

# Causes of Climate Change

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## WHAT'S COVERED

In this lesson, we will discuss the causes of climate change. We will discuss human activities that produce greenhouse gases and their effect on climate change. We will explore how our climate has changed over time and the various sources of greenhouse gas emissions. Specifically, this lesson will cover the following:

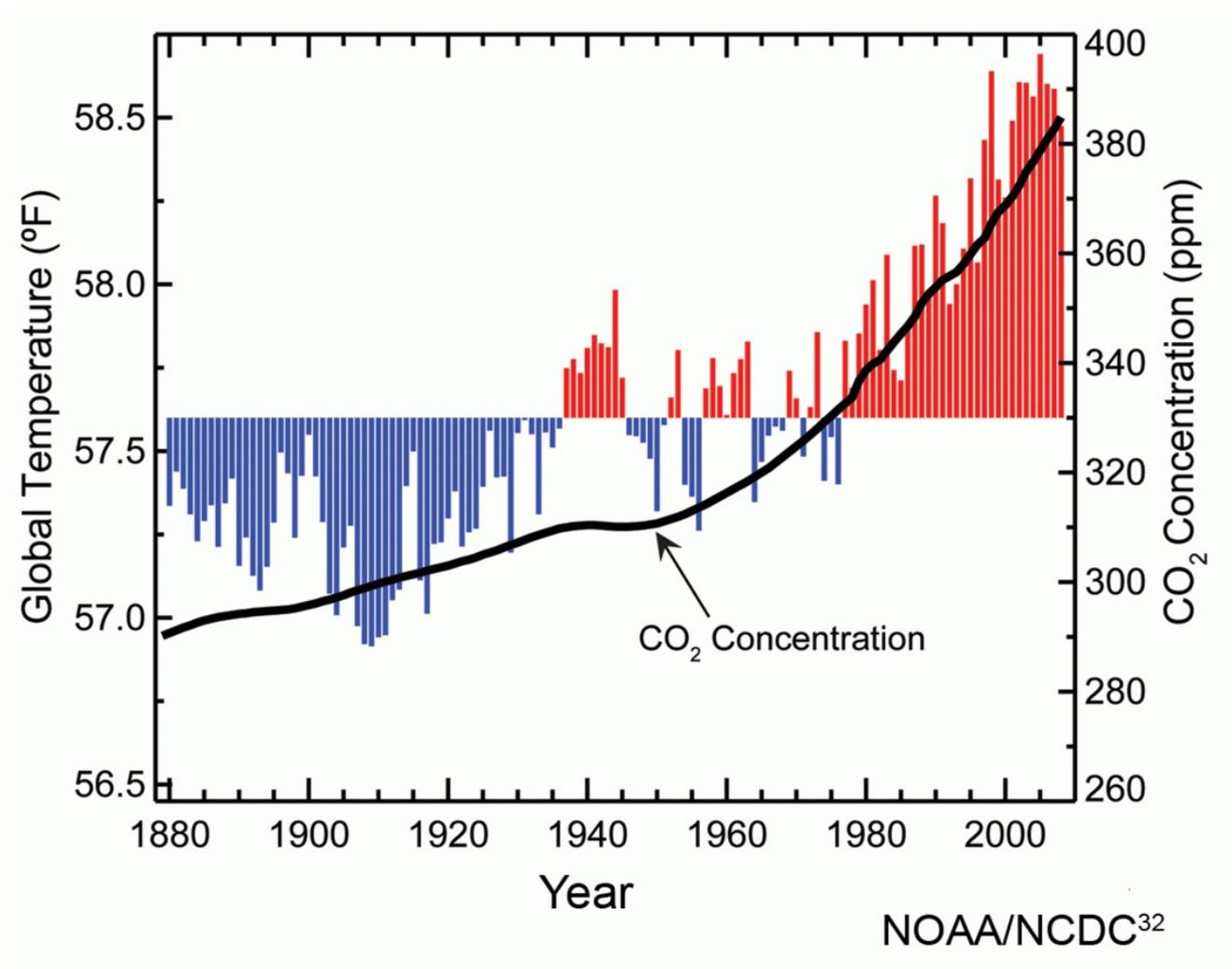
## 1. Human Activities

The following table summarizes the human activities that produce greenhouse gases.

Human Activity	Greenhouse Gas Effect
Use of fossil fuels	It produces greenhouse gases directly from burning.
Urban sprawl	It increases vehicle miles traveled and tailpipe emissions like carbon dioxide.
Agricultural practices	Practices such as grazing produce large quantities of methane.
Population growth	All producers of greenhouse gases are multiplied as population growth demands more fossil fuel consumption, more urban sprawl, and more vehicle miles traveled.

The Industrial Revolution, largely fueled by coal, resulted in a large spike in greenhouse gas emissions from human activity. While other greenhouse gases are potent, carbon dioxide is the most important pollutant to monitor because so much of it is produced from human activities.

The graph below shows global atmospheric carbon dioxide concentrations since 1880. As we can see, carbon dioxide has risen by approximately 80 parts per million, and global temperatures have gone up by around 1.5 °F.



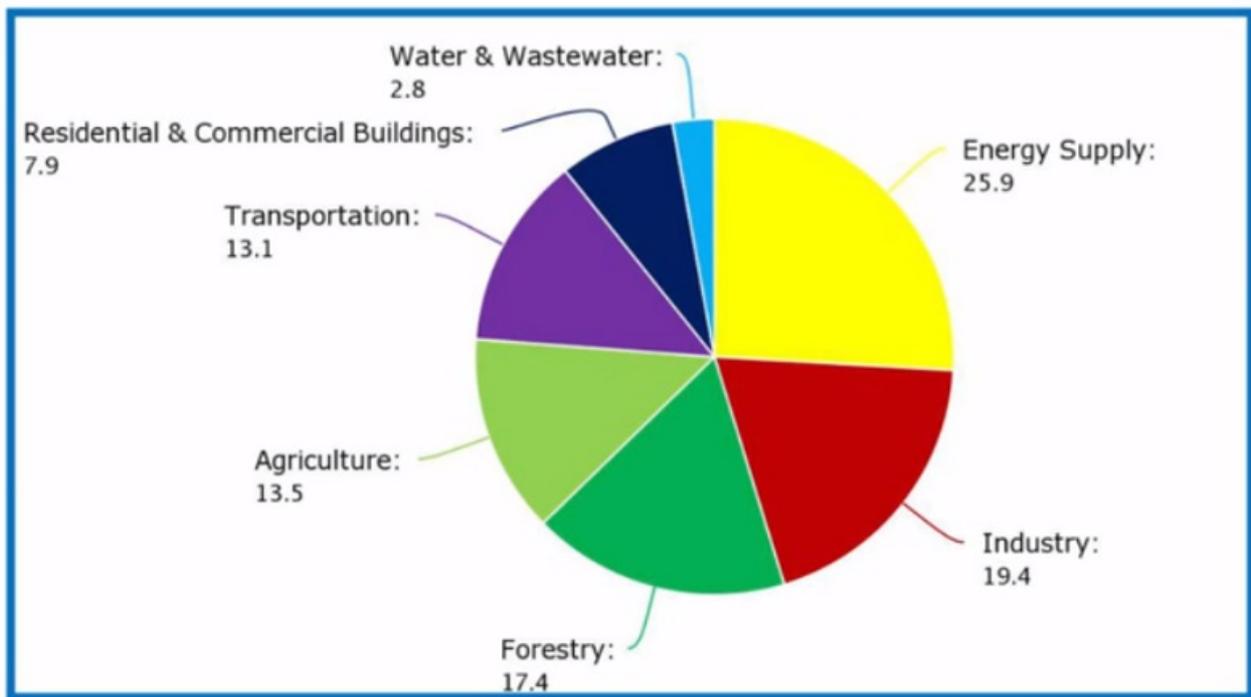
 HINT

An important point to note is that methane has also increased in concentration, largely from agriculture, since the Industrial Revolution. Methane is 30 times more potent than carbon dioxide as a greenhouse gas.

In addition, deforestation has reduced the amount of carbon dioxide being absorbed in the process of photosynthesis.

## 2. Sources of Greenhouse Gas Emissions

The graph below depicts various sources of greenhouse gas emissions and their percentage of total output. Energy is biggest at 25.9%, followed by industry at 19.4%, forestry at 17.4%, agriculture at 13.5%, transportation at 13.1%, buildings at 7.9%, and water and wastewater at 2.8%.



■ Energy Supply  
 ■ Industry  
 ■ Forestry  
 ■ Agriculture  
 ■ Transportation  
■ Residential & Commercial Buildings  
■ Water & Wastewater

**SUMMARY**

In this lesson, we learned about the causes of climate change. We learned about **human activities** and their relationship with climate change through the production of greenhouse gases. We explored how our climate has changed over time. We also learned which **sources of greenhouse gas emissions** are contributing to climate change through greenhouse gas emissions, along with their percentages of impact.

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- [Global annual average temperature \(as measured over both land and oceans\)](#) | Author: NOAA/NCDC | License: Public Domain