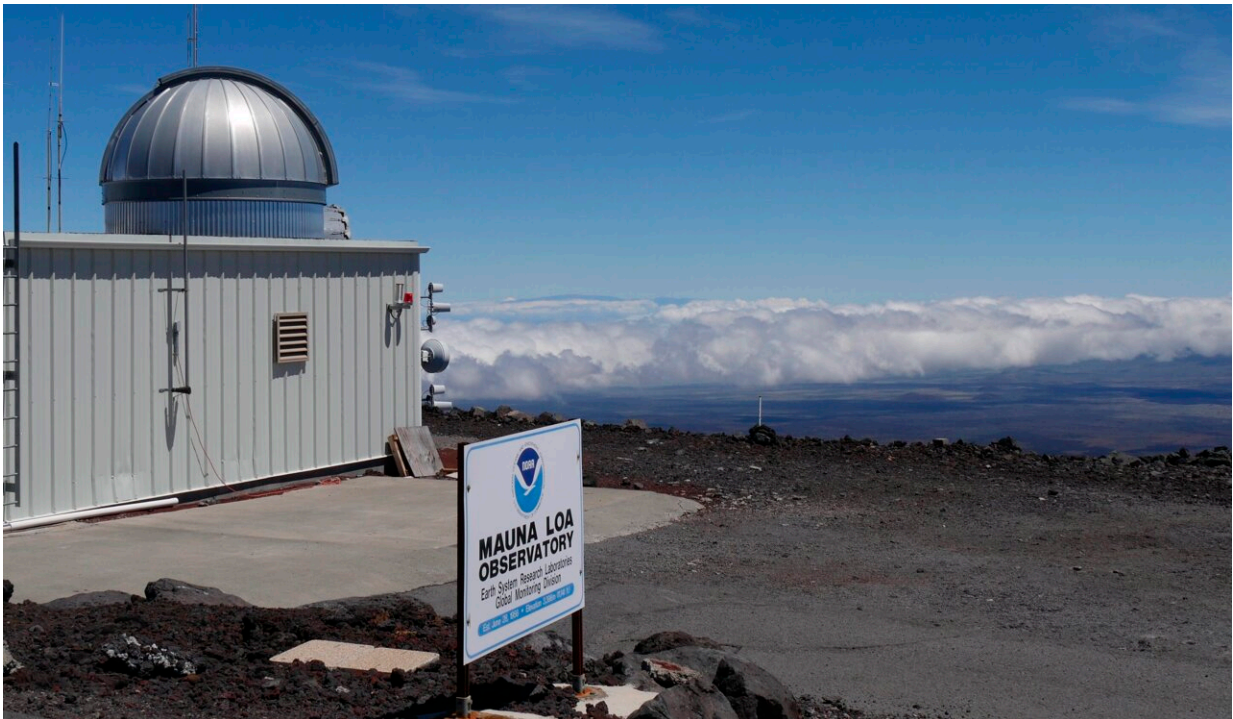


Carbon dioxide levels hit 50% higher than preindustrial time

June 7 2021, by Seth Borenstein



This 2019 photo provided by NOAA shows the Mauna Loa Atmospheric Baseline Observatory, high atop Hawaii's largest mountain in order to sample well-mixed background air free of local pollution. Heat-trapping carbon dioxide levels in the air peaked in May 2021, in amounts nearly 50% higher than when the industrial age began and they are growing at a record fast rate, scientists reported Monday, June 7, 2021. Credit: Susan Cobb/NOAA Global Monitoring Laboratory via AP

The annual peak of global heat-trapping carbon dioxide in the air has reached another dangerous milestone: 50% higher than when the industrial age began.

And the average rate of increase is faster than ever, scientists reported Monday.

The National Oceanic and Atmospheric Administration said the [average carbon dioxide level](#) for May was 419.13 parts per million. That's 1.82 parts per million higher than May 2020 and 50% higher than the stable pre-industrial levels of 280 parts per million, said NOAA [climate](#) scientist Pieter Tans.

Carbon dioxide levels peak every May just before plant life in the Northern Hemisphere blossoms, sucking some of that [carbon](#) out of the atmosphere and into flowers, leaves, seeds and stems. The reprieve is temporary, though, because emissions of [carbon dioxide](#) from burning coal, oil and [natural gas](#) for transportation and electricity far exceed what plants can take in, pushing greenhouse gas levels to new records every year.

"Reaching 50% higher carbon dioxide than preindustrial is really setting a new benchmark and not in a good way," said Cornell University climate scientist Natalie Mahowald, who wasn't part of the research. "If we want to avoid the worst consequences of climate change, we need to work much harder to cut [carbon dioxide emissions](#) and right away."

Climate change does more than increase temperatures. It makes [extreme weather](#)—storms, wildfires, floods and droughts—worse and more frequent and causes oceans to rise and get more acidic, studies show. There are also health effects, including [heat deaths](#) and increased pollen. In 2015, countries signed the [Paris agreement](#) to try to keep climate change to below what's considered dangerous levels.

The one-year jump in carbon dioxide was not a record, mainly because of a La Nina weather pattern, when parts of the Pacific temporarily cool, said Scripps Institution of Oceanography geochemist Ralph Keeling. Keeling's father started the monitoring of carbon dioxide on top of the Hawaiian mountain [Mauna Loa](#) in 1958, and he has continued the work of charting the now famous [Keeling Curve](#).

Scripps, which calculates the numbers slightly differently based on time and averaging, said the peak in May was 418.9.

Also, pandemic lockdowns slowed transportation, travel and other activity by about 7%, earlier studies show. But that was too small to make a significant [difference](#). Carbon dioxide can stay in the air for 1,000 years or more, so year-to-year changes in emissions don't register much.

The 10-year average rate of increase also set a record, now up to 2.4 parts per million per year.

"Carbon dioxide going up in a few decades like that is extremely unusual," Tans said. "For example, when the Earth climbed out of the last ice age, carbon dioxide increased by about 80 parts per million and it took the Earth system, the natural system, 6,000 years. We have a much larger increase in the last few decades."

By comparison, it has taken only 42 years, from 1979 to 2021, to increase carbon [dioxide](#) by that same amount.

"The world is approaching the point where exceeding the Paris targets and entering a climate danger zone becomes almost inevitable," said Princeton University climate scientist Michael Oppenheimer, who wasn't part of the research.

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