

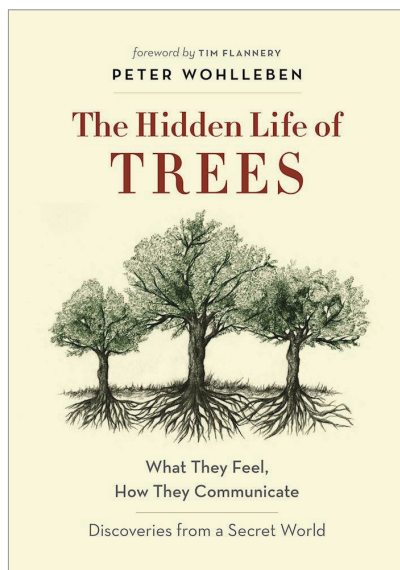
The Hidden Life of Trees – What They Feel and How They Communicate

Peter Wohlleben

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Written by a German forester, this book recounts the lives of trees growing in a beech forest he manages near the town of Hümmel in western Germany. In it, Peter Wohlleben argues cogently that trees are sentient and that they “take care of their offspring and of each other”. For many years he was a “regular” forester, as he says himself, planting and felling trees for lumber and as he points out, the commercial focus of his job warped how he looked at trees. However, as he moved through life he developed an interest on how trees communicate with each other. When he was a “regular” forester, “he knew as much about the hidden life of trees as a butcher knows about the emotional life of animals”. Before you categorise him as a tree hugger, it should be pointed out that he quotes from a 1997 article in *Nature*, that most venerable of scientific journals, which unearthed the fact that there is a vast network of roots and fungi working together. In an appendix, Dr Suzanne Simard, a professor of forest ecology at the University of British Columbia in Vancouver, noted that where birches had been cleared in her trial plots, there was a decline in the growth of the Douglas

firs. This research became known as the “wood wide web”. One wonders, should we have allowed the birch to grow in our older Norway spruce plantations?

Of course, older foresters in Ireland are familiar with the reverse scenario, where it was extremely difficult to establish Sitka spruce on “heather” sites, particularly *Calluna vulgaris*. There is an incompatibility in the mycorrhiza of both species. The only option was to fertilise the spruce which allowed it to speed up growth and crowd out the heather.

It could be argued that the reason we tend to forget, or fail to recognise, how remarkable trees are could be due to our anthropocentrism as much as the fact that trees live their lives at a much slower pace but live for very much longer than we do. Wohlleben instances a small, gnarled spruce tree in northern Sweden which is estimated to be 9,550 years old – almost twice as old as the bristlecone pine in California.

The author also benefited from research carried out by the University of Aachen, the University of British Columbia and the Max Planck Society, which he claims underpins his vivid descriptions, but he writes as a conservationist and admits that much remains unknown. “It’s very hard to find out what trees are communicating when they feel well,” he says. “I don’t hug trees and I don’t talk to them.” He goes on to say, “The thing that surprised me most is how social trees are. I stumbled over an old stump one day and saw that it was still living although it was 400 or 500 years old and without a single green leaf. Every living being needs nutrition, so the only rational explanation was that the tree stump was supported by the neighbouring trees, being fed via the roots with a sugar solution. As a forester, I learned that trees are competitors that struggle against each other, for light and for space, and there I saw that it’s just vice versa. Trees are very interested in keeping every member of this community alive.”

Beeches and oaks form forests that endure for thousands of years because they act like families, he says. Trees are tribal (‘They are genetically as far away from each other as you and a goldfish’) and ruthlessly protect their own kind; “Beeches harass new species such as oak to such an extent that they weaken.” Douglas fir and spruce also bond within their species.

On the other hand, willows are loners. “The seeds fly far away from other trees, many kilometres. The trees grow fast and don’t live very long. They are always the first, then they can’t breathe any more after 100 years and then they are gone.” Poplars aren’t social either and “a birch will suppress other trees so it has more space for its own crown. That doesn’t sound very nice but I think birch has no other choice because that’s what it’s grown like because of its genes.” City trees are like street kids – isolated, struggling against the odds and lacking strong roots.

One day, while in the forest, Wohlleben made an astonishing discovery: “The stones were an unusual shape: they were gently curved with hollowed-out areas.

Carefully, I lifted the moss on one of the stones. What I found underneath was tree bark. So, these were not stones, after all, but old wood. I was surprised at how hard the 'stone' was, because it usually takes only a few years for beech-wood lying on damp ground to decompose. But what surprised me most was that I couldn't lift the wood. It was obviously attached to the ground in some way. I took out my pocketknife and carefully scraped away some of the bark until I got down to a greenish layer. Green? This colour is found only in chlorophyll, which makes new leaves green; reserves of chlorophyll are also stored in the trunks of living trees. That could mean only one thing: this piece of wood was still alive! I suddenly noticed that the remaining 'stones' formed a distinct pattern: they were arranged in a circle with a diameter of about 5 feet. What I had stumbled upon were the gnarled remains of an enormous ancient tree stump. All that was left were vestiges of the outermost edge. The interior had completely rotted into humus long ago – a clear indication that the tree must have been felled at least four or five hundred years earlier.”

How can a tree which was cut down centuries ago still be alive? Without leaves, a tree is unable to photosynthesise, which is how it converts sunlight into sugar for sustenance. This ancient tree was clearly receiving nutrients in some other way – for hundreds of years.

Beneath this mystery lay an intriguing new frontier of scientific research, which would eventually reveal that this tree was not unique in its assisted living. Neighbouring trees, scientists discovered, help each other through their root systems – either directly, by intertwining their roots, or indirectly, by growing fungal networks around the roots that serve as a sort of extended nervous system connecting separate trees. If this weren't remarkable enough, these arboreal empathies are even more complex – trees appear able to distinguish their own roots from those of other species and even of their own relatives. How are trees able to detect threats; for instance, how does the holly know that it should grow thorns on its lower leaves and none above the browsing line?

This fascinating book was translated from German by Jane Billingham, although the publisher fails to acknowledge this. For the record, Peter Wohlleben's book was a bestseller in Germany – it comfortably out-sold the memoirs of fellow Germans, Joseph Ratzinger (Pope Benedict) and Helmut Schmidt (former German Chancellor). Well now, there's a challenge for Irish foresters!

John Mc Loughlin