

THE RED OAKS OF LOUISIANA

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All oaks belong to the genus *Quercus* in the family Fagaceae, along with chinquapins, chestnuts, and beeches. There are approximately 400 species of oaks in North America, Mexico, West Indies, Central America, Columbia, Eurasia, and northern Africa. About 88 of these are native to the United States and Canada and 28 grow naturally in Louisiana. Oaks are divided up into subgenera--white oaks, red oaks, and live oaks. Live oaks have evergreen leaves. White oaks have no bristles on the tips of the leaf lobes and the acorns mature in one growing season. Red oaks have bristles on the tips of the leaf lobes and the acorns require two years to mature. The wood of red oaks is much more porous than that of white oaks. This porous wood allows it to absorb more wood preservatives and thus makes it good for cross-ties and treated lumber, but it prevents them from being used for the making of liquid containers such as barrels.

According to the Flora of North America treatment that is now being reviewed, the correct names for Louisiana's 14 species of red oaks are:

Quercus incana--Bluejack or Sandjack oak.

Quercus laurifolia--Laurel oak

Quercus hemisphaerica--Upland laurel oak

Quercus phellos--Willow oak

Quercus nigra--Water oak

Quercus imbricaria--Shingle oak

Quercus falcata--Southern Red oak or Spanish oak

Quercus pagoda--Cherrybark oak

Quercus laevis--Turkey-foot oak

Quercus marilandica--Blackjack oak

Quercus texana--Nuttall oak or Striped oak

Quercus shumardii--Shumard oak

Quercus velutina--Black oak

The water oak complex, including *Q. laurifolia*, *hemisphaerica*, *phellos*, and *nigra*, and by some, *obtusa*, hybridizes so frequently that many individuals occur that are most difficult to identify. All have small acorns and the leaves are smaller than those of the other oaks and are not hairy underneath.

Laurel oak occurs in wet sandy areas in pine woods and can be easily identified by its long (up to 6 inches) leaves that are at least an inch wide. The twigs are very brittle. Willow oak has smaller leaves and it has stiff, non-brittle twigs. It is common on clay soils and thus is usually on lowlands. This is the common oak of "pin oak flats" in Louisiana. Actually, pin oak has large lobed leaves similar to those of Shumard oak and is found in the Ozarks and farther north, but not in Louisiana. The Upland Laurel oak occurs on deep sand and is common along Saline Bayou in Winn and Natchitoches parishes. Its leaves tend to be twisted, but are similar in size and shape to those of Willow oak.

The plants have a more "scrubby" look because of its failure to prune itself. Water oak leaves are about 4 inches long and are broadest near the tip and some forms have three distinct lobes. In general, if the leaf is small and glabrous and has lobes, it is a Water oak since Willow, Laurel, and Upland Laurel oak are not lobed. Water oak is our most common shade tree in the state. Old plants are very susceptible to mistletoe infections. All four of these oaks make good hardwood oak lumber and are probably surpassed only by Shumard and possibly Southern Red and Cherrybark for the quality of oak lumber produced. Upland Laurel oak seldom gets large enough to produce large logs

Bluejack oak, *Q. incana*, has leaves sometimes shaped similar to Laurel or Willow oaks, but its leaves are thick and very hairy on the lower surface. Blackjack oak, *Q. marilandica*, has thick, glossy leaves that have orange hair all over the lower surface. These two species grow on our sandiest and driest sites in the state. The old limbs die and hang down but seldom fall from the trunks. This leaves a scrubby, unkempt look to the trees. Most do not get big enough for lumber. Both are good for fuel for fires and Blackjack once furnished

most of the charcoal from the Ozarks for ore smelting in Missouri and Arkansas.

Southern Red oak probably has more different leaf shapes than any other native oak. It has the consistent characteristic of having hairs all over the lower surface of the leaves. The species name, *falcata*, refers to the fact that the angles formed by the lobes of the leaves are sickle-shaped. This is a fast-growing upland species. Cherrybark oak, *Q. pagoda*, is a lowland relative and is some times placed in the same species with the name *Q. falcata* var. *pagodaefolia*. The leaves of the Cherrybark oak are larger and one common form in Louisiana has whitish hairs on the lower epidermis as opposed to the common light brown to tan. The bole of this tree is usually straight and free of low limbs and thus forms some of our best oak lumber. It is restricted to lowlands and/or clay soils. Its bark is smoother than that of the upland Southern Red oak and at least to some people, resembles that of Black Cherry. The name of Spanish oak for the Southern Red oak has been used since colonial times but no plausible explanation of its origin is known.

Turkey-foot oak, *Q. laevis*, is another of the oaks of the dry sandy habitats of the Coastal Plain. In Louisiana, it is known to occur only in the area of the Pushepatapa Creek near Varnado in Washington Parish. Its leaves are as thick as those of the Blackjack oak and they are more deeply lobed than the leaves of Southern Red oak. They are glossy dark green on the upper surface and very densely hairy on the lower surface. They turn brown and hang on for a long time in the winter. It has the "shaggy" or "scrubby" look of both the Bluejack and the Blackjack oaks.

Arkansas oak, *Q. arkansana*, occurs in deep sand with the Bluejack and Blackjack oaks. It is common in Ouachita County near Chidester, Arkansas. It occurs in northern Union and Caddo parishes on sandy

soils. Its leaves are like small versions of Blackjack oak with the texture of Water oak. Not enough individuals occur in Louisiana to be of economic significance.

Nuttall oak or Striped oak, *Q. texana*, formerly *Q. nuttallii*, occurs throughout Louisiana in bottomland hardwood forests. It has thin leaves with deep lobes and with only tufts of hairs in the axils of the veins on the lower epidermis. It has large acorns with light stripes from end to end. These acorns are favorites of deer and squirrels. The wood is similar to that of Shumard oak and they are usually not separated in commerce.

Shumard oak, *Q. shumardii*, including Schneck's oak, is an upland oak with thin, deeply lobed leaves that are only about twice as long as wide. The short, wide leaf distinguishes sterile specimens from Nuttall oak. Shumard oak makes one of the most handsome oaks to be used in street plantings. Most of its leaves fall in a short period of time in early winter and its large leaves are easier to rake than those of Willow or Water oak. Shumard oak is one of the most important red oaks for lumber in the South. It is replaced commercially by Northern Red oak, *Q. rubra*, in the northern part of the United States.

Black oak, *Q. velutina*, is an upland oak that is quite common in North Louisiana in our upland pine forests. It is usually not distinguished from Southern Red oak by our tree harvesters, but it can be easily be distinguished by the orange inner bark. The other red oaks have white, pink, or almost red inner bark. Black oak leaves are thick and very glossy on the upper surface. The lower leaf surface is hairy all over. The terminal buds on black oak are very angular.

Shingle oak, *Q. imbricaria*, is known to occur in Louisiana only in Bossier Parish. Some trees in Ouachita Parish with leaves similar to this tree are possible hybrids of water oak and some other species, possibly overcup oak. Shingle oak has leaves about 1½ to 2 inches wide and about 6 inches long. They are not lobed and are hairy underneath. It is not considered native to Louisiana by the authors of the Flora of North America treatment. It gets its common name from the fact that it easily splits with a froe to make shingles and was thus used when Michaux first saw it.

Red oaks are some of our most common trees in the state. Southern Red oak and Water oak are the most common species. Our dry upland species include Bluejack, Blackjack, Turkey-foot (only in Washington Parish), Southern Red, Black, Shumard, Arkansas (in Union, Caddo, and possibly parishes between), and Upland Laurel oak. Nuttall and Cherrybark are common in our bottomland woods with Water, Willow, and Laurel oaks. Water oak and Willow oak occasionally occur in our upland sites as well. The acorns of all the oaks are important food for deer and squirrels. Small acorn species such as Water and Willow oaks are also eaten by ducks and jays. Jays help spread these trees widely by dropping the acorns when they open their mouth to fuss at a passing bird. Squirrels, of course, are famous for storing the acorns and forgetting where they "planted" them. In lowland sites some are scattered about by water, but none as efficiently as those of the white oak known as Overcup oak. The pores of the wood of red oaks make it burn better as fuel. The wood is much stronger than that of white oaks and has given rise to the expression "strong as an oak". Bark from oaks has been used for extracting tannic acid to tan skins into leather. Yellow dyes have been extracted from black oak bark. All 14 species are easily propagated by planting fresh acorns.