



# *Quercus nigra* Water Oak<sup>1</sup>

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## INTRODUCTION

Water Oak has a spreading, rounded, open canopy, and is most often used for a naturalized landscape (Fig. 1). The acorns are particularly abundant on Water Oak and make good food for wildlife. They badly stain asphalt and concrete for several months in fall and winter. The leaves vary tremendously, from rounded and entire to three-lobed with several bristle tips but are most frequently spatulate. Water Oak is deciduous in the North, semi-evergreen in the Deep South, and trees reach 60 to 80 feet in height (shorter when grown in the open) with a 50 to 70-foot spread. Some trees put on a wonderful yellow fall color show for about a week.

## GENERAL INFORMATION

**Scientific name:** *Quercus nigra*

**Pronunciation:** KWERK-us NYE-gruh

**Common name(s):** Water Oak

**Family:** *Fagaceae*

**USDA hardiness zones:** 6 through 10A (Fig. 2)

**Origin:** native to North America

**Uses:** recommended for buffer strips around parking lots or for median strip plantings in the highway; reclamation plant; shade tree; residential street tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common

**Availability:** generally available in many areas within its hardiness range

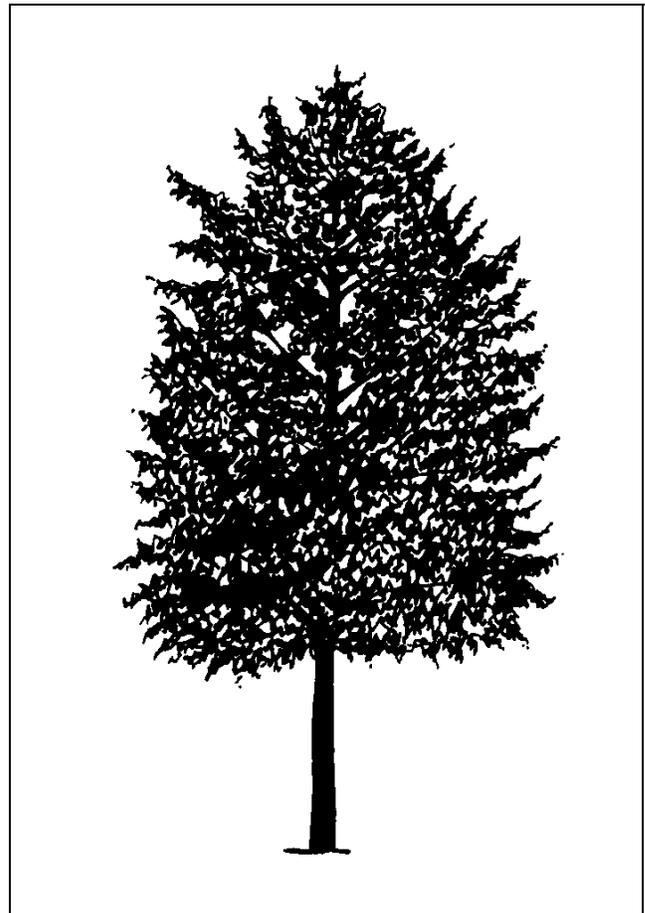


Figure 1. Young Water Oak.

## DESCRIPTION

**Height:** 50 to 60 feet

**Spread:** 60 to 70 feet

**Crown uniformity:** symmetrical canopy with a regular (or smooth) outline, and individuals have more

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Figure 2. Shaded area represents potential planting range.

or less identical crown forms

**Crown shape:** round; spreading

**Crown density:** moderate

**Growth rate:** fast

**Texture:** medium

### Foliage

**Leaf arrangement:** alternate (Fig. 3)

**Leaf type:** simple

**Leaf margin:** lobed; entire

**Leaf shape:** linear; obovate; spatulate

**Leaf venation:** banchidodrome; pinnate

**Leaf type and persistence:** deciduous

**Leaf blade length:** 2 to 4 inches; less than 2 inches

**Leaf color:** green

**Fall color:** yellow

**Fall characteristic:** showy

### Flower

**Flower color:** brown

**Flower characteristics:** inconspicuous and not showy; spring flowering

### Fruit

**Fruit shape:** oval; round

**Fruit length:** .5 to 1 inch; < .5 inch

**Fruit covering:** dry or hard

**Fruit color:** brown

**Fruit characteristics:** attracts squirrels and other mammals; inconspicuous and not showy; fruit, twigs, or foliage cause significant litter

### Trunk and Branches

**Trunk/bark/branches:** droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; not particularly showy; should be grown with a single leader; no thorns

**Pruning requirement:** requires pruning to develop strong structure

**Breakage:** susceptible to breakage either at the crotch due to poor collar formation, or the wood itself is weak and tends to break

**Current year twig color:** brown; reddish

**Current year twig thickness:** thin

**Wood specific gravity:** 0.63

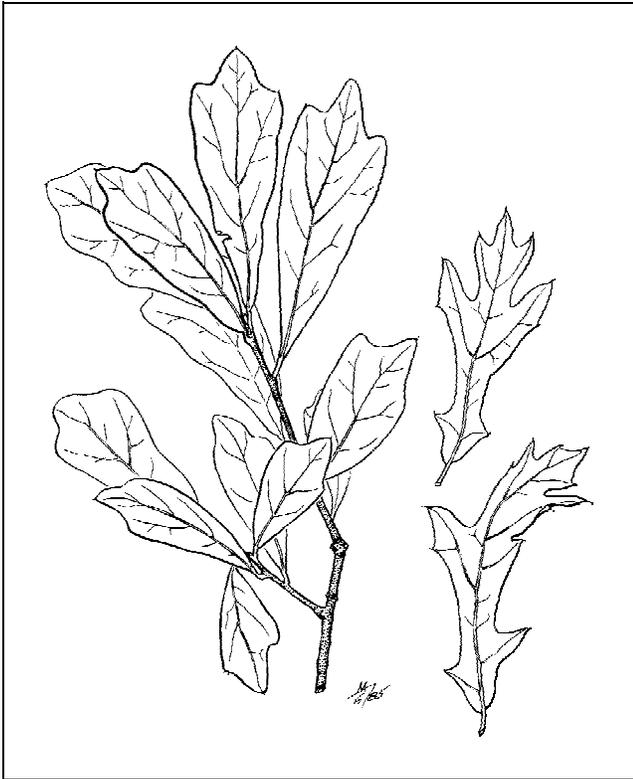


Figure 3. Foliage of Water Oak.

**Culture**

**Light requirement:** tree grows in part shade/part sun;  
tree grows in full sun

**Soil tolerances:** clay; loam; sand; slightly alkaline;  
acidic; extended flooding; well-drained

**Drought tolerance:** high

**Aerosol salt tolerance:** low

**Soil salt tolerance:** poor

**Other**

**Roots:** surface roots are usually not a problem

**Winter interest:** no special winter interest

**Outstanding tree:** not particularly outstanding

**Invasive potential:** little, if any, potential at this time

**Verticillium wilt susceptibility:** not known to be susceptible

**Pest resistance:** long-term health usually not affected by pests

**USE AND MANAGEMENT**

Easily transplanted, young trees should be trained to develop a central trunk and then will require only occasional pruning once established. Naturalized trees often develop with several upright multiple trunks which are poorly attached to the tree. Horizontal

branches droop toward the ground as additional growth adds to their weight. They can split from the tree in wind storms, deforming the plant and beginning the process of decay and decline. They appear to be poor compartmentalizers of decay since many are hollow at 40 years old.

A rapid-grower, Water Oak has a relatively short life span of only 30 to 50 years, particularly in the east on good sites where growth is rapid. Perhaps more durable and not as weak-wooded in drier areas such as Texas and Oklahoma where growth is slower. The tree often begins to break apart just as it grows to a desirable size. For this reason, Live, Bur, Shumard, Red, White, Swamp White Oak and others are much better choices. Like other Oaks, care must be taken to develop a strong branch structure early in the life of the tree. This might increase the life span by eliminating the need for removing large-diameter branches. Pruning large branches from the trunk often initiates decay in the trunk.

A North American native, Water Oak is adapted to wet, swampy areas, such as along ponds and stream banks, but can also tolerate other well-drained sites and even heavy, compacted soils. Not adapted to highly alkaline soil but will grow well in clay.

Propagation is by seed or hardwood cuttings. Propagation of Oaks by seed is the most common method, but horticulturists are developing techniques for vegetative propagation.

**Pests**

No pests are normally serious.

Galls cause homeowners much concern. There are many types and galls can be on the leaves or twigs. Most galls are harmless so chemical controls are not suggested.

Scales of several types can usually be controlled with sprays of horticultural oil.

Boring insects are most likely to attack weakened or stressed trees, particularly those with root damage resulting from construction activities. Newly planted young trees may also be attacked. Keep trees as healthy as possible with regular fertilization and water during dry weather.

Many caterpillars feed on Oak. Large trees tolerate some feeding injury without harm. Trees

repeatedly attacked, or having some other problem, may need spraying. Tent caterpillars form nests in trees then eat the foliage. The nests can be pruned out when small. Where they occur, gypsy moth caterpillars are extremely destructive on Oaks. Fall cankerworm has been a problem in some years.

Twig pruner causes twigs to drop off in the summer. The larvae ride the twig to the ground. Rake up and destroy fallen twigs.

Lace bugs suck juices from leaves causing them to look dusty or whitish gray.

Leaf miners cause brown areas in leaves. To identify leaf miner injury tear the leaf in two across the injury. If the injury is due to leaf miner, upper and lower leaf surfaces are separate and black insect excrement will be seen.

## **Diseases**

Except for oak wilt, no diseases are normally serious.

Mushroom root rot and trunk decay can be serious.

Anthrachnose may be a serious problem in wet weather. Infected leaves have dead areas following the midrib or larger veins. These light brown blotches may run together and, in severe cases, cause leaf drop. Trees of low vigor, repeatedly defoliated, may die. Trees defoliated several years in a row may need spraying, to allow the tree to recover.

Canker diseases attack the trunk and branches. Keep trees healthy by regular fertilization. Prune out diseased or dead branches.

Leaf blister symptoms are round raised areas on the upper leaf surfaces causing depressions of the same shape and size on lower leaf surfaces. Infected areas are yellowish-white to yellowish-brown. The disease is most serious in wet seasons in the spring but it does not need to be treated. Infection in the Deep South can be severe and can cause usually significant defoliation. Repeated heavy defoliations can weaken trees and make them more sensitive to other stresses.

A large number of fungi cause leaf spots but are usually not serious. Rake up and dispose of infected leaves.

Powdery mildew coats leaves with white powdery growth.

Shoestring root rot attacks the roots and once inside moves upward, killing the cambium. The leaves on infected trees are small, pale or yellowed and fall early. There is no practical control. Healthy trees may be more resistant than trees of low vigor.

Chlorosis due to iron-deficiency occurs on very high pH soil.