

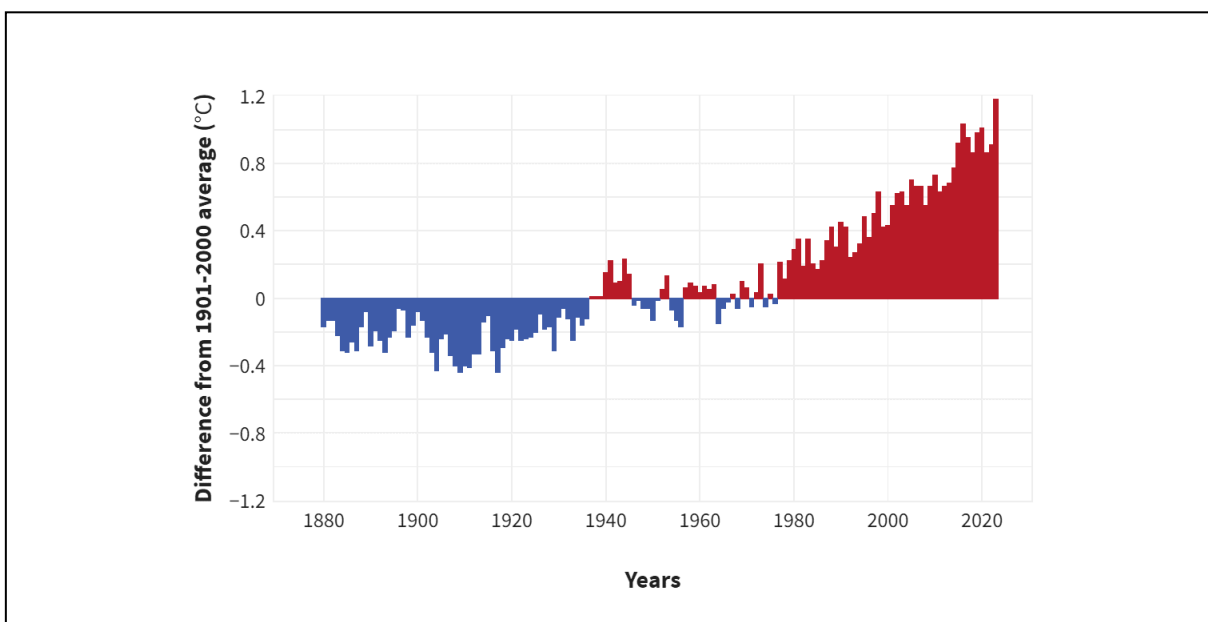


## Is Climate Change for Real?

***Our earth is warming at an unprecedented rate, and human activity is the principal cause.***

- While Earth's climate has changed throughout its history, the current warming is happening at a rate not seen in the past 10,000 years.
- According to the Intergovernmental Panel on Climate Change (IPCC), "Since systematic scientific assessments began in the 1970s, the influence of human activity on the warming of the climate system has evolved from theory to established fact."
- Scientific information taken from natural sources, such as ice cores, rocks, and tree rings, and from modern equipment like satellites and instruments, all show the signs of a changing climate.
- Earth's temperature has risen by an average of 0.11° Fahrenheit (0.06° Celsius) per decade since 1850, or about 2°F in total.
- The rate of warming since 1982 is more than three times as fast: 0.36°F (0.20°C) per decade.
- 2023 was the warmest year since global records began in 1850 by a wide margin.
- It was 2.12°F (1.18°C) above the 20th-century average of 57.0°F (13.9°C).
- It was 2.43°F (1.35°C) above the pre-industrial average (1850-1900).
- The 10 warmest years in the historical record have all occurred in the past decade (2014-2023).

### Global Average Surface Temperatures



Yearly surface temperature compared to the 20th-century average from 1880–2023. Blue bars indicate cooler-than-average years; red bars show warmer-than-average years. NOAA Climate.gov graph, based on data from the National Centers for Environmental Information.



## *Vital Signs of Climate Change*

**Global temperatures are RISING**  
**Oceans are getting WARMER**  
**Ice sheets are SHRINKING**  
**Glaciers are RETREATING**  
**Snow cover is DECREASING**  
**Sea levels are RISING**  
**Arctic sea ice is DECLINING**  
**Extreme events are INCREASING**

