

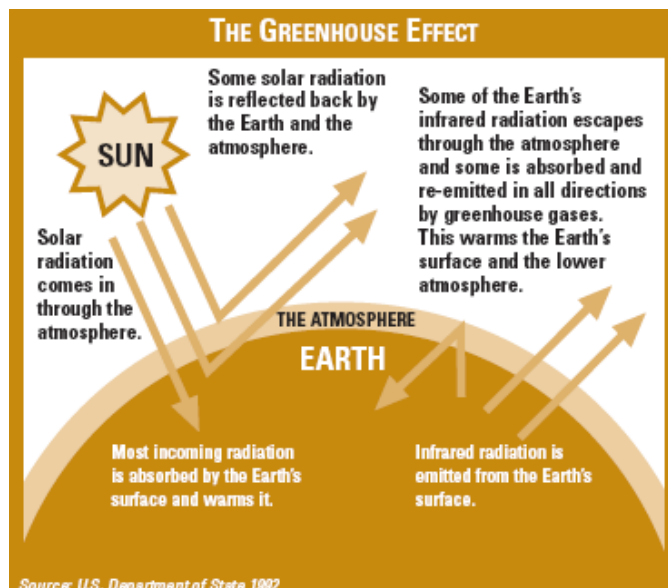
The Science of Global Warming

Climate scientists have clearly established that:

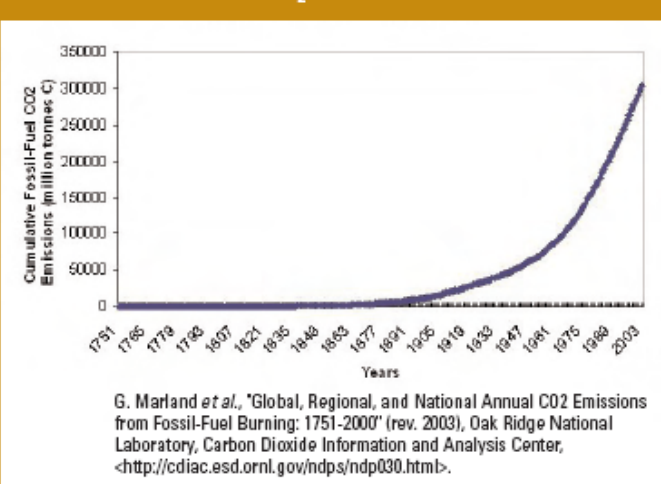
- The Earth's atmosphere is like a greenhouse, reflecting some of the sun's harmful rays and trapping life-sustaining heat.
- The burning of fossil fuels – coal, oil and natural gas – releases gases that accumulate in the atmosphere and trap additional heat at the Earth's surface.
- These increased “greenhouse gas” concentrations are already changing the Earth's climate, and temperatures will rise to much more dangerous levels unless we greatly reduce our emissions.

The Natural Greenhouse

Like the glass of a greenhouse, a layer of water vapor, carbon dioxide (CO₂) and other gases surrounds the Earth, keeping surface air temperatures at a comfortable worldwide average of 57°F. Without this natural insulation, the global thermometer would drop to about zero degrees and many life forms could not survive.



CUMULATIVE GLOBAL CO₂ EMISSIONS FROM FOSSIL FUELS



Concentrations of these greenhouse gases remained relatively stable during the 10,000 years or so prior to the industrial revolution. But the emissions from burning greater and greater quantities of fossil fuels in recent centuries have thickened the glass of the greenhouse and begun the process of warming the planet beyond its natural range.

Atmospheric concentrations of CO₂, the principal greenhouse gas, are higher than at any time in more than 650,000 years, and they keep on climbing.¹ If we continue on this course, the climate impacts we're already seeing will become much worse by the end of this century.

¹ International Panel on Climate Change, 2007, "Fourth Assessment Report Synthesis Report," Summary for Policy Makers (SPM), p.4, <www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf>.

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