

Mason man works with organization to research new habitats for endangered tree

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Monadnock Ledger-Transcript

June 9, 2021

<https://www.ledgertranscript.com/Mason-man-helps-research-new-habitat-for-critically-endangered-trees-40614474>

Hidden away on a property in Mason, about two dozen seedlings of *Torreya taxifolia* are quietly growing, watched over by **Daein Ballard**.

They may be the only specimen of their kind in **New Hampshire**.

Torreya taxifolia, sometimes called “stinking cedar,” is a type of evergreen tree only found in a very limited population in Florida. The critically endangered plant isn’t doing well in its native habitat, with only about 500 specimens left in the wild. People like Ballard are working to try to change that statistic.

Ballard is generally interested in conservation and preservation of struggling tree species. On his own property, he has several mature chestnut trees he’s seen grow to maturity, produce chestnuts for only a single year, and then die from the strain of reproducing under blighted conditions. He heard about the plight of the *Torreya taxifolia* completely by chance, he said, while looking online for information about other species under threat.

Ballard is now part of a group called “**Torreya Guardians**” that is studying how the tree grows in various climates, trying to gather information on where it might be able to survive and thrive. Though far, far north of its typical habitat, Ballard has been planting seedlings and seeds of stinking cedar in various soil and sun conditions on his property, to see how it takes.

So far, since starting the project in 2014, he said the results have been about 50/50 whether the trees survive.

“It can definitely survive here, but they may not thrive,” Ballard said. “They’re growing more slowly than they are in the south. It’s probably too far north for them here.”

That's OK, he said – at the moment, his results are just a data point for where these trees might do well, and where they might not. And, Ballard said, the success or failure of *Torreya taxifolia* might inform how the process works with other endangered plants.

“The *Torreya* is just an extreme example of this phenomenon. Trees are in the worst position of anything else when the temperature is warming or the climate changing. Because while they can and do move ranges, it happens over centuries. They can only move as fast as they can germinate and grow.”

Plant ranges do change, as animals or wind carry seeds outside of the usual habitat, and – if conditions are hospitable – plants take root. It's just a slow process, and habitat may be changing too quickly for some species to adapt. Humans can step in and try to help expand the range or settle a population in a completely new habitat, which is what the **Torreya Guardians** are experimenting with the stinking cedar. Ballard said the cedar is a good test case for human **assisted migration** because it has such a small, niche environment where it grows in the wild.

“It's a prime example of a tree in a habitat that is no longer suited for it,” Ballard said. “But a lot of trees are starting to have that problem. There are a lot of trees no longer in their ideal habitat.”

In his back yard, Ballard has his most impressive specimen – a tree which was in a pot as far back as 2012, and has grown to Ballard's mid-thigh. Most of his attempts, Ballard said, haven't had the chance to grow so large, despite his best efforts.

Several trees – some only a few inches tall – are scattered about his property, surrounded by a **tree fence to fend off the deer. The 20 surviving saplings represent about half of the ones Ballard originally put into the ground.** He said he's also planted as many as 100 seeds he's procured from other members of the *Torreya Guardians* who have more mature trees growing on their own private properties, but between ants, slugs, and deer destroying the seeds or sprouts, only about five have found any success in sprouting.

Ballard said his trees may not provide much more than **a single data point in a larger picture for the survival of the *Torreya taxifolia*.** But he said, who knows? These trees may still be here in 100 years, long after he's gone.

“Trees grow slower than us and live a lot longer than us. So who's to say? Maybe the climate in New Hampshire 100 years from now will be better for them. It's a long game.”

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Daein Ballard of Mason has planted two dozen *Torreya Taxifolia*, a critically endangered tree, on his property in Mason, as part of a research effort to find areas where the plant might be able to thrive.

