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Lessons From the Medieval Warm Period

My children often ask: Why is history so important? For which I regularly answer -- because the past is rich with information and lessons.

From about AD 800 to 1300 the Earth underwent a slight warming period so dubbed "The Medieval Warm Period." Most places experienced milder winters and longer summers but temperature differences never amounted to more than 1.8 degrees Fahrenheit or so. And everywhere was not necessarily warmer. For example, the eastern Pacific was cooler and drier.

Globally, the climate went through sudden and unpredictable swings. The most startling was

the extent and duration of droughts.

The difference between three quarters of an inch of precipitation spells the difference between life and death.

During the Medieval Warm Period much of North America through to Central and South America, and across the Pacific to China, experienced long periods of severe aridity.

Without a doubt we know from tree rings, cherry blossom records dating back 1,000 years from Korea and Japan, western Pacific corals, seabed cores, ice cores from polar, subtropical and tropical mountain glaciers, and cores from alpine lakes that droughts were the lethal silent killer of the Medieval Warm Period.

Prolonged Medieval droughts decimated Chaco Canyon and the Pueblo Peoples of the American southwest and the Angkor Wat of India. Repeated drought cycles leveled the Mayans of Middle America, and starved tens of thousands of northern Chinese farmers.

Droughts also forced Mongolian horse nomads to search for new pasture and saw the rise in AD 1206 of Genghis Khan, a brilliant leader who conquered more than twice as much as any other man in history. Interestingly, he created the first international postal system. And during his reign he lowered taxes for everyone, and abolished them altogether for doctors, teachers, priests, and educational institutions.

Tree rings from cottonwoods and Jeffrey pines unearthed from a receding lakebed in east central California revealed intense droughts between AD 910 to 1100 and AD 1250 to 1350. The only way the Native Americans survived during these arid times was to cooperate and carefully manage their water supplies and food resources across the harsh landscape.

The endless debate over anthropogenic global warming is over, the voluminous scientific evidence detailing our contributions to today's warmer world and of the future has well passed the phase of controversy.

Today, we are experiencing a sustained warming unknown since the end of the Pleistocene glaciation some 14,670 years ago.

The Quelcaya ice cap of southern Peru is retreating more than 197 feet a year, three times faster than in the 1960s. The Peruvian Andes have lost more than 21 percent of their glacier area since 1970. At least 27 million people rely on the glaciers for their water supply.

Lake Mead, an enormous reservoir of the mighty Colorado River, provides water for Arizona, Nevada, California and northern Mexico; and it's falling to a level not seen since it was first filled in the 1930s. Scientists are predicting a 50 percent chance that Lake Mead will run dry by 2021.

Over the past decade, the Southwest has suffered the sharpest temperature increase on the continent, declining late-season snowpacks, loss of forests and raging wildfires; and all the while growing faster than any other region in the United States. Global warming is predicted to reduce the snowpack runoff that feeds the Colorado River by as much as 45 percent over the next 50 years.

The continent of Australia has been pummeled by global warming over the past decade. The

cities of Perth, Sydney and Melbourne currently rely heavily upon newly created desalinization facilities, and the state of Victoria is getting set to open a plant in 2011 that will dwarf all others in the nation.

The lessons from the warm centuries of a thousand years ago clearly show us that drought is a real global problem. And those droughts of a warmer future will become prolonged and more intense.

Drought and water are the most important issues for this and future centuries.

Fresh water is the lifeblood of our planet - for agriculture, for herds, for drinking, and for wild ecosystems.

Currently, each year we are drawing 42 billion gallons of water from the Ogalla aquifer, which supplies eight states from Nebraska to Texas. And Las Vegas is trying to buy up any and all water that it can secure.

UNESCO estimates that 1.1 billion people do not have drinking water and about 2.6 billion people lack basic sanitation.

By 2025 about 2.8 billion people will live in areas of increasingly scarce water supplies.

By 2030, UNESCO also estimates that the world will need 55 percent more food with an ever-increasing demand for irrigation, which already claims about 70 percent of all fresh water consumed by humans. In addition, they estimate that 2 billion people will be squatters in urban centers.

Global warming will require a massive intervention on an international and long-term scale.

The time is now that we as a species plan for our great-grand children. This will require political, social and corporate thinking as never seen before.

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