

Dendroclimatology

Scientists are using the stories told through tree growth rings to help us understand historical and recent changes to the Earth's climate. Watch and respond to questions about two videos showing the important work dendroclimatologists do.

Defining Dendroclimatology

Dendroclimatology is a long word, but we can break it down to understand it.

Dendro-: root word meaning "tree"
-climat-: (climate) root word meaning weather patterns in a particular location over a long period of time
-ology: suffix meaning "the study of"

So dendroclimatology is the study of climate using trees!

Dendroclimatology is one type of **dendrochronology**. **Chrono** is a root word meaning "time," so dendrochronology is the study of time using trees.

Dendrochronologists and dendroclimatologists are scientists who use the growth patterns found in tree rings to learn about what happened in the past.

Video 1: Dendroclimatology overview

This video is a bit older, but it's a really great overview of what dendroclimatology is, how it's done, and what scientists can learn from it. It follows dendrochronologist Lisa Graumlich, of Montana State University, as she samples and analyzes trees in Yellowstone National Park.

Watch the video, then answer the questions below. You can rewatch the video to help you answer them.

[Tree Rings: Counting the Years of Global Warming](#) by Liz Smith.

Suggested Grades

Grades 9-12

Time

30-45 minutes

Subjects

- ADST
- Career Education
- Science
 - Earth Science
 - Environmental Science
 - Life Sciences
- Social Studies

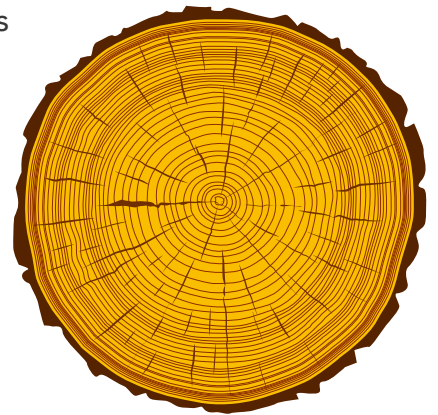
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Video 1 Questions

- What kinds of technology are being used? How might those technologies have changed in the past 13 years?
- What challenges do scientists face doing this work? (Think about technology, location, training, weather, time, etc.)
- What is deadwood and why is it important?
- What is the treeline? Why is it important?
- What can we learn from the sequence of narrow and wide tree rings?
- How do scientists know that tree rings are showing world-wide climate change?

Video 2: Dendroclimatology in Canada

Unfortunately, we haven't solved global climate change in the last 13 years. Scientists are still using tree ring data to help people understand how climate change is impacting local ecosystems. In this video, dendroclimatologist Dave Sauchyn explains how he is using tree rings to show the effects of climate change on the Canadian prairies.



Watch the video, then answer the questions below. You can rewatch the video to help you answer them.

[Dave Sauchyn - Dendroclimatology and the Canadian Prairies](#) by Climate Atlas of Canada

Video 2 Questions

- Why is it hard to see the effects of global warming on the Canadian prairies?
- Why are tree rings especially useful in helping to determine the change in climate over time?
- Why might the droughts in the future be different than the ones trees have recorded from the past?
- According to Dave Sauchyn, significantly reducing the amount of fossil fuels people use will be "a huge adjustment in the way that we make a living, especially in Western Canada." Why is that? What industries rely on fossil fuels?