
The Medieval warming period

The historical temperature change was the Medieval warming period. The Medieval warming period, also known as the Medieval climate optimum, was a time of warm climate in the North Atlantic region during the Medieval times. Causes (possibly) for the MWP were increased solar activity, decreased volcanic activity, and changes to ocean circulation. The Medieval warming period was followed by a cooler period in the North Atlantic; called the little ice age. Possible causes for the little ice age were cyclical lows in solar radiation, heightened volcanic activity, changes in the ocean circulation, variations in Earth's orbit and axial tilt (orbital forcing), inherent variability in global climate, and decreases in the human population.

Global temperature, carbon dioxide, and methane levels have also changed over time. Thermometer readings all around the world have risen steadily since the beginning of the Industrial Revolution. According to an ongoing temperature analysis conducted by scientists at NASA's Goddard Institute for Space Studies (GISS), the average global temperature on Earth has increased by about 0.8° Celsius (1.4° Fahrenheit) since 1880. Carbon dioxide levels have significantly changed over time as well; during ice ages, CO₂ levels were around 200 parts per million (ppm), and during the warmer interglacial periods, they hovered around 280 ppm (see fluctuations in the graph). In 2013, CO₂ levels surpassed 400 ppm for the first time in recorded history. This recent relentless rise in CO₂ shows a remarkably constant relationship with fossil-fuel burning and can be well accounted for based on the simple premise that about 60 percent of fossil-fuel emissions stay in the air. Methane levels have recently been increasing, too. In 1985, the average concentration was 1,620 parts per billion (ppb). By 2015, it had increased to 1,800 ppb. (Before the Industrial Revolution, concentrations held steady at about 700 ppb.) But the rate of increase in recent decades has varied. From the 1980s until 1992, methane was rising about 12 ppb per year. Then came roughly a decade of slower growth at 3 ppb per year. Starting in 2007, they began to rise again and have continued to do so since, increasing at a rate of 6 ppb per year. There are other consequences occurring right now due to global warming, such as coral reef bleaching, increased droughts, longer and stronger hurricanes, sea level rising, ocean temperature increasing, and ocean acidification. Each of these consequences is due mainly to the climate/temperature changes that come with global warming.

Humans have had, and still have, a huge impact on the atmosphere. The Industrial Revolution, while it greatly advanced our technology and development as a society, it was what started to create major issues with Earth's atmosphere. The greatest effect humans have on the atmosphere is their production of greenhouse gases, which trap heat into the atmosphere. The heat is trapped in the atmosphere causes the global temperature to rise, which then also affects the climate, too. Global temperature, as previously stated, is rising. As the Earth moved out the

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ice ages, the global temperature rose a total of 4 to 7 degrees Celsius over about 5,000 years. In the past century alone, the temperature has increased by 0.7 degrees Celsius, about ten times faster than the average rate of ice-age-recovery warming. On average, volcanoes release between 130 and 230 million tonnes of carbon dioxide per year. By burning fossil fuels, humans release in excess of 100 times more, about 26 billion tonnes of carbon dioxide, into the atmosphere every year. As a result, human activity overshadows any contribution volcanoes may have made to recent global warming. Besides the greenhouse effect, other factors could account for some of the climate and temperature variations. Increased solar activity and volcanic activity are two examples of some of those other factors. Solar changes have historically caused climate changes, but it is responsible for only less than 15 percent of the global temperature increases that have happened over the last century.

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