

Gingrich Stocking Charts

Stand stocking is a measure of site occupancy. It is often defined as a maximum average stocking. This is often presented as a relative index (percent stocking).

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The Gingrich Diagram was present in 1964, in conference proceedings and again in 1967 in Forest Science. This diagram illustrates the relationship between basal area per acre, density (trees per acres) and the quadratic mean diameter (the diameter of the tree of average basal area). The A-line is based on the normal stocking concept from normal yield tables. Growth in stands above 100% is considered to slow for normal forest management. The B-line is the point of crown closure of trees with a maximum crown width. A stand on the B-line is thought to have trees with no competition, yet no space wasted. The C-line is an estimate based on normal yield table of the lowest stocking that will grow to the B-line within ten years.

Also see:

Gingrich, S. F. 1967. Measuring and evaluating stocking and stand density in Upland Hardwood forests in the Central States. *For. Sci.* 13:38-53.

Husch, B., C. I. Miller and T. W. Beers. 1993. Forest Mensuration. Third Edition. Krieger Publishing Co., Malabar, Florida 402 p.

Kershaw, Jr, J. A. and B. C. Fischer. 1991. Maximum size-density relationships for sawtimber-sized mixed upland central hardwoods. In: "The 8th Annual Central Hardwoods Conference", L. H. McCormick and K. W. Gottschalk eds. *USDA, Forest Service, Northeastern Forest Experiment Station, General Technical Report*, NE-148, pp. 414-428.

Krajicek, J. E. and K. A. Brinkman and S. F. Gingrich. 1961. Crown competition-a measure of density, *For. Sci.* 7:35-42.

Larsen, D. R. Dan C. Dey and T Faust 2010. A Stocking Diagram for Midwestern Eastern Cottonwood-Silver Maple-American Sycamore Bottomland Forests. [*Northern Journal of Applied Forestry* 27\(4\):132-139.961.](#)

McGill, D. W. and R. Rogers, A. J. Martin, and J. S. Johnson. 1961. Measuring Stocking in Northern Red Oak Stands in Wisconsin, *Northern Journal of Applied Forestry* 16(3):144-150.



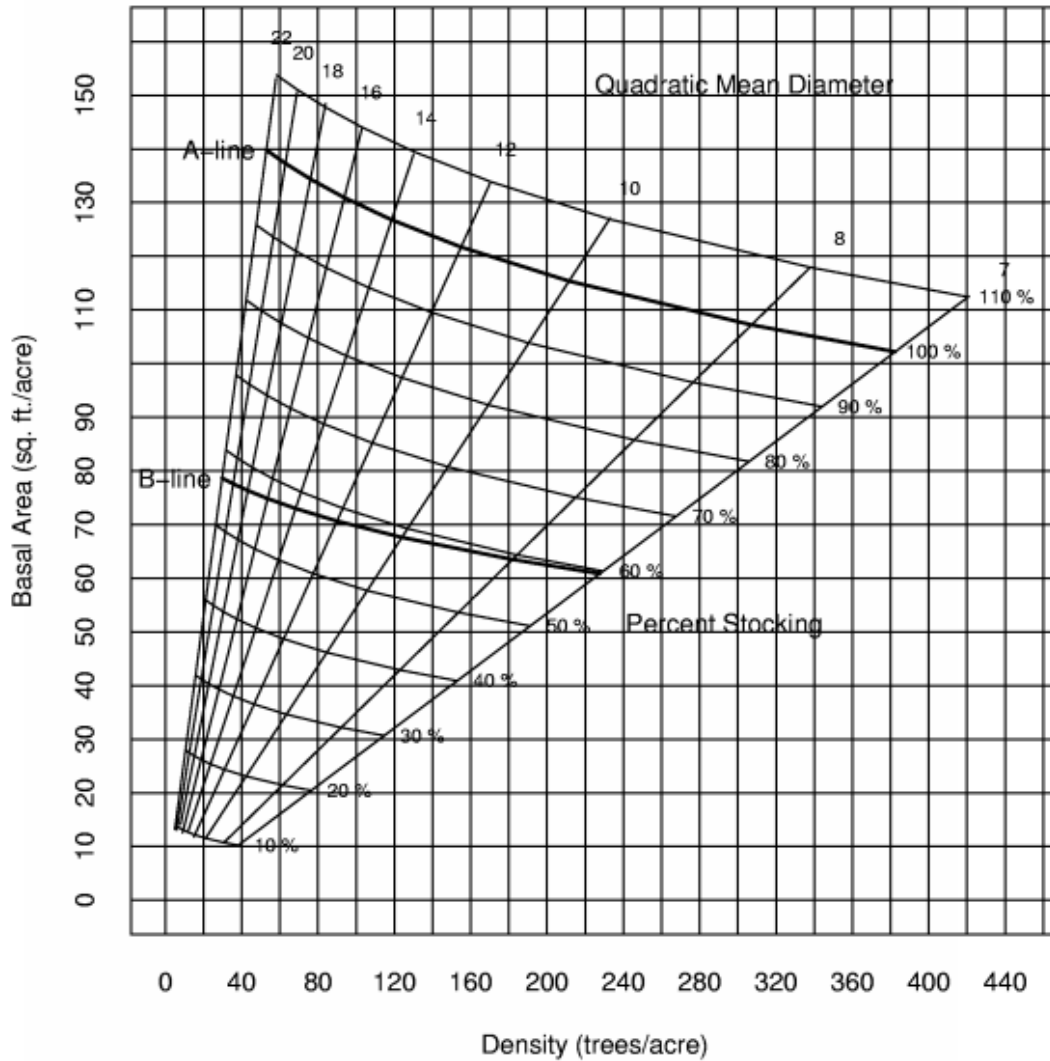


Figure 1. Gingrich stocking Chart.