

outbursts

● a monthly publication of outreach and international affairs

spotlight on the American chestnut

volume 2, issue 6

Envision a new forest canopy of 'mighty giants'

Catawba Sustainability Center provides nurturing environment for the American chestnut tree

By Andrea Brunais

Virginia Tech is part of a nationwide effort to bring back American chestnuts, the tree that once towered in American forests. Chestnut trees provided food and timber. They inspired poets and songwriters. When a state wildlife biologist in Georgia stumbled upon an undiscovered stand of half a dozen American chestnut trees in 2006, he said the experience was like coming face-to-face with Bigfoot.



American chestnuts were gorgeous, massive, and central to the economy.



The effort involves pollinating the few surviving native trees in the region; shown here is a "mother tree" that produces the seed for the next generation in the breeding orchard. After several generations, the young surviving trees are expected to carry not only local genetics but also resistance to blight.

Chestnut blight was one of the worst environmental disasters of the past century. The trees formed a canopy so dense that, according to lore, squirrels could travel from Maine to Georgia without touching ground. The last of the trees succumbed to blight just as the lyrics "chestnuts roasting on an open fire" were set to music.

At Virginia Tech's Catawba Sustainability Center, volunteers have joined Josh Nease, manager, on a vital project. They are working toward the day when American chestnuts can once again grow to maturity.

Even schoolchildren are part of the effort. Middle schoolers have visited the center, heard lectures and even planted a few chestnuts themselves.

High on a ridge at the center – the 377-acre farm that Virginia Tech owns – dozens of American chestnut trees have been planted. As expected, many trees have already died, so more seeds must be planted each year. Even with short lifespans, however, the little trees will do their part. Trees that survive long enough to flower are a source of pollen and thus a means to preserve local genetics. The small mother-tree orchard at Catawba is an important step on the long road to forest restoration.

continued on page 2



Volunteer Carl Absher, left, talks with seventh grade students from Roanoke's North Cross School on a visit to the Catawba Sustainability Center, where the students helped plant chestnuts.

Giants *continued*

Volunteers such as local arborist Carl Absher of The American Chestnut Foundation do the dirty work. They dig with augurs, plant the seedlings, measure their heights after planting, and record data to keep track of where each tree is planted.

It's a labor of love, because crossbreeding today's survivors will speed up a process that, if left to evolution, would take hundreds of years to complete. The hope is that these trees, which soar to heights of more than 100 feet, will one day no longer need scientists to nurture them. They may become hardy enough to not only survive but also flourish in the wild.

The chestnuts grew to their greatest size in the southern Appalachian Mountains, according to David Vandermast, who reviewed Susan Freinkel's 2007 book *American Chestnut* in the journal *American Scientist*. He observes that the tree "lives on in place names such as Chestnut Ridge and Yellow Mountain (referring to the splash of color when the chestnuts were in bloom)." At Catawba, Nease points out that chestnuts once were a valuable food source for animals, not to mention a keystone of the economy.

"About any environmental problem you come up with, trees are the answer. Trees will help," Nease adds.

If the work at Catawba succeeds, then one day the American chestnut may be more than just a memory and a fading line in song and verse.



Planting more seedlings every year, volunteers hope to create an orchard of 300 trees.

Hear, see, and learn more...

■ **Video - Volunteers work to preserve the American chestnut:**
<http://tinyurl.com/VTchestnut>

■ **WVTF - Resurrecting the American chestnut Tree:**
<http://tinyurl.com/WVTF-Chestnut>

■ **Virginia Tech Forest Resources and Environmental Conservation American chestnut fact sheet:**
<http://tinyurl.com/ChestnutFactSheet>

About the blight



Demise of American chestnuts began early in the 20th century when billions of trees succumbed to a fungus imported on Chinese or Japanese species of the tree, which carried *Cryphonectria*

parasitica but were resistant to it. The American version of the tree didn't stand a chance.

The Catawba Sustainability Center is planning a 300-tree orchard. This orchard will contribute to the process called "backcrossing" — the mating of a hybrid organism with one of its parents in order to preserve desirable traits. This process is being carried out on plots of land across the country. A completely blight-resistant species is being developed by employing genes from the Chinese chestnut. To preserve the genetics of the regional strain, the trees are backcrossed with trees native to our region. Over time the blight-resistant trees, though one-sixteenth Chinese, will be perfectly matched to the climate and soils of Catawba and Southwest Virginia.

www.outreach.vt.edu

Virginia Tech Roanoke Center

Roanoke Higher Education Center
 Suite 701
 108 North Jefferson Street
 Roanoke, Virginia 24016
 540-767-6100
www.vtrc.vt.edu

■ Kay Dunkley, director
 540-231-6100 ~ kdunkley@vt.edu

■ Josh Nesh, manager, Catawba Sustainability Center
 540-553-2311 ~ jnease@vt.edu

Outbursts is a publication of Outreach and International Affairs

Guru Ghosh, vice president
 Susan Short, associate vice president, engagement

Editorial and graphics staff

Andrea Brunais, 540-231-4691
 Keith Pierce, 540-231-7966
 Rich Mathieson, 540-231-1419
 Miriam Rich, 540-231-4153
 Lois Stephens, 540-231-4084