

Climate change is no fad or Johnny-come-lately in science. Rather, our knowledge has grown over 168 years, since an American scientist first discovered the heat-trapping properties of carbon dioxide. Over time, it has become more and more certain that humans are causing climate change and that continuing down that road poses great risks. In his efforts to expunge climate science, Trump is trying to wipe out the results of many decades of scientific research.

Here's a timeline of some of the major developments.

1856

The first climate science paper is published by an American scientist, Eunice Newton Foote, who [discovered](#) that CO₂ and water vapor trapped the sun's heat.

1863.

English scientist John Tyndall publishes similar finding in a better-known [paper](#).

1896.

Swedish scientist Svante Arrhenius predicts changes in surface temperature due to greenhouse effect.

1938.

Scientist [calculates](#) greenhouse effect from fossil fuels and matches it to recorded global temperature changes.

1956.

[Paper](#) shows that "that the average surface temperature of the earth increases 3.6° C if the CO₂ concentration in the atmosphere is doubled," very close to current estimates based on more sophisticated modeling.

Systematic measurements of atmospheric CO₂ levels begin at Mauna Loa observatory. Measurements continue to present, tracking annual increases.

1968.

First [paper](#) on risk of sea level rise due to climate change.

1969.

First satellite measurements of global temperature.

1985.

Antarctic ice cores extend record of global temperatures and CO₂ levels back 150,000 years.

1988.

First report by Intergovernmental Panel on Climate Change (IPCC) synthesizes climate science and concludes that emissions would clearly cause additional warming but that evidence of current warming was not yet certain.

NASA scientist James Hansen [testifies](#) to Congress that “global warming has reached a level such that we can ascribe with a high degree of confidence a cause and effect relationship between the greenhouse effect and observed warming.”

Michael Mann publishes famous ‘hockey stick’ graph of global temperatures show extraordinarily rapid recent increases, causing apoplexy among climate deniers that continues to this day.

1995.

Second IPCC report concludes that “climate change is likely to have wide-ranging and mostly adverse impacts on human health, with significant loss of life.”

2001.

Third IPCC reports states that “there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities.”

2007.

Fourth IPCC reports finds that: “Warming of the climate system is unequivocal ... Eleven of the last 12 years rank among the 12 warmest years [on] record.”

2015.

Fifth IPCC report states: “Human influence on the climate system is clear. Recent climate changes have had widespread impacts on human and natural systems [and] many of the observed changes are unprecedented over decades to millennia.”

2023.

Based on massive review of scientific research, most recent IPCC report concludes that:

- “Human activities . . . have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020.”
- “Human-caused climate change is already affecting many weather and climate extremes in every region across the globe.”
- “Every increment of global warming will intensify multiple and concurrent hazards.”
- “The likelihood of abrupt and/or irreversible changes increases with higher global warming levels.”

The trajectory of the science is clear, with decades of additional research providing greater certainty about the reality and risks of climate change. Hard evidence doesn’t count for much these days, if it doesn’t fit the MAGA agenda. But, Trump or no Trump, reality remains the same: human activities are rapidly increasing global temperatures, with serious consequences for all of us.

