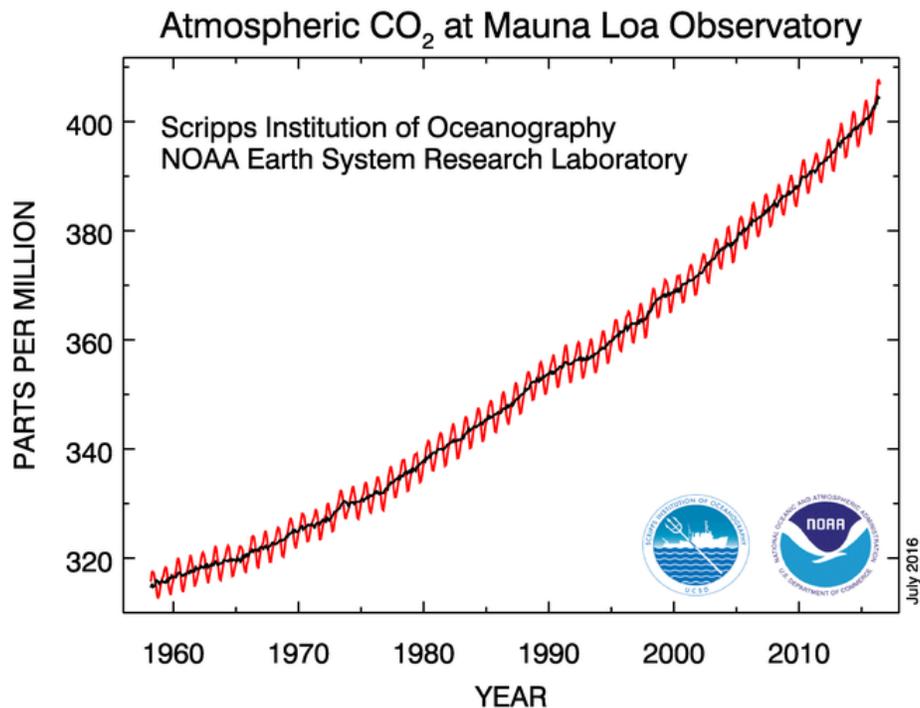


## CO<sub>2</sub> in the Atmosphere

### Learning goals:

- Analyze time series data of atmospheric CO<sub>2</sub>
- Describe how changes in society have changed atmospheric CO<sub>2</sub>
- Calculate individual contributions to anthropogenic CO<sub>2</sub> emissions



The above figure shows the amount of CO<sub>2</sub> in the atmosphere at Mauna Loa, Hawaii, the longest continuous direct measurements of CO<sub>2</sub> in the world. The line with the up-and-down pattern shows monthly values, the smooth line is the seasonally corrected version of the same values. They are presented in parts per million (ppm). The data are the most recent available from the National Oceanic and Atmospheric Administration's Earth System Research Laboratory, and are continually updated at [http://www.esrl.noaa.gov/gmd/ccgg/trends/#mlo\\_full](http://www.esrl.noaa.gov/gmd/ccgg/trends/#mlo_full).

1. Assume that the growth rate in the most recent decade of data continues into the future. What will the concentration of CO<sub>2</sub> be 20 years from now?
2. Calculate your personal carbon footprint using the Environmental Protection Agency's online calculator, available at <http://www3.epa.gov/carbon-footprint-calculator/>. What is your annual carbon footprint? Be sure to include whether your value is for yourself or your whole household.

