

INFOGRAPHIC



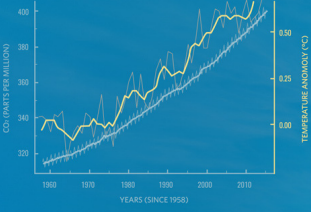
A BREATHING PLANET OFF BALANCE

The amount of carbon dioxide in our atmosphere is increasing, driven primarily by the burning of fossil fuels. Half of all carbon emissions are absorbed by Earth's ocean and land. But where precisely are they going, and can it continue?

ATMOSPHERE

THE RISE OF CARBON DIOXIDE (CO₂) IN EARTH'S ATMOSPHERE CORRESPONDS TO A WARMER PLANET AND RISING SEA LEVELS.


Each year, humans release nearly 40 billion tons of CO₂ into the atmosphere, driving changes in Earth's climate. That is an average of about 5.5 tons for every person on the planet. But that volume is not shared equally among nations. The top four emitters (China, the U.S., the European Union and India) are responsible for nearly 60% of carbon dioxide emissions.



LAND

HOW LONG WILL FORESTS AND OTHER PLANTS ACT AS ABSORBERS, OR SINKS, OF CO₂?

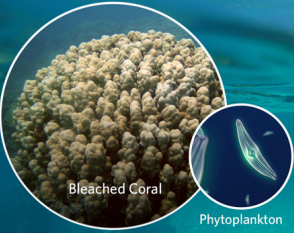
As of 2015, deforestation and other land use changes contributed 3.5 billion tons of CO₂ to the atmosphere. Forests and other plant life absorb the Earth's carbon dioxide, expelling the oxygen we need to breathe. When trees are killed by human activities, not only is CO₂ released, but an important carbon sink is lost.



OCEAN

HOW MUCH CO₂ CAN THE OCEAN TAKE BEFORE IT REACHES A TIPPING POINT?

Where the ocean and the atmosphere touch, CO₂ is absorbed and carried by currents to the depths. As the ocean takes in carbon dioxide, it becomes more acidic, threatening marine life. The ocean absorbs 90% of the heat trapped by greenhouse gases, and it is warming as well. Phytoplankton, microscopic plants that bloom across miles of the ocean and form the base of the world's marine food chain, store and release carbon much like forests on land. These tiny plants, sensitive to climate change, produce more than half of Earth's oxygen.




A DANGEROUS MILESTONE

"Passing the 400 mark reminds me that we are on an inexorable march to 450 ppm and much higher levels. These were the targets for 'stabilization' suggested not too long ago. The world is quickening the rate of accumulation of CO₂, and has shown no signs of slowing this down. It should be a psychological tripwire for everyone."

Dr. Michael Gussone
Global Change & Energy Program Manager, Project
Scientist, Orbiting Carbon Observatory-2 satellite
mission - NASA Jet Propulsion Laboratory

