



# Red Oaks? White Oaks?

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MICHIGAN FORESTRY NOTES  
MAY 2020

## Oak Taxonomy – The Subgroups

Oak (*Quercus spp.*) taxonomy has grown increasingly important considering the spread of oak wilt disease (*Bretziella fagacearum*). The “red oak group” (*Erythrobalanus*) is more vulnerable to the disease than the “white oak group” (*Leucobalanus*).

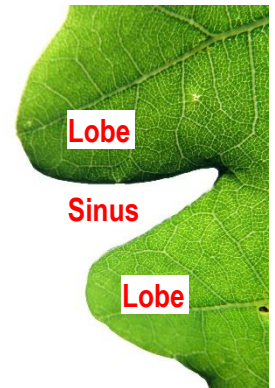
“Balanus” is the Latin root word for “acorn” or “acorn-like”. “Erythro” is red and “Leuco” is white. There is a third subgroup called “live” oaks whose range does not extend north into the Lake States. Acorns mature in the fall. The white oak acorns mature after a single season. The red oaks take two years, and their acorns are usually bitter-tasting. The white oaks have rounded leaf lobes. The red oaks have pointy or bristly leaf lobes.

The United States has at least 60 oak species, with an even larger number of hybrids. The genus presents many taxonomic challenges. According to the tree/shrub species list for the 2017 U.S. Forest Service Inventory and Analysis data, there are 11 species of oak in Michigan wildland forests<sup>1</sup>.

Collectively, these oaks comprise about 11 percent of the total Michigan forest volume. Oaks are important species for their dollar value, wide variety of uses, habitat contributions, human preferences, and other reasons. Taxonomically, they are in the same family (Fagaceae) as chestnuts (*Castanea spp.*), beech (*Fagus spp.*), tanoaks (*Lithocarpus spp.*), and chinkapins (*Castanopsis spp.*)<sup>2</sup>.

## Identifying Red Oaks and White Oaks

Most oak leaves are shaped with “lobes” and “sinuses”. A *lobe* is a finger-like projection and a *sinus* is the space in-between. The lobe tips of red oaks sport bristles. The tips of white oaks are rounded. During the leaf-off season, red oaks commonly have persistent leaves into the winter months and dropped leaves of any species can usually be found on the ground. Of course, care must be taken when associating a fallen leaf with the correct tree. Acorns, buds at the ends of twigs, and bark patterns can also be used to help identify oak during the dormant season. However, using these characteristics take a bit of practice. Red oak acorn cups tend to shallower than those of white oaks.



White Oak



Oaks typically have clusters of buds at the ends of twigs.



## Erythrobalanus or the Red Oaks

Oak leaves with pointed leaf lobes.

Common Name	Latin Name	Michigan Volume*	Other Common Names
Northern Red Oak	<i>Quercus rubra</i>	1,765,584,625	American red oak, black oak, buck oak, Canadian red oak, common red oak, gray oak, eastern red oak, leopard oak, Maine red oak, mountain red oak, red oak, Spanish oak, spotted oak, southern red oak, swamp red oak, water oak, West Virginia soft red oak.
Black Oak	<i>Q. velutina</i>	802,023,620	American red oak, blackjack, dyer oak, jack oak, quercitron, quercitron oak, redbush, red oak, smoothbark oak, spotted oak, tanbark oak, yellowbark, yellow oak, yellowbark oak.
Northern Pin Oak	<i>Q. ellipsoidales</i>	314,248,703	Scrub oak, Hill's oak, jack oak, upland pin oak, pin oak, red oak, black oak.
Pin Oak	<i>Q. palustris</i>	26,556,984	Red oak, Spanish oak, Spanish swamp oak, Spanish water oak, swamp oak, swamp Spanish oak, water oak.
Scarlet Oak	<i>Q. coccinea</i>	2,662,472	Bastard oak, black oak, buck oak, red oak, scarlet oak, Spanish oak, spotted oak
Shumard Oak	<i>Q. shumardii</i>	941,959	American red oak, Schneck oak, Schneck red oak, Shumard red oak, southern red oak, spotted bark, spotted oak, swamp red oak, Texas oak, Texas red oak.
Shingle Oak	<i>Q. imbricaria</i>	45,438	Laurel oak, small-leaved oak.

\*Volumes in cubic feet from 2017 USFS Forest Inventory & Analysis data. Total Michigan forest volume is 35,299,576,380 cubic feet.

## Leucobalanus or the White Oaks

Oak leaves with rounded leaf lobes.

Common Name	Latin Name	Michigan Volume*	Other Common Names
White Oak	<i>Quercus alba</i>	814,444,935	American white oak, Arizona oak, Arizona white oak, forked-leaf white oak, Louisiana white oak, mantua oak, ridge white oak, stave oak, true white oak, West Virginia soft white oak.
Bur Oak	<i>Q. macrocarpa</i>	105,344,962	Blue oak, burr oak, mossycup oak, mossy-overcup oak, overcup oak, scrub oak, white oak, white mossycup oak, white overcup oak
Swamp White Oak	<i>Q. bicolor</i>	85,005,724	Blue oak, bur oak, burr oak, mossycup oak, mossy-overcup oak, overcup oak, scrub oak, white oak, white mossycup oak, white overcup oak.
Chinkapin Oak	<i>Q. muehlenbergii</i>	94,976	Chestnut oak, chinquapin oak, dwarf chestnut oak, dwarf chinkapin, pin oak, rock oak, rock chestnut oak, running white oak, scrub oak, shrub oak, white oak, yellow oak, yellow chestnut oak.

\*Volumes in cubic feet from 2017 USFS Forest Inventory & Analysis data. Total Michigan forest volume is 35,299,576,380 cubic feet.

Notes.

1 "**Michigan Flora**" (Voss, 1985) lists additional minor oak species, some are unsubstantiated for Michigan; red oak group: **blackjack oak** (*Q. marilandica*) and the white oak group: **overcup oak** (*Q. lyrata*), **dwarf chestnut/chinquapin oak** (*Q. prinoides*), **rock chestnut oak** (*Q. prinus* sometimes called *Q. montana*), **post oak** (*Q. stellata*). "**Michigan Trees**" (Barnes & Wagner, 2004) adds **dwarf chinkapin oak** (*Q. prinoides*) and **English oak** (*Q. robur*). Red text is Erythrobalanus and blue text is Leucobalanus.

2 "**Textbook of Dendrology**" (Harlow & Harrar, 1969).



A red oak shelterwood regeneration area in Menominee County.

Bill Cook worked 23 years as an Extension forester and wildlife biologist out of Escanaba, Michigan. Prior to that, he worked over eight years in American Indian country, for various public and private agencies, Trees for Tomorrow Natural Resources Education Center, and has international forestry experience in Germany, Great Britain, Malaysia, Sweden, and Austria. He can be reached at cookwi@msu.edu. He's happy to field questions but numerous adventures may delay his response. After all, he IS enjoying retirement!