

Forestry 101

Forestry for Woodland Owners

Tree Identification

The Common Characteristics Used to Identify Trees

by Doug McLaren

Trees are a part of our daily lives. They produce the newspapers that we read, keep us warm with fire and shelter, and even convert carbon dioxide to oxygen. Nearly half of Kentucky's landscape is forested with a very diverse stand of tree species. Since trees have such an influence on our daily lives, we should take time to identify them.

Some trees are readily recognizable, such as sycamores that grow along creek banks with white bark flowing from the ground to the branch tips. Dogwoods are recognizable by the large white showy flowers in the spring and red berries persisting into the fall. Our state tree, the yellow-poplar or the tulip poplar, has a leaf profile of a tulip.

However, identifying many of Kentucky's trees species can be daunting. The quickest way to become proficient in the identification of our trees is to learn to use a dichotomous tree identification key, and the trick to using it successfully is to understand the common characteristics they use.

The first characteristic used by dichotomous tree identification keys is one that is apparent to all of us: Is the tree deciduous or coniferous? Deciduous trees are also known as broad-leaved trees. Coniferous trees have needles. Most deciduous trees lose their leaves in the fall. Many times deciduous trees are referred to as hardwoods (a slightly misleading term since some conifers actually have heavier wood than some of our hardwoods). Characteristics used to identify conifers include the number of needles in a bundle (typically two, three, or five) and cone characteristics. In Kentucky, eastern white pine is the only native conifer that has needles in groups of five.

All tree identification keys use several common characteristics to help identify hardwoods. One of the common characteristics is branching pattern. Specifically, is the branching alternate or opposite? Opposite branching means that buds, leaves, and branches occur directly across from one another, or opposite one another, on the stem. In Kentucky, only a small number of species are opposite-branched including maples, ashes, dogwoods, and horse chestnuts (buckeyes). All the other species have alternate branching where the leaves, buds, and branches are not lined up directly across from one another on the stem.

The next characteristic defines the leaf as simple or compound. The majority of tree species have simple leaves.



Eastern white pine

Photo courtesy: Paul Wray, Iowa State University, www.forestryimages.org

Simple leaves have the main rib of the leaf forming a petiole at the leaf base that is attached directly to the branch. Oaks, dogwoods, and many more species have simple leaves. In contrast, compound leaves are made up of more than one leaf blade (termed leaflets). Find where the petiole of a leaf attaches to the branch, and then follow the petiole away from the branch. If you find numerous leaflets attached to the petiole, the species has compound leaves. Examples include black walnuts, the ashes, and hickories.

The last characteristic used in identification is the leaf margin, or the edge of the leaf. Leaf edges can be smooth, lobed, or toothed.

Find a good pocket guide that has a dichotomous key, and use the common characteristics discussed above to help you through the process of elimination. Spend some time with a person who knows their trees. Let them point out these characteristics to you. Having someone to aid you in the first attempts will help you learn all the terms and concepts.

Soon the leaves will be bursting out of their winter hibernation and showing all their individual characteristics. And soon you can help others to identify trees.

A couple of good reference books for identifying trees in Kentucky are:

- "Tree Finder" by May Theilgaard Watts
- "Peterson's Field Guide to Eastern Trees" by George Petrides



White oak leaf

Photo courtesy: Chris Evans, University of Georgia, www.forestryimages.org

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