Planting Native Trees in Fall

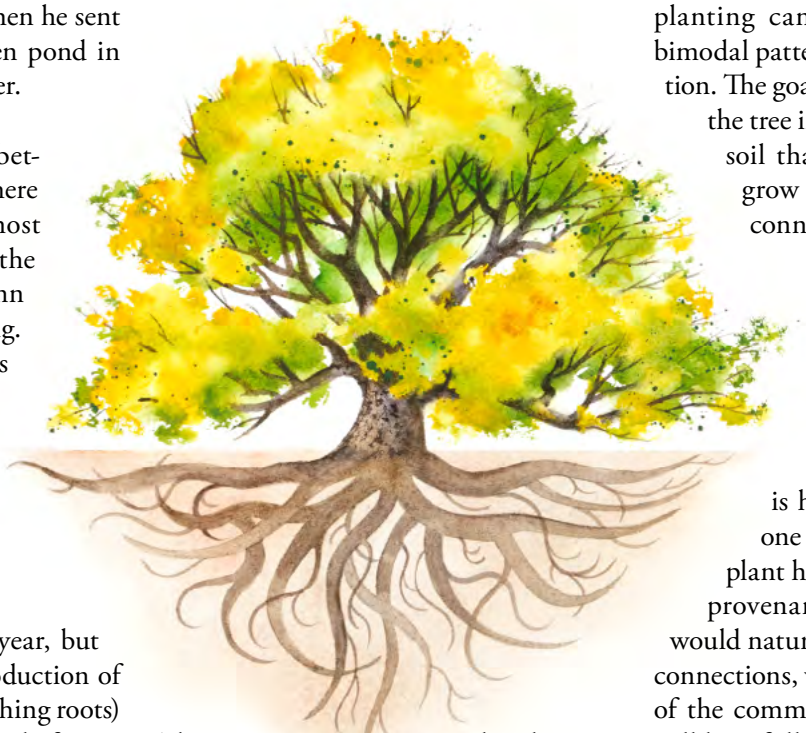
By Jack Phillips, RCA #449

Upon leaving my faculty position in the humanities a few years ago, I set out on a journey to learn everything I could about trees. It was my good fortune to be taken under the wing of Dr. Alex Shigo, the controversial and hugely influential scientist who changed the way the world thinks about trees. He was hardest on those in whom he saw promise, so I guess I should have felt honored when he sent me to dig roots from a frozen pond in New Hampshire in December.

One might think there's a better way to study tree roots. There isn't. New root tips flush most vigorously when the rest of the tree is slowing down in autumn or before waking up in spring. Shigo used to say that trees don't really go dormant; they just become more active below ground. To prove it, he required his chosen ones to harvest roots at a slushy time and place.

Roots grow throughout the year, but it is easiest to witness the production of new rootlets (small, soft branching roots) during the peak times. The partly-frozen soil that we dug at the edge of the pond contained lots of oak and birch roots, and large numbers of insects, nematodes, worms, and other soil organisms that became more active in the warmth of the lab. Under magnification we could see small, white root tips and fresh mycorrhizae, as well as the gossamer hyphae that build the fungal energy web in soil.

A couple of years after Dr. Shigo passed away, I flew back to New Hampshire for the late-winter root flush. I bought a cheap shovel at the hardware store in Barrington and set out for the woods that had served as our classroom. In a mixed stand of pine, oak, hemlock, and birch I scraped the snow aside and dug chunks of hard soil forest litter.



The next morning I appeared at the U.S. Forest Service research facility to meet with Dr. Kevin T. Smith, Shigo's former colleague and successor, who is now my mentor and friend. We spread out the thawed samples on his desk to have a look. I was delighted but not surprised at what we saw—dozens of new, tiny root tips with new mycorrhizae in fertile, moving soil.

Colleagues and I have replicated this study many times with similar results. We've harvested wild roots for workshops year round, but samples taken between the autumn and spring equinoxes behave the wildest. When the world above ground is slowing down in late fall and beginning to stir in early spring, life in soil reaches a frenzy. Tree planting can take advantage of this bimodal pattern of new root tip production. The goal of planting is to integrate the tree into the active living web in soil that continues to move and grow throughout the year. The connection points are the small root tips, and a native tree growing in healthy soil will make these connections as soon as new tips are initiated. They are tiny and astonishingly numerous and it is here that the tree becomes one with the fungal web. If we plant healthy, native trees of local provenance at a time when they would naturally prepare to make these connections, we move with the rhythms of the community that the young tree will hopefully join.

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