



Scientists try to resurrect that old chestnut

Cape May County team joins effort to restore species decimated by blight

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CAPE MAY COURT HOUSE - The American chestnut saplings growing under the large oak tree are slender and delicate, some as high as the ankle or hip. Yet despite their frail appearance, these young sprouts at the U.S. Department of Agriculture's Cape May Plant Materials Center could be the key to reviving one of the country's most important native trees in the Garden State.

The plants are part of a restoration program run by the U.S. Fish and Wildlife Service's New Jersey Field Office. The program started in 2002 and uses young all-American chestnuts that come from blight-resistant parents in Virginia; the seeds are supplied by the American Chestnut Cooperators' Foundation.

A total of 600 seedlings were planted through the program at Hartshorne Woods Park in Monmouth County with the Monmouth County Park System and Burden Hill Forest in Salem County with the Natural Lands Trust. Of those trees, 245 are still surviving, most in Monmouth County, said Eric Schrading, a senior Fish and Wildlife biologist and the program coordinator.

The miniature trees in Cape May were raised by inmates at Bayside State Prison in Maurice River Township and are being kept for a special purpose. Come fall, all 41 saplings will be removed from their planters, transplanted to land behind the center and fenced off from deer. Ideally, the trees will grow up healthy, pollinate in 10 to 15 years and eventually create a new "native" stock of trees that are resistant to the fungus that killed off billions of their predecessors.

"The idea behind the ones in planters is we're going to establish a nursery at the Cape May Center - a grove," Schrading said as he picked up the American specimens and examined the leaves, comparing them with a small sample of their Chinese cousin.

"It's nothing very impressive right now, but it's a long-term investment," he said.

The American chestnut, nicknamed "the redwood of the East," used to be one of the tallest trees in the forest - pollen records can be traced back more than 30,000 years. The chestnut could grow more than 100 feet high and live more than 500 years, and it comprised a quarter of the trees from New England, the South and across the Ohio Valley.

"There's an old saying that a squirrel could have jumped from one chestnut tree to another from Georgia to New York and not step on the ground," Schrading said.

The American chestnut was an important natural and industrial resource. Wild animals such as deer, rabbits and turkeys feasted on the nuts. American Indians ate chestnuts as a staple, and other Americans harvested them as a cash crop. The light-colored wood was prized for its buoyancy and rot-resistance, and it had a variety of uses, such as building barns, railroad ties, ships, utility poles and furniture, Schrading said.

The crash came about a century ago with the chestnut blight, a fungus that destroys the inner tree layers that provide nutrients. The blight was first reported in June 1904 at the Bronx Zoo in New York and is believed to have been caused by imported Asian trees. The fungus spread across the country via animals, rain and wind, despite attempts by the USDA, scientists and other organizations to stop the blight. By 1950, about 3.5 billion American chestnut trees died, wiping out most of the population.

Individual and isolated clusters of American chestnuts still exist throughout New Jersey, and other restoration projects are ongoing at the Wickecheoke Creek Greenway in Hunterdon County by the New Jersey Conservation Foundation, and Mount Paul Park and Schooley's Mountain Park in Morris County by the Morris County Park Commission, the American Chestnut Foundation and other volunteers.

Getting American chestnuts to survive has been a tricky task. Schrading said old trees often have shoots sprouting up at the base. But those saplings often get devoured by deer or last a few years before succumbing to the fungus.

One possible solution is to create a blight-resistant hybrid by "backcross" breeding American trees with Chinese chestnuts, which have co-existed with the disease for centuries. The American Chestnut Foundation in Vermont worked for 25 years on the project. Meanwhile, the American Chestnut Cooperators' Foundation in Virginia crossbreeds American trees that were naturally unaffected by the blight.

Both programs are labor-intensive. Scientists and volunteers collect pollen from trees and fertilize flowers. Then they gather nuts, plant them and watch them grow for five years before inoculating them to see if they can withstand the blight. This process can go through six generations before a fungus-resistant variety is created, according to the foundation Web sites.

Schrading said he used the pure American variety for the program because he wanted a "true specimen." The Cape May project cost \$500 for the seedlings and \$1,500 for

protective wooden tubes. The Monmouth County plantings cost about \$500.

In the future, Schrading said the children of the Cape May seedlings will be planted in protected lands, ideally in spots with healthy chestnut trees for cross-pollination, and closely monitored throughout their lives.

Ken Thoman, resource manager for Monmouth parks, said his have used hybrids from both the American Chestnut Foundation and American Chestnut Cooperators' Foundation in restoration projects. He is optimistic that the tenacious nature of the trees and the chestnut researchers will yield success.

"It would sure be nice to come back, but it won't be in our generation," said Thoman, who studied forest ecology at Cornell University. "Back in college, 30 years ago, it always amazed me that they survived this long. Their clones are going on with the future."

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