

THE SOCIAL LIVES OF TREES

FORESTS MAY PROVIDE
THE RESILIENCE
WE NEED TO COMBAT
CLIMATE CHANGE

BY DUSTIN GARRET RHODES.
PHOTOGRAPH BY MATTHEW MOISANT

I grew up in rural Virginia, in a valley surrounded by mountains and forests. During the summers of my childhood, I spent nearly every waking hour in the woods: playing with friends, climbing trees, building forts, wandering aimlessly. The forests were magical, a delight for every sense: the sound of leaves rustling; a glimpse of an animal going about their day; the touch of bark and bare feet on a pine-needle forest floor. To this day, forests feel most like home, and I go there every chance I get.

Most animal lovers know that forests are immensely important. Without them, countless animals (including us) would have no home. Our mother Earth would be depleted of oxygen and countless resources we take for granted. Maybe some of us know, from the memories of childhood, that our lives might have less wonder. But emerging science into the nature of trees and forests tells us something new, and deeply profound: Forests are complex beyond our wildest imaginations—they are “cooperative,” “nurturing” and “caring.” Trees are dependent upon one another, interconnected. Dare I say that in many ways (but without our determination to self-destruct), they are very much like us—nearly human.

TREES TALK TO EACH OTHER

Most of us imagine communication as something very literal: talking. But in nature, especially among the vast animal kingdom, communication manifests itself in chirps, tweets, grunts, sound waves, gesticulations—the list goes on and on. We’re often guilty of assuming our intellectual superiority because our species appears to communicate in the most elaborate language. Does it blow your mind to know that trees “talk” to one another, too?

Most of us take trees at face value: the size and shape of their leaves and trunks. But what we can’t see is far more fascinating. Underground are infinite pathways—roots, connected more intricately by fungi—that allow trees to commu-

nicate. This ability to communicate allows an entire forest to act as a single organism—an intelligence that we are only beginning to understand.

Canadian ecologist Suzanne Simard discovered tree communication almost two decades ago while researching her doctoral thesis. She found that trees communicate to one another via an elaborate system of latticed fungi beneath the ground. The form of communication she discovered is so complex and highly attuned, trees are able to relay warnings to other trees about impending environmental damage; they are capable of searching for their kin, and perhaps most astonishingly, trees in forests possess the ability to save other trees by transferring nutrients. She describes some trees special ability as “motherly.” Indeed.

Simard describes the process as an underground pipeline of sorts—which connects one tree root system to another. Simard’s work has demonstrated that, while trees do compete with one another, they also cooperate; thus when a tree needs extra help, other trees possess the ability to nurture and perform acts of salvation—providing extra nutrients to a struggling tree. One tree can literally save another.

FORESTS AT RISK

Forests, and many species of trees, in North America and around the world are in trouble, due to many factors such as logging, beetle infestations, disease, human overdevelopment, animal agriculture, and more. Much of the danger to forests exists due to climate change—specifically that warmer weather is changing the conditions of forests dramatically—causing certain types of trees to die en masse. In some places, entire forests are on the brink of death.

But there is much we don’t know about how forests can adapt to climate change, even though there are some promising signs when it comes to resilience. Simard says, “Resilience is really about the ability of ecosystems to recover their structures and functions within a range of

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possibilities. For forests in particular, trees are the foundation. They provide habitat for the other creatures, but also make the forest work. Resilience in a forest means the ability to regenerate trees. There's a lot that can be done to facilitate that because of these mycorrhizal networks, which we know are important in allowing trees to regenerate." But the bottom line is: We must stop decimating forests.

As we've long known, to preserve the environment, human behavior will have to change—dramatically. We'll have to view the environment differently and lessen our impact. Simard uses anthropocentric

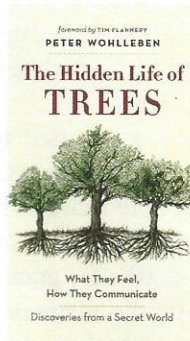
language to describe forest ecology and the environment, partially, to help humans understand their enormous importance and to be able to relate; but it's also because trees are, practically, mystical.

Children already know this. We adults simply need to remember.

TO LEARN MORE:

Suzanne Simard did a TED Talk that I highly recommend. You can find it online at: ted.com/talks/suzanne_simard_how_trees_talk_to_each_other.

The Hidden Life of Trees: What They Feel, How They Communicate by Peter Wohlleben is a fascinating and beautifully written book that's poetic, profound, and endlessly fascinating.



WHAT YOU CAN DO:



Be vegan. A plant-based diet lessens impact on all aspects of the environment. And it saves animals.



Consider **minimizing the use of paper products** and recycling as much as possible.



Use only **FSC (Forest Stewardship Council)** approved wood products, which ensures they were produced in an environmentally responsible way.



Get involved in forest preservation societies and organizations in your area.



Make **reduce, reuse and recycle a mantra**—a way of living.



Continue to **support organizations like Friends of Animals** that view animal advocacy in a holistic way. Animal exploitation and environmental degradation are deeply intertwined, and continue to help us fight both.



BY NICOLE RIVARD. PHOTOGRAPH BY EZRA JEFFREY

SHINRIN-YOKU GIVES NEW MEANING TO A WALK IN THE WOODS



Typically when I visit my local 65-acre nature preserve it's to get some exercise. Trail running is a wonderful alternative to being cooped up in a gym during the colder months. But recently I realized that even though trail running and hiking are great forms of exercise that allow you to be outdoors, if you truly want to experience and connect with nature—and yourself—there's a better way.

It's called Shinrin-yoku, or "forest bathing," and this health trend is taking off in the United States.

Shinrin-yoku, which doesn't actually involve any type of bathing, was developed in Japan in the 1980s, and it is becoming a staple of preventative healthcare and healing in Japanese medicine. Japanese researchers have found that the phytoncides that are produced to help plants and trees protect themselves from harmful insects and germs, are beneficial to humans. They found that people who spent three or four days in the forest had white blood cells that guard against tumors and infections elevated by 50 percent. That effect lasted a month. Other studies indicate benefits such as lowered cortisol levels (the stress hormone), plus lowered blood pressure and heart rate, and alleviation of depression.

According to the Association of Nature and Forest Therapy Guides and Programs, founded in 2012 by M. Amos Clifford, there is a long tradition of spending time in forested areas for the purpose of enhancing health, wellness and

happiness throughout the world. It's not just about healing people; it includes healing for the forest, or river, or desert, or whatever environment you are in.

Working for Friends of Animals, I liked the sound of that.

So I decided to try my first Shinrin-yoku session at Harry C. Barnes Memorial Nature Center in Bristol, Conn., in July. It was an eye-opener, literally and figuratively; I learned that there is so much to discover along a journey through the forest when you actually let yourself be in the moment and are not focused on any destination...or calories burned.

And that's the whole point of Shinrin-yoku—to use all of our senses to practice being in the moment, forgetting about the future and not lamenting over the past. Our guide prompted us first through some slow heel-to-toe walking, we massaged the earth with our feet while focusing on our equilibrium, and eventually she had us engaging all our senses—even our sense of smell as we picked up and sniffed various leaves. We also paused here and there to talk about what we were feeling in the moment and what we were grateful for.

As someone who loves wildlife watching, I was thankful for the different prompts by the guide, because in an hour and a half, I noticed flora and fauna that would otherwise have gone unnoticed—I marveled at Eastern Newts in the red eft stage; wood frogs; dragonflies, ants going about their day, the sounds of birds near and far, the light coming through the forest canopy, the shapes of different kinds of fungi and even the feeling of the moss on the tree I hugged. Yes, we hugged a tree.

Clifford, who has plans to certify 250 new guides next year, says “what energizes our work is our

love of nature; but also our sense of impending environmental catastrophe caused by global overpopulation and Western Cultures over-emphasis on consumption.”

He believes his contribution to finding solutions to these problems is to help as many people as possible to develop meaningful relationships with nature. And that's a concept shared by Friends of Animals.

“The reality is that most people don't spend much time in nature; and when we do, we are often distracted in ways that prevent us from forming meaningful connections with the plants and other inhabitants of the forest,” Clifford writes. “We agree with Jacques Cousteau that ‘people protect what they love.’ Love of nature arises naturally when we come into a heartfelt, embodied relationship with it, a kind of relationship that is not limited to knowing the facts but instead encompasses a much deeper knowing of one's place among the many beings.”

I couldn't agree more.

If you'd like to learn more about Shinrin-yoku, visit natureandforest-therapy.org.



HERE IS A LIST OF PLACES ACROSS THE COUNTRY THAT CURRENTLY OFFER FOREST BATHING.

- New England Nature and Forest Therapy Consulting, Acton, Mass. nenft.com
- Woodloch Lodge in Hawley, Pa. thelodgeatwoodloch.com
- Blackberry Farm in Walland, Tenn. blackberryfarm.com
- L'Auberge de Sedona in Sedona, Ariz. lauberge.com
- Trout Point Lodge in East Kemptville, Nova Scotia troutpoint.com
- Mohonk Mountain House, New Paltz, N.Y. mohonk.com/mindfulness
- Harry C. Barnes Memorial Nature Center, Bristol, Conn. elcct.org



Above & Left: Participants in Shinrin-yoku actually hug trees sometimes, like this one covered in fungi and moss at the Harry C. Barnes Memorial Nature Center in Bristol, Conn., where an Eastern Newt in the red-ef stage was also spotted. Photographs by Nicole Rivard