

Values before 1958 are taken from Antarctic ice cores.
Values 1958-present are from Mauna Loa observatory.



2010 flooding event in Ames, Iowa
Photograph by James Moreland, used with permission

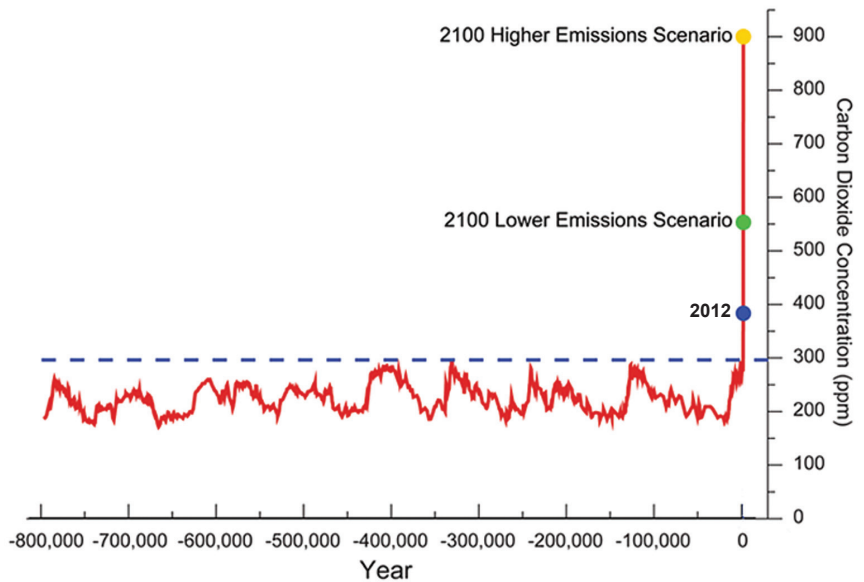
Climate and Climate Change

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One of the sources of energy that warms the Earth's surface is the downward radiation emitted from the atmosphere, often called the "greenhouse effect." This downward radiation depends on the amount of certain trace gases present in the atmosphere. These gases are collectively known as greenhouse gases. Carbon dioxide is the long-lived greenhouse gas with the greatest effect on Earth's temperature.

The concentration of carbon dioxide in the atmosphere is now higher than any time in at least the past 800,000 years and is rising rapidly. Principles of long-known, basic physics show that such a great increase in a long-lived greenhouse gas will warm the Earth's surface. This warming in turn will have effects on all parts of the climate system, including rainfall, winds, snow cover, and other climate variables important to agriculture.

Atmospheric carbon dioxide is higher than any time in the past 800,000 years



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