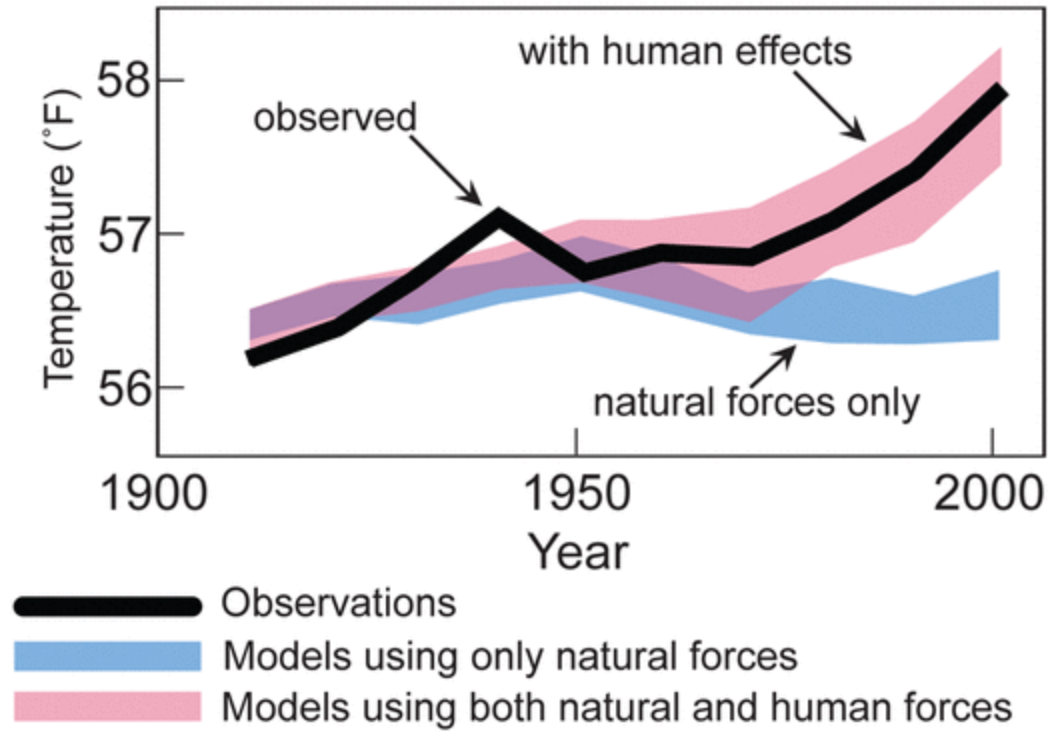


## Global Temperature Change



<https://www.everythingconnects.org/scientific-consensus-on-global-warming.html>

## Carbon Dioxide Concentration and Temperature Rate of Change

**48,000 BC to 400 BC**

**Length of time: 47,600 years**

Variable	Value in 48,000 BC	Value in 400 BC	Change	Rate of change per year
<b>CO<sub>2</sub> concentration (ppm)</b>	190.4 ppm	284.7 ppm	+94.3 ppm	94.3 ppm / 47,600 years = 0.0020 ppm per year
<b>Temperature anomaly (°C)</b>	-5.18 °C	0 °C	+5.18 °C	5.18 °C / 47,600 = 0.00011 °C per year

**1901 to 2011**

**Length of time: 110 years**

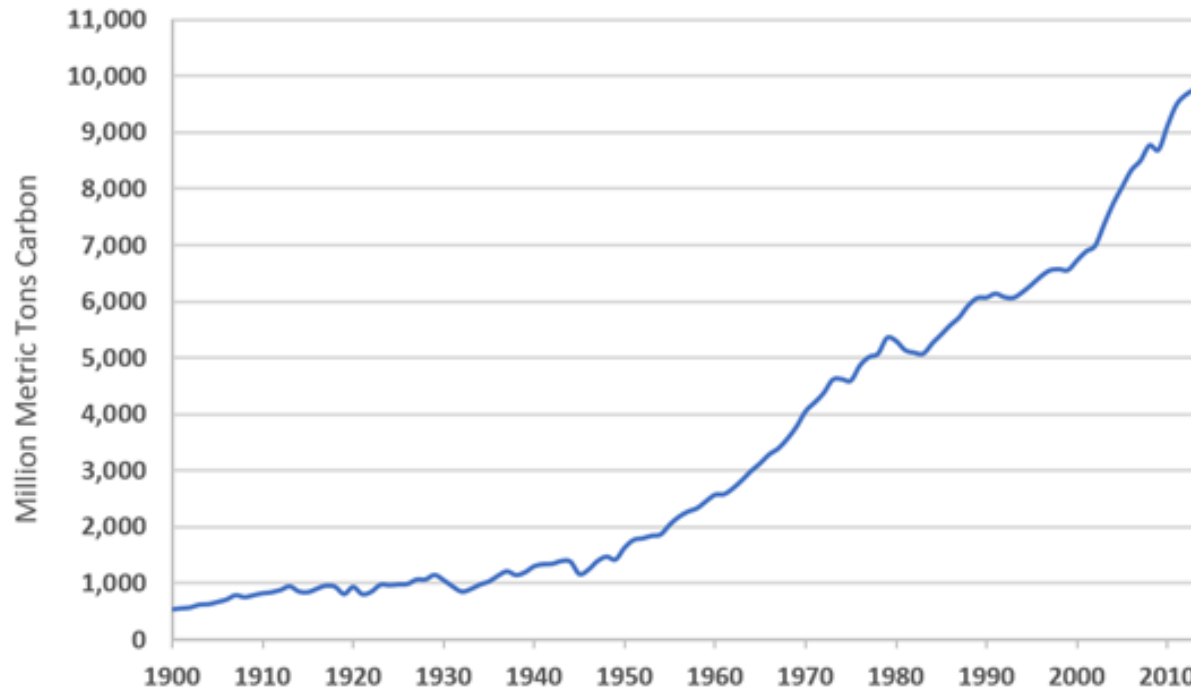
Variable	Value in 1901	Value in 2011	Change	Rate of change per year
<b>concentration (ppm)</b>	296.1 ppm	391.6 ppm	+95.5 ppm	95.5 ppm / 110 years = 0.868 ppm per year
<b>Temperature anomaly (°C)</b>	-0.16 °C	0.51 °C	+0.67 °C	0.67 °C / 110 years = 0.0061 °C per year

Data /source: U.S. EPA, *Climate Change Indicators In the United States*: <http://www.epa.gov/climatechange/science/indicators/>.

CO<sub>2</sub> concentrations are from Antarctica (1901) and Hawaii (2011).

Temperature anomaly is a global average.

## Global Carbon Emissions from Fossil Fuels, 1900-2014



**"Carbon Emissions"** refer to the carbon dioxide released into the atmosphere  
**"Fossil Fuels"** are fuels made from a natural resource like coal, oil, or natural gas.

Source: Boden, T.A., Marland, G., and Andres, R.J. (2017). Global, Regional, and National Fossil-Fuel CO<sub>2</sub>Emissions. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tenn., U.S.A. doi 10.3334/CDIAC/00001\_V2017.