

The New York Forest Owner

A PUBLICATION OF THE NEW YORK FOREST OWNERS ASSOCIATION

For people caring about New York's trees and forests

March/April 2020



Member Profile: Robert Gang

Volume 58 Number 2



**THE NEW YORK
FOREST OWNERS
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**The New York
Forest Owner**

A PUBLICATION OF THE NEW YORK FOREST OWNERS ASSOCIATION

VOLUME 58, NUMBER 2

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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.



NYFOA
New York Forest Owners Association

www.nyfoa.org

COVER: Front cover. Not many things are as satisfying as harvesting a nice sized buck on your own land. For member profile see page 21. All photos courtesy of Robert Gang.

From The President

The economic, ecological, and social benefits our forests provide are wide-ranging. Accordingly, our forests must be appropriately supported so these benefits are available for generations to come. The New York Forest Owners Association (NYFOA) "was founded in 1963 to encourage well-informed management of



privately owned woodlands in New York State and to promote, protect, represent, and serve the interests of woodland owners."

Throughout these years the forested land area in New

York State (today, almost 19 million acres, covering about 65% of the state) has steadily increased and the resulting benefits of these well managed forests are shared across the environmental and social spectrum.

The primary and most obvious benefit of sound forests is the production of the oxygen we need to live, and the absorption of the carbon dioxide we exhale. In addition, our forests purify the air we breathe by absorbing airborne pollutants, which has been linked with a reduction of asthma prevalence and a decrease in asthma symptoms in vulnerable populations. Forests are essential in maintaining clean water, cooling the earth, fighting floods, stabilizing soils, decreasing soil and water pollutants, and affecting weather patterns. Forests provide food sources and medicinal compounds for our needs. Trees can reduce cooling needs in summer and heating needs in winter. Forests provide wood for housing, furniture, paper, and other products

used in daily life. Woodlands are vital for biodiversity, and provide habitat to numerous species of fish and wildlife. Forests also provide opportunities for recreation, exploration, and relaxation for those that seek it.

NYFOA is committed to providing our members with the educational opportunities to steward their woodlands so that generations to come can enjoy the benefits that our forests contribute to our world. I encourage our members to utilize all the resources available to achieve their forest management objectives. I encourage others interested in the thoughtful management of private forestlands to consider joining NYFOA and supporting our mission. And I thank all our volunteers for their time and efforts in support of NYFOA's mission throughout the years and helping to ensure our woodlands continue to be well managed.

NYFOA's annual Spring Program is scheduled for April 25, 2020 in Syracuse, NY. Please save the date. The program will concentrate on long-term family forestland protection and estate planning. The agenda and details will be forwarded and posted on our website when finalized.

Although not a literary critic, I would recommend the book "The Big Burn" by Timothy Egan. It chronicles the creation of The United States Forest Service and the efforts of Teddy Roosevelt and Gifford Pinchot to establish our National Forests. Although a history book, it reads like a novel. It would be a good read on a cold winter's night.

-Art Wagner
NYFOA President

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*, woodwalks, chapter meetings, and statewide meetings.

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Tonewood

JEFF JOSEPH

For many of our musical instruments, the distinctive and pleasing sounds created are primarily the sound of wood. This is certainly true for guitars, and especially so for non-amplified ‘acoustic’ or ‘flattop’ guitars. The woody timbre and resonance of these instruments has provided some of the most iconic sounds in the popular music of the past century. To keep things simple, the discussion to follow will focus solely on the flattop steel string guitar, but much of the information will hold true for classical and archtop guitars, as well as for mandolins, ukuleles, dulcimers, and to a lesser degree for electric guitars.

Something of a marvel of engineering, the basic template for the design of the modern flattop guitar has not changed much since the 1840s. In most basic terms, it is a very thin sided wood box, with a latticework of lightweight interior wooden bracing ‘under the hood’ to help maintain the structure, and that has steel strings stretched across the top under extreme tension. When plucked or strummed, the strings vibrate at a complex amalgamation of differing frequencies. That vibrational energy is transferred to the top of the guitar, which in turn vibrates, turning the box of the guitar into a ‘speaker’ that pumps air (ideally beautifully woody sounding air) out of the soundhole and into our ears.

To maximize their resonance and nuanced tone qualities, guitars have to be built lightly enough to vibrate freely, while remaining strong enough to endure the constant strain



Acoustic flattop guitar with ‘Adirondack’ (red) spruce soundboard

of upwards of 150 pounds of string tension which is constantly trying to fold the guitar in half. This makes the art of luthiery a fine balancing act to be sure, as unlike more inert or uniform materials, the essential, living raw material in question—the wood—is near infinitely variable in its density, strength, and tonal responsiveness. So extensive hands-on experience, lots of trial and error, and perhaps some luck (or at least healthy

intuition) are as important as a grasp of the engineering required to create an instrument with a majestic (or at least musical) voice.

Due to the essential role that wood choice plays in the production of a tonally rich guitar, there have long been certain species that are preferred and/or prized for each of the individual parts that make up an instrument; the following are a few brief examples.

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By far the most important part of a guitar in terms of sound production is the top, or 'soundboard.' Almost all acoustic guitars utilize some species of spruce (*Picea sp.*) for their tops and bracing, as it has one of the highest strength to weight ratios of any wood species. Prior to WWII, the spruce most commonly used was red, or 'Adirondack' spruce (*P. rubens*), which despite the common name grows in a range from Nova Scotia in the north, down along the Appalachian spine to North Carolina, and which was/is prized for its strength and its crystal clear and powerful tone.

Due to overlogging during the war effort, as well as to the opening of the Pacific Northwest to the logging industry, red spruce was largely abandoned postwar in favor of the incredibly abundant (and incredibly large) old growth Sitka spruce (*P. sitchensis*). Sitka is still most commonly used today, but is substantially different enough in its tonal properties that a resurgence in the use of red spruce has begun more recently, which commands a significant price premium, as there is simply much less quality material available.

For backs and sides, the two mainstays of the guitar industry have long been either various species of rosewood (*Dalbergia spp.*) or mahogany (*Swietenia spp.*), many of which are considered threatened, with their use and international transport being monitored and/or restricted under the Convention on International Trade in Endangered Species (CITES). Guitar necks have commonly been carved from mahogany or Spanish cedar (*Cedrela odorata*), and the most common species used for fretboards and bridges have been either rosewoods, or ebony (*Diospyros spp.*). Each of these are also listed as threatened by CITES.

As supplies of these classic tonewoods dwindle, or are no longer able to be sourced in a sustainable (or even legal) way due to overharvesting or habitat loss, both individual luthiers and the guitar making industry have been increasingly looking for alternatives closer to home that provide the tonal and structural qualities needed, along with the aesthetic appeal necessary to compete with the customary colors and grain patterns of the traditional species used.

Whether or not you are a music lover, this is where the discussion becomes of particular interest to us as woodlot owners, as many of these alternatives can be found right in our woodlots, hedgerows, yards, and even on city streets. As more experimentation

takes place, luthiers are finding that we need not source tonewoods from halfway around the world, or from old-growth rainforests at all. In fact, many of our local woods are very well suited to building guitars that are structurally sound, and tonally distinctive, even if somewhat different from the character of the classic pre-war instruments.

Just off the top of my head, here are some examples of local timber species that have been and/or currently are being used to build world-class instruments: sugar maple, black walnut, yellow birch, black locust, black cherry, white and red oak, white ash, sycamore, catalpa, black gum, basswood, and hophornbeam. I am sure that with time there will be many more.

The biggest challenge will be to maintain a supply of locally sourced soundboards, as there is not a ready substitute for good spruce, and red spruce is a slow growing tree that takes a century or more to reach an adequate size (24" + DBH generally speaking), and that has been in decline over much of its range for some time.


I would encourage anyone with stands of red spruce in their woodlots to seriously consider managing them for long-term musical instrument production (such has been done for centuries in Europe with their spruces), as they will bring much more value this way than they ever would as framing lumber or pulp. Also helpful will be for the guitar buying public to learn to accept guitars tops with minor aesthetic flaws such as sap pockets, pin knots, color streaks, and wide/uneven grain.

Another possibility is moving toward the use of tops that are made up of 3 or 4 bookmatched pieces, rather than just two, which is how most all flattop guitars are currently built. From what I've read it seems that there is no loss tonally with this move, which would allow for the use of much more of the red spruce currently available, but aesthetic tastes can be slow to evolve, and truthfully, many guitar buyers shop with their eyes rather than their ears.

A few years back I went on a tour of the Martin guitar factory in central PA (187 years and still going strong!), and in a glass case I saw a very fine looking guitar built with only domestic woods, including some wildly figured ash for the back and sides. With EAB imminent in many areas, this would be a great way to preserve the legacy of (and to make some \$ from) ash until it (hopefully) rebounds with time. I have also read stories of luthiers having made

outstanding sounding guitars made with oak backs and sides, but no longer working with it due to lack of interest from the guitar buying public, which evidently will not abide a guitar with grain that looks like their kitchen cabinets, regardless of how it sounds.

For anyone out there interested in milling your own tonewood, or in having it milled, I would encourage you to experiment with any of the wood species mentioned above. A few things to keep in mind: first, it is *essential* that all of your wood be fully quartersawn, as it is much more dimensionally stable than flatsawn—this is critical for the structural stability of the instrument. For a full size 'dreadnought' style guitar you will need to end up with a bare minimum of about 16" wide once the top or back is joined, so plan on rough milling at least 8" of quartersawn material, which excludes the heart/pith and the sapwood, and leave it oversized enough in all dimensions so that it can be cut to length, milled flat, resawn into matching plates, and sanded to thickness (generally somewhere under 1/8" thick depending on stiffness) once dry. Make sure that the wood dries slowly and thoroughly to avoid checking, discoloration, and/or internal stresses. Keep in mind that smaller/narrower sized pieces can be used for braces, bridges, fretboards, or maybe sides or necks, or if you are building something like a ukulele, everything can be much smaller.

If you are really serious about any of this, your best bet would probably be to contact a local luthier, who would likely be more than happy to offer you information and advice in exchange for some nice wood, or even better, in exchange for a commission, should you be on the market for a guitar made of home grown wood. Or if you are feeling really ambitious, you could just try making one yourself, as there are many plans and tutorials readily available for all kinds of guitars. It may or may not end up sounding great, but you will certainly learn something in the process, and will have created something of great personal value.. In any event, whether you are a music maker or are just looking to market some nice logs or boards you have sawn, there are a variety of ways to be involved in turning wood into sound, and it seems the time is right for a renaissance of locally milled and locally made guitars. 

Jeff Joseph is chair of NYFOA's editorial committee.

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

Features of Trees Useful for Identification

Question: I have a new tree ID book and I'm struggling to learn what features of trees I should focus on when I'm trying to identify a new tree? (Chris S., Central New York)

Answer: Woodland owners who learn how to identify the trees and other vegetation on their property are better able to enjoy their land, and will make more informed decisions about their management actions. The terminology associated with dendrology, the study of trees, can be overwhelming. The starting point is to know the diagnostic features, and the ways those features might vary within and among tree species. Some, but not all, features that are reliable for the differentiation among species are presented here, as well as some common terms that are used in tree identification books. Make sure your book has a good glossary.

Following are features of trees and shrubs that provide the greatest clarity in identification. A challenge is to recognize how these features differ between species (Figure 1), and how these vary within a species. Within a species, one prominent cause of variation is tree age, which influences many of the features.

For example, bark on young trees is often smooth, although as trees age the bark at the base of the stem is first to acquire the characteristics typical of a mature tree. Tree vigor, as a result of soil, sunlight, or past disturbances can influence some tree features. Tree genetics can also cause variation of a feature. Most tree guides will describe the variation of features that might be attributable to genetics. Finally, while there may



be some differences of a feature on any particular specimen (a specimen is the particular tree or shrub you're inspecting), be sure to see as much of the specimen as possible and use the most common manifestation of a feature.

Recognizing variability is important, but so is knowing what won't vary. Features that are basically constant for a species include the edge of a leaf (the margin), the arrangement of buds and leaves as opposite or alternate, anatomical structures such as thorns or pith (the inner spongy core of a twig), the type of fruit such as nut versus berry, and the position of fruit on stalks or along twigs.

There are advantages and disadvantages to using any one feature, but all are potentially useful. For example, twigs usually differentiate between species given differences in twig color, diameter, bud features, smell, and straightness. However, for about a month in the spring as the new twigs emerge, their typical characteristics are obscured. Similarly, the bark on mature trees is often fully diagnostic to separate among species, and this is the



Figure 1. Red (left) and sugar (right) maple have similar looking leaves, although sugar has a smooth margin and red has a toothed margin.



Figure 2. Hickory is an example of a genus that has alternate bud and leaf arrangement. Note also the overlapping or imbricate bud scales.

common way that foresters identify trees. However, young trees have bark that is usually quite different from the bark of that species on more mature trees. Thus, there is not one single feature that is always useful; the correct feature depends on the situation.

Arrangement

One of the most useful features to identify trees, at least to sort hardwoods into two broad categories, is whether the buds are paired on the stem, known as “opposite” arrangement, or if the buds are unpaired, known as “alternate,” in their position along

the twig. (Figure 2). Because twigs emerge from buds, twig arrangement is often consistent with bud arrangement. Although bud arrangement is almost always invariant, trees with opposite branches might lose an occasional branch and give the appearance at quick glance of being alternate. Another uncommon arrangement, whorled, has three leaves at one point on the twig. Whorled arrangement occurs on northern catalpa (*Catalpa speciosa*) and the wetland shrub buttonbush (*Cephalanthus occidentalis*), the later can be either opposite or whorled with three or four leaves.

Foliage

Foliage is the most apparent feature, but in hardwoods is the feature with the most variability in size, shape and outline. In fact, first year seedlings can have foliage features that are remarkably different than even second year or older seedlings. Conifer foliage, the needles, tend to be consistent in size and shape. Size and shape of hardwood leaves can vary as a result of the amount of sunlight, drought and defoliation, or other factors. Outline or leaf shape is often similar among several species, and can be useful, though not always definitive. Other features of foliage are more useful. The arrangement of the foliage follows the buds, as previously described.

There are several features of foliage that warrant attention because they lack variability. The leaf type describes either a simple or compound leaf (Figure 3). A simple leaf has a single blade and the stalk, known as the petiole, connecting the blade to the twig. A compound leaf has multiple leaflets, which are blades attached to a central stalk known as a rachis that attaches to the twig. In some species a leaflet looks like a leaf, except that there is a bud on the twig where the leaf connects. There is never a bud where the leaflet attaches to the rachis. The edge of the leaf is called the margin. A leaf (or leaflet) margin is



Figure 3. Compound leaves have multiple leaflets. On this elderberry, each leaf has 5 leaflets, note the leaves are opposite, and the elderberries are attached.

continued on page 17

Wild Things in Your Woodlands

KRISTI SULLIVAN

SPOTTED SALAMANDER (*Ambystoma maculatum*)



The spotted salamander is large and stout, with a broad, blunt head. It is easy to recognize by the round yellow spots on its back, arranged in two irregular rows running down the length of its black body. There can be as many as 50 spots, and these usually extend from the head to the tip of the tail. The belly tends to be a slate-gray color with gray flecks along the sides. Adults generally measure from 4 - 7 inches and can be as long as 10 inches. Males typically reach maturity when they are 2 to 3 years old, whereas females usually take 1 to 2 years longer until they breed. A spotted salamander can live for more than 20 years!

The aquatic larvae of spotted salamanders are dull green with white or light bellies, and generally lack any particular markings.

The spotted salamander is relatively common and widespread in New York State. Spotted salamanders are most noticeable in the early spring for a short period of time when they congregate in large numbers to breed. During this explosive breeding period, which usually occurs in March or early April, spotted salamanders make mass migrations at night toward nearby pools and ponds. The breeding migration generally is triggered by the first warm, steady spring rains, even if there is snow remaining on the ground. The males, who often arrive first, begin swimming about in a highly active state that becomes nearly a frenzy when females arrive in the pond to mate.

During courtship and mating, adult male spotted salamanders deposit gelatinous white sperm packets on sticks or on the bottom of the pond. These packets are very easy to spot and serve as the first clue that spotted

salamanders are present in a pool or pond. A female will swim over the packet and take up the sperm into her cloaca. Within one to a few days, the female lays eggs in gelatinous masses of usually 100 to 200 eggs, attaching the egg clusters to aquatic vegetation or sticks. Eggs usually take from 30 to 50 days to hatch, depending on the temperature of the water. The new hatchling starts out as an elongate tadpole, with external gills near the neck region, and short buds in place of front limbs. As the tadpole develops, toes form on the front feet, rear legs sprout near the base of the tail, and it ultimately loses its gills and tail fin, all in preparation for life on land.

Temperature, water level, and food availability combine to influence the length of the tadpole stage. The minimum time it takes for a spotted salamander to metamorphose into its terrestrial form is two months; usually

newly transformed animals begin leaving the water in late summer and early fall. In the water, the larvae eat small crustaceans, mollusks, and insect larvae. On land, spotted salamanders eat beetles, earthworms, snails, slugs, insects, and spiders. Once transformed, they will remain on land for the rest of their lives, except briefly during spring breeding periods.


While congregated together in their breeding pools, spotted salamanders can be seen readily, even by a casual observer. During the rest of the year, however, the spotted salamander is largely fossorial, retreating to underground burrows. In moist environments or damp weather, individuals occasionally can be encountered under logs, stones, or boards during the day, or out foraging at night. In winter, they hibernate underground in burrows sometimes more than three feet deep.

The spotted salamander is an important component in both aquatic and terrestrial communities. Eggs and larvae provide food for a wide variety of aquatic animals, and predatory fish, birds, snakes, and turtles eat adults. Because of their complex habitat requirements, spotted salamanders are sensitive to the loss of both wooded and aquatic habitats. Furthermore, their tendency to migrate between these habitats during the breeding season makes them highly vulnerable to mass mortality. Cars crush a substantial numbers of adults each spring on roads that separate upland sites from breeding ponds.

Spotted salamanders may move more than 1/2 mile from bodies of water where they breed, but will return to the same pond to breed year after year, often using the same exact path each year to travel from upland to aquatic sites. To provide habitat for spotted salamanders, landowners can enhance and protect both their aquatic breeding sites and the surrounding woods. Shallow woodland pools that dry up during late summer or fall (and do not support predatory fish) provide particularly valuable breeding habitat. Protecting these and other breeding sites from pollution (chemicals, sediments from erosion) and disturbance is essential for these animals. By marking the boundaries of breeding pools during the wet season, landowners can help prevent

disturbances within the boundaries of the pools during drier times.

In surrounding woodlands, maintaining a mostly closed forest canopy (> 75 percent within 100 feet, and > 50 percent within 400 feet of the pool or pond) will provide optimum habitat for the spotted salamander and many other amphibians. A closed canopy shades the forest floor, keeping soils moist and leaf litter abundant. Coarse woody debris (logs, tree tops, etc.) can also be left on, or added to, the forest floor to provide safe havens for the spotted salamander throughout much of the year.

Maintaining minimal disturbance between breeding pools and adjacent woodlands allows spotted salamanders to move freely between the two. Disturbances such as road construction, skid trails, or large ruts can create barriers to travel if they occur close to breeding pools and ponds. Locating skid trails away from (400 feet) breeding pools, and harvesting timber when the ground is either frozen or completely dry, provides extra consideration for the spotted salamander. 

Kristi Sullivan is Director of the NY Master Naturalist Volunteer Program. More information about wildlife and wildlife habitat can be found at <https://blogs.cornell.edu/nymasternaturalist/about-our-program/>

Supported by USDA NIFA.

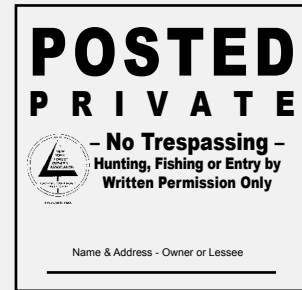
Welcome New Members

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
Jim Brady	AFC	Sophie McManus	LHC
Steven Buttiker	CDC	Pamela & Dean Morningstar	AFC
Ken Ciccotelli	SFL	Tricia & Steven Ranck	SOT
Sloane Crawford	CDC	Philip Robinson	WFL
Leo Drozdowycz	LHC	Michael Stokes	WFL
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* Minimum order is 25 signs with additional signs in increments of 25.

Take a Walk in the Forest Saturday May 16th

COORDINATED BY MARY JEANNE PACKER



Be part of a national program for informing friends and neighbors about good forest stewardship

The third Saturday in May each year is designated as National Walk in the Woods Day™ by the American Forest Foundation. In 2020, that day will be Saturday May 16. The American Forest Foundation invites its network of family forest owners and Tree Farmers recognized by the American Tree Farm System to offer tours of their managed forests, or simply take their own families and friends for a walk in the woods.

The goals of National Walk in the Woods Day™ include: inform the public of the many benefits of trees and forests, increase public awareness of the dynamic nature of the forest, and inform the public that private family forestland owners have multiple and diverse objectives, and that their investment in forest management results in benefits that we all enjoy.

The American Forest Foundation has teamed up with the Society of American Foresters to make it easy to be sure that your walk in the woods is enjoyable and educational. The two groups have jointly published a free *Walk in the Forest, a Guide for Promoting Forests and Forest Management* including a number of engaging activities for walkers of all ages and interests. The guide also contains tips for pre-walk planning and suggestions for post-walk follow-up activities. There is a section in the guide just dedicated to working with students and educators.

There are many landowner benefits to promoting a walk in your woods. By sharing their woodland with

other people, landowners are able to explain the important forestry benefits of clean water, wood products, and wildlife. Landowners also are able to share their woodland improvements and show their commitment to sustaining America's forests.

Before taking your walk, there are a few boxes you will want to check off. Start with when do you want to schedule your walk? Once you have decided on a day, next is who will be walking with you? Will it be family? Friends? Maybe you are considering taking a larger group or kids from a local school or homeschool group? The guide reminds forest owners, "if you can't plan a walk for National Walk in the Woods Day™, consider another spring date to tie in with Arbor Day or Earth Day."

Now what to do? Perhaps take your group on your favorite trail? Do you have any recent accomplishments such as tree planting or restored wetlands to show off? Or are there any unique qualities to your land?

Develop a plan. Where will you meet everyone? Do you have maps or other handouts with basic information about your property? Don't be afraid to contact the foresters who help manage your property. They are a great source of information.

Next let's talk about safety. Make sure there are no low-hanging limbs. Check for anything that might be blocking your pathway. Take a walk before inviting others, just to double check that the trail is clear.


Now it is the day of the walk! Welcome people as they arrive and



Take a Walk in the Forest Saturday May 16 and be part of a national program for informing friends and neighbors about good forest stewardship. Photo ©Lynn Reket/Flickr.

show them safe places to park. Maybe ask questions about natural resources and sustainable forest management to get people thinking? Answer questions people may have, allow them to take pictures, and try to start a discussion with your group.

After the walk, think about how did it go? Was there much discussion? Were you able to start a dialogue with your group about forests? What did your group think of the walk? Were they engaged and interested?

Let's get out and take a walk! And remember to send photos of your walk to the NY Tree Farm Program office to share with other forest owners. 

Resources:

Download the *Walk in the Forest, a Guide for Promoting Forests and Forest Management* at https://eekwi.org/teacher/pdf/WIF_manual.pdf
 NY Tree Farm Program email: nyreefarm@gmail.com

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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.



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A Tub Full of Trees

PAUL HETZLER, ISA-CERTIFIED ARBORIST

A hot soothing bath is an age-old remedy for calming our nerves, but science has now shown that a better tonic for anxiety and stress is bathing in the forest, fully dressed. True story. Of course, a few details would be helpful.

In a blinding flash of the obvious, research has proven that being in the woods makes us feel better. To be fair, the scientific process requires measurable evidence, so in this case, real-time brain imaging with fMRI and PET scans, as well as blood-cortisol levels, heart rate and blood pressure, were used in a host of studies which showed that being immersed in nature does us a lot of good, even if we're skeptical.

We are blessed with an abundance of forested land, so we're ahead of the curve in a new fad headed our way called "forest bathing." In Japan this has been going on for decades, but it has recently arrived in North America. Apparently in Los Angeles, forest bathing is an organized activity led by trained, certified forest-bathing guides.

I'm not saying that's wrong, but really, all you have to do is step into a forest for 20 minutes or more. That's it. No fees; no equipment to buy. Although walking as you "bathe" is ideal, you'll reap benefits even if you just sit or lie there inert.

Lest you think this is a lot of fuss about nothing, remember that a solid majority of our population resides in urban areas. According to the Canadian Parks Council, the average Canadian spends 90% of their time indoors, and a US EPA study revealed that Americans spend 93% of their time inside.

In light of this, and the mounting evidence of how important nature is to our health, mainstream medical doctors around the world now actually prescribe walks in the woods. In the US, more than 500 doctors have joined a group called Park Rx America, a "non-profit organization whose mission is to decrease the burden of chronic disease and increase health and happiness by virtue of prescribing Nature during the routine delivery of healthcare."

Distance from wild forests need not be a barrier for urban dwellers, as a well-treed park will do just fine. In fact, researchers say that if we could get our cities and suburbs to a tree-canopy density of 40% — which is quite feasible, by the way — people could accrue the benefits of "bathing" in a forest right in their neighbourhood.

The positive effect that trees have on our health is far from nebulous — it is being quantified, and the results are staggering. Governments are very interested in potential health-care cost reduction which can be attained through exposure to nature. In the USA, which has by far the most expensive health care system in the world, Dr. Kathy Wolf of the University of Washington calculates the annual US savings to be at least \$2.7 billion, and possibly as much as \$6.7 billion.

Early in the history of public zoos, keepers noticed that animals deprived of a naturalistic environment tended to get violent, and became ill more often. The same holds true for the human animal.




Dr. Frances Kuo from the University of Illinois at Champaign-Urbana says humans living in landscapes that lack trees undergo patterns of social, psychological and physical breakdown that are strikingly similar to those seen in other animals deprived of their natural habitat.

The advantages of experiencing nature are myriad. In a February 2014 article in theguardian.com, Richard Louv, author of *Last Child in the Woods*, tells how patients in rooms with tree views had shorter hospital stays and needed less pain medication compared to patients without a natural vista. Elderly adults tend to live longer if their homes are near a park or other green space, regardless of social or economic status. College students do better on cognitive tests when their windows face natural settings, and after just an hour in the woods, memory performance and attention span improves 20%.

Scandinavian countries quietly embraced this idea long ago. In Norway there's a movement called *Friluftsliv*, "open-air life," which kind of boils down to forest bathing. They even have a law, *Allemannsrett*, or "all humankind's right," which allows anyone to walk on rural land not under cultivation.

We need to think of trees as an essential part of our health, and act accordingly. I encourage everyone to start forest-bathing as soon as possible. For that over-the-top stress, however, perhaps you could arrange to have your tub moved into the woods to get the best of all worlds.

For further information on forest bathing, see <https://www.webmd.com/balance/news/20190611/forest-bathing-nature-time-hot-health-advice> 

An ISA-Certified Arborist since 1996, Paul Hetzler wanted to be a bear when he grew up, but failed the audition. Having gotten over much of his self-pity concerning that unfortunate event, he now writes essays about nature. His book *"Shady Characters: Plant Vampires, Caterpillar Soup, Leprechaun Trees and Other Hilarities of the Natural World,"* is available on amazon.



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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

THE LEGEND OF THE BROWNTAIL MOTH

BY MARK WHITMORE

I was digging in my bag for this column and was fortunate enough to meet a colleague from Maine at a conference recently who reminded me of the remarkable tale of the Browntail Moth, or BTM for short. As an entomologist this story is really rich, but to the popular audience it has all sorts of great twists such as a long history of being amazingly annoying, human health hazards galore, terror, political intrigue, excommunications, and even the intervention of the Center for Disease Control. To top it off, it's yet another invasive species just in case you thought I might be ignoring my favorite topic.

Apparently the first reports of Browntail Moth date back to the 1500's. Charles Fernald and Archie Kirkland from their 1903 treatise on BTM mention that in

1543, during an outbreak of the browntail moth, a member of the city council in Grenoble, France introduced a resolve begging the local church official "to excommunicate these pests and censure them, in order to check the damage they were doing daily." In 1731 the French entomologist Reaumur noted that they were on every oak tree along the road to Paris from Tours and described in detail its life history. Not long after that, Carl Linnaeus himself gave BTM its scientific name, *Bombyx chrysoorrhoea*, later changed to *Euproctis chrysoorrhoea*. Just in case you forgot, Linnaeus is the guy who devised the system of using Latin names for organisms. There are numerous other reports from Europe about the angst caused by the extensive BTM defoliation in forests and orchards but this isn't all, it gets much worse...

Well, the hairy part of the story is the pain inflicted by the setae, or hairs, that cover the body of BTM caterpillars. The fuzzy caterpillars have hairs that are barbed and hollow (urticating), designed to deliver a toxin when they pierce skin, similar to stinging nettles only much worse. This is the human health hazard part of the story. To top it off the rash and "intolerable itching" caused by the toxin can last weeks or even months! When you google BTM the photos of the rashes caused by the hairs are horrendous. One of the kickers is that it's not just people who like to pet fuzzy little caterpillars who are affected. The hairs break off and can be carried by the wind, finding their way into homes and settling amongst dried leaves where they can remain toxic for up to three years. Yes, you read correctly, three whole years! In addition, imagine the respiratory distress



Browntailed moth caterpillar. Both photos are by Tom Schmeelk, Maine Forest Service.

caused by inhaling those hairs! Having asthma myself that is a scary prospect. Reports of suffering in Fernald and Kirkland (1903) are quite grim and I can't help but imagine the terror caused by this likely unexplained "plague" in medieval Europe during large defoliation events.

Reading the thrilling account of its discovery in Massachusetts by Fernald and Kirkland (1903) is like reading a Gothic who-done-it. As they describe it, BTM was first reported in 1897 in Cambridge and Somerville feeding on pear leaves in a couple of properties. Coincidentally this was not far from where gypsy moth first escaped captivity in Medford 25 years earlier at the home of the eccentric amateur entomologist, astronomer, and illustrator of celestial objects, Étienne Léopold Trouvelot, after he was chased from France by Bonaparte. Trouvelot eventually became a highly respected astronomer and was even elected to the American Academy of Arts and Sciences, but I digress.

Because of the problems caused by gypsy moth there was a crew in place to rapidly respond to the reports of defoliation damage. They immediately treated using arsenical insecticides but kept a few to raise to adults for identification. Using European literature Fernald and Kirkland finally determined they were dealing with the notorious BTM and quickly set about assessing the situation. After making inquiries around town they discovered that there had been other locations with severe defoliation and buildings covered with white moths, eventually concluding that they were imported on roses by a nursery around 1890. The moths were out of the bag and had been for a while. Some things never seem to change.

So now let's discuss biology and what's going on today. BTM host range is very broad but they are most often found on oaks and fruit trees in the rose family like apples and pears. BTM has a one-year life cycle starting with eggs laid on leaves in mid-summer. The young first instar larvae, or caterpillars, hatch from eggs in August and feed gregariously on the underside of leaves, damage referred to as skeletonizing. When they get to be third instar larvae in late September they will group together and spin a winter web tying together a few leaves at the very top of a tree, about the size of a softball. These winter webs are easy to spot when surveying in winter.



Brown-tail moth overwintering web. These are found at the top of trees and are easily seen in winter

Warm summers benefit BTM because they can speed development and they can enter winter as a larger 4th instar larva. This is significant because it is in the 4th instar that it begins to develop the urticating hairs and this early development prolongs our exposure. In mid-spring, as new leaves are emerging, the larvae will renew feeding and develop through 6th to 8th instar before wandering around looking for a place to pupate in late June to early July. These largish (1.5 to 2 inches) caterpillars can be distinguished from others like the forest tent caterpillar and gypsy moth by the red-orange tufts of hairs on the tail end. BTM will pupate either singly or

in groups forming cocoons covered with the evil hairs. It's at this time they can be transported great distances on vehicles. The beautiful white moths will emerge from their cocoons in late-July, mate, then lay eggs on the underside of a leaf in groups of 200 to 400. Like most moths they are active at night and are attracted to lights. They get their name from the mass of bright brown hairs covering the tail end of their abdomen which stands out in contrast to the pure white of the wings and the rest of their body.

The story of BTM population growth in North America was quite shocking early on when by 1914 populations had

expanded to south to eastern Long Island, north through much of New Brunswick, and inland to northern New Hampshire and eastern Vermont. Then in the 1920's the populations collapsed likely due to weather, a pathogenic fungus, *Entomophaga ullicae*, and a parasitic fly, *Compsilura concinnata*, first introduced to control gypsy moth starting in 1909. This adds an additional layer of intrigue, this time entomological. It turns out the introduction of *C. concinnata* was ineffective for gypsy moth because it needs to overwinter in the body of the host it parasitizes, like BTM, however gypsy moth overwinters as an egg. This is something the entomologists should have thought of before introducing it. The real tragedy is that *C. concinnata* is a generalist parasitoid of moths, attacking many different species and has become a tremendous problem with some of our most treasured native moths like the luna moth and cercropia moth. Again, I digress...

As the populations collapsed, interest in BTM waned and by the 1970's it was found in a small area at the tip of Cape Cod and in Casco Bay, Maine. BTM populations would erupt in Maine and defoliate trees over a few thousand acres, but then they would collapse, seemingly a non-issue until populations started building in 2015. Since then populations have been expanding rapidly with 76k acres defoliated in 2016 and 126k acres in 2018. In 2019 with a wet spring that favored the pathogenic fungus in the core area of the outbreak the population seemed to collapse, but there was very little fungal activity at the periphery. This situation has more than just a few of us worried. The Maine Center for Disease Control set up a website and call in center that had a 40% increase with a total of 1300 calls in 2019. With its demonstrated ability to move rapidly and history of expanding into much of New England, BTM will be the focus of attention in Maine and I hope elsewhere. If you're planning a vacation in Maine you should beware of the evil hairs!

I would like to add a special thank you to Tom Schmeelk of the Maine Forest Service for his assistance with many of the details of this article, including the photos. 📷

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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Chair Camp 2020 July 30, 31 and August 1

ED NEUHAUSER

Immerse yourself this summer in the mysteries of making Windsor furniture at Chair Camp 2020. This year's event will take place July 30, 31, and August 1 and will run from 9 a.m. until 4 p.m. each day. The workshop is "maker's choice" where participants choose from 7 different projects ranging from shop stools to rocking chairs.

This year's camp will be graciously hosted by Ed Neuhauser and Peg Coleman at their woodshop in Groton, New York. You can call 607-898-3614 to contact Ed and reserve your space. Leave your number and a message, and he will get back to you ASAP.

As in years past, David Abeel will be leading the workshop and a 10% discount will be available to members of the New York Forest Owners Association. All materials, tools, and turned parts will be provided including maple, cherry, walnut, pine, and poplar. There are no prerequisites to take this class.

Dave Abeel, from Traverse City, Michigan has always had an interest in making furniture from scratch, particularly a wide variety of Windsor chairs, early benches and stools. Dave found that he enjoyed teaching others to build furniture as much as he enjoyed building the furniture itself. Over the years he has developed a furniture building system that allows even the least experienced woodworkers to successfully construct a piece of Windsor furniture in two or three days. Now he travels around the country in a van chock-full of benches, tools, supplies, and materials to selected locations where he "sets up shop."

Beginning to advanced woodworking skills are welcome. Teens under 18 will need permission of a guardian to participate. Teams or couples are also welcome to work together on a project.

Some projects will be completed in 2 days and some will require 3. By the

end of class all work will be glued up and leveled, ready for a coat of paint or varnish at home.

Don't be intimidated if you have never made something like this before. Dress to be on your feet all day. We take a short lunch break around noon. Bring your own lunch.

All turned parts, materials, and tools will be provided but you are welcome to bring hand tools from home. If you have a rechargeable drill or orbital sander it might come in handy if there is a big class. The class will be a great opportunity to get familiar working with a bending form, travishers, a compass plane, various spoke shaves, hand planes, and drawknives. We also will practice determining sightings lines and drill angles for drilling your seat. Chair comfort, solid engineering and symmetrical design will all be emphasized. All secrets will be revealed!

In regard to the charge for class, it depends on what project you have selected. Again, there is a 10% discount

for New York Forest Owner Association members. You can pay by check or cash on the day of class. Pricing information is below:

Tall Kitchen Stool w Double H Stretcher
\$200; *NYFOA member \$180*

Boot Bench without back
\$200; *NYFOA member \$180*

Boot Bench with Back
\$290; *NYFOA member \$260*

Side Chair
\$290; *NYFOA member \$260*

Arm Chair
\$345; *NYFOA member \$310*

Rocking Chair
\$395; *NYFOA member \$355*

Settee
\$495; *NYFOA member \$450*

Questions? Call, text, or email David Abeel at 734-646-2064, abeeldavid@hotmail.com, or go to David's Facebook page (www.facebook.com/david.abeel.9) to see samples of class outcomes throughout the past year.

We look forward to seeing you this summer. 📷



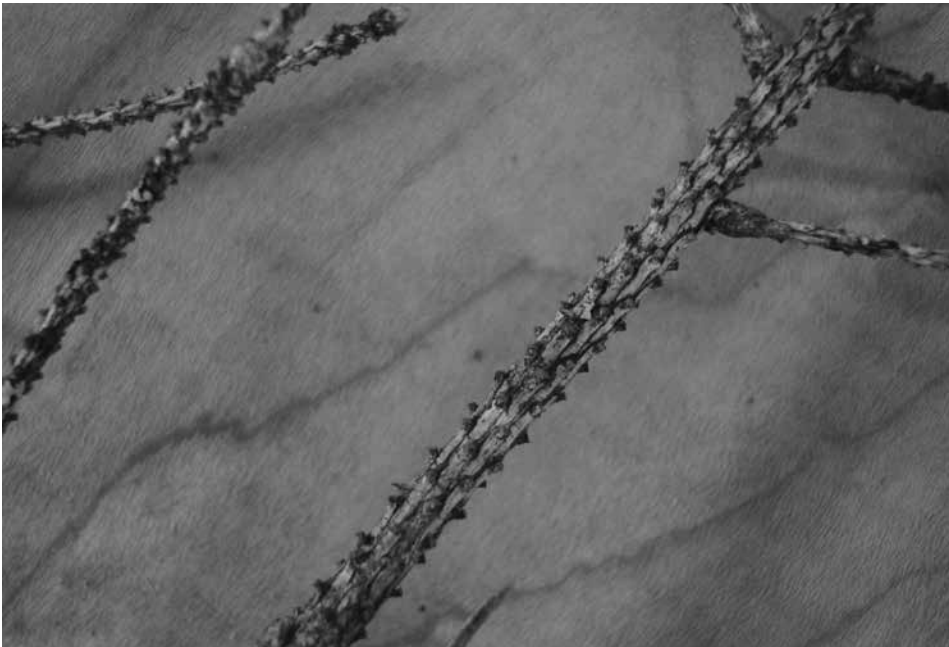


Figure 4. Only the spruce have peg-like projections called sterigmata that connect the single needle to the twig.

invariant within a species. The common margin types include smooth (known as “entire”), “serrate” or saw tooth like, and some variation of crenate or dentate (rounded or toothed). Entire margins are usually entire; there is not much variation. Serrate might be singly serrate, such as elm, or doubly serrate,

such as all species of the birch family. Crenate and dentate can be coarse, small, sharp, etc. for example bigtooth aspen (*Populus grandidentata*).

A final feature of hardwood foliage to consider is how the leaves and leaflets are attached. Leaves are attached to the twig with a petiole,

and leaflets are attached to the rachis with a petiolule. The petiole is usually round, but in the aspen/poplar genus is flattened. Most petioles are a simple unremarkable connection, but in American sycamore (*Platanus occidentalis*) will enclose the bud, or the base of the petiole may encircle the twig in other species. The petiolule is either present, known as stalked, or absent in which case the leaflet is sessile or connects directly to the rachis. Similarly, the scar that is left after the leaf drops is diagnostic for some species.

Conifer foliage differentiates among species based on needle length, form/shape, nature of attachment, and aroma. Pines (genus *Pinus*) are recognized by clusters of foliage. Each cluster is called a fascicle, and the number of needles per fascicle usually differentiate species. Spruce (genus *Picea*) are recognized by single needles that are square in cross-section and attached to the twig with a stalk known as a sterigmata (Figure 4). Fir (genus *Abies*) have flattened needles that are attached to the twig with a circular pad on the twig, and have some variation of a citrus-like aroma when crushed. The fir needles are often attached on the horizontal sides of the twig, and then known as “two-ranked.” Hemlock (genus *Tsuga*) have flattened needles with a stalk, but the stalk does not persist on the twig. Also the needles attached to the top of the twig are often smaller and inverted.

Twigs

Except for about a month in the spring, twigs can be used to differentiate among almost all species of trees. Some species of birch and hickory can be a challenge to separate. Also, in the woods, the twigs may be in the canopy and not accessible. The first feature of a twig to inspect is the arrangement of buds and leaves as either opposite or alternate. The next

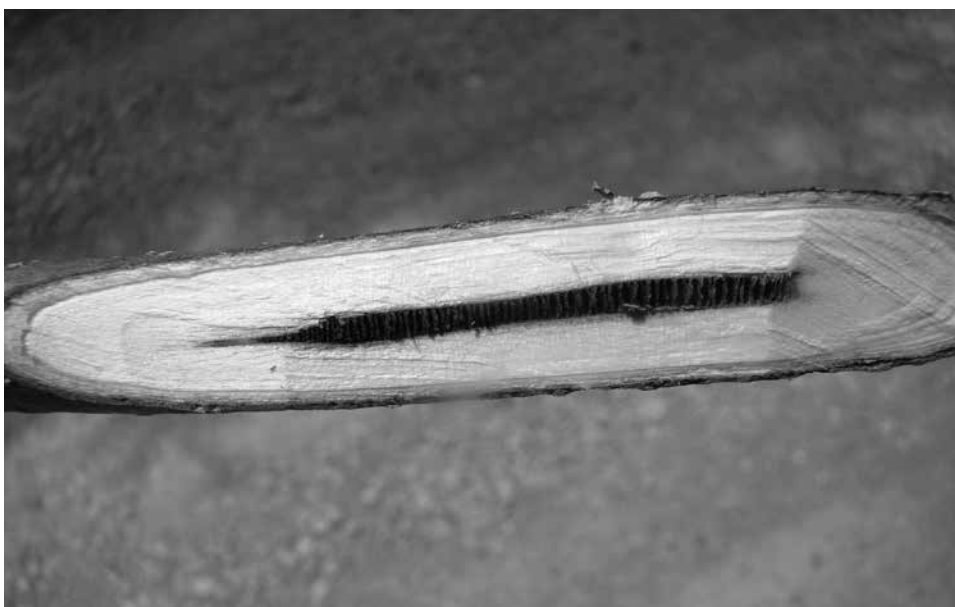


Figure 5. Butternut (pictured) and black walnut have chambered piths. In butternut it is a dark colored pith. In black walnut the pith is light colored.

continued on page 18



Figure 6. Green (left) and black (right) ash samaras are of different size and shape. The percentage of the wing that covers the seed helps distinguish green and white ash.

feature is to inspect the outer layer of the buds. Some buds have overlapping scales, called “imbricate.” Other buds have scales that are valvate. Finally, some buds lack scales and are called “naked.” Other diagnostic twig features include color, stoutness, straight vs. zig-zag, lenticels, and stipule scars.

Other features of twigs may include the presence of an aroma (e.g., yellow birch, cherry) or the construction of the pith. The pith is the spongy center of the twig and can have one of three types of construction: homogeneous, is solid and is most common; diaphragmed piths are solid with cross-longitudinal separations that



Figure 7. The bark of black cherry is described as “burnt potato chips” given the black plates.

create small filled cavities; chambered are hollow with cross-longitudinal separations that create small empty cavities (Figure 5).

Fruit

There are several types of fruit. Because fruits originate from flowers, and flowers are the definitive feature for identification of species, the fruit can be especially beneficial for identification. However, fruits are often in the crown, dispersed on the ground from an unknown specimen, partially decomposed in the leaf litter, or eaten by wildlife. There are several common fruit types described below, about half as many as exist among all trees. The common fruit types include:

- Berry – a fleshy and pulpy fruit with multiple seeds (e.g., pawpaw). The shell of the berry lacks seams or sutures.
- Nut – a dry single-seeded fruit. The nut itself lacks seams (e.g., acorns), but there may be a husk that has seams (e.g., hickory).
- Samara – fruit that is a combination of the seed and a wing. Maples have paired samara that you knew as “helicopters.” Ash also have samara as a fruit, where size and shape help distinguish species (Figure 6).
- Cone – the fruit of the conifers, comprising a central axis and scales. The number of scales, length of cone, shape of the scales, scale margin, scale thickness, and persistence of the scales help to differentiate species. The fruit of the cedar family is not a cone in the traditional use of the word.

Bark

Bark is the most commonly used feature of trees for identification by people who work in the woods. As a reminder, the bark of young or immature trees is often quite different from mature trees. There are several types or structures of bark, each having differences to help sort among species. These types include:



Figure 8. White oak bark is highly variable. This picture shows overlapping plates on the upper portion of the stem, and blocks or thick plates on the lower section.

- Ridge and furrowed – Imagine a freshly furrowed farm field, where the furrows and ridges interlace. This is the pattern for genera or species such as ash (*Fraxinus spp.*), walnut (*Juglans spp.*), basswood (*Tilia americana*), hickory (*Carya spp.*), black locust (*Robinia pseudoacacia*), and red oak (*Quercus rubra*). The differences among the species are based on the stiffness of the bark, thickness of the ridge, width of the ridge, the shape of the ridge, the color in the furrows, texture within the furrows, and the inner color of the ridges.
- Plates – Plates are a broad category that I include here to mean flat pieces of bark with edges. The classic plate bark is that of cherry (Figure 7). Other plates may be elongated, such as sugar maple (*Acer saccharum*) and red maple (*A. rubrum*). Some plates are variable on the same tree, for example white oak (*Q. alba*) can have thin overlapping plates, or coarse blocky plates (Figure 8).
- Smooth – Most species have smooth bark when young. These young specimens can be differentiated,

often by color, texture or a variety of other structures such as lenticels or branch scars. Few trees have smooth bark when mature, but those include American beech (*Fagus grandifolia*), tree of heaven (*Ailanthus altissima*), and pin cherry (*Prunus pensylvanica*) albeit with prominent lenticels. Mature yellow birch (*Betula alleghaniensis*) and paper birch (*B. papyrifera*) might be considered as smooth but exfoliating, or conversely having thin plates that curl at the edge. The bark of yellow and paper birch become very coarse as the trees attain significant age.


Site

It is worth mentioning site conditions because this can aid in differentiating two closely related species within a genus. Although a species is usually common to a site because it is most competitive there, it can occur on other sites. For example, green ash (*Fraxinus pensylvanica*) is most common on moist and riparian soils, and white ash (*F. americana*) is most common on more upland, though seldom dry soils. Some of the hickories are more common

on moist or on dry sites. Finally, there are occasions where you'll find a species growing off-site that may change features; I recall a yellow-poplar (*Liriodendron tulipifera*), which is common on moist fertile soil, growing on a dry infertile site and had unusually coarse bark, yet typical buds and twigs.

Habit

The final feature is growth habit, which is the architecture of the crown. Habit is of infrequent use, but of interesting notoriety for some species. The classic example of habit is the vase-like form of American elm (*Ulmus americana*). Other features of habit that might help include persistent lower branches on pin oak (*Q. palustris*), opposite branches on the maples, ashes and dogwoods, and coarse branches on ashes, bur oak (*Q. macrocarpa*) and Kentucky coffeetree (*Gymnocladus dioica*)

There are several terms in this article that I thought I remembered, but needed to confirm. I am grateful to have access to the *Trees of New York – Native and Naturalized* by Donald J. Leopold of SUNY ESF. This is an exceptional book (my “go to” book) for its details of descriptions, pictures and line drawings. The current version is of coffee-table quality, but I'm told the next edition will be paperback and suitable for use in the field. A book with good line drawings and the fifty most common trees of New York is the Cornell 4-H *Know Your Trees*. Both are available on Amazon, and the latter is available free and online at <http://bhort.bh.cornell.edu/tree/trees.htm> 

The column is coordinated by 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.



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Member Profile:

Robert Gang

BY DORIAN HYLAND

Robert Gang came to owning his woods in a roundabout, family kind of way. In 1975 his sister and brother-in-law wanted to buy some land and couldn't afford to buy the whole 180 acres. Robert's father helped purchase the land and the family found themselves with three 60 acre parcels which changed the direction of their family's interests and activities of three generations. One parcel of the land his father bought, 58 acres in Fabius, Onondaga county, was turned over to Robert in 1990. Since then, he has been almost solely in charge of all plans and decisions made for the land.

His father had ideas about what to do and how to do it, and some of those turned out just fine. Robert followed in his footsteps, working to improve the woods for timber, diversity, and wildlife. However, Robert also chose different ways to manage. After becoming a member of NYFOA, he learned about and attended Cornell's Master Forest Owner (MFO) Volunteer training at the Arnot Forest. This training and his connections with Cornell's Extension Forestry program provided a fine beginning foundation to begin making effective, long-range management decisions.

Later, he determined he needed site-specific advice to make wise, thoughtful decisions, and so Robert found NYSDEC forester, Charles Porter. Together they discussed Robert's goals and plans, and the result of this collaboration was the creation of a stewardship management plan for the woods, with particular attention to the highly variable topography.

The Fabius land is bordered on the east by a creek and state land, and on the west side by the Finger Lakes trail through state forest land which had been abandoned farmland. The private property on the north and south sides is wooded. The slight hillside along the creek is populated with hemlock. At the top of the rise is a wet field where his father planted hundreds of white spruce and other conifers. When these were small they were a source of the family's Christmas trees. The southern portion has a stand of aspen and the ravine leading to the road has mostly mature black locust. During the early years after purchase, a local bee keeper kept a few hives at the end of the field which provided a nice bonus: jars of "thank you" honey.

On the west side of the road, there's an area where the utility company drives in with their equipment to clear trees for the power lines. In doing so they introduced Japanese knotweed wherever their tires made ruts, which now requires that Robert spend time, energy, and money to eradicate this particularly problematic invasive species. This pattern seems all too common.

In an area that had been an apple orchard, his father planted white spruce. Robert tried to rejuvenate this orchard with little success, although the ten Sargeant's crab apple trees he planted for cross pollination still thrive. The old orchard is now mostly overgrown with white ash trees. The land continues to rise, a sort of low hill, mostly populated by mature white ash trees. West of the lower hill is a five acre bench, originally a flat field but now covered with pole size sugar maple and white ash, the result of marking by NYS forester Charles Porter 15 years earlier. Those marked trees have been girdled, cut, and faithfully provided about 10 face cords of firewood per year ever since. The west edge of the flat area has an old hedgerow of sugar maple that grew on the ancient fence



Last year Robert grew 17 pounds of shiitake mushrooms using beech and sugar maple bolts. He used to sell his extra bolts to people from Syracuse but stopped because they couldn't understand the difficulty in accessing that particular high snow filled woodlot until late in the season.

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This natural regeneration of sugar maple has not been discovered by deer. Robert's been actively tubing some of these seedlings to ensure survival in case the deer do find this happy corner of the woods. The herbaceous understory plants indicate a fertile site, which will help the maple seedling gain height quickly.

line along the old field. Tapping these trees for the last five years or so resulted in maple syrup which he gives to friends and family.

The rest of the property, about 20 acres, consists of a steep hillside covered mostly with sugar maples. A logging road provides access. The soils here are thin, over shale, and thus of intermediate quality for growing trees. The hillside was logged about nine years ago under the guidance of forester Dave Skeval. In 2013, after the logging, Robert started a three year effort of planting 40 hardwood seedlings each year where the timber was removed. Only about 50% of the trees planted have survived despite his protecting each tree with a tube. The mistake, he thinks, was in his tree source. All of the initially small seedlings have died. He admits another mistake was in trying to save money by using bamboo poles to support the tree tubes. Bamboo poles, he discovered, rot after a season or two, and the tubes fall over. He now uses 5-foot lengths of PVC conduit to support the tubes. Robert's original source of tree seedlings provided relatively small seedlings that didn't survive. His new source is better and seedlings are 18 to 24 inches in height and cheaper than the local sources. Altogether the number of species growing here is

large: the upper hillside is mostly sugar maple, with black cherry and white ash; the lower hillside is mostly white ash, with black cherry, sugar maple, and an ancient apple orchard with white spruce. Around and along the creek hemlock predominates.

Early on his father used some of the abundant hemlock to build a lean-to for camping. The family enjoyed camping for many years until a tree crashed on the lean-to. Not deterred, they built another lean-to, which is still in use. Camping wasn't and isn't the family's only recreational activity. Both family and friends use the woods for hunting deer, grouse and turkey, and when it isn't hunting season, they find pleasure in hiking the trails throughout the 58 acres. Cameras on the trails give Robert a sense of the wide variety of animals that live there, such as the elusive fisher. Collecting ramps and mushrooms are part of the fun, as well as preparing

bolts of maple to grow shiitake mushrooms. There are, unfortunately, people using the land who are not welcome. Hunters cross the borders of the state land, ignoring posted signs. They continue to be a difficult problem to solve.

From 1975 to 2000 he and his family used the land sparingly, mostly deer hunting, camping in the lean-to and collecting firewood. But then came the time when they began to plant a few hundred white spruce and other conifers. Around 2000, Robert planted an apple orchard in the lower field. Then in 2005-2006, the trees in the designated five acres were marked and girdled. A few years later the upper and difficult to access hillside was logged. This started Robert's planting of hardwood seedlings including black cherry, red oak, white oak, black walnut, and Sargeant's crab apple. During the three year period from 2013-2015, he planted 40 sugar maple seedlings in tree tubes, in addition to planting food plots and cutting brush in an effort to reclaim the lower field. He heavily pruned the ancient apple orchard in an effort to restore it, though this did not succeed.



This black cherry seedling has emerged from its tree tube in good health. Protection from deer by tree tubes is Robert's preferred method.

Success has come from learning through experience: what to buy and how to protect that investment rather than buying heavy equipment. Planting hardwood seedlings has been the Gang family's major effort at Fabius. After his experience with seedlings, Robert recommends buying the largest available size and best quality seedlings, and protecting them in five or six foot tree tubes supported with five foot lengths of PVC conduit. Robert has also found that using a K-bar (also known as a dibble bar or tree planting bar) to plant them is the best way to break through heavy soil. In the end his hard work paid off: his upper field is all pole size timber and the lower field is finally growing into forest. Of course, the biggest challenge is one he'll never win: getting good access up the steep, high hill. Attending to the beech problem is a must or, he figures, that is all that the next generation will see on the woodlot.

Another pleasure he says, is "growing shiitake mushrooms from sugar maple and beech bolts." 2019 was a great year, "early last summer I collected over 17 pounds of Shiitakes." The exceptional

production meant that in July Robert had to stop his practice of force fruiting the bolts because he had collected all the mushrooms he needed for the year. Perhaps the deepest joy of owning your own woodlands is to use ash and maple from your own woods to make moldings for your own home, another of his successes. His son is following in his footsteps. He recently bought and used a chainsaw mill to rough cut some black cherry slabs.

To improve his knowledge and understanding of how best to improve his land, Robert has made use of Cornell's MFO training, worked with both DEC and private foresters, and attended NYFOA lectures at both annual meetings and especially at the NYS Farm Show each February. Robert recommends finding a good forester and taking their advice, and especially, he insists, hiring a forester for any timber harvesting operations. Finally, make sure you understand the Best Management Practices and insure that they are followed during a timber harvest.

After over forty years of having the

land in the family and the last thirty being responsible for it, Robert knows the satisfaction of a job well done. "My greatest joy is to sit in an area amongst 10 or 15 tree tubes with oak trees extending out of the tops while deer hunting. Can't wait to pull those tubes and use them for the next round of planting. While I myself may never see acorns or harvest the timber, my sons and grandsons will benefit from my efforts," he said.

As a NYFOA member he attends the annual meetings and has been on one woodwalk. At these events, he's met his neighbors from Fabius and his more recent purchase in Osceola. As a MFO volunteer he has given back by conducting volunteer site visits with other owners. Connecting with others who share similar goals and a love for the woods is the heart of the NYFOA membership. 🌲

If you would like to be considered for a member profile, please contact Jeff Joseph, chair, NYFOA editorial committee at jeffjosephwoodworker@gmail.com

Dorian Hyland is a writer for The New York Forest Owner landowner profile.

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