



Vermont-New Hampshire Chestnut Notes

Volume 6, Issue 1

Spring 2014

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CHESTNUT RESTORATION, SUSTAINABILITY AND STUDENT CITIZEN SCIENTISTS

Marshal Case, VT/NH TACF Board of Directors

Our Vermont/New Hampshire Chapter is now engaged in an exciting partnership project with Mount Anthony Union Middle School (MAUMS) in Bennington, Vermont.

At the request of the Superintendent of Schools, approval of the Middle School Principal and official Agriculture Committee of the school, we will be preparing soils and laying out a planting design in a wooded corridor just two hundred yards from the front entrance to the school. Few public schools in the United States have a large tract of land. MAUMS has



MAUMS student Claire Paquin is a "Naturalist-in-training."
Photo courtesy of Marshal Case.

109 acres that include significant forest, open prime agriculture fields, and Furnace Brook watershed that borders the eastern boundary. The "north 40" acres are all woodland and have some impressive oak and hemlock trees. In partnership with Trust for Wildlife (TFW), a conservation organization based in Vermont and headquartered in the town next to the school, a significant trail system has been put in place with the help of Catamount Rotary Club (CRC). TFW has recently purchased 25 acres of watershed property that adjoins the school property on the east side with a view of the Green Mountain National Forest (bringing the combined land area to 134 acres). During the surveying of the TFW land, an old American chestnut post was discovered along the edge of the brook. It was part of a barbed wire fence line.

MAUMS has initiated a very futuristic sustainability program. It is the first school in southern Vermont to have incorporated composting into their lunchtime ritual, as part of a Farm to School pro-

(Student Citizen Scientists, Continued on page 3)

JOIN US FOR OUR SIXTH ANNUAL MEETING!

The VT/NH Chapter will hold our sixth Annual Meeting on **Saturday, April 12, 2014** at the Squam Lakes Natural Science Center in Holderness, NH. The meeting will include a keynote presentation by VT Fish & Wildlife Department biologist Forrest Hammond, describing potential American chestnut restoration impacts on black bears and sportsmen, updates on the work of your local VT/NH Chapter and an afternoon field visit to a nearby chestnut breeding orchard established in 2013. Please see page 7 for more information. **Hope to see you there!**

“I have a lot to learn as we move forward with our breeding program and the development of seed orchards...Looking forward to working with you to get there.”

PRESIDENT'S CORNER

Yurij Bihun, VT/NH TACF Interim President

The VT/NH Chapter is going through another transition as it grows and matures into a vital component of the national initiative to restore *Castanea dentata* to the American landscape. Since its formation in 2007, we have come a long way in terms of a functional organization and the development of our breeding program. In 2014, we face an almost complete changing of the guard in terms of the executive officers and a possible expansion of the board of directors (BOD) -- on top of a major reorganization of the national TACF governing structure. The successional pattern of the officers and current BOD has analogies to the natural process of forest succession. After an undetermined period in the brush stage, early pioneer tree species establish themselves and there is a systematic progression from saplings through pole timber to a relatively stable mature or climax forest. If we follow this analogy, the VT/NH Chapter is still in the sapling stage but on the cusp of rapid, vigorous growth.

I was in Beirut, Lebanon last spring on an assignment to assess forest dieback along the Lebanon Moun-

tain Trail (LMT) when I received an e-mail from Grace Knight, former Chapter President, notifying me that the recently elected Chapter President would be unable to serve and I was now the *defacto* President of the Chapter. I was preoccupied with the dwarf mistletoe infestation along the LMT and getting safely out of Lebanon, so I postponed any action until I got back to Vermont.

Since last summer, I have been slow to come up to speed in the shadow of Grace Knight, who did an outstanding job leading our Chapter out of the brush stage. Her leadership and understanding of how things work on the local and national level has been a great asset. As a forester with an advanced degree in tree improvement, I should be a good candidate to take over the reigns but, not only is my knowledge of forest genetics rusty, most of my planting and regeneration work has been with conifers not broadleaved species. Grace's hands-on knowledge of growing and managing a breeding orchard, as well as pollination, will continue to be important to the leadership of the Chapter. With considerable hesitation, I agreed



Interim VT/NH Chapter President, Yurij Bihun.

Photo courtesy of Yurij Bihun..

to lead as Interim President until the next Annual Meeting. Now that I have gotten my feet wet, I have crossed the proverbial Rubicon and decided to throw my hat into the ring and run for President of the Chapter for the next three years.

I have a lot to learn as we move forward with our breeding program and the development of seed orchards, as well the imminent on-the-ground restoration of American chestnut. It is clear, however, that growing a vibrant, involved membership and developing the leadership capacity of the VT/NH Chapter will be part of the challenge. Looking forward to working with you to get there.

STUDENT CITIZEN SCIENTISTS (Continued)

(Continued from page 1)

gram. The first sustainability teacher, Stephen Greene, is a veteran science teacher and his wife Helen is also on the faculty and head of the Agriculture Committee. Both are very excited to now incorporate an American chestnut science component to their current and long term vision. This will be an education project that involves all 7th and 8th grade students. Beginning with preparation of the selected area (based on soil sample test results from UVM), students will help flag and remove any invasive plants. Students, with the help of volunteers from TFW and CRC, will dig post holes and be part of putting deer fencing in place. The first planting of Restoration Chestnuts 1.0 will happen in spring of 2014. Stephen Greene will be in charge of day to day oversight as the "citizen scientist" students monitor conditions, growth rates, and comparisons of plantings that will also happen in more alkaline sites. All data will be kept in a log and the growing reference materials will be housed in the double open classroom that has been designated for the sustainability program and curriculum. Students will be required to do basic research, make displays that will benefit future students for continuity, and partake in the field work necessary to grow chestnut trees. The selected area has a mix of hardwoods, including oak trees.

Students will be able to add organic material, as productive and experimental, from the lunchroom composting project. MAUMS already has a very significant school garden area that is supplying food for the lunchroom. According to Helen Fields, head of the Agriculture Committee, "What we have now is 500 families who are teaching themselves and others how to be part of a sustainable future."

Vermont Act 250 is important at MAUMS as the permits to build a school on the original 112 acre farm (3 acres were yielded for the bypass project on the south side) were granted after the designated Land Use Committee presented plans that included adhering to standards dictated by the Act. Another important component of getting the permits was an integrated curriculum designed and contributed by TFW. It requires use of the outdoor areas connected to all subjects taught at MAUMS.

In addition to capturing the "big picture" for the students and faculty, as well as the community as a whole, a three-panel kiosk telling the American chestnut story will be built and put in place at the high visibility entrance to the planting area that looks south to Mount Anthony and Mount Greylock in the Berkshires of Massachusetts. The entire kiosk will be built from American chestnut beams that originally came



Mount Anthony Union Middle School and chestnut planting area.

Photo courtesy of Marshal Case.

from Cornwall, Connecticut where a Connecticut Chapter member had dismantled an old barn. When I built my log home, he conveyed to me some of the chestnut wood for kitchen cabinets. I'm donating whole original beams for the kiosk that will be constructed by a Vermont master carpenter. As one member of partnering Catamount Rotary Club (also donating some funds to help the sustainability project) said, "This is a generational project where our children and their children will be reading books in the shade of trees planted by students today."

Author Marshal T. Case, former President and CEO of TACF and now serving on the VT/INH board, is long time volunteer "naturalist in residence" at MAUMS. He is also President and Naturalist of TFW and put together the integrated curriculum that helped secure permits to build the school.

"This is a generational project where our children and their children will be reading books in the shade of trees planted by students today."

MEMBER PROFILE: HANS SCHAEFER AND SARAH MOTT

Kendra Gurney, TACF Regional Science Coordinator



Hans Schaefer and Sarah Mott, on the farm in Bristol, NH.

Photo courtesy of Hans Schaefer.

Meet Hans Schaefer and Sarah Mott, orchard managers of the Old Gurdy Farm chestnut breeding orchard in Bristol, NH (site of our Annual Meeting field trip on April 12). Natives of Attleboro, MA, Hans and Sarah met in their twenties. Hans earned dual degrees in Fine Arts and Industrial Design from the Rhode Island School of Design and Sarah earned a degree in Ceramics from the Mass College of Art. Fast-forward several years and Hans, who started off with a cabinetry and furniture shop in the mid-80's, now spends most of his professional time on high-end custom building. Sarah maintains a clay studio and shows her work across the country, teaches at Dean College and designs and maintains a few estate gardens. The two live in Attleboro, MA and have raised two sons, both in their twenties - August and Angus.

The orchard in Bristol, NH has history dating back to 1969, when Hans' parents bought the 130-acre farm. Hans spent his youth visiting often and in 2002 the couple bought the farm and continue spending time there as often as possible, enjoying all seasons. With a strong interest in growing and making things, the chestnut story is one that has long been on their minds, checking on regenerating chestnut sprouts behind Sarah's parents' house or coming across old chestnut lumber during building projects. A goal for the farm is improved wildlife habitat, making their new orchard a natural fit.

The farm provides endless fun for Hans and Sarah - hunting mushrooms, planting potatoes, building things, making maple syrup with Hans' brother Ian, even moving large rocks around to add some curiosity to the landscape. In addition, the couple enjoys bats, native bees, butterflies, spontaneous travel and driving fast cars.

This large tree in West Woodstock, VT has a bad blight infection but we harvested 221 nuts from our pollination work, capturing the tree's genetics for our breeding program.

Photo courtesy of Grace Knight.



MANY THANKS FOR POLLINATION DONATIONS!

The VT/NH Chapter again received very generous donations in support of their 2013 pollination season. A special **thank you** goes out to **Public Service of New Hampshire (PSNH), Green Mountain Power (GMP), Vermont Electric Power Company (VELCO), Asplundh Tree Expert Company and Davey Tree Expert Company** for helping us get up into the trees for our pollination work.

Pollination of a wild American chestnut mother tree requires coordination between the landowner, the bucket truck provider and mother nature. Our volunteers handle that coordination and often fly high into the canopy to make the pollinations. A special **thank you** goes out to **Don and Nina Huffer, Grace and Randy Knight, Curt Laffin, John Prestige, Gary Robertson, Todd Ross, and Matthew Shroyer** for their 2013 volunteer pollinations efforts.

Anyone interested in donating or volunteering their services to the VT/NH Chapter should contact Kendra Gurney: kendra@acf.org or (802) 999-8706.

A TALE OF TWO WEEVILS....

Terry Gulick, VT/NH TACF Board of Directors and Kendra Gurney, TACF RSC

Chestnut weevils are a relatively common pest of chestnut, and honestly, they are pretty gross. That said, they are not generally a major problem unless the infestation is quite severe. There are two species of weevil, the lesser chestnut weevil and the greater chestnut weevil. (And yes, there is a pun in there about the lesser of two weevils, though having the lesser chestnut weevil is probably not any better than the greater.) Weevils most commonly show up on sites where chestnuts have been producing viable nuts for a while, as their life-cycle depends on the eggs being laid in the developing nut, and the larvae feeding on and emerging from the nut in the fall.

Chestnut weevils are most distasteful if you are planning to eat the nuts. If the nuts are for planting weevils generally do not do enough damage to prevent germination (though they may chew through storage bags and find their way into the refrigerator – ick). The best method for controlling them is to interrupt their life cycle by collecting all nuts from the ground shortly after they have fallen (1-2 days, if not sooner) and either storing them for eating or planting, or destroying them, or even bagging and removing them from the site all together. If the larvae can't winter-over in the soil, you shouldn't have much of a population of emerging weevils in

the spring to re-infest the trees.

Because reproducing chestnuts are relatively rare, and weevils require viable reproduction to support their lifecycle, our growers are not often familiar with this pest. But they are certainly around and this fall long-time grower and VT/NH Chapter Board member Terry Gulick had his first encounter with this nuisance pest. Below is his account, which includes some additional information about the chestnut weevil.

Beware the chestnut weevil! *It has found its way into Vermont, well Springfield, anyway. I was invaded by this nuisance creature last summer. Its presence showed up in my chestnuts after I gathered them in early October.*

The female beetles inject their eggs into the young chestnuts with their long snout. The larvae, once hatched, will chew through the shell of the nut once the bur opens and falls to the ground. They burrow into the ground several inches, and then emerge the next season as beetles, starting the cycle once more.

Gathering chestnuts both off the



Chestnut weevil larvae emerging from a nut.
Photo courtesy of Jerry A. Payne, USDA Agricultural Research Service, Bugwood.org

trees and ground reduces the chance of a new infestation next season. Some sources suggest spraying but that can be tricky and the timing must be just right.

If chestnuts do have the larvae and/or eggs, heating them in hot water at 120°F for 20 minutes will kill the organism without harming the nut, which can still be eaten or planted (though there is some risk of damaging the embryo if the water is too hot so this is not necessary for nuts to be planted).

Organic remedies may be possible but I am not aware of them. However, I am going to plant tansy and about 150 garlic cloves this spring from a quantity of bulbs I have. Both are very strong aromatic plants and insects, usually, don't like them. Possibly that includes the chestnut weevil – stay tuned!

(Weevils, Continued on page 6)

“Weevils most commonly show up on sites where chestnuts have been producing viable nuts for a while, as their life-cycle depends on the eggs being laid in the developing nut, and the larvae feeding on and emerging from the nut in the fall.”

WEEVILS (continued)



Adult chestnut weevil.

Photo courtesy of Jennifer C. Giron Duque, University of Puerto Rico, Bugwood.org.

This pest is yet another example showing that production agriculture has its challenges.

For more information on the chestnut weevil, see the article on page 17 from The Journal of The American Chestnut Foundation, May/June 2013, Issue 3, Vol. 27 and on page 17 from September 2010, Issue 2, Vol 24. An archive of all volumes of The Journal can be found on-line at: www.acf.org/journal.php

UPCOMING VOTE: PROPOSED BYLAWS CHANGE

The following proposed change (in **bold**) to the VT/NH Chapter bylaws will be voted on at the Annual Meeting on April 12, 2014. **Proposed Amendment to Article I: Section 5 -**

Article I: Section 5. Each member of this Chapter shall have the right to cast one vote at the Annual Meeting of the Chapter and any regular or special meeting of members of any motion that may be properly brought before such meeting, including the election of Officers and Directors. **Voting at regular, special or Annual Meeting by Regular members can be done in person or in absentia via electronic mail, telephone, or US Postal mail service.**

KEYNOTE PREVIEW: BLACK BEAR FOOD HABITS AND THE IMPORTANCE OF RESTORING THE AMERICAN CHESTNUT

Forrest Hammond, Wildlife Biologist and Black Bear Project Leader, VT Fish & Wildlife

Black bears in the north country go through intermittent years when foods are plentiful and when foods are in short supply. Their survival and mortality rates, as well as reproductive rates, are tied to this cycle of food availability. Through the years there have been losses of several key foods for bears with the result that now during years of hard mast failure there are few alternative foods. This presentation will review the food habits of black bears in northern New England and explore the impact that restoring a key mast species, such as the American chestnut, might have on black bears as well as other wildlife species.

About Forrest:

Forrest M. Hammond is currently a wildlife

biologist with the Vermont Fish and Wildlife Department and works out of the Springfield, VT state office. He received both a B.S. in Zoology and an M.S. in Wildlife Management from the University of Wyoming where for his master's thesis he studied the food habits and habitat use of black bears in the Salt River Range of NW Wyoming. He worked as a district wildlife biologist and then as the grizzly bear biologist for the Wyoming Game & Fish Department before returning to his home state of Vermont. He currently serves on the Department's Big Game Team and is instrumental in setting seasons and bag limits for deer and moose and is responsible for doing environmental reviews of residential and commercial development projects in southern Vermont. He is also the leader of the Department's black bear and turkey programs.



Black bear, close up.

Photo courtesy of VFWD.

JOIN US FOR OUR SIXTH ANNUAL MEETING!

The VT/NH Chapter's Sixth Annual Meeting will be held on **Saturday April 12, 2014** at the **Squam Lakes Natural Science Center in Holderness, NH**. See schedule on page 8. We hope you can join us!

Highlights:

This year's keynote speaker will be Forrest Hammond, Wildlife Biologist and Black Bear Project Leader with VT Fish & Wildlife. He will be discussing what American chestnut restoration may mean for black bears (see page 6).

The Squam Lakes Natural Science Center is a compelling venue, offering a variety of educational programs

(Gephart Exhibit Trail opens May 1). The mission of Squam Lakes Natural Science Center is to advance understanding of ecology by exploring New Hampshire's natural world. An afternoon field tour is planned at a new breeding orchard in nearby Bristol, NH (page 4). Please dress for the outdoors if you plan to join us.

Coffee, water and light snacks will be provided. A box lunch may be **pre-ordered** for \$15 (for details contact Gary Robertson – (603) 528-5217 or bicycle81@yahoo.com) or attendees are welcome to bring a bag lunch.

We hope to see you there!

Directions:

Squam Lakes Natural Science Center
23 Science Center Rd
Holderness, NH
www.nhnature.org/



From I-93 take Exit 24 Ashland/ Holderness.

Follow Route 3 South for approximately 4 miles into Holderness.

Turn left onto Route 113 and the SLNSC driveway is about 200 yards up on the left.

For alternate directions or more information, please visit:

www.nhnature.org/visit/index.php

COOKING WITH CHESTNUT: CHESTNUT FRITTERS

Grace Knight, VT/NH TACF Secretary

During sugaring season, my family loves a supper of apple fritters or chestnut fritters, served with fresh warm maple syrup, after a day outside gathering sap and boiling. I adapted this go-to recipe from "Italian Immigrant Cooking" by Elodia Rigante.

Ingredients:

2 cups whole peeled chestnuts (canned or dried European chestnuts work well)
2 cups milk
½ teaspoon salt
2 Tablespoons butter
2 Tablespoons sugar
1 teaspoon vanilla extract
5 egg yolks + 1 egg yolk, beaten
1 cup fine bread crumbs, unseasoned
Vegetable oil for frying
Confectioner's sugar
Warm maple syrup

Recipe:

Combine the chestnuts, milk, and salt in a saucepan and simmer until the chestnuts are tender, about 15 minutes.

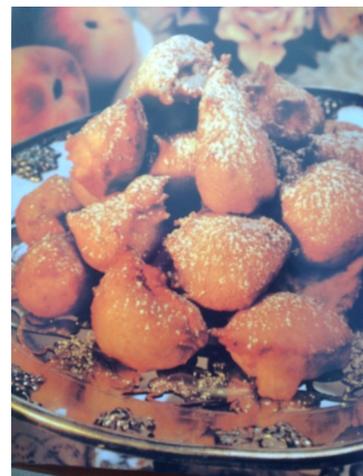
Remove from the heat, drain chestnuts, and mash well with a fork or potato masher.

Add the butter, sugar, vanilla, the 5 egg yolks, and mix well.

Take spoonfuls of the mixture and roll them into balls. Dip them in the beaten egg yolk, then roll them in the bread crumbs.

Have vegetable oil (a high temperature oil such as canola or safflower) heated to 370 degrees F, to a depth 3 or 4 inches, in a large cast iron skillet. Fry each fritter in hot vegetable oil until golden brown, turning once during frying, and drain on paper towels.

While still hot, sprinkle with confectioner's sugar and serve with individual small saucers of warm maple syrup, to dip the fritters in before popping them in your mouth.



Chestnut fritters, dusted with confectioner's sugar and ready for dipping in warm maple syrup. Yum!

Photo courtesy of Grace Knight.

If you'd like to learn more about volunteer opportunities or report an American chestnut tree that may be useful for our breeding program, please contact Kendra Gurney at (802) 999-8706 or kendra@acf.org OR VT/NH Chapter President Yurij Bihun at (802) 310-4491 or ybihun@uvm.edu



VT/NH Chapter of
The American Chestnut
Foundation

Care of:

Kendra Gurney
TACF Regional Science Coordinator
705 Spear Street
South Burlington, VT 05403

Check out this newsletter on-line!

[http://www.acf.org/
ChapterNews_vt.php](http://www.acf.org/ChapterNews_vt.php)

CALENDAR OF EVENTS

Saturday, April 12, 2014

SIXTH ANNUAL MEETING

9:30 am – 4:00 pm

Squam Lakes Natural Science Center
23 Science Center Rd
Holderness, NH

Schedule of Events

9:30 am – 10:00 am: Registration and coffee

10:00 am – 12:00 pm: Annual Meeting, including
keynote address by VT F&W's Forrest Hammond

12:00 pm – 1:00 pm: Lunch and Raffle (lunch order
available - see page 7)

1:00 pm – 3:00 pm: Tour of the Old Gurdy Farm
chestnut orchard in Bristol, NH. About 20 mins from
the meeting venue, come dressed for the field.

3:00 pm – 4:30 pm: Board meeting to discuss spring
field plans and chapter business (members welcome)

We hope to see you there!

UPCOMING EDUCATIONAL DISPLAYS

Saturday April 5, 2014

Saving Special Places 2014

Laconia Middle School, 150 McGrath St, Laconia, NH
Please contact Spencer Brookes for more details:
sbrookes@tds.net or (603) 654-6771

Sunday May 4, 2014

Herricks Cove Wildlife Festival

Rockingham, VT
Please contact Terry Gulick for more details:
(802) 885-5405

UPCOMING EDUCATIONAL TALKS

Thursday April 10, 2014

7:00 - 8:00, Wilmot Public Library

Wilmot, NH

Wednesday April 30, 2014

7:00 - 8:00, Historical Society of Cheshire County

Keene, NH

Please see the VT/NH Chapter Google Calendar for
more details: www.acf.org/ChapterNews_vt.php