



Vermont/New Hampshire Chestnut Notes

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Chapter Signs Agreement with Vermont Department of Forests, Parks, and Recreation for Establishment of Seed Orchard in Essex Junction



Essex Tech Center students shucking chestnuts.

In December 2017, the State of Vermont, Agency of Natural Resources, Department of Forests, Parks and Recreation (FP&R) signed a license agreement with the VT/NH Chapter of The American Chestnut Foundation to establish a seed orchard on the grounds of the West Street office of FP&R in Essex Junction, VT. Gary Sabourin, FP&R District Forestry Manager is the primary technical contact and worked with New England Science Coordinator Kendra Collins, VT/NH Chapter President Yurij Bihun, and VT/NH Chapter Treasurer Daane Crook to draw up the agreement. Daane, who has a law degree and works for the Massachusetts Division of Fish and Game, was particularly helpful with the legal aspects of the paperwork.

The three-quarter acre site is located on the grounds of the West Street FP&R and was formerly home to the Vermont State Nursery for fifty years. It is fitting to use the land now to cooperate on a TACF seed orchard that may be located there for thirty years or more.

The VT/NH Chapter is working with the high school students of the Natural Resources and Forestry Program of the Center of Technology in Essex and other partners in the community to establish and maintain the orchard. We are hoping to break ground on site preparation in April for planting later this spring. Interested members who live locally and other volunteer organizations in the area are encouraged to volunteer to help with the planting. If you are willing to help, please contact VT/NH Chapter President Yurij Bihun at: shelterwoodsystems@comcast.net. Thank you!

PRESIDENT'S CORNER

By Yurij Bihun, VT/NH Chapter President



VT/NH Chapter
President Yurij Bihun
Photo courtesy Yurij
Bihun

Every year it seems like we are marking a milestone but this year we approach an undisputable achievement — ten years as an active Chapter!

After a few early meetings, a preliminary Board of Directors was appointed in September 2007. The VT/NH Chapter constitution and bylaws were drawn up and signed by the new board. Soon after, the original license agreement between The American Chestnut Foundation Constitution (TACF) and the new VT/NH Chapter was signed on October 26, 2007, at the TACF Annual Meeting in Burlington, Vermont. At that time, the TACF headquarters was in Bennington, Vermont, with Marshal Case as President and CEO.

Although VT/NH was one of the last chapters to form, it quickly kicked into gear. The first official board meeting was held February 9, 2008, at the Southern Vermont Natural History Museum in Marlboro, Vermont, led by founding Chapter President Ed Metcalf. That May, a breeding orchard was planted at Grace and Randy Knight's High Shelter Farm in Perkinsville, VT, and another one on May 15 at the New Hampshire Division of Forests and Lands Shieling State Forest in Peterborough. Within the first year, Metcalf stepped down as President, and Grace Knight took on the Presidency. She was elected, along with the first full slate of officers and board members, at the first Annual Meeting, held in early May 2009 at the Wethersfield Center Meeting House in Perkinsville, VT. Under Grace Knight's tireless and

dedicated leadership, the Chapter became a 501(c) (3) nonprofit in September 2011.

Despite an all-volunteer Board of Directors and members scattered across two rugged, northern New England states at the edge of the American chestnut's extended range, much has been accomplished. The Chapter quickly grew to 200 members and eager board members, volunteers, and citizen scientists rolled up their sleeves to do the hard work of backcross breeding and restoration. The Chapter has identified over 20 mother trees, harvested thousands of chestnut seeds, planted 11 breeding orchards, and established its first seed orchards with individual landowners, as well as with partners like New Hampshire Division of Forests and Lands; Beaver Brook Association; Vermont Forests, Parks, and Rec; U.S. Forest Service; Merck Forest and Farmland Center; and National Audubon Societies. We are now exploring partnership with the Society for the Protection of New Hampshire Forests and other conservation organizations.

The first seed orchard, established in 2016 at the Fox Forest Research and Demonstration Forest in Hillsboro, NH, was the first step to completing our backcrossing breeding program. A second seed orchard will be started this spring at the Vermont Forests, Parks, and Recreation in Essex Junction, VT. Another major accomplishment is a new strategic plan developed in 2017 with its matching implementation plan to guide our next decade of growth.

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STRATEGIC PLAN IMPLEMENTATION: MEMBERSHIP DATABASE By Curt Laffin

The Spring Newsletter is one of the few opportunities the Chapter has to communicate directly with members. We would like to take this opportunity to highlight important strategic planning actions aimed at improving our ability to communicate with VT/NH Chapter members.

A member's interest in American chestnut restoration may range from simply paying dues, to volunteering for hands-on work, to serving on committees, or serving on the Board of Directors. However, if we do not keep members well-informed and up-to-date on Chapter activities, we are missing the opportunity to get and keep members involved.

Our Strategic Plan was completed in the Fall of 2016 and focuses on this need with two strategies:

- **Create a database of members and potential members and use it to communicate with them.**
- **Communicate with members and potential members at least once each quarter.**

Our Chapter is working with the National TACF Office in Asheville, NC, and others to build and manage the needed membership database and communication platforms. However, progress is slow because we lack volunteers with experience in these areas. If you have related experience to help us move forward on this project, your input will be greatly appreciated.

If you are willing to participate please contact VT/NH Chapter President Yuri Bihun at: shelterwoodsystems@comcast.net. Thank you!

PRESIDENT'S CORNER (continued from page 2)

The Chapter – like science and the breeding effort itself – is a work in progress. That elusive resistant chestnut is always five or ten years down the line. But we are getting there. New technologies, such as experiments utilizing a small-stem assay technique to accelerate blight resistance, are taking place in several New England chapters.

The Chapter is exploring another programmatic area to conserve native American chestnut germplasm through a system of Germplasm Conservation Orchards (GCO) across the American chestnut's range. This will help conserve native germplasm *in situ* and maintain genetic diversity for regionalizing transgenic materials as they become available. The Chapter is

developing a strategy to establish GCOs and will need help from members to make this happen.

Thanks to Board member Douglas McLane, there is now a small nursery in Plymouth, New Hampshire for growing stock for educational plantings, like the one at New Hampshire Audubon's McLane Center. Although reintroduction of American chestnut is still on the horizon, there are several reintroduction trials in New Hampshire and at the University of Vermont, Jericho Research Forest. These will provide useful silvicultural information for the ultimate restoration of American chestnut.

Nothing would be possible without the wonderful support

from New England Regional Science Coordinator Kendra Collins, members, and volunteers. While membership numbers are steady, increasing memberships by ten percent is an objective of the strategic plan. We are making slow headway in that direction. Fundraising has not been a priority but as we grow and manage multiple seed orchards and reintroduction trials, we will need additional funding.

We look forward to working with members in the field and in the often, not-so-glamorous, but necessary, aspects of organizational planning. Together we can meet our goal of restoring the American chestnut to woodlands of northern New England.

MONADNOCK CONSERVANCY'S RESEARCH TRIALS AT MAYNARD FOREST

By Rick Brackett and Katrina Farmer

At the end of an old woods road, in the middle of typical New Hampshire forest, is an oversize metal gate like you would find at a large vegetable garden — and it serves a similar purpose: to keep the deer out. It's the gateway to a study site on the Monadnock Conservancy's Maynard Forest, a 91.8-acre property located in Gilsum, NH. There, the Conservancy is studying the relationship between American beech, white-tailed deer, and the reintroduction of the American chestnut, in partnership with Antioch University New England, TACF, Natural Resources Conservation Service (NRCS), and University of New Hampshire Cooperative Extension.

The Maynard Forest was gifted in 2004 to the Conservancy. The Conservancy hired a licensed forester to write a management plan for the property. In 2010, the same forester was put to work overseeing the creation of 12 one-acre forest openings, or patch cuts. The intention was to encourage red oak regeneration and simultaneously discourage beech regeneration.

However, after three growing seasons only the beech was thriving. The deer population has steadily increased from six deer per square mile to 12 in the Monadnock Region over the last century. This relatively small change in the number of deer presents a problem for forest regeneration as deer don't care to eat beech and the young trees gain a competitive

advantage over the other species that deer prefer to eat like red oak. Beech is no longer a valuable timber product, nor high value wildlife tree, in the Monadnock Region due to beech bark disease or nectria canker (*Nectria galligena*), a fungus that causes stems to die before reaching maturity and subsequently results in root sprouting.

Conservancy staff applied for a NRCS Conservation Innovation Grant to study forest regeneration dynamics on the property. This study had three main goals:

- To determine the impact of deer exclusion fencing on forest regeneration, diversity and abundance;
- To determine the success of mechanical cutting and herbicide treatment on controlling beech regeneration;
- To reintroduce American chestnuts and study their potential to compete and fill the niche of beech on the property.

The Conservancy felt that beech historically filled an important niche as an intermediately shade-tolerant hardwood species that produced an annual hard mast crop. In light of the beech bark disease, the Conservancy explored options for filling that niche. After finding a couple blighted chestnuts on the property and seeing in the deed that the property was referred to as the "Chestnut Lot," conservancy staff started to research chestnuts, including attending some TACF events.

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Chestnut leafing out in spring.
Photo by Rick Brackett

MAYNARD FOREST RESEARCH TRIALS (continued from page 4)

In May 2014, a team of staff and volunteers, under the direction of TACF Regional Science Coordinator Kendra Collins, planted 130 potentially blight resistant (PBR) American chestnut hybrid (B_3F_3) seedlings in two of the Maynard Forest openings. The seedlings came from a nursery orchard in Pennsylvania.

Each of the forest openings with chestnut trees has been fenced and gated. The exclusion fencing prevents the seedlings from being damaged by wildlife such as white-tailed deer and moose. Each tree is further protected with a plastic tube shelter, discouraging herbivorous rodents and rabbits that fit through the fencing, climb over, or burrow under it. Chestnuts were planted in two patches. The first patch was planted at a 20 foot by 20 foot spacing to mimic orchard density. In this scenario, individual chestnuts should not compete with each other while they compete with other species. In the other patch the chestnuts were planted at an 8 foot by 8 foot density to simulate a stem exclusion scenario where saplings compete with their own species as well as others. These planting densities will allow the Conservancy to measure survival in a restoration situation and determine how many seedlings per acre are needed to develop a forest with a significant chestnut component.

After three growing seasons in the ground at the Maynard Forest, the Conservancy has measured 81% survivorship with the major causes of mortality including small rodent browse and thick hay-scented fern competition. Only one chestnut

seedling seemed to have died due to the blight as evidenced by orange fungus near the root collar. The average height of all the chestnuts planted was 92.8 cm with the average height being taller in the 8x8 or stem exclusion spacing at 99.9 cm (3.27 feet). The tallest individual measured 264 cm (8.66 feet).

The Conservancy is excited to continue to monitor the progress of the reintroduction, analyzing the data, and sharing the results. Staff is hopeful that these trees will continue to teach students, landowners, and land managers for decades to come. But mostly, we await the first flowers and nuts with bated breath! The only question is, will we see them before the bears and other critters do.



Chestnut planting in one of the patch cuts in Maynard Forest. Photo by Rick Brackett



Hana Kiewicz-Schlansker, research assistant from Antioch University, collecting growth and vegetation data in a 2x2 plot. Photo by Rick Brackett

WE ARE BUILDING A PARTNERSHIP By Curt Laffin

The Monson Center is one of New Hampshire's premier historic sites covering 269 acres in Hollis and Milford townships. In the late 1700's, a group of early settlers started a town there but it only lasted about 30 years. It is now owned by the Society for Protection of New Hampshire Forests (SPNHF) and cared for by Russ Dickerson, a descendent of the original Monson family. Former Chapter Board member Steve Giglio partnered with Russ to plant six Potentially Blight Resistant B₃F₃ American chestnut trees at Monson in May 2017.

In June, Will Abbott, Vice President of Policy and Reservation Stewardship at SPNHF, visited Monson where volunteer Curt Laffin explained the chestnut restoration program. The possibility of creating a chestnut orchard on a SPNHF property was discussed. In December, Chapter President Yurij Bihun, New England Science Coordinator Kendra Collins, and three Board members met with Will and SPNHF Foresters in Concord to explain orchard requirements and discuss potential sites. The conclusion was that the mutual benefits of a partnership can be significant.

SPNHF is one of our country's premier state land conservation organizations. It was founded in 1901 and has more than 10,000 members. The SPNHF mission is:

"We are a forestry association seeking to perpetuate the forests of New Hampshire through their wise use and their complete preservation in places of special scenic beauty."

It has helped to protect more than one million acres of New Hampshire open space and provides stewardship of 1,032 properties covering 196,000 acres. Of these landholdings, SPNHF owns 181 properties totaling 56,000 acres. The VT/NH Chapter is eager to move our orchard program forward working with SPNHF to set the foundation for a lasting partnership.



VOLUNTEER PROFILE: JIM TALBOT By Yurij Bihun

I first met Jim Talbot one sunny morning 35 years ago at the Pension Santos in Port-au-Prince, Haiti. Jim, a PhD biologist, was working for the Latin American Bureau of the U.S. Agency for International Development (USAID) as Regional Environmental Management Specialist for the Caribbean. I was a fresh-faced intern working for a USAID reforestation project. We have been good friends ever since.

After Haiti, Jim returned stateside to work for an environmental consulting firm in Pennsylvania. To my surprise and delight, he moved to Vermont in 1998 to take a job at Associates in Rural Development (ARD) in Burlington. Shortly after he retired in 2015 as Vice President of ARD-TetraTech, he joined the VT/NH Chapter Board and, soon after the Executive Committee.

Jim, originally from the Philadelphia area, has pleasant recollections of chestnuts when he was growing up. "My best friend and neighbor across the street had a Chinese chestnut tree in his backyard. I have many fond memories of first harvesting the nuts, learning how to roast chestnuts, and then hanging out under this great shade tree to wax and polish our first cars when we were in our late teens," recalled Jim.

Jim has not shied away from fieldwork such as planting seedlings at the Merck Forest, emasculating male catkins, harvesting chestnuts at Valley View Farm breeding orchard in Shelburne, and the unenviable job of shucking burs in the lab. Along with Curt Laffin, Jim was instrumental in facilitating our strategic plan. In addition to his secretarial duties and strategic planning, he is looking at board governance to help us work more efficiently. Despite an occasional admonition, he is adjusting to the glacial speed of an all-volunteer board. We are looking forward to his insights and continuing contributions to the VT/NH Chapter!



Jim Talbot, standing left.

TENTH ANNUAL MEETING

VT/NH Chapter of the American Chestnut Foundation

Saturday, April 21, 2018

Society for the Protection of New Hampshire Forests
54 Portsmouth Street, Concord, NH

9:30 - 10:00 am - **Registration and coffee**

10:00 - 10:30 am - **Opening Remarks, Elections* and Chapter Business**

by Yurij Bibun, President, VT/NH Chapter TACF

10:30 - 11:00 am - **The Past and Present of the Forest Society and the Future of Partnerships**

By Will Abbott, Vice President for Policy and Reservation Stewardship, SPNHF

11:00 am - 12:00 pm - **Restoration of American Chestnut: A Marriage of Breeding and Biotechnology**

By Dr. Jared Westbrook, TACF Director of Science, Asheville, NC

12:00 - 12:30 pm - **Lunch** (\$12 per person; pay at door or bring a bag lunch)

12:30 pm - 2:00 pm - **Tour of Educational Chestnut Plantings** McLane Audubon Center, Concord, NH

2:00 - 4:00 pm - **VT/NH Chapter Board of Directors Meeting**, McLane Audubon Center, Concord, NH

We will discuss spring field plans and chapter business. *Members are welcome. We hope to see you there!*

***Nominating Committee**

The Nominating Committee will present the slate of officers and board members for election, all to be elected to three-year terms. **Additional nominations may be made from the floor.**

Current board members up for re-election: Terry Gulick, Douglas McLane, and J.P. Powers.

New board members: William Coder, Gary Hawley, and Curt Laffin.



Keynote Speaker

Dr. Jared Westbrook, TACF Director of Science for the American Chestnut Foundation (TACF) based in Asheville, North Carolina. He received a Ph.D. in Plant Molecular and Cellular Biology in 2014 from the University of Florida. His focus since starting at TACF in 2015 is to speed up selection of the most disease resistant trees in the TACF's breeding program with early screening and genomic selection. He is also collaborating closely with Dr. Bill Powell at SUNY-ESF to diversify blight-resistant transgenic American chestnut populations pending regulatory approval. He is motivated by the multi-generational collaborative effort to bring the iconic American chestnut tree back from the brink of extinction.



Vermont/New Hampshire
Chapter of The American
Chestnut Foundation

Care of:
Kendra Collins
TACF Regional Science Coordinator
705 Spear Street
South Burlington, VT 05403

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online!

<https://www.acf.org/vt-nh/>



TENTH ANNUAL MEETING - Saturday, April 21, 2018

Our Tenth Annual Meeting is on **Saturday, April 21, 2018**, at the **Society for Protection of New Hampshire Forests (SPNHF)** Conservation Center in Concord, NH. Dr. Jared Westbrook, TACF Science Director, is the Keynote Speaker. Coffee, water, and pastries will be provided. Lunch is available for \$12 (pay at the door, cash or check) or bring your own bag lunch.

Directions: SPNHF is at 54 Portsmouth Street in East Concord, NH. From I-93 take Exit 16, Rt. 132. At the roundabout take the first right and follow Rt. 132. Go 0.3 mile to Portsmouth Street, turn right, go a short distance, and watch for the SPNHF Conservation Center sign on your left. Plan to arrive around 9:30 a.m. Meeting will begin at 10:00 a.m.

**Saturday,
April 21, 2018**
**TENTH
ANNUAL
MEETING**

10:00 a.m.

Society for the
Protection of
New Hampshire
Forests,
Concord, NH

After the Annual Meeting and lunch we will drive about five miles to the McLane Audubon Center to see the chestnut trees in the Educational Planting installed in 2016 as a TACF/NH Audubon partnership project. Following that, the VT/NH Board of Directors will conduct its quarterly meeting. All members are invited to attend. NH Audubon has generously provided a room for the Board meeting.



New Hampshire Audubon
Protecting New Hampshire's natural environment for wildlife and for people.