

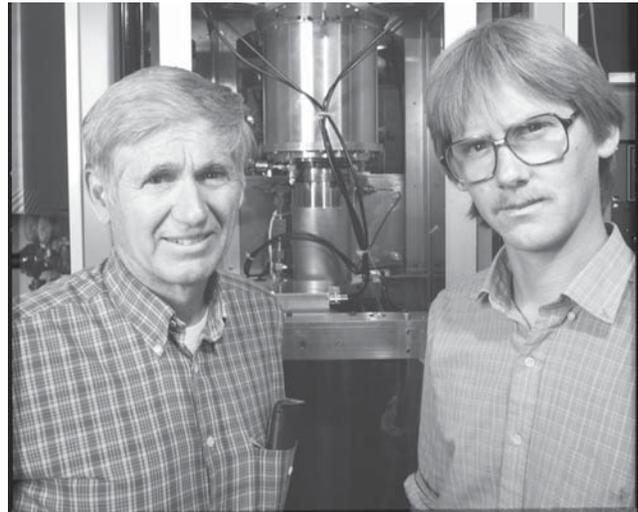
The “Keeling Curve” Tells a Story

One of the most famous scientific graphs of the 20th century is the Keeling Curve. Fifty years ago, Charles David Keeling started monitoring *carbon dioxide* (CO₂) levels in the *atmosphere*. He had to gather his data away from traffic and other sources of carbon dioxide, so he collected his data on Mauna Loa, a mountain in Hawaii that is surrounded by thousands of miles of ocean.

Keeling discovered that carbon dioxide is gradually accumulating in the atmosphere. The seasonal swings in the curve (notice the curve is a jagged line) demonstrate that the Earth sort of breathes. When plants grow in the spring, they take up carbon dioxide through photosynthesis, and the level of carbon dioxide in the atmosphere dips. In the fall, decaying leaves and plants return carbon dioxide to the soil, and the level rises.

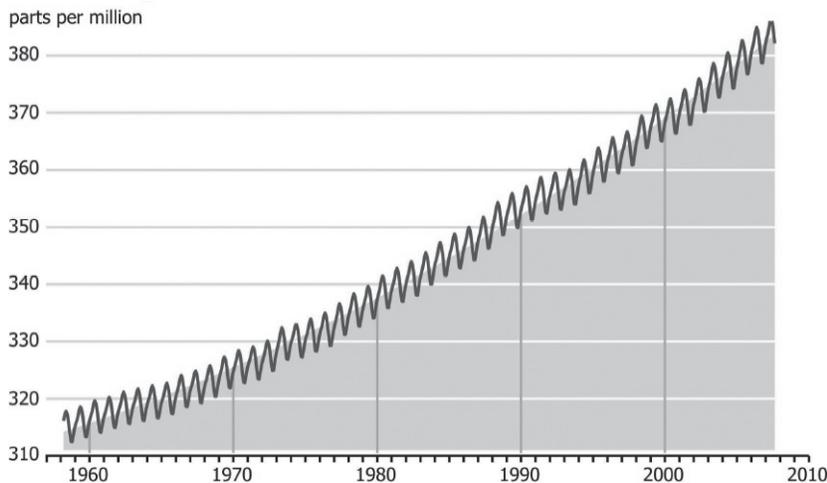
Why do CO₂ levels matter? Carbon dioxide is a “greenhouse gas” (see p. 6), and the level of greenhouse gas in the atmosphere affects our climate.

Excerpted and adapted by Martha Merson from “A life-or-death commitment,” Robert Krier, <www.paramuspost.com>.



Charles David Keeling died in 2005, but his son, Ralph, has kept the time-series studies alive. Photo and chart used with permission from Scripps Institution of Oceanography.

Monthly Carbon Dioxide Concentration



Keeling began monitoring carbon dioxide levels in 1958. His work laid the foundation for the study of global warming.

What is PPM?

Scientists measure the level of carbon dioxide (CO₂) in the atmosphere in parts per million (ppm). In 1850, the concentration of atmospheric CO₂ was about 280 ppm. For every 1 million molecules in the atmosphere, 280 of them were CO₂. In 2005, it was about 379. Today, it is 385. If the present rate of increase continues, CO₂ concentrations in the atmosphere will reach about 600 ppm in 2050 and 800 parts per million by 2100. Investigate further on pp. 12, “Probability and Risk.” Some say we need to reduce carbon levels to 350 ppm. Find out more at <www.350.org>.