



Landowners Guide to Identification and Characteristics: **CHESTNUT OAK (*Quercus montana*)**

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FOR-144

Chestnut Oak (*Quercus montana*)

Chestnut oak is found in the Appalachian Mountains and surrounding areas. It is a member of the white oak group. The chestnut oak is a medium-sized tree that typically grows 50 to 80 feet tall and up to two feet in diameter. The wood resembles white oak wood, and the leaves resemble American chestnut, chinkapin oak and swamp chestnut oak. The large acorns are an important wildlife food.

Identification

The leaves are the easiest characteristic to use for identifying chestnut oak. Chestnut oak leaves are deciduous, somewhat oval narrowing at the top and bottom of the leaf but widest above the middle. The edges of the leaves are scalloped, and the surface is shiny green and pale on the underside.

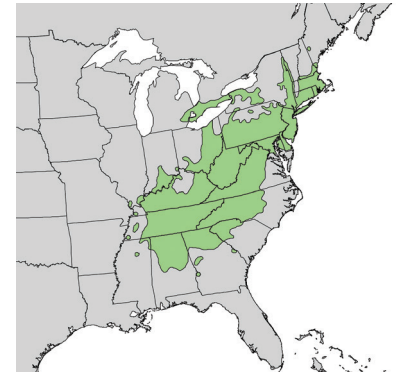


Figure 1: Chestnut oak range map. Photo courtesy: Atlas of United States Trees



Figure 3: Chestnut oak leaves are somewhat oval narrowing at the top. Photo courtesy: Chris Evans, University of Illinois, Bugwood.org

Figure 2: Chestnut oak leaves with scalloped edges. Photo courtesy: Wendy VanDyk Evans, Bugwood.org

This publication is part of the White Oak Initiative's (www.whiteoakinitiative.org) **Landowners for Oaks Series** designed to provide foundational information necessary for sustainable management of white oak and upland oak forests.

The **Landowners for Oaks Series** is produced by the Cooperative Extension Service, University of Kentucky, Department of Forestry and Natural Resources (<http://ukforestry.org>) in support of the White Oak Initiative.

Authors: Laurie Thomas and Darren Morris, UK Forestry and Natural Resources. Published as University of Kentucky's Cooperative Extension publication FOR-144.

Funding for the **Landowners for Oak Series** was provided by the Kentucky Division of Forestry through the Upland Oak Sustainability and Management Project sponsored by USDA Forest Service, State and Private Forestry, Landscape Scale Restoration Program.

Bark

The bark is smooth and gray on young trees but darkens and becomes deeply furrowed on older trees. The deep furrows make it easy to identify older trees and are an excellent identifying characteristic.

Acorns

The acorns are relatively large 1 to 1 ½ inches long. They are somewhat oval with a thin warty cap that separates from the acorn when it matures. They mature in one growing season, dropping in the fall and germinating once dropped.



Figure 6: Chestnut oak acorns are large and somewhat egg-shaped. *Photo courtesy:* Keith Kanoti, Maine Forest Service, Bugwood.org

Using the twig and buds to identify oaks can be difficult and tricky. However oaks can be distinguished from non-oaks by the characteristic grouping of buds clustered near the tip of the twig. The twig is orange-brown or slightly grayish in color with buds that are pointed, somewhat cone shaped and longer than most other oak buds. Using a hand-lens can be helpful.



Figure 7: Terminal buds of chestnut oak. *Photo courtesy:* T. Davis Sydnor, Ohio State University, Bugwood.org



Figure 4: Notice the deep furrows of this mature chestnut oak. *Photo courtesy:* Nancy Loewenstein, Auburn University, Bugwood.org

Figure 5: Notice this 5 inch diameter chestnut oak has not yet developed deep furrows.

General Information

Reproduction and Regeneration:

Most hardwood trees use seed and vegetative (root and stump sprouting) regeneration to reproduce.

- Seed regeneration via acorn: Chestnut oak typically begins acorn production around 20 years, but acorn production varies greatly from year to year with large acorn crops happening every four to five years. The acorns are dispersed mainly by squirrels and gravity in the fall. The acorns mature on the tree in one growing season, drop in late summer or early autumn and germinate upon dispersal.
- Regeneration via sprouting: Chestnut oaks sprout vigorously following damage to the trunk due to harvesting, fire etc. In fact, most of the chestnut oak regeneration comes from stump sprouts.

Site Location and Competition:

- Chestnut oak is usually found on dry uplands and ridgetops usually on the south or west facing slope on dry sandy soils.
- Other upland oaks often found competing with chestnut oak on these same sites include white oak, scarlet oak and black oak.

Sunlight Requirement:

- Chestnut oak is intermediate in shade tolerance and is considered similar to white oak.

Other Oaks that Look Similar:

- Chestnut oak leaves can be confused with swamp chestnut oak, swamp white oak and chinkapin oak.

Uses:

- This species is used for lumber, flooring, furniture and railroad ties.
- The wood makes excellent firewood because of its high fuel value.
- The leaves of young chestnut oak are commonly browsed by deer, and the acorns are eaten by a variety of large and small mammals as well as birds.

Other Facts:

- The bark of the chestnut oak is high in tannin content and was heavily used in the leather tanning industry prior to the 20th century.
- Chestnut oak's scientific species name *montana* means "of the mountains", probably referring to where it is found growing.
- Its common name comes from the resemblance of its leaves to the American chestnut leaves.
- As of 2020, the National Champion chestnut oak was 105 feet tall and 276 inches in circumference. It is located in the District of Columbia.



Figure 8: Chestnut oak seedling. Photo courtesy: Chris Evans, University of Illinois, Bugwood.org

An approximation of **Shade Tolerance** of upland oaks from least to most tolerant

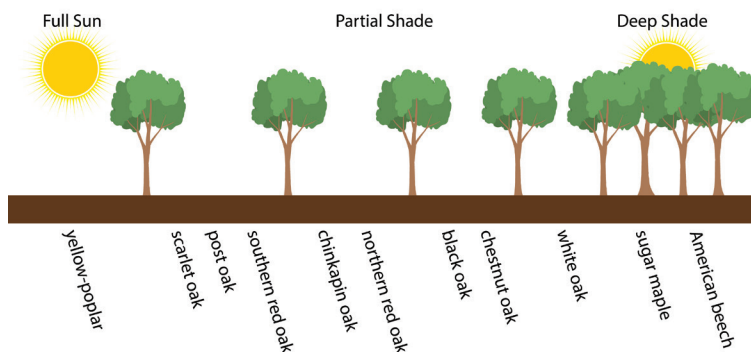


Figure 11: Shade tolerance of upland oaks.

The photos at the top of page one represent a few of the many benefits and uses of white oak, making it one of the most important tree species in the Eastern United States. Photos and images courtesy of the authors or the University of Kentucky Department of Forestry and Natural Resources unless otherwise noted.

Thomas, L., and Morris, D. 2022. Landowners Guide to Identification and Characteristics: Chestnut Oak. Cooperative Extension Service, University of Kentucky, Department of Forestry and Natural Resources, FOR-144. 3pp.

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