

Landowners Guide to Identification and Characteristics:
SCARLET OAK (*Quercus coccinea*)

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Scarlet Oak (*Quercus coccinea*)

Scarlet oak is one of the many red oaks found in the eastern United States. It is a medium-sized tree of 70 to 80 feet and is commonly found on dry upland slopes and ridges in natural landscapes. Scarlet oak has also been widely planted as an ornamental for its beautiful scarlet red leaves in autumn and its ability to tolerate dry conditions. Like many red oaks it is suitable for timber products and its fruit, the acorn is a valuable wildlife food.

Identification

The leaves of scarlet oak may seem somewhat similar to northern red oak but on closer inspection they are much more deeply lobed. This makes the leaf of scarlet oak appear thinner or smaller, especially near the upper canopy of the tree where sunlight is more readily available. They are deciduous, about 3 to 7 inches long with five to nine bristle tipped lobes. In summer the leaves are a dark shiny green and typically scarlet in fall.

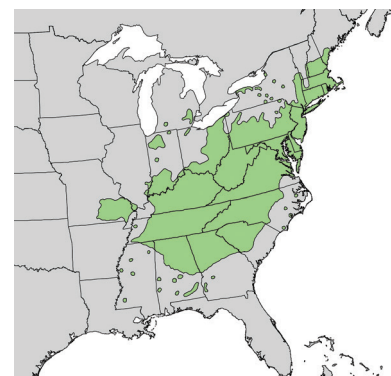


Figure 1: Scarlet oak range map. Photo courtesy: Atlas of United States Trees



Figure 2: Scarlet oak leaves have much deeper lobes compared to northern red oak. Photo courtesy: David Stephens, Bugwood.org

Upper canopy leaves appear thinner with wide lobes

Figure 3: Scarlet oak seedlings are commonly not as deeply lobed in shaded locations. Photo courtesy: Steve Patton, University of Kentucky

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.

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Bark

The bark is grayish brown on young trees but as the tree grows and matures the bark becomes darker and develops irregular ridges similar to ski slopes. The ski slopes on scarlet oak are usually less prominent than those on northern red oak, especially as they approach the upper branches where the color becomes a more solid lighter gray.

Acorns

The acorns are a half to 1 inch long and somewhat oval in shape, often with concentric rings near the tip. The acorn cap which covers about half of the nut has somewhat shiny scales and looks like it has been varnished.



Figure 4: Scarlet oak acorns are fairly small with caps that cover about half of the acorn. Photo courtesy: David Stephens, 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 reddish brown and somewhat slender. The buds are pointed and slightly angled with scales that have a light colored pubescence on the tip.



Figure 5: Scarlet oak terminal buds.



Figure 6: The upper trunk and lower canopy of scarlet oak often have dead branches and visible branch scars due to its lack of self-pruning. Photo courtesy: Steve Patton, University of Kentucky

Figure 7: Scarlet oak often exhibits butt swell caused by the fungus that causes chestnut blight.

General Information

Reproduction and Regeneration:

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

- Seed regeneration via acorn: Scarlet oak typically begins acorn production around 20 years but abundant production may not be until 50 years of age. Trees produce good acorn crops every three to five years with acorn production being quite variable among trees. The acorns require two growing seasons to mature. This happens in late summer or early fall with germination occurring the following spring. The acorns are scattered and dispersed by a variety of animals. The acorns are a favorite food of gray squirrels, chipmunks, mice, deer and birds such as blue jays and red-headed woodpeckers.
- Regeneration via sprouting: Scarlet oak can sprout vigorously following damage to the trunk due to harvesting, fire etc.

Site Location and Competition:

- Scarlet oak is more commonly found on dry ridges and upper slopes. It can also occasionally be found on middle and lower slopes but is usually excluded from these sites by other species that are more tolerant to shade. The sites where it is most commonly found have dry sandy type soils.
- Other upland oaks often found competing with scarlet oak on these same sites include chestnut oak, black oak, southern red oak and sometimes white oak.

Sunlight Requirement:

- Scarlet oak is fairly intolerant of shade, meaning that it does not tolerate shade from other trees.

Other Oaks that Look Similar:

- Scarlet oak tends to have poor form and poor self pruning, often with many dead branches in the canopy. Mature trees can also have a very distinctive butt swell caused by the fungus that causes chestnut blight. This swelling of the lower portion of the trunk does not kill the tree and usually contains sound wood within.
- A mature, exceptional scarlet oak can be confused with northern red oak. Both exhibit the characteristic bark ridges that resemble ski slopes. The difference is northern red oak retains the ski slope appearance farther up the trunk, where with scarlet oak, the ski slope ridges tend to broaden becoming a solid lighter gray on the upper trunk and branches.
- Other oaks that may be confused with scarlet oak are northern red oak, southern red oak and black oak.

Uses:

- The wood is used for construction lumber, railroad ties, planking and occasionally flooring and furniture.
- In landscape plantings it can be a valuable tree because it is hardy, can tolerate droughty conditions and has wonderful scarlet fall foliage. However, scarlet oak does not do well on alkaline soils.
- The acorns are eaten by squirrels, chipmunks, mice, deer, turkey, blue jays and woodpeckers.

Other Facts:

- Scarlet is very susceptible to fire damage due to its thin bark.
- The scientific species name for scarlet oak is *coccinea* which means scarlet and is from the Greek "kakkos" which means "a berry".
- The National Champion scarlet oak as of 2020 is in Mercer County, New Jersey; it is 128 feet tall and has a 201 inch trunk circumference.

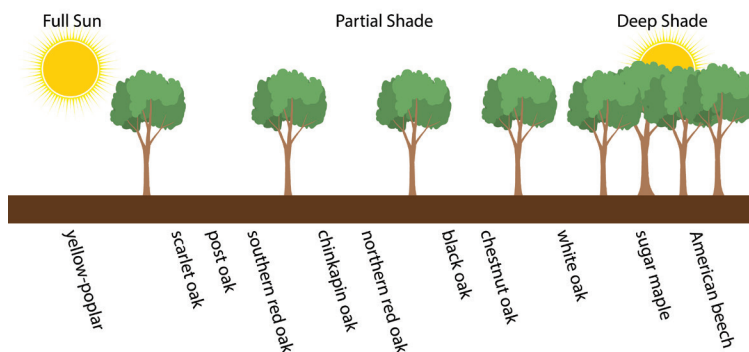
An approximation of **Shade Tolerance** of upland oaks from least to most tolerant

Figure 8: 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.

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