Vasievich, J. Michael; Kingsley, Neal P. 1995. **Where are the walnut trees in Missouri?**. Walnut Council Bulletin. 22(4): 4-6.

Where are the black walnut trees in Missouri?

J. Michael Vasievich and Neal P. Kingsley[1]

Walnut trees are well distributed and relatively abundant in Missouri according to the most recent forest inventory completed in 1989. The forest inventory (Hahn 1991) reports that 7.3 billion trees were found on Missouri timberlands and that 1 in 100 were black walnuts. Digging into the Eastwide Forest Inventory Data Base (Hansen et al. 1992) provides more interesting details about the walnut resource. In total, 234 thousand photo interpretation points were identified for the Missouri inventory and 4,672 plots were measured in the field or projected. The field crews found walnut trees on 1,059 plots.

Black walnut trees were found in all but 4 counties in the State. Also, no walnut trees were found in the St. Louis urban area, because no forested plots were measured there. The top ten walnut counties in Missouri (in order by growing stock volume) were Platte, Jasper, Caldwell, St. Clair, Douglas, Benton, Ralls, Boone, Moniteau, and Ray. Walnut trees were uncommon in the southeastern bootheel region where forests generally cover less than 10 percent of the area. Plots where black walnut trees were found are shown in figure 1.

Based on field measurements by inventory crews, about 85.4 million walnut trees 1 inch in diameter at breast height (DBH) or larger can be found in Missouri's forests. Most of the trees, about 89 percent, are smaller than 12 inches in diameter as indicated in figure 2. The largest walnut tree found, a 44 inch DBH specimen, was located in Cass county. The expanded tree

---

1 The authors are Project Leader, forest economics research, and Program Manager, forest inventory and analysis, North Central Forest Experiment Station, USDA-Forest Service, East Lansing, MI, and St. Paul, MN, respectively.

sample shows that more than 50 thousand walnut trees greater than 25 inches could be growing in Missouri's forests. All of these especially large trees were found to be rough or rotten. This is a similar pattern to the one we've found in other states. About 40 percent of the walnut trees in Missouri were classified by FIA standards as either rough or rotten. Many short-log trees were classified as rough and did not qualify as growing stock because sawlog length was less than 12 feet. Short-log trees contained 26.2 million board feet of sawtimber.

The merchantable volume of walnut timber found on all measured plots was 299 million cubic feet. Some counties had more than 2 million cubic feet of walnut volume as shown in figure 3. Of this, 50 percent was in growing stock trees and the rest in rough and rotten trees. Sawtimber volume was estimated at about 491 million board feet in all live trees on all sites. Growing stock trees on timberland had 398 million board feet of sawtimber. In total, 82 percent of the sawtimber volume was in growing stock trees with the remaining volume in rough and rotten trees as shown in figure 4.

The inventory data show that walnut trees might be found on 2.9 million acres of forest land or almost 21 percent of the 14 million acres of forest land in Missouri. Most black walnut trees, 84 percent, were found on nonindustrial private lands followed by other private - corporate with slightly less than 8 percent. A very small number of walnut trees, two tenths of one percent, were found to be growing in planted stands.

Most walnut trees in the State are growing on less productive sites. Only about 11 percent of the walnut trees were found on high sites capable of growing 85 cubic feet per acre per year or better. Forty three percent of the walnut trees were growing on low sites that were classified as capable of producing less than 50 cubic feet per acre annually.

Although walnut trees occur in most forest cover types, they are most common in the oak-hickory type. About 54 percent of the black walnut trees occurred in forests classified as oak-hickory. Thirty percent of walnut trees occurred in the maple-beech-birch type. Walnut is also

found to a lesser extent in forest types classified as shortleaf pine, eastern redcedar, mixed oak-pine, and bottomland hardwoods.

It's clear that Missouri has a valuable walnut resource. Although it's hard to judge the full value, the black walnut trees in the State could be worth from $200 to $500 million on the stump. When manufactured, the walnut resource is worth much more. With care, the abundant crop of small walnut trees can sustain the production of walnut lumber for the foreseeable future. The next forest inventory, scheduled for 1999, will reveal even more about this valuable timber resource.

If you would like to learn more about the forest inventory in Missouri or any other North Central state, contact your State Forester or the Forest Inventory and Analysis Unit, North Central Forest Experiment Station, 1992 Folwell Avenue, St. Paul, MN 55108, phone 612-649-5139. Plot and tree measurement records are available in data base format in the Eastwide Forest Inventory Data Base.

References

Hahn, Jerold T. 1991. Timber Resource of Missouri. USDA-Forest Service, North Central Forest Experiment Station, Resource Bulletin NC-119.

Hansen, Mark H., Thomas Frieswyk, Joseph F. Glover, and John F. Kelly. 1992. The Eastwide Forest Inventory Data Base: Users Manual. USDA-Forest Service, North Central Forest Experiment Station, General Technical Report NC-151.

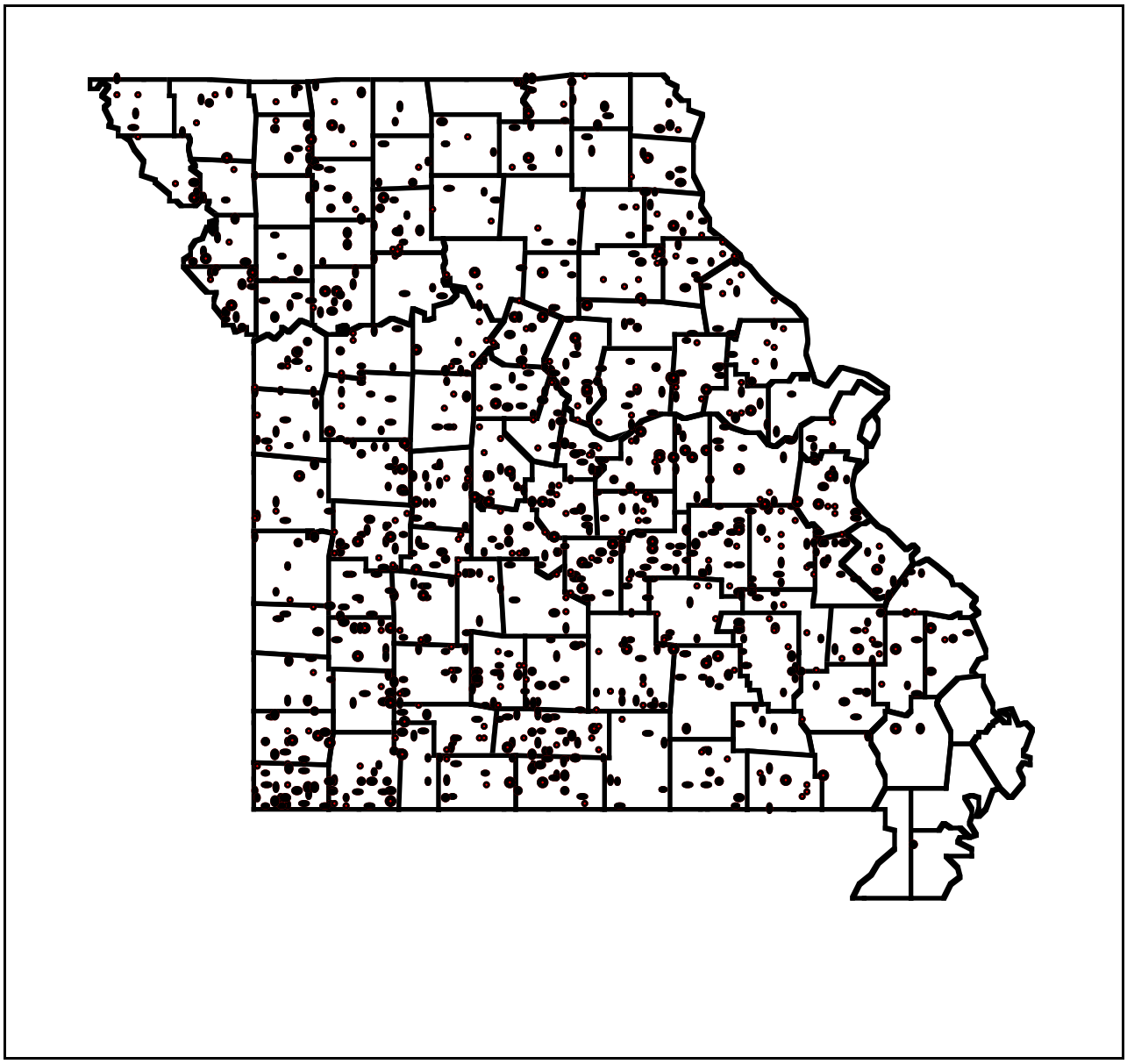

Figure 1. Location of forest inventory plots in Missouri where black walnut trees were found in the 1989 forest survey.

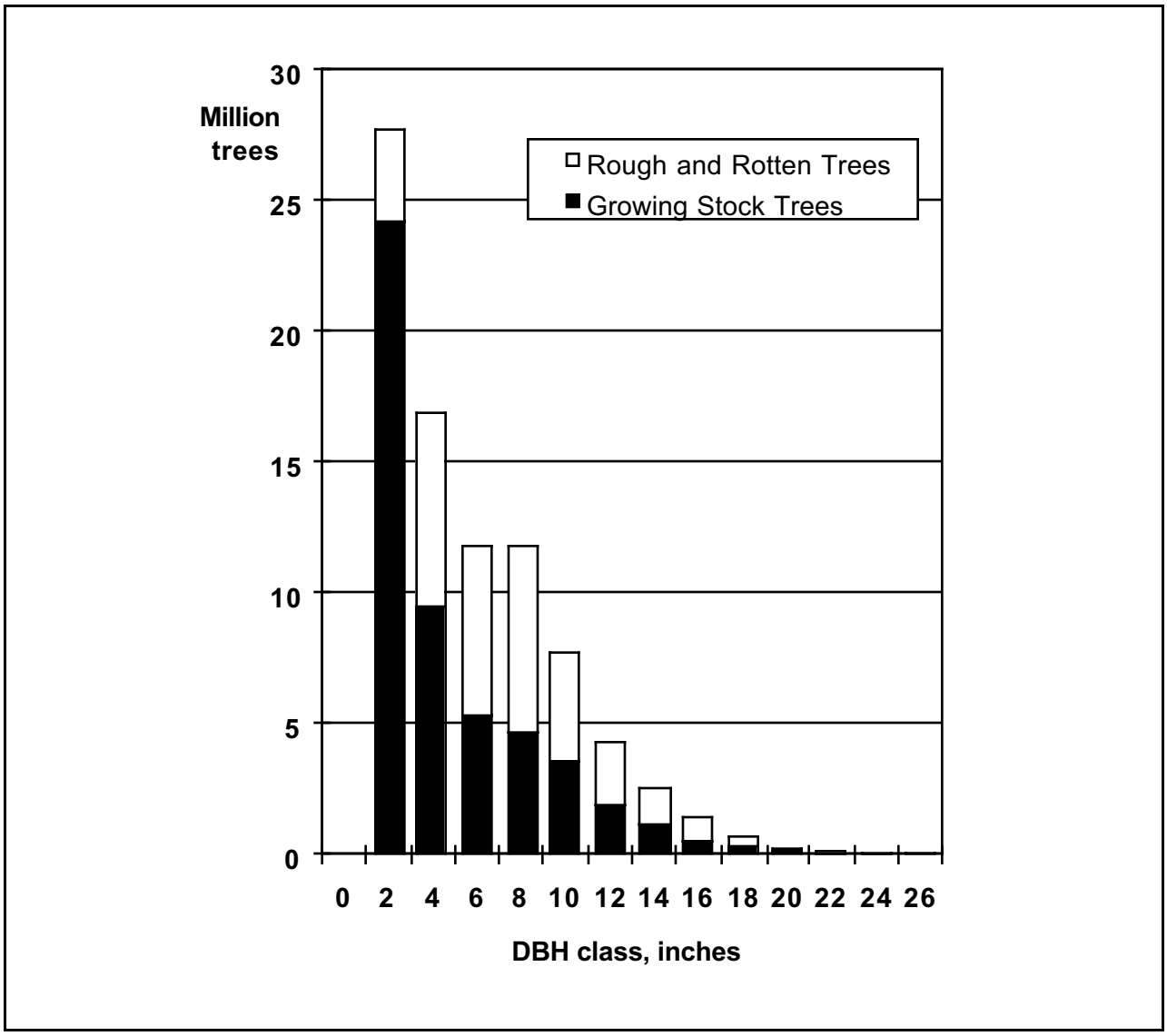

Figure 2. Estimated number of black walnut trees in Missouri, 1989, by diameter class.

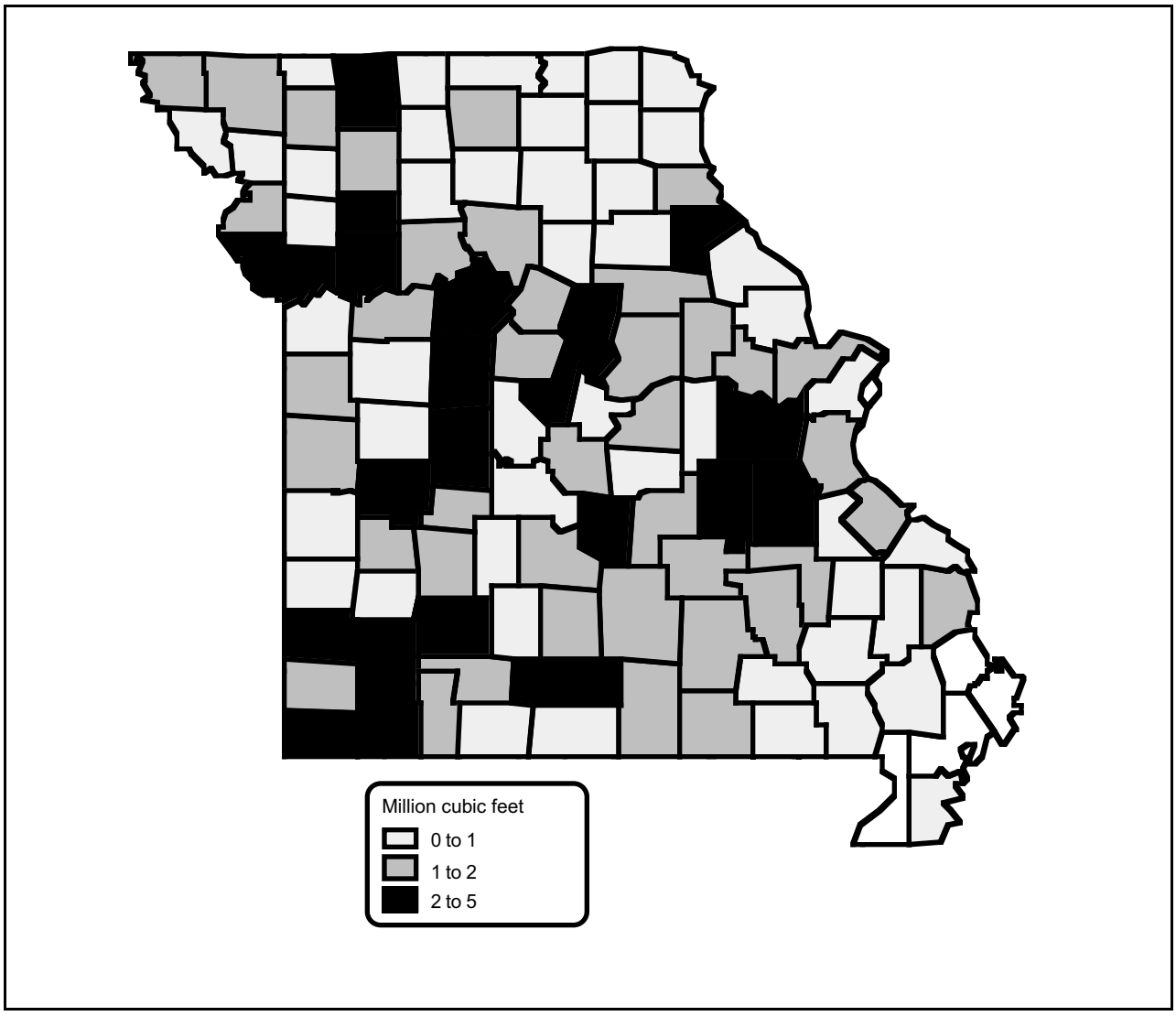

Figure 3. Distribution of black walnut growing stock volume for Missouri counties.

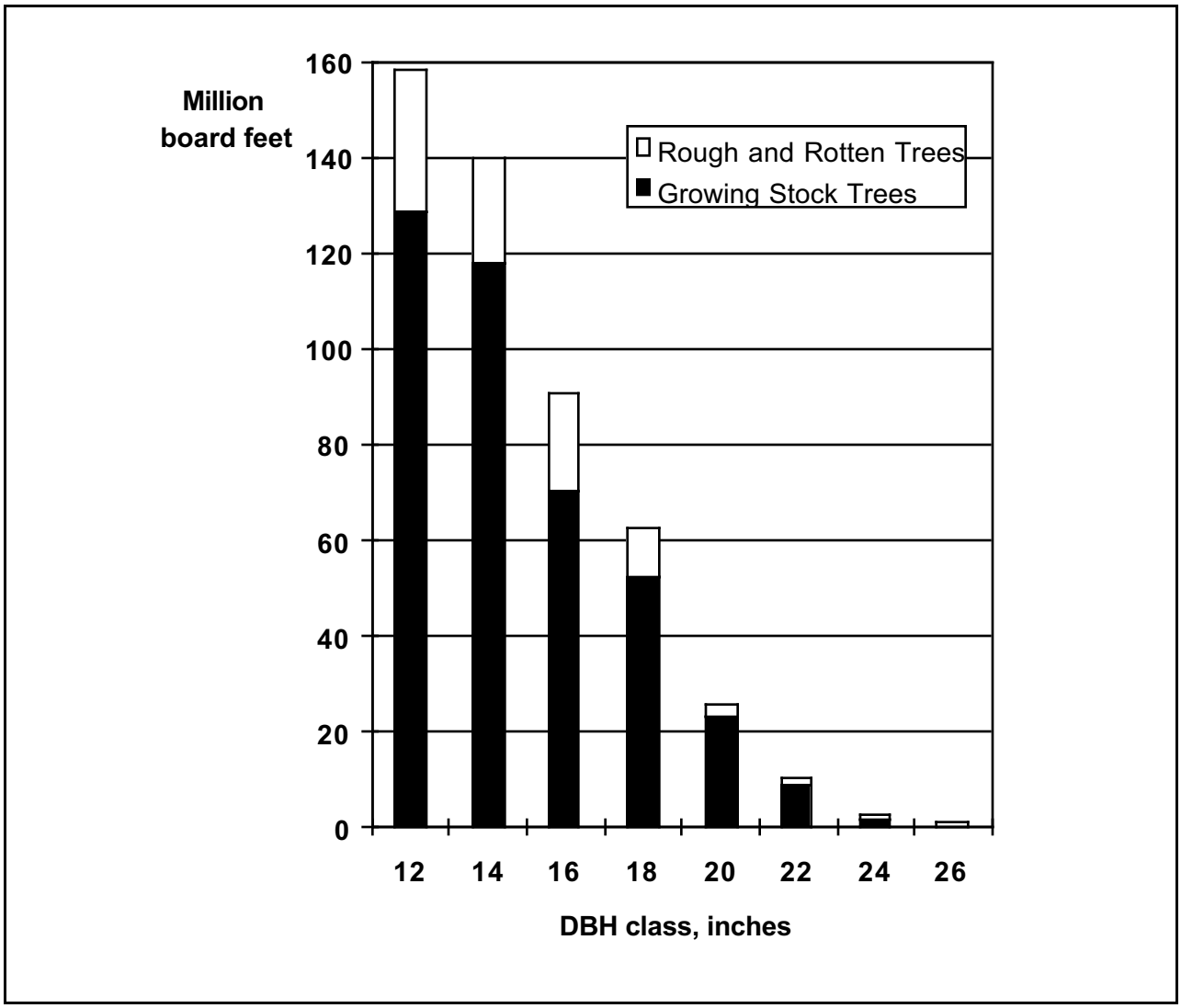

Figure 4. Estimated sawtimber volume of black walnut trees in Missouri, 1989, for growing stock and other live trees, by diameter class.