

# WHERE'S ALL THE CARBON?

Carbon moves between three “sinks”: the atmosphere, oceans and land.

## THE ATMOSPHERE

About 50% of the CO<sub>2</sub> released over history by human activity is now in the atmosphere. Increasing amounts of atmospheric CO<sub>2</sub> and other gasses may be contributing to a stronger “greenhouse effect” and causing Earth to become warmer over time.

Fires, decay,  
animal respiration

PHOTOSYNTHESIS

Natural exchange of CO<sub>2</sub>  
between AIR and SEAWATER

## FORESTS AND SOILS

About a quarter of the CO<sub>2</sub> released by humans has been absorbed on land, largely by forests, plants and soils, where it appears to have less harmful effects than in the atmosphere and oceans.

HUMAN ACTIVITY results in the emission of nearly 36 billion tons of CO<sub>2</sub> every year.

## THE OCEANS

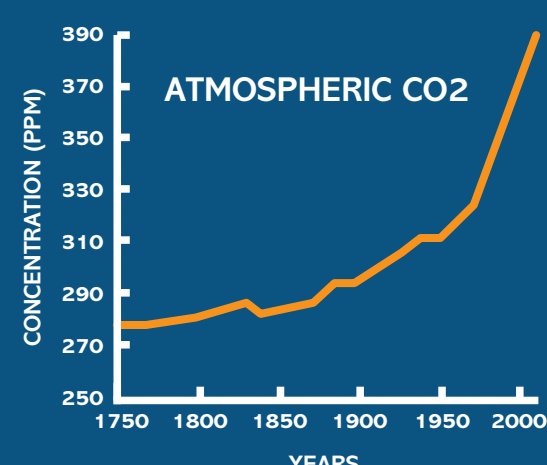
Roughly a quarter of the CO<sub>2</sub> released by humans is being absorbed into the oceans, which has made the oceans more acidic.

Large amounts of carbon are locked deep underground, in limestone and fossil fuel deposits such as coal, oil and natural gas.

Some carbon is released to the surface through volcanic activity. But at least 100 times more than that is released through fossil-fuel burning and cement production.

Volcanoes

**FORESTS  
ARE  
WORKING  
THEIR  
TRUNKS OFF**



Carbon dioxide has been accumulating in the atmosphere since the beginning of the Industrial Revolution, when humans first started burning fossil fuels. In that time, the concentration of CO<sub>2</sub> has increased from about 280 parts per million to about 400 parts per million.



One way to store or “sequester” carbon is through reforestation. In the Pacific Northwest, new trees must be planted after harvest. It's the law. As the new forest grows, it will do its work of absorbing CO<sub>2</sub> through photosynthesis.



When trees take in CO<sub>2</sub> through photosynthesis, they store the carbon as wood and release oxygen as a byproduct. About half of the dry weight of wood is stored carbon.



Unlike other building materials such as steel and concrete, wood stores carbon. Wood also requires less energy to manufacture. Using more wood will increase the amount of carbon stored in buildings and other products.



Hundreds of products are made from wood. When a tree is made into a wood product, the carbon stays in the wood for the life of the product, which can be hundreds of years.

Come to think about it, this poster is printed on sequestered carbon. If you burn it or leave it outside to decay, the carbon will return to the atmosphere. As long as you keep it on your wall, the carbon stays put!



Oregon Forest  
Resources Institute

LearnForests.org