Can Trees Talk?

A forest manager named Peter Wohlleben was walking along a path when he noticed some shapes in the dirt. They formed a circle. He looked more closely and discovered that the shapes were part of an old tree. A long time ago, someone had cut down the tree. Now there was just the base. It was nothing more than a stump, which is the ring of wood left after a tree falls.

Wohlleben looked more closely. The stump did not look completely dead. A tree cannot live without leaves. It needs to process sunlight into sugar or it dies. Wohlleben thought the tree was about 500 years old. A tree cannot live for 500 years without leaves, but this tree stump was alive.

Wohlleben did some research and made a fascinating discovery. Other trees were keeping the stump alive. Trees have roots underground, and a fungus that grows on the roots allows chemicals and sugars to move from one tree to another. Other trees were using this root system to feed the old piece of tree.

This discovery surprised the forester because it showed that trees are not alone. They depend on each other. Older trees take care of younger trees and later younger trees may take care of their elders. In fact, trees are like a family: cooperation and sharing help keep the whole forest healthy. Wohlleben and other forest researchers are continually discovering new ways that trees help each other.

Insects are a problem for trees. They eat the leaves and can damage the wood. Hungry insects usually attack a weak tree. They eat the leaves, and the tree cannot process sunlight. Healthy trees can defend themselves by producing a chemical. The chemical makes the leaves taste bad, so the insects stop eating the tree. Now typically those insects might just go to the next tree. Then that tree has the problem. However, that does not happen.

The first tree warns other trees in the area. It sends chemical information into the air and other trees receive it. Then they can start producing the same chemical. The tree can also use its root connections to tell other trees about the insect. Those trees can begin using the same chemical, and they can send information to the next tree. In this way, one tree can teach others to defend themselves against the insects. This system thus helps protect a whole forest.

Healthy trees can produce many insect poisons and they can even make their leaves taste terrible to animals. However, weak trees have more difficulty. Insects might kill a few weak trees, but with the help of the forest communication system, most trees survive. However, when the balance between healthy and unhealthy trees is upset, insects can destroy entire forests.

In North America, thousands of forests are in danger. Their enemy is a small black insect. The insect is not new, but it can do more damage because the trees are stressed. The trees depend on a cold winter to kill beetles. They also need a lot of water. Climate change has made the forests are warmer and drier. Now these insects can survive longer and attack more forests. In recent years, visitors to national parks do not see a beautiful green forest. Instead, many of the trees are an ugly reddish brown.

Forest managers have hope that the trees will come back because trees can learn. One lesson is to use less water. Typically, when there is a lot of water in the ground, the tree drinks a

lot. However, when there is less rain, and the ground is dry, the tree suffers. The next year, the tree drinks less water. In fact, trees that are used to dry environments learn to need less water.

A few years ago, there was almost no rain in Texas. The ground became dry and many trees died. However, some trees did not. Those trees changed. They only sent water to the strongest part of the tree. Some of the trees branches dried up. They fell, and the tree became smaller. A few leaves grew close to the main trunk of the tree, and those leaves kept it alive. The tree was not big and beautiful any more, but it showed the ability to understand the problem and find a solution.

The more foresters learn about trees, the more interesting trees become. They seem to have an intelligence that is completely different from the way our brains are organized. They can change, they can share, and they can even teach each other. Wohlleben's research gave him a deep respect for trees, and he wrote a book called *The Hidden Life of Trees* to teach people more about these quiet giants of the forest.

Discussion

After reading this article, do you agree that trees are intelligent?