

**Table 1.** Annual values of leaf area duration ( $L_d$ ), aboveground net primary production plus aboveground respiration (ANPP'), and net primary production (NPP) for each of the four FACE sites.

Site	Species	Year	Ambient CO <sub>2</sub>			Elevated CO <sub>2</sub>		
			$L_d$ (m <sup>2</sup> yr m <sup>-2</sup> )	ANPP' (g C m <sup>-2</sup> yr <sup>-1</sup> )	NPP	$L_d$ (m <sup>2</sup> yr m <sup>-2</sup> )	ANPP' (g C m <sup>-2</sup> yr <sup>-1</sup> )	NPP
Duke FACE*	<i>Pinus taeda</i> , unfertilized	1994	1.1	692	626	1.1	812	756
		1995	1.3	800	719	1.3	982	901
		1996	1.3	805	725	1.5	1005	915
		1997	1.2	819	731	1.3	1036	942
		1998	1.3	740	662	1.6	933	851
		1999	1.4	839	746	1.7	1028	931
		2000	1.4	913	809	1.7	1113	1003
	<i>Pinus taeda</i> , fertilized	2001	1.6	738	656	1.9	963	871
		2002	1.5	545	490	1.8	688	633
		2003	1.2	629	565	1.5	833	761
		1999	1.6	995	876	1.9	1146	1028
		2000	1.8	1132	993	2.0	1261	1126
		2001	2.0	924	811	2.3	1142	1020
		2002	1.7	661	584	1.9	789	720
AspenFACE <sup>†</sup>	<i>Populus tremuloides</i>	2003	1.1	462	424	1.7	555	541
		2001	1.1	250	229	1.6	460	446
	<i>Betula papyrifera</i>	2002	1.2	335	305	1.8	533	518
		2003	1.0	343	315	1.6	505	495
ORNL-FACE <sup>‡</sup>	<i>Liquidambar styraciflua</i>	1999	2.9	892	882	3.0	1021	1021
		2000	3.0	1036	972	3.3	1115	1137
		2001	2.9	980	1055	3.2	1035	1249
		2002	2.9	937	919	2.9	980	1229
POP-EUROFACE <sup>§</sup>	<i>Populus alba</i>	2000	4.0	1305	1132	3.9	1503	1341
		2001	4.8	1719	1493	4.5	2291	2029
	<i>Populus nigra</i>	2000	2.6	1288	1130	2.9	1599	1530
		2001	3.1	1688	1532	3.1	1980	1853
	<i>Populus euramericana</i>	2000	4.1	1674	1437	4.4	1730	1562
		2001	5.0	2224	1983	5.1	2591	2413

$L_d$  was calculated as peak  $L$  (for deciduous forests) or growing season averaged  $L$  (conifer forest) multiplied by growing season length (as fraction of a year). NPP was calculated as the sum of production of wood, leaves, and coarse and fine roots (1). ANPP' was calculated as the sum of wood, leaves, and aboveground maintenance respiration [=0.25 x ANPP; (2)], or by subtracting coarse and fine roots from NPP and adding aboveground maintenance respiration.

\*Duke FACE: growing season averaged  $L$  and leaf production from this study and ref. 3; wood and coarse root production from this study using allometry (4, 5); fine root production from ref. 6.

<sup>†</sup>AspenFACE: peak  $L$  from ref. 1 multiplied by CO<sub>2</sub>-induced enhancement of leaf biomass (7); ANPP calculated as NPP minus coarse and fine root biomass production in ref. 7.

<sup>‡</sup>ORNL-FACE: peak  $L$  from ref. 8; ANPP calculated as NPP minus coarse and fine root biomass production in ref. 9.

<sup>§</sup>POP-EUROFACE: peak  $L$  from refs. 10, 11; ANPP calculated as NPP minus coarse and fine root biomass production in ref. 12.

1. Norby RJ, DeLucia EH, Gielen B, Calfapietra C, Giardina CP, King JS, Ledford J, McCarthy HR, Moore DJP, Ceulmans R, *et al.* (2005) *Proc Natl Acad Sci USA* 102:18052-18056.
2. Ryan MG (1991) *Tree Physiol* 9:255-266.
3. Phillips N, Oren R (2001) *Ecol App* 11:385-396.
4. Naidu SL, DeLucia EH, Thomas RB (1998) *Can J For Res* 28:1116-1124.
5. Schäfer KVR (2002) PhD thesis (Duke University, Durham, NC).
6. Matamala R, Schlesinger WH (2000) *Global Change Biol* 6:967-979.
7. King JS, Kubiske ME, Pregitzer KS, Hendrey GR, McDonald EP, Giardina CP, Quinn VS, Karnosky DF (2005) *New Phytol* 168:623-636.
8. Norby RJ, Sholtis JD, Gunderson CA, Jawdy SS (2003) *Oecologia* 136: 574-584.
9. Norby RJ, Ledford J, Reilly CD, Miller NE, O'Neill EG (2004) *Proc Natl Acad Sci USA* 101:9689-9693.
10. Gielen B, Liberloo M, Bogaert J, Calfapietra C, DeAngelis P, Miglietta F, Scarascia-Mugnozza G, Ceulmans R (2003) *Global Change Biol* 9:1022-1037.
11. Wittig VE, Bernacchi CJ, Zhu X-G, Calfapietra C, Ceulmans R, De Angelis P, Gielen B, Miglietta F, Morgan PB, Long SP (2005) *Global Change Biol* 11:644-656.
12. Gielen B, Calfapietra C, Lukac M, Wittig VE, De Angelis P, Janssens IA, Moscatelli MC, Grego S, Cotrufo MF, Godbold DL, *et al.* (2005) *Tree Physiol* 25:1399-1408.