

Activity: Tree-Ring Analysis

name: _____

Pre-Activity Questions

1. What is paleoecology? _____
2. What kind of cells are tree rings made up of, and what do they transport?

3. How are the cores obtained from trees? (This does not harm the tree.)

4. List three specific ways tree-ring analysis is used in the field of paleoecology. To determine the timing of . . .

Activity

5. The page stapled to this one shows two cores. The one labeled **AA** was taken from a living tree in 1990. Label the 1990 ring and the 1987 ring.
6. Which was the better growing season? . . . 1990 or 1987
7. Label the rings for each of the following years: 1980, 1970, 1960, 1950, 1940, 1930
8. Count the rings on **AA** to determine how old that tree was in 1990. _____ years
9. Label the ring from **AA**'s first growing season with the year. What year did it start growing? It started growing in the year _____.
10. Was 1960 a good growing season or a poor one for **AA**? _____
11. The other core (**XX**) was taken from a log cabin. This log was once a tree that lived in the same forest as **AA**. Why do the rings for **AA** and **XX** match up for several years?

12. Which tree sprouted first? Circle one-> **AA** or **XX**
13. Label the first year of each decade on core **XX** as you did on core **AA**.
14. List the six best growing seasons (years) for core **AA**.

15. In what year did **XX** start growing? _____

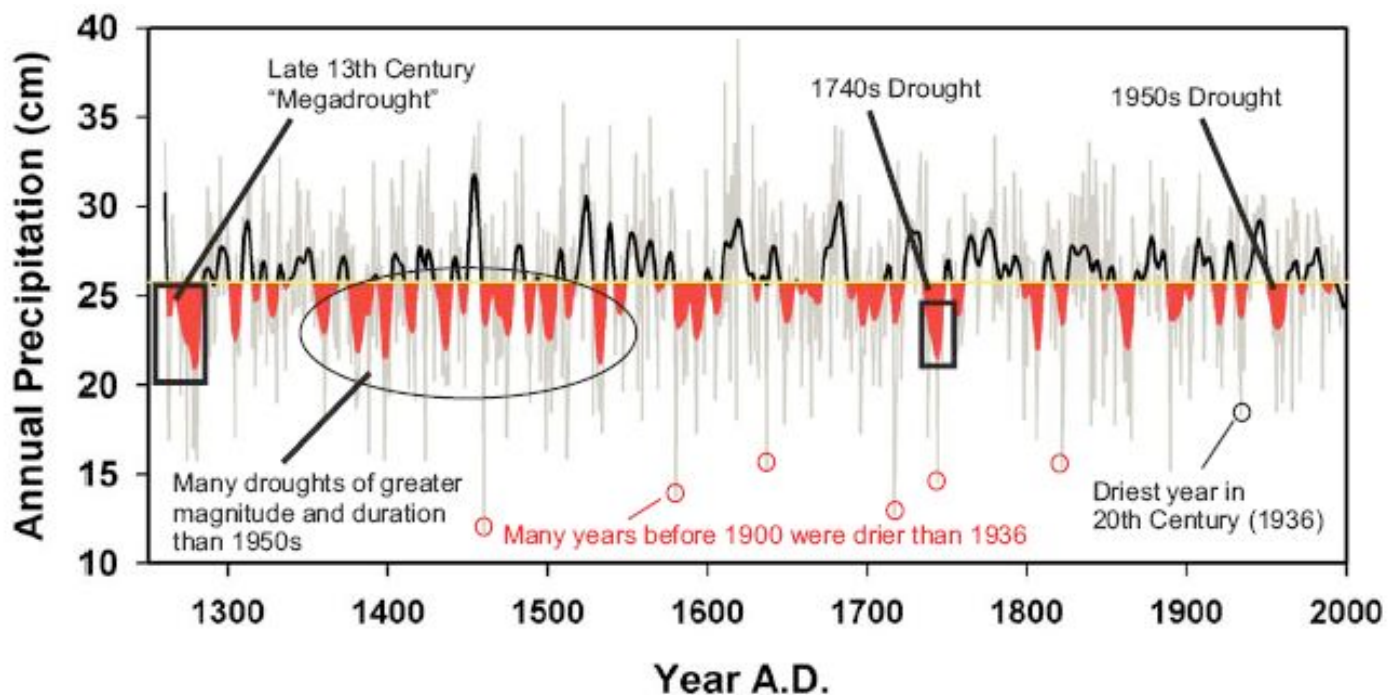
16. Assuming a trapper built this cabin the same year XX was cut down, when was the cabin built?

17. If the trapper died in 1960, how many years did he live there? _____ years
18. List the six best growing seasons (years) for core **XX**.

19. According to these two cores, during which three decades did this particular forest receive the most precipitation? (An example of a decade would be the "1990s".)

20. Based on these two cores, which decade received the smallest amount of precipitation? _____
21. Look at the graph on the below. Approximately how old were the trees that were used in this study?

22. This study (see graph below) was done in north-central Wyoming. What was its purpose?



23. The Dust Bowl was a drought that happened in the Oklahoma area in the 1930s. According to the graph (above), when was the worst drought in northcentral Wyoming during the 1900s?

NOTE: There are more questions on the back of the core diagrams.

24. For the Wyoming area represented on the graph (second page of this handout), which 200-year period was most prone to drought?

25. Meteorologists have been keeping track of precipitation amounts for over 100 years at most locations. Tree rings can tell scientists how much precipitation fell in the centuries before precipitation amounts were measured. Explain how scientists could check to see how accurate the tree ring evidence is. (Tough question! Do not ask your instructor or other groups for help!)

26. Another way that scientists can learn about past climates is to examine cores taken from glaciers such as those in Greenland and Antarctica. Look at the graph below.

a. How many years of data are represented on the graph below?

b. Is there are correlation between the temperature and carbon dioxide levels? Explain.

c. The graph shows 4 ice ages. What happens to dust levels during these cold periods?

