

**Table 1.** Global forest carbon budget (Pg C year<sup>-1</sup>) over two time periods. Sinks are positive values; sources are negative values.

Carbon sink and source in biomes	1990–1999	2000–2007	1990–2007
Boreal forest	0.50 ± 0.08	0.50 ± 0.08	0.50 ± 0.08
Temperate forest	0.67 ± 0.08	0.78 ± 0.09	0.72 ± 0.08
Tropical intact forest*	1.33 ± 0.35	1.02 ± 0.47	1.19 ± 0.41
Total sink in global established forests†	2.50 ± 0.36	2.30 ± 0.49	2.41 ± 0.42
Tropical regrowth forest‡	1.57 ± 0.50	1.72 ± 0.54	1.64 ± 0.52
Tropical gross deforestation emission§	-3.03 ± 0.49	-2.82 ± 0.45	-2.94 ± 0.47
Tropical land-use change emission	-1.46 ± 0.70	-1.10 ± 0.70	-1.30 ± 0.70
Global gross forest sink¶	4.07 ± 0.62	4.02 ± 0.73	4.05 ± 0.67
Global net forest sink#	1.04 ± 0.79	1.20 ± 0.85	1.11 ± 0.82

*Equations of global forest C fluxes*

$$F_{\text{established forests}} = F_{\text{boreal forests}} + F_{\text{temperate forests}} + F_{\text{tropical intact forests}} \quad (\text{Eq. 1})$$

$$F_{\text{tropical land-use change}} = F_{\text{tropical gross deforestation}} + F_{\text{tropical regrowth forests}} \quad (\text{Eq. 2})$$

$$F_{\text{gross forest sink}} = F_{\text{established forests}} + F_{\text{tropical regrowth forests}} \quad (\text{Eq. 3})$$

$$F_{\text{net forest sink}} = F_{\text{established forests}} + F_{\text{tropical land-use change}} \quad (\text{Eq. 4})$$

\*Tropical intact forests: tropical forests that have not been substantially affected by direct human activities; flux accounts for the dynamics of natural disturbance-recovery processes. †Global established forests: the forest remaining forest over the study periods plus afforested land in boreal and temperate biomes, in addition to intact forest in the tropics (Eq. 1). ‡Tropical regrowth forests: tropical forests that are recovering from past deforestation and logging. §Tropical gross deforestation: the total C emissions from tropical deforestation and logging, not counting the uptake of C in tropical regrowth forests. ||Tropical land-use change: emissions from tropical land-use change, which is a net balance of tropical gross deforestation emissions and C uptake in regrowth forests (Eq. 2). It may be referenced as a tropical net deforestation emission in the literature. ¶Global gross forest sink: the sum of total sinks in global established forests and tropical regrowth forests (Eq. 3). #Global net forest sink: the net budget of global forest fluxes (Eq. 4). It can be calculated in two ways: (i) total sink in global established forests minus tropical land-use change emission or (ii) total global gross forest sink minus tropical gross deforestation emission.