

From Seed to Shade



A TREE CARE GUIDE *from* TNMP



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Contents

Trees are Resources	1
Trees are resources integral to our quality of life	
Community partner	
Benefits of Trees	2
Selecting the Right Tree	3
Plan before you plant	
Trees to avoid planting in Texas	5
Tree Selection Guide	6
Find your zone	11
Tree Care Basics	12
How to plant a new tree	
How to Prune a Tree	14
How to properly prune	
Pruning Don'ts	15
Tips from the experts	
How to find a Professional Arborist	16
Learn More About Trees	17
Where to find more information	

Stately pine trees. Brilliantly colored cottonwoods. Quaking aspen. An orchard of apple trees. Every tree starts with a seed and grows into a living treasure that provides beauty, sustenance and shade for generations.



THE BEST TIME TO PLANT A TREE WAS TWENTY YEARS AGO.
THE SECOND BEST TIME IS TODAY. *Chinese Proverb*

Trees are Resources

Trees are resources integral to our quality of life. But they can interfere with another important resource we all depend on – electricity. During wind, rain, ice and thunder storms, tree limbs can fall on power lines and cause outages. And when trees and power lines connect, there are serious safety risks:

- Branches can fall during storms causing high voltage lines to fall to the ground creating an electrocution hazard to anyone in the area.
- Trees that grow near power lines also make it all too easy for a child climbing the tree to come in contact with power lines.
- Roots also crack sidewalks, clog sewer lines and septic tanks.

At TNMP, we strive to balance our commitment to environmental stewardship, with our responsibility to provide a safe, reliable source of power for our customers around Texas.

You can help by making sure any new trees that you plant won't interfere with any power lines or utilities on your property. We've created this guide to help you plan and plant trees that will be beautiful, healthy and safe from seed to shade.

Benefits of Trees

It's impossible to measure the value of trees because they have so many benefits. They add beauty to the landscape, offer abundant harvests and provide habitats for wildlife. And that's just the beginning. Trees also:

- Reduce pollution by trapping particles and gases that pollute the air.
- Absorb carbon dioxide and give off oxygen, diminishing the negative effects of burning fossil fuels.
- Improve water quality because their roots keep soil in place, which reduces water runoff and soil erosion.
- Lower energy bills by shading homes in the summer and blocking cold winter winds.
- Act as natural sound barriers.
- Increase property values by adding aesthetically to homes.
- Provide privacy.
- Screen unattractive views.

IF YOU WOULD LIKE MORE INFORMATION ABOUT TNMP, *visit our web site at TNMP.com*

Selecting the Right Tree

When you plant a tree, you make an investment in our environment and our community. Take the time to plan before you plant and your investment may last for generations, paying dividends for years to come.

Plan Before You Plant, Plan Ahead

If you want to plant a new tree, consider these things first:

Purpose – Why are you planting a tree? Whether your goal is shade, privacy or just to beautify your home, make sure the tree you choose matches the purpose you have in mind.

Location – When you're selecting a site for your tree, look up, down and around to ensure that as your tree matures it won't interfere with its surroundings.

- *Look up* – If trees grow near or around power lines they can disrupt the power supply and pose a safety hazard. Trees at maturity must be a minimum of 15 feet away from power lines. The 10 foot tall tree that was purchased at the nursery today may grow five to ten times that size at maturity. Plan ahead and select the right tree for the right location.
- *Look down* – Tree roots can interfere with underground utilities that may be less than three feet below the surface. Do not plant a tree within 10 feet of underground utilities. Before you dig a hole for a tree – or for any reason – call TNMP and we will come to your home within two days to mark utility locations for free. "Dig Tess" at 1-800-DIG-TESS, or 1-800-344-8377.
- *Look around* – As your tree grows, its branches can grow against the walls of your home, block street signs or visibility for drivers. And, if you have any utility transformer boxes on your property, keep trees and shrubs at least 10 feet away from the transformers so that utility workers can access them. Roots can damage walls, sidewalks, driveways etc.



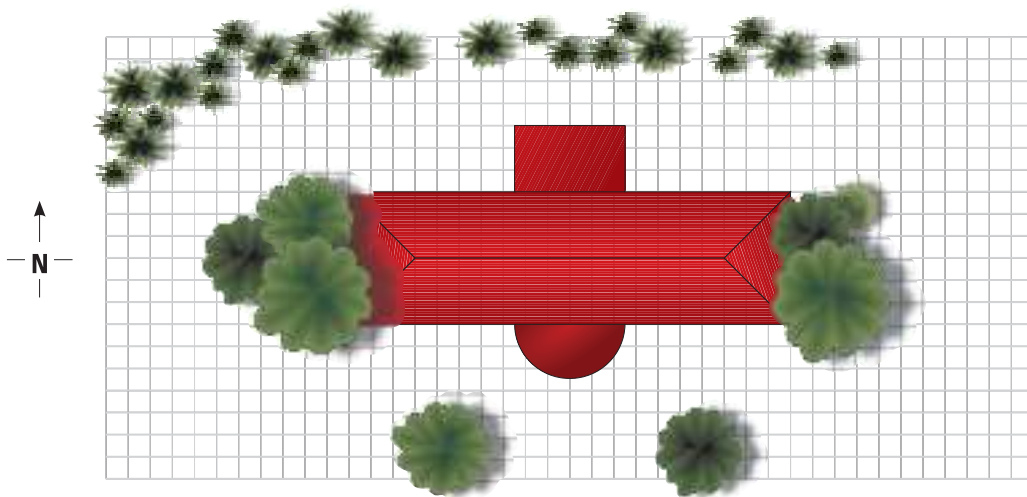
IF I KNEW I SHOULD DIE TOMORROW, I WOULD
PLANT A TREE TODAY. *Stephen Girard*

Characteristics – Trees come in all shapes and sizes. Some flower, others produce fruit. Some need shade, others require sun. Some grow thin and tall, others branch out. The tree you choose should match your expectations and work within your landscape. See tree selection guide for more information.

Water Use – Water use is a big concern in Texas. Get the best results and be environmentally responsible, choose a low-water use tree that is drought tolerant. Select a tree that is adapted to the site and the water availability.

Climate Tolerance – Consider Texas’ four seasons, drought conditions, and abundant sunshine when you select a tree.

Insects and Disease – Make sure your new tree is resistant to disease and insect infestation. Select a tree that doesn’t have chronic insect problems.



Energy Conservation – You can lower your heating and cooling bills by strategically planting trees around your home:

- Rows of shrubs and evergreens make effective windbreaks. Reduce wind currents by planting low trees and shrubs close to your home.
- Plant deciduous trees – those that drop their leaves in the fall – on the south and west sides of your home for summer shade. When they lose their leaves, they allow solar heating in winter.

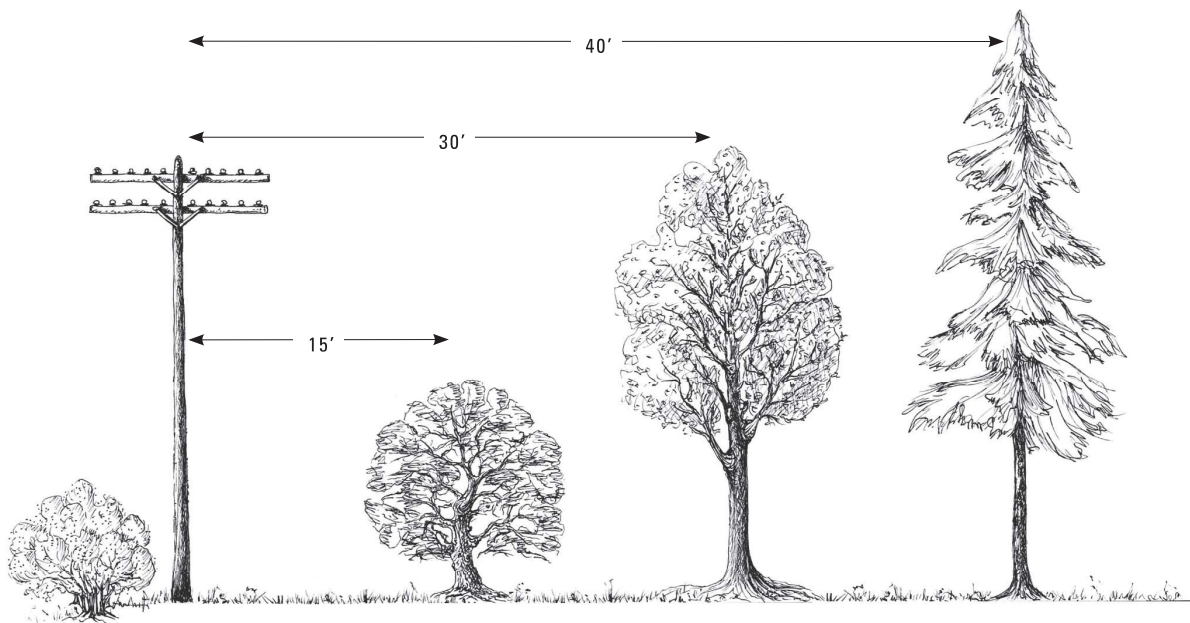
DECIDUOUS *vs.* EVERGREEN

DECIDUOUS TREES PROVIDE SHADE IN THE SUMMER. THEY DROP THEIR LEAVES IN THE FALL AND WINTER AND ALLOW FOR SOLAR HEATING. EVERGREENS KEEP THEIR NEEDLES ALL YEAR LONG. THEY MAKE EXCELLENT WINDBREAKS.

Trees to Avoid Planting in Texas

Professional arborists do not recommend planting the following trees in Texas. They have negative characteristics including excessive water usage, weak structures and disease susceptibility.

TREE SELECTION	CHARACTERISTICS
<i>Ailanthus</i>	prolific seed and root sprouts which take over landscape
<i>Arizona or Texas ash</i>	weak-wooded, insect and disease problems
<i>Birch</i>	weak structure, insect and disease problems
<i>Black locust</i>	prolific root sprouts
<i>Boxelder</i>	weak structure, insect problems
<i>Bradford pear</i>	weak structure, prone to storm damage
<i>Chinese tallow</i>	weak-wooded, insect and disease problems, short-lived
<i>Hackberry</i>	weak-wooded, short-lived
<i>Mimosa</i>	weak-wooded, short-lived
<i>All poplars</i>	weak structure, short-lived, susceptible to storm and ice damage, attracts borers
<i>Russian olive</i>	fast grower that uses lots of water, short-lived, disease problems
<i>Salt cedar</i>	fast grower that chokes out waterways and desirable vegetation



Tree Height Guide

The larger the tree, the farther it should be from a power line. As a rule of thumb, small variety trees – those under 25 feet high at maturity – should be 15 feet from power lines. Medium variety trees must be at least 30 feet away and large trees should be 40 feet from power lines.

Tree Selection Guide

The following page lists trees that are ideal for planting in Texas.

TREE SELECTION	HARDINESS ZONE	MATURITY SIZE	WATER USAGE
<i>Afghan pine – Pinus eldarica</i> Pyramidal – 3 inch ovate to oblong reddish cone	6 to 9	30 – 50'	High
<i>American elm – Ulmus americana</i> Vase shaped – cultivar-Valley Forge	2 to 9	60 – 90'	Med
<i>American plum – Prunus americana</i> shrub or small tree – white flowers with 5 petals and yellow anthers	5 to 9	12 – 20'	Med
<i>Apples and crabapples – Malus spp.</i> Oval – white to pinkish flowers, fruit tree, many varieties	3 to 8	10 to 20'	Med-High
<i>Arizona cypress – Cupressus arizonica</i> Pyramidal – aromatic, evergreen foliage	7 to 9	40 – 50'	Low
<i>Atlas cedar – Cedrus atlantica</i> Irregular, wide pyramidal – open growth	7 to 10	50'	Med
<i>Austrian pine – Pinus nigra</i> Open spreading at maturity – cones	4 to 7	60'	Low
<i>Black walnut – Juglans nigra</i> Rounded – nut covered with green flesh	4 to 9	50 – 75'	Med-High
<i>Bur oak – Quercus macrocarpa</i> Pyramidal – acorn producing tree	3 to 8	50 – 80'	Med
<i>Carolina buckthorn – Rhamnus caroliniana</i> Spreading – grows in almost any soil	6 to 9	10 – 30'	Low-Med
<i>Catalpa – Catalpa bignonioides</i> Rounded – showy white flowers, cigar-like pods	6 to 10	30 – 40'	Med
<i>Cedar elm – Ulmus crassifolia</i> Upright – drought tolerant, yellow-gold fall foliage	6 to 9	80'	Med
<i>Chinese pistache – Pistacia chinensis</i> Oval – green flowers, good xeriscape plants	6 to 9	25 – 35'	Low
<i>Chinquapin – Castanea pumila</i> Multi-stemmed tree or shrub – fruits are tiny round burs	5 to 9	30'	Med

TREE SELECTION	HARDINESS ZONE	MATURITY SIZE	WATER USAGE
<i>Chinquapin oak – Quercus muhlenbergii</i> Rounded – needs lots of space	5 to 9	40 – 60'	Med
<i>Chitalpa – Chitalpa taschkentensis</i> Open, upright – white to lavender flowers	8 to 11	30'	Low-Med
<i>Deodar cedar – Cedrus deodar</i> Pyramidal – fast grower	7 to 10	50'	Med
<i>Desert willow – Chilopsis linearis</i> Upright shrub – orchid-like fragrant flowers	7 to 10	20'	Low
<i>Dwarf crape myrtle – Lagerstroemia indica</i> Rounded – lacey multicolored summer flowers	7 to 10	5 – 8'	Low-Med
<i>Eastern cottonwood – Populus deltoides</i> Rounded – male has red catkins, female has green flowers	2 to 9	75 – 100'	Med-High
<i>Eastern redcedar – Juniperus virginiana</i> Upright, pyramidal – drought tolerant, attracts birds	2 to 9	30 – 40'	Low
<i>Eastern redbud – Cercis canadensis</i> Upright, vase – violet spring flowers	4 to 9	25'	Low-Med
<i>Fringetree – Chionanthus virginicus</i> Narrow, oblong crown – needs acidic to neutral soils	6 to 9	15 – 30'	Med
<i>Gambel oak – Quercus gambelii</i> Oval – yellow flowers, good fall colors	4 to 8	15 – 20'	Low
<i>Ginko (male) – Ginko biloba</i> Upright – good fall color	3 to 8	70'	Low-Med
<i>Goldenrain tree – Koelreuteria paniculata</i> Open – yellow flowers, good street tree	5 to 9	30 – 40'	Low
<i>Hawthorn – Crataegus spp.</i> Pyramidal to spreading – showy flowers	4 to 8	25'	Low-Med
<i>Honeylocust – Gleditsia triacanthos</i> Upright, vase – good in water-collection areas	4 to 9	50'	Low-Med

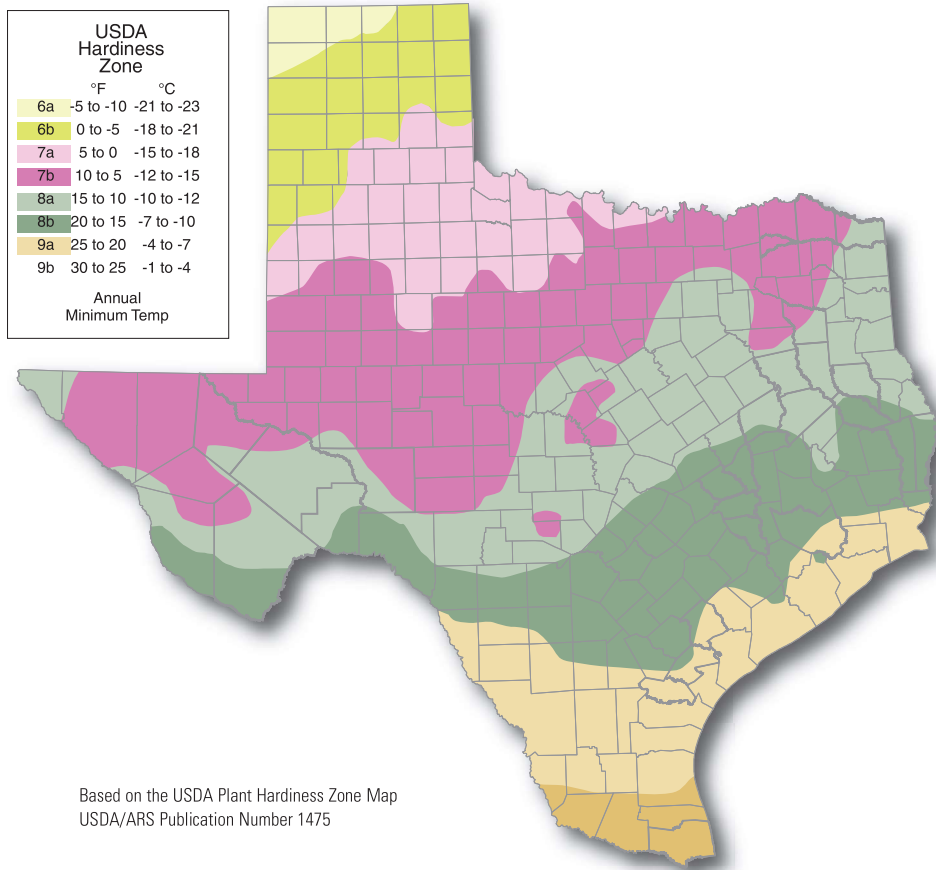
TREE SELECTION	HARDINESS ZONE	MATURITY SIZE	WATER USAGE
<i>Horsechestnut – Aesculus hippocastanum</i> Round – cream colored flowers	4 to 7	50'	High
<i>Incense cedar – Calocedrus decurrens</i> Broadly conical – evergreen, heat and drought tolerant	5 to 8	30 – 70'	Low-Med
<i>Japanese black pine – Pinus thunbergiana</i> Irregular – 2 to 3 inch brown cone	5 to 8	30 – 50'	Med
<i>Japanese maple – Acer palmatum</i> Rounded – good fall color	5 to 8	15 – 25'	Med
<i>Japanese pagoda – Sophora japonica</i> Rounded – pea-shaped white flowers	4 to 8	25'	Low
<i>Jujube – Ziziphus jujube</i> Drooping – red fruit	6 to 9	20'	Low
<i>Kentucky coffee tree – Gymnocladus dioica</i> Oval, rounded – purplish flowers	3 to 8	50'	Low
<i>Lacebark elm – Ulmus parviflora</i> Rounded – good street tree, durable, good fall color	4 to 9	40 – 50'	Med
<i>Littleleaf linden – Tilia cordata</i> Oval – flowering	3 to 7	60'	Med
<i>Live oak – Quercus virginiana</i> Rounded – acorn producing tree	7 to 10	40 – 80'	Med
<i>London planetree – Platanus x acerifolia</i> Pyramidal – deep red flower, good street tree	5 to 9	75 – 100'	Med
<i>Loquat – Eriobotrya japonica</i> Rounded – large leathery green leaves	7 to 10	10 – 20'	Med
<i>Magnolia – Magnolia spp.</i> Pyramidal, rounded, or oval – various flowers depending on species	3 to 10	15 – 80'	Low-Med
<i>Mexican buckeye – Ungnadia speciosa</i> Irregular – drought tolerant, fragrant pink-purple spring flowers	8 to 10	10 – 20'	Low-Med

TREE SELECTION	HARDINESS ZONE	MATURITY SIZE	WATER USAGE
<i>Mexican elder – Sambucus mexicana</i> Round – showy white flowers	7 to 10	15 – 25'	Med
<i>Mexican plum – Prunus mexicana</i> Rounded – fragrant white flowers	6 to 9	15 – 25'	Low-Med
<i>Newport plum – Prunus cerasifera “Newport”</i> Rounded – pink and white flowers	4 to 9	15 – 25'	Med
<i>Peach – Prunus persica</i> Rounded – various flowers and fruit depending on variety	5 to 8	15 – 25'	Med
<i>Pecan – Carya illinoensis</i> Upright, rounded – nut drop tree	5 to 9	70'	Med
<i>Pink flowering locust – Robinia x ambigua</i> Oval – fragrant pink flowers	4 to 8	25 – 40'	Low
<i>Piñon pine – Pinus edulis</i> Irregular – ovoid 2 inch cone	6 to 8	10 – 20'	Low
<i>Plains cottonwood – Populus sargentii</i> Rounded – catkins with cottony seeds	2 to 7	40 – 80'	Low-Med
<i>Possumhaw holly – Ilex decidua</i> Spreading – grows well in most soils, red berries in winter	6 to 9	15 – 20'	Med
<i>Purple-leaf plum – Prunus cerasifera</i> Rounded – small white flowers, purplish red leaves	5 to 8	15 – 20'	Low
<i>River birch – Betula nigra</i> Multi-stemmed, upright – popular landscape tree	4 to 9	40'	High
<i>Roughleaf dogwood – Cornus drummondii</i> Rounded – white spring flowers, drought tolerant	5 to 9	15 – 30'	Med
<i>Rusty blackhaw – Viburnum rufidulum</i> Vase shaped – white spring flowers, blue-black berries in late summer	5 to 9	20'	Low
<i>Saucer magnolia – Magnolia x soulangiana</i> Spreading – large white, pink, purple spring flowers	8 to 9	20 – 25'	Med

TREE SELECTION	HARDINESS ZONE	MATURITY SIZE	WATER USAGE
<i>Scotch pine – Pinus sylvestris</i> Irregular at maturity – small cones	3 to 7	50'	Low
<i>Shumard oak – Quercus shumardii</i> Broad open crown – fast growing, drought tolerant	7 to 10	75'	Low-Med
<i>Silver maple – Acer saccharinum</i> Oval – yellow-red fall foliage, prefers acidic soils	4 to 8	60 – 80'	Med-High
<i>Sumac – Rhus spp.</i> Rounded – white to greenish summer flowers	4 to 10	10 – 20'	Low
<i>Texas live oak – Quercus fusiformis</i> Spreading – evergreen leaves, drought tolerant	7 to 10	20 – 50'	Low
<i>Texas madrone – Arbutus texana</i> Rounded – thin white flaky bark, white-pink flowers	7 to 10	20 – 30'	Low
<i>Texas mountain laurel – Sophora secundiflora</i> Narrow crown – fragrant purple flowers in spring	8 to 9	5 – 20'	Low-Med
<i>Texas red oak – Quercus buckleyi</i> Rounded – good fall color	5 to 9	30'	Low
<i>Umbrella catalpa – Catalpa bungei</i> Round – pink to white flowers	4 to 8	50'	Low
<i>Wax myrtle – Myrica spp.</i> Narrow, rounded – drought tolerant, grows well in most soils	7 to 10	5 – 20'	Low
<i>Weeping willow – Salix babylonica</i> Irregular – fast growing, brittle wood	4 to 9	50'	High
<i>Western catalpa – Catalpa speciosa</i> Upright – white clustered flowers	4 to 8	50'	Low
<i>White mulberry – Morus alba</i> Rounded – fruit attracts birds, fast growing, can be invasive	5 to 9	30'	Med-High
<i>Yaupon holly – Ilex vomitoria</i> Rounded – evergreen, white flowers with red berries	7 to 9	10 – 20'	Low-Med

Find your zone.

USDA hardiness zones and average annual minimum temperature range for Texas.



Tree Care Basics

With proper planting and some regular maintenance, your tree should thrive. These guidelines will give you a good start. Since every tree is different, you should learn about your tree's specific needs.

How To Plant A New Tree

Step 1 Plan ahead — select the best type of tree for the site.

Step 2 Look up, look down and look around to confirm that the location you've chosen will work for the mature size of the tree.

Step 3 **Call "Dig Tess"** TNMP will come out to your home and locate all of your underground utilities. Call 1-800-DIG-TESS or 1-800-344-8377.

Step 4 Locate the tree's root collar – the flare right above the root system. The tree should be planted so that the root collar is at the same level or slightly above the soil surface.

Step 5 Mark out a planting area two to three times the diameter of the root ball.

Step 6 Based on the planting area, dig a saucer-shaped hole two to three times the diameter of the root ball and deep enough for the root collar to sit just above the soil surface. Don't dig too deep. The ground can settle, so it's better to have the root collar a bit higher than ground level.

Step 7 Carefully place the tree in the center of the hole.

Step 8 If the root ball or trunk is wrapped in burlap, remove any fabric, wire or twine used to secure the root ball. If the tree is containerized, carefully remove the container or cut it away from the root ball, and gently spread the roots that may be curled on the sides or at the bottom of the container. Roots growing in a circle will continue to grow that way and may cause the tree to fail and die.

Step 9 Once you've positioned and straightened the tree, back fill the hole with the original soil. If soil contains clay or other undesirable material ask local nursery or Cooperative Extension Service for recommendations of soil amendments. Generally speaking, the native soil should be used to backfill the hole. As the soil is added, lightly push it around the roots or water the soil to eliminate air pockets. Back fill the hole so the soil height is just below the root collar.

Step 10 Add a layer of mulch over the planting area to help retain water. Form a berm around the outside perimeter of the planting area to trap water. Keep the mulch 2-4" away from the trunk of the tree to stop fungus from growing on the trunk.

Step 11 **Water is the key to survival for a newly planted tree.** A good rule of thumb is to water your new tree once a week for a full year. Water for about an hour with a slow, root-saturating trickle. If it rains or is very hot and dry, adjust the watering schedule accordingly.

Soil Amendments

As you're preparing your planting area, you may need to add amendments to enrich the soil. Ask your local nursery or Cooperative Extension Service for advice based on your soil type and the tree you're planting. Adding fertilizer isn't generally recommended as it can burn the roots of a new tree.

Staking

New trees don't usually need to be staked. If your tree is unstable or leans, stake it with soft materials such as elastic ribbon or plastic ties. Do not use plain wires. Allow for movement in the tree. Remove the stakes once the tree is established, generally after the first growing season.

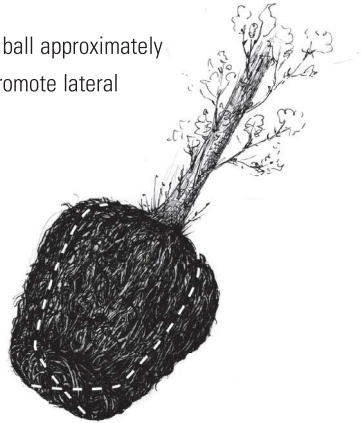
Proper Pruning

First and foremost, plan ahead and have a reason to prune your tree. Correct pruning techniques help trees develop strong structures and defend against insects and disease. When you plant a new tree, be sure to prune off any broken or dead branches and branches that are rubbing together. Allow the tree to become established before doing any additional pruning.

Some young trees may also have low hanging branches that get in the way of people and vehicles. In these cases, you can remove some of the lower branches. Also, remove any secondary "leaders." Remember, when proper pruning techniques are used the tree may be pruned at any time during the year however the best time to prune a tree is in the winter or early spring.

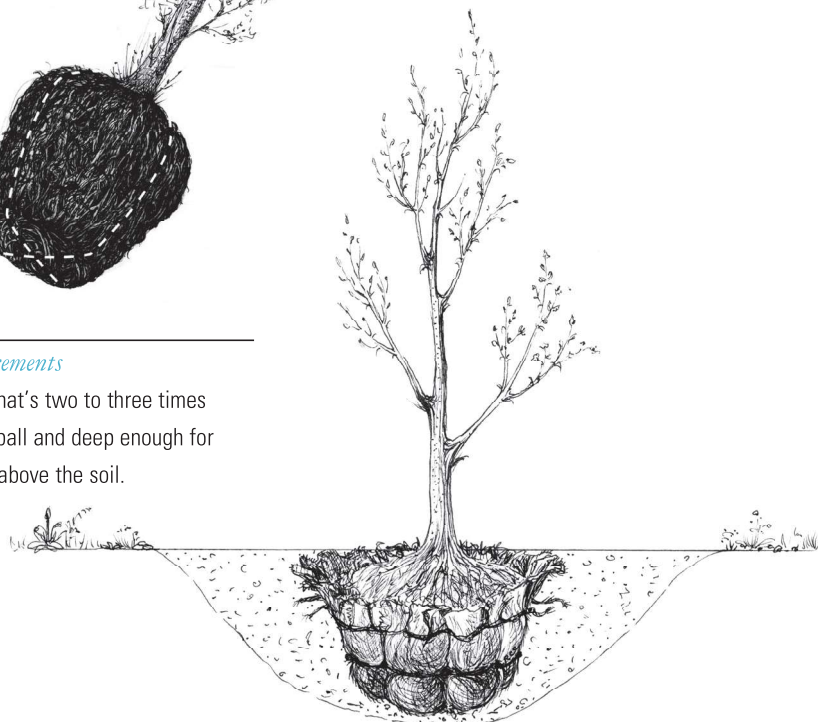
Bound Root Ball

Make cuts to the root ball approximately 1" to 1 1/2" deep to promote lateral root growth.



Planting Hole Requirements

Dig a hole for your tree that's two to three times the diameter of the root ball and deep enough for the root collar to sit just above the soil.



How to Prune a Tree

Step 1 Plan ahead and determine the reason for pruning.

Step 2 Make sure that the tree and your equipment are well away from any power lines. If the tree is growing near a power line, hire a professional arborist. For more information, go to TNMP.com/tree-trimming.

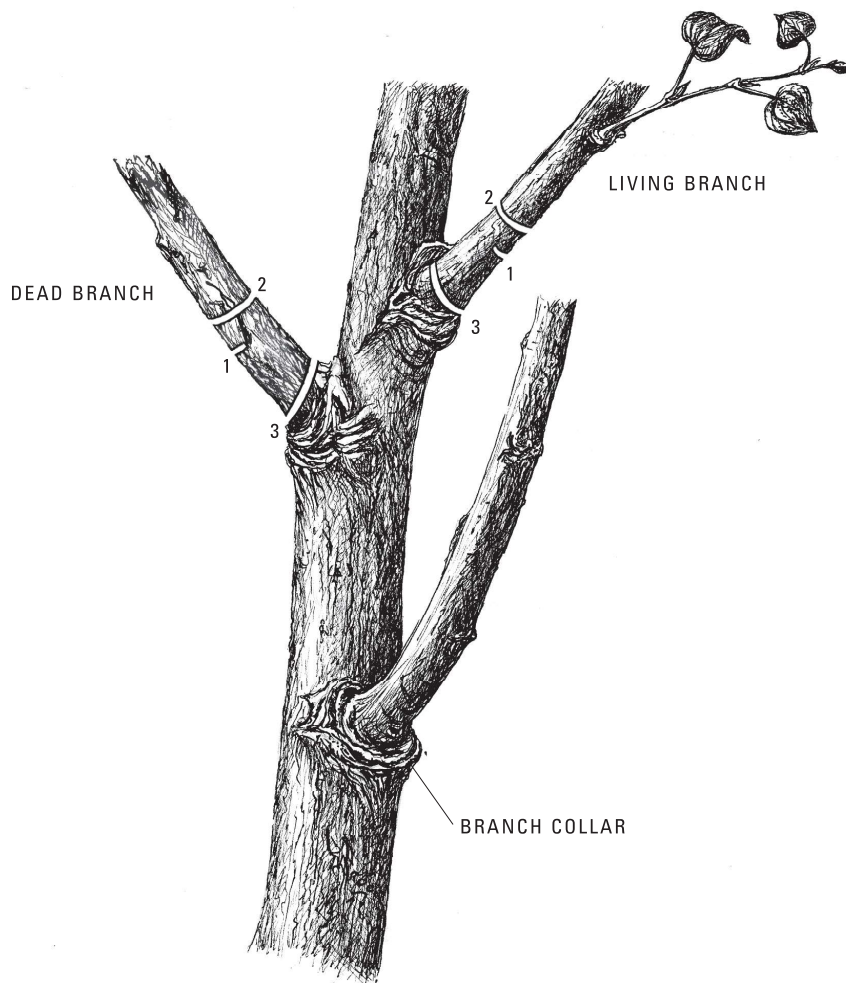
Step 3 Use a clean, sharp pruning saw.

Step 4 Find the branch collar. This is the swollen area at the base of every branch fork.

Step 5 Make an undercut at point #1 in the branch to be removed.

Step 6 Make a through cut at point #2 – the undercut made in step 5 prevents the bark from tearing back towards the trunk.

Step 7 Make the final cut at point #3, just outside the branch collar.



Pruning Don'ts

- Don't "hatrack" or "top" a tree to reduce its size. This common, and harmful, practice stresses the tree, causes weak growth, and makes the tree more vulnerable to disease and insect-infestation.
- Don't cut into the branch collar – the swollen area at the base of every branch fork. If you cut or remove the branch collar, the tree may not cover the wound.
- Don't just cut off the tips of the branch. Make proper collar cuts where two branches come together. See previous page for how to make proper collar cuts.
- Wound dressings or pruning paints are usually not necessary and can actually damage the tree by slowing the closing and sealing of the wounds.

YOU CAN'T TELL BY JUST LOOKING. *Statewide* 1-888-866-7456

IT IS IMPOSSIBLE TO TELL IF A POWER LINE IS ENERGIZED JUST BY LOOKING AT IT, SO NEVER TOUCH A POWER LINE. IF YOU SEE A DOWNED POWER LINE, KEEP YOUR DISTANCE AND CALL TNMP RIGHT AWAY.

How to Find a Professional Arborist

An arborist is a tree care specialist. Hiring an arborist to help maintain your trees is an investment that can result in attractive, healthy trees. How do you choose an arborist?

- Ask friends and neighbors for recommendations
- Call tree trimming companies and learn about their pruning and maintenance techniques.
- Check to see if an individual is an ISA Certified Arborist (the ISA does not “certify” companies only individuals).
- Ask companies for local references.
- Request proof of insurance from any company you hire.
- Get a contract stating the project scope and the price.
- Never attempt to trim trees near power lines.
- For more information, go to TNMP.com/tree-trimming.

The International Society of Arboriculture (ISA)

also has a list of Certified Arborists on its

web site at www.treesaregood.com



A SEED HIDDEN IN THE HEART OF AN APPLE
IS AN ORCHARD INVISIBLE. *Welsh Proverb*

Learn More About Trees

TNMP.com

For more information on selecting, planting and caring for trees you can also visit us online.

www.txforestservation.tamu.edu –

The Texas Forest Service Web site provides access to information on topics such as shade tree planting, conservation education, urban forestry, forest management, and much more.

www.arborday.org – *The National Arbor Day Foundation*

Entirely dedicated to the planting, nurturing and celebration of trees, this site has everything from tree facts and Arbor Day information to free tree programs and a gift store.

www.puc.state.tx.us/ocp/electric/elecfacts/trees.pdf

All about trees and power lines. A publication of the Public Utility Commission of Texas.

www.tvma.net/home.htm

The Texas Vegetation Management Association promotes professional development, training and more for its members and the public.

Notes



FOR MORE INFORMATION, CALL *Statewide* 1-888-866-7456



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Use this free resource guide from TNMP to help select, plant and maintain
the right tree for your home. FOR MORE INFORMATION, CALL *Statewide* 1-888-866-7456

