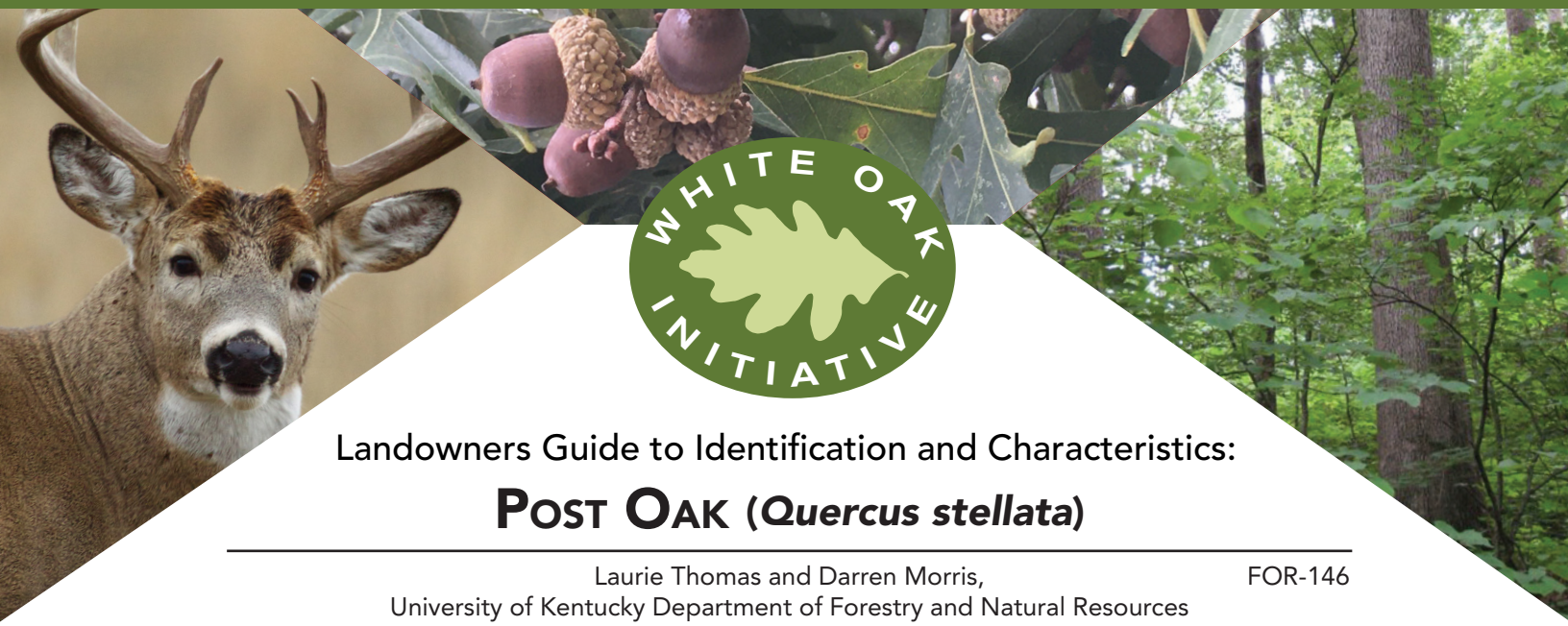

Landowners Guide to Identification and Characteristics:

Post Oak (*Quercus stellata*)

Laurie Thomas and Darren Morris,
University of Kentucky Department of Forestry and Natural Resources

FOR-146

Post Oak (*Quercus stellata*)

Post oak is a found throughout eastern and central North America and is a member of the white oak group. This oak is usually found on dry uplands. Post oak can grow to 65 feet tall. The foliage and acorns are an important wildlife food. However, the leaves can be toxic to cattle, sheep and goats due to high levels of tannins.

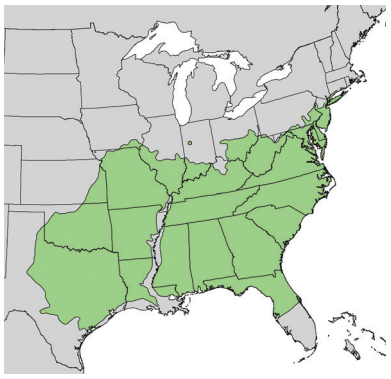

Figure 1: Post oak range map. ***Photo courtesy:*** *Atlas of United States Trees*

Identification

The leaves are the easiest characteristic to use for identifying oaks. Post oak leaves are deciduous and typically have five lobes with square-shaped middle lobes. These square lobes are blunt and wide near the tip sometimes giving the leaf a cross-like shape. The blunt tips are quite variable in shape but are an

Figure 2: Post oak leaf that shows square shaped lobes. ***Photo courtesy:*** *Vern Wilkins, Indiana University, Bugwood.org*

Figure 3: Notice the cross-like shape that is formed by the 3 lobes at the tip of this post oak leaf. ***Photo courtesy:*** *Vern Wilkins, Indiana University, 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.

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important identifying characteristic of post oak. The leaves are relatively thick and kind of leathery with scattered downy hairs on top and thicker yellowish-brown downy hairs on the underside.

Bark

The grey to reddish brown bark is similar to white oak but usually has more defined ridges. Post oak never displays the large flaky bark appearance characteristic of white oak.

Figure 4: Post oak never develops the flaky bark pattern as seen with white oak. ***Photo courtesy:*** *Vern Wilkins, Indiana University, Bugwood.org*

Figure 5: Post oak terminal buds. ***Photo courtesy:*** *Vern Wilkins, Indiana University, Bugwood.org*

Acorns

The acorns are 1/2 to 2/3 inches long. They are egg-shaped with a bowl-shaped cap that covers over 1/3 of the acorn. The cap has thin scales. They turn dark brown when they mature. They mature in one growing season, dropping in the fall and germinating once dropped.

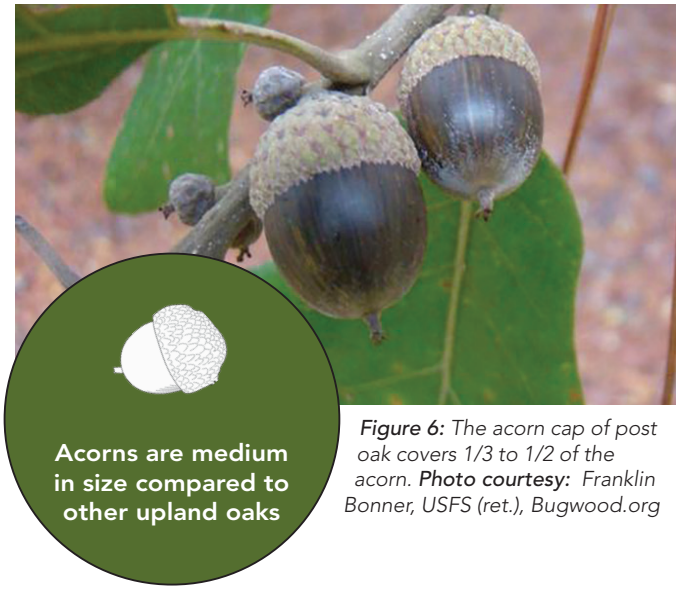

Figure 6: The acorn cap of post oak covers 1/3 to 1/2 of the acorn. ***Photo courtesy:*** *Franklin Bonner, USFS (ret.), Bugwood.org*

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 grayish-brown and covered with downy hairs. The buds are slightly egg-shaped with scales that have short downy hairs. Using a hand-lens can be helpful.

General Information

Reproduction and Regeneration:

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

- Seed regeneration via acorn: Post oak typically begins acorn production around 25 years, but acorn production varies from year to year with good acorn crops every two to three years. It produces fewer acorns than white oak, black oak and scarlet oak. The acorns mature on the tree in one growing season and drop in late summer or early autumn and germinate upon dispersal. Acorns are dispersed by gravity and small mammals.
- Regeneration via sprouting: Post oak stump and root sprouts following damage due to harvesting, fire etc. It does not sprout as vigorously as white oak, chestnut oak or scarlet oak.

Site Location and Competition:

- Post oak is usually found on dry uplands and ridgetops and on south and west facing slopes.
- Post oak exhibits tremendous drought resistance.
- Other upland oaks often found competing with post oak are black oak, scarlet oak and white oak.

Sunlight Requirement:

- Post oak is intolerant of shade, meaning that is does not regenerate and grow in the shade of other trees.

Other Oaks that Look Similar:

- Post oak has distinctive cross-shaped leaves, but the bark can be confused with white oak. Keep in mind that post oak bark does not have the sideways shingles characteristic that mature white oaks have.

Uses:

- This species is used for lumber, flooring and railroad ties but is not a preferred timber species.
- The wood makes excellent firewood because of its high fuel value.
- The acorns are eaten by white-tailed deer, turkeys and rodents.

Other Facts:

- Post oak is susceptible to the chestnut blight.
- The scientific species name *stellata* means "covered with stars"referring to the tufts of downy hairs that cover the underside of the leaves.
- Its common name comes from its use to make fence posts.
- As of 2020, the National Champion post oak was 95 feet tall and 255 inches in circumference. It is located in Cherokee, Alabama.

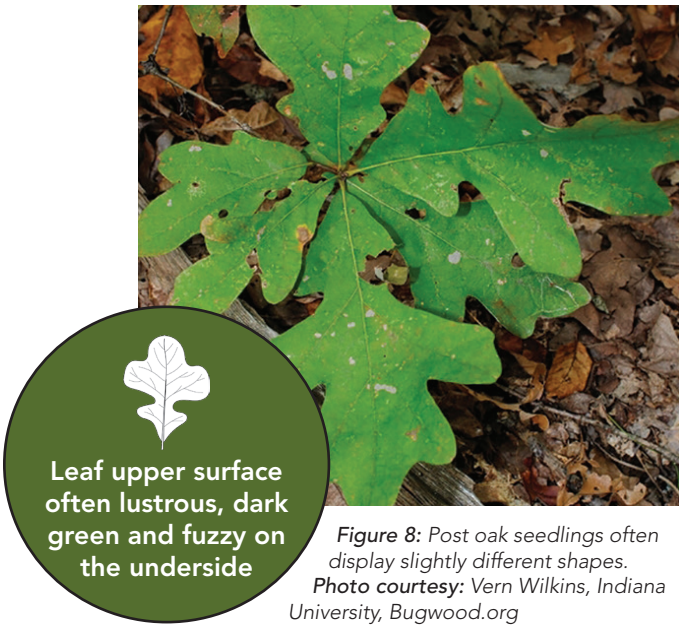

Figure 8: *Post oak seedlings often display slightly different shapes.* ***Photo courtesy:*** *Vern Wilkins, Indiana University, Bugwood.org*

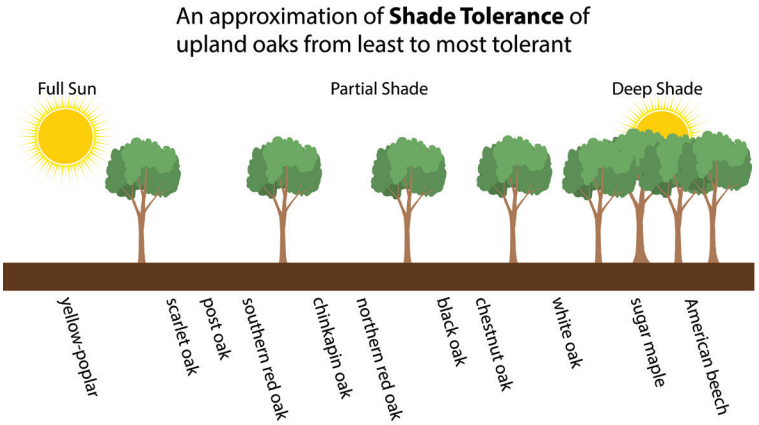

Figure 7: *Shade tolerance of upland oaks.*

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: Post Oak. Cooperative Extension Service, University of Kentucky, Department of Forestry and Natural Resources, FOR-146. 3pp.

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