

Level of organization	System	Rates/fluxes involved *	Term	Definition	Sources
Organ	Leaf	GPP, NPP, R_a	NA	$\frac{\text{Net photosynthesis}}{\text{Gross photosynthesis}}$	This paper
Organism	Heterotrophic microorganisms	U, G, R_h	Yield, apparent yield, growth yield, C-use efficiency, growth efficiency	$\frac{\text{Biomass production}}{C_{\text{uptake}}}$	Monod (1949), Payne (1970), van Bodegom (2007)
	Animals	U, G, R_h	Gross growth efficiency	$\frac{\text{Biomass production}}{C_{\text{ingestion}}}$	Sterner and Elser (2002), Doi et al. (2010)
	Plants	U, G, R_a	C-use efficiency	$\frac{\text{Biomass production}}{\text{Gross photosynthesis}}$	Gifford (1995)
Community	Terrestrial microorganisms	U, G, R_h	C-use efficiency	$\frac{\text{Biomass production}}{C_{\text{uptake}}}$	Manzoni et al. (2012), Geyer et al. (2016)
		U, G, R_h, EX	Substrate use efficiency	$\frac{\text{Biom.} + \text{exudate prod.}}{C_{\text{uptake}}}$	Schimel and Weintraub (2003)
	Aquatic bacteria	U, G, R_h	(Gross) growth efficiency	$\frac{\text{Biomass production}}{C_{\text{uptake}}}$	del Giorgio and Cole (1998)
	Plants	GPP, NPP, R_a	Biomass production efficiency	$\frac{\text{NPP}}{\text{GPP}}$	Cannell and Thornley (2000), DeLucia et al. (2007)
Ecosystem	Soil	NECB, NPP	C sequestration efficiency	$\frac{C_{\text{accumulation rate}}}{C_{\text{input rate}}}$	Stewart et al. (2007)
	Sediments	NECB, rate of C burial	Organic C burial (or preservation) efficiency	$\frac{C_{\text{accumulation rate}}}{C_{\text{input rate}}}$	Canfield (1994), Alin and Johnson (2007)
	Vegetation and soil	NEP, GPP	C-use efficiency	$\frac{\text{NEP}}{\text{GPP}}$	Fernandez-Martinez et al. (2014)
	Oceanic photic zone	NPP, rate of C export	Particle export ratio	$\frac{C_{\text{export}}}{\text{NPP}}$	Ducklow et al. (2001), Dunne et al. (2005)
	Food webs (producers, consumers, predators)	U, G, R_h	C transfer efficiency, food chain efficiency	$\frac{\text{Biomass production}}{\text{GPP}}$	Lindeman (1942), Sterner and Elser (2002)
	Watersheds (vegetation, soil, water bodies)	NECB, GPP	NA	$\frac{\text{NECB}}{\text{GPP} + F_{\text{in}}}$	This paper