

Estimating Tree Canopy Cover and Basal Area

In some cases, San Juan County's critical area regulations allow limited tree removal in buffers and tree protection zones provided a given amount of tree canopy cover or "basal area" per acre is retained. (Basal area is the area covered by the tree trunks at a point 4 ½ feet above the ground.) Following are instructions on how to estimate canopy cover and basal area.

Percent Canopy Cover

Percent canopy cover is easiest to estimate from aerial photographs that are available on the County's Polaris mapping tool. Following are two methods that may be used:

1. Compare the aerial photo to the "Visual Guide for Estimating Tree Canopy Cover" which is attached; or
2. Lay a transparent copy of the "20 x 20 Dot Grid for Measuring Percent Tree Canopy Cover" over the photo of the parcel. Within the area being evaluated count the dots that are over tree canopy (being careful not to count shade as canopy) and then divide that value by the total number of dots over the area being evaluated. A dot grid that can be photocopied onto a clear overlay is attached. Note: This method is proportional and the scale of the photo is not relevant.

Basal Area

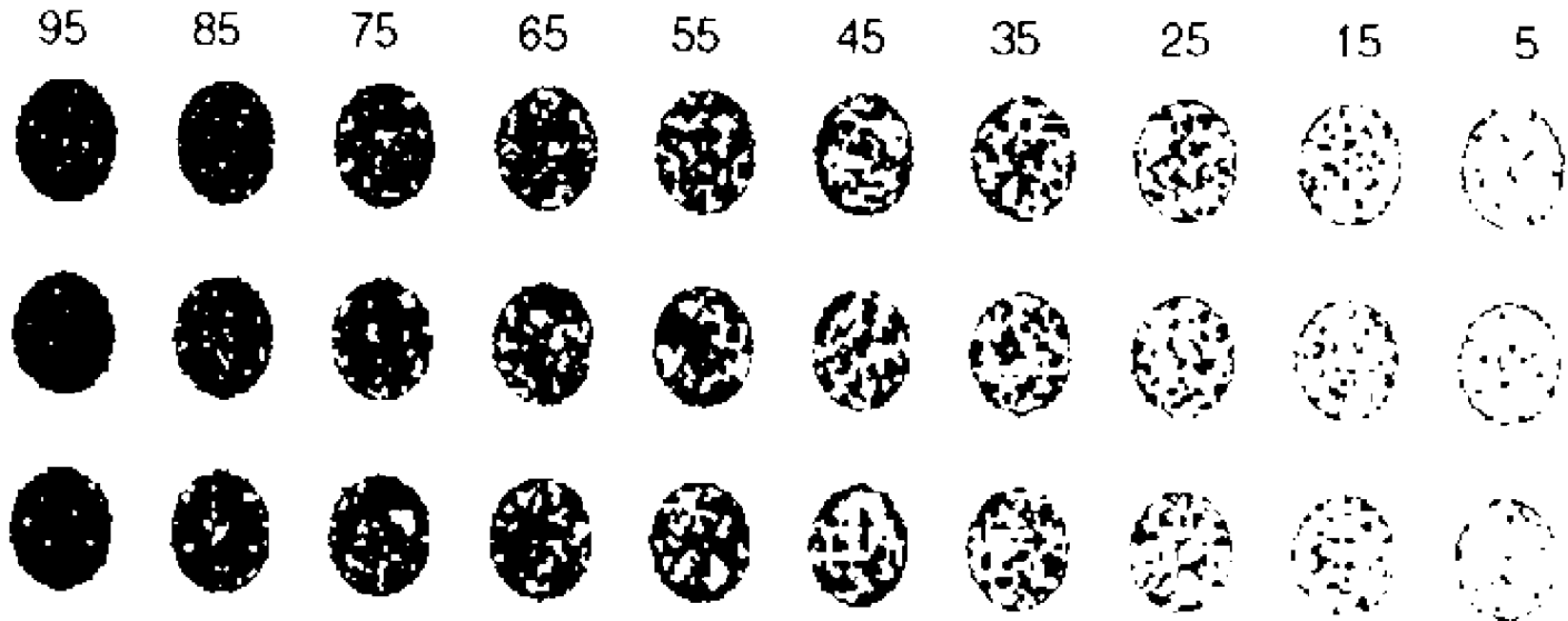
Use the attached "Tree Basal Area Worksheet" to calculate the basal area of the trees within the area being considered. To do this, measure the circumference of each tree 4 ½ feet above the ground and for each tree place a tally mark in the appropriate box in Column D of the worksheet. After all the trees are measured the tally marks in each box will be added together to obtain a total.

For each line on the worksheet multiply the number of trees from Column D by the basal area listed in Column C, and put this total in Column E. Add the values in Column E together and then divide by the number of acres. This is the tree basal area per acre. An abbreviated example follows:

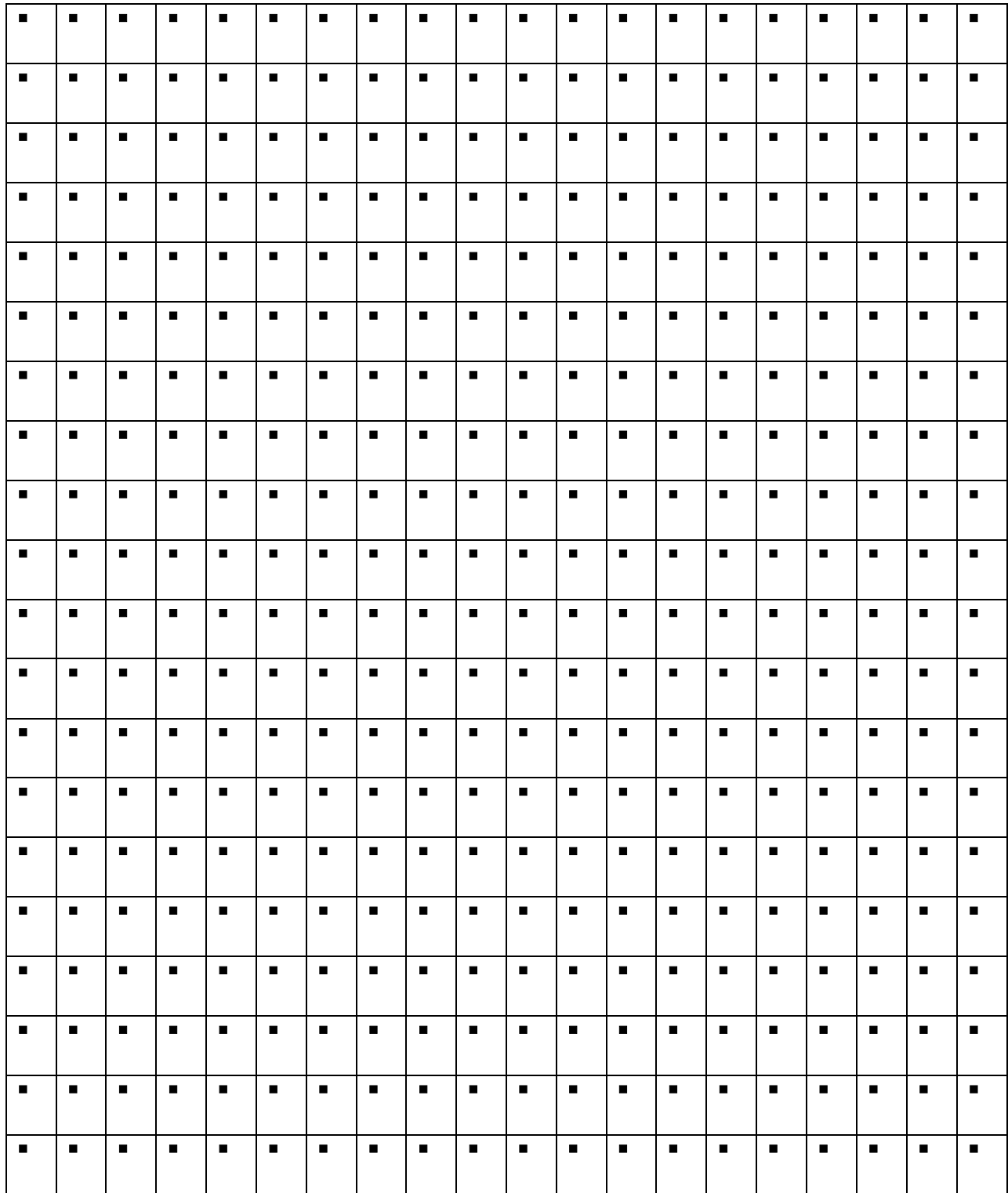
Column A	Column B	Column C	Column D	Column E
Circumference in inches at breast height (4.5 ft. from ground on uphill side).	Diameter at Breast Height in inches.	Basal Area Per Tree	Number of Trees with Listed Diameter.	Total Basal Area For All Trees with Listed Diameter (Column C x Column D).
12.6	4	.09	1	.09
15.7	5	.14	4	.56
18.0	6	.20	2	.40
Total Tree Basal Area				1.05
Size of Site Being Evaluated in Acres (1 acre = 43,560 s.f.)				.5
Tree Basal Area Per Acre				2.10

VISUAL GUIDE FOR ESTIMATING TREE CANOPY COVER

Percent Tree Canopy Cover



20 X 20 DOT GRID FOR MEASURING PERCENT TREE CANOPY COVER



Tree Basal Area Worksheet

Column A	Column B	Column C	Column D	Column E
Circumference in inches at breast height (4.5 ft. from ground on uphill side).	Diameter at Breast Height in inches.	Basal Area Per Tree	Number of Trees with Listed Diameter.	Total Basal Area For All Trees with Listed Diameter (Column C x Column D).
12.6	4	.09		
15.7	5	.14		
18.0	6	.20		
22.0	7	.27		
25.2	8	.35		
28.3	9	.44		
31.5	10	.55		
34.6	11	.66		
37.8	12	.79		
40.9	13	.92		
44.1	14	1.07		
47.2	15	1.23		
50.3	16	1.40		
53.4	17	1.58		
56.5	18	1.77		
59.7	19	1.97		
62.8	20	2.18		
65.9	21	2.41		
69.0	22	2.64		
72.1	23	2.89		
73.3	24	3.14		
76.4	25	3.41		
79.5	26	3.69		
82.6	27	3.98		
85.7	28	4.28		
88.8	29	4.59		
92.0	30	4.91		
95.1	31	5.24		
Total Tree Basal Area				
Size of Site Being Evaluated in Acres (1 acre = 43,560 s.f.)				
Tree Basal Area Per Acre				