Woodland Owners Association, Inc. 11 University Way, Suite 4, Brattleboro, VT 05301
802-257-7967 ext. 302

# WOODLOT TIPS

*Photo:* franky242, FreeDigitalPhotos.net

# SUMMER 2013

**Friday, August 30, 2:00–3:30 p.m. — Tour of the Unique Jamaica Cottage Shop**

WOA is sponsoring this free tour of the Jamaica Cottage Shop manufacturing facility in Londonderry. This free tour will be held rain or shine and will start at 2:00 p.m. sharp and run till 3:30 p.m. Domenic Mangano, the founder and owner, is a very creative individual who has an interesting background. Some edited excerpts from his website:

"The Company was founded in 1995 and originally located in Jamaica, Vermont. The idea was conceived during a four-year excursion across the United States working as a carpenter. The shed market all across the country has been supplying flimsy, ugly outbuildings with few choices. After studying firsthand the many architecture styles around the country, including Frank Lloyd Wright, several cottage designs emerged.

From our earliest beginnings experimenting with dog houses, we knew we could provide a superior product using native lumber and Vermont craftsmen.

In 2004 Jamaica Cottage Shop, Inc. purchased a manufacturing facility two miles north of the beginnings in Jamaica. Our current 70,000 square foot factory allows all work to be built indoors. We expanded the product line and developed the cottage sheds to include the current pre-cut post and beam kits. Today, Jamaica Cottage Shop produces the finest wood sheds and cottages anywhere, and we ship our creations all over the United States and Canada."

**Directions:** Travel north on Route 30 to Jamaica. Pass through the center of the small village and continue 5 miles to the junction of Routes 30 and 100. Turn north on route 100 and travel two miles. Turn right onto Winhall Station Rd., a paved road. The office is located 1/8 of a mile from Route 100 on the right. The full address to use for map software is 170 Winhall Station Rd., South Londonderry, VT 05155. For more information, contact County Forester Bill Guenther at (802) 257-7967.

## Save the Date! — Saturday, September 7th WOA Annual Meeting

At the Riverledge Foundation in Grafton. We will observe the effects of a recent harvest and discuss white pine management, trail maintenance and songbird habitat. Forests, Parks, and Recreation Commissioner Michael Snyder will join us for the day.
***Look for details and directions in a special mailing.***

## Saturday, October 26, all day — The Famous BIG Tree Tour!

County Forester Bill Guenther will host the now 20-year-old Big Tree Tour around Windham County looking at trees listed on the Big Tree Registry, some significant runners up and some that may be farther down the list, but that are very significant in size.

We will meet at the Vernon Town offices at 8:30 a.m. After a short introduction, the tour will depart at 8:45 SHARP. Since the itinerary is not yet final, it would best to contact Carol or me at the Extension office at (802) 257-7967 in early October to check.

Our first stop will be the State Champion sassafras, a species that barely reaches Vermont from the south. This stop is also the site of Vermont Made Furniture, and owner Peggy Farabaugh will give us a brief talk about her company. Other likely stops are either at the champion or runner-up sugar maple, the runner-up black walnut, or the State Champion silver maple. We will have a lunch stop in Dummerston at Esther Falk's runner-up butternut tree from approximately 11:45-12:45. Esther is a Dummerston legend, and at 92 years young, will share many insights about her favorite tree.

In the afternoon, we will likely head over the mountain to Wardsboro to visit the champion apple, the runner-up hemlock, and the champion white pine in Londonderry, currently Vermont's tallest known tree at 144 feet. The last tree of the day will probably be the state champion sycamore located right next to the Harmonyville General Store.

We have two recent champions — a red spruce in Marlboro (about a 20-30 minute hike each way) and a paper birch in Wardsboro (close to an hour hike each way). We try to plan the Big Tree tour so that a wide range of folks can participate. BUT if I get enough requests from hardy hikers, I may plan a day to visit some more difficult to reach Big Trees. Let me know!

**Directions:** The Vernon town offices are located at 567 Governor Hunt Rd. in Vernon village. From the main intersection in downtown Brattleboro where Main St., Canal St., Routes 119 and 142 all come together, travel south on Route 142 for 5.5 miles. After crossing a set of railroad tracks, bear LEFT onto Governor Hunt Rd. After about a quarter mile, the Town Offices will be on your RIGHT. Go to the parking lot at the BACK of the building.

## President's Column

*By George Weir*

For 12 of the last 13 years I have had the distinct pleasure of serving as a trustee of our association, including two 3-year terms as president. Our bylaws specify a 3-year term for trustees and allow individuals to serve two consecutive terms. So I have twice served consecutive terms with a one year break between, and now I have to step down for a least a year. This, my final president's message, will focus on things I have enjoyed that make our association so successful.

I am only a little wistful about stepping down after the annual meeting – not because I have something better to do, I don't – but because others should have a chance to serve and contribute. During my time, new trustees and members often brought new ideas and experience. In recent years, WOA has had the good fortune to have elected two trustees with experience as editors who have taken responsibility for our newsletter. Our scholarship committee generally includes educators. When we revised our bylaws a decade ago we were fortunate to have an attorney on board who took on the task of revision. Our program committee always includes foresters and landowners with broad field experience and interests. When we needed a prize for our recent scholarship raffle, Peter Wimmelman crafted and provided a beautiful bowl.

Although we are all part of one community of interest, we have differing perspectives, based on our specific relations to the forest. In seeking trustees, the nominating committee ensures the board will include landowners, foresters, loggers, and people from forest product manufacturing. Our bylaws allow (perhaps I should say require) the county foresters to have ex officio status. They serve interminably. This diversity allows the association to stay up to date on broad forestry issues. And as it turns out, our diverse experience allows us to accomplish the various things we set out to do.

During the past 60 years our membership has hovered around 400 and dues as long as I can recall have remained at $10 per year. Dues have been enough to cover our minimal administrative costs. The important work we do and the opportunities we offer, particularly scholarships, are funded by gifts from members. So we have kept dues as low as we can and asked people to make gifts in addition to dues.

Our newsletter is always enjoyable and interesting and almost entirely home grown. Occasionally we borrow an article from somewhere else, but to a great extent we rely on ourselves to bring the ideas and write the articles. Our county foresters, Bill and Sam and Gil Cameron, have made invaluable contributions over the years and I thank them for those. As for my writing, I learned from former presidents Bill Schmidt and Stu Thurber that folks enjoy reading about the personal experiences of others. So although not shy about expressing my opinion on various issues, I have tried more often to write of my enjoyment of the land and the forest and enjoyment of our association.

Over the years, members pass on, but others join; trustees retire, but others come forward. If I had to guess, I would predict that our organization that has remained so strong for the past 63 years would be here and strong 63 years from now. To ensure that future, I encourage all of us to continue to contribute financially, to recruit friends to join, and for those willing to spend the time, to take a turn as a trustee.

On a final note, my wife Joan and I returned in late July from two weeks on the mid-coast of Maine, marvelous and very different from here. Driving up the West River valley from Brattleboro after eight hours on the road, I was absolutely taken by the rich beauty of the forest on the hills around. It made me think of several things. (First the obvious: it rained a lot while we were away.) More importantly, despite a lack of destination attractions, people travel here in summer to enjoy the place we live, what we experience every day. Coming home always reminds me not to take this place for granted, to look at the land the way visitors see it. Also, lush and rich mean productive. The fact that I have to have to fight woody vegetation that encroaches on our open land, that tree branches crowd the back roads and occasionally knock out the power, that the weeds in our garden are knee high after only two weeks away all result from soils, species and climate that have made our forest so productive and

diverse and have supported me and so many others who rely on the land.

In my work and in WOA I have had the good fortune to know people, landowners, loggers, mill owners and others who care about the land and intend to manage the forest to the best of their ability. New challenges will continue to arise, but I have confidence in our future.

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*For membership information or email notices of upcoming programs, contact Carol Morrison, WOA Clerk, at woodlandownersassociation@gmail.com*

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## Twilight Walk on Bill Guenther's Woodlot

*By Margaret MacDonald, WOA Trustee*

On July 25th, 13 people joined County Forester Bill Guenther for a twilight walk on his property in Newfane. Bill began the program by noting that he had looked at over 100 properties before buying his home on Bensch Mountain. His desire to be self-sufficient — to have enough trees on the property that he could sustainably cut enough firewood each year to heat his home — proved a key criterion in his choice. He handed out an information sheet showing the harvest history in each of four compartments on the property, all of them composed of northern hardwoods with some eastern hemlock and eastern white pine. He estimated that since he bought his property he has removed some 130 cords of firewood from the 23.65 acres, of which 75 percent comes from the original 10 acres he purchased in 1988.

During the 2-1/2 hour program, Bill touched on a range of topics, from guidance on increasing airflow around a dwelling, to protecting the leach field of a septic system, to the noticeable effects of climate change. Some selected highlights:

*Woodlot management*: Bill makes a point of walking his entire property at least once a year, and carefully decides why (or why not) to cut a particular tree. He then devotes considerable thought to *how* to cut each tree to avoid damaging structures, drainage pipes, or other trees. He commented that when planning to fell a tree you have to know what the nearest three trees to be harvested will do, and then decide on the best sequence and pattern for cutting.

Bill leaves any slash with a diameter of less than 3 inches on the ground as compost to build up the soil and as habitat for wildlife. He also carries out controlled burns of brush piles near the house to minimize potential fire hazards and enhance aesthetics — with the proper permits and the knowledge of his neighbors.

*Removing trees near a house:* Homeowners should recognize the importance of increasing airflow around a house by cutting nearby trees. The increased sunlight not only makes a dwelling more cheerful, but also raises temperature and, together with greater movement of air, lowers humidity in the home. That, in turn, leads to lower electricity and fuel bills for heating or dehumidifying and reduces the need to repair damage due to moisture.

However, cutting trees near a house — whether to improve airflow or to remove hazard trees — calls for special care, given the risk of catastrophic damage. To illustrate, Bill showed us several stumps of trees he felled within the last 12 months, and described the considerations — and problems — involved in cutting each tree. For example, in one case the crowns of three hazard trees were intertwined; in another, a tree had a sharp "elbow" that might have pierced the piping in the leach field depending on the angle at which it fell. Bill solved that problem by cutting nearby trees first and then dropping the one that could have dug into the ground on top of the others, which served as a cushion.

One way to identify potential hazard trees is by taking a photograph each year looking up into the crown. If you constantly see more daylight from one year to the next the tree is in trouble and you should consider removing it.

*Effects of climate change*: When Bill bought his property in 1988 he ran his dehumidifier for 7 or 10 days in an entire year; currently he has to run it constantly from the beginning of June through Labor Day. Climate change has also increased the frequency and violence of storms and events such as microbursts. Windham County residents have lost electric power far more frequently this year than in the past, primarily because the combination of extremely strong winds and saturated soils means that more trees are coming down on power lines.

Bill recommended that people notify the power company if they spot a tree that poses a threat to a power line. Only experts should remove such trees; this is not a do-it-yourself project. He also reminded us never to approach (let alone touch) a tree that has fallen on a power line.

*Endangered hardwoods*: Bill now sees *no* regeneration of oaks and maples on his land, partly because invasive ferns are choking out the tiny saplings, and partly because white-tailed deer browse small hardwood saplings down to a point where the young trees cannot survive. He is currently using Tubex tree shelters to protect two young oaks. The shelters consist of a hollow 5-foot-long tube, pounded far enough into the ground to create a seal, but open at the top. The seedlings have grown amazingly fast in these tubes: a seedling that would normally grow about two feet in several years showed that amount of growth in four months.

In his inaugural speech in 2011 Governor Shumlin noted that "the buckthorn is choking out the young hardwood saplings" in Vermont. Bill noted that this was the first time a Vermont governor had referred to the damage created by invasive plants.

*Harvesting and managing firewood*: Bill does all his cutting and harvesting of firewood on frozen ground to avoid disturbing the soil or his driveway when skidding the logs (see "A Low Tech, Low Cost Forwarder" in the Winter 2013 issue of *Woodlot Tips*). This also prevents getting dirt on the wood. That, in turn, means that when he blocks the logs his chainsaw cuts only clean wood, which makes for more rapid and efficient cutting and also means that the chain does not have to be sharpened as often.

Bill skids the logs onto a pile near his woodpiles for later blocking, splitting, and stacking. He stores his firewood in several rows on pressure-treated pallets that rest on gravel. When all of his storage space is full, he has 16.3 cords, but he only burns about four cords per year. When stacking, he is very careful about interlocking the logs so that the piles are stable. One of the ultimate humiliations for a wood burner is to have a pile tip over when the frost leaves the ground in the spring.

After showing us the protective gear that everyone should wear when operating a chainsaw, Bill emphasized the importance of monitoring your fatigue levels, and *never* using a chainsaw (or other power tools) when you're tired. It's when people get tired that they get sloppy, and that's how accidents occur. He recommended varying activities so that you use different muscle groups and don't get stiff: switch from blocking the wood, to splitting the logs, to moving and stacking the firewood.

> ***Forestry jargon:*** *Technically a woody tree is a seedling until it gets to 1 full inch in diameter; then it becomes a "sapling." At 4 inches, it becomes a "pole" and at 12 inches it becomes a "sawlog."*
>
> *— Bill Guenther*

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## *Who* is the Woodland Owners Association?

*With this issue, a series of profiles and stories about WOA trustees and members begins. A few will be included in each future issue so members can learn more about who WOA is through interesting stories about connection to and stewardship of Windham County forestland. If you would like to share your story, please email Carol Morrison at* woodlandownersassociation@gmail.com *with* Profiles *in the subject line*.

### *Trustees*

**Barbara Cole** — I learned about WOA from Halsey Hicks, my forestry teacher at Marlboro College, for whom our scholarship fund is named. This is my second term serving as a trustee for this local organ-

ization that has an interesting and varied board and membership. WOA provides informative programs and communications that fit with the interests of me and my husband to be good stewards of our 58 acres of mixed hardwoods and some open fields. Early pictures show that our land was used for farming. So, as teachers, we felt that the best use of the land was nature education for children.

For fifteen years we ran Maple Ridge Farm Camp, a seven-week environmental/farm camp providing a wide variety of animals and nature activities for local and city children to enjoy. We have been sugaring here since 1973, are in the Current Use Program, cull firewood for our use as part of our Forest Plan, and maintain walking trails in the woods. As part of the North American Maple Project, since 1988 the Vermont Forest Service has monitored two plots on our back hill, measuring sugar maple health trends.

On our daughter's adjoining 16 acres that contains a wonderful wetland, we are creating successive habitat for woodcock, ruffed grouse, rabbit, and songbirds as part of the Wildlife Habitat Improvement Program. The American beech is my favorite tree. As kids, we climbed the beech in our yard. The leaves turn a beautiful color in the fall, and the nuts feed wildlife.

**Phil Edelstein** — My family has received immense pleasure from taking our turn to be stewards of a beautiful forest in Whitingham. WOA is a local woodlands organization that provides a wonderful way to connect with some of the 10,000,000 American families who have passion for the land and together, owning mostly small woodlots, comprise 60 percent of all the private timberland in the country. When we bought our property in 1987, it was a former dairy and maple farm with no buildings, just old cellar holes. The land did not have any residents and was not maintained for nearly 100 years. Forest management started in 1995, the same year the land was enrolled in the Current Use Program. There have been two timber harvests so far, yielding 10 different tree species, my favorite being sugar maple. I hope that future owners will feel the passion and remain good stewards.

**Margaret MacDonald** — I'm a landowner with no expertise whatsoever in forestry, wildlife management, etc.; I work as an editor. I joined WOA because I always learn something from the excellent programs, and I also really like the other members. Except for the seven acres around my house, my property is in the Current Use Program. In 2008, when Stu Thurber asked me if I would be interested in running for the board, his reason was that apparently I'm one of the relatively few landowners who is extending my property rather than carving it up into smaller parcels to sell. A sad commentary, if true. My favorite tree? The sugar maple, of course!

**Sam Rowley** — I have been an outdoors person all my life. As a young boy living in Brattleboro, I was fortunate to be surrounded by the trees and nature of Vermont. My family moved to the Boston area when I was still a tyke. Living in a suburban setting during my primary and secondary school years solidified my love for the natural world. After high school graduation, I decided to study my interests and pursue a degree in Plant and Soil Science at University of Vermont. This choice brought me back to Vermont and to the environment I love.

During and after college, I also spent time living in Kenya where I gained an appreciation for plant, animal, and social differences that vary from Vermont. Living overseas gave me a valuable outlook on life. I now live in Brattleboro with my flock of chickens and hive of bees (and one lone goose). I am going on my third year teaching Horticulture at The Windham Regional Career Center. I like to share my fascination with nature and land stewardship with high school students in hopes that my passion fosters theirs, as they are our future stewards. I focus on plant science, agricultural topics and the natural world. When the workday is done, I am usually out on the water kayaking, hitting the trails for a hike, or lending a hand with a few community organizations and municipal advisory boards and committees. My favorite tree is the yellow birch. It is sweet, grows chaga, and is a great survival resource in the woods

Inonotus obliquus, commonly known as chaga mushroom, is a fungus in the Hymenochaetaceae family. It is parasitic on birch and other trees. The sterile conk is irregularly formed and has the appearance of burnt charcoal. Wikipedia

## EAB Field Trip

Trish Hanson, Forest Protection Entomologist, Vermont Agency of Natural Resources, investigates the telltale serpentine pathways of the Emerald Ash Borer through the tree's cambium. The bark is stripped using a drawknife to reveal EAB evidence, visible at the upper and lower right of the tree.

The forest site is in Voorhees, New York, where a busload of Vermont foresters, First Detectors, UVM Extension people and others travelled in June to see an active EAB infestation.

At left is Jim Esden of the Vermont Dept. of Forest Parks & Recreation, a workshop leader and community presenter on invasive insects. At right is Mark Whitmore, Forest Entomologist in the Department of Natural Resources at Cornell University and one of the leading experts on EAB.

Whitmore addressed the group and discussed the advance of EAB in New York State and the use of products for soil drench or injection to save ash trees. He also spoke about what is known as SLAM (Slow Ash Mortality), an integrated management approach to slow the advance of EAB and reduce the financial burden to communities for removal of dead and dying ash by spreading the costs out over a longer period of time.

***Photo:*** *John Evans*

## Emerald Ash Borer (EAB) Update

*By Bill Guenther, Windham County Forester*

Caitlin Cusack oversees Vermont's volunteer First Detector Program, which is a group of citizens trained in the basic detection techniques for EAB as well as Hemlock Wooly Adelgid (HWA) and Asian Longhorned Beetle (ALB). Caitlin began her update with the question: Where's EAB now in NH?

"The New Hampshire Emerald Ash Borer delineation survey is complete. According to Kyle Lombard, New Hampshire forest entomologist, the generally infested area is six miles by two miles, all along the Merrimack River, and includes one forested site where EAB is well established. An integrated pest management strategy is being implemented, including installation of sink sites, trap trees, and EAB population reduction with pesticides."

At this point, we do not have access as yet to the total number of actual infested trees in New Hampshire. When I spoke to Barbara Schultz (formerly Burns) our Forest Health Manager, she did not have anything to add to the New Hampshire situation, but did remark that EAB had been found in another county in Connecticut (Fairfield), the southwestern-most county in the state. This now means that Connecticut has two infested counties involving 12 towns.

It is so important that we now have as many sets of eyes watching our ash trees as possible. Many of the entomologists believe that the "blonding" I spoke of in the last newsletter, may be one of the best detection techniques. This is where woodpeckers seeking out the little larvae peck at the ash tree's corky bark, exposing the lighter inner bark creating distinct patches of lighter colored bark throughout the crown of the infested tree. From some of the pictures I have seen, this can be very striking.

Even though all states and provinces around us are infested, I try to be optimistic that our little enclave of a state may not have to deal with this pest. Even if it should get here, the mortality rate is not 100 percent; for some reason some ash trees are not attacked. I always have hope that we can use science to help us develop either resistant trees or some reasonable way to control the insect. So keep the faith!

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## Asian Longhorned Beetle Traps in Windham County

*By Sam Schneski, Windham and Windsor County Forester*

As most of our readers know, the state of Vermont has been on alert for two major exotic invasive insects that are known to be in neighboring states but not yet in Vermont. You may have seen some of the purple triangle traps that have been set out for detection of Emerald Ash Borer (EAB). These traps are great tools to help with early detection of EAB as well as to get private citizens interested and asking questions.

That's great for EAB, but what about the Asian Longhorned Beetle (ALB) that we've heard so much about devastating forest, urban and community trees in Worcester, Mass.? This summer the State of Vermont, in cooperation with the U.S. Forest Service and the State of Massachusetts, has placed and will monitor ALB traps in trees throughout Vermont to help with early detection of the insect.

The black traps, positioned in the lower canopy of selected host trees, will be in place from early July through September. The lure in the traps is a combination "cocktail" of ALB pheromones and plant volatiles of host trees. Priority sites were selected based on a number of criteria, including areas known to be visited by people from ALB-infested areas and

towns with second-home owners from ALB zip codes. While these pheromone traps are still under development, they have proven effective in identifying previously unknown infested area, notably two areas in the Worcester area last year.

Windham County will have four traps to be monitored bi-weekly, with the help of local Forest Pest First Detectors. Early detection of ALB infestations is a critical tool for the eradication of the pest and the preservation of non-infested host trees. Within the last year, ALB was declared eradicated from New Jersey, Manhattan, Staten Island, and Toronto

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## The Past, Present and Future of Southern Vermont's Forests

### *Excerpts from a presentation at the Brattleboro Museum and Arts Center (BMAC)*

### *Part III*

*By Bill Guenther, Windham County Forester*

This is the final installment in a series recapping remarks I made last year at the Museum.

Part II discussed the wide range of species mix in Windham County due to climate and altitude variables. When we look at the various tree species and their occurrences, we find that our forests are made up of: hemlock, 17%; red maple, 16%; sugar maple, 13%; beech, 6%; red oak, 6%; ash, 4%; yellow birch, 4%; other hardwoods, 14%; white and red pine, 12%; spruce and fir, 7%, and other softwoods, 1%.

My best guess is that the "other hardwoods" category contains a fairly large percentage of black birch, a close cousin to yellow birch, because it is very low on the deer browse preference list. Many of us believe that black birch will make up much of the future forests of Windham County. I'll go into more detail on this a bit later.

The larger a parcel is, the more benefits and options it provides for various types of wildlife habitat, recreation, timber management, watershed values and many other uses. In short, larger parcels offer us a wider range of management options. I looked at some data on the percentage of land in parcels greater than 50 acres in all 23 Windham County towns. The data show that all of the County's towns had 50% of their forested parcels in tracts greater than 50 acres. Dover, Putney and Brattleboro were at 51%, 52% and 54% respectively. The towns with the highest percentage of forested parcels greater than 50 acres were Grafton at 80% and Somerset at a whopping 96%. The latter has mostly National Forest land and land owned by the Trans Canada power company, so this was no surprise, as it is an anomaly. It was encouraging though, to see from the data that we still have a pretty high percentage of parcels at least greater than 50 acres. I would like to see some data that show how many parcels we have that are greater than 500 acres. When you get into that size category, there are many more management options available, especially with respect to wildlife habitat management.

The last part of my remarks commented on the various threats that confront our Windham County forests. I started with those abiotic happenings such as wind, tornadoes, ice storms, hurricanes drought, excessive rainfall and wildly fluctuating temperatures. Whether or not one believes in global warming I am a definite believer in climate change. In the 27 years I have now served in Windham County, the first 10 or so tended to have weather events that caused some forest damage, but in the last 10–15 years much has changed. I have experienced far more severe winds and thunderstorm events in this more recent time span.

We have also seen winters with wildly fluctuating temperatures. On March 15, 2012, I climbed Mt. Washington and it was 41 degrees on the summit with a 6 mph wind, way off what the average should be. On March 21, 2012, the temperature reached 82 degrees in Canaan, Vermont's northeastern-most town. Barbara Schultz (former-

ly Burns), our Forest Health Manager in the Forest, Parks & Recreation Dept., has kept detailed records of when the red maples on her property flower. The average flowering date is April 16, but in 2012, it was March 19, an astounding 27-day difference. Last year was the first time I've ever seen all 50 states showing some form of drought on the USDA Drought Monitor maps.

And of course the huge weather event of Tropical Storm Irene caused loss of life and millions of dollars in property damage, and had many negative impacts on forestry. Many road systems were washed away or eroded and bridges lost.

I won't dwell on the biotic threats too long, as many are familiar to you. The key threats are the Big Three invasive insects — Hemlock Wooly Adelgid, Asian Longhorned Beetle and Emerald Ash Borer. The first has arrived with some negative impacts, but has not been too devastating. The other two insects could be big trouble if they arrive.

Another biotic threat is the spread of invasive plants in all forms; aquatic, herbaceous, shrub, vine and tree. We see continued spread especially of buckthorn, oriental bittersweet and Japanese barberry. However, many others are creating challenges in managing our woodlands. One of the many reasons I want to see our economic climate in better shape, is so we can have more resources available to combat these nasty invaders.

The last biotic challenge I'll mention is our severe deer browse situation, especially in the eastern half of the county. I will not belabor that point here, but I will say it is still a big problem. If all things stay equal I believe we will see Windham County forests gradually convert to a huge percentage of black birch, which, as I mentioned earlier, is almost browse proof.

So many challenges exist, but the forests of New England have a *resiliency* as strong as its people!

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## WOODLAND SECRET #11 — LICHENS

*By Arthur H. Westing, Former WOA Trustee*

We see reasonably many lichens in our woodlands, where they are generally attached to rocks or trees (on the trunks and branches), and doing no harm to the latter. They are among the most curious living things to be found in our woodlands. They are composed of two organisms: the first, a **fungus** (which forms the visible structure); and the second, a **green alga** or, less often, a **cyanobacterium** [once misnamed a "blue-green alga"] (which lives inside the fungal cells). The two form an inseparable union known as a symbiotic (or mutualistic) relationship. The fungus contributes a protective structure (the thallus) for the two organisms, while the green alga or cyanobacterium produces the food (sugar) used by both of them.

Lichen symbiosis is an incredibly ancient phenomenon, having been found in the fossil record as far back as 600 million years ago (during the precambrian Ediacaran Period), and thus about as far back as any identifiable living organism ever found in the fossil record. Lichens grow very slowly, and live for many decades and even centuries (with some being estimated to have lived a mind-boggling 5,000 years). Most of the 800 or more North American lichens can be divided into three main growth forms (although some confusing intermediates do exist, and even some variable forms): (1) **Crustose** (those forming a crust on rocks or trees, looking almost as if they were painted on; although some crusts form small warts); (2) **Foliose** (those with a more or less loosely attached leaflike form); and (3) **Fruticose** [*not* "Fruiticose"] (those with a branching shrublike form, either with upright stalks, or else with hanging threadlike stalks).

The lichens are incredibly tolerant of extreme environmental conditions (as to temperature, wind, and moisture). On the other hand, most are quite sensitive to air pollution (especially so to sulfur-dioxide, a product of coal burning), their relative abundance in southeastern Vermont thus telling us that the air here is still only mildly polluted. A locally common example of each of the three types of growth form follows:

**Whitewash lichen** (*Phlyctis argena*): A crustose lichen, chalky white in color. Often growing on the trunks of smooth-barked trees, and looking as if it had been painted on (hence its name).

**Shield lichen** (*Parmelia sulcata*): A foliose lichen, greyish-green in color. Forms a more or less round shield (the thallus looking as if it were composed of numerous tiny crinkly leaflets) several inches or more across on tree trunks (with smaller individuals growing on branches and twigs).

**Reindeer lichen** = "**Reindeer-moss**" (*Cladonia [Cladina] rangiferina*): A fruticose lichen, ashy grey in color. Often found on the ground in dry rocky sites. Often mis-named "moss" because it looks a bit like a moss; and "reindeer" because it is a favored food of reindeer (*Rangifer tarandus*). It grows worldwide in the far north, and similar local animals, such as moose (*Alces alces*), feed on it.

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## *WOA at the Stroll*

Consulting forester George Weir, president of WOA, answers questions about the display from a visitor to the WOA booth at the Strolling of the Heifers in June.

Trustee Margaret MacDonald is at the rear and WOA clerk Carol Morrison is at left.

***Photo:*** *John Evans*

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## Upcoming Programs

(See inside for details.)

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|---|---|
| **Friday, August 30 —** | **Jamaica Cottage Shop Tour**<br>**2:00 – 3:30 p.m.** |
| **Saturday, September 7 —** | **WOA Annual Meeting,**<br>**Riverledge Foundation, Grafton** |
| **Saturday, October 26 —** | **The Famous BIG Tree Tour!** |

*Mission of Woodland Owners Association*

WOA is a non-profit association of woodland owners and managers, members of the wood products industry, and other interested parties in the Windham County Region who advocate both sustainable management practices and the enjoyment of forests and their ecosystems. In support of these ends, WOA offers educational opportunities for all age groups. Areas of interest include: biodiversity; clean air and water; cultural and historic resources; fair and equitable taxation of woodland; forest products; recreation; scenic beauty; and wildlife habitat. We recognize that these concepts are continually evolving and therefore will strive to consider the most current thinking and values regarding them.