



Branching Out

Spring 2019

How Trees Make Rain

Trees give off aerosols into the air called terpenes. When we cut a pine branch, that familiar smell is the aerosol being given off by the plant that signals it has been damaged. But terpenes also combine with ozone to create large molecules that stick together as they rise through the atmosphere, collecting water vapour and creating clouds. Eventually, as the water vapour cools, it becomes rain. So, trees actually create the very weather that they need to survive.

Forest Bathing How Trees Can Help You Find Health and Happiness by Dr. Qing Li, Viking 2018

Plants emit other plant hydrocarbons, phytoncides, to protect plants from bacteria and fungal infections and from insects. The air in coniferous forests, especially pine forests, tests as being especially free of bacteria and harmful microflora. So perhaps it is not surprising that a forest walk can provide health benefits for humans.

We commonly feel more relaxed and happier after a walk in our forest, but did you know that scientific studies have proven the health benefits of this activity? Originating in Japan and known as shinrin-yoku, forest therapy is covered by health insurance in Japan and Korea because its benefits have been so widely accepted. Many Japanese companies include this therapy for their employees. So, what have the studies shown?

Forest Bathing Benefits:

decreased stress hormone (cortisol), lowered blood pressure, anxiety relief, improvement of heart conditions, skin conditions and asthma faster healing after surgery, anti-cancer benefits and strengthened immune systems, improved sleep, mental focus, energy and general mood

What happens when forests disappear?

When the emerald ash borer devastated ash forests in the US, the opportunity to study health repercussions presented itself. Across 15 states, emerald ash borer was associated with 6,113 lung related deaths and 115,080 heart related deaths. The loss of those beneficial phytoncides was determined to play a part in these deaths. As increased deforestation proceeds on a planetary scale, the implications are clear not only for wildlife but for us as well.

Talking Trees

Until recently, the concept of trees and other plants communicating seemed like science fiction. “The Hidden Life of Trees” by P. Wohlleben, reveals that trees communicate with each other, send nutrients to their offspring and other species and even maintain very old stumps either remotely or by fungal networks. Recently, scientists theorize that these old stumps retain forest memory. The tips of roots, the rudimentary brains of plants, have the ability to seek out nutrients and detect the roots of other trees. Trees not only send glucose to their offspring, but to other species in need of nourishment because the health of the whole forest depends on biodiversity and survival of the whole forest is the overriding goal. When tragedy hits in the form of infestations, fire or tornadoes, diversity preserves some species even though others may be devastated. The goal is survival of the whole forest and this is achieved by preserving many different species not just one. There is a lesson here for us when planting trees on our woodlands. Planting many trees, all of the same species, is contrary to what we see in nature and now we know why. Diversity of native species is the key to survival of the whole.

The Wood Wide Web, a fine fungal web that stretches for kilometers in an undisturbed forest, forming a mutually beneficial relationship with trees. Trees give the fungi glucose. In turn, the fungi provide trees with an all important communication web.

Dr. Suzanne Simard at UBC has been studying how trees defend themselves from predators. Oaks, for example carry bitter toxins that make their leaves unpalatable. Other species release scent compounds that signal predators to attack the tree's enemies. For example, elms and pines call on parasitic wasps to lay eggs in caterpillars that eat the elms and pines. When they hatch, wasp larvae consume the caterpillars. When tree roots are attacked, electrical signals are emitted and picked up by the fungal threads that form a communication network throughout the forest, essentially warning neighbouring trees of the danger. Once aware of the threat, all trees in the area mount their defenses like Oaks boosting tannins in their leaves. It appears that when trees are isolated or so weakened that they become disconnected from the communication web, they are more susceptible and, lacking the help of neighbouring trees, succumb more readily to insect attack and disease.



A forest is not a competitive war zone but a diverse cooperative inter connected community

Guest Speaker Events:

Especially for Newcomers-Poison Ivy Identification- Sat. June 15th 10:30 a.m.

With Sharon Callan-meet at the mailboxes

Sunday, June 23 1:30 HWCA Clubhouse

James Corcoran, registered Forester

“Identifying the Trees on Your Property”

Everyone Welcome