

Basal Area

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Basal area per tree is the cross-sectional area of a tree at breast height. It can be calculated from Diameter at breast height (DBH) by the following formula:

$$BA = \frac{\pi}{4 * 144} DBH^2$$

$$BA = 0.005454154 * DBH^2$$

where

BA is basal area per tree.

DBH is the diameter at breast height.

B is the constant 3.1415.

Basal area per acre is the sum of all the basal area per tree in the acre. Basal area per acre or hectare is a standard measure of the size-density relationship in a stand.

$$BA / ac = \sum_{i=1}^n BA_i w_i$$

where:

BA/ac is the Basal area per acre,

BA_i is the Basal area per tree for the *i*th tree

w_i is the sample expansion factor weight.

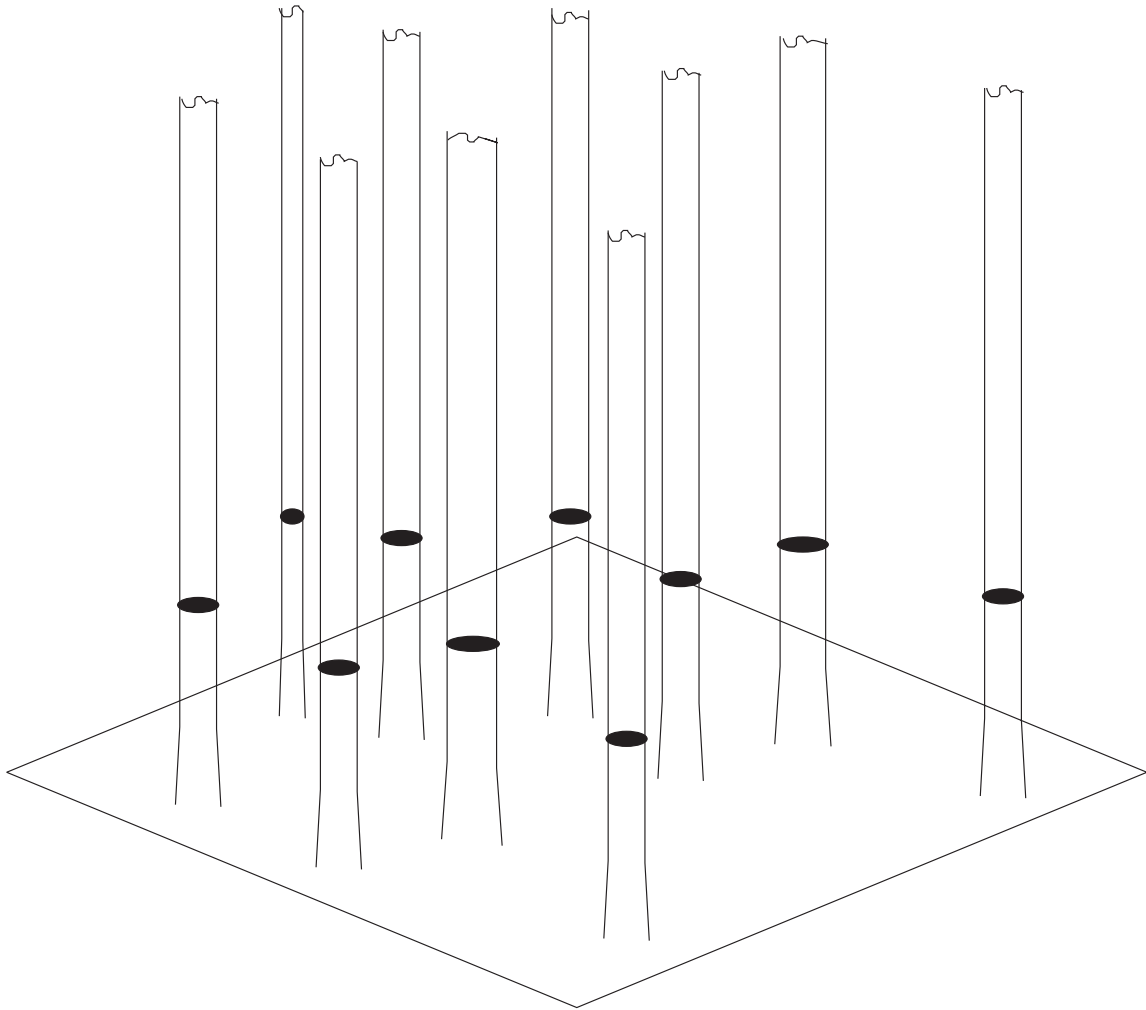


Figure 1. An illustration of basal area per acre. The basal area per tree is the cross-sectional area of each tree at breast height (the black ellipses). Basal area per acre would be the sum of these cross-sectional areas for all trees in an acre.