

# Major Climate Change Occurred 5,200 Years Ago: Evidence Suggests That History Could Repeat Itself

December 16 2004

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Glaciologist Lonnie Thompson worries that **he may have found clues that show history repeating itself**, and if he is right, the result could have important implications to modern society.

Thompson has spent his career trekking to the far corners of the world to find remote ice fields and then bring back cores drilled from their centers. Within those cores are the records of ancient climate from across the globe.

From the mountains of data drawn by analyzing countless ice cores, and a meticulous review of sometimes obscure historic records, Thompson and his research team at Ohio State University are convinced that the global climate has changed dramatically.

But more importantly, they believe it has happened at least once before, and the results were nearly catastrophic to emerging cultures at the time. He outlined his interpretations and fears today at the annual meeting of the American Geophysical Union in San Francisco.

A professor of geological sciences at Ohio State and a researcher with the Byrd Polar Research Center, Thompson points to markers in numerous records suggesting that the climate was altered suddenly some 5,200 years ago with severe impacts.

He points to perfectly preserved plants he discovered that recently

emerged from the Quelccaya ice cap in the Peruvian Andes as that glacier retreats. This monstrous glacier, some 551 feet (168 meters) deep, has shown an exponentially increasing rate of retreat since his first observations in 1963.

The plants were carbon-dated to determine their age and tests indicated they had been buried by the ice for perhaps 5,200 years. That suggests that somehow, the climate had shifted suddenly and severely to capture the plants and preserve them until now.

In 1991, hikers found the preserved body of a man trapped in an Alpine glacier and freed as it retreated. Later tests showed that the human – dubbed Oetzi – became trapped and died around 5,200 years ago.

Thompson points to a study of tree rings from Ireland and England that span a period of 7,000 years. The point in that record when the tree rings were narrowest – suggesting the driest period experienced by the trees – was approximately 5,200 years ago.

He points to ice core records showing the ratio of two oxygen isotopes retrieved from the ice fields atop Africa's Mount Kilimanjaro. A proxy for atmospheric temperature at the time snow fell, the records are at their lowest 5,200 years before now.

He lists the shift by the Sahara Desert from a habitable region to a barren desert; major changes in plant pollen uncovered from lakebed cores in South America, and the record lowest levels of methane retrieved from ice cores from Greenland and Antarctica and all occurred at the same time – 5,200 years ago.

“Something happened back at this time and it was monumental,” Thompson said. “But it didn't seem monumental to humans then because there were only approximately 250 million people occupying the planet,

compared to the 6.4 billion we now have.

“The evidence clearly points back to this point in history and to some event that occurred. It also points to similar changes occurring in today’s climate as well,” he said.

“To me, these are things we really need to be concerned about.”  
The impact of a climate change of that magnitude on a modern world would be tremendous, he said. Seventy percent of the population lives in the world’s tropics and major climate changes would directly impact most of them.

Thompson believes that the 5,200-year old event may have been caused by a dramatic fluctuation in solar energy reaching the earth. Scientists know that a historic global cooling called the Little Ice Age, from 1450 to 1850 A.D., coincided with two periods of decreased solar activity.

Evidence shows that around 5,200 years ago, solar output first dropped precipitously and then surged over a short period. It is this huge solar energy oscillation that Thompson believes may have triggered the climate change he sees in all those records.

“The climate system is remarkably sensitive to natural variability,” he said. “It’s likely that it is equally sensitive to effects brought on by human activity, changes like increased greenhouse gases, altered land-use policies and fossil-fuel dependence.

“Any prudent person would agree that we don’t yet understand the complexities with the climate system and, since we don’t, we should be extremely cautious in how much we ‘tweak’ the system,” he said.

“The evidence is clear that a major climate change is underway.”

Source: Ohio State University

Citation: Major Climate Change Occurred 5,200 Years Ago: Evidence Suggests That History Could Repeat Itself (2004, December 16) retrieved 2 May 2024 from <https://phys.org/news/2004-12-major-climate-years-evidence-history.html>

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