



Global Monitoring Laboratory
Earth System Research Laboratories



Trends in CO₂

Trends in CH₄

Trends in N₂O

Trends in SF₆

Trends in Atmospheric Carbon Dioxide

- NOTE: Starting Feb. 10, 2021, the CO₂ data is now on the WMO X2019 scale. Read about the [CO₂ Scale](#) for more details.
- [Can we see a change in the CO2 record because of COVID-19?](#)

Mauna Loa, Hawaii

[Global](#)

[CO₂ Animation](#)

[CO₂ Emissions](#)

[Last Month](#)

[Last 1 Year](#)

[Full Record](#)

[Growth Rate](#)

[Data](#)

[Interactive Plots](#)

Data

The complete Mauna Loa CO₂ records described on this page are available.

- [Mauna Loa CO₂ monthly mean data](#) (CSV)
- [Mauna Loa CO₂ annual mean data](#) (CSV)
- [Mauna Loa CO₂ annual mean growth rates](#) (CSV)
- [Mauna Loa CO₂ weekly mean and historical comparisons](#) (CSV)

Additional CO₂ data from Mauna Loa and other worldwide sampling sites can be found using the [GML Data Finder](#) of public data sets.

These values are **subject to change** depending on quality control checks of the measured data, but any revisions are expected to be small.

- [See change log and notes](#)
- [A description of how we make measurements at Mauna Loa.](#)

How to reference content from this page

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Further Reading

C.D. Keeling, R.B. Bacastow, A.E. Bainbridge, C.A. Ekdahl, P.R. Guenther, and L.S. Waterman, (1976), Atmospheric carbon dioxide variations at Mauna Loa Observatory, Hawaii, *Tellus*, vol. 28, 538-551

K.W. Thoning, P.P. Tans, and W.D. Komhyr, (1989), [Atmospheric carbon dioxide at Mauna Loa Observatory 2. Analysis of the NOAA GMCC data, 1974-1985](#), *J. Geophys. Research*, vol. 94, 8549-8565

Etheridge, D. M., L. P. Steele, R. L. Langenfelds, R. J. Francey, J.-M. Barnola, and V. I. Morgan, (1996), [Natural and anthropogenic changes in atmospheric CO2 over the last 1000 years from air in Antarctic ice and firn](#), *J. Geophys. Res.*, 101(D2), 4115–4128, doi:10.1029/95JD03410.