HOW THE HURRICANE OF '38 SHAPED A FOREST

Forest Notes

NEW HAMPSHIRE'S CONSERVATION MAGAZINE

EASY WOOD HEAT?

Berlin becomes a model for wood pellet boilers

Beaks and bark in the cold northern woods

WINTER 2014

SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS

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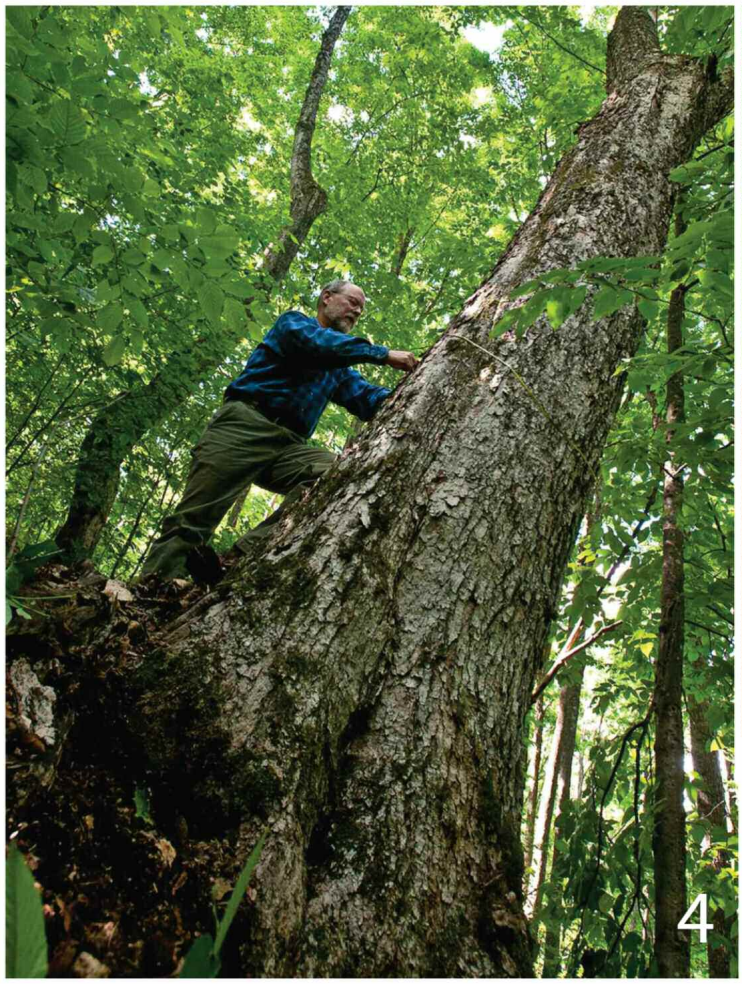

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Our Members Really Get It

I recently met a young filmmaker who was exploring what it is about New Hampshire that inspires love and loyalty among those who live here. She "didn't get it," but was curious about what keeps people here, what draws them back as visitors year after year, and why they value the state's mountains and rivers, wildlife and forests. I'm glad she chose to visit us, and I hope we helped her in her quest.

On a different place on the spectrum are our members, who love New Hampshire and are loyal supporters of our conservation work. Many have been members for decades, and each fall we recognize them for their loyalty. Their responses are gratifying.

One long-time member wrote to thank me for the pin we sent him acknowledging his 30 years of supporting the Forest Society. But this was no ordinary thank you. He listed 10 reasons for being a member for three decades. Included was, "the 1989 easement on my land...now owned by my five sons." Another was, "The Forest Society's cooperation and leadership in working with other land conservation organizations in New Hampshire." And, finally, "The excellent communications with your members." These are praises that not only make us feel proud, but also inspire us.

From a different part of the state, "These forty years being part of the Forest Society are forty I am glad to count. And the sense I had when I joined... that just in joining, I was, with other members and those who had been before, helping to protect places that matter." Our members are eloquent, as well as involved!

From Colorado came a letter from members who recently moved from the Granite State: "One of the things that did not go out with the excess contents of garage, cellar and attic, however, was our support for the excellent work done by the Forest Society... The Forest Society is a prominent and effective force among those who would maintain New Hampshire's natural environment for wise use, aesthetics and recreation."

These people, our people, know what matters to them about New Hampshire.

Jane Difley is the president/forester of the Society for the Protection of New Hampshire Forests.

Society for the Protection of New Hampshire Forests
A non-profit membership organization founded in 1901 to protect the state's most important landscapes and promote wise use of its renewable natural resources. Basic annual membership fee is $35 and includes a subscription to *Forest Notes*.

Editor: Jack Savage
Managing Editor: Brenda Charpentier
Design & Production: The Secret Agency
Printing: TDS Printing

Forest Notes is published four times a year and printed on elemental chlorine-free Sappi Flo paper with 10 percent post-consumer recycled content. Sappi Flo is made from pulp purchased from suppliers who document sound environmental practices and sustainable forest management.

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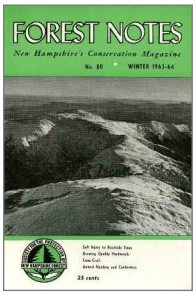
50 Years Ago in Forest Notes



The cover of the Winter 1963-64 issue of *Forest Notes* featured the frozen summit of Mount Washington. The photo caption observed: "Only the most experienced mountaineers have any business in New Hampshire's Presidential Range during almost half the year."

It went on to explain that, "The buildings in the distance on the top of Mount Washington and the land surrounding them are being considered for acquisition by the State." Of course the State did acquire the summit, which is now the 60-acre White Mountain State Park, surrounded by the 750,000-acre White Mountain National Forest.

Forest Society Board Welcomes Three New Trustees

Forest Society members elected Lorin Rydstrom of Hollis and Andy Lietz of Rye to three-year terms on the Board of Trustees at the 2013 annual meeting Sept. 28. The board elected Charlie Bridges of New Durham to a three-year term in early December.


Lorin Rydstrom

Rydstrom is a senior advisor to Forest City Trading Group LLC, a leader in the marketing of forest products throughout North America. He served as president of one of Forest City's companies, Seaboard International Forest Products in Nashua, for 30 years.

Rydstrom is a member of the board of Home Health and Hospice in Merrimack and the Nashua Bank, which he and other local business leaders founded in 2006. In Hollis, he has served on the board of the Beaver Brook Association and as a member of the town's Budget Committee. He currently serves on the Hollis Brookline Cooperative School Budget Committee.


Andy Lietz

Lietz is retired from 40 years in the electronics manufacturing field. He served as president and CEO of Hadco Corporation in Salem, N.H., and as the chairman of C.P. Clare Corporation in Beverly, Mass. Prior to Hadco, Lietz worked for IBM for 20 years.

He has served as chairman of the board for the University System of New Hampshire and the Business and Industry Association and also served for nine years on the board of The Nature Conservancy's New Hampshire chapter.

He serves on the boards of two public companies, Safeguard Scientific of Philadelphia and Amphenol in Wallingford, Conn., and two private companies, Echo Software Consulting, in Conway, N.H., and Setem Technologies, a UNH start-up company.


Charlie Bridges

Bridges is a certified wildlife biologist who recently retired from a 25-year career with the N.H. Fish and Game Dept., where he served as the Habitat and Wildlife Diversity Program administrator. Last April, the Forest Society honored him with the Sarah Thorne Conservation Award for his effectiveness in facilitating land conservation partnerships throughout the state. Prior to Fish and Game, he worked as the UNH Cooperative Extension wildlife specialist.

Bridges served on the Land and Community Heritage Investment Program board for 10 years and the Current Use board for more than 20 years including four as chair. He has also served on the Natural Resource Conservation Service's (NRCS) State Technical Committee, the N.H. Forest Advisory Committee and the State Conservation (Moose Plate) Committee. He currently serves on the Land and Stewardship Committee of the Moose Mountains Regional Greenway.


Forest Society staff and land stewards clean up the Hedgehog Mountain Forest in Deering.

Join Us as a Volunteer Land Steward

The Forest Society is looking for volunteer land stewards to help monitor reservations in select towns. We train land stewards to monitor boundaries, maintain trails and help with property infrastructure. You will also join a thriving community of active stewards having fun in the woods. Volunteers must be able to attend a two-day training May 9 and 10 in Alexandria and make a two-year commitment to the program. If you're interested, contact Carrie Deegan at cdeegan@forestsociety.org or 224-9945.

We are recruiting stewards for properties in these towns:

North Country:
Lincoln, Woodstock, Dalton, Stark, Conway

Lakes Region:
Gilmanton, Alton, Freedom, Hebron, Tamworth, Farmington, Orange

Seacoast:
Madbury

Dartmouth Sunapee:
Lyme, Danbury, Warner, Grantham, Enfield, Sutton

Central N.H.:
Franklin, Washington, Boscawen, Henniker, Hillsborough, Webster, Deering

Monadnock/Southwest:
Jaffrey, Westmoreland, Wilton, Stoddard, Surrey, Dublin, Richmond, Chesterfield, New Boston, Sharon

A Forest History Mystery

By Stephen Long

Clues and tales from Hurricane of '38 inform one man's quest to know his land

On a steep slope in the woods above our house, one particular sugar maple stands out for both its great size and its longevity. Some of the lichen-covered bark is sloughing off its trunk, but no woodpeckers have been probing it for insects, so it seems sound. And that's remarkable for a tree that was a seedling in 1832, the year Andrew Jackson was elected to a second term as president.

The dominant tree in its neighborhood, it forks 20 feet up into a spreading crown that has relegated newcomers to the understory, and at 28 inches across, it is twice the diameter of its neighbors. All of the other outsized trees in our woods got their start as pasture trees, as indicated by their heavy lower limbs and multiple trunks. This one's form confirms the opposite, that of a tree that grew up competing in a forest. In the long process of self-pruning, it was shedding lower limbs before the Civil War.

Loggers passed it by on various occasions, probably because it has a pronounced lean and a prominent seam that compromise its lumber value. It had a 15-inch diameter in 1954, when logger Walter Dunklee bought the timber on this lot and drove his Army surplus deuce-and-a-half deep into the woods to truck the logs out. He didn't cut it.

Nor was it cut 16 years earlier, when the local bobbin mill bought the rights to harvest "all the beech, birch, and maple timber standing and blown down" in the worst wind that ever hit my town of Corinth, Vt., the hurricane of 1938. While many nearby trees were uprooted, this maple stood firm in winds that gusted at more than 100 miles per hour. Such a performance makes it worthy of a name, and I've christened it Andrew Jackson.

From the moment I learned that these woods had been blown down on Sept. 21, 1938, I wanted to know more about the hurricane, but nobody living on our land that day was still around to tell me about it. Nobody could describe to me the wind, the sky, the sound of the crashing trees, or tell me what it was like to wake up the next morning to a changed world. Fortunately, other people in town had experienced it, so I went visiting.

Stephen Long measures the "Andrew Jackson" maple that started his investigation into how the Hurricane of 1938 shaped his woods. Photo by John Douglas.

Whether conifer or hardwood, the taller the tree, the more likely it was to uproot. Think of a tree as a lever. The taller the tree, the longer the lever and the greater force it's capable of exerting on the ground where it's anchored. In 1938, the roots gave out much more frequently than the trunks, as shown in this photo of Herbert Adams standing in front of the roots of a large yellow birch blown down in Kinsman Notch. Photo courtesy of the Forest History Society, Durham, N.C.

I went to see Harry Brainerd, who was 12 years old when the hurricane hit. Harry lives four miles west of our woods, on Taplin Hill, in a white cape-style farm house, which, along with its large white barn, once belonged to his great-grandfather. The buildings perch on a knoll, with acres of lush hayfield in the foreground, the very image of a well tended New England farm.

Harry and I sat at his kitchen table while he told me about the hurricane. He said he'd been carried to and from school that day because he had been suffering from rheumatic fever.

"When I came home in the afternoon, I was sitting by the window. School didn't let out until four o'clock back in those days, and I was sitting in the chair right there. I noticed that the little trees were bending right over, about 20 minutes past four. I thought 'twas awful windy, but we just didn't pay much attention." His mother still had clothes out drying on the line.

The wind kept coming, and the skies got darker. A mile to the west, Harry's classmate Bryce Metcalf saw maple trees on the ridge start toppling over, roots and all. The Metcalf farm, surrounded by hay meadows and cornfields, was just as exposed to the wind as the Brainerds', and Bryce's father was worried that the barn roof might lift off. He decided to clinch the nails that were holding the metal roof to the strapping, and Bryce and the hired man went with him. The hay was piled right to the roof, so the three of them climbed up on top of it and started bending the nails over.

"All of a sudden my father could see the whole roof starting to lift up," Bryce said. "He got us out of there, and the whole thing started to go, and then, finally, part of it went off."

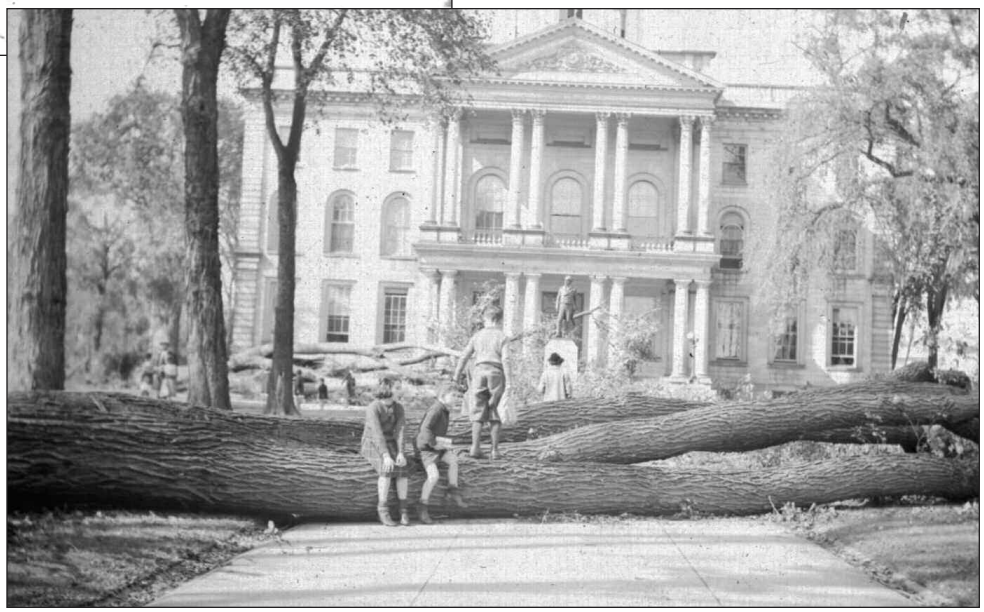
Back at the Brainerds', Harry watched the radio aerial fly off the barn. The family had a Wards airline radio and listened to Lowell Thomas report the news of the world. Even if the radio had kept working, it wouldn't have warned them about the storm. Weather forecasting in the '30s relied on primitive tools, and the hurricane's arrival was a shock to all who experienced it. With electrical and telephone lines down, word did not spread north to be prepared for the winds.

During supper, Harry was startled to see their huge barn doors bouncing end over end across the field. Yard trees began crashing onto the house. "The pine and the spruce hit the house, and when they hit the ridge pole, they broke right off, and the top part of the tree slid down the other side. It got so that every time one of them huge trees struck the house, the house just jumped right up and down. I remember my father said, and my mother too, 'I guess we'll be starting over again.' We figured the barns would probably be demolished and everything else. That's the way it was."

As bad as it was, the damage in Corinth was just one twig in the brushpile. The path of destruction spanned 90 miles across, and forests were toppled in every New England state, with New Hampshire and Massachusetts being particularly hard hit.

The damage was so bad that the federal government formed an agency—Northeast Timber Salvage Administration (NETSA)—to deal with all the downed timber. An administrator wrote in the agency's report, "The capricious hurricane, contacting the earth but lightly in some places, viciously in others, left wind-thrown timber in large and small bodies over some 15 million acres, or 35

Residents in Keene use a two-man saw to clear debris. The storm killed more than 600 people and caused some $400 million ($5.5 billion in today's dollars) in property damage. Photo courtesy Keene Public Library.



In front of the state capitol in Concord, kids play on the toppled elms. Photo courtesy of N.H. Division of Forests and Lands.

percent of all the land area of New England." He noted that damage occurred in 904 towns in 51 counties and took a bite out of the woodland bank accounts of 30,000 Depression-era landowners.

All told, an estimated 2.6 billion board feet were blown down. To put that in context, a typical truckload of logs holds 6,600 board feet. It would take almost 400,000 of these trucks to transport the wood that was blown down.

Here's another way to think of it. The largest hardwood sawmill operating today in New England is Cersosimo Lumber in Brattleboro, Vt. It buys 40 million board feet of sawlogs annually. At their current rate of production, it would take Cersosimo 65 years to process 2.6 billion board feet.

As it was, spurred on by NETSA and with help from the New Deal's Works Progress Administration and Civilian Conservation Corps programs, the industry geared up and sawed nearly half of the blowdown into lumber. Cutting with axes and crosscut saws, and skidding logs with horse-drawn sleds, thousands of men participated in what has to be the largest logging job ever.

The Worst Storm

In the last two years, devastating tropical storms have pummeled the Northeast. Irene in August 2011 was particularly hard on Vermont, while October 2012 found Sandy walloping New York City and New Jersey. These two storms, the second dubbed a "superstorm" by those who traffic in hyperbole, can provide a framework for picturing what happened on Sept. 21, 1938. Out on the ocean, both storms reached hurricane status—defined as having sustained winds of more than 74 miles per hour—but each had been downgraded to a tropical storm by the time it made landfall. Each did tremendous damage to the built environment, with most of the harm coming from the deluge of rain and the tidal surge. But these storms were essentially floods. Sure, there was wind, but the hurricane-force winds they packed hit the coast hard and then dissipated as the storm traveled inland, which is typical of most hurricanes. The rain kept falling, but because a hurricane gathers its power from warm ocean water, the winds lost their force upon landfall.

The Hurricane of 1938 was unique in that it carried brutal winds 300 miles inland. It brought plenty of rain as well, but less than

had fallen the previous week in a separate low pressure system that stopped dumping rain only the night before. One point that has been lost in the retelling is that much of New England was already flooded when the 1938 hurricane entered the picture.

On making landfall, Irene moved along at 15 miles per hour, a speed typical for hurricanes, which don't seem to be in a hurry. They poke along, and it can take days for a huge system to work its way through any particular spot on its path. Not so on Sept. 21, 1938. With a forward speed of 57 miles per hour, this hurricane sped from a position east of Cape Hatteras to the south shore of Long Island in only seven hours. Its center crossed Long Island at 3:30 p.m.; Hartford, Conn., at 4:30; the Vermont border at 6. High winds preceded the center's arrival and continued after it passed, but the storm was over relatively quickly, thus the aptness of its early moniker, the Long Island Express. (The naming system that we know today didn't come into being until 1952.) The strong winds in any one locale lasted no more than five hours, peaking for only an hour or so.

White Pine Was Most Vulnerable

One of the hardest hit landowners was Harvard University, which has owned a research forest in Petersham, Mass., since 1907. Harvard Forest encompassed 2,100 acres in 1938 and has grown to 3,750 acres today. Before the hurricane, the staff was actively managing its timber stands to produce income to fund research at the forest. It was also a model forest, demonstrating to the public how good forestry could benefit

The hurricane of '38 picked up speed across the Atlantic, then turned sharply north and smashed into New England. The winds blew strongest to the right of the storm's center, tracked above. The colors shown on the trajectory correspond to categories of wind speed (green: tropical storm; yellow: hurricane category 1; orange, hurricane category 2; red: hurricane category 3; purple: hurricane category 4 and blue: hurricane category 5.) Map courtesy of National Oceanic and Atmospheric Administration Coastal Services Center (www.csc.noaa.gov/hurricanes).

Most of the trees ravaged by the '38 hurricane were pines. The wind uprooted some trees and snapped off the trunks of others, like these at Fox Forest in Hillsborough. Photo courtesy of N.H. Division of Forests and Lands.

everyone, from the owners of the woods to the lumber industry and the workers who depend on that industry. When the hurricane blew through, Harvard's grand experiment in sustainable forestry was rendered to splinters.

In residence that autumn was a new graduate student named Willett Rowlands, who was quickly enlisted to document the extent to which the various stands had been blown down. With a clipboard and camera in hand, he scrambled through blowdowns and got himself covered with oozing pine pitch every day as he documented each plot, noting the species, direction of fall, and degree of damage.

The following year's annual report featured Rowlands' catalog of the forest destruction, citing at least moderate damage to 75 percent of the forest, with 16 percent (334 acres) completely blown down. They salvaged 5.5 million board feet, but showed only a slight profit because of the high costs of the operations. Most of the mature trees had fallen, so prospects for future timber sales looked dim, and Harvard Forest's days of relying on timber income to fund research activities were over.

David Foster, the current director of Harvard Forest, is a landscape ecologist and forest historian with an abiding interest in broad-scale forest disturbance. Over the years, he and his colleagues have studied the hurricane damage across the region and published papers explaining the patterns of damage, the difference in damage to particular species, and the factors that influence whether or not a stand of trees was blown down.

It turns out that the extent of the blowdown depended largely on what kind of trees were in the crosshairs. Using Rowlands' hard-earned data, Foster found that conifers were more vulnerable than hardwoods, and that white pine—the region's tallest and fastest growing tree—was the most vulnerable of all. As a rule, older, taller trees were more susceptible than shorter, younger trees, but in the case of pine, even 15-year-old individuals were knocked over. At 30 years, entire stands of pines were flattened. Pine accounted for nearly 90 percent of the timber salvaged in New England. Hardwoods, which in general have a stronger root system, weren't blown down unless they were taller, which meant they would have been considerably older than the fast-growing pine. Massachusetts and New Hampshire had a preponderance of pine in their woods at the time, which explains why they suffered the greatest losses. Whether conifer or hardwood, the taller the tree, the more likely it was to uproot. Think of a tree as a lever. The taller the tree, the longer the lever and the greater force it's capable of exerting on the ground where it's anchored. Older forest-grown trees tend to be taller and have their crowns concentrated in the top third of the tree, so they transfer more of the wind's force to the ground. They are also more rigid and less capable of bending, so something has to give—it's simply a question of whether the trunk is stronger than the roots. In 1938, the roots gave out much more frequently than the trunks. Less than 15 percent of the pine

Massachusetts and New Hampshire had a preponderance of pine in their woods at the time, which explains why they suffered the greatest losses.

Residents start cleaning up the flooded and damaged neighborhoods in Keene, N.H. Photo courtesy Keene Public Library.

trunks broke, and an even smaller percentage of hardwoods snapped off.

The same principle explains why many of the old pasture trees were left standing. Open-grown trees are short; with no competition, they put their energy into growing branches and not a tall trunk—so the wind's leverage is greatly reduced. And while more branches mean more area to catch the wind, pasture trees have spent a lifetime dealing with wind, so they've developed stronger root systems. Similarly, trees lining the edge of a field gain wind-firmness from years of being buffeted by wind from at least one flank, and they held their ground better than trees deeper in the forest.

Foster points out that, across the region, the damage was surprisingly variable. If you had flown over New England in a plane, you would have seen a mosaic of damage, with many shades of gray between the blocks of black and white. Some large patches were flattened, and others had more than half their trees blown down. But in some forests the trees were merely inconvenienced by having their leaves stripped just a couple of weeks before they would normally have dropped. And some stands escaped damage altogether. You would have seen damaged trees on 35 percent of the land area—slightly more than 15 million acres. But only four percent—600,000 acres—were absolutely flattened.

The determining factor was a site's relative exposure to the wind, and in interior New England, hurricane winds are always strongest from the southeast. That's because hurricanes arrive in New England from a generally southerly direction. Those that come from the west or southwest have diminished winds because they've traveled over land, and are more likely to cause some rainy days rather than a full-blown disaster. Same thing if the track takes the storm out to the Atlantic: rain but no appreciable wind. But in the exceptional case when a hurricane heads due north in the Atlantic and avoids landfall as long as possible, it will pack all its winds with it.

That's what happened in 1938. Tracking from south to north, the hurricane sped forward at 57 miles per hour. If it had been a straight line storm, the winds would have been 57 miles per hour from the south, which would have been plenty. But because hurricanes are cyclonic systems, the counter-clockwise winds can either increase or diminish the effect of the forward motion, depending on your position relative to the path. The strongest winds were to the east of the track, where the forward motion was added to the rotational wind. In this case, sustained winds from the southeast of 50 to 80 mph combined with a forward speed of nearly 60 mph to produce winds of 110 to 140 mph.

On the other hand, locales to the west of the storm track saw the forward momentum more or less canceled out by the winds blowing from the north.

In the absence of any strong topographical features, all areas to the east of the storm track would be similarly exposed. Gently rolling terrain doesn't change the equation much. But any hill open to the southeast wore a bull's-eye—the steeper the slope, the more pronounced the bull's-eye.

Foster's colleague Emery Boose has created computer models that reproduce the conditions of historical hurricanes. By entering weather observations and historical documentation of damage on a town-by-town basis, Boose created a model of the storm track and speed, the timing of arrival at any location, and the wind speed and direction for that location over the duration of the storm.

I asked him to run the model for Taplin Hill in Corinth, and he sent me an Excel spreadsheet showing, among other things, wind speed and direction at 5-minute intervals. From it, I could chart the rise and fall of the wind, the period at which it reached its peak, and the ongoing change in direction as the center passed to the west. It matched up well with eyewitness reports and newspaper accounts. The strongest sustained winds were between 8 and 9

p.m. at 77 miles per hour, with gusts reaching 117 miles per hour. They came from the east and then slightly south of east (from 93 to 119 degrees).

Our land, only four miles away, would have experienced the same wind speed and direction. And our hillside, with its 30 percent slope facing east, definitely wore a bull's-eye, which makes the continued presence of Andrew Jackson, the 180-year-old sugar maple, even more impressive.

Trees Can Talk

I owe my knowledge of Andrew Jackson's history to a forestry tool called an increment borer and to Dave Orwig, the forest ecologist at Harvard Forest who showed me how to use it. Orwig has cored thousands of trees, counting their annual rings to determine their age. More important to Orwig than age, though, is what the tree's pattern of growth tells him about the conditions it lived through.

An increment borer is a drill bit that is hollow in the center. When it's threaded deep into a tree and aimed for the center, a core of wood about the circumference of a pencil can be withdrawn. This core shows the growth rings, which tell the story of lean years (or even decades) when the tree added little girth, interspersed with wider rings that correspond to more favorable conditions. Orwig set me up at a microscope in Harvard Forest's herbarium and showed me how to use dendrochronology software to record each increment of the tree's growth.

We had a logging job in our woods that fall, which provided me with cookies (inch thick cross sections) sliced from the ends of freshly cut trees. I examined these under the microscope in the same way and, with data from 16 cookies and cores, Orwig showed me how to interpret what I found.

All of the trees were alive in 1938, and many were 40 or so years old when the hurricane hit. Except for Andrew Jackson, none of them was more than three inches in diameter in 1938, and their growth rings were very tight. It took these trees 13 years to add an inch in diameter, which is very slow growth, and that's the best they were doing. Some were growing even more slowly. Clearly, they'd been languishing in the understory.

But when the overstory trees blew down in 1938, these smaller trees didn't blow down with them. Nor were these survivors crushed by falling trees. Their final bit of good fortune was that they managed not to be in the way of the loggers salvaging the timber that had blown down. So when they were suddenly free to grow, they took advantage of it and grew rapidly for the next few decades. It took two or three years for them to recover from the stress of sudden change, but once they recovered, they really took off.

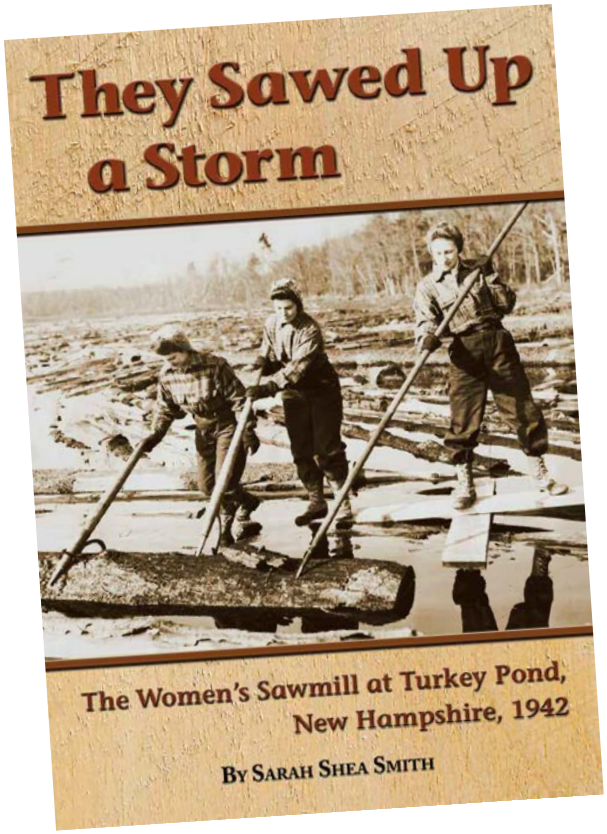
Andrew Jackson's experience differed only in that it was a larger tree when the hurricane hit. It had taken a century to grow 11 inches (hampered by a four-decade stretch, starting in 1847, in which it added only an inch), but following the hurricane it added nine inches in just 30 years. It went from a growth rate of 1.1 inches per decade to three inches per decade. Clearly, for this tree the hurricane was a godsend.

This hillside, like others blown down in the hurricane, is pock-marked with deep depressions adjacent to correspondingly large mounds. This pit and mound topography looks as if somebody dug a hole and piled the dirt next to it, and it happens anytime the wind uproots a tree. As the roots are ripped from the ground, they carry a mass of soil and stone, excavating a hole. The bigger the tree, the bigger the hole. Over time, the roots and stump decompose, leaving a mound of earth.

One of the more interesting things about this topography is that decades after the tree went down you can stand in the pit, look out across the mound, and see exactly where the tree fell. The 1938 hurricane's winds came from the southeast, so the conventional wisdom has long held that trees fell to the northwest. But on our hillside, most of the pit and mound pairs faced east, downhill.

Something was wrong.

A man walks on the Bridle Trail on Mt. Deception in the White Mountain National Forest after a path was cut through downed birches in May of 1939. B.W. Muir.
Photo courtesy of Forest History Society, N.C.



The 1938 hurricane left about 2.6 million board feet of timber on the ground, enough lumber to frame 170,000 houses, according to They Sawed Up a Storm, *by Sarah Shea Smith. The U.S. Forest Service coordinated a massive timber salvage operation that relied on the Civilian Conservation Corps, the Works Progress Administration and committees from each town in the affected area. Smith tells the story of another group, the female sawmill workers at Turkey Pond in Concord, who carried on the salvage work when male workers were called into World War II.* They Sawed Up a Storm *was published by Jetty House in 2010.* Cover image printed with permission by Sarah Shea Smith.

I invited David Foster to have a look, and we spent a February morning exploring the hillside. Foster agreed that the pits and mounds showed that trees fell to the east, and he raised the possibility that these pits and mounds had been produced at another time. Maybe some portion of our woods had blown down in 1938, but the pits and mounds in front of us were from other events. Given that the prevailing wind is from the west, all these trees could have fallen over at other times.

Clinging to my assumption, I proposed that the 30 percent slope came into play. Perhaps gravity trumped the power of the wind, and the trees rocked back and forth and followed their weight downhill. But Foster pointed out that white pine had fallen uphill on east-facing slopes that were every bit as steep as ours. And indeed, I'd seen that at Harvard Forest. In fact, I'd seen not just the pit and mound, but the pine stumps, identified as such by remnant branch whorls. It may seem peculiar, but softwoods rot more slowly than hardwoods, which typically disintegrate within 50 years.

It's human nature to relish a good disaster—how else to explain the attraction of the Weather Channel?—and so it pained me to even consider the possibility that the hurricane had somehow passed our woods by. At Foster's recommendation, I sought guidance from Charlie Cogbill, a Vermont forest ecologist and historian with connections to both Harvard Forest and Hubbard Brook Experimental Forest in North Woodstock, N.H. An aficionado of blowdowns, Cogbill has his own shorthand for the various ways trees are affected by wind: high snap, low snap, tipup, pistol butt. He had documented the hurricane and salvage at Hubbard Brook, which, like ours, is largely a northern hardwood forest. He was intrigued by what he saw in our woods, but he wasn't any readier than Foster to jump to conclusions. "Get the data," Cogbill said. "And then we can see if something different happened here."

In full sleuth mode now, I climbed the hill with my compass and notebook, recording compass bearings for 58 of the most prominent pits and mounds. While they didn't all fall in the same direction, the majority fell to the east or just south of east. At each pit and mound, I took compass bearings for the aspect (the direction the hill faces) and it averaged just south of east. This data confirmed that the trees' direction of fall was much more closely linked to the hill's direction than to wind direction. In other words, they had fallen downhill.

I wanted to see if our hillside was an anomaly, so I visited Harry Brainerd's sugarbush, which had been laid low in 1938. One of the slopes pitched to the east, just like ours, and on it 12 out of 15 trees fell downhill instead of to the northwest. Next, I visited Hubbard Brook, where I confirmed that trees on their southeast facing slopes had fallen downhill.

Any logger will tell you how difficult it is to fell a tree uphill. Gravity is working against you, and the crowns are heavier on the downhill side. All the way up the slope, the uphill trees overtop the trees below, so they can expand their crowns to the light. On their back sides, facing the hill, their crowns are smaller because they are shaded by the trees above. This produces a lot more weight on the downhill side.

I was convinced that gravity was stronger than 100 mile an hour winds, and I had some data to back up my supposition. But really all it proved was that on these slopes, the trees fell downhill. It didn't prove that they had fallen downhill during the hurricane. The only way to know that was to determine how old the mounds were. One more bit of detective work was required.

Foster pointed out that I could ascertain the age of a mound by determining the age of a tree growing on it. If the tree's origin was prior to 1938, the mound pre-dated the hurricane. He suggested I look for paper or yellow birch because these species find the disturbed soil of an exposed rootball particularly hospitable as a seed bed, meaning they would germinate soon after the tree fell. But our woods are heavy to sugar maple and, sure enough, that's all

A plaque made from the 400,000,000th board foot of timber salvage hangs in the Forest Society's board room.

I could find. Two mounds had sugar maples growing on them. The first stood on a mound facing 49 degrees (northeast); the second on a mound oriented 98 degrees (nearly due east). I borrowed an increment borer from Dave Orwig and extracted cores. I glued them to the ready-made holders and began sanding according to Orwig's instruction, starting with 125 grit, then 200 grit, then 400 grit sandpaper, until they were polished like a piece of fine furniture.

I have to admit, my heart was racing when I brought the first core into focus on the microscope. I marked each decade with a pencil dot and went backwards. 2010, 2000, 1990...The first tree was from 1943, the second from 1942. Bingo. These maples had seeded onto mounds formed a few years earlier, when the trees blew down in 1938.

Still, I knew that I needed to replicate these results in another forest to be sure, so I went back to Hubbard Brook and got permission to core some trees. I found four trees on downhill mounds, two white ashes and two yellow birches. I went through the same process, and the white ash trees turned out to have been seedlings in 1956 and 1960, which showed only that the mounds they grew on were older than that—not very conclusive.

I knew the yellow birches were better bets, but the first one was a bust because its core had a small section of rot where the rings didn't show up. I had no way of knowing how many years were eaten up by that gap.

But I hit paydirt with the second yellow birch. This 13-inch diameter tree was a seedling in 1942. It was standing on the mound of a tree that had fallen to the southeast (142 degrees). This birch and the two maples on my hillside showed that the mounds that provided their seedbed had been formed just before 1942.

All trees have their own characteristics, and it's not that much of a stretch to suggest that hardwoods would behave differently than less windfirm white pines when faced with catastrophic wind. It seems that in this case, at the height of the storm, gusts exceeding 100 miles per hour kept the trees swaying back and forth. A gust would push the crown in the uphill direction, then let up. "It was the tree rebounding back in the downhill direction that stretched the roots to the breaking point," Cogbill said. "The torque from the rebound was enough to break the roots, and they failed under tension on the uphill side." And down they went, some like dominoes, others on their own.

Our woods are like many across New England, a story of devastation and recovery. And the recovery came naturally; region-wide, almost none of the blown down forests were replanted.

It took me a while, but I now have a clear picture of what happened on our hillside. And, yes, it pleases me to know that it was the hurricane that knocked all those trees over. Our woods are like many across New England, a story of devastation and recovery. And the recovery came naturally; region-wide, almost none of the blown down forests were replanted.

Walking through these flourishing woods today, it is hard to imagine the devastation attending their birth. Seventy-five-year-old trees seem mature and the full canopy of our woods seems ageless. Let's just say that we're blessed to have forests that are so resilient.

That perspective and that sentiment would have provided little solace to the people who ventured into their woodlots and sugarbushes after the storm passed. Bryce Metcalf said, "The next day, my father and I walked out there. It was just a jungle. You couldn't get through it, so many trees were down. And the trees that were left standing had branches and limbs blown off so they never ran sap like they did previously. It pretty near ruined our sugar place."

In 1938, when practically every Vermont farmer relied on income from maple sugaring, that was indeed a cruel blow.

This article first appeared in the Autumn 2013 edition of Northern Woodlands Magazine. Stephen Long is a former editor of Northern Woodlands who is working on a book about the 1938 hurricane.

Fired Up

The Model Neighborhood Project aims to help entire communities switch to pellet boilers

By Kelly Short

"Every time the oil truck drives by, I smile," said Marie Canning of Berlin, N.H. Canning smiles because she and her husband Peter turned off their oil burner for good in February 2012 when they switched to using a high-efficiency, fully-automated wood pellet boiler instead of oil. The Cannings were the first of 40 homeowners and two non-profits in Berlin to participate in the Model Neighborhood Project, a program conceived by the Northern Forest Center and Maine Energy Systems and launched with local partners in Berlin to help the region switch to heating with a local, renewable heat source instead of imported oil.

Above: *The first of 40 Berlin, N.H., homeowners to install a wood pellet boiler in the Model Neighborhood Project, Peter Canning (right), looks over his basement boiler system with Mike Wilson (left), senior program director for the Northern Forest Center, and Cimbria Badenhausen (center), former director of the Berlin BetterBuildings program.*

Inset: *Pellet boilers save homeowners between 40 and 50 percent on their heating fuel bills, according to the Northern Forest Center. The average time it takes for a homeowner to recoup unsubsidized installation costs is 11.5 years. The payback is quicker for homeowners taking advantage of state energy rebates.* Photos courtesy of Northern Forest Center.

THE BTU ACT

In May, U.S. Sen. Angus King (I-Maine) introduced the Biomass Thermal Utilization Act of 2013 (BTU Act) to extend renewable energy tax credits to high-efficiency wood heating systems, which would provide valuable financial stimulus to the wood heat industry. Rep. Mike Michaud (D-Maine), introduced the BTU Act in the House in July. Sen. Susan Collins (R-Maine), Sen. Jeanne Shaheen (D-N.H.), Sen. Bernie Sanders (I-Vt.), Rep. Peter Welch (D-Vt.), Rep. William Owens (D-N.Y.), Rep. Chris Gibson (R-N.Y.), and Rep. Ann McLane Kuster (D-N.H.) are Northern Forest co-sponsors. We encourage you to contact your legislators and ask them to support the BTU Act.

Left: *A delivery truck from Maine Energy Systems loads pellets to deliver to customers. The pellets will be dumped into a storage hopper. The automatic feeding system will then move pellets into the boiler as needed.* Photo courtesy Northern Forest Center.

Below left: *Wood pellets are made by compressing wood chips and sawdust. The high pressure heats the wood, softening its lignin into a natural glue that holds the pellets together.*

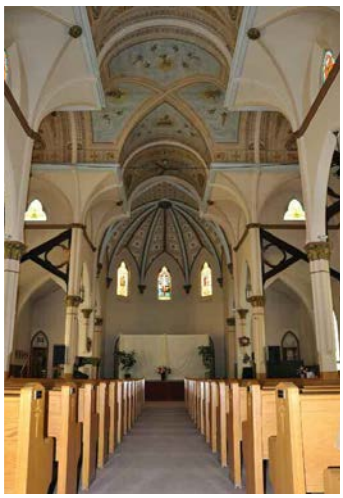
"What we're championing is wood pellet heat used on the community-scale, and residents in Berlin stepped up to demonstrate that this new technology is efficient and reliable," said Rob Riley, president of the Northern Forest Center "We're promoting small-scale, wood-based biomass heating because it can deliver direct economic and community benefits for the region."

The Northern Forest Center, a charitable organization with offices in Concord, N.H., and South Portland, Maine, advocates for the Northern Forest region (northern Maine, New Hampshire, Vermont and New York) and seeks ways to help its communities benefit from forest-based economic and conservation initiatives.

"Most new technologies are expensive until market demand can bring down the price," Riley said. "By using Berlin as a 'model' neighborhood, we've created demand for the boilers—prices have dropped 18 percent on one model—and this cluster of boilers in one place ensures that participants will have regular pellet deliveries and the local expertise to maintain the systems. The Model Neighborhood Project is ratcheting up demand for the boilers and eliminating barriers to making the switch from oil to wood.

The Northeast consumes 84% of the home heating oil used in the United States. It's estimated that the Northern Forest region spends $6 billion per year on imported fossil fuel. For every dollar spent on home heating oil, 78 cents leaves the local economy.

In contrast, when people switch to wood pellets, 100 percent of the money they would have spent on oil stays in the regional economy: homeowners save 40 to 50 percent on their fuel bills, and what they do spend buys pellets grown and produced in the region. Demand for pellets creates jobs in the pellet mills and further down the supply chain for loggers,


In Berlin, the Model Neighborhood Project wants to show that pellet boilers provide fuel cost savings and efficiency in not only homes like the two-family owned by the Laughy (left), but also a variety of larger structures like the former church building that houses the St. Kieran Community Center and an apartment complex managed by the Berlin Housing Authority. Photos courtesy Northern Forest Center.

foresters and truckers. The mills create an important market for lower grade wood, which helps forestland owners with the cost of stewarding their forests.

The savings and the income from jobs then ripple through the economy. Over the last two years, participants in the Model Neighborhood Project have saved more than $65,000 and avoided adding 450 net tons of carbon dioxide to the atmosphere. The total positive economic impact of the project to date is nearly $250,000. An online dashboard at www.northernforest.org/berlin_dashboard.html regularly updates the project's impact.

"I think switching to pellet boilers for heat will catch on quickly," said Mary-Jo Landry, executive director of the Berlin Housing Authority. "It makes good sense to use a fuel source that's close to where you need to use it. We're so concerned here about people being able to work, and these pellets are coming from the next state over. It makes me really happy to know that our heating budget is supporting local workers in today's forest industry."

With a subsidy from the Model Neighborhood Project and other support, the Housing Authority was able to replace the oil burners for the Welch Apartment Complex in Berlin, which houses 55 elderly and disabled residents, many of whom are income sensitive or in fragile health. "We expect to save $11,000 a year," Landry said. "We'll be able to maintain the standard of care that our residents need, and that's very important."

While there have long been other ways to use wood heat, they involve lugging firewood or bags of pellets. The new class of fully automated pellet boilers eliminates that labor by feeding pellets into the boiler automatically when the thermostat calls for heat.

Jayco and Sophie Laughton moved into their new home in Berlin in June 2012 and by winter found themselves buying 175 gallons of oil a month to heat the former 2-family house and to keep the hot water flowing. With energy efficiency improvements and a pellet boiler in place, things have changed.

"The previous owner spent $6,000 a year on oil. At the rate we're using pellets, we'll save $2,000 to $3,000 a year, maybe more," Jayco said.

But what really sold Jayco—who has served in the Army National Guard for 14 years, including duty in Iraq and Afghanistan—was the automatic feeding system that moves pellets from the storage hopper into the boiler.

"I couldn't leave Sophie here to deal with a system where she had to haul bags of pellets and load the boiler," he said. "This system is self-contained, it's very convenient, and Maine Energy Systems is very quick with pellet delivery."

(Many other companies also deliver pellets; information is available from boiler manufacturers.)

The Model Neighborhood Project set out to help 40 homeowners in Berlin convert from oil to wood pellet heat, and the final installation was scheduled for early December. In addition to the 40 homes, Berlin Housing Authority and St. Kieran Community Center for the Arts also converted from oil to pellets, which may

The Northeast consumes 84% of the home heating oil used in the United States. It's estimated that the Northern Forest region spends $6 billion per year on imported fossil fuel. For every dollar spent on home heating oil, 78 cents leaves the local economy.

give Berlin (population 9,743) the highest per capita density of wood pellet boilers in the country.

"The savings and economic impact are just what communities in the North Country need," Riley said. "Over the 25-years these boilers will be in service, they'll displace 1.2 million gallons of oil, saving homeowners and community organizations $2 million on heating. The total economic impact of the project should be $6.4 million. That's real money that will be circulating in Berlin and Gorham and across the border in communities like Athens and Strong, Maine, where the pellet plants are."

In June, the Northern Forest Center launched a second Model Neighborhood Project serving the communities of Farmington and Wilton, Maine, and it is developing projects for the Northeast Kingdom of Vermont and the Adirondacks. "We have tremendous potential in this region to use a home-grown renewable resource for energy," Riley said. "There are challenges in getting anything new going, but the project's success in Berlin shows that we can save money, create forest-based jobs and become more energy independent at the same time."

At St. Kieran Community Center for the Arts, recently retired Executive Director Joan Chamberlain said she expects to save $8,000 a year by eliminating oil. The arts center provides a wide variety of cultural events for residents and tourists in the Androscoggin Valley. Its programs are presented in a late 19th-century former church with fine acoustics, seating for 400 people, and a soaring ceiling that annually challenged the non-profit's budget when it came to keeping the space warm and useable.

The winter before installing wood pellet boilers, Chamberlain made the difficult decision to close the main performance space for three months because of the rising cost of oil. "Switching to the new wood pellet boiler is transforming our organization," she said. "The money we save on heat will bring real benefits to the community, because we'll be able to offer more arts programming. And the community chorus won't have to rehearse wearing coats and hats!"

David Benckendorf, who moved from Illinois to Berlin with his wife Sandy, likes the savings and the environmental benefits of using pellets, but he also appreciates the security of seeing where his heating fuel comes from. "We have this tremendous resource here, and it's also beautiful. I don't support indiscriminant use of any asset, but to fail to use it and to instead import our heating supply from anywhere—be it the Gulf of Mexico or the Middle East—just seems absurd," Benckendorf said. "We have something here in our own back yard that will grow back in 30, 40 or 50 years. With oil, it will take a million years."

Kelly Short is communications director for the Northern Forest Center. The Center helps create economic opportunity and community vitality from healthy working forests in Maine, New Hampshire, Vermont and New York (www.northernforest.org).

SUBSIDIES AND REBATES HELPED HOMEOWNERS AND BUSINESSES AFFORD INSTALLATION COSTS

On average, Model Neighborhood participants in Berlin paid $7,737 of the average $20,590 cost for a fully installed new pellet boiler; rebates from the NH Public Utilities Commission and subsidies from the Northern Forest Center covered the balance of the expense. Since the start of the project, Maine Energy Systems has reduced the cost of its 20KW boiler, which is suitable for residential and light commercial users, by 18 percent.

A study by the Biomass Energy Resource Center (BERC) at the Vermont Energy Investment Corporation found the simple payback period for the full cost of a pellet boiler to be 11.5 years, which is less than half the expected life of the boiler. Dutch Dresser, director of Maine Energy Sytems, likes to point out that there is no payback with an oil burner: you install it and buy oil and reap no savings. BERC'c payback findings are based on an installation cost of $19,000 and an average annual fuel savings of $1,650. The payback is quicker for homeowners who take advantage of the state energy rebates.

Installation costs in Berlin generally varied by about $6,000 depending on the size of the boiler needed, the configuration of the cellar, the existing hot water system and other factors, such as removing the oil tank or installing a chimney liner. Energy efficiency improvements were not included in the cost.

Partners, Funders and Boiler Subsidies

Maine Energy Systems, based in Bethel, Maine, manufactures the boilers and provided a guaranteed price on pellets.

Berlin BetterBuildings, a program funded through the U.S. Department of Energy and operated by the Community Development Finance Authority in New Hampshire, identified potential participants and helped homeowners improve the energy efficiency of their homes before installing the wood pellet boilers.

The Northern Forest Center coordinates the program and provided subsidies to help participants cover the purchase and installation of their wood pellet boilers.

The City of Berlin backed the project as beneficial for the community.

The N.H. Public Utilities Commission provides rebates of 30 percent (up to $6,000) to participants, and the rebates continue to be available to anyone installing a qualified high-efficiency wood pellet boiler (see www.puc.nh.gov/Sustainable%20Energy/Renewable Energy Rebates-WP.html for details).

Project funders included generous individuals; foundations Jane's Trust, The Neil & Louise Tillotson Fund of the New Hampshire Charitable Foundation, The US Endowment for Forestry & Communities and The Wapack Foundation; and the following New Hampshire corporations that purchased tax credits through the NH Community Development Finance Authority to support the project: Bank of New Hampshire, Checkmate Payroll, Citizens Bank, First Colebrook Bank, Global Forest Partners, LP, Grappone Automotive Group, The Lyme Timber Company, Northland Forest Products, Northway Bank, Stonyfield Farm and TransCanada.

Explore New Hampshire's Natural Bounty through Two Lecture Series

Mark your calendars for these upcoming events.

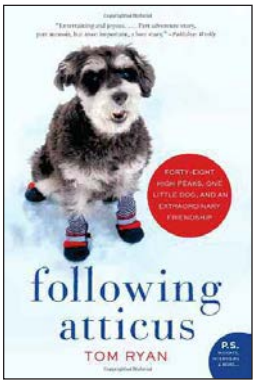
BRETZFELDER PARK FAMILY LECTURE SERIES

Learn about New Hampshire's great outdoors in this free series. Except where noted below, these presentations take place at the Bretzfelder Memorial Park, on Prospect Street in Bethlehem. Call 444-6228 or go to the calendar page of www.therocks.org for more information. Preregistration is not required.

FEBRUARY 12

The Early History of Kinsman Notch and Lost River

Local hiking columnist and author Mike Dickerman of Littleton presents "The Early History of Kinsman Notch and Lost River," drawing on his 2013 book *White Mountains Hiking History: Trailblazers of the Granite State*.



FEBRUARY 19

Following Atticus: 48 High-Peaks, One Little Dog

Author Tom Ryan presents his story of hiking in the White Mountains with his miniature schnauzer, Atticus, as told in *Following Atticus: 48 High-Peaks, One Little Dog, and an Extraordinary Friendship*. Tom and Atticus will be around to sign books after the program.

FEBRUARY 26

Exploring the Geology of the White Mountains

Woodrow "Woody" Thompson presents a nontechnical overview of New Hampshire geology based on the newly published *The Geology of New Hampshire's White Mountains*, which he co-authored. Note: This event takes place at The Rocks Estate in Bethlehem, not Bretzfelder Park.

Go online. Get outside.

Visit www.forestsociety.org/ThingsToDo for a complete and up-to-date list of field trips and special events.

COTTRELL-BALDWIN SERIES: RECOVERY, REEMERGENCE AND RENEWAL IN SPRING

The popular Cottrell-Baldwin Environmental Lecture Series returns on Tuesday nights at 7 in March and April. Join us for the free series at the Henry Baldwin Environmental Center at the Caroline A. Fox Research and Demonstration Forest in Hillsborough. Call 224-9945 for more information. Preregistration is not required.

MARCH 4

Karner Blue Butterfly Restoration

Photo courtesy USFWS.

Heidi Holman, wildlife diversity biologist at the N.H. Fish and Game Dept.'s Nongame and Endangered Wildlife Program, details how habitat restoration through controlled fire, wildflower plantings and captive rearing of larval caterpillars led to the restoration of the endangered Karner blue butterfly.

MARCH 18

The Return of the Bald Eagle

Join Chris Martin, senior raptor biologist with the Audubon Society of N.H., as he shares nearly three decades of bald eagle population recovery in New Hampshire and New England.

APRIL 1

Phenology — What Is That?

Diane DeLuca, senior biologist with the Audubon Society of N.H., discusses the life-cycle phases of plants and animals that can be affected by climate change. Audubon's Deering Wildlife Sanctuary is included in nationwide, cooperative long-term efforts to monitor life cycle events to better understand the impacts of climate change.

APRIL 8

Steve Schuch: Songs and Stories to Celebrate Spring

Come and enjoy a performance by Steve Schuch, an award-winning singer/songwriter, multi-instrumentalist, author and composer. Honors include a Grammy nomination, five fiddling championships, PBS soundtracks, and the Parents Choice Gold Award for his *Trees of Life* recording.

The Cottrell-Baldwin Environmental Lecture Series is co-sponsored by The N.H. Division of Forests and Lands, Fox State Research and Demonstration Forest and the Forest Society.

SATURDAY, FEB. 15 | 10 a.m. to 2 p.m.

Snowshoe Hike with Mammal Tracking

Morse Preserve, Alton

Join Forest Society land stewards Ken and Suzanne Marvin for a guided winter snowshoe hike on the Forest Society's 431-acre Morse Preserve on Pine Mountain in Alton. Learn about winter wildlife tracking for signs of deer, foxes, coyotes, fishers, ermines and other small mammals. Enjoy exceptional views of the Belknap Range and Lake Winnipesaukee.

Dress appropriately in layers for comfortable hiking in winter weather. BYO lunch, water and snowshoes. Meet at the Mike Burke Trail parking area on Avery Hill Road. No dogs, please. Children under 15 must be accompanied by an adult. Call 224-9945 for more information.

SATURDAY, FEB. 22
SATURDAY, MARCH 15
10 a.m. to 1 p.m.

Introduction to Careful Timber Harvesting

Taves Forest, Roxbury (Feb. 22)
Eagle Pond, Wilmot (March 15)

Learn the basics of careful timber harvesting at an active logging site. We'll explore logging equipment, road- and timber-landing layout and wood markets. The Feb. 22 tour is at the Forest Society's 150-acre Taves Forest in Roxbury, a mixed oak-pine-maple woodlot and the site of a winter "cut to length" mechanized timber harvest. The March 15 tour is at the Eagle Pond Farm in Wilmot. Eagle Pond Farm is a Tree Farm owned by the poet Donald Hall. The timber harvest there is designed to thin an uneven age system to create more diversity of ages and sizes and to improve wildlife habitat.

Registration is required by clicking Things to Do at www.forestsociety.org or by calling Tina Ripley at 224-9945, ext. 313. Co-sponsored by UNH Cooperative Extension, Meadowsend Timberlands, Ltd., and Cheshire and Merrimack counties.

SATURDAY, MARCH 8 | 9 a.m. to 2 p.m.

Wilson Tavern Hike

Stoddard

Join Meade Cadot, Lucia Kittredge, Martha Pinello and Alan Rumrill of the Cheshire County Historical Society to explore the route of the old King's Highway through 361 newly conserved acres south of Route 9. The 2-mile hike will take us to the site of the 18th-century Wilson Tavern and through excellent wildlife habitat.

Bring lunch and carpool from the Harris Center at 9 a.m. To register, contact Meade at cadot@harriscenter.org, or call 224-9909. Co-sponsored by The Forest Society and Harris Center for Conservation Education.

SATURDAY, MARCH 1 | 9 a.m. to 1 p.m.
SNOW DATE: SUNDAY, MARCH 2

Winter Mammal Tracking Hike

The Fells and Hay Forest Reservation, Newbury

Whose tracks are those in the snow? Which wildlife are the most active in the winter woods? Find out during this popular, annual late winter mammal tracking workshop led by Forest Society naturalist Dave Anderson. We'll start indoors, then move outside for tracking on snowshoes. Warm footwear is mandatory. BYO snowshoes.

Tracks in the snow mark a coyote's hunting trail.

$5 for Forest Society and Fells members / $10 for non-members.
Sponsored in partnership by the Forest Society and The Fells. To register or for more information, call 763-4789 x 3 or visit www.thefells.org. Supported by grants from the N.H. Charitable Foundation's Wellborn Ecology Fund, and the Creekmore and Adele Fath Charitable Foundation.

FRIDAY, MARCH 14 | 10 a.m. to 1 p.m.

Wild Apple Tree Pruning Workshop

The Fells and Hay Forest Reservation, Newbury

Releasing and pruning wild apple trees will keep them healthy and increase yield to benefit a wide variety of wildlife. This workshop, with both indoor classroom instruction and outdoor field practice, will be led by Nigel Manly, director of the Forest Society's Rocks Estate.

Free for Fells and Forest Society members; $10 for non-members. Bring a bag lunch, appropriate outdoor wear and, if desired, favorite pruning tools.

This program sponsored by the Forest Society and The Fells. To register or for more information, call 763-4789 x 3 or visit thefells.org. Supported by grants from the N.H. Charitable Foundation's Wellborn Ecology Fund, and the Creekmore and Adele Fath Charitable Foundation.

MARCH 15, 22, 29 & APRIL 5
10 a.m. to 4 p.m.

New Hampshire Maple Experience

The Rocks Estate, Bethlehem

Experience the tradition of sugar making with hands-on learning and tasty treats. The tour includes an interactive step-by-step demonstration of crafting maple syrup, complete with a visit to the onsite sugar house and to the interactive maple museum and education center. Take a horse-drawn wagon ride through the historic 1,400-acre estate!

Reservations are highly recommended (444-6228), but walk-ins welcome on a space available basis.

MARCH 19 | 7 to 8 p.m.

Film: *The Ordinary Extraordinary Junco*

The Rocks Estate, Bethlehem

A new documentary film from Indiana University and funded by the National Science Foundation designed to engage, entertain, and inspire audiences of all backgrounds. The film is comprised of eight chapters that highlight past and present biological research on one of the most common yet diverse groups of songbirds in North America, the juncos.

Call 444-6228 or go to the calendar page of www.therocks.org for more information. Co-sponsored by The Audubon Society of N.H.

The Forest Society thanks the following businesses for their generous support.

Summit Circle
($5,000 and up)

Camp Pemigewassett, Inc.
Event Builders, LLC
Inns at Mill Falls
Littleton Coin Company
The Mountain Corporation
New Hampshire Electric Co-op Foundation
Northeast Delta Dental
Northland Forest Products
Pennichuck Corporation
SCM Associates, Inc.
Superior Nut Company

Chairman's Circle
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Alpine Adventures Outdoor Recreation
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Checkmate Payroll Services
Chinburg Builders
The Collins Camp Corporation
Concord Cooperative Market
Doucet Survey, Inc.
FORECO
Forest Land Improvement Company
Fuller's Sugarhouse, LLC
Great Brook Veterinary Clinic, LLC
Green Mountain Coffee
Hall Tavern Farm
Image 4
Inn on Golden Pond
Kel-Log, Inc.
Lenk Orthodontics
Limington Lumber Company
Meadowsend Timberlands, Ltd. Ptn.
Nathan Wechsler & Company
New England Wood Pellet, Inc.
Nobis Engineering
Parade Properties
Pine Springs
Pinetree Power, Inc.
Polly's Pancake Parlor

Colleague *(continued)*

Sunset Park Campground
Twin State Sand and Gravel
Wendell Veterinary Clinic
Zambon Brothers Logging

Matching Gift Companies

Allegro MicroSystems, Inc.
Allendale Mutual Insurance Company
American Biltrite Charitable Trust
American Express
American International Group, Inc.
Ames Planning Associates
Amica Companies Foundation
Autodesk, Inc.
Bank of America
CA, Inc Matching Gifts Program
ExxonMobil Foundation
f5 Networks
Fairpoint Communications
FM Global Foundation
Gartner
GE Foundation
Global Impact
Green Mountain Coffee
Hewlett Packard Company Foundation
The Home Depot Foundation
Houghton Mifflin Matching Gifts Program
IBM Corporation
Lincoln Financial Group Foundation
Long-Term Care Partners
Lumina Foundation for Education
Markem-Imaje Corporation
MassMutual
Merck Partership for Giving
Meredith Corporation Foundation
The Millipore Foundation
Morgan-Worcester, Inc.
Open System Resources, Inc.
Oracle Corporation
Payden & Rydel
Pfizer Foundation
Prudential Matching Gifts Program
Saint-Gobain Corporation
Shell Oil Company Foundation
Tender Corporation
Textron Matching Gift Program
Thomson Reuters
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And many thanks to those businesses who give less than $250.

The Forest Society…Where Conservation and Business Meet

For information on business memberships, please contact Susanne Kibler-Hacker at (603) 224-9945 or via email at skh@forestsociety.org.

ART EXHIBITS

These exhibits can be viewed Monday through Friday from 9 a.m. to 5 p.m. at the Conservation Center Conference Room, located at 54 Portsmouth St. in Concord, N.H. The Conference Room is also used for meetings, so please call 224-9945 before visiting to confirm that the room is open.

"Founding Fathers Redux" by Barbara Busenbark.

JANUARY – FEBRUARY

The White Mountains and Beyond

Barbara Busenbark's oil and watercolor paintings cover a wide range of subjects spanning from the White Mountains to Mount Rainer in Washington state. Barbara's mountain scenes evoke the majesty and peacefulness of rugged landscapes. This exhibit also features a sampling of her vibrant still-life paintings.

MARCH – APRIL

Stories in Wood

"Dragonfly" by Craig Altobello.

Craig Altobello uses the grain, texture and natural color of wood to create images from nature. This ancient wood inlay technique is called marquetry. He uses primarily North American woods including local species such as black locust, apple, hickory, aspen, butternut and figured maples. His colorful wood panels include birds, blossoms, botanical illustration and landscapes.

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Left: *Ambika Baraily (left) and Saraswoti Dhimal, at work with the Student Conservation Association, work on the Barlow Trail on Mt. Kearsarge.* Photo courtesy SCA.

Right: *The SCA group on Mt. Kearsarge included (top row): Saraswoti Dhimal, Ambika Baraily, Liz Titus Putnam (SCA founder), Maxwell Cooper, Dinesh Maidali, James Kontoules, (bottom row): Tyler Pitts, Devi Bhandari and Lan Tran.* Photo courtesy SCA.

Q2C Trails Grant Connects City Youth to the Outdoors

By Paula Tracy

She had never camped out before, let alone wielded an ax to cut brush all day on a mountain slope, but last summer Manchester high school student Saraswoti Dhimal did both on Mount Kearsarge in Wilmot.

She was among a group of city youths working with the Student Conservation Association to help the state with its backlog of deferred maintenance and help volunteer members of the Sunapee-Ragged-Kearsarge Greenway Coalition to improve the popular 1.8 mile Barlow Trail.

For a two-week "hitch," the youths built stone steps and drainage ditches and cleared brush to help preserve the trail for years to come.

Many in the group were refugees from other countries who found summer work in service to others through the SCA. SCA leaders Tyler Pitts and Lan Tran, who work year-round out of the SCA state headquarters at Bear Brook State Park in Allenstown, led the effort. The crew camped out at the base of the trail at Winslow State Park, swam at the end of the day in local waters and cooked over a campfire.

"The Quabbin-to-Cardigan Partnership is bringing together these city kids and longtime local trail volunteers—many of whom are retirees—to get work done on some of the best-loved trails in western New Hampshire."

— Chris Wells, the Forest Society's senior director for strategic projects and policy

The Kearsarge project and a similar one at Pillsbury State Park were made possible by grants from the new Quabbin-to-Cardigan (Q2C) Trails Grants Program administered by the Forest Society.

The kids involved in the projects not only gained great skills and experience, but also earned some money while getting leadership training, said Chris Wells, the Forest Society's senior director for strategic projects and policy.

"The Quabbin-to-Cardigan Partnership is bringing together these city kids and longtime local trail volunteers—many of whom are retirees—to get work done on some of the best-loved trails in western New Hampshire," he said.

He said the projects are early successes of the new Q2C Trails Grants Program, which will be funding up to $250,000 worth of trail projects over the next several years.

Founded nationally in 1957 and in New Hampshire in 1993, SCA is a hands-on program that benefits natural and cultural resources. It offers expense-paid internships that can lead to future work.

Amy Bassett, spokeswoman for the N.H. State Parks, said the Q2C-funded crews were among several who are making a huge difference helping keep up state park properties.

Continued on page 23

IMPROVING TRAILS, ENGAGING COMMUNITIES
New Q2C Trails Grants Program Funds First Seven Projects

Last December, an anonymous donor provided $500,000 to the Quabbin-to-Cardigan Initiative (Q2C), a partnership of private conservation groups and public agencies, coordinated by the Forest Society, committed to conserving the last, best forests that remain in the region stretching from the Quabbin Reservoir in central Massachusetts to Mt. Cardigan in west central New Hampshire. Half of the donation was to be used to sustain the partnership's successful land conservation grants program. The other half was earmarked for the creation of a new trails grants program. The goals of the trails grants program are two-fold: to build, improve and maintain hiking trails in the region, and to engage more people in the development, stewardship and use of these trails.

In its first round completed over the summer and fall, the grants program funded seven projects totaling almost $50,000. More than 16 miles of trails were created or improved, while many more were enhanced via trail maps and other supports. The next round of grants will open in the first quarter of 2014. Here's a look at the program's first seven projects:

1. Building a Trailwork Community
Sponsor: Sunapee-Ragged-Kearsarge Greenway Coalition
Award: $2,622
Miles of trail improved: 4
Summary: Q2C funded a series of outdoor workdays last summer and fall, aimed at attracting and training new volunteers to help maintain and improve the SRK Greenway, a 75-mile loop hiking trail in the Sunapee/Kearsarge area of New Hampshire.

2. Barlow Trail Repair, Winslow State Park
Sponsor: Sunapee-Ragged-Kearsarge Greenway Coalition/ Student Conservation Association
Award: $9,700
Miles of trail improved: 1.8
Summary: Q2C funded much-needed repairs on this heavily-used hiking trail up Mount Kearsarge in Winslow State Park in New Hampshire (see story).

3. Monadnock-Sunapee Greenway Repair
Sponsor: Monadnock-Sunapee Greenway Trail Club
Student Conservation Association
Award: $9,700
Miles of trail improved: 5
Summary: Q2C funded much-needed repairs on several sections of hiking trail in Pillsbury State Park that are part the Monadnock-to-Sunapee Greenway, a 48-mile trail connecting the two peaks.

4. Calhoun Forest-Porcupine Fall Loop Trail
Sponsor: Monadnock Conservancy/ Student Conservation Association
Award: $7,925
Miles of trail created: 0.5
Summary: Q2C funded the development of a new half-mile trail on the Monadnock Conservancy's Calhoun Forest, with the aim of attracting and training a network of local trail volunteers/leaders in their service area in southwest New Hampshire.

5. Trails of Chesterfield
Sponsor: Town of Chesterfield, N.H.
Award: $1,400
Summary: Q2C funded three outdoor kiosks in high-traffic areas of town, that provide town residents and visitors with a map and user information on the town's extensive hiking trail system.

6. Trail development at Distant Hill Gardens and Emerson Brook Forest
Sponsor: ACCESS (Keene, N.H.)
Miles of trail developed: 5
Award: $9,827
Summary: Q2C funded the development of trail systems at two private demonstration forests in southwest New Hampshire that encourage engagement and use by the public. At Distant Hill Gardens in Alstead, Q2C funded the layout and construction of trails and signage throughout the property that lead visitors through a self-guided tour of natural communities and native plants. At Emerson Brook Forest in Gilsum, Q2C funded construction of wheelchair accessible trails with self-guided nature stops. Both projects were completed by youth and adults who work with ACCESS, a Keene-based social services agency.

7. Trail Tools, Millers/Baquag River Trail Map and Bridge
Sponsor: North Quabbin Trails Alliance (Athol, Mass.)
Award: $7,500
Summary: Q2C awarded funding to the fledgling North Quabbin Trails Alliance (NQTA) for three discrete projects. NQTA makes a concerted effort to engage a broad cross-section of people in the development and use of their trails, including local seniors and disabled veterans.

To learn more about the Q2C Partnership, see the story "Saving the Best of the Highest" in the spring issue of Forest Notes, available online at forestsociety.org/newsroom.

Continued from page 21

"We hugely appreciate the work they do," she said. "It's vital because we are very low staffed, particularly in the spring."

Teresa McNamee, program director of the NH Corps of SCA in Concord, said the Mt. Kearsarge group had a number of important visitors during their hitch, including Gov. Maggie Hassan, who climbed up to see the kids to congratulate them and offer encouragement.

She said through hard physical effort and daily living in a group, the students develop teamwork and leadership skills which will serve them throughout their lives.

To learn more about the Q2C Partnership, go to Q2C.org. For more information on SCA in New Hampshire visit www.thesca.org/nh.

This article first appeared on Paula Tracy's Escape Outside page on www.WMUR.com. (www.wmur.com/escape-outside)

Creative Conservation

How generous property owners are turning assets into protected acres

A deep passion. An extraordinary gift.

Some landowners know the real value of land lies in its natural worth: soils to grow food; trees to build useful items, places to walk where hands can join, and where the sight of a turtle or the sound of a bird's song may be the highlight of the day. When a property enhances a family's life, there is a responsibility to pass on those benefits.

The gift of land, or perhaps a conservation easement to the Forest Society or other responsible land trust, are proven ways of ensuring future generations the opportunity to benefit from a property kept whole. But there are other creative ways to forward the cause of conservation, such as our Assets to Acres Program. Assets to Acres is a way for property owners to donate real estate that can be sold to generate funds to support the ongoing stewardship of the Forest Society's conservation lands and help purchase more conservation easements and land.

Gordon and Barbara Russell of New Boston are pioneers of the Assets to Acres Program for the Forest Society. The Russells own a contemporary home surrounded by a deep forest and 100-acre wetland. They protected their land through a conservation easement with the Piscataquog Land Conservancy, but they wanted their house to benefit conservation as well. So earlier this year, they arranged for the Forest Society to acquire their house and 36 acres of their land. Similar to what is known as a 'life estate' where someone donates land and a residence while retaining the right to live there for the remainder of their lives, the Russells retained a 10-year lease on the house. They continue to live there, manage the property and pay the expenses, just as they did before. But when they leave, the house and land can be sold and the net proceeds will benefit the Forest Society's conservation programs. In effect, the house and land have become part of the investment portfolio of the Forest Society.

When Barbara and Gordon Russell wanted their New Boston home to benefit conservation, they turned to the Assets for Acres Program. Photo by Kimberly Peck.

Such generosity is in keeping with the Russells' strong conservation ethic that led them to create the Russell Farm and Forests Foundation to help land trusts secure conservation easements and purchase land in the Russells' home watershed. Through their generous grants, they have helped to protect thousands of acres in collaboration with the Forest Society, other land trusts and local communities.

Assets to Acres projects aren't all like the Russells'. Gifts are customized to suit the needs of the owner while providing benefits to the Forest Society. Recently a generous couple from Massachusetts with ties to New Hampshire donated their share of ownership in a condominium at a popular White Mountain ski resort. The Forest Society will put the condo on the market with the goal of selling it quickly and dedicating the net proceeds to our Assets to Acres program.

The donation of a house, condo, cottage, small woodlot or country estate can be a conservation asset while providing a substantial tax benefit. If you, or someone you know would like more information on how to turn a real estate 'asset' into conservation 'acres', please contact Susanne Kibler Hacker at 224-9945.

Learn more about
Assets to Acres on our website:
www.forestsociety.org
(click the Land Conservation tab)

Landowner Gretchen Abendschein is selling the restored 1793 home and artist's studio on 220 acres in Acworth but has made sure the land will remain intact by donating a conservation easement on it to the Forest Society. From the house, one can see Mt. Monadnock beyond the forests and farmed fields.
Photos courtesy Gretchen Abendschein.

Leaving the Land

Donating easement in husband's memory was something Acworth landowner felt had to be done first

The hard decision for Gretchen Abendschein was to put the rapturously beautiful 220-acre farm she loved in Acworth up for sale.

The easy decision was to refuse the first serious offer she received.

She was in the midst of donating a conservation easement on the land to the Forest Society, and the potential buyer made the offer contingent upon her not signing the easement deed.

"I told the realtor to tell them to go away," Abendschein said.

What those buyers didn't know was that for Abendschein, the easement is a document of devotion, priceless as a love letter kept in a top drawer for a lifetime. It represents the wishes of her late husband, Jerry Pfohl, who died in 2010, and the many conversations and plans the couple made for protecting the land they enjoyed together for nearly three decades while walking in the woods, gazing at the night sky, watching wildlife and sitting by the pond. "We wanted to make sure a place this gorgeous wouldn't go to developers," Abendschein said.

Pfohl, an artist, bought the property in 1966 and before moving there fulltime in the late 70s used it as a retreat, visiting from Manhattan, N.Y., to soak up the natural beauty, peace and quiet.

Jerry Pfohl and Gretchen Abendschein frequently walked their property's trails, and Jerry often painted landscapes from vantage spots along them.

"This place replenished his soul, his psyche, his creative life," Abendschein said.

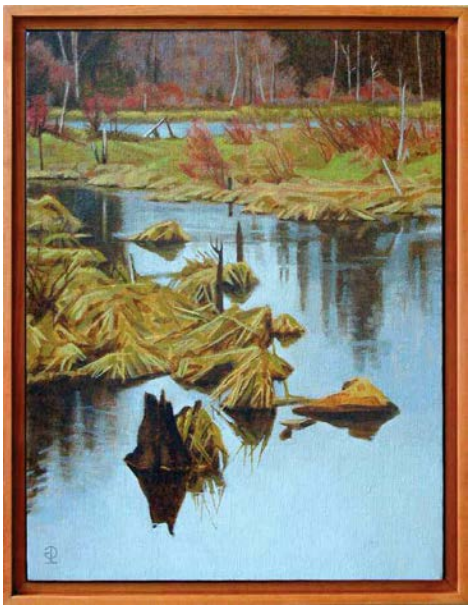
He also used his artist's vision to beautify the man-made parts of the property. He restored the 1793 house, built as part of the first settlement of the town, got rid of old rusted farm equipment, buried power lines, shoveled out the barn with friends and transformed it into a studio.

Abendschein, a fellow artist who also works in choreography, met Pfohl and the farm in 1980 when she arrived for a summer art workshop he was offering. "I came up here, my feet hit the ground and the thought came into my mind: I don't think I ever want to leave this place.' "And it just so happened that we fell madly in love with each other. We were very lucky."

Pfohl, who worked in many mediums and sold his work through galleries in Vermont and New Hampshire, continued to be inspired by the land throughout his life. Most of his New England landscape scenes were painted or drawn from spots along the forest trails or looking out his studio's windows.

"The land itself holds such a deep sense of tranquility. It's a very rejuvenating property," Abendschein said.

Mostly forested, about 50 of the 206 acres consist of prime agricultural soils. A rolling hayfield stretches out beyond the house and up a gentle slope to meet the sky.



A wetlands scene painted by Jerry Pfohl at the Acworth property. He bought the land in 1966 as a retreat and later moved to live there fulltime.

When no one was looking, nature took back the land

Donation protects historic quarry site in Mason

Two things are startling about the newly conserved land around an abandoned granite quarry in the little southern New Hampshire town of Mason. One is the odd assortment of engraved granite blocks that were obviously once intended for greatness but didn't quite make the grade and got tossed aside. The other is the silence. Even a hawk swoops to the forest floor to snatch a wriggling meal without a sound.

"It's like a little wild valley, this whole center part of Mason, it's off the beaten track, quiet, out of the way," said Liz Fletcher, a member of the Mason Conservation Commission.

The quiet is only startling if you know the story of this place's former life, because that former life was noisy.

During the quarry's heyday from 1867 to 1893, Alexander McDonald of Cambridge, Mass., put up to 200 men to work extracting granite blocks from an ever-deepening hole in the ground. Many of the workers lived in a humming little village around the quarry that boasted houses, a blacksmith shop, the company store and even a post office—all now long gone. The railroad connected it all. But the din is what really defined the place, as described in the bicentennial history of Mason published in 1968 by the Mason Historical Society:

The puff-chugging of the locomotive and the clanging of its bell must have been a rich addition to the resounding commotion in the quarry itself: the machinery turning, the pump pumping, heavy chains and hooks clanking, cables screeching through the giant pulleys: the noise of the enormous traveling crane accompanied by the whacking of chisels and the thudding of mallets, the din of the huge polishing machine and the massive planers, the lusty shouts of the workmen and the big steam whistle on the tall brick chimney blowing morning, noon and close-of-day loud enough to be heard all over town.

Mason granite built the Metropolitan Museum of Art, churches, government buildings, monuments and memorials all over the country, such as the memorial to Union soldiers and sailors in Salisbury, N.C., adorned with an eagle with the broken shackles of slavery in its talons. Mason granite was known for the fine texture of the stone as well as the gifted workmanship of the craftsmen who engraved it with swirls of ribbon, tree boughs, flowers, animals and, of course, dates and names.

George and Catherine Schwenk are both active in the Mason community and want the Mason quarry land to be enjoyed as a town forest.

Despite its successes, the McDonald quarry went bankrupt and later changed hands, then was abandoned altogether. Fires destroyed some of the buildings; the weather and time finished off the rest.

When no one was really looking, nature took back the land. Mason's bicentennial book puts it this way:

Once so filled with life and activity, the houses of the little village began to sag, their clapboards assuming fantastic curvatures. New growth sprang up where all had been cleared. The heavy plaster on the laths gradually pulled walls inward; trees growing up from the cellars through the roofs and windows pushed walls outward. Brick by brick the once warm chimneys dropped down.

Today the closest thing you might hear to the quarry's steam whistle is the shriek

"This has been a working farm, without cessation, since 1793," Abendschein said. "That's another reason we didn't want this to be developed. Once you build on prime agricultural land, you don't get it back. That's it."

Her neighbor, John Luther, the last dairy farmer in the town, now hays the fields just as his father did before him. Members of the community are welcome to use the trails that meander through the woods, and horseback riders, hikers, hunters and cross-country skiers have all benefited from the land remaining open.

With hilltop views all the way to Mt. Monadnock, the property without an easement would be vulnerable to being chopped up into pricey housing lots. Though Abendschein made the difficult decision to put the property up for sale so she could move to a smaller place in Vermont, she has ensured that the land will remain as she and Pfohl knew and loved it.

"I feel very fortunate that I was able to spend 33 years of my life in such a spectacular location that fed me with its beauty every day," Abendschein said. "Before leaving, I wanted to acknowledge my gratitude by conserving the land that gave so much to us and held our love for so many years."

Left: *Bob Larochelle, a member of the Mason Conservation Commission, stops along the former rail bed leading to the quarry to point out one of the relics at the site. Cast-offs that didn't meet quality standards were tossed aside back when the quarry was producing monuments and building materials that were shipped around the country. Mason granite was valued for its fine-grained texture.*

Right: *Now a peaceful swimming hole for locals, the quarry was once the industrial hub of Mason, complete with a surrounding village of worker's houses, a blacksmith shop, a post office and a company store.*
Photos by Brenda Charpentier.

of a local teenager jumping from the ledge above the old quarry pit into the water that now fills it. You might also hear the panting of happy dogs walking with their owners and the hoof thuds of horses on rides through the quarry land that connects to a vast network of former railroad trails.

All of this sounds great to those who have worked to conserve the 110 acres of land around the old quarry. The project started when the most recent owners, George Schwenk and Dick Morley of Mason Quarry LLC, donated a conservation easement on the land to the Forest Society and then gave the land itself to the town of Mason to use as a town forest. Schwenk and Morley, angel investors who have dealt mostly with technology companies, bought the property in 1974, around the time Schwenk moved to Mason.

"We bought it because we thought somebody ought to protect it," Schwenk said. A former Boy Scout troop leader, Schwenk used the quarry land for Scout camping trips early on and over the years left it open to the community for recreation.

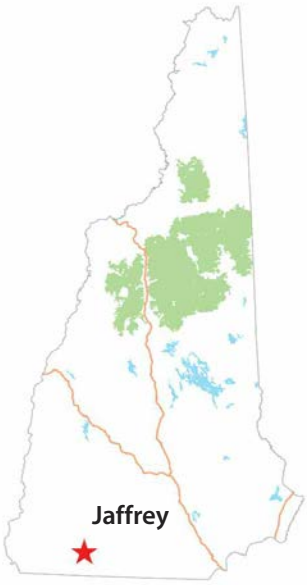
Protecting the land with an easement and gifting it to the town will make sure the area remains protected as a cultural treasure unique to Mason.

"It's local history come alive," said Catherine Schwenk, George's wife, who serves on the local historical society. Catherine is also active in the New England Wildflower Society, which has surveyed the land and is in the process of reporting on uncommon flora growing there.

"We'd like to see the people use the land, to enjoy it as it is and to understand the history of it. We want to conserve it for the future," she said.

Fletcher said the conservation of the land fits in well with the town's plans to conserve another 120 acres nearby, also through a conservation easement with the Forest Society, further preserving the network of trails in the area and keeping intact what local residents are used to—an accessible spot for snowmobiling, horseback riding, swimming and other low-impact recreation. She said ATVs will not be allowed, and the town will establish ordinances making the area open to only Mason residents so that the quarry swimming hole doesn't become too much of a magnet and it stays, for the most part, quiet.

"Most people want it to stay like it is, like they've always known it," Fletcher said.



Norma Sands and her late husband Harold Sands enjoyed the outdoors lifestyle that came with living on a peaceful certified Tree Farm near Mt. Monadnock in Jaffrey. Photo by Brian Hotz.

"He Would Split, and I Would Stack"

Often the morning sunlight sparkling on the dew and gilding the birch trees outside Norma Sands' kitchen window in Jaffrey is enough to make her tarry at the kitchen sink far longer than she needs to. Her home of 46 years is nestled against Mt. Monadnock's eastern slope, where the glory of being surrounded by thousands of acres of open woodlands lightens even mundane daily tasks.

"It's absolutely beautiful. I've been a half hour at my kitchen sink this morning just looking out," Sands said during a visit to her home.

Sands' appreciation was shared by her husband, Harold, who died four years ago. The outdoors lifestyle they enjoyed with their three children included hiking, stewarding the 90 acres as a certified Tree Farm, hunting and cutting firewood for the ever-hungry woodstove.

"We used to do it together, my husband and I. He would split, and I would stack," Sands said.

Whatever the activity, Mt. Monadnock stood as both backdrop and destination, only a walk out the door away.

"The mountain is important to everybody in Jaffrey. We just think of it as our mountain," Sands said.

Though she still finds great joy in the land, Norma made the difficult decision last summer to prepare to sell her home, downsize and simplify. But first she made sure the land she and her husband shared their lives on would remain intact by donating a conservation easement on it to the Forest Society, which she and her husband had long supported as members.

Whatever the activity, Mt. Monadnock stood as both backdrop and destination, only a walk out the door away.

"We both knew we didn't want it to fall into the hands of someone who would clear it and develop it," Sands said. "I just hate to see New Hampshire eroded away with houses and paving. You know, that's not what New Hampshire's all about."

The property is next to the Forest Society's 4,400-acre Mt. Monadnock Reservation and the State's Monadnock State Park. Conserving it adds a protective buffer to the Birchtoft Trail, one of the trails to the summit, and fills in one more puzzle piece in the conserved Monadnock landscape. This is the fourth Forest Society project on the slopes of Mt. Monadnock in the last two years, and together they add another 550 acres of conserved land around the mountain.

Mt. Monadnock is a priority of the Forest Society, a focus area of the Quabbin to Cardigan Conservation Initiative and highlighted as a conservation priority for the Town of Jaffrey.

Thankfully, all who treasure Mt. Monadnock have a friend in Norma Sands, whose priorities during a time of transition have ensured that the natural treasures she has held dear will remain intact to be enjoyed by others.

"I'm glad to know that this beauty is going to be here no matter who owns it," Sands said. "If it's cared for properly, it will be here forever."

WITH SPECIAL THANKS TO A COMMITTED PARTNER

The Russell Farm and Forest Conservation Foundation has been integral to the success of many Forest Society conservation projects. The Forest Society is grateful to the foundation for its help covering project expenses on the easements in Acworth, Mason and Henniker that are written of in this section of Forest Notes.

"I Wouldn't Have Sold It Without the Conservation Easement"

With frontage on Long Pond, old fields and wooded uplands, the north Henniker property Lou and Peggy Gagnon bought in 1998 and later built a home on was already a wildlife magnet. Longtime members of the Forest Society and nature lovers, the Gagnons set about making their 62 acres of land even more attractive to animals by releasing apple and mast-bearing trees, reopening old fields and planting fruit trees that would provide more food to more critters. When a trail cam captured shots of a bobcat, Lou Gagnon was delighted but not all that surprised.

"There's pretty much every type of wildlife there—moose, bear, deer, coyotes, turkeys. It had all the things wildlife needed; it just needed a little help."

Their appreciation for the specialness of the land, which they also used to train bird dogs, prompted plans to conserve it someday. "We always talked about it and said we should put this into conservation land. You know—we talk and talk about things and don't do them," Gagnon said.

But then Peggy was diagnosed with cancer, and she passed away in 2011.

"After that happened, I said now I'm going to do it," Gagnon said.

In honor of Peggy's love for the land and with a desire to give something back, Lou started the process of donating a conservation easement on it to the Forest Society and completed it last summer.

Lou Gagnon trained hunting dogs and planted wildlife-attracting trees and shrubs on the property he and his late wife Peggy owned in Henniker. Photo by Brian Hotz.

"There's not enough open land as it is, and it's disappearing at an alarming rate. It's my little gift back to nature, I guess," Gagnon said.

The property is in the southern Mink Hills, a focus area for the Forest Society as well as the surrounding towns of Warner, Henniker and Bradford. In addition to providing a buffer for Long Pond, the easement also protects the scenic value of undeveloped road frontage in Henniker and is located close to other conserved lands including the Forest Society's Foster's Conservancy and the Bill Glavin Memorial Forest.

Gagnon said completing the easement was something he had to do before selling the property, which he accomplished last fall in preparation to be married to a new special someone and move to live in Stafford.

"It sold in eight days. The people who bought it liked nature as well. They felt the restrictions of the conservation easement were things they could live with. I felt very, very fortunate. I wouldn't have sold it without the conservation easement. It meant that much to me."

42 More Acres of Water Supply Protection in Barrington

The Town of Barrington has donated a conservation easement to the Forest Society on a 42-acre addition to the town's 1,378-acre Samuel A. Tamposi Water Supply Reserve, on which the Forest Society also holds an easement.

This project is part of a continued effort to protect the quality of ground and surface water in the headwater area of the Oyster and Bellamy rivers and the Bellamy Reservoir. The town originally purchased and protected the reserve in 2001 with the assistance of a N.H. Dept. of Environmental Services Water Supply Protection grant.

"Conservation of this parcel is a key link in the formation of an extensive wildlife corridor in the southern part of Barrington," said John Wallace, chair of the Barrington Conservation Commission. "It has frontage on the Bellamy River and connects two previously conserved areas."

In addition to money from the town's conservation fund, funding for the acquisition and conservation of this parcel came from the City of Portsmouth, the Town of Madbury, the Bafflin Foundation, and the Fields Pond Foundation.

The Samuel A Tamposi Water Supply Reserve is open to the public for passive recreational activities and hunting. For more information see the Barrington Conservation Commission's web site at www.barringtonconcom.org.

Red Light, Green Light: Which New Energy Projects Should N.H. Approve?

The SEC makes these decisions, and its charter needs renovation

By Will Abbott

All new major energy facility projects present trade-offs between the need for energy and the natural environment. In New Hampshire we have created the Site Evaluation Committee (in RSA 162-H) to help maintain a balance between the two in the public interest. The SEC sits as judge and jury as a one-stop shopping mall for all permits a major energy facility requires in order to be built in the state.

As energy markets and consumer demands for energy change, the regulatory process that permits new energy facilities must adapt. As we move from a highly regulated electricity marketplace to a less regulated marketplace, the law establishing the SEC needs some major renovations to assure that the SEC effectively meets its charge. Here are four of the most critical renovations we believe the 2014 legislature should address:

1. Restore a "needs determination" provision that used to be in the statute but was removed by successful lobbying of energy companies in 1998.
Essentially current law gives an applicant seeking an SEC permit a complete pass on the issue of whether the project is needed. If the less regulated electricity marketplace can finance the project, the law all but says the SEC should presume the project is needed. This is not the way to "maintain a balance between the environment and the need for new energy facilities" as the current purpose statement of the SEC statute reads. The SEC should be required to make an independent determination of need for each project that applies for an SEC permit BEFORE deciding whether the applicant meets the other requirements of the law for a permit.

2. Change the size and membership of the SEC.
Fifteen state agency commissioners and directors are tasked with serving on the SEC, often with a subset of the full group (a minimum of seven) sitting in review of an individual application. These agency leaders simply do not have the time to allocate from their primary duties to take on the SEC task. Furthermore, conflicts arise when an individual agency has a legal obligation to defend a particular interest and its commissioner must remain neutral because of his or her service on the SEC. Clearly the SEC must rely on state agencies for information to inform its decisions; however, SEC decisions could be made by selecting five well equipped individuals from the public to do what the law requires of seven to 15 state agency heads.

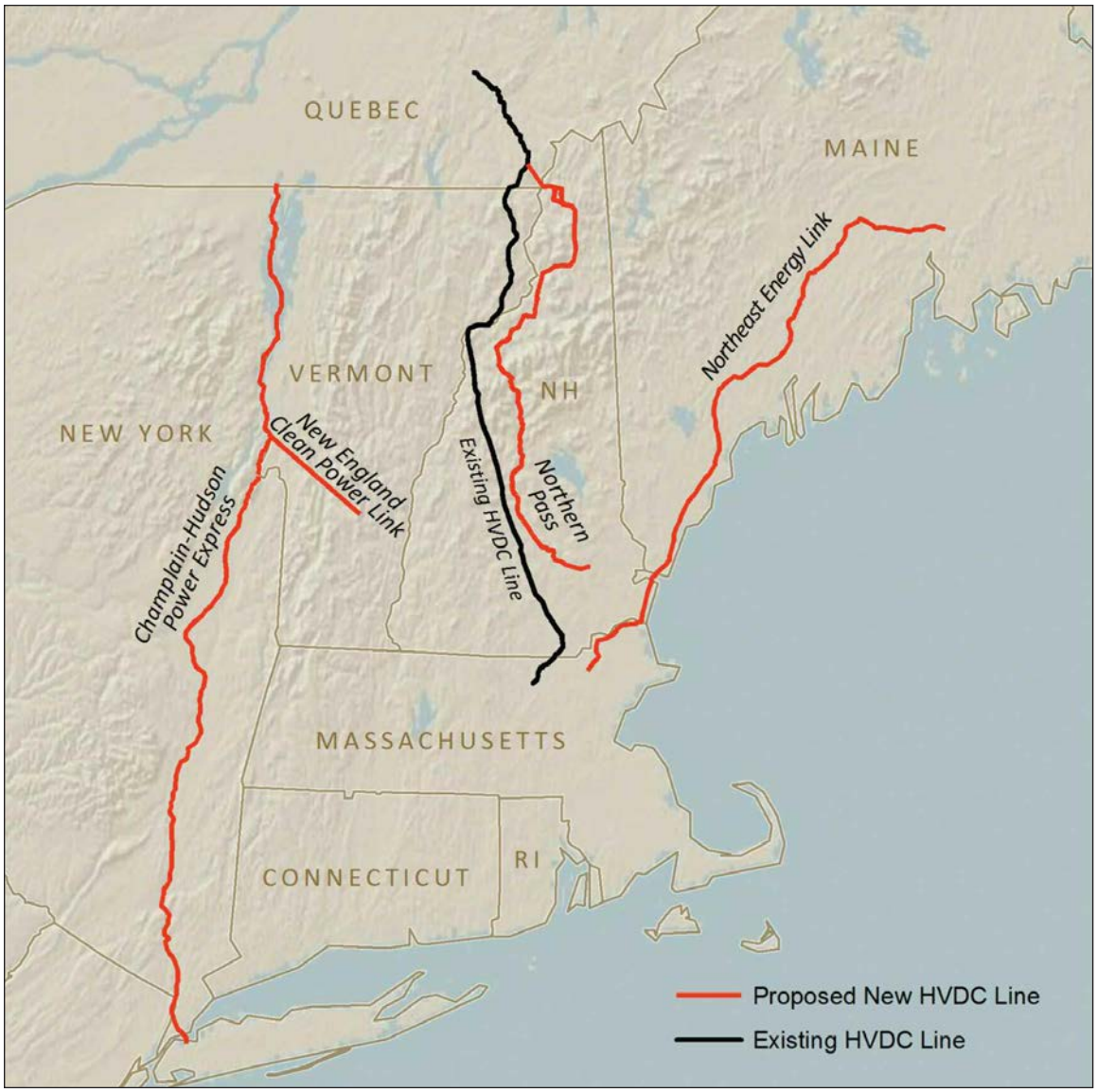
3. Provide the SEC with resources to do its work.
The SEC operates today without any staff or other financial resources to do the needed review. The applicant pays for studies ordered by the SEC, but the taxpayers pay for the time of the state agency heads who deliberate on applications. There may be a more fair way to allocate application review costs between the taxpayer and the applicant, but the SEC must have resources sufficient to the task to assure that it makes well informed decisions. Further, many SEC permits awarded require on-going monitoring to assure that conditions imposed by an SEC permit are adhered to. If there are no financial resources available to pay for this monitoring work, how is the public assured that this work will get done?

4. Assure that municipalities directly or indirectly impacted by a proposed project have a seat at the table where permitting decisions are made.
The SEC under current law trumps any and all local zoning ordinances; yet, there is no process in place to assure that municipalities have a direct voice in the siting of a new energy facility within their region. The process needs to be re-aligned to provide municipalities a more direct say in the decision-making at the SEC on individual applications that affect municipalities, their residents and their taxpayers.

The current law has its strong points. The idea of one-stop shopping makes good sense for the permitting of new energy facilities, as long as the shopping experience addresses all public needs. The idea of an adjudicatory process for the SEC application review is healthy, as it assures that the process is fair, open and predictable for the public and the applicant. The existing criteria on which the SEC must base its findings for a final decision provide a good beginning framework.

To assure that the current SEC law properly meets present and future public needs of balancing the environment with needed energy facilities, the 2014 Legislature should review and renovate the SEC process as rigorously as it would have the SEC itself review new applications for new or expanded energy facilities in the state.

Will Abbott is vice president of policy and reservation stewardship at the Forest Society.



In light of the three other transmission line proposals that use underground technology, Northern Pass's proposal to use obsolete overhead lines for 180 of its 187-mile preferred route looks increasingly archaic. The existing National Grid transmission line also shown above is an overhead line built in the 1980s. It's currently underutilized. Map by Neatline Associates.

Northern Pass Overhead Proposal Looks Increasingly Obsolete

By Jack Savage

New Vermont Proposal Would Go Underwater and Underground

As Northern Pass continues to insist that burial of private transmission lines between Quebec and New England is not viable, another transmission developer announced yet another proposal to do exactly that.

In late October 2013, TDI New England proposed building a 1,000-megawatt (MW) transmission line underneath Lake Champlain and then underground to a converter station in Ludlow, Vt., where it would connect into the New England power grid. The "New England Clean Power Link", as the developers dubbed the proposal, would cover 150 miles, cost an estimated $1.2 billion to construct, and would be privately financed through the Blackstone Group.

Northern Pass, by contrast, proposes to build 180 miles of overhead line (plus seven miles underground) that would have a

1,200 MW capacity at a projected cost of $1.4 billion financed by Hydro-Quebec.

TDI is well on its way to burying another 1000 MW transmission line to service the New York grid that would also go underneath Lake Champlain. The Champlain Hudson Power Express, so called, will run 330 miles at a cost of $2.2 billion.

All three proposals are looking to enable Hydro-Quebec to export electricity to the northeast U.S. In New York, the International Brotherhood of Electrical Workers (IBEW) opposed the Power Express project over concerns that it would compete unfairly with domestic power producers. In New Hampshire, the IBEW has been a proponent of Northern Pass, hoping for transmission construction jobs while arguing that its members do not have the expertise to build an underground line.

In Maine, National Grid has proposed the "Northeast Energy Link", a 230-mile transmission line that would bring up to 1,100 MW of power from northern Maine (wind energy) and eastern Canada to southern New England. Project developers are proposing burying the line under transportation corridors at an approximate cost of $2 billion.

Congressional Delegation Wants Alternatives Made Public

The four members of New Hampshire's Congressional Delegation: Senators Jeanne Shaheen (D) and Kelly Ayotte (R) plus Congresswomen Carol Shea-Porter (D) and Ann McLane Kuster (D), sent a letter to the federal Department of Energy renewing their request that the DOE "provide the public with a preliminary report detailing which alternative routes will be studied" as part of the Northern Pass Environmental Impact Study (EIS), required for the project's Presidential Permit.

Many of the thousands of public comments submitted to the DOE as part of the scoping process for the EIS focused on ensuring that alternative routes, such as a line buried along public transportation corridors, be studied. The process anticipates that the applicant's preferred route will be contrasted with alternatives that may have less damaging impact.

Given the public interest in the viability of burying transmission lines (among other alternatives), many feel that the DOE should let the public know which alternatives they are including as part of the EIS *before* completing and issuing a draft of the study. If and when the Northern Pass project applies to the state Site Evaluation Committee (SEC), which is the only body authorized to permit such a proposal in New Hampshire, the EIS would inform the SEC's deliberations and decision-making—including consideration of viable alternatives. An incomplete EIS would not serve the public interest.

Will They or Won't They?

In amongst the ongoing discussion about the Northern Pass proposal, the cat-and-mouse game between stock analysts and Northeast Utilities' executives has been interesting to listen in on. (Northern Pass is a partnership involving Northeast Utilities, which owns Public Service of New Hampshire, and government-owned Hydro-Quebec.) During quarterly earnings calls, NU execs try to put the best face possible on the status of the Northern Pass project, while stock analysts politely question to what extent the information they're getting is based in reality. In general, those stock analysts are publicly deferential.

In that context, analysts Rob Rains and Tim VandenBerg of Washington Analysis caused something of a stir when they issued an opinion in late fall cautioning investors that the Northern Pass project "likely faces significant delays and cost increases."

"Regulatory hurdles and substantial political headwinds will likely prevent the project from going into service before 2018, at the earliest with delays until 2019-2020 very possible as well," Rains and VandenBerg wrote. "We simply disagree with Northeast Utilities' past statement that it expects Northern Pass to be in service in 2017 and that it will receive state siting approval in 2015.

"We also expect the firm to succumb to overwhelming political pressure from Gov. Maggie Hassan (D), Sen. Kelly Ayotte (R), and state lawmakers calling for them to bury more of the project underground in the northernmost portion of the state, beginning in Pittsburg and traveling through Coos County...Political opposition is strong and bipartisan and we think the company will ultimately need to bury this stretch of the line in order to appease residents and move the project forward."

"Political opposition is strong and bipartisan, and we think the company will ultimately need to bury this stretch of the line in order to appease residents and move the project forward."

— Washington Analysis

The analysts also noted that the Department of Energy (DOE, which is commissioning an Environmental Impact Study required for the project's Presidential Permit) has demonstrated a heightened sensitivity to the politics of the Northern Pass proposal. It's anticipated that the draft EIS will not be published before late 2014, triggering a comment period and potential public hearings. They noted that "the prevailing feedback was *negative*, increasing the uncertainty over the project's future."

Also fueling uncertainty in the analysts' minds is the fact that Northern Pass, as a non-reliability project (there is no determination that the project is needed "to keep the lights on" in New England) cannot petition for the use of eminent domain. The Forest Society, in particular, maintains that Northern Pass does not have legal access to its preferred route and cannot use eminent domain to acquire such access.

First Fire in our Forest

By George F. Frame, CF

Several years ago we harvested white pine, beech and other hardwoods from our 334-acre Harmon Preserve Forest in Freedom. Our goal was to start the process of restoring the globally rare *Pitch pine-scrub oak woodlands* natural community. When we acquired the forest in the late 1990s, we agreed to the stipulation that this rare ecosystem be restored and maintained. The lack of natural disturbances, most notably fire, had impacted the pitch pine's ability to regenerate, and the invasion of other species had caused a decline in the growth and quality of the pine and associated scrub oak.

It took some time to understand the factors affecting this unique forest, and more yet to determine that the most effective course of action was to remove the competing vegetation and then burn the area to prepare the site for pitch pine regeneration. The cones of pitch pine will only open after a brief period of heat. Additionally, the ground under the trees needs to be relatively clear of brush, allowing the seed a duff-free place to germinate. Fire accomplishes both tasks very well when properly applied and managed.

The Forest Society received the last grant for the use of prescribed fire provided by the Natural Resource Conservation Service (NRCS) in 2006, but planning and assessments began several years earlier with wildlife and forest inventories. Without fire experts on staff, the Forest Society looked to The Nature Conservancy to provide direction for the development of burn plans, the layout of fire breaks and trails, and to guide the assessment of available fuels which carry the fire as it does its job.

As the planning for our burn progressed, another effort was being undertaken at the state level by a group of agencies committed to the use of prescribed fire called the New Hampshire Prescribed Fire Council1. In 2013 the Council developed a Memorandum of Understanding (MOU) that cleared the way for participating agencies and organizations to share manpower and resources when using fire as a tool.

A low, fast fire prepares the seed bed for pitch pine regeneration at the Harmon Preserve in Freedom. Photo by Jeff Lougee.

With fire responsibilities contracted to The Nature Conservancy, the Forest Society became the first beneficiary of the power of the new MOU. On Sept. 27, a multi-agency crew burned 58 acres at the Harmon Preserve. Starting early in the morning and monitoring weather and humidity as they went, the crew spent the day applying fire with torches dripping a mix of gasoline and diesel fuel. The full effectiveness of the burn remains to be measured.

This action begins what we hope will be a continual cycle of burning, assessment, preparing for the next burn, burning, assessment, preparing, etc. The expense of this project is large, and to be frank we aren't sure where the future dollars will come from; but the benefits to the natural community, to the firefighters provided with local learning opportunities, and to the cooperative efforts of like-thinking agencies and organizations will accrue long into the future.

Representatives from thirteen organizations make up the NHPFC including:

N.H. Army National Guard

N.H. Dept. of Resources and Economic Development Division of Forest and Lands

N.H. Dept. of Environmental Services

N.H. Fire Academy

N.H. Fish and Game Department

Local Fire Departments

Society for the Protection of N.H. Forests

The Nature Conservancy New Hampshire Chapter

University of New Hampshire

University of New Hampshire Cooperative Extension

U.S. Fish and Wildlife Service

U.S. Air Force

U.S. Forest Service White Mountain National Forest

George Frame is the Senior Director of Forestry at the Forest Society. He can be reached at gframe@forestsociety.org.

Tree Larder

Beneath the bark lies a hidden, tasty world

By Dave Anderson

On bitter-cold January nights, water trapped beneath tree bark expands and freezes with an audible "pop!" Sub-zero temperatures rupture tiny tubes comprising the "zylem" layer which is arranged like bundles of microscopic drinking straws, the innermost ring of tubes in the sapwood. That audible pop of freeze-cracking is a cruel sound of a mid-winter's night in a frozen forest.

While the trees stand stoically against the cold, they provide a cozy refuge—critical winter habitat for the insects, birds and mammals best adapted to life in northern forests.

Each tree species has distinctive bark designed to protect tender sapwood from attack by insects, fungi and injuries. Bark color, texture and thickness play an important role in tree adaptation to winter freeze and thaw cycles. Long, loose plates of thick bark distinguish mature pine, yellow birch, sugar maple and aptly-named shag bark hickory. Black cherry and spruce feature small scales—like burnt potato chips. The thin light gray bark of younger sugar maple, red maple and beech reflect rather than absorb warming rays of sun and provide a slick, Teflon-like surface inhibiting the attachment of mosses and lichens. Birch and aspen are wrapped in a tight envelope of protective chalky white or smooth green photosynthetic bark.

The bark of young saplings and pole-sized trees is smooth and tight. The craggy, deeply-furrowed bark of old trees provides a more fully-stocked insect pantry. As trees expand outward, their once-clear log faces develop characteristic fine lines and wrinkles (to say nothing of crow's feet) that deepen to form distinctive ridges, deep furrows or shaggy plates quite unlike the boles of younger trees of the same species. You can make your own analogies.

Red-bellied woodpeckers forage for beetle and moth larvae beneath the bark, using their long, sticky tongues to probe into the cracks chiseled with their sharp beaks. Photo by Charles Brutlag/Dreamstime.com.

With the addition of mosses and lichens over time, the wide variety of bark characteristics provides both food and shelter essential to winter wildlife survival. Beneath loose plates of bark lies a hidden world of hibernating fireflies, spiders, beetles, ants and moths. Inside cocoons, pupae rest in suspended animation while inside tiny frozen eggs, developing larvae await the warming pulse of spring.

Birds and small mammals expertly probe beneath tree bark, gleaning tasty, protein-rich and fat-rich insects. English muffins are no match for the myriad

White-breasted nuthatches hunt for moth pupae and larvae beneath the winter bark. They also stash nuts and seeds snatched from feeders into bark crevices. Nuthatches get their name from poking seeds and nuts into tree bark and then battering them with their beaks until the tender inside parts "hatch" out of their shells. Photo by Charles Brutlag/Dreamstime.com.

"nooks and crannies" packed with nutritious overwintering insects in every acre of mature New Hampshire forest. Resident winter birds including chickadees, white-breasted and red-breasted nuthatches, tufted titmice, blue jays, gray jays, red-bellied, downy and hairy woodpeckers spend the better part of every winter day probing bark to glean insects, eggs or bits of lichen.

In autumn, the same birds along with mice also cache tiny wind-blown seeds of birch and aspen and larger maple seeds, beechnuts and even oak acorns in bark crevices above the snow. A treasury of calorie-rich, black oil sunflower seeds, millet seeds and thistle seeds from local birdfeeders is hoarded and transported to restock the hidden tree-bark larder against the prospect of leaner days or empty feeders.

But tree trunks emerging from deep snow also provide a different kind of winter food pantry and shelter for small mammals. When the sun's rays strengthen in February and March, south-facing sides of trees warm up daily, melting snow away from the bark to create "melt-wells." These little moats catch blowing bits of birch or conifer seeds and tumbleweeds of tiny dislodged lichens and reveal exposed green patches of moss or ferns. Mouse, vole and squirrel tracks in the snow link to the food supplies in melt wells and connect beneath the snow to their relative shelter. The small mammals on the open snowpack are pitilessly exposed as if scurrying across a white tablecloth set for hungry owls or prowling coyotes.

The next time you walk in winter woods, pay attention to mammal tracks leading to melt wells and look closely at birds probing loose bark. You will likely discover that trees' protective bark is better than winter's cruelest bite!

Naturalist Dave Anderson is director of education for the Society for the Protection of New Hampshire Forests. He can be reached via e-mail at danderson@forestsociety.org.

Consulting Foresters

The Forest Society encourages landowners to consult with a licensed forester before undertaking land management activities. The following are paid advertisers.

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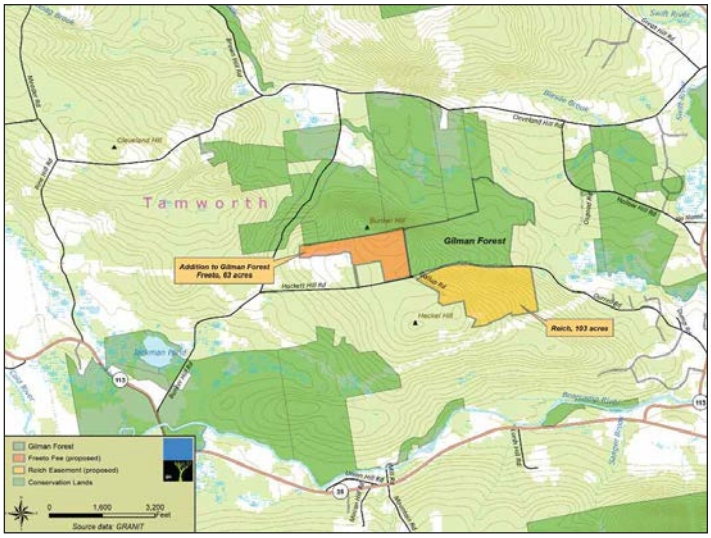
The Gilman Forest ridgeline can be seen from Tamworth's Cleveland Hill Road.



Help Us Expand WOW: "Whites-to-Ossipee Wildlife Connectivity"

In 2010, the Forest Society and the Tamworth Conservation Commission celebrated a successful collaboration that created the 142-acre Gilman Forest in Tamworth. We're excited to be working with the Tamworth Conservation Commission again, this time to enlarge the Gilman Forest by buying 63 acres at a bargain sale rate and to conserve an adjacent 103-acre property through a conservation easement. This is a wonderful opportunity to add a total of 166 acres of conserved land to a vital corridor linking the unfragmented forests of the Sandwich Range and the Ossipee Mountains.

We need your help to raise $155,000 by Feb. 28 to complete both projects.

Why is this land so important?

Wildlife habitat

The Gilman Forest is at the center of 900 contiguous acres of conserved land in a region identified as some of the highest priority wildlife habitat in central New Hampshire. The Bearcamp Trackers have explored these forests and found signs of many wide-ranging species such as moose, bear and bobcat. In a warming world, the north-south connectivity provided by Gilman Forest and adjacent conservation areas protect the ability of local wildlife to move and adapt.

Water resources

Protecting large forestlands helps protect water quality in Tamworth's central watercourse—Mill Brook—and the Ossipee aquifer downstream.

Recreation

An existing trail network extends from the Mill Brook area and Gilman Forest onto the additional land being conserved. These trails will continue to be open to the public for passive recreation including hiking, snowshoeing, cross-country skiing and wildlife viewing.

Scenic values

Protecting this additional 166 acres will preserve the seamless forested landscape viewed from Cleveland Hill Road, Route 25, and other public viewpoints.

Rural character

Saving these large forest blocks with extensive frontage on the still undeveloped and unpaved Durrell and Hackett Hill roads will prevent future development that would create a barrier to wildlife.

If you'd like to help us enlarge the Gilman Forest and strengthen this corridor of wildlife habitat in Tamworth, please indicate your preference on the form on page 37 or give online at www.forestsociety.org. Thank you!

Everybody Hikes Mt. Major Campaign Closing in on Goal

A quick look through data from a survey of Mt. Major hikers reveals a lot of superlatives. "Fantastic," "favorite" and "best" come up frequently under the "comments" section of the survey. And so do entreaties like this one: "Please keep these trails open for everyone!"

That's exactly what the Forest Society and the Lakes Region Conservation Trust set out to do when the Everybody Hikes Mt. Major campaign started last summer. Since then, working with other members of the Belknap Range Conservation Coalition (BRCC), we have been busy writing grants, reaching out to our fellow Mt. Major lovers through the media and direct mail appeals, giving public presentations, hosting hikes and asking for support through our e-newsletters and Facebook pages and right here in *Forest Notes*.

More than 1,250 individual donors have stepped up to help! Two towns, Alton and Gilford, have committed funds. Five grant committees and family foundations have also pledged their support. We are pleased to report that as of this *Forest Notes* printing, the campaign has reached $1.4 million on the way to our goal of $1.8 million.

Several grant committees required longer than the initial project deadline of Dec. 1 to make their decisions, so we have extended the fundraising target to March 15. If you have not yet supported this campaign, we hope you will help us reach the finish line!

Hikers watch the sun rise over Lake Winnipesaukee from the Mt. Major summit. Photo by John Welch.

Our goal is to purchase and protect 950 acres of the Belknap Range. We are in the process of buying four parcels containing key segments of the extensive trails network in the range, located in the heart of the Lakes Region, southwest of Lake Winnipesaukee. Two of the properties are on Mt. Major in Alton, one of the most popular hiking destinations in New Hampshire. One is on the adjacent Quarry Mountain, and one is on Piper Mountain and in the Moulton Valley of Gilford.

Grants for the campaign have come from the Land and Community Heritage Investment Program (LCHIP), the Bafflin Foundation the S.L. Gimbel Foundation, the N.H. State Conservation Committee, the Open Space Institute, and an anonymous family foundation. The tremendous support from 1,250 individual donors is in large part thanks to the dedicated volunteers from the Belknap Range Conservation Coalition who shared the project with hikers and collected donations at the Mt. Major trailhead during the hiking season.

It's also thanks to the popularity of the weatherproof map of the Belknap Range trails that donors of $50 or more receive as a "thank you" gift. Thank you to mapmaker Weldon Bosworth and volunteers from the BRCC and the Belknap Range Trail Tenders for providing this great gift!

If you would like to support the campaign, please use the coupon on below or go to www.forestsociety.org. Thank you!

☐ **YES, I WANT TO HELP THE FOREST SOCIETY PROTECT FORESTS, TRAILS AND VIEWS**

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Telephone: _____ Email: _____

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Everybody Hikes Mt. Major campaign • **WOW – Gilman Forest**

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Please mail the completed form to: Society for the Protection of New Hampshire Forests 54 Portsmouth Street, Concord, NH 03301. Or donate online at www.forestsociety.org.

For more information, contact Susanne Kibler-Hacker at 603-224-9945 or via e-mail at skh@forestsociety.org.

Thank you for your help!

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THE MANY FACES OF CONSERVATION

Harriet Taylor and Mary Fowler

Franconia

Members since 1974 and 1992

Left: *Sisters Harriet Taylor and Mary Fowler are two members of the large family that placed a conservation easement on the vacation property they call Butterhill in Franconia.* Photo by Jeremy Barnaby.

"Love of the wilderness can be instilled in children's lives if they are lucky enough to have parents and relations who convey that love. This was true for all of us: seven siblings who grew up coming to the White Mountains, hearing our parents' stories of hiking the peaks, the early days of the guides at Lost River, and the joy of their honeymoon at Hideaway, the cabin in Franconia that belonged to our great uncle, Philip Ayres, who was the Forest Society's first forester and led the grassroots campaign to save the White Mountain National Forest.

We were lucky to be able to come to Franconia in the summers and stay at Hideaway as we were growing up. When our parents bought our Butterhill property up the road from Hideaway, it became the vacation place for our far-flung, large family. We all realized the importance of keeping it unchanged. So we began to explore the possibility of a conservation easement with the Forest Society. We have long respected and appreciated the Forest Society's mission, so deciding to work with this organization was the easy part. What wasn't so easy was collecting opinions and holding meetings with more than 60 vocal family members, but it did happen eventually.

Today as grownups with children and grandchildren of our own, we are cognizant of our heritage and that original love of the White Mountains. We are happy to have the conservation easement on our property and to pass down this responsibility and love to our young people in return."

MEMBERS MAKE THE DIFFERENCE!

Harriet and Mary are among the 10,000 members who helped the Forest Society protect more than one million acres in New Hampshire. To join them, use the envelope in this issue or contact Margaret Liszka at 603-224-9945.