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Trends in Atmospheric Carbon Dioxide

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Data

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

- **Mauna Loa CO₂ monthly mean data** (ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_mm_mlo.txt)
- **Mauna Loa CO₂ annual mean data** (ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_annmean_mlo.txt)
- **Mauna Loa CO₂ annual mean growth rates** (ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_gr_mlo.txt)
- **Mauna Loa CO₂ weekly mean and historical comparisons** (ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_weekly_mlo.txt)

Additional CO₂ data from Mauna Loa and other worldwide sampling sites can be found using the **ESRL/GMD Data Navigator** (/gmd/dv/data/index.php?parameter_name=Carbon%2BDioxide) 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 (trends_log.html)**
- **A description of how we make measurements at Mauna Loa. (../about/co2_measurements.html)**

How to reference content from this page

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Contact

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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, (</gmd/publications/showpub.php?pubid=2828>) *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 (<http://www.agu.org/journals/ABS/1996/95JD03410.shtml>), *J. Geophys. Res.*, 101(D2), 4115-4128, doi:10.1029/95JD03410.

<http://www.esrl.noaa.gov/gmd/ccgg/trends/data.html> (/gmd/ccgg/trends/data.html)



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