

# Record annual increase of carbon dioxide observed at Mauna Loa for 2015

March 10 2016, by Theo Stein

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The annual growth rate of atmospheric carbon dioxide measured at NOAA's Mauna Loa Observatory in Hawaii jumped by 3.05 parts per million during 2015, the largest year-to-year increase in 56 years of research.

In another first, 2015 was the fourth consecutive year that CO<sub>2</sub> grew more than 2 ppm, said Pieter Tans, lead scientist of NOAA's Global Greenhouse Gas Reference Network.

"Carbon dioxide levels are increasing faster than they have in hundreds of thousands of years," Tans said. "It's explosive compared to natural processes."

Levels of the [greenhouse gas](#) were independently measured by NOAA's Earth System Research Laboratory and by the Scripps Institution of Oceanography.

In February 2016, the average global atmospheric CO<sub>2</sub> level stood at 402.59 ppm. Prior to 1800, atmospheric CO<sub>2</sub> averaged about 280 ppm.

The last time the Earth experienced such a sustained CO<sub>2</sub> increase was between 17,000 and 11,000 years ago, when CO<sub>2</sub> levels increased by 80 ppm. Today's rate of increase is 200 times faster, said Tans.

The big jump in CO<sub>2</sub> is partially due to the current El Niño weather pattern, as forests, plantlife and other terrestrial systems responded to changes in weather, precipitation and drought. The largest previous increase occurred in 1998, also a strong El Niño year. Continued high emissions from fossil fuel consumption are driving the underlying growth rate over the past several years.

**More information:** To track CO<sub>2</sub> concentrations at Mauna Loa and global CO<sub>2</sub> concentrations visit NOAA's Greenhouse Gas Reference Network. [esrl.noaa.gov/gmd/ccgg/trends/](https://esrl.noaa.gov/gmd/ccgg/trends/)

Provided by NOAA Headquarters

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