



# NYFOA

New York Forest Owners Association

**SOUTHEASTERN ADIRONDACK**

## The Overstory

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Chair: Bruce Cushing  
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Editor and Design:  
Kristie Edwards

To submit articles for publication,  
please contact: [Kristie Edwards, 411  
Beech Street,  
Mayfield, NY 12117  
edwardsk922@gmail.com](mailto:kristie.edwards@nyfoa.org)

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[www.dec.ny.gov/lands/5259.html](http://www.dec.ny.gov/lands/5259.html)

## Wooden you know? Wooden satellites and other innovations

By Paul Hetzler

As a card-carrying, registered tree hugger, I have long touted the benefits of trees such as carbon storage, energy savings and improved mental health. And beyond the familiar tree-related blessings such as maple syrup, lumber and firewood, I've written about some obscure things like birch-based candy that fights tooth decay, and [health-promoting chaga tea derived from a birch fungus](#). Then there's basswood bark for fiber, elm bark for baskets, and pine bark for lunch. That stuff is all pretty straightforward.

More highly processed wood products, though, are a mystery to me. Even a fairly mundane example like how a pile of dirty logs becomes a decidedly coveted treasure – I'm speaking of toilet paper, of course – seems like rocket science. But recent developments are truly mind-blowing. Without a doubt, tree-derived stuff has risen to a whole new level: [the Japanese will soon rocket a wooden satellite into space](#).

A joint venture between Kyoto University and Japanese logging company Sumitomo Forestry aims to have the world's first wooden satellites orbiting the Earth by 2023. Really. There are an estimated 6,000 satellites now orbiting the Earth, and most of them are non-functional. Apparently, each time a dead satellite re-enters our atmosphere, it produces alumina particles as it burns up, and these micro-bits remain in the stratosphere for years, eating away at the protective ozone layer. Of course, when wood burns it does not produce alumina. Toasted marshmallows, perhaps, but not any dangerous pollution. Plus, if one of these satellites should break up in space, wood chips are way less dangerous to the International Space Station than the myriad nuts, bolts and metal shards floating around up there.

The engineers at Kyoto University aren't using plywood or OSB board, obviously. Researchers from the University of Maryland, the National Institute of Standards and Technology, and other institutions have found various ways to make wood super-strong and amazingly light and thin.



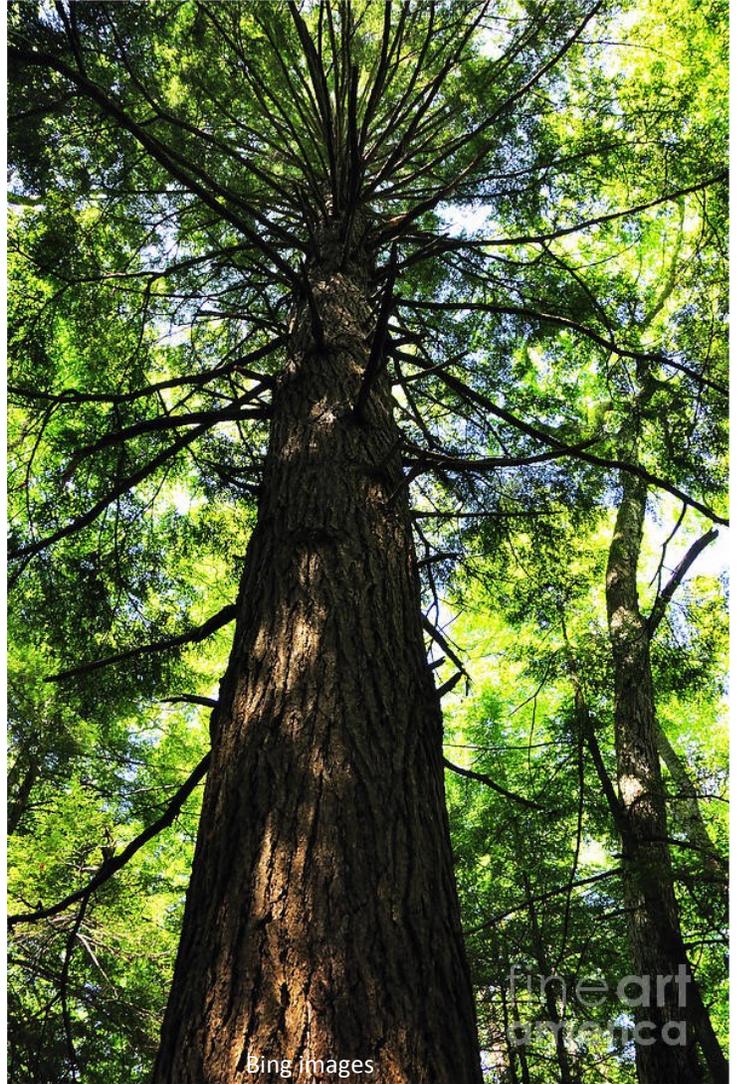
*Photo: Japan plans a 2023 launch of the world's first satellite made out of wood. Photo courtesy of Sumitomo Forestry*

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# What's Hurting New York's Hemlocks?

By: Lauren Mercier, Capital Region PRISM

Eastern hemlocks (*Tsuga canadensis*) are considered a foundational species in New York's forests, meaning they not only are a part of the ecosystem, they create it as well. These native conifers are found along waterways and on slopes, and provide many ecosystem services including habitat for animals and erosion control. Hemlocks are the third most common tree species in New York, so can you imagine if they all went away? Unfortunately, this vision isn't as far-fetched as you may think. Since the 1980s, a small invasive pest called Hemlock woolly adelgid (*Adelges tsugae*) (HWA) has been making its way around the state threatening our hemlock trees. HWA is an aphid-like sapsucker that attaches and feeds at the base of hemlock needles. Eggs hatch in the spring and the immature HWA begin their search for a fresh needle to feed on. HWA infestations travel slowly at about 10 miles per year on its own but bird migration and firewood can help spread the infestations at a much faster pace. Once settled, the HWA undergo a period of dormancy in the summer then begin feeding throughout the fall and winter. During this feeding time, the HWA will develop a white, woolly mass around its body to keep warm during the winter months and to provide a sac for the eggs to be laid in the spring. HWA is easiest to spot when covered in the white wool, but can also be identified without it if you look close enough. During the late summer and early fall, HWA crawlers look like a sesame seed sitting at the base of a hemlock needle and can barely be seen with the naked eye. Once an infestation has become established, the feeding can disrupt the flow of water and nutrients to the branches, inhibiting new growth. After a few years, visible needle loss or discoloration becomes more prevalent, indicating the death of the tree. Although it takes a while for HWA to cause significant damage, it is important to identify an infestation early so the spread can be limited and trees can be saved. Suspected infestations can be reported to NYSDEC Forest Health, [foresthealth@dec.ny.gov](mailto:foresthealth@dec.ny.gov), your local PRISM, or iMapInvasives. iMapInvasives is a GIS-based application that helps track the spread of invasive species; visit [www.imapinvasives.org](http://www.imapinvasives.org) to download. Once an infestation is confirmed, experts in forest health will determine the next step of action to stopping the spread. Integrated pest management is considered the best management practice for controlling species like HWA, which includes early detection and utilizing tactics like chemical treatments or releasing biological controls. For more information visit the Cornell Hemlock Initiative <https://blogs.cornell.edu/>



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### Partnership for Regional Invasive Species Management (PRISM)

New York State has a network of PRISMs charged with increasing awareness on invasive species and detecting and controlling the spread of invasive species in both the aquatic and terrestrial realms. PRISMs are state funded entities, hosted by a variety of not-for-profit organizations. There are eight PRISMs in New York State, which are divided up by general region: Long Island, Lower Hudson, Catskills, Capital Region, Adirondack, St. Lawrence/Eastern Lake Ontario, Finger Lakes, and Western New York. Each PRISM has their own unique partnerships, scopes of work, and key species that they deal with, however there is coordination across PRISMs as well. For more information, visit: [https://www.dec.ny.gov/docs/lands\\_forests\\_pdf/prismfs.pdf](https://www.dec.ny.gov/docs/lands_forests_pdf/prismfs.pdf)

### Tips on Reporting

1. Take a clear photo with size reference (hand, pencil, etc.).
2. Turn on location on your smart device to accurately capture the location of the photo.
3. Include your name and contact information in the event that more information is needed.
4. Record date, time, location, and contact information on live samples.



Top: HWA developing wool. Mark Whitmore, Cornell University.



Right: Woolly masses on hemlock branch.

The University of Maryland’s “super wood,” as they call it, is equal to steel in strength, yet is lighter than aluminum. Dr. Liangbing Hu, leader of the UM research team, says their low-cost innovation will rival steel and titanium alloys in construction uses, and is much cheaper. Hu expects it to be used in cars and planes in the future (which makes sense, since using it in the past would be tricky).

Scientists at the National Institute of Standards and Technology have combined wood fiber with, of all things, a marine worm to create a product which is comparable to super wood, but is more flexible. Similar work is being done in many other countries, including France and Sweden, where engineers have focused on transparent wood for shatter-proof windows.

The recent news (see the BBC’s December 2020 report at <https://www.bbc.com/news/business-55463366>) about Japanese engineers branching out into wood satellites is pretty amazing, but wood has been moving into unexpected areas for some time now. A very cool example is San Francisco-based Allbird, which since 2014 has been making soft, comfortable wood-fiber running shoes. Made from sustainably grown eucalyptus trees, the sneakers are said to be unusually light, cool and comfortable, especially good for hot climates.

But that’s a pedestrian use compared to what French tire maker Michelin has been doing since 2018. It’s hard to believe that a giant manufacturer like that would take a page from Fred Flintstone.

While Fred’s tires were puncture-proof, Michelin’s wood-based tires will look and perform like conventional tires, which on average are 80% petroleum-derived. Michelin engineers have found a way to produce elastomers – which are stretchy compounds, as you might imagine – from paper-mill waste. These tires are expected to be rolled out within the next two years. Wood-based pneumatic tires can still be pierced by a nail, but are way more comfortable than solid logs. I only hope that companies that produce braking systems aren’t inspired by the Flintstones as well.

And finally, a research team at the University of Delaware has developed a way to make adhesive polymers from tree lignin. By volume, the vast majority of a tree is cellulose. Trees produce lignin for strength on an as-needed basis because it takes a lot of energy to make; on a windy site a tree will produce more, and the same tree in a protected location will produce less. It’s analogous to a normal parking garage, which needs some reinforcing steel in the cement. If that garage is intended for tanks and trucks, a lot more steel had better go in the ‘crete.

Anyway, the University of Delaware group, led by professor of Materials Science and Engineering Dr. Thomas Epps, has created a low-cost adhesive from these lignin polymers. They reportedly made a transparent tape that they say performs as well as commercial Scotch tape. Dr. Epps is now experimenting with a wide variety of tree species to see if the lignins, which differ slightly from one kind of tree to another, could have unique applications.

Considering the miracles that trees are, think about planting a few this spring. You never know – you might be growing an actual cure for the common cold.

*Paul Hetzler has been an ISA-certified arborist since 1996. He claims not to have made any of this up.*

## Coming Events.....

### Saratoga Woodworkers Showcase

Canceled for 2021

Save the date for 2022

March 26 & 27th

Of course we are all hoping life can soon return to normal and we can start planning steering committee meetings and events. At this time none of those are in the works. We are hoping a spring/summer walk will be possible and will send out details if one can be planned. We are making plans for our Fall Annual Picnic, last years was a great success, we are all looking forward to being together again soon! Take care!

### Saratoga County Fair 2021

Currently scheduled for

July 20th — 25th

If the fair is not canceled we will need to decide if you have our booth this year



## Tree Eaters, Potions and Lotions

By: Dr. Jane Sorensen Lord, (reprinted from Mar/Apr 1993 Forest Owner)

He looked at me straight in the eye, "Then, since you are a Tree Farmer, you must know what Adirondack means."

"No." "It means tree eaters. The Indians of that region ate trees in the winter."

I cannot document the meaning of Adirondack, but Pine nuts and most of the other mast tree nuts are high in phyto -protein and were definitely staples of the Indian diet.

They used trees for medicinal purposes as well. The sap of the Pine and Juniper were used for colds and sore throats. Indeed, the sap of White Pine, with a consistency in the mouth of raw honey and a taste like mild Pinesol smell, does relieve a raspy throat and leaves a pleasant mouthwash aftertaste.

A tea of Juniper berries (about a teaspoon full) calms down a too full stomach and acts as a strong diuretic. A cooled tea with two teaspoons of berries, applied to the skin with a cotton ball or sprayer takes the itch away from mosquito bites and is supposed to take away the sting of a bee (I haven't been stung since I read about this, but it does work on mosquito bites. )

New sprigs from the Hemlock tree (NOT the hemlock plant which resembles Queen Anne's Lace and which provided Socrates's demise) mulled in Scotch for six or more weeks is a cold remedy.

I made some and did blind taste tests on my English husband, Gordon, and two of his peer age compatriots and got the same response, "My mother gave that to me for a cold during the War."

Adding Linden flowers (Basswood) to Scotch is supposed to provide the same remedy, but I couldn't test it because, according to Gordon it gives a delicate, aged flavor and the potion got drunk before anybody got a cold.

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Jane Sorensen Lord (credentials in 1993 at time of printing) was the Communications Liaison for the NYS Tree Farm Committee. She has been an Occupational Therapist for 28 years and likes therapeutic activity. She became a Doctor of Naturopathy in 1991 and has been growing and using herbs in her practice.

## The Tenacity of Trees....



This tree fell over and cloned four trees

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The same happened to new Birch leaves and twigs in vodka, that is supposed to be food for stomach ailments and diarrhea. I admit that it does taste good right after dinner.

Birch catkins and twigs impart a winter-green smell to canola (grape seed) oil and a capsule of Vitamin E, and makes sunburn sting and itch disappear. Used without a sunburn, Birch oil soaks rapidly into the skin removing dryness. I sent some to my brother for his psoriasis and he said it stopped the itching when applied every couple of hours.

I have not made a tincture from Beech for internal use (see Linden and Birch) but the Indian used it for diabetes, to calm nerves, and to improve the appetite.

Beech leaves plucked directly from the tree and rubbed on the skin are supposed to be an antidote to poison ivy, like Jewel Weed—I don't get poison ivy so I can't vouch for this use. I do make a skin oil from the early spring leaves and use it regularly after swimming in a chlorine pool. It works better than any commercial product I've tried. Supposedly, the smooth bark shows the observant that Beech is food for the skin.

Trembling Aspen buds are also supposed to be of cosmetic value, if bathed in weekly (tie them up in cheese cloth so they don't clog the drain) and should be used daily for ulcers, burns and the like. They do seem to soften the water. I'm going to mix them with Beech and Birch this spring to create a super oil.

More interesting, now that malaria is moving back out of control (I know, I know it is not a problem in New York) is the use of Trembling Aspen over Quinine in its treatment. It is supposed to give the same results with less after effect.

Boiled and strained Maple leaf tea was used by the Indian as an eye wash instead of Boric acid or Murine. I use fresh aloe on my eyes and my cats successfully, which is easier to collect, but I plan to try Maple this summer. Three wine glasses imbibed per day of the tea is a liver tonic—too bad the French don't have many or any Maple trees.

If you take the caps of acorns and smash them up into a powder, they can be used for internal and external infections and inflammations. You can drink it in a tea (strain it) and gargle with it for bleeding gums. I tried this for a while and changed to Crest Plaque Control which tastes better.

I have also made pile suppositories with the powder and cocoa butter. They did work, but Preparation H is really a lot more accurate because of its higher melting point!

Chewing White Willow twigs releases salicylic acid, the healing component of aspirin, and will relieve a headache. It's stronger to use the bark, but that needs to be soaked for several hours then boiled. Supposedly, the leaves and bark boiled into a tea, cooled, and strained stop dandruff when used as a hair rinse.

Properly collecting the tree parts to use is important to assure strength in the concoction. Younger, new leaves yield the most power. My guess is like collection herbs, the best time of day is right after the dew is off. Bark (not cambium) can be collected at any time of year. I did not discuss the use of the cambium layer, because its collection can kill your trees. I am minus one wild cherry teenager, even though I didn't girdle the tree.

If you are not using leaves you collect immediately, or wish to use them over time, dry them. You can speed dry them in the microwave on the programmed defrost cycle (under-guess rather than over-guess the time or you'll get powder.)

To make a tea, use a teaspoon of dried leaves, pour boiling water over them and let sit for 20 minutes. Honey covers bad taste better than sugar. A tea of bark should be simmered for at least 35 minutes. It will get stronger the longer you simmer. The bark teas taste the worst, I think.



You already know that one of my favorite forms to extract tree goodies is a tincture. Using any 80 proof, or higher spirit, fill a jar 1/2 full of crushed leaves, etc. then fill the jar up with booze. Label and date this because it is necessary to let it sit for 6-8 weeks (the longer the better.) Shake it periodically. You can use the liquid and leave in the tree parts. **DO NOT** drink it in the same amounts as non-treated liquor. The ingredient makes it stronger medicine. Start with tablespoon doses.

The skin oils can be made with any good oil. I use canola as a base extractor (non-smelly, good for skin, cheap) then dilute with other oils (coconut, almond, sesame, etc..) after it is cured. Put ingredients in to fill 3/4 of a jar then fill the jar with oil. Squeeze in 1000 unit of Vitamin E to prevent molding. Let sit for 6-8 weeks shaking occasionally. You can add perfume at this point. The oils can be used on the skin directly or put into a bath. Birch oil makes a good after shave.

## *Chairman's Corner.....*

### *Following the Blue Stripes*

Last fall was my first experience marking crop trees for Timber Stand Improvement with my forester Steve Hanfield. He had 360 pole trees to mark over 12 acres for my EQUIP project. Watching Steve work would make a person dizzy; as he looked up, down, and around a pole, then painting or moving on. I quickly figured out that standing too close might get a few blue stripes painted on me as well. By the end of the day, all 12 acres were marked and my work would begin November 1.

The 12-acre project actually started last spring with the treatment of invasive honeysuckle. The removal of the invasive honeysuckle turned out to be months of effort; working my way under each bush, cutting and lopping, and treating each honeysuckle trunk. Having the honeysuckle removed certainly helped in the fall with the next step of Timber Stand Improvement work. Thinning the 12 acres to release the pole trees with the honeysuckle under control made maneuvering through the undergrowth so much easier.

For every blue striped tree marked, 3-5 more poles, mostly black birch and poplar all tangled up in grape vine had to be cut out. What a help having the trees marked by my forester turned out to be. I could burn a tank of chainsaw gas in one spot following the blue marks, working to connect the dots. Each tree being marked ahead of time was a great time saver. Unfortunately the trees being cut out were tangled up in grape vine and were too light to break the grape vine and fall to the ground by themselves. Each one took several cuts, lots of pulling, and a slightly sore shoulder.

Being an EQUIP funded job, the work had restrictions that required the work be done from Nov 1 to March 31 to ensure nothing was disturbed during nesting season. I knew I'd be missing two of those months to cold and snow. Luckily the snow held off through most of December and January which allowed me to get a lot done. Having my forester mark the trees ahead of time just made life so much nicer, like Dorothy in The Wizard of Oz, following the yellow brick road, but I followed the blue stripes.

*Bruce*



Are you interested in hosting a woodswalk?

Do you have a suggestion for a chapter event?

If so please contact Kurt Edwards, event coordinator,

at 411 Beech Street, Mayfield, NY 12117, or at [edwardsk922@gmail.com](mailto:edwardsk922@gmail.com)



New York Forest Owners Association

**SOUTHEASTERN**

PO Box 541  
Lima, NY 14485  
1-800-836-3566

**SAC Officers:**

Chairman :  
Bruce Cushing  
becushing@gmail.com  
(518) 695-9207

Vice Chair: vacant

Treasurer:  
Robert Manning  
remremrem99@gmail.com  
(518) 251-4638

Secretary:  
William Burke  
liamsb46@gmail.com

**Steering Committee Members:**

Kurt & Kristie Edwards  
edwardsk922@gmail.com  
(518) 661-5685

Dave & Jane Jenks  
janejenks.adkmts@yahoo.com  
(518) 532-7595

Ed & Donna Welch  
trautwei@gmail.com