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Dear Members and Friends,

Working in my office looking out over our beautiful campus here at Prouty Woods, I still find myself sometimes wishing I was marking timber or claiming a high peak along the Appalachian Trail. One thing that soothes my wanderlust is to receive the many stories that people from around New England send in along with best wishes for NEFF’s work to conserve the region’s forests. Some of these stories arrive by email, some as a call, text message, or digital picture shared on our Facebook or Instagram pages. And some still arrive in carefully written letters.

Let me tell you about two of them. They were prompted by the announcement in our last newsletter that we lost our good friend and former Executive Director John T. Hemenway at age 92. Many of John’s friends have sent a letter in with their thoughtful donations in his memory.

We received one letter from the wife of a former NEFF forester. She explained that her husband worked on John’s land in the Taylor Valley of Vermont. Her husband wasn’t faring too well physically and was spending most of his time in bed, but he sent along his respects and a donation. She also said that he had a dream a few nights prior to writing the letter, and in the dream he was marking timber in Taylor Valley.

For those of you who have had the opportunity to manage woodlots and mark timber, the emotional connection of these words is probably tangible. Spending long hours, days, and seasons in the forest examining one tree after another can be more than an occupation. It can turn into a form of meditation, a beautiful experience that shapes your life and awareness. To me, it makes sense that someone would dream about it. I’ve written about my own transformative experience marking timber in an article previously published in Northern Woodlands: northernwoodlands.org/articles/article/markin_g_timber. For those who have not marked timber, perhaps reading this article will provide a window into what it is like, and why someone might dream of the experience.

The second letter was from another friend who reported that more than 50 years ago John convinced him to do NEFF’s accounting as a volunteer until the organization hired a professional. He said that John made a tradition of giving him a pint of maple syrup for his work. While reading the letter, I looked over my desk at the last pint remaining from a case I had bought from our good friends at Holiday Brook Farm in the Berkshires. I sent it to him with a note that said:

“Here at NEFF we have a memory that is long and a gratitude that is timeless. Thank you for your support. Have another pint.”

And thank every one of you for your support. It is a privilege to serve you and your interests. I believe when you read this newsletter, you will be as excited about the progress NEFF is making as I am.

Robert Perschel
Executive Director

Front Cover: Carson Hauck, NEFF’s Stewardship Associate, and Lindsay White, Yale School of Forestry & Environmental Studies graduate, on an easement monitoring visit in Granville, MA.
Last year, we asked NEFF land donors Paul Kendall and Sharon Rives to share the story of Braintree Mountain Forest. They graciously agreed, and we couldn’t be more excited to launch our first short film, A Common Vision: Conserving Braintree Mountain Forest.

Visit newenglandforestry.org and scroll to the bottom of the homepage, or visit vimeo.com/newenglandforestry to see stunning views of the woodland, and to hear first-hand the story behind Braintree Mountain Forest. We hope you enjoy the film, and that it inspires you to visit one of our 144 Community Forests throughout New England.
On a warm spring day, I joined Rodgers and DeStasio in Deerfield, New Hampshire to find out why they have been putting trees in rivers. As we trudged through mud and snow to reach the first site, Rodgers gave me a crash-course in how the region’s land-use history has led to sick rivers in desperate need of restoration (and trees).

It is a familiar one—the story starts in the 1700s and continues into the early 1800s, when New England’s forests were largely cleared and converted to farms and pasture. Without trees, the region’s rivers were unleashed. With no roots to hold riverbanks together, no branches or downed trunks to slow the flow of water in streams, and runoff from the cleared landscape pouring unchecked into waterways, the balance between the cutting power of the rivers and the resistance of the banks shifted. Channels cut their way to straighter lines and became entrenched in deeper banks. Where rivers once meandered through the landscape, depositing nutrients in slow-moving sections and providing a wide array of aquatic habitats, they now barreled along straightaways.

For many underwater critters, including brook trout and other native fish species, this meant a housing crisis. For downstream towns and infrastructure, this meant flooding and damage. And even with the period of reforestation over the past 100 years, Rodgers said our streams haven’t bounced back yet.

“People think, ‘oh, as long as you have trees around [rivers], they are probably good or will be eventually,’” Rodgers explained. “But everything is in the same, fairly degraded state.”

In an effort to restore habitat and stream function, Trout Unlimited is employing “large-wood loading” and “chop and drop” programs. Wood loading is when trees are positioned in rivers to change the way water moves through a system. “Chop and drop” refers to trees that are cut along the edge of a river and dropped across the channel. Both methods create resistance and roughness in the current, leading to slower water above the structure, and faster rapids below.

Standing on the banks of Griffon Brook in Deerfield, New Hampshire, where DeStasio and a crew of workers employed wood loading techniques on 1,000 feet of stream, Rodgers explained how it works. “Every time you put wood in streams like this, you’re slowing down the water, you’re adding roughness. Were this not all in here, this might be a straighter torrent just shooting past.” Rodgers said. “If we slow it down up here, it’s going to have a lot less of an effect when the water hits the town, and it will have a huge benefit to the in-stream system.”

A successful wood loading installation on the Griffon Brook in Deerfield, New Hampshire builds new in-stream habitats above and below the underwater structure.
Slowing water down helps the stream in a number of ways. First, it creates a diversity of underwater habitats, including fast-moving rapids and slow-moving eddies. Slower moving water allows for nutrient deposition, which provides food for aquatic insects and also reduces the amount of nutrients that dump out into larger waterways downstream.

The work has the added benefit of flood resilience in downstream towns. As DeStasio explained, “During high flows, or big torrential downpours, that water isn’t going to end up in backyards.” Instead, restored areas will flood above wood loading structures, helping to reduce stream flows and flooding downstream.

For now, Trout Unlimited is prioritizing smaller streams for wood loading projects, because restoring these tributaries will have a trickle-down effect for downstream rivers. Even with countless miles of streams in need of restoration, DeStasio and Rodgers are hopeful that work like this will continue to spread throughout the region.

“You could do this kind of work in every single river or stream throughout New England, and it would have a huge benefit to the in-stream system,” Rodgers said.

While it only takes one or two days and a hardy crew of workers to complete 1,000 feet of stream restoration, the effort goes beyond the initial grunt work. Each project includes monitoring before, during, and after implementation to determine the work’s impact. Research teams collect data on streamflow and health, as well as native fish and aquatic insect populations. In areas where projects have been in place for years, the data indicates that wood loading can help increase trout and aquatic insect populations while providing increased flood resilience downstream.

In addition, hours of outreach and education back up every project, helping connect landowners, communities, and land managers with resources and best practices that will contribute to healthy streams throughout New England.

Back at the stream, DeStasio and Rodgers take a final look at the meandering channel, complete with riffles, pools, and eddies—proof that their efforts are making a difference. The snow is melting quickly, and their boots are caked in a layer of mud. It is time to start planning the next restoration project.

Trout Unlimited is a non-profit organization dedicated to conserving, protecting, and restoring North America’s coldwater fisheries and their watersheds. Erin Rodgers is the Western New England Project Coordinator, and Joel DeStasio is the New Hampshire Field Manager for the New England Culvert Project.

Harvests for Habitats

In the same way that land clearing in the 1700s and 1800s led to habitat loss in streams today, it contributed to habitat loss in New England’s forests as well. To learn how forestry practices can help restore New England’s historic diversity of forest habitats, check out our “Harvests for Habitats” article in NEFF’s Spring 2017 issue of Into the Woods, available on our website: newenglandforestry.org/connect/publications/newsletter
Preserving and promoting water quality is just one of the many benefits of forest conservation. Forest soils help filter water, thus improving water quality; trees increase flood resilience by trapping rainfall and reducing runoff; tree canopies help shade and cool rivers, and their roots help stabilize banks; and as forests mature, older trees contribute naturally-occurring wood in the stream, reducing the need for wood loading efforts.

These benefits can be protected through responsible forest management, which NEFF practices and promotes throughout New England. For example, foresters can leave buffer strips along streams where harvesting is either very minimal or the trees are left untouched. Buffer strips help reduce runoff from the surrounding landscape, and the intact tree canopy shades the river and helps moderate summer water temperatures. Additionally, the tree roots stabilize river banks, preventing erosion.

The way that foresters build and maintain trails can also impact water quality. First, selecting a pathway that is not on steep terrain will help reduce runoff. Second, installing water bars, or angled troughs cutting across roads or trails, helps to contain and direct runoff towards forested areas to help slow the water down. Maintaining or removing these structures after completing a logging operation is crucial to ensure that water is directed, filtered, and slowed down as much as possible.

In areas where stream crossings are required, temporary stream crossings help maintain proper stream ecology, and can be removed after a harvest is complete. In addition, conducting harvests in the winter when the ground is frozen can help reduce impacts on water quality.

Many of these procedures are required by each state’s Best Management Practices (BMPs), which serve as recommendations and regulations for harvest protocols. In addition to following BMPs, NEFF’s woodlands are certified by the American Tree Farm System® and Forest Stewardship Council™ standards, which include standards to address water quality issues.

To see what a typical NEFF harvest looks like, and to see how we protect and promote the wide array of forest benefits, check out our “Anatomy of a Timber Harvest” infographic in our Winter 2016 issue of Into the Woods, available on our website: newenglandforestry.org/connect/publications/newsletter

Erin Rodgers and Joel DeStasio check out a chop and drop installment on the Lamprey River in Deerfield, NH.
Beautiful, inspiring, cutting-edge, and sustainable—these are just a few of the words that come to mind when touring the newly opened UMass Amherst Design Building, the largest modern wood building in New England.
The results captivated the Massachusetts officials who had come to hear the NEFF presentation. Sitting in a classroom with soaring ceilings supported by glulam posts, another mass timber engineered wood product, Massachusetts Secretary of Housing and Economic Development Jay Ash asked about the costs of using CLT, its fire resistance, and its construction uses. Assistant Secretary for Energy and Environmental Affairs Daniel Sieger, representing Secretary Matthew Beaton, expressed his agency’s interest in partnering with Ash to feed new building demand with wood from New England forests. UMass Chancellor Kumble Subbaswamy shared his institution’s positive experience of building with wood. Following the presentation, the group headed into the atrium of the Design Building for a press conference announcing support for building with wood in the Commonwealth.

The Design Building is a testament to the wood building revolution that has captured the imagination of architects, engineers, and designers around the world. And now, the revolution is one step closer to New England’s forests, thanks to a new report announced by New England Forestry Foundation.

Behind its dark façade, it is filled with light reflecting off white walls, plate glass windows, and—everywhere—glimpses of blonde wood. Classrooms, studios, laboratories, and conference rooms ring a four story atrium featuring dramatic wood-steel trusses. Supporting the entire building, from massive beams and posts to structural walls, are wood products that are engineered to be as strong as steel and concrete.

In early April, New England Forestry Foundation invited landowners, foresters, federal and state officials, developers, builders, architects, and members of the press to the UMass Design Building to hear from analysts from Pöyry, a global forestry markets consulting firm based in Finland. With support from the USDA Forest Service’s Wood Innovations Program, NEFF commissioned Pöyry to research how New England forests and communities could participate in the revolution in building techniques that the Design Building showcases.

The exciting results of the NEFF/ Pöyry report show that New England is positioned to be competitive in the cross-laminated timber market. CLT is an engineered wood product that allows wood to enter into new construction markets, including multi-family apartment buildings and commercial mid- to high-rise construction. These large panels of crisscrossed, glued pieces of lumber are strong and fire resistant, and help cut on-site construction time significantly.

Pöyry’s findings show that just a 1% penetration of CLT into multi-family and commercial building segments in the U.S. Northeast would support the operation of one to two CLT mills in New England. And once those mills are up and running, New England CLT could compete globally, as the production cost here would be comparable to competitors in Quebec, the U.S. Midwest, and the Pacific Northwest, and lower than production costs in most of Europe. The study also found that many widely abundant New England tree species would be suitable to make CLT in New England, including spruce, fir, white pine, and hemlock.
“I just recently became responsible for the building codes,” said Ash with a smile. “I think we can get this done.”

At the press event, Ash and Sieger spoke of the many benefits of using wood, from preserving state forests to creating beautiful buildings to mitigating climate change. In particular, Ash emphasized the chance to create jobs in rural areas, and invited engagement from anyone who was ready to invest in a mill.

“Come see me,” he said. “And in the meantime, I’ll be looking for incentives I can offer to investors.”

The potential for a new wood market is a welcome prospect to Maine millers and landowners, where the precipitous collapse of the New England pulp and paper industry has shuttered mills and cost jobs, and to landowners and millers further south who struggle to find markets for lower-value species such as hemlock.

But how to get there is the next question. Developing the U.S. Northeast market for CLT is still in a process of fits and starts—dependent on savvy developers, architects who appreciate it, and clients who are willing to pay some extra costs until there is enough scale to bring them down.

“We’re at a tipping point, but once it takes off, there is going to be an explosion of [building with] mass timber,” predicts Marc Rivard, a structural engineer at WoodWorks, a project of the U.S. Department of Agriculture, the Softwood Lumber Board, and the Canada-based Forestry Innovation Investment. “It is evolving every month, if not every week. We just need some projects, like schools constructed with CLT, to get this going in New England.”

In addition to pilot building projects providing momentum for CLT in New England, the successful development of a U.S. Northeast CLT market will depend on available supply— which is developing in part through the support of local research institutions, including UMass and University of Maine. For example, UMass is researching the potential of using low-value and currently underused wood species in CLT panels, which will determine whether Massachusetts, southern Vermont, and southern New Hampshire will be able to supply fiber for CLT with species like hemlock.

The NEFF/ Pöyry study is helping to organize the path forward for bringing CLT to New England’s forests. And projects like the Design Building at UMass will help state leaders, investors, and landowners see what’s possible. 🌿
Faculty member Peggi Clouston, an expert on wood technologies and mass timber structures, was adamant that the new UMass Design Building would be made of wood.

Echoing the findings of the Pöyry report, she said that constructing big buildings with wood is not so unusual in other parts of the world, and is becoming more accepted all the time. In her native British Columbia, for example, the world’s tallest mass timber-steel hybrid building stands at eighteen stories on the university campus there.

“I teach architects, engineers, and builders how to build buildings like this, how to design them structurally,” she said. So she and her co-investigator, Alex Shreyer, lobbied project designers to forgo concrete and steel in favor of wood.

“I told them, ‘We can do this— it’s being done in Canada and all over the world,’” she said. “We were engaging the architects and they were very excited. But three months into the design process we were told by the project manager, ‘Sorry, it’s going to be a steel structure,’ and I said, ‘No way.’”

The issue was the added cost of design and materials, an eventual $3 million difference. Though Clouston tried to find corporate support for the additional dollars, in the end it was her connection to the world of local forestry that helped get the project done. When Massachusetts Department of Conservation and Recreation foresters invited her to present at the Forest Forum in 2015, she met former U.S. Representative John Olver, who caught Clouston’s enthusiasm for what mass timber construction could mean for local forests.

Olver convinced the Massachusetts state legislature to put a line item for the extra cost in an environmental bond bill, and Clouston and Shreyer got their wish: A state of the art mass timber demonstration project in central Massachusetts.

As the NEFF/ Pöyry report cites, the same kind of steady education combined with initial cost assistance and policy change is what helped create the market for CLT in Europe.

“Unprotected steel is allowed by code, but the problem is that as soon as the fire starts, the steel melts,” said Clouston. “Mass timber takes a long time to catch fire, and when it does the charred wood on the outside forms a protective layer. It’s actually far safer.”

In addition to CLT’s strength and fire resistance, another benefit is the relative ease of construction with CLT. CLT panels, which are sized and cut to fit each project’s specs, lend themselves to a modular construction model that can cut down construction time, labor, and the need for heavy equipment on site. And as Chancellor Subbaswamy said, that was exactly the experience at UMass. “Once we decided to do the redesign, it went up very quickly.”

The Path to Building With Wood at UMass Amherst
CONSERVING WHITTEN WOODS
577 ACRES IN ASHLAND, NH

WRITING AND PHOTOGRAPHY BY Charlie Reinertsen

Squam Lake is the second largest lake located entirely within New Hampshire, spanning 6,731 acres and parts of five towns. With the addition in April 2017 of NEFF’s newest community forest, Whitten Woods, NEFF’s total conservation footprint in the Lakes Region of New Hampshire is now larger than Squam Lake, totaling 7,034 acres of forestland conserved in the region.

Whitten Woods, located on Highland Street in Ashland, New Hampshire, has been a top priority for protection in both the town’s open space planning and the Squam Lakes Conservation Society’s Squam Uplands Initiative. Due to its prime location near the town center, and with spectacular views to Squam Lake, it has been the target of several would-be developers. Thanks to the collaboration between Squam Lakes Conservation Society (SLCS), Squam Lakes Association (SLA), NH’s LCHIP program, and New England Forestry Foundation (NEFF), the 577-acre woodland with views to Squam Lake will be conserved forever.

“Whitten Woods is a valuable recreational resource, and will become an impressive woodland over time as it recovers from past heavy harvesting,” Whitney Beals, NEFF’s Director of Land Protection, stated. “The project was a wonderful collaboration, with each of the partners serving critical and complementary roles.”

To get the project off the ground, SLCS made the initial land purchase, with the plan to transfer ownership to NEFF as the permanent land steward. Today, NEFF owns the woodland, SLCS and LCHIP hold the conservation easement, and SLA will maintain an extensive network of trails. In the long-term trail vision, SLA will be making portions of the property accessible to visitors of all abilities.

The project was made possible by private contributions and support from many organizations and groups. Dominated by red oak, hemlock, and white pine, the property will be managed sustainably under NEFF’s exemplary standards, and the trails will remain open to the public. Whitten Woods is NEFF’s 144th Community Forest, and increases NEFF’s ownership in New England to more than 27,500 acres.

Pedersen Addition To Whitten Woods

Cecilia Pedersen, an abutter to the east side of the Whitten Woods assemblage, sold her 82-acre parcel to NEFF at a bargain sale price, improving access to Whitten Woods for both forest management and recreational uses, and bringing the total protected woodland to 577 acres.
NEFF's footprint in the Lakes Region of New Hampshire

10 Community Forests totaling 5,045 acres

Want to plan a trip to one of NEFF’s 144 Community Forests throughout New England? Use our mobile-friendly Forest Finder Tool, available on our website: newenglandforestry.org/explore/explore-our-forests

12 Conservation Easements totaling 1,989 acres
**Proudy Perks**

WRITING AND PHOTOGRAPHY BY Charlie Reinertsen

**The Office Dogs**

Visitors to NEFF’s Community Forests know that we have a soft spot for our four-legged friends, with all our forests open to dogs that are in control and cleaned up after. That affection extends into our office. On any given day you can find at least one “office dog” roaming the halls, spreading smiles and looking for the perfect scratch, belly rub, or treat.

First there’s Obi, a 6-month-old terrier/cattle-dog mix whose life goal is to finally catch the laser pointer beam in the conference room. A winter puppy, Obi is known for making great escapes in search of the warmest heat source. Chris Pryor (Director of Forest Stewardship and Obi’s Human) will often find the escapee snuggled on top of floor vents, huddled next to crackling fireplaces, or spread across the lap of a happy co-worker.

**The Games**

NEFF purchased the forest and home-turned-office in 2003 from the Proutys, a family known for their generosity and love for games. While living on the property, the Prouty family invited the public to enjoy their trails and woods, and they hosted community bowling nights in their two-lane candlepin bowling alley. Today, the forest remains open to the public from dawn to dusk (as are the trails on all of NEFF’s Community Forests), and the bowling alley is still used by a few staff who are in the habit of staying after hours to get a few frames in and unwind from the work day.

**The Land**

NEFF’s headquarters is located on the 118-acre Proudy Woods Community Forests, with five miles of pristine woodland trails. From the office, a ten-minute hike can bring you to the top of Wilderness Hill to take in a 40-mile view to Mount Monadnock, or down to the waterfront on Long Lake. As many staff will testify to (and studies continue to show), a quick walk in the woods does wonders for wellness and work productivity. It is fairly common to see NEFF’s staff walking or running the trails for a mid-day brain break, and on special occasions, you might even spot a couple of us canoeing during our lunch break.

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Generous support from individuals and organizations has allowed NEFF to continue and expand its efforts to conserve the forested New England landscape and the environmental, social, and economic benefits it provides.

Your contributions are greatly appreciated and are vital to our ongoing success. Visit newenglandforestry.org and click the donate button, or return the enclosed envelope to make a donation today.

Every gift is important to us and helps us fulfill our mission. Thank you for your help in conserving New England’s forests for future generations.
View from the blueberry barren on NEFF’s Phelon Memorial Forest in Granville, MA.

Photo by Charlie Reinertsen