



CONSERVATION SHOWCASE

Forestry practice leads to a surprising discovery

Jack Lochhead, Forest Land Owner | Conway, Massachusetts

When Jack Lochhead first looked into a federal government program to help him manage his forest land in rural Conway, Massachusetts, he had no idea that it would lead to a surprising discovery deep in the forest.

Lochhead, a retired math and physics educator who taught at the University of Massachusetts, Amherst and institutions in New York City and Boston, moved into his home in the early 1970s. Soon thereafter, he set out to buy the land surrounding the house because he didn't want someone else building a house next to his.

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Once he accomplished that goal, he realized that he needed to figure out what to do with the 250 acres of woodland. A forester in town approached Lochhead and asked if he had thought about forest management on his land.

“At that time there were government programs that paid for thinning cuts,” explains Lochhead. “So we've had our land under active forest management plans since sometime in the 1980s.”

More recently, Lochhead learned from forester Mary Wigmore about the Wildlife Habitat Incentive Program (WHIP)

available through the USDA Natural Resources Conservation Service (NRCS), which could provide him with technical and financial assistance for forestry practices.

“People from the NRCS office in Greenfield came out and we walked the land looking for potential sites for oak regeneration,” says Lochhead, referring to a conservation practice that calls for land around existing oak trees to be cleared to allow new oaks to take hold.

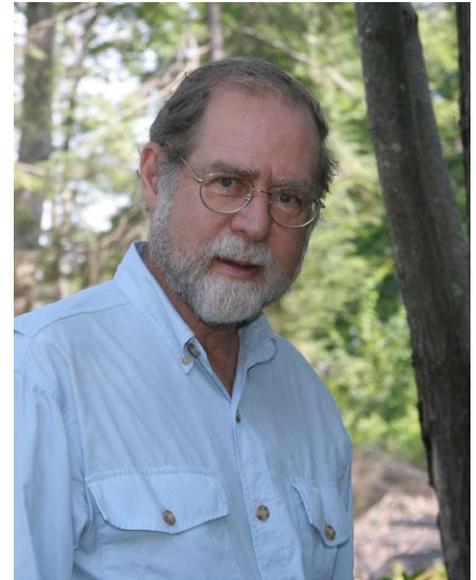
Oak regeneration is practiced in parts of Massachusetts because, historically, land was cleared for farming and timber harvesting, which led to the dominance of other species when the forest began to grow back.

“Oak regeneration is not quite as drastic as a clear cut because each big oak should have its trunk shielded from the afternoon sun and if there are enough big oaks, you get these clumps of trees that are left,” explains Lochhead.

“We put [the project site] deep in the forest so if it didn't look good, we knew it would grow back soon enough. We're pleased about how it worked out visually. There are a lot of oak seedlings coming up only a year after the cut,” says Lochhead.

That decision to put the four acre oak regeneration project deep in the woods lead to a startling discovery.

“Prior to the cut, we had been walking through the woods with a friend of ours,” remembers Lochhead. “She looked down at the ground and said ‘You've got chestnuts here.’ It was in the fall and the nuts had just fallen.”



Jack Lochhead's 250 acres of forest land in Conway, Massachusetts has been in active forest management for nearly 30 years. He recently discovered a lone American chestnut tree deep in the woods near his oak regeneration project site.

What Lochhead's friend had discovered was a lone American Chestnut tree, a large, deciduous tree species of the beech family that was one of the most important forest trees in eastern North America before it was devastated by the chestnut blight, a fungal disease.

Lochhead's forester recommended that he call Brian Clark of Ashfield, the local representative for The American Chestnut Foundaton (TACF). “He came out right away, within a few hours of when I called him. We walked up and took a look. He said ‘Yeah, that's an American Chestnut and it's in good health,’” recalls Lochhead.

Lochhead asked the logger who was clearing the land for oak regeneration to ensure that the chestnut tree didn't get cut down or hurt in the operation. Clark

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Brian Clark (left), a local representative of the American Chestnut Foundation, shows Jack Lochhead the special bag used to pollinate American chestnut trees.

told Lochhead that clearing the area next to the chestnut was the right thing to do.

“Because it’s right on the edge of the clear cut, it’s really opening up to a lot more light than it got before, so it’s a much more vigorous tree now,” says Lochhead.

Due to the rarity of American Chestnut trees, TACF has a breeding program to pollinate and collect chestnuts from surviving trees.

“The trees that we use in the breeding program, we refer to as ‘mother’ trees,” explains Clark. “Many of the trees we use as mother trees are the size of Jack’s. We do a controlled pollination with pollen that we get from TACF.”

“You put bags over the female flowers before they become receptive to being pollinated. The normal process is that every tenth bag, you don’t pollinate, that way, if there are viable nuts, you know whether there was any wild pollen present,” says Clark.

“We want to make sure that the nuts that are harvested in the fall are the ones that are pollinated by our pollen source and not some other tree on the odd chance there might be another chestnut around somewhere,” says Clark.

The tree was pollinated with a mixed strain of Chinese Chestnut, which is

resistant to the blight, and American Chestnut. The goal is to produce a tree that is more like the American Chestnut than the Chinese because the Chinese is more like a bush.

The pollination bag is a special bag made of heavy waxed paper for this purpose and will survive the summer on the tree. The bag is twisted and secured with a wire twist tie.



Chestnuts have burrs that make them impervious to predators. The spines can go through heavy leather gloves. Predators generally leave the nuts alone until they open.

The nuts are harvested, then planted in a small area. As the seedlings come up, they’re deliberately infected with the blight. Those that stay healthy will be transplanted into an orchard where they’ll grow to full size.

The problem with pollinating Lochhead’s tree is that getting to the location requires a four-wheel drive vehicle. A 50 foot crane is needed to reach the chestnuts.

TACF has arrangements with utility companies that lend bucket trucks to help fertilize chestnut trees. The typical bucket truck, however, is designed for use on the road and wouldn’t be able to get up the hill to Lochhead’s site.

Clark eventually found a company in Vermont that has a bucket on a crawler.

“The chestnut, as I understand it, was a far more important food source to wildlife than the acorn,” explains Lochhead. “There are theories that some wildlife were wiped out by lack of the chestnut. Prey species that ate chestnuts were diminished in numbers until the point where predators like the lynx didn’t have enough food and disappeared.”

“If the chestnut can be brought back, it will have a tremendous impact on the wood industry and it will very likely change the nature of wildlife in the forest,” says Lochhead, noting that TACF believes that they’re within 10 years of having saplings that they can start producing in numbers that will be blight resistant.

Lochhead, who is also receiving assistance through WHIP for removal of invasive barberry, honeysuckle, winged euonymus and multiflora rose on 240 acres, has enjoyed his experience working with the NRCS Greenfield staff. Now he’s trying to get other landowners along the South River interested in doing similar work.

“If they can see a concrete example of what a neighbor has done, that’s very interesting to them,” says Lochhead. 💧



Oak saplings began to appear within one year after the oak regeneration project began.

For more information on the American Chestnut Foundation’s efforts to restore the American chestnut tree, visit www.acf.org.

