



Every time I meander through the woods  
I hear Dennis Thompson's words:

**“Birch trees do not like to live alone.”**

*Dennis Thompson serves as the land commissioner of Minnesota's north central Aitkin County. Dennis and his forest management team are familiar with their woodlands: every spring they plant anywhere from 50,000 to 250,000 white spruce, balsam fir, and red and white pine into 224,574 acres of those northern soils.*



## The Dennis Thompson Hug

Really? I don't think of Dennis as necessarily an emotional kind of guy, concerned about the feelings that birch trees have. I hope he doesn't take offense, but in all sincerity and with deep respect for my professional forestry colleague, it is difficult to imagine Dennis, a county land manager in charge of 224,574 acres of forested land in north central Minnesota, leaning over and asking the 100,000 tree seedlings he plants annually, 'where' and 'with whom' they would like to be planted.

However, recent 'reads' and contemplations give me pause to consider that Dennis just may be a heartbeat away from a different way of thinking about the natural resources that share our worlds. Who is really to say that birch trees do- or do not 'like' to live alone?

Here at Dovetail, our team is methodically scientific. Gosh, look at (and read!) some of the recent articles: *“Exploring the Potential Effects of an Expanding Forest Carbon Market on Working Forests and Communities in the United States.”* And *“Deforestation: Definitions, Trends, and Policies for Forests and Forest Products.”* How about *“Regenerative Agriculture and the Intersection with Sustainable Forestry infographic?”*

These folks are not 'wishy washy.' Team members' respective research is based on scientific inquiries; their articles are peer reviewed and team analyzed - and then all of that is repeated until they are certain they have it right.

But maybe we are missing a beat if we dismiss the sound and throb of the forest Dennis may be referring to. Two recently published books . . . *Finding the Mother Tree*, by Suzanne Simard and *The Hidden Forest*, by Peter Wohlleben, raise thoughts about the interdependence of trees and their alleged underground tree communication through a “wood wide web” of mycorrhizal fungi. Simard's research suggests that two different tree species, namely paper birch and Douglas fir, trade photosynthetic carbon back and forth through this fungal network. The author even suggests, “Roots don't thrive when they grow alone; the trees need one another.”



***She continues: “Sharing of energy and resources means they are working together like a system. An intelligent system, perceptive and responsive.”***

Both books describe and advance the concept of a web of soil fungi that connects trees to one another - not only connects, but influences interactions with one another. Their respective books describe this in different ways and to different degrees. But both authors are disciples to the concept that trees are social creatures that cooperate with one another through the underground mycorrhizal networks that facilitate communications, sharing of nutrients, and even ‘warning’ one another of potential environmental dangers.

Perhaps a little “Biology 101” will help you understand. At the heart of the respective stories are fungi. Except for the obvious, above-ground fruiting bodies (more familiarly: mushrooms), fungi obscurely weave their way through soils and decaying wood. In these out-of-sight places they form networks of fine tubular cells called “mycelium.” (The word is derived from combining the Greek words for “fungus” and “root.”)

Over decades, these mycelium networks expand. Author Peter Wohlleben tells about a fungus in Oregon estimated to be 2,400 years old, extending for 2,000 acres and weighing 660 tons. Wohlleben quoted this from an article by A. Casselman, “Strange but True: The Largest Organism on Earth is a Fungus,” *Scientific American*, October 4, 2007.



An amicable teamwork is alleged to develop between fungi and trees. With the help of mycelium (a unique mycelium appropriate for each specific tree species, by the way), a tree can increase its functional root surface and therefore suck up considerably more nutrients and water than it would ‘working’ as an individual.

In *Finding the Mother Tree*, author Simard conducted extensive research that suggested birch trees and fir trees exchange nitrogen and carbon via those mycorrhizal networks and can ‘swap roles’ as being either the source or the sink of these exchanges throughout the seasons. Both species benefit from growing together. As Simard investigated further, she noted that old and young fir trees as well, are connected underground via this mycorrhizal network. This prompted her idea of ‘mother trees’ nurturing their offspring.

***Simply said: “Trees are ‘tuned in’ to other trees.”***

*Is this biology? Or anthropomorphism?*



Scientists, medical researchers, artists, poets - all feel and hear in their own idiosyncratic, remarkable, and individual ways. I thought I would find some conclusive thoughts if I asked the highly respected, retired US Forest Service research scientist John Zasada. He is an academic and publisher in his own right, including: *A Review of the Regeneration Dynamics of North American Boreal Forest Tree Species, and Modeling the Atmospheric Dynamics Within and Above Vegetation Layers* – among a myriad of other scientific publications he has authored and co-authored.

So, John . . . what about this relationship between trees and fungus and their ‘need’ for one another, and the alleged brotherhood/sisterhood that grows among them?

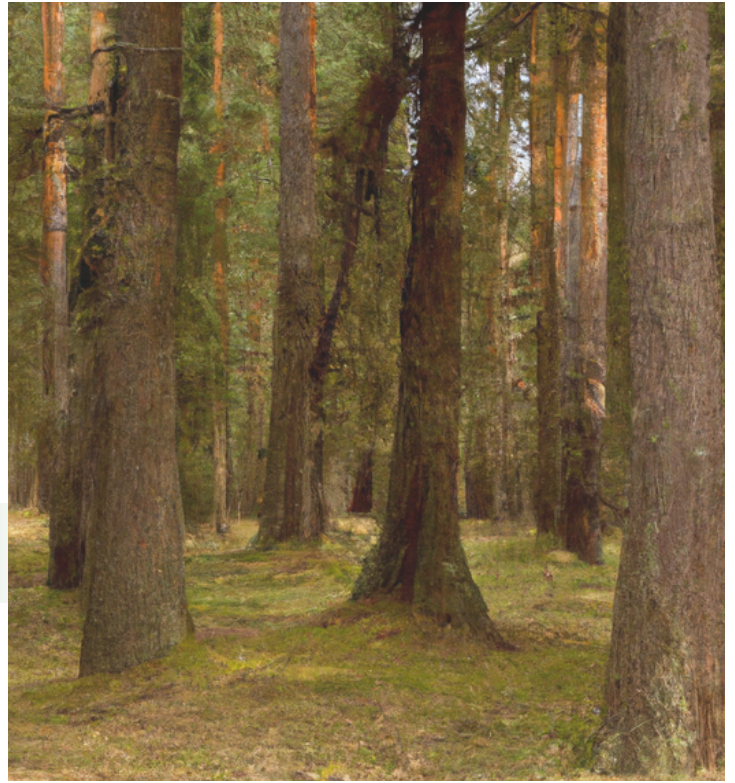
Is it physics, or are trees attuned to the needs of other trees? Is there a spirituality in science? Does scientific inquiry exist beyond data and technology?

***“Not everything is scientific, Kathleen.”***

Thanks, John. Maybe that’s the cleanest explanation. We all navigate in cyberspace, that virtual computer world – a world that even the dictionary states: “Exists in theory.” Maybe that ‘forest-wide’ web is an underground cyberspace where there is more happening below ground than many realize. Maybe scientific inquiry truly does exist beyond data and technology. Perhaps the interdependence between different layers of creation exists in a cyberspace all its own – that it’s up to us to uniquely interpret a heartbeat where and when we hear one.

I don’t know - or need to know what the answers are. Perhaps during that next meander through the woods, I should merely be intrigued by the questions themselves.

(Or, perhaps, it would be simplest to just ask Dennis.)



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