
Stalagmites record annual rainfall!

Caves often have beautiful interior decoration created when calcium carbonate, dissolved in water passing through the overlying limestone, is redeposited inside the cave - stalactites hanging down, stalagmites pointing up and flowstone on the floors. In a distinctly wet winter / dry summer climate such as ours, the material is deposited in annual pulses, leaving a layered deposit rather like growth rings in a tree trunk.

Pauline Treble of the Australian National University, Canberra, wondered whether these deposits could provide a record of what is happening to the climate - specifically the rainfall - up above the cave. For her PhD she analysed a small stalagmite from Moondyne Cave that had formed on a boardwalk, so its exact age was known. She found that phosphorous, magnesium and the oxygen isotopic ratio preserved in the stalagmite, record the known rainfall decrease from about 1970 onwards. In other words, stalagmites can tell us about past climates!

She has now started a new research project, testing materials from caves at Margaret River and Yanchep, to attempt to take our annual rainfall record back across the last 1000 years. The aim is to try to determine how naturally variable the climate is, for example, have dry spells like the past 35 years happened before 1850 and the recorded industrial revolution atmospheric changes? The answer to this will help us answer the question "How much of the current climate trend is man made?"

Watch this space!
