red pine seedlings in old fields of goldenrod require good weed control

Soil type and drainage appear to influence the effectiveness of an allelochemical on a sensitive species. Clay particles have many surfaces that adsorb or attach allelochemicals while sandy particles do not. Sandy soils tend to drain easily and leach allelochemicals while clay soils don't, allowing allelochemicals to build up in the soil. A classic research study of white and red pine interplanted with black walnut illustrates the interaction of these elements. There were no effects from black walnut toxins on pines until they reached pole size. Then the pines on clay soils and poorly drained sands experienced 100% mortality while pines on nearby well-drained sandy soils showed no inhibition effects at all.

Most allelopathy research has been conducted on weeds that affect the growth of food crops (Putnam and Tang, 1986). While these weeds may indeed affect trees it isn't known conclusively as research hasn't been conducted on many trees to date. However, these weeds are said to have allelopathic potential and should be considered as interfering plants (Appendix A).

Ecologists and foresters have also identified lichens, grasses, forbs, ferns and shrubs that are known to affect seed germination and seedling growth. Reindeer moss, a lichen growing on the soil, is allelopathic to jack pine and white spruce seed germination. Tall fescue grass allelochemicals inhibit sweetgum, white ash, black locust and even black walnut. The effects are significant enough that black walnut saplings can eventually stagnate and die. Quackgrass toxins haven't been tested against trees, as yet, but are toxic to mycorrhizae on soybeans and are suspect on trees based on anecdotal reports. Foxtail and smooth brome are allelopathic to aspen species.

Many broadleaf herbaceous plants, or forbs, are known to allelopathicly affect trees. Wild carrot has been shown to affect black locust while orange hawkweed affects the growth of balsam fir and white pine. Goldenrod could be considered the "poster child" for broadleaf plant allelopathy and trees. Alone or in concert with aster, it can dramatically affect the germination and growth of seedlings of jack pine, black locust, sugar maple, red pine, black cherry and tulip poplar.

Bracken fern is allelopathic to black cherry and possibly to other species too.

Interrupted fern is toxic to northern red oak and bracken fern affects black cherry. Hayscented fern was once considered to be allelopathic to black cherry but further research has shown its inhibition is actually the result of light competition. It's possible, however, that its allelochemicals are potential inhibitors of other tree species. Regardless, of the interference factor, hayscented fern has been shown to be very inhibitory of seed germination and seedling growth of trees.

Shrub research has usually focused on light competition as an interference factor but there is extensive research to show that toxins from lambkill or sheep laurel, can significantly inhibit the growth of black spruce by killing root cells, especially when growing on poorly drained soil. Some shrubs like blueberry and viburnums are also suspected of being allelopathic and inhibit the germination of tree seeds. In contrast to the inhibiting effects of some shrubs, research suggests that shining sumac has an allelopathic effect on grasses and forbs that can actually enhance the regeneration of hackberry, oak and other woody species. Also, blackberry and sweet fern are considered hospitable to tree-seed germination.

You may have observed that White, Scotch and Austrian pines readily germinate and grow in old fields that have been abandoned by farmers. Spurr and Barnes (1992) suggested that an allelopathic mechanism may be operable in the pines' establishment success. On the other hand, many ground cover species can inhibit the germination and growth of jack and red pine. Elm appears to be unaffected by allelopathic effects of most ground cover species and easily invades old fields, even those with goldenrod. Green and white ash seem to regenerate easily into grass and forb fields, as well.

So what does allelopathy have to do with your woodland property and efforts to control interfering vegetation? First, it tells us that not all interfering vegetation is equal in limiting regeneration. Control priorities can be based on a species' ability to resist tree seed germination and growth. Secondly, allelopathic elements may be operable even without light competition. For example, even in the presence of full sun, sugar maple and red pine will have difficulty regenerating or growing in a ground cover of goldenrod, even if a seedling is able to grow above the goldenrod. Thirdly, allelopathic plants on clay or poorly drained, soils are more prone to inhibiting germination or growth of desirable species than on sandy soils. And lastly, some ground cover species, such as sumac and blackberry, don't need control as they may actually foster regeneration.

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Timothy Chick, Adjunct Forestry Professor, Paul Smith's College, Paul Smiths, NY. Email address: tacadk@roadrunner.com

Appendix A. Weeds with allelopathic potential.

Aster	Dock	Purple nutsedge
Barnyardgrass	Downy brome	Quackgrass
Bermudagrass	Fall panicum	Redroot pigweed
Bracken fern	Giant foxtail	Russian thistle
Canada thistle	Goldenrod	Tall fescue
Common chickweed	Goosegrass	Velvetleaf
Common cocklebur	Green foxtail	White cockle
Common lambsquarters	Johnsongrass	Wooly plantain
Common milkweed	Large crabgrass	Yellow foxtail
Common ragweed	Little bluestem	Yellow nutsedge

Wild Things in Your Woodlands

By Kristi Sullivan

Beaver (*Castor canadensis*)

North Carolina Forest Service Archive, Bugwood.org

Beavers are the largest rodents in North America. Adults range from 35 to 46 inches including the tail, and weigh from 45 to 60 pounds. They have a heavily muscled, strong-boned body, with a dorsally flattened tail that serves as a paddle for swimming. Their thick, insulating fur is chestnut to dark brown in color. Beavers are monogamous and typically have one litter of two to four young each year. Kits remain with their parents and younger siblings for two years before setting off on their own. In the wild, beavers typically live from 10 to 12 years, a long life span for a rodent.

The beaver, appropriately designated New York's state mammal, has played an important role in shaping the state's natural environment as well as its history. In the 1600s, Europeans exploring this region found the beaver plentiful. Most bodies of water, large or small, supported populations of beavers. Beaver trapping proved to be a good way of making a living, with exports of beaver pelts from New York to Europe reaching nearly 80,000 annually in the late 1600s. By the late 1800s, however, the beaver was nearly extirpated from the state due to overexploitation and deforestation. A decline in demand for beaver pelts, combined with protective legislation, reintroduction efforts, and recovery of suitable habitat, led to a rebound of beaver populations in the 1900s. Today, beavers are abundant throughout the state, recently returning even to the waters of New York City and Long Island after 200 years of absence.

Beavers require a constant, plentiful source of water, where they typically build a dam to flood the area and construct a lodge as a home site. They commonly are found along stretches of streams and rivers narrow enough to be dammed, with moderate to little gradient and ample food adjacent to the waterway. However, some live along large rivers, forest-lined lakes, or wooded marshlands. Beavers are unique among mammals in their ability to change their own environment to suit them. Ponds constructed by beavers create habitat for other animals as well, including other furbearers, waterfowl, amphibians, reptiles, fish, invertebrates, and other animals who visit these habitats to feed. By damming streams, beavers create ponds that offer protection from predators, and aid in establishing suitable food resources like sedges, grasses, and wetland shrubs. Beavers are herbivores and locate food using their sharp sense of smell. They feed mostly on herbaceous vegetation during the spring and summer and on the bark, twigs, and buds of aspen, maple, willow, birch, alder, and black cherry during the fall and winter. In preparation for winter, they harvest twigs and branches and pile them in the water, weighting them down with mud. This food pile provides a source of food that they can access below the ice if the pond freezes over. Beavers are active all year and may emerge from the den during the winter to feed on fresh material as well.

Beavers have many interesting physical features that make them well suited to their semi-aquatic, tree-felling lifestyle. For example, they have long, chisel-like incisors that grow continuously. Gnawing on wood is a necessary activity for offsetting this growth. There have been reports of one adult cutting up to 300 trees in one year. Beavers do not cooperate in cutting trees. Furthermore, a beaver cannot control the direction in which a tree falls. In addition to their large teeth, beavers have a large, paddle-shaped tail with a leathery covering. The tail is used as a rudder and propeller while swimming and as a support when the animal sits upright. An alarmed beaver also uses its tail to warn others of danger by slapping it against the water's surface. The beaver has several adaptations for underwater activities. Its lips can be closed behind the incisors and, by pressing the tongue tightly against the roof of its mouth, the beaver can gnaw underwater without choking. Special valves also close off the nostrils. Transparent eyelids called nictitating membranes allow the animal clear vision underwater while protecting its eyes from debris. It also is able to remain submerged for 15 minutes because its heart rate slows.

Beavers are interesting animals that create habitat for other wildlife, and are fascinating to observe. They are active in the evening and at night. A good way to observe beavers is to visit an active beaver dam about an hour before sunset. Initially, the male beaver emerges from the lodge to patrol the area for danger. Later, the female and young will join him. Beavers have very poor eyesight and a quiet observer can sit back and watch the animals go about their daily tasks.

Although the dam-building behavior of beavers is captivating, at times their activities can cause unwanted flooding or damage to valued trees. For more information on dealing with damage done by beavers, visit the Internet Center for Wildlife Damage Management at http://icwdm.org/wildlife/Beavers.aspx

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

Walking The Talk When It Comes to Forest Stewardship:

The Experiences Of A Family Tree Farm

Brett Chedzoy

My parents, Jim and Rose Chedzoy, purchased our farm in 1988 from retiring dairy farmer friends. The 190 acres of woods, fields and old overgrown pastures was a young forester's dream come true. Although the activities on the farm have shifted through the years, our commitment to making the land better for the next generation has not. For the past 27 years we have enjoyed nurturing our woods by attempting to "grow the best and harvest the rest." The perennial challenge, however, has been to dedicate sufficient time to getting the work done. Commercial timber harvests in 1989 and 1994 were a start towards improving our woods, but the thinnings were focused mainly on salvaging unhealthy trees and those killed by gypsy moth outbreaks in the late 80's. Since then, the removal of hundreds of cords of firewood and many more thousands of girdled trees seem to have hardly made a dent in the yet overstocked woods.

When NYFOA's Restore New York Woodlands (RNYW) initiative began a few years ago, it provoked me to realize that I could and should do more to properly tend our woods. After all, if a forester can't do it, what right do I have to preach to others what they should be doing in their woods?

Loggers study the growth rings of a red oak that was harvested to give more growing space to the better adjacent oak. This 90-year old tree showed a notable increased growth response starting 25 years ago, following the harvest of two competing trees (of lesser quality) in a 1988 harvest. As a result of the thinning, the harvested oak grew approximately two additional inches in diameter in the 25-year period, yielding about 50 more board-feet of volume that netted an extra $50. The best tree remains in this spot to continue gaining in value and provide quality genetics for the next generation of forest. Good silviculture pays!

The first step towards implementing a more complete and robust management program for our woods started by acknowledging that time was a limiting factor and that we needed help. Fortunately, most woodland owners today are able to take advantage of a variety of timber markets to thin trees and decrease the competition for growing space in their woods. In our case, help came to the rescue in the form of a forester by the name of Jim Shuler, and an Amish logging company headed by Aiden Zook from Addison, NY. Both Jim and Aiden have built their businesses around marketing low-quality, low-value timber. Neither would tell you that it has been easy, but on the other hand it's not hard to find work doing what no one else wants to do!

Two years of planning came to fruition this May when Aiden and his crew arrived with a grapple skidder, a slasher (a machine that bucks logs in the landing and loads the trucks), and a good assortment of chainsaws and strong backs. The first week was dusty, the second week was just about right, and by the third week in early June we were averaging a few inches of rain per week and "mud season" ensued, despite most of the woods being on high, dry gravelly ground. Careful time management by the loggers allowed them to stay productive by felling on the wet days and skidding on the dry ones. A month into the job, nature threw her own "twist" into the weather-related challenges with a tornado that tore a two mile path through parts of our farm and the neighboring Watkins Glen State Park. Fortunately, the homes and buildings were largely untouched, but the storm corkscrewed dozens of large oaks from the ground, and left many dozens of other mature trees shattered, split and snapped off well above the ground. On the several acres that received a direct hit, at least I was able to enjoy seeing the woods as I had envisioned it looking post-harvest for a couple of weeks before a localized natural disaster had the final say. On the upside, now I can blame some of the post-harvest messiness on the storm!

The 60 acre harvest took two months to complete, and generated about 1000 tons of pulpwood, 10,000 board-feet (three truck loads) of pallet logs, and a similar

Brett discusses where to fell a challenging tree with the loggers. Timber harvests are most successful when landowners, foresters and loggers communicate clearly and work together.

amount of grade sawlogs. The value of pulpwood and pallet logs are usually interchangeable, but forester Jim Shuler likes to supply both markets in case one dries up. The roughly ten percent of the volume in grade sawlogs represented over 90% of the overall timber value from the harvest. Those of you familiar with timber harvesting in New York know that most commercial harvests today yield almost entirely grade sawtimber, sometimes with a little firewood (pulpwood) in the form of "cull trees".

So why would any of us want to have a large, messy-looking timber sale where most of the trees harvested are worth little or nothing? Well, the gardeners in the audience understand that an untended, unweeded garden pays poor dividends

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Most of the volume harvested in this "leave the best, remove the rest" thinning was pulpwood. Note that the majority of the log ends show abundant evidence of decay and defect. This is due largely to their growth being suppressed by larger, better trees (of the same age) resulting in declining vigor and quality. Few of these harvested trees have the potential to grow into quality sawtimber.

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Some changes in the woods are caused by man, while others are natural. About half-way through the harvest, a tornado damaged several acres of woods. Most of the roughly 100 uprooted and severely damaged trees were salvaged thanks to an exceptional effort by the loggers. The increased and unexpected disturbance will require adaptive management to minimize problems like colonization by forest invasive plants.

at the end of the season. Changes in the woods come more slowly, but the principles are largely the same, where judicious weeding can greatly enhance the growth and productivity of the desirable plants. Unfortunately, most of the trees removed during timber harvests today are those of significant value, while the "weed trees" are largely ignored. This is comparable to removing part of the tomato plants each time the garden is tended, but passing over the weeds that compete with the veggie plants for sunlight, water, nutrients and space.

Woodlot Management Workshop

Please join us at this upcoming event to learn about making a family forest better for the next generation! The walk will take place on Saturday, September 12th from 9:30 – Noon at Angus Glen Farms, 3050 Station Road, Watkins Glen, NY, and will highlight recent logging to promote tree health and regeneration, invasive plant control, integrated timber and livestock production (silvopasturing), wildlife habitat enhancements, and strategies for dealing with forest pests.

Foresters and loggers will be present to share their insights, as well as Cornell Master Forest Owner Volunteers who can be consulted individually for advice.

The woods walk will take place rain or shine, and require about one mile of hiking.

This event is free of charge, and is sponsored by Cornell University's Master Forest Owner Program (*www.cornellmfo.info*), Cornell Cooperative Extension (*http://cceschuyler.org*), and the NY Forest Owner's Association (*www.nyfoa.org*).

No RSVP is necessary. For additional information please contact Brett Chedzoy by phone (607) 535-7161 or email: *bjc226@cornell.edu*

After several such harvests, little remains of value – though plenty of remaining green stuff still gives the false appearance of a productive garden or woods. The major difference, however, between the garden and woodlot is that we can own up to our mistakes and start over again the following spring in the garden. Fixing such mistakes in the woods can take decades, and the legacy of poor woodlot management will linger for generations.

Each of you reading this has your own reasons for being a woodland owner. But I feel safe in generalizing that all of you enjoy your woods and would like to make it better for the future. What if that means forsaking a big windfall timber harvest in the short term and instead receiving peanuts for dozens of truckloads of pulp/firewood? And what if the heavy "weeding" of low-quality trees meant radically changing the appearance of your woods? (probably for the worst, in the eyes of most)? Throughout my career as a forester I've overseen the harvest of many thousands of acres of forest, ranging from light thinnings to clearcuts. I still find the visual changes from these silvicultural activities to be striking, especially when it happens in my own woods. I also recognize that this is largely how the public judges forest management: taking a beautiful woods and making it look less beautiful in the short-term due to logging slash, muddy skid roads, etc. Wouldn't it be nice if both we, and the public passer-by's who judge what we do on our land became as comfortable with weeding the woodlot as the garden – and fully understood the importance and benefits to both? I don't believe that any of us who loves our woods will ever be able to remove visual impacts and aesthetics from the list of criteria that we use to evaluate our management activities, but I do hope that we can balance these important considerations with others to implement the best silviculture and stewardship possible on our family tree farms. Our legacy will be judged by how the *next* generation of forest looks, not by the short-term unsightliness of "doing the right thing" today.

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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

Hemlock Tip Blight

By Mark Whitmore

As you are probably well aware, this was a very wet spring and early summer in New York. One of the problems with this weather pattern is that it favors the growth of fungi, including plant pathogens. This summer in particular I've noticed an unusual number of dead tips on hemlock twigs. This is caused by the fungus *Sirococcus tsugae*. First isolated from hemlocks and true cedars in the Pacific Northwest, *S. tsugae* was just recently split from the species *S. conigenus*, which has a broad host range among conifers. *S. tsugae* was first noted on the east coast in 2006 across a large area in central and southern Maine. Since that time it has been found on the east coast in Georgia, throughout much of New England, in Pennsylvania all the way west to the Allegheny, and New York. This is likely not because it has spread rapidly from an introduction point but rather that it was widespread yet for some reason not recognized as a problem. Why? My colleague in Maine, Bill Ostrofsky, thinks it has something to do with the very wet springs they have been having over the past 10 years. Neither I nor the NYSDEC Forest Health crew have had reports from the public or noticed very much *S. tsugae* ourselves. So what is going on in New York? Is this a mostly benign yet periodically eruptive disease or is it yet another emerging problem for hemlocks?

Figure 1: Infected needles with spore-producing structures of Sirococcus tsugae. Photo courtesy of Maine Forest Service.

First some biology. *S. tsugae* is an asexually reproducing fungi in the form class Coelomycetes, part of what is also referred to as the Fungi Imperfecti. The spores, or in this case conidia, are borne in darkly colored structures called pycnidia which are formed on infected needles and twigs late in the summer or early fall (see figure 1). Pycnidia are not always present in infected tissue so visual identification in the field can be frustrating. In the spring when the young, tender hemlock shoots are beginning to elongate the conidia will be splashed about with rain, land on the twigs and infect them. Infection causes the shoot to become flaccid and droop. Survival of conidia and subsequent shoot infection is enhanced when conditions remain moist, temperatures remain in the 60's F, and there is not a lot of direct sunlight. Imagine an understory tree near a small creek or pond. The infected shoots will eventually dry out, first turning a reddish color and then gradually turning dark brown (see figure 2). These infected shoots can remain on the tree for a few years but it is uncertain if they continue to produce viable conidia beyond the first year of infection. One of the interesting things about hemlock is that they continue to produce new shoots throughout the growing season if conditions are favorable. I've observed the second flush of shoots to also become infected but my thought is that the incidence of infection decreases as summer progresses and it gets drier.

As you may have guessed, the problem occurs when a significant number of the shoots on a tree are killed. The impact of *S. tsugae* can be particularly pronounced in nursery seedlings where mortality occurs rapidly with shoot loss. My experience in the forest setting is that damage is mostly light with heavier damage uncommon and seemingly isolated to understory trees in moist sites. However, in Maine Bill Ostrofsky says that they have found *S. tsugae* to on occasion infect nearly all the shoots on a tree and in some instances perhaps not cause mortality, but play a major role in it along with other agents like deer,

Figure 2: Tip dieback on eastern hemlock infected with Sirococcus tsugae. Photo by Mark Whitmore.

hemlock woolly adelgid, and elongate hemlock scale.

Unfortunately there is not much that can be done to control *S. tsugae* at this time other than silvicultural manipulation to decrease hemlock stocking and manage understory vegetation to improve airflow and dry out the stand. I think the important thing at this stage is to get a better idea of where we stand in New York with this pathogen so we can evaluate if it is something we should be concerned enough about to begin developing management plans. This is where the woodlot owners can be helpful. If you locate what you think is hemlock tip blight please take a few photos and send them to me (*mcw42@cornell.edu*), your local DEC forester, or the DEC Forest Health program (*foresthealth@dec.ny.gov*).

But wait, I'm not finished. The situation with the tip blight got me thinking and there is another foliar disease of hemlock that has become widespread in Pennsylvania over the past few years and I'm also wondering what is happening with it in New York. Fabrella needle blight is caused by the ascomycete fungus *Fabrella tsugae*. Symptoms of this pathogen are needles in the lower part of the tree turning brown and falling off the twigs in late summer and fall. You can tell if it is the pathogen by finding the small pustule-like fruiting structures on the underside of the needles amongst the stomata, or the two white racing stripes on the underside of the needle. These fruiting structures appear white to tan in color at first but gradually turn dark brown to black by fall. *F.tsugae* usually infects the lower canopy needles, sometimes in patches on branches amongst healthy needles. In Pennsylvania they feel the best time to look for *F.tsugae* is from December through March. The impact of this pathogen on tree health is likely small on its own but as with the Shoot Blight it could be yet another stressor that our hemlocks have to deal with in order to survive. It would be helpful to hear and see photos if you think you have this pathogen in your woodlot.

For more information on these diseases these fact sheets might be helpful:

http://na.fs.fed.us/pubs/palerts/tip_blight/tip_blight_lo_res.pdf

http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_007191.pdf

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

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You will receive an email every two months that includes a PDF file of the publication. While being convenient for you – read *The Forest Owner* anytime, any place; this will also help to save the Association money as the cost of printing and postage continues to rise with each edition.

tions/ee0059). Pathfinder II is a formulation that includes Triclopyr that is available in New York and that does not require a certified applicators permit. The chemical in the mix causes abnormal growth of cells in the tissue of the stem, rupturing the connection provided by the phloem. An advantage of a chemical girdle is that, if correctly applied, the tree will die within that growing season and promptly release the adjacent crowns from competition. Chemical girdles need an oil carrier for Triclopyr to penetrate the bark. The mixture is applied from ground level to about 20 inches high, so thick bark, snow, or rainy weather may limit effectiveness. The label indicates the bark of stems larger than 6 inches in diameter is too thick to allow for an effective treatment.

Biological methods amount to the use of livestock such as goats, sheep or cattle to strip the bark from the stem. This a selective mode because only one stem at a time is treated, but the manager needs to assure that the mixture of tree species and stem sizes will focus livestock attention on the targeted species. Most livestock prefer thin bark, so biological girdling has its greatest potential to control undesired understories among desired mature stems. The fungus responsible for beech bark disease is another example of biological girdling, though not an agent we can control.

A hybrid method of girdling includes "frill and squirt" (FAS). FAS is a hybrid technique because the frill, a continuous cut or chop around the stem, is enhanced with an herbicide such as glyphosate. This technique involves the use of a hatchet or chainsaw to chop or cut a continuous girdle around the stem, and an herbicide such as glyphosate (e.g., Round-up, Rodeo, Accord XRT) is squirted onto the freshly cut tissue. Other herbicides can be used as well. The frill provides, technically, the girdle because it severs the phloem. The glyphosate accelerates the process of tree death because it moves in the stem to the foliage where it interrupts photosynthesis. The FAS technique has its greatest effect on the treated stem, but in some circumstances the glyphosate moves into the root system and into connected stems of the same species. Glyphosate applied with FAS or similar methods has not been reported as transferring to species other than the target species.

A variation of FAS is hack-and-squirt (HAS), which uses a hatchet or ax to make a non continuous series of chops around the stem, and each incision receives a small dose of an herbicide. HAS works by exposing living tissue about every three inches around the stem and a chemical such as glyphosate or Imazapyr is applied to the freshly exposed tissue. HAS differs from FAS only by a discontinuous or continuous series of chops or cuts. Some people will use these terms almost interchangabley. Because HAS creates a smaller reservoir, incisions are usually made about every three inches versus every 8 to 12 inches with a drill (Figure 5). FAS would be used less frequently than HAS, for species such as buckthorn, which seem to tolerate all except the most extreme treatments. Use caution with herbicides, because although glyphosate does not have activity or movement in the soil, Imazapyr may move in the soil and affect non-target species.

Figure 5: Stem injection, while not strictly girdling, is a treatment that shares many similarities in the nature of the application. Gasoline or cordless drills can be used to drill a hole that serves as a reservoir for an herbicide. Glyphosate is mobile in the tree, but lacks soil activity. Imazapyr has soil activity and can kill trees rooted in the treatment zone.

A method similar to HAS is stem injection. By the definition here, that is to sever or kill the phloem, stem injection is not a girdle. Stem injection does not sever the phloem and uses a chemical to achieve death of the tree. Stem injection might be accomplished with a cordless drill. The spacing of the drill holes will depend a bit on hole diameter, depth, and properties of the herbicide. There is not extensive research on this method, however. If HAS uses a milliliter or so of herbicide per incision (approximately one-half a thimble), a series of relatively small and shallow holes via injection would suffice. However, with herbicides that move within the tree, such as glyphosate, widely spaced and up to 1.5 to 2 inch deep holes might require less effort.

The injection method with glyphosate has been used effectively on many species including aspen, beech, white pine, hornbeam, and hophornbeam. Many hardwoods are sensitive to glyphosate applied by HAS and stem injection. In preliminary trials, stem injection of large diameter wolf white pine proved effective with 2 inch deep holes, made with a 5/8" bit, spaced 12 inches on the circumference using 25% active ingredient glyphosate in a winter treatment. Although limited in the number of observations, this treatment of wolf white pine had no flash into adjacent white pine. The herbicide label for Rodeo and Accord XRT II includes many other species that can be controlled (http://pims.psur.cornell.edu/).

It is best to consider girdling as a tool. As with any tool, there are appropriate and inappropriate applications. Also, as with any tool, girdling can be done incorrectly and result in more complications than would a different strategy.

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.*

Rabbit Enclosures

Ed and Wanda Piestrak

We have several miles of roads throughout our property and 90% of them are seeded with clover. Since seeding the roads we have noticed the population of rabbits increasing. During the evening hours multiple rabbits were observed feeding on the clover.

We decided to do what we could to assist the rabbit population. A few years ago we constructed approximately six rabbit enclosures along the trails. These enclosures included a foundation of cinder blocks, treated 4x4 timbers, large stones, and a multitude of approximately 15 inch tree stumps. We placed multiple limbs over these structures and left openings where rabbits can easily gain entrance.

The following winter we noticed many rabbit prints entering and exiting the enclosures. The following summer we also noticed additional rabbits feeding along the clover roads.

We have therefore concluded that planting clover and constructing structures that rabbits can frequent was very effective in increasing the rabbit population on our property. Prior to the clover seeding, rabbits were very scarce. However, since the seeding and constructing these enclosures they have become abundant through out the property.

Our forester, Mr. Bruce Robinson can attest to the multitude of rabbits on the property at this time.

We would offer the following suggestions to make the process of introducing rabbits onto your property more convenient and economical:

1) If you have a timber harvest, leave the tree tops on the forest floor; they make excellent habitat. However, should you utilize the tree tops for firewood you can still leave the small branches in a brush pile type setting.

2) If you do any TSI on your property you can pile up the cut trees to form brush piles.

3) If you remove some trees to keep your trails open, you can pile up the trees into brush piles near the trail. By constructing brush piles near the trail the rabbits will usually take advantage of the food and housing.

Like they say, "If you build it, they will come"

Ed and Wanda Piestrak are members of NYFOA.

Rabbit Enclosure Process:

Step 1

Step 2

Step 3

Step 4

Member Profile:
Philip Di Benedetto

Briana Binkerd-Dale

Philip Di Benedetto has always been an avid outdoorsman, particularly enjoying hiking, fishing and kayaking. During his 20's he took three months to backpack and hike in nearly all of the major US national parks, plus Banff and Jasper national parks in Canada. This sense of adventure has been reflected in some major career changes – going from training Standardbred pacers and trotters for 10 years to working as a surveyor while attending night classes to achieve a B.S. in mechanical engineering. Born and raised in Elizabeth NJ, he currently works as an engineer for the US Navy in Lakehurst NJ, just a few hundred yards from the Hindenburg crash site. He has long loved the Adirondacks and was looking for land there for about 20 years. When he became discouraged by relying on realtors, he put significant time into doing his own research online, putting his background as a surveyor to use in evaluating property features and topography. He had almost given up on finding the right parcel before he came across the 38 acre camp that he and his fiancé Susan call Harmony Hill. Phil has two sons, Ian (an Army Ranger currently serving in Iraq) and Scott (an accountant), while Susan has three successful daughters of her own.

While their children enjoy coming up when they can, the land is Phil's dream-come-true. He and Susan have spent every weekend there that they can since buying it about 5 years ago. Located in Bleecker in Fulton County, it's a varied property with trails, a nice house with outbuildings and a small apple orchard that was planted by the previous owners. It also has the advantage of being close to town, the hospital, lakes and additional hiking. Located on one of the highest points around that is habitable, there used to be a beautiful view of the surrounding mountains that has since been blocked by trees – however, there are some rock outcroppings and the property itself is relatively flat and rolling. The majority of trees are maple, beech, hemlock and yellow birch, with some large old eastern white pines. Wildlife on the property includes otters and trout (which they stock in the pond), bear, porcupine, deer, small mammals, frogs, toads and lots of owls. A lot of the wildlife is nocturnal, which inspired him to install a trail camera that revealed greater numbers and diversity of species than there initially seemed to be.

One of the resident bears captured on a trail camera installed by Phil.

Phil has taken the same active approach to becoming a steward of his land that he took to finding it. He found his forester, Ken Hotopp, through the DEC forester list after interviewing several other people and calling a local timber company for leads — Ken is retired but still has a few clients. Phil and Ken just hit it off. Phil is in his third year with Environmental Quality Incentives Program (EQIP), a federal program designed to improve timber stands through methods prescribed by a forester based on a written management plan. Their plan maintains 70% of the canopy; trees are selected for harvest by the forester but it is a cooperative effort with the landowner. Ken works with Phil to make sure that the trees being cut support his ownership objectives and align with other activities on the property. The EQIP practices can be done in a time

The Di Benedetto family enjoying the pond.

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Mountain view from the driveway.

frame that works for the landowner. Phil, Susan and Ken decided to break up the work across 3 years, after which they will receive a cost-share payment from the Natural Resources Conservation Service (NRCS) for their efforts.

They are starting to see some results from the implementation of the EQIP program – opening up the canopy has encouraged growth of tree seedlings, particularly oaks. Phil is considering taking some action to protect the seedlings from deer browse. They spend a lot of time on maintaining the existing trails on the property – he has been impressed with the forest's speed and ability to quickly fill a void when a light gap is opened up. They have been putting some energy into managing populations of invasive plants as well through cutting them back and treating the stumps with Round-Up, particularly Japanese knotweed and autumn olive.

The apple orchard.

Phil took a Game of Logging course to learn felling techniques and proper use of a chainsaw. The increased skill in productivity and safety has been useful in harvesting firewood and doing work recommended by his forester. He's considering building a shed next year with white pine and hemlock harvested on the property. He also took the Master Forest Owner volunteer course, which he described as an eye-opening experience that encouraged him to explore some less common practices such as mushroom cultivation and bee-keeping. Phil and Susan have about 12 logs they inoculated with mushrooms and started a couple of beehives two years ago. The bees were difficult to maintain without being there more regularly, but they are going to try again next year.

Phil and Susan have had enjoyable experiences renting out a small guest house on the property through two different websites, AirBnB (http://www.airbnb.com) and Vacation Rentals By Owners (http://www.vrbo.com). They just started last year and so far guests have included a couple from Missouri, a group from Manhattan and others from France, India and Canada. He said that guests enjoy the opportunity to get out in nature and off their cell phones for a bit (an easy thing to do with limited reception), and proceeds from cottage rentals help cover nominal costs of the property such as taxes.

Phil's advice to fellow forest owners is to get out there and do their research: no one is going to knock on your door and tell you what you need to know. He recommends utilizing the internet – universities are a great resource, and there are a lot of helpful webinars out there. The process of research will lead you down the path to meeting other forest owners, finding classes that are useful to you, and helping you determine what is the best fit for you and your land. Every piece of property is different and everyone has different priorities, but with an open mind, adaptability and taking advantage of the resources that are out there, you can make great things happen.

Briana Binkerd-Dale is a student in Biological Sciences and Natural Resources at Cornell University. If you are interested in being featured in a member profile, please email Jeff Joseph at jeffjosephwoodworker@gmail.com

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