

Quercus virginiana: Southern Live Oak¹

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Introduction

A large, sprawling, picturesque tree, usually graced with Spanish moss and strongly reminiscent of the Old South, Live Oak is one of the broadest spreading of the Oaks, providing large areas of deep, inviting shade. It is the state tree of Georgia. Reaching 40 to 60 feet in height with a 60 to 100 foot spread and usually possessing many sinuously curved trunks and branches, Live Oak is an impressive sight for any large-scale landscape. An amazingly durable American native, it can measure its lifetime in centuries if properly located and cared for in the landscape. It makes an excellent street tree in the South. Unfortunately, Oak wilt has devastated the tree in parts of central Texas. Give it plenty of room since the trunk can grow to more than six feet in diameter.



Figure 1. Mature *Quercus virginiana*: Southern Live Oak

General Information

Scientific name: *Quercus virginiana*

Pronunciation: KWERK-us ver-jin-ee-AY-nuh

Common name(s): Southern Live Oak, Live Oak

Family: *Fagaceae*

USDA hardiness zones: 7B through 10B (Fig. 2)

Origin: native to North America

Invasive potential: little invasive potential

Uses: street without sidewalk; shade; specimen; reclamation; parking lot island > 200 sq ft; tree lawn > 6 ft wide; urban tolerant; highway median

Availability: not native to North America



Figure 2. Range

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Description

Height: 60 to 80 feet
Spread: 60 to 120 feet
Crown uniformity: symmetrical
Crown shape: spreading, round
Crown density: dense
Growth rate: moderate
Texture: fine

Foliage

Leaf arrangement: alternate (Fig. 3)
Leaf type: simple
Leaf margin: entire
Leaf shape: elliptic (oval), linear
Leaf venation: pinnate
Leaf type and persistence: semi-evergreen, evergreen
Leaf blade length: 2 to 4 inches, 4 to 8 inches
Leaf color: green
Fall color: no color change
Fall characteristic: not showy

Flower

Flower color: brown
Flower characteristics: not showy

Fruit

Fruit shape: elongated, oval
Fruit length: .5 to 1 inch, less than .5 inch
Fruit covering: dry or hard
Fruit color: brown
Fruit characteristics: attracts birds; not showy; fruit/leaves a litter problem

Trunk and Branches

Trunk/bark/branches: branches droop; showy; typically one trunk; thorns
Pruning requirement: needed for strong structure
Breakage: resistant
Current year twig color: gray
Current year twig thickness: thin
Wood specific gravity: 0.88

Culture

Light requirement: full sun, partial sun or partial shade
Soil tolerances: clay; sand; loam; alkaline; acidic; occasionally wet; well-drained
Drought tolerance: high
Aerosol salt tolerance: high

Other

Roots: can form large surface roots
Winter interest: no
Outstanding tree: yes
Ozone sensitivity: unknown

Verticillium wilt susceptibility: resistant
Pest resistance: resistant to pests/diseases

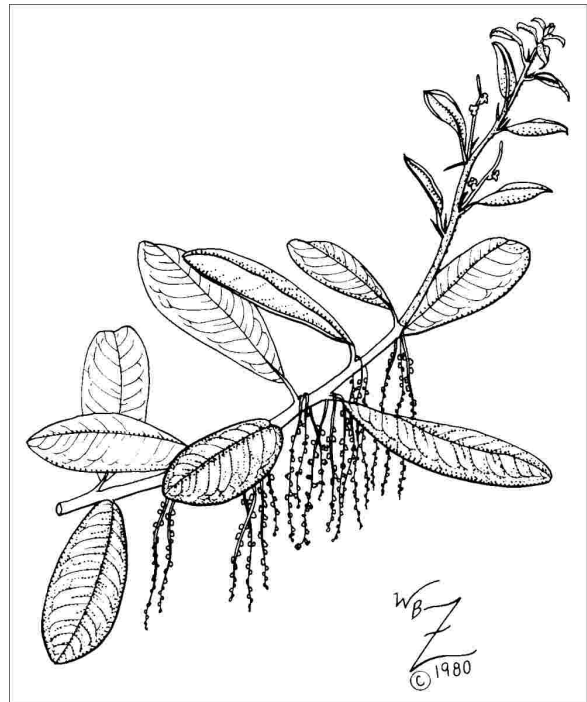


Figure 3. Foliage

Use and Management

Once established, Live Oak will thrive in almost any location and has very good wind resistance. Live Oak is a tough, enduring tree that will respond with vigorous growth to plentiful moisture on well-drained soil. Like other Oaks, care must be taken to develop a strong branch structure early in the life of the tree. Be sure to eliminate multiple trunks and branches which form a narrow angle with the trunk as these are likely to split from the tree as it grows older.

Be sure that adequate soil space is given to Live Oak. Although roots will grow under curbs and sidewalks when planted in confined soil spaces allowing the tree to thrive in urban sites, in time, they lift sidewalks, curbs and driveways. This may be a small price to pay for the bountiful shade cast by a row of healthy trees.

One of the biggest problems with Live Oak in our cities is the lack of pruning. Therefore, it is not a plant-and-forget tree. Because this tree can live for such a long time, it is very important to develop proper trunk and branch

structure early in the life of the tree. Following planting in the nursery, prune the tree each year for the first three years, then every five years to age 30. This program will help ensure that the tree develops into a strong, long-lived fixture in the community, and will help develop the 14 to 15 foot tall vehicle clearance needed for planting along city streets.

Best growth is made in moist, acid soil, sand, loam or clay, but the tree is amazingly adapted to drought. It also tolerates alkaline soil well. Young trees grow three feet each year and the trunk adds about one-inch in diameter under nursery conditions. Construction-impacted trees take a long time to die, giving Live Oak a reputation for being a tough tree. It is usually the last tree to die around a newly constructed building.

Sand Live Oak, *Quercus virginiana* var. *geminata* (*Q. geminata*), grows on sandy soil, is more upright and open-crowned in habit, has thick revolute leaves and acorns produced in pairs. It may be more suited for street tree planting due to the smaller size. Leaves emerge about four weeks after Live Oak and Sand Live Oak suckers more than Live Oak. The fast-growing variety 'Heritage' is recommended for desert areas, and is more common in the southwestern United States. *Quercus fusiformis* is native to central and southern Texas, is susceptible to Oak wilt but resistant to root rot. Perhaps more adapted to Texas than *Quercus virginiana* but nursery operators do not normally differentiate among the Live Oaks.

Pests

It is usually pest-free. Occasionally mites infest the foliage, but they are of little concern in the landscape.

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.

Aphids cause distorted growth and deposits of honeydew on lower leaves. On large trees, naturally-occurring predatory insects will often bring the aphid population under control.

Boring insects are most likely to attack weakened or stressed trees. Newly planted young trees may also be attacked. Keep trees as healthy as possible with regular fertilization and water during dry weather.

Diseases

It is usually disease-free except for Oak wilt in parts of Texas and perhaps some other isolated areas. Oak wilt is a fatal disease beginning with a slight crinkling and paling of the leaves. This is followed by leaf wilting and browning of leaf margins then working inward. The symptoms move down branches toward the center of the tree. Cut down and destroy infected trees. The disease may be spread by insects, pruning tools or transporting infected wood to uninfected areas. The disease appears to infect Red, Black and Live Oaks particularly. Common practice in Texas where Oak wilt is most prevalent is to immediately paint pruning cuts on Live Oak with pruning paint to help prevent the insect vector from coming to the tree. Avoid pruning in midspring to early summer in areas where Oak wilt is present. Dormant or summer pruning is best.

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

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 fungal growth resembling white powder.

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.