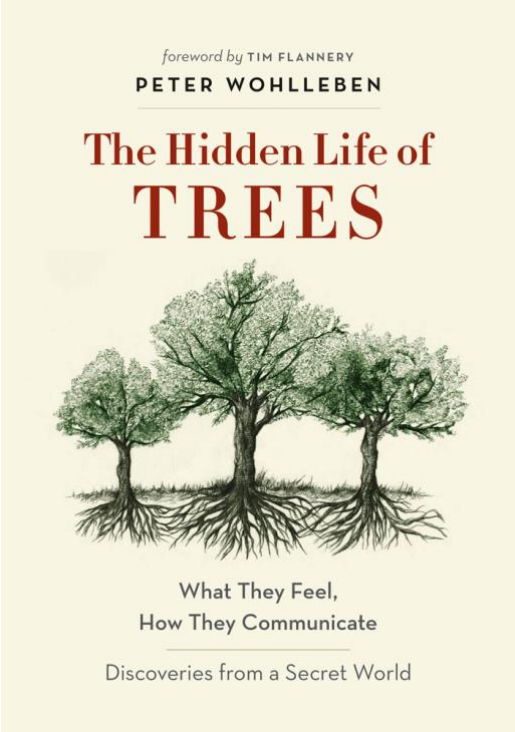
GREYSTONE BOOKS

Reading Guide

The Hidden Life of Trees, by Peter Wohlleben



Are trees social beings? In this international bestseller, forester and author Peter Wohlleben convincingly makes the case that, yes, the forest is a social network. He draws on ground breaking scientific discoveries to describe how trees are like human families: tree parents live together with their children, communicate with them, support them as they grow, share nutrients with those who are sick or struggling, and even warn each other of impending dangers. Wohlleben also shares his deep love of woods and forests, explaining the amazing processes of life, death, and regeneration he has observed in his woodland.

After learning about the complex life of trees, a walk in the woods will never be the same again!

About the Author

Peter Wohlleben spent over twenty years working for the forestry commission in Germany before leaving to put his ideas of ecology into practice. He now runs an environmentally-friendly woodland in Germany, where he is working for the return of primeval forests. He also runs a nature academy, The Waldakademie Hümmel, where he gives leads guided tours and seminars. He is the author of numerous books about nature, including *The Hidden Life of Trees*, *The Inner Life of Animals,* and, available from Greystone starting in spring 2019, *The Secret Wisdom of Nature*. Together, these three titles comprise the Mysteries of Nature Trilogy.

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Author Interview

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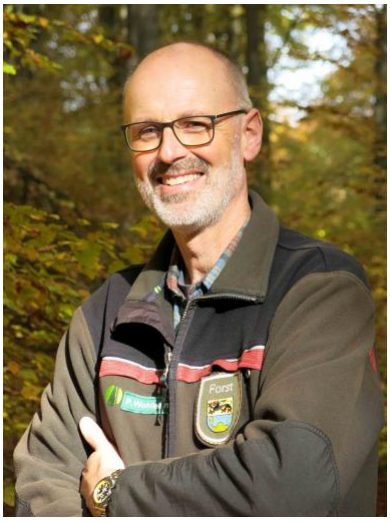

Why did you choose to anthropomorphize trees in *The Hidden Life of Trees?*

We humans are emotional animals. We feel things—we don't just know the world intellectually. So I use words of emotion to connect with people's experience. Science often takes these words out, but then you have a language people can't relate to and can't understand. That's one reason most scientific research has so little impact on people. We have been viewing nature like a machine. That is a pity because trees are badly misunderstood. When I say mother trees suckle their children, no one really thinks that the mother tree will latch its seedling to a non-existent breast. But you say "suckling," and everyone knows instantly what's going on—that there's a special relationship.

What are some key lessons that we as humans can learn from the forest?

The main lesson is that support without conditions is the best thing. When you are caring for other trees—or other humans—then you really care for yourself. It's good for you because, as a human being, you need your family and social structure to feel well. Trees are the same. When you discover trees and watch them, it's like looking in a mirror. We see it on our forest reserves when an old beech tree becomes lonely because a storm has blown down four or five of its neighbours and becomes weak. We all know it's not working when every single person is just thinking of him or herself.

How do we know that trees talk to each other?

Scientists can prove very easily that trees exchange information. For example, when an insect attacks a tree, you can measure electrical signals going through the tree, and the tree will produce poisonous substances to get rid of the insect. In the meantime, it warns its surrounding companions by a chemical call, a scent, and the other trees know instantly what sort of attack is coming and can prepare. We know just a few words of tree speech by observing these threat responses. It's like learning English by hurting people and listening to what they say. It's not a good way to learn tree speech, but it's the only one we have so far.

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You speak about the forests in central Europe as well as those in British Columbia. What differences are there between the trees on these separate continents?

I don't think there are any big differences because forest work the same all over the world. Whether you're in British Columbia, Germany, or Brazil, all forests form family bonds because trees are very social. They live according to the same strategies, which means that they try to care and support each other to make a forest stable. A tree is not a forest—a tree needs a forest. That way they can create a certain climate.

What actions suggest that trees have memory?

We had a heavy drought here in Germany. In subsequent years, the trees that had suffered through the drought consumed less water in the spring so that they had more available for the summer months. Trees make decisions. They can decide things. We can also say that a tree can learn, and it can remember a drought its whole life and act on that memory by being more cautious of its water usage.

What does friendship between trees look like?

In about one in 50 cases, we see these special friendships between trees. Trees distinguish between one individual and another. They do not treat all other trees the same. For example, I saw two old beeches standing next to each other. Each one was growing its branches turned away from the other rather than toward each other, as is more usually the case. In this way and others, tree friends take care of each other. This kind of partnership is well known to foresters. They know that if you see such a couple, they are really like a human couple; you have to chop down both if you chop one down because the other will die anyway.

What is it that trees do that suggests they have personalities?

Trees have just as much character as humans do. They also exercise independent judgments, which can differ. If trees lose their leaves too early, they may not produce enough food for a long winter. If they keep them on too long, they may get caught in an early snowstorm and the weight of the snow can break their branches. Some trees of the same species and age living right next to each other shed their leaves weeks before their neighbors. I'm not sure why some choose to do this earlier and others later, but it shows that there really are differences of character that we can't easily account for.

Do trees feel pain when they are pruned or cut down?

We don't know how trees experience pain, but the mechanism is the same as in humans. When you hurt a tree, electrical signals run through the tree's tissue. New research by the University of Leipzig shows that when a human cuts a branch, the tree will bring in wound-healing substances. But when a deer bites a branch, the tree will first bring in poisonous substances to repel the deer, and afterwards bring in substances to heal the wound. So a tree is able to sense the difference in attacker.

How can spending time in a forest improve human health?

Research in South Korea and Japan shows that your blood pressure will go down when you're in a healthy forest. There is also research that says if you can look out the window at a tree when you're in the hospital, you will become healthy again more quickly than if the tree wasn't there. It makes sense. For example, fire and humans go together, otherwise we wouldn't have developed as we did. Now for fire, you need to have wood, forests, so this strong relationship with our ancestors is there in our unconscious.

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Key Facts from the Book

The Hidden Life of Trees, by Peter Wohlleben

- Forest science has revealed that **trees (and other plants) in an uncultivated environment communicate with each other via an underground web** of fungi interconnected with tree root systems. Through this "fungi internet," trees can warn each other of impending danger.

- **However,** sick or weakened trees will eventually lose this ability to communicate and with then become more vulnerable to pests and disease.

- Trees also use their root system and the "fungi internet" as a redistribution mechanism for nutrients **like a giant social security system to ensure all members of the group have equal access to food**. But this process works best when trees grow close together, unlike in an industrial planted forest.

- Trees behave like family units beyond sharing nutrients and communicating with each other. **"Mother" trees nurture their offspring in a form of "upbringing."** They shade their offspring to slow down their growth and ensure proper development and long-life.

- **Trees also communicate via scent.** Some species will release a toxic substance when their leaves are nibbled on. This substance is a repellant to the predator, and also a warning to nearby trees who then release the same substance as a preventative measure.

- **Trees provide life support for their sick and dying brethren,** pumping sugar to the family member through their roots when it cannot provide its own food, often nourishing a sick tree back to health.

- **Trees register pain.** Leaves send out electrical signals when they are being eaten, just as human tissue does when it is hurt.

- **Trees are capable of learning.** For example, after suffering a drought and physical repercussions from lack of water, trees appear to learn and do a better job of rationing their water supplies in subsequent seasons, even when water appears to be in abundance.

- **Trees can be bullies.** Beeches are known to harass other species, snapping up their water and food from larger oaks to weaken them.

- City trees, aka **Street Kids**, with no close relatives, transplanted after years of handling in nurseries into hard packed soil, **are disadvantaged** and don't grow as tall or strong as their cousins in the wild, making them prone to coming down in windstorms.

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Discussion Questions

The Hidden Life of Trees, by Peter Wohlleben

1. When asked why he chose to anthropomorphize trees, Peter Wohlleben said, "I use words of emotion to connect with people's experience. Science often takes these words out, but then you have a language people can't relate to and can't understand." What do you think of this approach? And in what ways is this anthropomorphism effective in *The Hidden Life of Trees*?

2. *The Hidden Life of Trees* became a surprise bestseller, earning a place on the New York Times and many other bestseller lists. What do you think it is about the present moment we live in that makes nature such a popular topic for today's readers?

3. Fungi, while functioning as the "wood wide web," can allow trees to communicate and share crucial survival information. However, they can also damage trees by invading the bark and causing rot. How does this relationship reflect or parallel the one that humans have with our internet?

4. Peter mentions how a number of forest conservationist methods that help trees in the short-term actually damage a forest's long-term health. In the forest that he works with in Hümmel, Peter has banned machines and only allows log removal by horses. In general, does technological advancement work with nature or against it? Can you think of examples of each?

5. When a woodpecker drills holes into a tree's bark, the tree is then susceptible to rot or an invasion of fungi. On the other hand, birds play an integral role in plant reproduction by spreading seeds over long distances. How would you describe the complex relationship between animals and trees?

6. In the first chapter called "Friendship," Peter describes himself being profoundly inspired when he realizes that what he initially took for stones were actually remnants of a rotting stump kept alive by neighboring trees. Is there a significant tree or forest area that has similarly affected your life?

7. Wohlleben writes that people are more physiologically relaxed when journeying through a deciduous forest due to the chemical signals the trees release. However, this effect is absent in a walk through a coniferous forest. Have you experienced this difference? Which do you prefer, and why?

8. Western society places more of an emphasis on the individual, whereas Eastern society values a more collective culture. In terms of the ways in which trees care for themselves and others, where do they fall in this spectrum and why?

9. What do you think is the most important lesson that human society can adopt from the lives of trees?

10. Did you have any misconceptions about trees that were changed by reading Peter's book? If so, what were they? And how did it feel to have your perspective change?

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