

Common Oaks of Florida ¹

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This document describes characteristics of the oak species common to Florida, as well as some that are not so common. A short glossary at the end of the document provides definition of technical terms used.

Background

The nineteen species of oaks native to Florida are a small segment of the beech family (Fagaceae) which includes beeches, chestnuts, chinkapins and oaks. The oaks (genus *Quercus*) are economically important species worldwide, providing timber for ships, staves for barrels, and lumber for flooring and fine furniture. Corks, tannins and dyes come from oaks, as well as valuable wildlife food in the form of acorns. Oaks have played a significant role in history and religions of the world, marking meeting places of historical figures, providing the strength to fleets of sailing ships and supporting the sacred mistletoe of the druids.

Oaks provide excellent fuelwood to heat our homes and deep shade to cool them in the summer. They are excellent landscaping trees, many exhibiting brilliant autumn foliage while others remain leafy green throughout the winter. While there is significant variation among species, their wood is

generally strong and durable. On good sites, oaks grow relatively quickly, providing landscape and shade values within five to ten years. Some species, including water oak are relatively short-lived. White oaks over 300 years old are not unusual and live oaks over 500 years old have been documented.

Over 300 species of oaks worldwide are divided into two groups: the white oaks and the red (or sometimes black) oaks. The white oak group includes species with acorns that mature in the fall of the year they are formed (annual oaks). White oaks generally have a rounded leaf tip and rounded lobes without bristles. Their acorns are sweeter than those of the bitter red oak group, making them more palatable to both humans and wildlife. The red oak's leaf lobes are usually pointed or tipped with a fine bristle. Their acorns mature the second year following their formation, leading to the designation as biennial oaks. Oak flowers are fairly inconspicuous, consisting of catkins which appear at the same time as the leaves.

The White Oak Group

Eight members of the white oak group are native to Florida: bluff oak, Chapman oak, chinkapin oak,

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live oak, overcup oak, post oak, swamp chestnut oak and white oak. Sand post oak, a variety of post oak, also is native to Florida. All have alternately arranged leaves, usually with rounded tips. The inner surface of the acorn shell is smooth and the relatively sweet acorns of white oaks generally germinate in the fall of the year.

Bluff Oak (*Quercus austrina*)

Bluff oak (Figure 1) is similar to white oak but generally smaller. As its name implies, bluff oak can be found on riverside bluffs in moist, rich soils. Its leaves are 3-to-8-inches long, usually with five short, rounded lobes; dark green above and lighter underneath. Oval acorns appear singly or in pairs and may be slightly fuzzy near the apex or tip. The cup covers a third to a half of the nut.

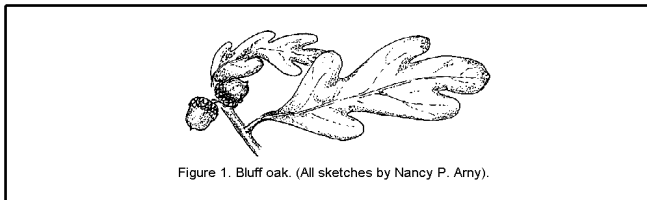


Figure 1. Bluff oak. (All sketches by Nancy P. Army).

Figure 1 .

Bluff oaks have little economic significance but contribute to species diversity of forested areas and provide valuable wildlife food and nesting sites.

Chapman Oak (*Quercus chapmanii*)

While Chapman oaks (Figure 2) may reach 50 feet in height and exceed 10 or 12 inch diameters, Florida specimens rarely grow beyond shrub height in the dry, sandy scrub ecosystem they inhabit. This oak's narrow, unlobed leaves are silvery green with short, hairy petioles. They are about 3-1/2-inches long. The knobby, warty cups of Chapman acorns cover almost one half of the fruit. Acorns occur singly or in pairs.

Chinkapin Oak (*Quercus muehlenbergii*)

The chinkapin oak (Figure 3) is found on dry, rocky soil and limestone ridges in the northern U.S. and in deep, rich, valley soil in association with other hardwoods in the southern U.S. It is common throughout the eastern U.S. except on the coastal plain. Chinkapins may reach heights from 60 to 80 feet and diameters of 2 to 3 feet. Crowns are narrow

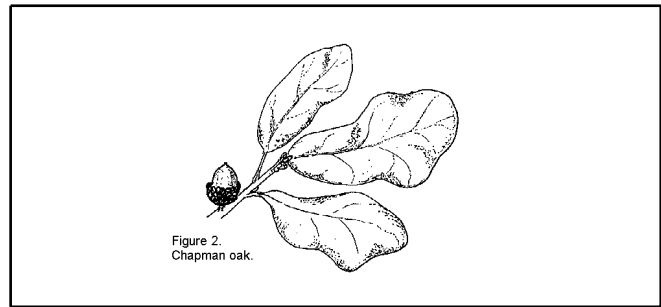


Figure 2.
Chapman oak.

Figure 2 .

and round-topped and the tree may resemble a shrub in the northern part of its range.

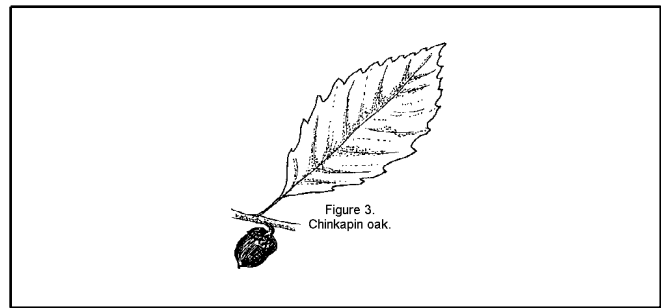


Figure 3.
Chinkapin oak.

Figure 3 .

Leaves are alternate, simple and deciduous, 4-to-7-inches long and 1-to-4-inches wide. The leaf is wedge-shaped, silvery and pubescent below with a stout yellow midrib. Acorns generally appear singly on the reddish-purple twigs. Pairs do occur. Bark becomes grey as it matures. Acorns are dark-brown-to-black, measuring 3/4-inch in length. A bowl-shaped cap with brown scales covers half of the fruit.

Live Oak (*Quercus virginiana*)

Majestic, moss-draped live oaks (Figure 4) reach heights of 40 to 50 feet with trunk diameters of 3-to-4 feet. Their low, massive branches provided naturally formed, angled wood valuable in building the wooden ships of the 1800s. It was for this reason that one of America's first forest reserves was established in the panhandle of Florida. Live oaks are common on sandy soils throughout the state. Their range along the coastal plain extends from Virginia to Texas.

Unlike most other oaks, the live oak retains its leaves until after the following year's leaves have appeared. This habit results in an "evergreen" tree. Leaves are unlobed and rarely toothed: lustrous green

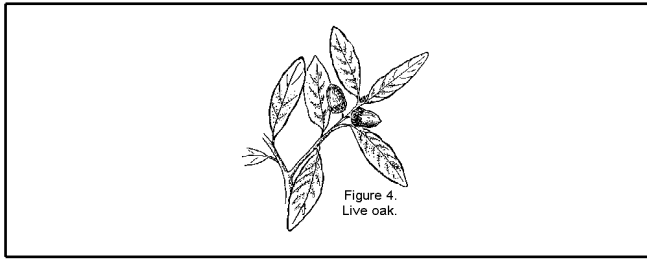


Figure 4 .

above and pale-pubescent on the underside. Leaf length varies from 2-to-5 inches with width ranging from 1/2-to-2-1/2 inches.

Acorns, usually in clusters of three to five, are set on relatively long stalks. The 1-inch long, brownish-black fruit is longer than it is round with almost a third of its length covered by a top-shaped cap. Twigs are gray-brown and smooth. Mature bark is deep red-brown and slightly furrowed with small surface scales. Live oaks are among the more long-lived oaks, frequently achieving ages greater than 200 years.

Overcup Oak (*Quercus lyrata*)

As its name implies, the scales of the cap, or cup, almost entirely enclose the 1/2-to-1-inch-round fruit. Overcup oaks (Figure 5) may--in rare instances--achieve heights of 100 feet, but are generally shorter. Trees are frequently twisted and are of little economic value, but provide valuable wildlife habitat in the bottomlands where they abound. They may be found with willows, swamp-chestnut oaks and elms along the coastal plain from New Jersey to Florida and Texas. Their buttressed bases are an adaptation to the wet soils of the bottomlands. Their gray-brown bark is irregularly ridged or flattened and may appear to spiral around the trunk.

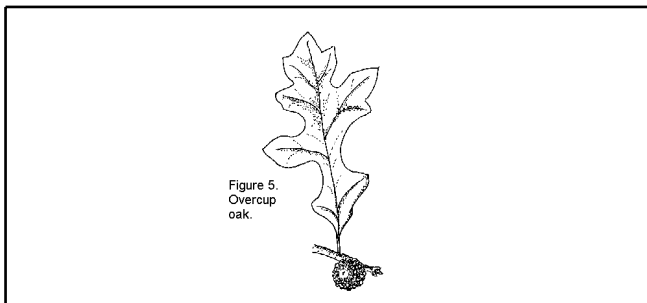


Figure 5 .

The deciduous leaves are 6-to-10-inches long and 1-to-4-inches wide with 5 to 9 lobes. The tip may be pointed or round, but the base is always wedge-shaped. One inch long petioles are slender and support the dark green leaves with pale-pubescent or nearly smooth undersides. Acorns, in pairs or singly, are closely attached to twigs.

Post Oak (*Quercus stellata*)

A classic post oak leaf (Figure 6) resembles a cross. The two central lobes of the five on each leaf are larger and somewhat square. Size varies from 3 to 4 inches in width and 4 to 5 inches in length. Leaves are dark green, covered with short, fine, soft hairs on top. Leaves are wooly underneath.

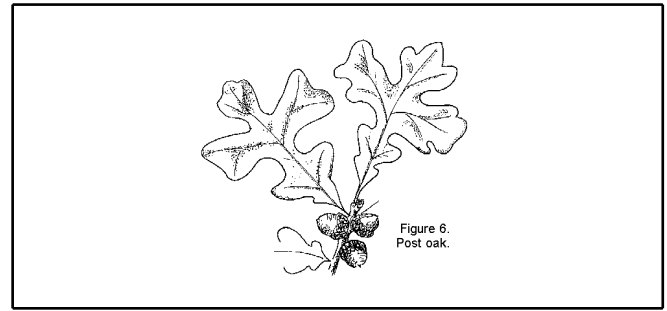


Figure 6 .

Acorns, singly or in pairs, are closely attached to stout, somewhat fuzzy, brown twigs. They are about 3/4-inch long with slight stripes running toward their somewhat fuzzy tips. The bowl-shaped cup covers about a third of the nut.

Post oak bark is thick and gray: blocky or scaly in youth, deeply fissured with plate-like scales at maturity. This species can be found as far north as Massachusetts and as far west as Iowa and Texas. A valuable timber species, post oak grows on dry, sandy soils or rocky slopes. Occasionally, it appears in rich bottomlands.

The sand post oak (*Quercus stellata* var. *margaretta*) also occurs in Florida. Generally smaller and scrubby, it has smaller leaves and more wooly twigs. The state champion sand post oak grows in Gainesville.

Swamp Chestnut Oak (*Quercus michauxii*)

Also known as basket oak or cow oak, this 60-to-80-foot-tall swamp chestnut oak tree (Figure 7) is found on moist, periodically flooded, bottomland soils from southern New Jersey to northern Florida. Its uses include traditional farming tools, baskets, posts, and barrels. Margins of the unlobed deciduous leaves have coarse, wavy teeth. The leaf is 5-to-8-inches long and 3-to-4-inches wide; dark lustrous green on top, silvery pubescent below.

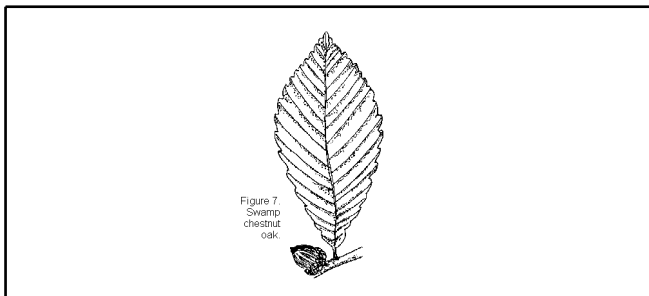


Figure 7 .

Solitary or paired lustrous brown acorns are 1-to-1-1/2-inches long with a bowl shaped cup of wedge-shaped scales covering a third of its length. Stout, red-brown twigs mature to a brownish gray, while bark of the mature tree is a furrowed, scaly gray outside and red inside.

White Oak (*Quercus alba*)

This model for the white oak group (Figure 8) exhibits 7-to-9-rounded lobes with sinuses angled toward the usually three-lobed tip. Extending from a 1-inch petiole, a yellow midrib runs the full 5-to-9-inch length of each bright green leaf. Two to 4 inches wide, the leaf's underside is pale. Acorns, solitary or in pairs, are almost directly attached to pale-to-gray twigs. The light brown 3/4-inch long nut shows three-fourths of its length beyond the bowl-shaped cap.

White oak timber is valuable for ship building, furniture, barrels, baskets, and fuel. White oak acorns, a valuable wildlife food, were once widely used by Native Americans after the acorns were boiled to remove the tannin. This resource is available from southeastern Canada to mid-Florida and northwest to Minnesota.

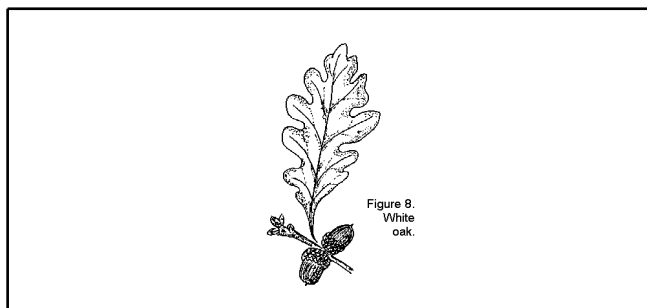


Figure 8 .

Bark of the white oak is light gray: in scaly rectangles when young--becoming ridged and shallowly fissured at maturity. Trees may achieve heights of 80-to-150 feet with diameters up to 5 feet on rich soils, sandy soil, and stony ridges.

The Red Oak Group

Eleven members of the red oak group are native to Florida. As mentioned earlier, all exhibit alternate leaves, pointed and/or bristle-tipped leaves and acorns which take two years to mature. The acorns of red oaks are generally bitter to the taste and frequently exhibit woolly or silky inner linings in a tough outer shell. These seeds generally germinate (sprout) in the spring.

Black Oak (*Quercus velutina*)

Black oaks (Figure 9) reach heights between 70 and 85 feet with trunk diameters of 3 to 4 feet. The low, wide, spreading crown exhibited by open-grown trees is composed of branches and leaves dark green above and copper-green below. Leaves are generally wedge-shaped, with variable margins. The 5-to-7 broad or narrow lobes are sometimes separated by deep sinuses; sometimes by very shallow ones. Lobes and tip invariably display bristles. Petioles are long (3 to 5 inches) and stout. Tufts of hair are usually visible in the axils of veins on the underside of the leaf.

Acorns are variable as well--sometimes oval, sometimes nearly hemispherical. Bark is reddish-brown on young twigs. The trunk bark is dark brown and smooth with an orange-red inner bark in youth. As trees mature, bark becomes thick and scaly with deep vertical furrows.

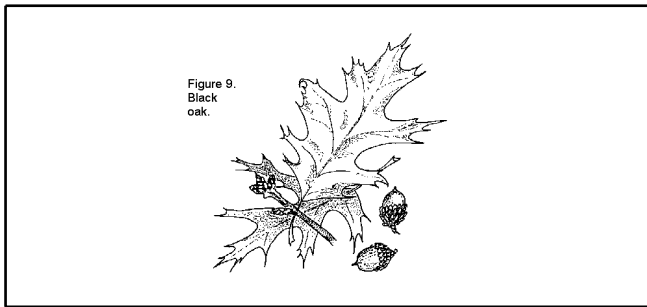


Figure 9 .

Growing from southern Maine to Florida and Texas, black oaks may be found on dry slopes and ridges or moist, rich soils. It is rare in bottomlands. Leaves do not turn vivid colors in autumn, so this species is rarely planted as an ornamental. Its wood is valuable and the bark is a major source of tannic acid and a yellow dye called quercitron.

Blackjack Oak (*Quercus marilandica*)

The blackjack oak (Figure 10) is a small tree, rarely exceeding 50 feet in height, occasionally used for posts, ties or fuelwood. Average heights are 20 to 30 feet with diameters approaching 12 inches. The crown of this species is frequently narrow and contorted and its bark is black, divided into block-like plates.

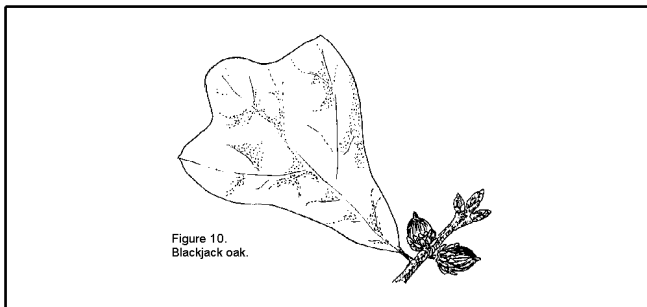


Figure 10 .

Leaves of the blackjack are deciduous; dark yellow-green above and orange-pubescent below. Size varies from 2 to 3 inches in width and 6 to 7 inches in length. The leaf shape is quite variable: they are broadly ovate with 3 (rarely 5) bristle-tipped lobes. The overall pattern of the leaf is a T, narrow at the base and broadest at, or very near, the tip. The base is roundly wedge-shaped.

The light-brown acorns are oblong to ovoid, about 3/4 inch long. About half the nut is covered by loose, reddish-brown scales of the cap.

Blackjack oaks may be found on dry, sandy soils from New York and southern Michigan, west to Texas and south to Florida.

Bluejack Oak (*Quercus incana*) [Formerly *Quercus cinerea*]

The bluejack oak (Figure 11), is a small tree or large shrub seldom exceeding heights of 30 to 35 feet. Diameters of 5 to 10 inches are normal. Such diminutive size is not surprising considering the sites preferred are dry, sterile, sandy soils from Virginia to East Texas and south to peninsular Florida. It is a common associate of turkey oak and longleaf pine.

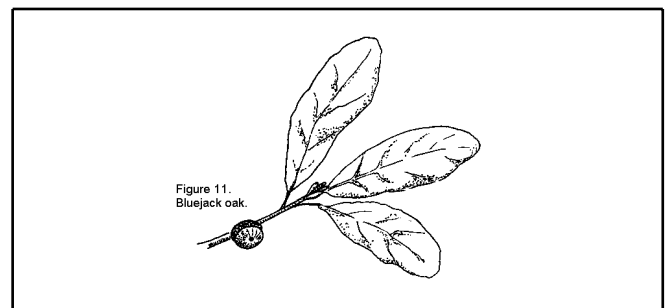


Figure 11 .

The unlobed (rarely 1-to-4 lobes) oblong-oblongate leaves are blue-green with wooly lower surfaces. They range from 2 1/2 to 5 inches in length and up to 2 inches in width. Leaves on sprouts may be irregularly dentate. The leaf tip may be rounded or blunt with a short bristle.

Acorns of the bluejack oak are nearly globular and are characterized by hairs near the apex and longitudinal striations. They are light brown with pale pubescent scales covering about half of the nut.

Laurel Oak (*Quercus laurifolia*)

The medium-sized laurel oak tree (Figure 12) usually reaches heights of 50 to 60 feet, though trees as tall as 100 feet have been recorded. Diameters of 3 to 4 feet are normal.

Slender branches form a broad, round-topped, dense crown. Laurel oaks are found scattered on sandy soils near streams and swamps from the coastal plain of North Carolina to central Florida.

Leaves are simple and deciduous, although they remain on the tree through much of the winter,

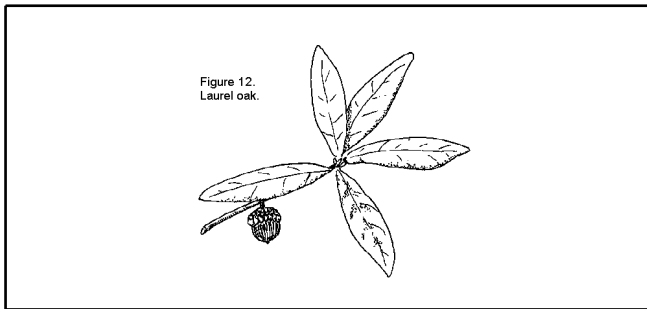


Figure 12 .

generally falling in early spring. The tree will remain bare of leaves for several weeks before the new oblong leaves appear. They are 2 to 4 inches long at maturity, and 1/2 to 1 inch wide. Margins are either entire or irregularly lobed. Laurel oak leaves are lustrous green above and pale below with a yellow mid-rib.

Acorns are generally solitary, commonly sessile and egg-shaped. The 1/2-inch-long nut is brownish-black, covered by a thin, saucer-shaped cap with reddish-brown pubescent scales. Twigs are slender and deep red. Mature bark is up to 1/2 thick and dark reddish-brown: at first smooth, then becoming divided into deep fissures separated by broad, flat ridges.

Myrtle Oak (*Quercus myrtifolia*)

This small, evergreen oak is commonly found in coastal areas on sandy ridges from South Carolina to Mississippi--including peninsular Florida. Thick forests of wind-sculptured myrtle oaks (Figure 13) are common along seashores where development has not yet occurred. It is a small tree, seldom reaching over 35 feet in height with diameters generally from 4 to 8 inches. The bark is light gray and smooth, becoming shallowly furrowed and ridged and wrinkled at joints where the trunk bends.

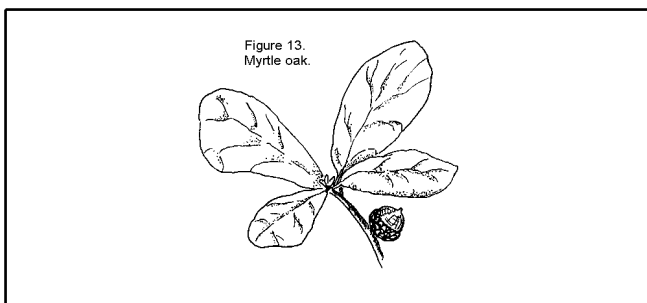


Figure 13 .

The 1-to-2-inch-long leaves are oval to oblong, leathery and sometimes bristle-tipped. Margins are entire and both surfaces are smooth, dark green and shiny. Twigs are hairy and acorns are very small, about 1/2 inch in diameter, and round. A saucer-like-to-top-shaped cup of small, flattened scales encloses about half of the nut. Acorns grow in pairs or clusters.

Although of no commercial value for wood products, the dense thickets provide protection for both wildlife and sand dunes, as well as enhancing the visual aspect of many coastal communities.

Shumard Oak (*Quercus shumardii*)

From Maryland on the East Coast to Iowa and Texas in the West, the Shumard oak (Figure 14) ranges as far south as central Florida. It is a large, attractive tree, attaining height of 90 to 125 feet on ideal sites in deep, rich bottomlands along streams and riverbanks.

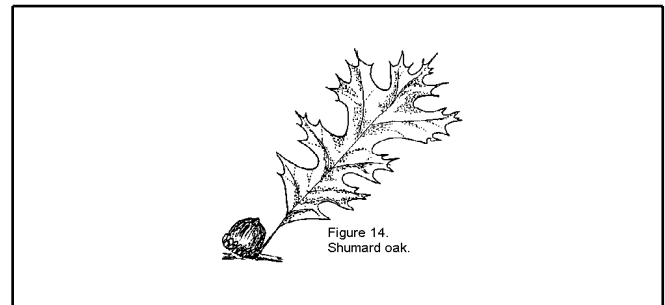


Figure 14 .

Leaves of the Shumard are alternate, simple and deciduous in habit; obovate in shape. They are 6 to 8 inches long and 4 to 5 inches wide, with a wedge-shaped or flattened base. Six to 11 bristle-tipped lobes on each leaf are dark green above and paler green below with tufts of hairs where veins and mid-ribs meet. Sinuses are rounded and generally deep.

This commonly planted landscape tree has moderately stout, hairless, gray-brown twigs. Mature bark is thick with whitish, scaly ridges separated by dark fissures. The foliage of Shumard oaks turns a deep crimson red in autumn; one reason it is valued as an ornamental.

Its acorns are oblong to ovoid, up to 1-1/4 inch in length and 1 inch in diameter. The cap is saucer-shaped with somewhat pubescent scales.

Southern Red Oak (*Quercus falcata*)

A valuable commercial species, the southern red oak (Figure 15) may reach heights of 70 to 80 feet. Diameters of 2 to 3 feet are normal. Spreading branches create a broad, open, round-topped crown. Southern red oak can be found on dry, infertile soil in stands of mixed hardwoods and pine from New Jersey and southern Illinois in the North to Texas and central Florida in the South.

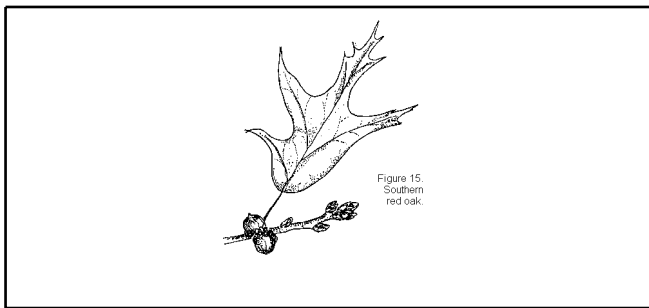


Figure 15 .

Leaves are deciduous, 5 to 9 inches in length and 4 to 5 inches in width. The base is definitely bell-shaped at the junction of the flattened 1-to-2 inch petiole. Upper surface of the leaf is lustrous dark green and the underside is rusty and pubescent. Two basic leaf shapes are common: 1) obovate with three bristle-tipped apical lobes or 2) 5 to 7 deeply divided lobes with a long, often subdivided terminal lobe.

Acorns appear singly or in pairs. They are nearly round, 1/2-inch long, and orange-brown. The cap may be shallow and bowl-like or top-shaped, covering a third to a half of the nut. Cup scales are pale pubescent except on the margins. The acorn is attached to stout twigs which are orange and pubescent in their first year, becoming hairless and dark red their second year. Bark of the mature tree is up to 1-inch thick, with dark brown or black rough scaly ridges separated by deep fissures.

Swamp Red Oak (*Quercus pagoda*)

This valuable timber and wildlife species, the swamp red oak (Figure 16) sometimes referred to as cherrybark oak, was once known as *Quercus falcata*

var. *pagodaefolia* . It is a common bottomland species of the southern coastal plain and the Mississippi River Valley. The largest specimens are found on moist, loamy ridges, old fields, and flats. Trees may reach heights of 100 to 130 feet and attain diameters of 3 to 5 feet.

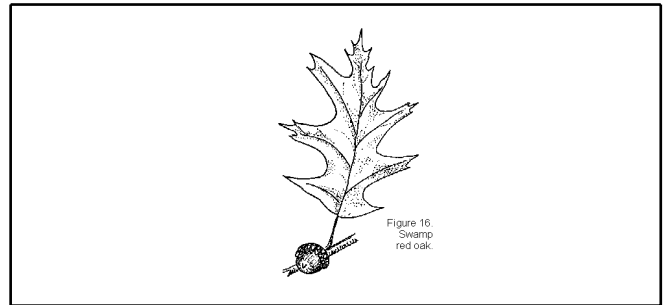


Figure 16 .

Leaves are 5- to 11-lobed. They closely resemble southern red oak leaves, but have more lobes. Bark of mature trees is gray-black flaky or scaly somewhat resembling the bark of a cherry tree. Acorns are about 1/2-inch long, round or hemispherical with a thin, shallow cap covering up to a third of the nut.

Turkey Oak (*Quercus laevis*)

The leaves of this relatively small tree are thick, rigid and heavily veined, bright yellow-green lustrous above and somewhat paler below. They are deeply divided into 3 or five lobes. Rarely there are seven lobes on a turkey oak leaf (Figure 17). Lobes may be toothed and the tip is usually 3-toothed. The underside of the leaf may show tufts of rusty-red axillary hairs. Petioles are generally twisted, allowing the leaf to sit perpendicular to the ground, reducing surface area exposed to the drying sunlight of its sandhill habitat.

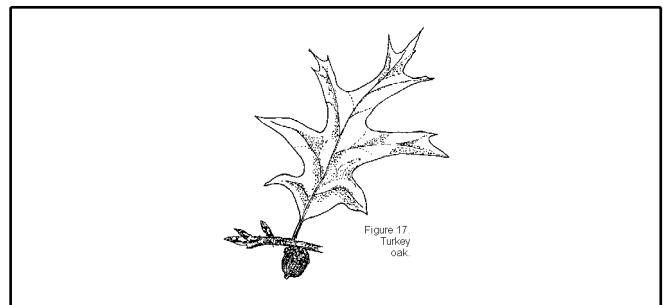


Figure 17 .

Turkey oaks can be found in dry, sandy, sterile soil. Common uses include fuel and construction on farms. The form and size preclude use as commercial timber. Maximum heights are generally 20 to 30 feet, with diameters of 2 feet. The crown is broad, open, and irregular.

Acorns are light brown, about 1-inch long and 3/4-inch wide. They are oval with rounded ends. One end is enclosed by a small, thin red-brown cap covered by scales.

Water Oak (*Quercus nigra*)

The leaves of the water oak (Figure 18), a tall, slender oak are semi-persistent, falling a few at a time throughout the winter. This persistence may give the appearance of an evergreen habit, but leaves do not persist into the second growing season. Water oaks are extremely variable in shape and size, especially on sprout growth. Even on mature branches, shape varies widely. They are generally shaped like a spatula, narrow at the base and broadly rounded near the tip. Margins may be entire, three-lobed near the tip or variously lobed on both margins. Both surfaces of the leaf are green and smooth except for infrequent axillary hairs below. The lower surface is a slightly lighter green.

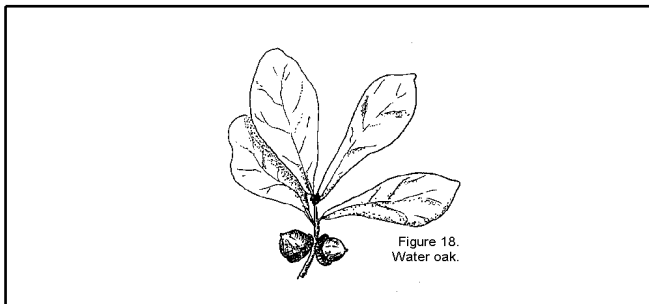


Figure 18 .

Even large water oaks (50 to 70 feet in height is average) retain relatively smooth bark. It is smooth and brown in youth, grading to gray-brown with irregular furrows. Diameters of 2 to 3 feet are common for mature trees.

Acorns are solitary or occasionally in pairs. The light-brown-to-nearly-black nuts are oval to hemispherical in shape and may be pubescent near the tip. They are about 1/2-inch long with a pubescent, saucer-shaped reddish-brown cup.

This wide-spread species may be found in mixed pine-hardwood forests, along roadsides, in flatwoods, bottomlands or urban openings. Its range extends along the Atlantic and Gulf coasts to East Texas and south into central Florida.

Willow Oak (*Quercus phellos*)

This frequently planted ornamental tree reaches 80 to 130 feet in height with trunk diameters of 3-to-6 feet. Grown in the open, the trunk is short with a dense, broad oblong or oval crown covered with deciduous leaves with bristle-tips. In forests, the tree tends toward a longer trunk with a spherical crown. Preferred sites are rich, moist bottomlands along swamps and streams. This oak is rare on drier sites.

Leaves are 2 to 5 inches in length and 1/2 to 1 inch in width and exhibit wavy or irregularly lobed margins on sprout growth. Like the willow this oak is named for, its leaves are generally lanceolate, though some specimens may be oblong (Figure 19). Most are broadest near the middle of the leaf. The upper surface is light green, smooth and shiny with raised veins. The lower surface is paler and may have whitish hairs along the midrib. The thin petioles are 1/4-inch long.

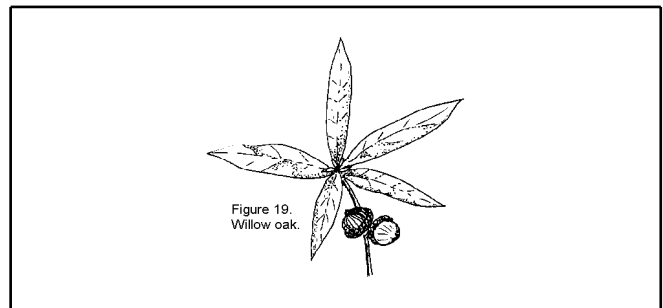


Figure 19 .

Acorns may be solitary or in pairs, hemispherical and 1/3-to-1/2-inch long. The nut is yellowish brown and bluntly pointed. The cup is greenish-brown, thin and saucer-shaped, enclosing only the base of the nut.

Glossary

Alternate leaf arrangement. Leaves are off-set on each side of the twig (not opposite)

Apex. The tip or point of a leaf or acorn

Base. The end of the leaf or acorn nearest the twig

Catkin. A flexible, often pendent, cluster of unisexual flowers arranged along a central axis

Cap or **cup.** The scaly covering by which the nut (acorn) is attached to the twig

Crown. The portion of a tree including branches, twigs and leaves

Dentate. Toothed or tooth-like

Lanceolate. Shaped like a spear point; long and thin

Lobe. A part of a leaf which extends outward from its general mass

Margin. The edge of the leaf

Midrib. The central vein or structure of a leaf

Nut. Used here to mean the portion of an acorn containing the seed

Ovate. Egg-shaped

Obovate. Shaped like an upside-down egg

Petiole. The "stem" of a leaf, by which it is attached to a twig

Pubescent. Covered with soft, fine, short hairs

Sinus. The space (indentation) between lobes