

Cross-sectional area of a tree



To determine the cross-sectional area of a tree, you first need to know the tree's diameter at breast height (DBH). DBH is measured using a special diameter measuring tape that is wrapped around the tree at 4.5 feet above the ground. If a diameter tape is not available, you can use a regular measuring tape to get the circumference and divide by 3.14 to get the diameter. Once you know the diameter, you must divide by 2 to get the radius.

Cross-sectional area is determined by squaring the radius and then multiplying by 3.14. For example, if a tree is measured as 10" DBH, the radius is 5". Multiplying 5 by 5 equals 25, which when multiplied by 3.14 equals 78.5. Thus, the cross-sectional area of a 10" DBH tree is 78.5.

This chart shows the cross-sectional area for trees from 2" to 50" DBH.

DBH	CSSI	DBH	CSSI	DBH	CSSI	DBH	CSSI	DBH	CSSI	DBH	CSSI	DBH	CSSI	DBH	CSSI
2.0	3.14	7.8	47.76	13.6	145.19	19.4	295.44	25.2	498.51	31.0	754.39	36.8	1063.08	42.6	1424.59
2.1	3.46	7.9	48.99	13.7	147.34	19.5	298.50	25.3	502.47	31.1	759.26	36.9	1068.86	42.7	1431.28
2.2	3.80	8.0	50.24	13.8	149.50	19.6	301.57	25.4	506.45	31.2	764.15	37.0	1074.67	42.8	1437.99
2.3	4.15	8.1	51.50	13.9	151.67	19.7	304.65	25.5	510.45	31.3	769.06	37.1	1080.48	42.9	1444.72
2.4	4.52	8.2	52.78	14.0	153.86	19.8	307.75	25.6	514.46	31.4	773.98	37.2	1086.31	43.0	1451.47
2.5	4.91	8.3	54.08	14.1	156.07	19.9	310.87	25.7	518.48	31.5	778.92	37.3	1092.16	43.1	1458.22
2.6	5.31	8.4	55.39	14.2	158.29	20.0	314.00	25.8	522.53	31.6	783.87	37.4	1098.03	43.2	1465.00
2.7	5.72	8.5	56.72	14.3	160.52	20.1	317.15	25.9	526.59	31.7	788.84	37.5	1103.91	43.3	1471.79
2.8	6.15	8.6	58.06	14.4	162.78	20.2	320.31	26.0	530.66	31.8	793.82	37.6	1109.80	43.4	1478.59
2.9	6.60	8.7	59.42	14.5	165.05	20.3	323.49	26.1	534.75	31.9	798.82	37.7	1115.71	43.5	1485.42
3.0	7.07	8.8	60.79	14.6	167.33	20.4	326.69	26.2	538.86	32.0	803.84	37.8	1121.64	43.6	1492.25
3.1	7.54	8.9	62.18	14.7	169.63	20.5	329.90	26.3	542.98	32.1	808.87	37.9	1127.58	43.7	1499.11
3.2	8.04	9.0	63.59	14.8	171.95	20.6	333.12	26.4	547.11	32.2	813.92	38.0	1133.54	43.8	1505.98
3.3	8.55	9.1	65.01	14.9	174.28	20.7	336.36	26.5	551.27	32.3	818.98	38.1	1139.51	43.9	1512.86
3.4	9.07	9.2	66.44	15.0	176.63	20.8	339.62	26.6	555.43	32.4	824.06	38.2	1145.50	44.0	1519.76
			67.89		178.99		342.90	26.7	559.62		829.16		1151.51		1526.68

3.5	9.62	9.3		15.1		20.9				32.5		38.3		44.1	
3.6	10.17	9.4	69.36	15.2	181.37	21.0	346.19	26.8	563.82	32.6	834.27	38.4	1157.53	44.2	1533.61
3.7	10.75	9.5	70.85	15.3	183.76	21.1	349.49	26.9	568.03	32.7	839.39	38.5	1163.57	44.3	1540.55
3.8	11.34	9.6	72.35	15.4	186.17	21.2	352.81	27.0	572.27	32.8	844.53	38.6	1169.62	44.4	1547.52
3.9	11.94	9.7	73.86	15.5	188.60	21.3	356.15	27.1	576.51	32.9	849.69	38.7	1175.69	44.5	1554.50
4.0	12.56	9.8	75.39	15.6	191.04	21.4	359.50	27.2	580.77	33.0	854.87	38.8	1181.77	44.6	1561.49
4.1	13.20	9.9	76.94	15.7	193.49	21.5	362.87	27.3	585.05	33.1	860.05	38.9	1187.87	44.7	1568.50
4.2	13.85	10.0	78.50	15.8	195.97	21.6	366.25	27.4	589.35	33.2	865.26	39.0	1193.99	44.8	1575.53
4.3	14.51	10.1	80.08	15.9	198.46	21.7	369.65	27.5	593.66	33.3	870.48	39.1	1200.12	44.9	1582.57
4.4	15.20	10.2	81.67	16.0	200.96	21.8	373.06	27.6	597.98	33.4	875.71	39.2	1206.26	45.0	1589.63
4.5	15.90	10.3	83.28	16.1	203.48	21.9	376.49	27.7	602.32	33.5	880.97	39.3	1212.42	45.1	1596.70
4.6	16.61	10.4	84.91	16.2	206.02	22.0	379.94	27.8	606.68	33.6	886.23	39.4	1218.60	45.2	1603.79
4.7	17.34	10.5	86.55	16.3	208.57	22.1	383.40	27.9	611.05	33.7	891.52	39.5	1224.80	45.3	1610.89
4.8	18.09	10.6	88.20	16.4	211.13	22.2	386.88	28.0	615.44	33.8	896.82	39.6	1231.01	45.4	1618.01
4.9	18.85	10.7	89.87	16.5	213.72	22.3	390.37	28.1	619.84	33.9	902.13	39.7	1237.23	45.5	1625.15
5.0	19.63	10.8	91.56	16.6	216.31	22.4	393.88	28.2	624.26	34.0	907.46	39.8	1243.47	45.6	1632.30
5.1	20.42	10.9	93.27	16.7	218.93	22.5	397.41	28.3	628.70	34.1	912.81	39.9	1249.73	45.7	1639.46
5.2	21.23	11.0	94.99	16.8	221.56	22.6	400.95	28.4	633.15	34.2	918.17	40.0	1256.00	45.8	1646.65
5.3	22.05	11.1	96.72	16.9	224.20	22.7	404.50	28.5	637.62	34.3	923.54	40.1	1262.29	45.9	1653.85
5.4	22.89	11.2	98.47	17.0	226.87	22.8	408.07	28.6	642.10	34.4	928.94	40.2	1268.59	46.0	1661.06
5.5	23.75	11.3	100.24	17.1	229.54	22.9	411.66	28.7	646.60	34.5	934.35	40.3	1274.91	46.1	1668.29
5.6	24.62	11.4	102.02	17.2	232.23	23.0	415.27	28.8	651.11	34.6	939.77	40.4	1281.25	46.2	1675.54
5.7	25.50	11.5	103.82	17.3	234.94	23.1	418.88	28.9	655.64	34.7	945.21	40.5	1287.60	46.3	1682.80
5.8	26.41	11.6	105.63	17.4	237.67	23.2	422.52	29.0	660.19	34.8	950.67	40.6	1293.96	46.4	1690.07
5.9	27.33	11.7	107.46	17.5	240.41	23.3	426.17	29.1	664.75	34.9	956.14	40.7	1300.34	46.5	1697.37
			109.30		243.16		429.83	29.2	669.32		961.63		1306.74		1704.67

6.0	28.26	11.8		17.6		23.4				35.0		40.8		46.6	
6.1	29.21	11.9	111.16	17.7	245.93	23.5	433.52	29.3	673.91	35.1	967.13	40.9	1313.16	46.7	1712.00
6.2	30.18	12.0	113.04	17.8	248.72	23.6	437.21	29.4	678.52	35.2	972.65	41.0	1319.59	46.8	1719.34
6.3	31.16	12.1	114.93	17.9	251.52	23.7	440.93	29.5	683.15	35.3	978.18	41.1	1326.03	46.9	1726.69
6.4	32.15	12.2	116.84	18.0	254.34	23.8	444.66	29.6	687.79	35.4	983.73	41.2	1332.49	47.0	1734.07
6.5	33.17	12.3	118.76	18.1	257.17	23.9	448.40	29.7	692.44	35.5	989.30	41.3	1338.97	47.1	1741.45
6.6	34.19	12.4	120.70	18.2	260.02	24.0	452.16	29.8	697.11	35.6	994.88	41.4	1345.46	47.2	1748.85
6.7	35.24	12.5	122.66	18.3	262.89	24.1	455.94	29.9	701.80	35.7	1000.47	41.5	1351.97	47.3	1756.27
6.8	36.30	12.6	124.63	18.4	265.77	24.2	459.73	30.0	706.50	35.8	1006.09	41.6	1358.49	47.4	1763.71
6.9	37.37	12.7	126.61	18.5	268.67	24.3	463.53	30.1	711.22	35.9	1011.72	41.7	1365.03	47.5	1771.16
7.0	38.47	12.8	128.61	18.6	271.58	24.4	467.36	30.2	715.95	36.0	1017.36	41.8	1371.58	47.6	1778.62
7.1	39.57	12.9	130.63	18.7	274.51	24.5	471.20	30.3	720.70	36.1	1023.02	41.9	1378.15	47.7	1786.10
7.2	40.69	13.0	132.67	18.8	277.45	24.6	475.05	30.4	725.47	36.2	1028.70	42.0	1384.74	47.8	1793.60
7.3	41.83	13.1	134.71	18.9	280.41	24.7	478.92	30.5	730.25	36.3	1034.39	42.1	1391.34	47.9	1801.11
7.4	42.99	13.2	136.78	19.0	283.39	24.8	482.81	30.6	735.04	36.4	1040.09	42.2	1397.96	48.0	1808.64
7.5	44.16	13.3	138.86	19.1	286.38	24.9	486.71	30.7	739.85	36.5	1045.82	42.3	1404.59		
7.6	45.34	13.4	140.95	19.2	289.38	25.0	490.63	30.8	744.68	36.6	1051.55	42.4	1411.24		
7.7	46.54	13.5	143.07	19.3	292.40	25.1	494.56	30.9	749.53	36.7	1057.31	42.5	1417.91		