

Fast Facts on Global Warming Science

from the National Wildlife Federation and the Union of Concerned Scientists

The latest climate science tells a compelling story. Our atmosphere is dangerously out of balance and the climate we depend on for our food, water and health is changing rapidly. Studies published since the Intergovernmental Panel on Climate Change issued its comprehensive report in 2007 provide ever more compelling evidence that swift and deep reductions of heat-trapping gasses are needed if we are to avoid catastrophic climate change. United States leadership is essential, and there is no time to waste.

Global warming is heating up our planet right now:

- Temperatures this decade have been [higher than any other decade on record](#), and one degree (F) higher than average temperatures in the 20th century.
- Ocean temperatures worldwide this summer were [hotter than ever previously recorded](#).
- Sea ice extent in the Arctic melted to its [third-lowest recorded levels](#) this summer.
- Sea levels are [projected to rise faster than we thought](#) the last time the IPCC weighed in. Without emissions reductions, a 2.6 foot rise is likely by the end of the century and a 6.6 foot rise is possible.

Science indicates an even stronger need to act than previously thought:

- Carbon dioxide levels in the atmosphere for 2009 (387 parts per million) are the [highest they have been in at least 800,000 years](#) and possibly as long ago as 15 million years.
- Globally, an estimated [8.7 billion tons](#) of carbon were emitted in 2008 from burning coal, oil and natural gas, more than a 40 percent increase from 1990.
- The ocean's ability to absorb carbon dioxide is [declining](#) as it heats up and becomes more acidic. In 1959, the ocean absorbed 60 percent of the extra CO₂ we put in the atmosphere. In 2008, it only absorbed 55 percent.
- Studies indicate that the Earth will take a long time -- [at least a thousand years](#) -- to come back into balance and recover from the excess CO₂ we are putting into the atmosphere. Every day of delay locks in more warming for ourselves and future generations.