



Houston Area Urban Forestry Council

Tree Planting Guide



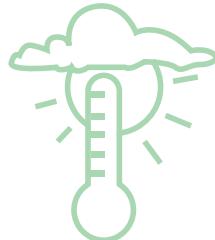
WHY PLANT TREES?

The question is simple and basic, but often not considered carefully enough when selecting trees. Before planting think about what benefits you would like your tree to provide. The addition of trees to your landscape is important for many reasons.

Consider some of the following reasons for planting trees:

ENERGY CONSERVATION

Trees planted strategically on the west, south and east sides of your home can reduce cooling costs by up to 50%. Deciduous trees shade your home during the hot summer months, while allowing sunlight to warm your home during the winter. Planting evergreen trees on the north side of your home will slow winter winds which can reduce heating costs by up to 30%.



INCREASED PROPERTY VALUE

Trees enhance the economic vitality of a city. Trees can increase property values by as much as 20%.



WILDLIFE HABITAT

Trees provide food and shelter for birds and other wildlife in our urban environment.



AESTHETICS

Trees beautify our urban environment by making our communities more livable and helping to restore our mental health and well-being.



IMPROVED AIR QUALITY

Trees act as filters by trapping dust and absorbing air pollutants, while releasing vital oxygen.



STORM WATER REDUCTION

Trees help reduce storm water runoff and soil erosion, while improving water quality.

WHAT TO PLANT

In creating a planting scheme, you must first determine the desired benefits and match the appropriate tree to the site condition. Each tree has specific needs that must be met in order for it to develop in a healthy and vigorous manner. Is the soil well drained or does it retain water? Is the soil acidic or alkaline? Is there direct sunlight available or mostly shade? Are there any overhead utilities or nearby structures to consider? These and other site factors must be considered when selecting a tree.

Once you have determined what species are appropriate, you must decide which of those you prefer. Do you want a shade or do you prefer fruit as well? Would you favor a flowering tree or one with attractive fall color? If you are planting near your home for energy savings, consider a deciduous tree. These trees provide shade in the summer while allowing the sun's warming rays to penetrate through bare branches during the winter.

Your list of candidate trees should be short now that you have identified your needs and wishes. What tree species are presently growing in your yard and neighborhood? Providing diversity in your landscape is a good way to minimize the potential impact of disease and insect damage. Tree diversity also benefits your landscape by providing a variety of aesthetics features and wildlife habitats. To assist you with your selection refer to the list of recommended trees for the Houston area.

WHERE TO PLANT A TREE

Space is a major factor when deciding where to plant a tree. Trees that are given ample space for growth to their mature size are healthier and require less maintenance. Common problems associated with improperly placed trees include power outages, buckled sidewalks and driveways, and obstructed views of traffic. Deciduous shade trees should be planted on the south and west sides of your house to provide cooling shade in the summer and allow the sun to warm your house in the winter.

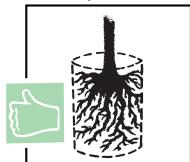
<u>Mature Tree Height</u>	<u>Minimum Distance from Structure</u>
Up to 30'	10' minimum distance from structure
30' to 50'	15' minimum distance from structure
50' plus feet	20' minimum distance from structure

Power outages can occur when branches come too close to utility power lines. Trees and power lines can coexist, and potential conflicts can be avoided by selecting and planting trees with size and growth characteristics appropriate to their location.

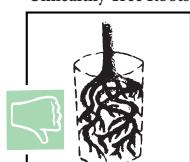
SELECTING YOUR TREE

When selecting trees at your nursery, remember, bigger is not always better. The largest trees in a group may have outgrown their containers. Generally, the smaller a tree is when planted, the healthier it will be as it develops and matures. Circling roots can girdle your tree causing stunted growth and poor anchoring. Trees should be free of insects, disease and physical damage. They should also have straight trunks and balanced branching. If a tree appears dormant, scratch a twig to be assured it is green and moist inside.

Healthy Tree Roots



Unhealthy Tree Roots



6 STEPS TO FOLLOW WHEN PLANTING A TREE

Follow these basic guidelines when planting a tree and don't hesitate to consult with a tree care professional.

WHEN TO PLANT A TREE

Generally, mid-November to late-February is the best time to plant trees in the Houston area. Planting in late fall or winter will allow roots to become established before moisture demanding summer sets in.

1. PLANTING A CONTAINER GROWN TREE

Do not remove tree from container until you're ready to place into planting hole. Fine roots dry out rapidly when exposed to air.

2. HOLE SIZE

Dig a hole 2 to 3 times wider than the root ball and slightly shallower. The trees should be planted slightly above the original soil level (this is especially important in heavy clay soils to aid in drainage.) When the hole is ready, gently remove tree while lightly pressing against sides of container. If necessary, cut container vertically to dislodge root ball.

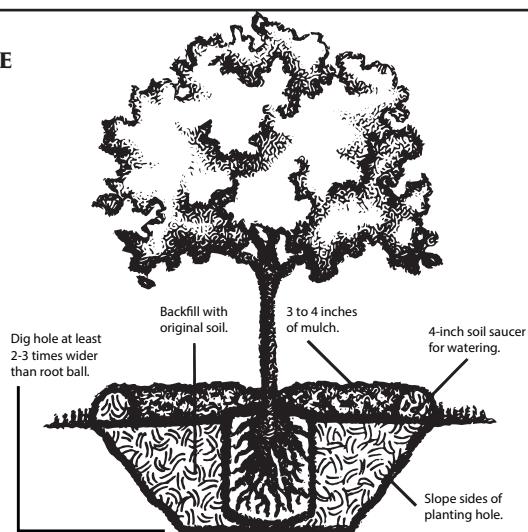
3. PLACING THE TREE IN THE HOLE

Set tree gently into hole, lifting by root ball. Tree should be centered and plumb. Cut any circling roots along the outer edge of root ball with pruning shears. Hold tree while backfilling around root ball and tamp soil lightly to eliminate air pockets. Large clods should be broken apart before backfilling.

4. MULCHING

Remove any grass or weeds within a 3' minimum diameter circle around the tree and create a watering saucer. Cover with 3-4" mulch composed of bark, wood chips, compost, pine needles, etc. Do not use fresh grass clippings.

PROPERLY PLANTED TREE



5. WATERING

Adequate water is essential at planting time. Place water hose at base of tree and allow water to slowly trickle until soil is saturated.

The following watering schedule may be utilized with adjustments made during the prolonged periods of rain or drought.

Initial watering after planting:

Root zones should be slow-soaked every seven days for four weeks.

November-February:

Root zones should be slow-soaked every three weeks.

October, March and April:

Root zones should be slow-soaked every two weeks.

May-September:

Root zones should be slow-soaked once a week.

6. CARE OF NEWLY PLANTED TREE

After watering, add mulch to compensate for any settling. If necessary, stake tree to keep upright. Prune dead, diseased and damaged branches. Research has proven that pruning the crown to "compensate for root loss" actually impedes root regeneration and slows establishment. Structural pruning should be delayed until the second year of growth.

TREE PLANTING TIPS

- Loosen the soil far beyond the drip line of tree.
- Brace the tree only if it will not remain upright in a moderate wind.
- Brace with broad, belt-like materials that won't injure the bark and remove after one growing season.
- Cover root ball with mulch, but keep trunk exposed.
- Keep soil moist, but not water-logged.
- Remove dead, diseased and damaged branches.
- Wait one year to begin structural pruning and fertilizing.

MISTAKES TO AVOID

- Do not plant too deep.
- Do not wrap trees.
- Do not amend the soil, unless the soil is very poor.
- Do not brace so tightly that the tree cannot sway.
- Do not leave supports on for more than one growing season.
- Do not disturb root ball.
- Do not remove branches to balance crown with roots.

SMALL TREES FOR THE HOUSTON AREA

(Recommended for planting near or under power lines)

Common Name Scientific Name	Benefits	Comments
Redbud <i>Ceris canadensis</i>	Spring flowers, fall color	Eastern redbud for average soil; Texas redbud for hotter, drier sites
Fringe tree <i>Chionanthus spp.</i>	Spring flowers	American species on moist, acid soils; Chinese species on drier sites
Texas persimmon <i>Diospyros texana</i>	Attractive bark, wildlife	Good small tree for hot/dry sites; males lack 1" black fruit
Mexican plum <i>Prunus mexicana</i>	Fragrant spring flowers, wildlife	Tolerates most sites; prefers good drainage
Hawthorn <i>Crataegus spp.</i>	Spring flowers, wildlife	Mayhaw & Parsley on moist, acid soils; Green, Littleship & Texas on drier sites
Crapemyrtle <i>Lagerstroemia spp.</i>	Summer flowers; fall color	Varieties & hybrids available in full range of size & color; prefers full sun
Southern waxmyrtle* <i>Myrica cerifera</i>	Good screen, wildlife	Evergreen; tolerates wet soils
Yaupon* <i>Ilex vomitoria</i>	Colorful fruit, wildlife	Evergreen; tolerates wide range of conditions; <i>I. decidua</i> is deciduous yaupon
Cherryl laurel* <i>Prunus caroliniana</i>	Good screen, wildlife	Evergreen; compact variety available

LARGE TREES FOR THE HOUSTON AREA

(Not recommended for planting near or under power lines)

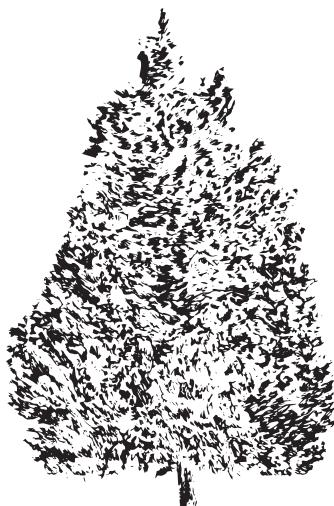
Common Name Scientific Name	Benefits	Comments
Red maple <i>Acer rubrum</i>	Spring & fall color	Rapid growth; Drummond is an excellent variety
River birch <i>Betula nigra</i>	Showy, salmon colored	Rapid growth; prefers moist soil bark; fall color
Pecan <i>Carya illinoensis</i>	Edible fruit; wildlife; long-lived	Texas state tree; native is best tree shade, while varieties produce larger pecans
Green ash <i>Fraxinus pennsylvanica</i>	Fall color	Tolerates a wide range of conditions; rapid growth
American holly* <i>Ilex opaca</i>	Females with red berries; wildlife	Evergreen; prefers moist, acidic soils; several varieties & hybrids available
Sweetgum <i>Liquidambar styraciflua</i>	Fall color	Rapid, upright growth; prefers moist soil
Loblolly pine* <i>Pinus taeda</i>	Wildlife	Evergreen; rapid, upright growth, prefers acidic soils
Live oak* <i>Quercus virginiana</i>	Wildlife; long-lived	Semi-evergreen; spreading branch habit; dense shade; drought tolerant

LARGE TREES FOR THE HOUSTON AREA, (cont.)

(Not recommended for planting near or under power lines)

Common Name Scientific Name	Benefits	Comments
Bur oak <i>Quercus macrocarpa</i>	Wildlife; long-lived	Drought tolerant; prefers well-drained soils; unusually large acorns
White oak <i>Quercus alba</i>	Fall color; wildlife; long-lived	Prefers well-drained soils
Shumard oak <i>Quercus shumardii</i>	Fall color; wildlife	Prefers acidic to mildly alkaline, well drained soils
Water oak <i>Quercus nigra</i>	Wildlife	Rapid growth; tolerates poor drainage
Overcup oak <i>Quercus lyrata</i>	Wildlife	Tolerates poor drainage
Baldcypress <i>Taxodium distichum</i>	Fall color; long-lived	Tolerates a wide range of conditions, including poor drainage
Cedar elm <i>Ulmus crassifolia</i>	Fall color	Tolerates a wide range of conditions; drought tolerant
American elm <i>Ulmus americana</i>	Fall color	Rapid growth; distinctive vase shape; tolerates a wide range of conditions
Black walnut <i>Juglans nigra</i>	Edible fruit; wildlife	Requires well-drained soils
Eastern redcedar* <i>Juniperus virginiana</i>	Good screen/windbreak; wildlife	Evergreen; drought tolerant
Southern magnolia* <i>Magnolia grandiflora</i>	Showy, fragrant flowers	Evergreen; dense shade; varieties available; avoid hot dry locations

* Denotes evergreen trees



WHEN TO PRUNE

After the first growing season, light pruning and removal of dead branches can be done at any time. Winter is the best time to prune. Prune spring flowering trees, like redbuds and fruit trees, after they bloom.

The best time to prune live oaks and red oaks is in late June through September and January through early February. Pruning these oaks during the rest of the year could make them more susceptible to the oak wilt disease.

Always use clean and sharp pruning equipment. Never use a ladder for pruning and never prune trees near a power line.

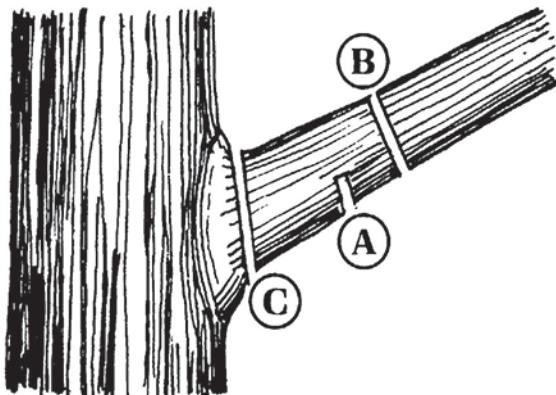
HOW TO PRUNE

Inspect the tree first and determine what need to be pruned. Some examples of limbs that should be removed include the following: crowded, rubbing and narrow branch angles, double leaders, root suckers and water sprouts.

When removing these branches, always prune back to the main trunk or the next largest branch being careful not to prune into the branch collar nor leave a pronounced stub. The branch collar is the swelled area near the base of the limb. Always make a clean cut to accelerate wound closure. Wound dressings do not prevent rot. Lopping shears should be used on branches smaller than $\frac{3}{4}$ " in diameter.

To avoid peeling bark, remove larger branches with a saw utilizing the 3 cut method. Incorrect pruning methods can cause costly problems. Discuss the maintenance of your trees with an arborist. When hiring a tree care company, seek out professionals who can provide references and proof of insurance.

THREE-CUT METHOD



(A)

Undercut 12"-24" up from the branch collar (this stops the bark from peeling).

(B)

Make the second cut from the top all the way through the branch, 2" to 3" above cut 1.

(C)

The final cut should be just beyond the branch collar. Support the stub so it does not tear the bark.

OAK WILT DISEASE

Oak wilt disease, common in the Texas Hill Country, affects a variety of oak trees. This disease is caused by a fungus, Ceratocystis fagacearum, that clogs the water conducting vessels of infected trees, causing them to wilt and die within a few weeks or months.

The fungus spreads from infected to healthy trees in two ways:

First, log range transmission is accomplished with the help of a small insect. Sap feeding beetles called nitidulids, can carry fungal spores from infected oaks to healthy oaks, inoculating them with the fungus when feeding on sap from fresh wounds. Although these beetles generally fly short distances, greater distances are covered when beetles and spores hitchhike on unseasoned firewood.

The second path of transmission is from tree to tree through root grafts. This is possible because similar species of oak growing close together often form interconnecting root systems. These grafted roots allow the fungus to move from an infected tree to a healthy tree.

PREVENTATIVE MEASURES TO SAFEGUARD AGAINST OAK WILT DISEASE

In the Houston area, emphasis should be placed on disease prevention. An obvious source of both the fungal spores and the beetles is firewood cut from infected red oaks. Firewood cut from infected live oak trees, while not harboring the spores that are produced on infected red oaks, can still transport contaminated beetles. For these reasons, it is best to avoid unseasoned firewood cut from known oak wilt centers. Well-seasoned firewood, exhibiting loose bark and checked wood, would have become inhospitable to the oak wilt fungus during the previous hot, dry summer. If the firewood has a tight bark and the place of origin is unknown, it is best to cover the wood pile with clear plastic, making sure the edges are tucked into the soil to prevent insect spread.

Preventative measure commonly used in areas affected by oak wilt include minimizing the pruning of live and red oaks between February 1 and June 1 (times when beetle activity and fungal spores are most prevalent) and applying pruning paint immediately on fresh wounds.

Planting a diversity of tree species is another way to safeguard against oak wilt disease. To protect oaks from becoming vulnerable to insect and disease attack, no single species should compose greater than 10 percent of the total tree population in a given area. When planting oak trees in areas already populated with red and live oaks, special consideration should be given to oak wilt resistant species such as bur, overcup, swamp chestnut and white.

Although oak wilt is presently not a problem in the Houston area, outbreaks are possible. Any multiple oak tree loss that cannot be explained by a known cause should be inspected by a county extension agent, Texas Forest Service forester, or trained arborist.

For more information on oak wilt disease contact the Texas Forest Service at 713-688-8931 or visit the Texas Oak Wilt web site at <http://texasoakwilt.org>.

THE HOUSTON AREA URBAN FORESTRY COUNCIL

The Houston Area Urban Forestry Council (HAUFC) was formed in 1986 with the mission of providing a forum where the different interests involved in urban forestry could come together to develop programs for an enhanced urban forest in the greater Houston area.

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