



Atmosphere  
(800)

**Atmospheric  
Carbon Net  
Annual Increase  
4**

**↑ ↑ GtC/y: Gigatons  
of carbon/year**

*Numbers in parentheses  
refer to stored carbon  
pools. Red indicates  
carbon from human  
emissions.*

**120 + 3**  
**Photosynthesis**

**60**

**Plant  
respiration**

**9**

**Fossil fuels,  
cement, and  
land-use  
change**

**Plant  
biomass  
(550)**

**60**

**Microbial  
respiration and  
decomposition**

**3**  
**Net terrestrial  
uptake**

**Soil carbon**

**Soil  
(2300)**

**Fossil pool  
(10,000)**

**90 + 2**

**Air-sea gas  
exchange**

**90**

**Surface ocean  
(1000)**

**Phytoplankton  
photosynthesis**

**Respiration  
and  
decomposition**

**Net ocean  
uptake  
2**

**Deep ocean  
(37,000)**

**Reactive sediments  
(6000)**