

CARBON STORES

OCEANS

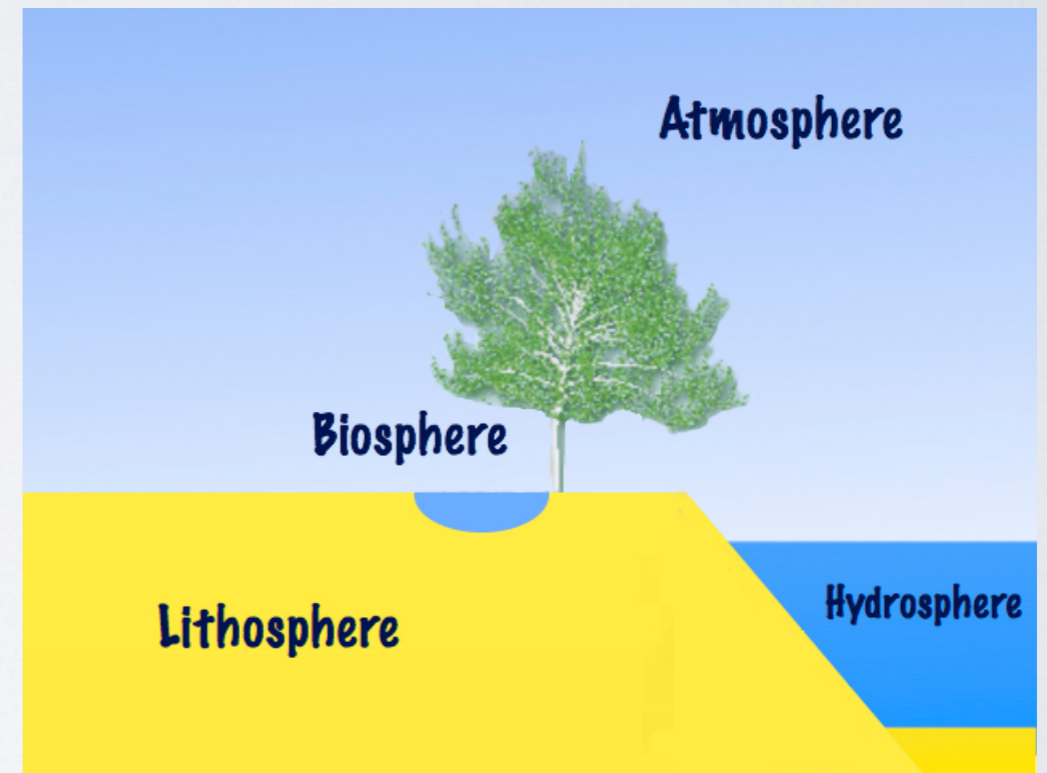
The Oceans store 50 times more carbon than the atmosphere

- The amount of carbon stored in the Oceans is increasing
 - 30% of CO₂ released by humans has been diffused into the oceans
- CO₂ acidifies the water which creates carbonic acid. This harms marine life
 - > Lobsters and other shelled animals shells are weakening
- Since 1750 the Ocean's pH has decreased by 0.1 (30% change)



BIOSPHERE

- Plants absorb 25 percent of the Carbon Dioxide released by humans
- This combined with oxygen and Nitrogen forms organic carbon -> Organic carbon is passed down the food chain and released by the animals
- 45% of all carbon stored in plants are located in Russia and the Amazon
- Amounts of carbon being held varies on due to changing rates of photosynthesis
- Deforestation especially burning woodland releases 1.5 billion tonnes of stored carbon every year



CARBON AND METHANE

- There is permafrost, up to 2 miles below the Earth's surface which holds 40% of the world's carbon stores. This layer of permafrost has been accumulated because of dead organic matter which has been compressed for millions of years.
- 500 GT of CO₂ in permafrost compared to 800 GT of atmospheric CO₂
- Positive feedback loop: As global temps. increase, permafrost begins to thaw, releasing methane and CO₂. This process worsens climate change.
- Possible increase of 45-64% of methane if global temperatures increase by 4 degrees C.
- Melting snow caps reduce the global albedo, making carbon stores within the ocean vulnerable.

Major stores of carbon on the earth

Sink	Amount in billions of Metric tons
Atmosphere	578 (as of 1700)- 766(as of 1999)
Soil organic matter	1500 to 1600
Ocean	38,000 to 40,000
Marine sediments and sedimentary Rocks	66,000,000 to 100,000,000
Terrestrial Plants	540 to 610
Fossil Fuel Deposits	4000

