

Northern Woodlands

July 1st, 2022 by Ethan Tapper [Summer 2022](#)

The Importance of Legacy Trees

Legacy trees are trees of an older generation that persist in a younger forest. The ecological benefits of legacy trees are many. Their complex bark provides habitat for mosses and lichens, invertebrates, and bark-foraging birds such as nuthatches and brown creepers. Massive canopies produce huge amounts of mast as well as unique foraging, nesting, and denning opportunities for an array of birds, mammals, and invertebrates. Below the ground, old trees provide complex habitats in the rhizosphere – the world of roots – and are an important part of the forest's mycorrhizal networks.

Old trees often straddle life and death, retaining a live canopy while other parts of them decline and decay. As these trees senesce, they provide additional habitats for the community of decomposers – invertebrates, fungi, bacteria, and other microorganisms – critical to soil formation and foundational to forest ecology. Woodpeckers forage in their rotting wood, creating cavities that provide still more nesting and denning sites for a variety of birds and mammals.

With big trees, forest stewards must strike a complex balance: most trees reach economic maturity long before they complete their biological lives and before revealing some of their most remarkable ecological attributes. If we harvest every big tree, our forests will lack the habitats and other benefits that these trees provide. Retaining some legacy trees is one strategy for managing forests to both responsibly produce renewable resources and to promote forest health, resilience, and biological diversity. Like tiny reserves, legacy trees are retained in perpetuity – allowed to grow, to cast seeds, and eventually to decline and die. At each step they enrich the complex ecology of our managed forests.

Which trees should be legacy trees? In the interest of diversity, it's prudent to retain trees of different species and with different attributes. Because most forests abound in trees with tremendous ecological value and little economic value, there's often little economic downside to leaving a few legacy trees per acre – a massive yellow birch with a crooked trunk, an old red maple riddled with cavities. Sometimes, however, the compromise is more significant: healthy, valuable trees should also occasionally be retained, and – as with any tree in the forest – legacy trees take up space, light, water, and other resources that could be used to grow trees with greater economic value. In either case, retaining legacy trees means forgoing some modest economic gain for significant ecological gain.

Recognizing the value of legacy trees doesn't mean that we need to retain every big tree in the woods. Besides big trees, healthy, vibrant, resilient forests are often defined by a multi-aged structure, an irregular, gap-filled canopy, and dead wood – features that provide important habitats and ecological benefits and that may be encouraged by cutting big trees. While it is difficult to generalize in systems defined by their variability, old forests in New England typically only feature 10 to 12 big, old trees per acre. Any number of legacy trees – even two or three per acre – will be an asset to a forest.



In a young forest in Milton, Vermont, this sugar maple legacy tree offers complex bark, a varied canopy, multiple cavities, a hollow center, and large-diameter deadwood. Photo by Ethan Tapper.