Can You Read a Tree?

By Jessica Fries-Gaither

What's the weather like today? Sunny? Rainy? Snowy? What about yesterday? Was it the same or different? You probably know that **weather** changes from day to day. Sometimes it even changes from hour to hour!

Climate can change, too. It just happens over long periods of time. A place might have been very different long ago. A cool place might have been warm. A warm place might have been cool. How can we know what the climate was like long ago?

Scientists have kept records of the weather for the last two hundred years. To learn what the climate was like before that, they might have read old diaries or journals. A farmer might have kept a journal about when he harvested his crops each year. Another person might have written in a diary about when trees bloomed in spring.

But diaries and journals can only help so much. What about hundreds of thousands of years ago, before there were people at all? The secret to learning about Earth's climate in the past can be found in surprising places, like giant trees.

The World's Oldest Tree

In the White Mountains of California, a **gnarled** and twisted tree grows on the steep side of a mountain. Its name is Methuselah (meh-thoo-se-lah). It isn't an ordinary tree. You see, Methuselah is nearly five thousand years old. It is the oldest-known living tree in the world.

Methuselah is a bristlecone pine tree. These long-living trees are found in only six states in the western United States. Their trunks are smooth from wind-blown sand and ice. They have yellow-green needles, like other pine trees. Bristlecones aren't very tall. They grow to be only about sixty feet. Most of the tree's energy is used to survive, instead of growing big.

Scientists think that Methuselah has been growing since 2832 B.C. Imagine all the things that have happened during this time. The pyramids were built in Egypt. The first Olympics were held in Greece. The Roman Empire ruled a large part of Europe. Christopher Columbus discovered America. America won its independence from Britain. And so on!

Why are trees like Methuselah important? They help scientists learn about the Earth's climate long ago. Here's how.

Have you ever seen the inside of a tree? If so, you know that a tree's trunk is divided into many circular sections, or rings. These tree rings can tell scientists how old a tree is. Each ring equals a year, so a

tree with five rings is five years old. A tree with fifty rings is fifty years old, and so on.

Scientists also measure how wide the rings are. The width of the rings helps them understand what the climate was like during that year. A wide ring tells scientists that there was plenty of water and warm temperatures during the year. A narrow ring means that there wasn't enough water or the temperatures were too hot or too cool.

Scientists don't just study one tree's rings to learn about the climate. Instead, they will study the rings of many trees in the area. The rings of all the trees will be similar. Scientists compare the rings to draw conclusions about what the climate was like for that place in the past. Scientists have done this in many places in North America and Europe. They know what the climate was like thousands of years ago.

Go outside and look at the trees near your home or school. What can they tell you about the past?

Glossary

climate - the average of the weather conditions through all the seasons over a period of time

gnarled – twisted, full of knots

weather - what it is like outdoors at a certain time

Flesch-Kincaid RL = 4.5