

CLIMATE NEWS

From Sheldon Whitehouse, Barbara Boxer, and Jeff Merkley

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Recent Heat Spike Unlike Anything in 11,000 Years



A new study looking at 11,000 years of climate temperatures shows the world in the middle of a dramatic U-turn, lurching from near-record cooling to a heat spike. The joint Oregon State and Harvard University study, published in the journal *Science*, reconstructs global temperatures throughout the Holocene—the climate period that began at the end of the last ice age, about 11,500 years ago, and continues to the present. The study shows how the Earth was cooling for several thousands of years until an unprecedented reversal in the 20th century. The researchers say it is further evidence that modern-day global warming isn't natural, but the result of rising carbon dioxide emissions that have grown rapidly since the Industrial Revolution began about 250 years ago. The decade from 1900 to 1910 was one of the coolest in the past 11,300 years—cooler than 95 percent of the other years. Yet 100 years later, the decade from 2000 to 2010 was one of the warmest, said lead author Shaun Marcott. “We’ve never seen something this rapid. Even in the ice age the global temperature never changed this quickly,” Marcott said. Before this study, continuous temperature record reconstruction only went back about 2,000 years.

(*Time/Science*.1228026)

Pope Francis Addresses Environment in Inaugural Mass

The Catholic Church's first New World pontiff formally began his ministry Tuesday with a call for politicians, priests, and others in positions of power to protect the needy and the environment. Standing on the steps of St. Peter's Basilica, Pope Francis said to a group of heads of state, among a crowd of tens of thousands gathered for his inaugural Mass: “I'd like to ask, please, to anyone who is in charge of the economy, politics, society—to all men and women of good will—let's be custodians of creation and of the design of God inscribed in nature—custodian of others and of the environment.” Pope Francis's audience included U.S. Vice President Joe Biden, the first Roman Catholic to hold that office; German Chancellor Angela Merkel; Argentine President Cristina Kirchner, and other world leaders. Speaking under clear, blue skies, the 266th pope warned that “when man fails in his responsibility as custodian, when he doesn't take care of creation and his brothers, then we find space for destruction.” (*WSJ*)

A Science of Signs of Spring

To chart the advent of spring, thousands of volunteer naturalists are logging when cherry trees and lilacs first blossom, when Monarch butterflies and hummingbirds fly north, and when insects stir and robins nest. Their backyard observations record how plants and animals across North America are responding to long-term temperature changes that, according to the U.S. National Climatic Data Center, have meant earlier springs than in past decades. Indeed, the annual growing season in much of the U.S. is two weeks longer now than a century ago, federal records show. To enlist an army of observers, the U.S. Geological Survey and the National Science Foundation set up the National Phenology Network in 2007. Phenology is the study of the timing of natural events. This year, the network has more than 2,000 people tracking variations among 600 species of plants and animals in the North America. The aim is to create a reliable technical daybook of seasonal change that researchers can use. Using this data, scientists are finding such signs of change. For example, researchers at Clemson University (SC) and Taylor University (IN) analyzed records of bird sightings dating to 1880 and discovered that ruby-throated hummingbirds are migrating to North America as many as 18 days earlier than decades ago. (*WSJ*)

U.S. Scientists Report Big Jump in Heat-Trapping CO₂

New federal figures show that the amount of heat-trapping carbon dioxide (CO₂) in the air jumped dramatically in 2012, making it unlikely that global warming can be limited to another 2°F as many leaders hoped. CO₂ levels increased by 2.67 parts per million (ppm) since 2011 to total just under 395 ppm, says Pieter Tans of NOAA's greenhouse gas measurement team. That's the second highest rise in carbon emissions since record-keeping began in 1959, and it moved the Earth even further outside of the 170 to 300 ppm range of CO₂ that existed for the previous 800,000 years. Scientists say the rise in CO₂ reflects the world's economy revving up and burning more fossil fuels. Additionally, plants and oceans (which normally absorb some CO₂) took in less CO₂ than average last year, says Dr. John Reilly, co-director of MIT's Joint Program on the Science and Policy of Global Change. Plant and ocean absorption of CO₂ varies naturally year to year, which Tans says points to human influence being the dominant factor. (*AP*)