# Lessons from a seedling–

## Every Day is Arbor Day

*"…forests hide wonders that we are only just beginning to explore. …"*
*– Peter Wohlleben, The Hidden Life of Trees*

Quincy's QUILL

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Officially, Friday is Arbor Day. But in reality, every day is – and should be observed as – Arbor Day. Most of us take trees for granted; we do not see them as they truly are – marvelously intelligent living beings that can teach us not just one thing but many things. To place humanity in proper perspective across time and space – trees live for centuries, not years; and they occupy 99 percent of the Biomap of planet earth. That leaves just 1 percent for all of the creatures who benefit from trees – man and womankind and all the creatures of the earth.

One of the most fascinating books you will ever read is "The Hidden Life of Trees – What They Feel, How They Communicate: Discoveries From a Secret World" by German forest ranger Peter Wohlleben – an international best seller that reads like a suspense novel in which the tree is both the chief detective and the unsung hero.

The first surprise is the discovery that trees are "social." Not only do they share nutrients, they "sense" other trees. In 2016, while touring a forests under his care in Hummel, Germany, Wohlleben pointed out two beech trees, saying, "These trees are friends. You see how the thick branches point away from each other? That's so they don't block their buddy's light. Sometimes, pairs like this are so interconnected at the roots that when one tree dies, the other dies, too."

Trees communicate – via visual signs, electrical signals (root ending nerve cells), sound and scent. Four decades ago, scientists in the African Savannah noticed something when a giraffe feeding frenzy traumatized acacia trees. Within minutes, the acacias began pumping toxic substances into their leaves to ward off the pesky herbivores while simultaneously emitting a "warning" gas (ethylene), to signal neighboring acacias of the crisis at hand. Oaks release toxic tannins in their bark and leaves, changing "delicious" leaves into bitter greenery in order to kill chewing insects or ward off infestation. Willows produce a defensive compound – saliclyic acid – to do the same thing. This same acid from willow bark can relieve headaches.

How do trees "talk" to each other? Do they "talk" to other plants? Because it is impractical to "listen" to a forest, scientists study seedlings in the laboratory. When they started listening, it did not take long to discover that their measuring apparatus registered roots crackling quietly at a frequency of 220 hertz. The even more surprising discovery concerned seedlings not involved in the experiment. When their roots were exposed to a crackling at 220 hertz, they oriented their root tips in that direction, indicating essentially that they "heard" the other

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