



This is the print version of the [Skeptical Science](http://sks.to/volcano) article '[Volcanoes emit more CO2 than humans](http://sks.to/volcano)', which can be found at <http://sks.to/volcano>.

Do volcanoes emit more CO2 than humans?

What The Science Says:

Humans emit 100 times more CO2 than volcanoes.

Climate Myth: Volcanoes emit more CO2 than humans

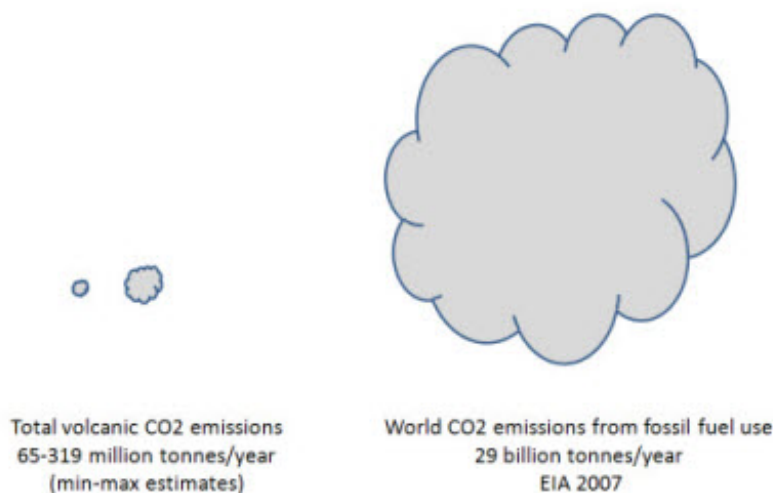
"Human additions of CO2 to the atmosphere must be taken into perspective.

Over the past 250 years, humans have added just one part of CO2 in 10,000 to the atmosphere. One volcanic cough can do this in a day." ([Ian Plimer](#))

The solid Earth contains a huge quantity of carbon, far more than is present in the atmosphere or oceans.

Some of this carbon is slowly released from the rocks in the form of carbon dioxide, through vents at volcanoes and hot springs. Volcanic emissions are a small but important part of the global carbon cycle. Published reviews of the scientific literature by [Mörner and Etiope \(2002\)](#) and [Kerrick \(2001\)](#) report a range of emission of 65 to 319 million tonnes of CO2 per year. Counter claims that volcanoes, especially submarine volcanoes, produce vastly greater amounts of CO2 than these estimates are not supported by any papers published by the scientists who study the subject.

The burning of fossil fuels and changes in land use results in the emission into the atmosphere of approximately 34 *billion* tonnes of carbon dioxide per year worldwide, according to the U.S. Energy Information Administration ([EIA](#)). The fossil fuels emissions numbers are about 100 times bigger than even the maximum estimated volcanic CO2 fluxes. Our understanding of volcanic discharges would have to be shown to be very mistaken before volcanic CO2 discharges could be considered anything but a bit player in contributing to the recent changes observed in the concentration of CO2 in the Earth's atmosphere.



Volcanoes can—and do—influence the global climate over time periods of a few years but this is achieved through the injection of sulfate aerosols into the high reaches of the atmosphere during the very large volcanic eruptions that occur sporadically each century. [But that's another story...](#)

Recommended further reading on CO2 and volcanoes can be found here: [Terry Gerlach in Earth Magazine](#) ; [USGS](#)



Skeptical Science explains the science of global warming and examines climate misinformation through the lens of peer-reviewed research. The website won the Australian Museum 2011 Eureka Prize for the Advancement of Climate Change Knowledge. Members of the Skeptical Science team have authored peer-reviewed papers, a [college textbook on climate change](#) and the book [Climate Change Denial: Heads in the Sand](#). Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.



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