

Basal Area Guide (DBH and Trees per Acre)

**Trees Per Acre Table (By Diameter and Basal Area)**

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There are many types of natural resource planning and management applications that require estimating the number of trees for a given size that would occupy an acre of land. The table presented here attempts to provide the number of trees per acre assuming that all have the same diameter, or that average diameter has low variability around a specified value.

This table provides the number of trees of a given size per acre across 14 relative densities. Density is based upon site occupancy and crown size approximations. The density factor used is in units of 10 square feet of basal area ranging from 10 to 140 square feet basal area per acre. Basal area is the combined cross-sectional area of all trees on an acre at 4.5 feet above the ground.

This table is intended as an educational and general management device which can assist landowners and natural resource managers with estimating tree numbers per acre. This table is an expansion of commonly available forestry tables.

**Table 1: Number of trees per acre by diameter (DBH) class in inches and basal area (BA) per acre class in square feet. (DBH is measured at 4.5 feet above ground on uphill side of tree and BA is the total cross-sectional areas of all trees on an acre measured at 4.5 feet above the ground on the uphill side of a tree. Values are rounded to the nearest whole tree.) Basal Area (square feet per acre).**

DBH	BA10	BA20	BA30	BA40	BA50	BA60	BA70	BA80	BA90	BA100	BA110	BA120	BA130	BA140
1	1,834	3,669	5,503	7,338	9,172	11,006	12,841	14,675	16,510	18,344	20,178	22,013	23,847	25,682
2	459	917	1,376	1,834	2,293	2,752	3,210	3,669	4,128	4,586	5,045	5,503	5,962	6,420
3	204	408	612	815	1,019	1,223	1,427	1,631	1,834	2,038	2,242	2,446	2,650	2,854
4	115	229	344	458	573	688	803	917	1,032	1,147	1,261	1,376	1,491	1,605
5	73	147	220	294	367	440	514	587	660	734	807	881	954	1,027
6	51	102	153	204	255	306	357	408	459	510	561	612	662	713
7	37	75	112	150	187	225	262	300	337	374	412	449	487	524
8	29	57	86	115	143	172	201	229	258	287	315	344	373	401
9	23	45	68	91	113	136	159	181	204	227	249	272	294	317
10	18	37	55	73	92	110	128	147	165	183	202	220	239	257
11	15	30	46	61	76	91	106	121	136	152	167	182	197	212
12	13	26	38	51	64	76	89	102	115	127	140	153	166	178
13	11	22	33	43	54	65	76	87	98	109	119	130	141	152
14	9	19	28	37	47	56	66	75	84	94	103	112	122	131
15	8	16	25	33	41	49	57	65	73	82	90	98	106	114
16	7	14	22	29	36	43	50	57	65	72	79	86	93	100
17	6	13	19	25	32	38	44	51	57	64	70	76	83	89
18	6	11	17	23	28	34	40	45	51	57	62	68	74	79
19	5	10	15	20	25	31	36	41	46	51	56	61	66	71
20	5	9	14	18	23	28	32	37	41	46	51	55	50	64

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DBH	BA10	BA20	BA30	BA40	BA50	BA60	BA70	BA80	BA90	BA100	BA110	BA120	BA130	BA140
21	4	8	13	17	21	25	29	33	37	42	46	50	54	58
22	4	8	11	15	19	23	27	30	34	38	42	46	49	53
23	4	7	10	14	17	21	24	28	31	35	38	42	45	49
24	3	6	10	13	16	19	22	26	29	32	35	38	41	45
25	3	6	9	12	15	18	21	24	26	29	32	35	38	41
26	3	5	8	11	14	16	19	22	24	27	30	33	35	38
27	3	5	8	10	13	15	18	20	23	25	28	30	33	35
28	2	5	7	9	12	14	16	19	21	23	26	28	30	33
29	2	4	7	9	11	13	15	18	20	22	24	26	28	31
30	2	4	6	8	10	12	14	16	18	20	22	25	27	29
31	2	4	6	8	10	12	13	15	17	19	21	23	25	27
32	2	4	5	7	9	11	13	14	16	18	20	22	23	25
33	2	3	5	7	8	10	12	14	15	17	19	20	22	24
34	2	3	5	6	8	10	11	13	14	16	18	19	21	22
35	2	3	5	6	8	9	11	12	14	15	17	18	20	21
36	1	3	4	6	7	9	10	11	13	14	16	17	18	20
37	1	3	4	5	7	8	9	11	12	13	15	16	17	19
38	1	3	4	5	6	8	9	10	11	13	14	15	17	18
39	1	2	4	5	6	7	8	10	11	12	13	15	16	17
40	1	2	3	5	6	7	8	9	10	12	13	14	15	16
41	1	2	3	4	6	7	8	9	10	11	12	13	14	15
42	1	2	3	4	5	6	7	8	9	10	11	13	14	15
43	1	2	3	4	5	6	7	8	9	10	11	12	13	14
44	1	2	3	4	5	6	7	8	9	10	10	11	12	13
45	1	2	3	4	5	5	6	7	8	9	10	11	12	13
46	1	2	3	4	4	5	6	7	8	9	10	10	11	12
47	1	2	3	3	4	5	6	7	8	8	9	10	11	12
48	1	2	2	3	4	5	6	6	7	8	9	10	10	11
49	1	2	2	3	4	5	5	6	7	8	8	9	10	11
50	1	2	2	3	4	4	5	6	7	7	8	9	10	10
55	1	1	2	2	3	4	4	5	6	6	7	7	8	9
60	1	1	2	2	3	3	4	4	5	5	6	6	7	7
65	--	1	1	2	2	3	3	4	4	4	5	5	6	6
75	--	1	1	1	2	2	2	3	3	3	4	4	4	5
80	--	1	1	1	1	2	2	2	3	3	3	3	4	4

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DBH	BA10	BA20	BA30	BA40	BA50	BA60	BA70	BA80	BA90	BA100	BA110	BA120	BA130	BA140
85	--	1	1	1	1	2	2	2	2	3	3	3	3	4
90	--	--	1	1	1	1	2	2	2	2	3	3	3	3
95	--	--	1	1	1	1	1	2	2	2	2	2	3	3
100	--	--	1	1	1	1	1	2	2	2	2	2	2	3