1. Carbon flow

flow	magnitude 10^{12} kg(C)/yr
CO_2 flux to the atmosphere from decomposition and combustion of terrestrial organic matter and from animal respiration [This flow is nearly exactly balanced by a flow of inorganic carbon from the atmosphere to terrestrial living biomass in net primary productivity.]	50
inorganic carbon production in the oceanic mixed layer from decomposition of oceanic organic matter and animal respiration [This and the subsequent flow are nearly exactly balanced by a flow of inorganic carbon from seawater to living organisms in oceanic net primary productivity.]	20
inorganic carbon production in the deep ocean from decomposition of oceanic organic matter	5.0
net upwelling of inorganic carbon from deep ocean to the mixed oceanic layer	5.0
CO_2 flux to the atmosphere from fossil fuel burning and cement manufacturing (2006)	6.5
river flow of organic carbon to the oceans	0.2
deposition of carbon to oceanic sediment from sinking oceanic detritus	0.1
consumption of H_2CO_3 from weathering of rock and sediment	0.1

*Anthropogenic flows are believed to be known to within ±15%. Natural flows are often only crudely known. Most are uncertain to ±50%; and some, like the global biological nitrogen fixation rate, could be wrong by a factor of three (i.e., a value of 3 has a range of uncertainty from 1 to 9). Stocks in organic matter and in soil, rock, fuel, and sediments are believed to be known to within a factor of two. Atmospheric CO_2 and N_2 stocks are known to better than ±1%.