

Table. Volume-of-wood to carbon mass conversion coefficients. Based on specific gravity table compiled by Linda Heath and tree level data from the FIADB as of Fall 2002. Values reflect the distribution of species in each region and forest type.

The metric conversion coefficient is v2c_ tons, and the English version is v2c_ lbs:

Metric tons carbon = Volume (m3) * v2c_ tons

English, pounds carbon = Volume (ft3) * v2c_ lbs

Additionally, average conversions for softwood and hardwood species were determined for each forest type (metric only).

Conversion coefficient = average specific gravity * weight of water * percentage carbon
(in metric units this is: spec. grav. * 1 * 0.5)

Region	FIADB Forest Type	Specific Gravity	v2c_ lbs	v2c_ tons	Softwood v2c_ tons	Hardwood v2c_ tons
NE	Aspen/Birch	0.4101	12.7960	0.2051	0.1787	0.2150
NE	Elm/Ash/Cottonwood	0.4751	14.8244	0.2376	0.1803	0.2412
NE	Exotic Softwoods	0.4164	12.9905	0.2082	0.1996	0.2377
NE	Loblolly/Shortleaf Pine	0.4730	14.7586	0.2365	0.2306	0.2590
NE	Maple/Beech/Birch	0.4997	15.5897	0.2498	0.1846	0.2598
NE	Non-stocked	0.4371	13.6362	0.2185	0.1707	0.2368
NE	Oak/Gum/Cypress	0.4649	14.5058	0.2325	0.1966	0.2510
NE	Oak/Hickory	0.5263	16.4213	0.2632	0.1954	0.2665
NE	Oak/Pine	0.4591	14.3241	0.2296	0.1942	0.2628
NE	Spruce/Fir	0.3713	11.5834	0.1856	0.1750	0.2414
NE	White/Red/Jack Pine	0.4042	12.6122	0.2021	0.1815	0.2546
NLS	Aspen/Birch	0.3908	12.1926	0.1954	0.1776	0.1986
NLS	Elm/Ash/Cottonwood	0.4366	13.6228	0.2183	0.1696	0.2271
NLS	Exotic Softwoods	0.4130	12.8860	0.2065	0.2023	0.2216
NLS	Maple/Beech/Birch	0.4780	14.9129	0.2390	0.1781	0.2476
NLS	Non-stocked	0.4379	13.6613	0.2189	0.2022	0.2311
NLS	Oak/Hickory	0.5262	16.4162	0.2631	0.1901	0.2666
NLS	Spruce/Fir	0.3628	11.3198	0.1814	0.1734	0.2174
NLS	White/Red/Jack Pine	0.4025	12.5579	0.2012	0.1961	0.2265
NPS	Aspen/Birch	0.3850	12.0120	0.1925	0.1986	0.1927
NPS	Elm/Ash/Cottonwood	0.4622	14.4222	0.2311	0.2173	0.2312
NPS	Exotic Softwoods	0.4180	13.0409	0.2090	0.2050	0.2055
NPS	Loblolly/Shortleaf Pine	0.4734	14.7696	0.2367	0.2301	0.2542
NPS	Maple/Beech/Birch	0.5110	15.9418	0.2555	0.2147	0.2559
NPS	Non-stocked	0.4839	15.0983	0.2420	0.1948	0.2579
NPS	Oak/Gum/Cypress	0.5374	16.7678	0.2687	0.2162	0.2691
NPS	Oak/Hickory	0.5558	17.3399	0.2779	0.2182	0.2787
NPS	Oak/Pine	0.4831	15.0741	0.2416	0.2146	0.2594
NPS	Ponderosa Pine	0.3842	11.9870	0.1921	0.1903	0.2731
NPS	Spruce/Fir	0.4185	13.0577	0.2093	0.2067	0.2584
NPS	White/Red/Jack Pine	0.3828	11.9443	0.1914	0.1831	0.2342
PSW	Alder/Maple	0.3721	11.6106	0.1861	0.1834	0.1888
PSW	Aspen/Birch	0.3804	11.8683	0.1902	0.1953	0.1856

Region	FIADB Forest Type	Specific Gravity	v2c_lbs	v2c_tons	Softwood v2c_tons	Hardwood v2c_tons
PSW	Douglas-fir	0.4583	14.2987	0.2291	0.2171	0.2788
PSW	Elm/Ash/Cottonwood	0.4038	12.5983	0.2019		0.2019
PSW	Fir/Spruce/Mt. Hemlock	0.3711	11.5769	0.1855	0.1853	0.2776
PSW	Hemlock/Sitka Spruce	0.3680	11.4828	0.1840	0.1843	0.1816
PSW	Lodgepole Pine	0.3774	11.7757	0.1887	0.1887	0.1842
PSW	Non-stocked	0.4020	12.5429	0.2010	0.1872	0.2893
PSW	Other Western Hardwoods	0.5144	16.0496	0.2572	0.2091	0.2873
PSW	Other Western Softwoods	0.3915	12.2163	0.1958	0.1912	0.2900
PSW	Pinyon/Juniper	0.4975	15.5213	0.2487	0.2364	
PSW	Ponderosa Pine	0.4143	12.9246	0.2071	0.1945	0.2683
PSW	Redwood	0.3737	11.6594	0.1868	0.1792	0.2813
PSW	Western Oak	0.5694	17.7644	0.2847	0.2058	0.3070
PSW	Western White Pine	0.3564	11.1200	0.1782	0.1782	
PWE	Alder/Maple	0.3461	10.7975	0.1730	0.1550	0.1850
PWE	Aspen/Birch	0.3745	11.6842	0.1872	0.1985	0.1905
PWE	Douglas-fir	0.4322	13.4854	0.2161	0.2162	0.2180
PWE	Elm/Ash/Cottonwood	0.3155	9.8433	0.1577	0.1779	0.1550
PWE	Fir/Spruce/Mt. Hemlock	0.3760	11.7315	0.1880	0.1881	0.1902
PWE	Hemlock/Sitka Spruce	0.3629	11.3214	0.1814	0.1808	0.2038
PWE	Lodgepole Pine	0.3895	12.1509	0.1947	0.1948	0.1955
PWE	Non-stocked	0.4164	12.9905	0.2082	0.2054	0.2773
PWE	Other Western Hardwoods	0.4228	13.1920	0.2114	0.2117	0.2059
PWE	Pinyon/Juniper	0.3845	11.9967	0.1923	0.1923	
PWE	Ponderosa Pine	0.3889	12.1343	0.1945	0.1938	0.2752
PWE	Western Larch	0.4491	14.0107	0.2245	0.2251	0.2073
PWE	Western Oak	0.5893	18.3850	0.2946	0.1963	0.3200
PWW	Alder/Maple	0.3926	12.2493	0.1963	0.2042	0.1907
PWW	Aspen/Birch	0.4109	12.8214	0.2055	0.1971	0.2194
PWW	Douglas-fir	0.4387	13.6885	0.2194	0.2201	0.2088
PWW	Elm/Ash/Cottonwood	0.3543	11.0542	0.1772	0.1853	0.1752
PWW	Fir/Spruce/Mt. Hemlock	0.3958	12.3496	0.1979	0.1960	0.2197
PWW	Hemlock/Sitka Spruce	0.4064	12.6795	0.2032	0.2036	0.1887
PWW	Lodgepole Pine	0.3760	11.7322	0.1880	0.1917	0.1863
PWW	Non-stocked	0.4189	13.0696	0.2094	0.2120	0.1954
PWW	Other Western Hardwoods	0.4362	13.6104	0.2181	0.2005	0.2265
PWW	Other Western Softwoods	0.4258	13.2865	0.2129	0.1980	0.2582
PWW	Pinyon/Juniper	0.3989	12.4448	0.1994	0.1994	
PWW	Ponderosa Pine	0.4462	13.9210	0.2231	0.1944	0.2786
PWW	Redwood	0.3450	10.7638	0.1725	0.1700	0.1850
PWW	Tanoak/Laurel	0.4716	14.7151	0.2358	0.2124	0.2541
PWW	Western Oak	0.5497	17.1514	0.2749	0.2153	0.2986
RMN	Aspen/Birch	0.3723	11.6148	0.1861	0.2022	0.1829
RMN	Douglas-fir	0.4310	13.4480	0.2155	0.2156	0.2072
RMN	Elm/Ash/Cottonwood	0.3526	11.0026	0.1763	0.1966	0.1746
RMN	Fir/Spruce/Mt. Hemlock	0.3540	11.0462	0.1770	0.1770	0.1983
RMN	Hemlock/Sitka Spruce	0.3628	11.3178	0.1814	0.1809	0.2140
RMN	Lodgepole Pine	0.3811	11.8903	0.1905	0.1906	0.1844
RMN	Non-stocked	0.3869	12.0728	0.1935	0.1913	0.2200
RMN	Other Western Hardwoods	0.6863	21.4128	0.3432	0.2170	0.3776
RMN	Other Western Softwoods	0.3650	11.3894	0.1825	0.1824	0.4027
RMN	Pinyon/Juniper	0.4536	14.1531	0.2268	0.2202	0.4924
RMN	Ponderosa Pine	0.3899	12.1649	0.1950	0.1950	0.1679
RMN	Western Larch	0.4370	13.6343	0.2185	0.2186	0.2041
RMN	Western White Pine	0.3902	12.1752	0.1951	0.1933	0.2076

Region	FIADB Forest Type	Specific Gravity	v2c_lbs	v2c_tons	Softwood v2c_tons	Hardwood v2c_tons
RMS	Aspen/Birch	0.3552	11.0819	0.1776	0.1795	0.1764
RMS	Douglas-fir	0.4305	13.4317	0.2153	0.2149	0.2218
RMS	Elm/Ash/Cottonwood	0.3714	11.5863	0.1857	0.2006	0.1871
RMS	Fir/Spruce/Mt. Hemlock	0.3441	10.7363	0.1721	0.1712	0.1883
RMS	Lodgepole Pine	0.3760	11.7311	0.1880	0.1881	0.1750
RMS	Maple/Beech/Birch	0.3898	12.1614	0.1949	0.1912	0.2005
RMS	Non-stocked	0.4478	13.9716	0.2239	0.2085	0.3261
RMS	Oak/Hickory	0.3796	11.8443	0.1898	0.1900	0.1807
RMS	Other Western Hardwoods	0.6909	21.5566	0.3455	0.2308	0.3853
RMS	Other Western Softwoods	0.3695	11.5274	0.1847	0.1840	0.2524
RMS	Pinyon/Juniper	0.4705	14.6784	0.2352	0.2324	0.3742
RMS	Ponderosa Pine	0.3937	12.2845	0.1969	0.1926	0.2959
RMS	Spruce/Fir	0.3780	11.7939	0.1890	0.1890	0.1814
RMS	Western Oak	0.5782	18.0404	0.2891	0.2114	0.3325
RMS	Western White Pine	0.3613	11.2729	0.1807	0.1807	
SC	Elm/Ash/Cottonwood	0.4848	15.1256	0.2424	0.2120	0.2434
SC	Loblolly/Shortleaf Pine	0.4778	14.9077	0.2389	0.2348	0.2615
SC	Longleaf/Slash Pine	0.5323	16.6089	0.2662	0.2668	0.2582
SC	Maple/Beech/Birch	0.5230	16.3167	0.2615	0.2020	0.2643
SC	Non-stocked	0.5378	16.7799	0.2689	0.2350	0.2706
SC	Oak/Gum/Cypress	0.5054	15.7695	0.2527	0.2210	0.2567
SC	Oak/Hickory	0.5369	16.7498	0.2684	0.2264	0.2715
SC	Oak/Pine	0.5018	15.6575	0.2509	0.2335	0.2680
SC	White/Red/Jack Pine	0.4227	13.1877	0.2113	0.1827	0.2673
SE	Elm/Ash/Cottonwood	0.4975	15.5208	0.2487	0.2157	0.2506
SE	Loblolly/Shortleaf Pine	0.4750	14.8196	0.2375	0.2350	0.2502
SE	Longleaf/Slash Pine	0.5358	16.7168	0.2679	0.2680	0.2614
SE	Maple/Beech/Birch	0.5132	16.0128	0.2566	0.1899	0.2595
SE	Non-stocked	0.4693	14.6430	0.2347	0.2196	0.2366
SE	Oak/Gum/Cypress	0.4767	14.8723	0.2383	0.2200	0.2431
SE	Oak/Hickory	0.5261	16.4135	0.2630	0.2246	0.2656
SE	Oak/Pine	0.4988	15.5640	0.2494	0.2337	0.2606
SE	Spruce/Fir	0.4017	12.5323	0.2008	0.1900	0.2540
SE	Tropical Hardwoods	0.6191	19.3156	0.3095	0.2423	0.3164
SE	White/Red/Jack Pine	0.4021	12.5441	0.2010	0.1792	0.2601