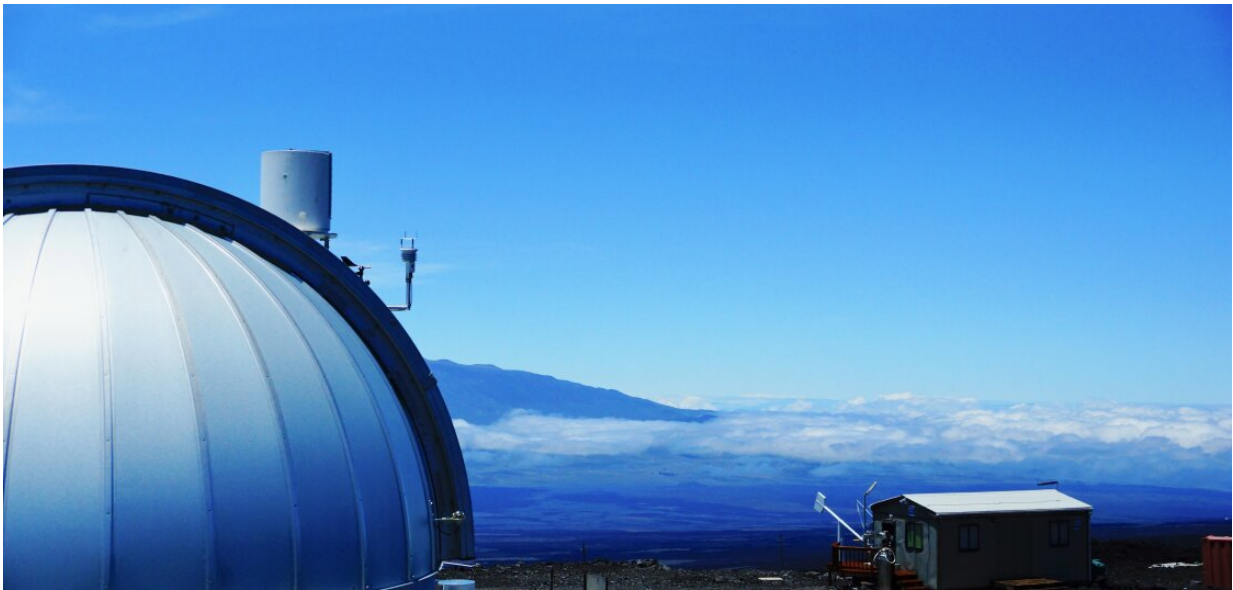


Carbon dioxide levels in atmosphere hit record high in May 2019

June 5 2019



Credit: NOAA Headquarters

Atmospheric carbon dioxide continued its rapid rise in 2019, with the average for May peaking at 414.7 parts per million (ppm) at NOAA's Mauna Loa Atmospheric Baseline Observatory.

The measurement is the highest seasonal peak recorded in 61 years of observations on top of Hawaii's largest volcano and the seventh consecutive year of steep global increases in concentrations of carbon dioxide (CO₂), according to data published today by NOAA and Scripps

Institution of Oceanography [offsite link](#). The 2019 peak value was 3.5 ppm higher than the 411.2 ppm peak in May 2018 and marks the second-highest annual jump on record.

Monthly CO₂ values at Mauna Loa first breached the 400 ppm threshold in 2014.

"It's critically important to have these accurate, long-term measurements of CO₂ in order to understand how quickly fossil fuel pollution is changing our climate," said Pieter Tans, senior scientist with NOAA's Global Monitoring Division. "These are measurements of the real atmosphere. They do not depend on any models, but they help us verify climate model projections, which if anything, have underestimated the rapid pace of climate change being observed."

The concentration of CO₂ in the atmosphere increases every year, and the [rate of increase is accelerating](#). The [early years](#) at Mauna Loa saw annual increases averaging about 0.7 ppm per year, increasing to about 1.6 ppm per year in the 1980s and 1.5 ppm per year in the 1990s. The growth rate rose to 2.2 ppm per year during the last decade. There is abundant and conclusive evidence that the acceleration is caused by increased emissions, Tans said.

The Mauna Loa data, together with measurements from sampling stations around the world, are collected by NOAA's [Global Greenhouse Gas Reference Network](#) and produce a foundational research dataset for international climate science.

CO₂ and the Keeling Curve

The highest monthly mean CO₂ value of the year occurs in May, just before plants start to remove large amounts of the greenhouse gas from the atmosphere during the [northern hemisphere](#) growing season. In the

northern fall, winter and [early spring](#), plants and soils give off CO₂, which cause levels to rise through May.

Charles Keeling was the first to observe this seasonal rise and subsequent fall in CO₂ levels embedded within annual increases, [a cycle now known as the Keeling Curve](#).

More information: Trends in Atmospheric Carbon Dioxide.
www.esrl.noaa.gov/gmd/ccgg/trends/full.html

Provided by NOAA Headquarters

Citation: Carbon dioxide levels in atmosphere hit record high in May 2019 (2019, June 5) retrieved 12 May 2024 from <https://phys.org/news/2019-06-carbon-dioxide-atmosphere-high.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.