

Isn't The Climate Always Changing?

Yes. But never before like this.

Atmospheric carbon concentration levels have always varied, and, due to the greenhouse effect, these CO₂ increases have led to temperature increases.

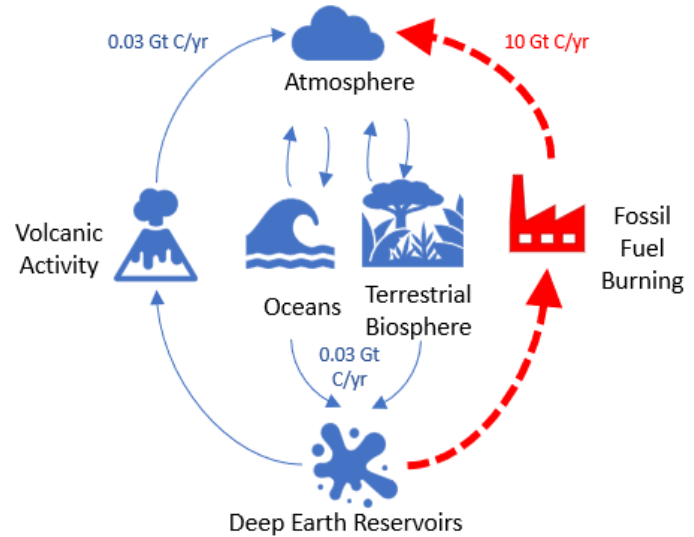
For the billion years prior to the Industrial Revolution, volcanic activity was primarily responsible for carbon being transferred from deep in the earth into the atmosphere.

The Earth's carbon cycle works in such a way that at times of high atmospheric carbon concentration, excess carbon is absorbed by the oceans and plant life. Through sedimentation, or the deaths of living things, this carbon eventually finds its way back underground; that is, until it's once again forced into the earth's atmosphere by volcanic eruption.

As such, the Earth's carbon cycle can traditionally be considered self-stabilizing.

However, as you can see on the graph below, this process typically occurs over tens of thousands of years, providing our planet's life and processes with ample time to adjust and stabilize.

Our Planet's Carbon Cycle



Through harvesting and burning fossil fuels, human activity has disrupted the natural carbon cycle.

In the 3.7-billion-year history of life on our planet, atmospheric carbon levels have never increased so quickly.

The last time Earth experienced today's CO₂ levels was 3 million years ago. Back then, the planet is estimated to have been 2.5°C warmer, with sea levels 20 metres higher.

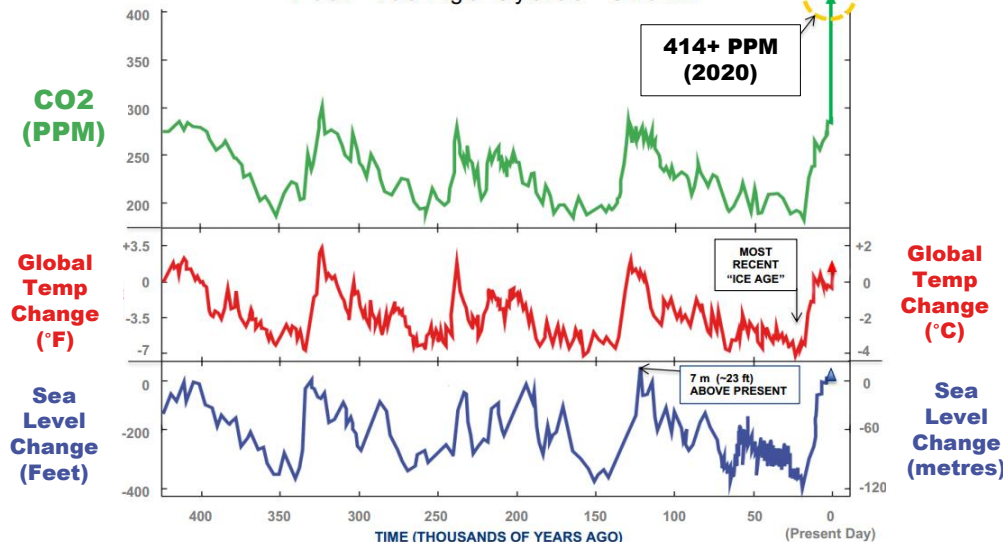
Globally, over 260 million people live less than 2 metres above sea level. The World Bank estimates that by 2050, climate-related disasters will displace 140 million people every year.

For our species and planet to thrive peacefully and sustainably, we need to transition away from fossil fuels.

Carbon Dioxide (CO₂), Temperature, & Sea Level

Move in Long-Term Synchronization

Four "Ice Age Cycles" Shown



Sources:

- <https://www.worldbank.org/en/news/press-release/2018/03/19/climate-change-could-force-over-140-million-to-migrate-within-countries-by-2050-world-bank-report>
- <https://e360.yale.edu/features/how-the-world-passed-a-carbon-threshold-400ppm-and-why-it-matters#:~:text=The%20last%20time%20the%20planet,different%20than%20it%20is%20today>
- <https://www.nature.com/articles/s41467-021-23810-9>
- <https://johnenglander.net/400000-year-graphic-shows-sea-level-temperature-and-co2/>

The Physics of Climate Change by Lawrence M. Krauss



Scan here for more information.