How Much Carbon Is in a Tree?

Use this table to find a rough estimate of the amount of carbon stored in a tree on the basis of the tree's circumference at breast height (CBH) and its height (H). The estimated amount of carbon is in kilograms.

Circumference at Breast Height (in m)

Tree Height (in meters)	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.0	2.25	2.5	2.75	3.0	3.25	3.5	3.75	4.0	4.25	4.5
2.0	10	14	19	26	36	48	61	77	95	115	138	162	189	217	248	281	316	353
4.0	11	18	28	43	62	86	113	145	181	221	266	315	368	425	486	552	622	696
6.0	13	22	38	60	89	124	165	213	267	327	394	467	547	633	725	823	928	1,040
8.0	14	26	48	77	115	162	217	281	353	433	522	620	726	840	963	1,095	1,235	1,383
10	15	31	57	94	142	200	269	349	439	539	651	773	905	1,048	1,202	1,366	1,541	1,727
12	16	35	67	111	168	238	321	416	525	645	779	925	1,084	1,256	1,440	1,638	1,848	2,070
14	17	39	76	128	195	276	373	484	610	751	907	1,078	1,263	1,464	1,679	1,909	2,154	2,414
16	18	43	86	145	221	315	425	552	696	857	1,035	1,231	1,443	1,672	1,917	2,180	2,460	2,757
18	19	48	95	162	248	353	477	620	782	963	1,164	1,383	1,622	1,879	2,156	2,452	2,767	3,101
20	20	52	105	179	274	391	529	688	868	1,069	1,292	1,536	1,801	2,087	2,394	2,723	3,073	3,444
22	21	56	114	196	301	429	581	756	954	1,175	1,420	1,688	1,980	2,295	2,633	2,994	3,379	3,787
24	22	60	124	213	327	467	633	823	1,040	1,281	1,549	1,841	2,159	2,503	2,872	3,266	3,686	4,131
26	23	64	133	230	354	505	685	891	1,126	1,387	1,677	1,994	2,338	2,710	3,110	3,537	3,992	4,474
28	24	69	143	247	380	544	737	959	1,211	1,493	1,805	2,146	2,517	2,918	3,349	3,809	4,298	4,818
30	25	73	152	264	407	582	789	1,027	1,297	1,599	1,933	2,299	2,697	3,126	3,587	4,080	4,605	5,161
32	26	77	162	281	433	620	840	1,095	1,383	1,705	2,062	2,452	2,876	3,334	3,826	4,351	4,911	5,505
34	27	81	172	298	460	658	892	1,163	1,469	1,811	2,190	2,604	3,055	3,541	4,064	4,623	5,217	5,848
36	28	86	181	315	486	696	944	1,231	1,555	1,917	2,318	2,757	3,234	3,749	4,303	4,894	5,524	6,192
38	29	90	191	332	513	734	996	1,298	1,641	2,023	2,446	2,910	3,413	3,957	4,541	5,166	5,830	6,535
40	31	94	200	349	539	773	1,048	1,366	1,727	2,129	2,575	3,062	3,592	4,165	4,780	5,437	6,137	6,879
42	32	98	210	366	566	811	1,100	1,434	1,813	2,235	2,703	3,215	3,772	4,373	5,018	5,708	6,443	7,222
44	33	103	219	382	592	849	1,152	1,502	1,898	2,341	2,831	3,368	3,951	4,580	5,257	5,980	6,749	7,565
46	34	107	229	399	619	887	1,204	1,570	1,984	2,448	2,960	3,520	4,130	4,788	5,495	6,251	7,056	7,909
48	35	111	238	416	645	925	1,256	1,638	2,070	2,554	3,088	3,673	4,309	4,996	5,734	6,522	7,362	8,252

These estimates are based on the formula: M_C (mass of carbon in the tree) = 0.5 x M_w (mass of the wood), where M_w = 0.55 x V (volume of tree) x D_w (density of wood); V = 0.0567 + 0.5074 x $(CBH/\varpi)^2$ x H. It assumes that D_w = 0.6 g/cm^3, and that water makes up 45 percent of the tree's mass.