

# From Seed to Shade

A TREE CARE GUIDE *from PNM*



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*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 PNM, we strive to balance our commitment to environmental stewardship, with our responsibility to provide a safe, reliable source of power for our customers around New Mexico.

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, *visit our web site at [PNM.com](http://PNM.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 PNM and we will come to your home within two days to mark utility locations for free. "Call Before You Dig" at 811 statewide.

- *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.



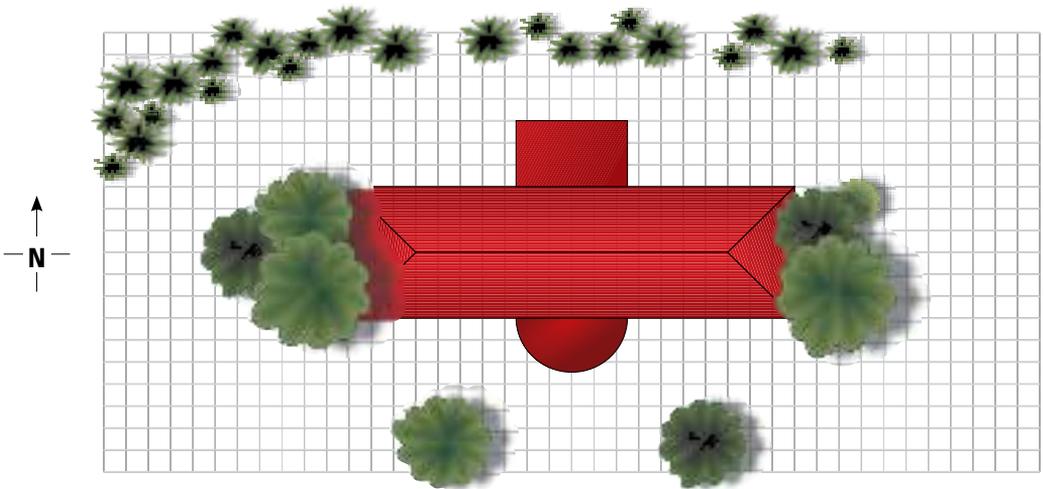
IF I KNEW I SHOULD DIE TOMORROW, I WOULD  
PLANT A TREE TODAY. *Stephen Girard*

**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 New Mexico. 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 New Mexico’s 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.

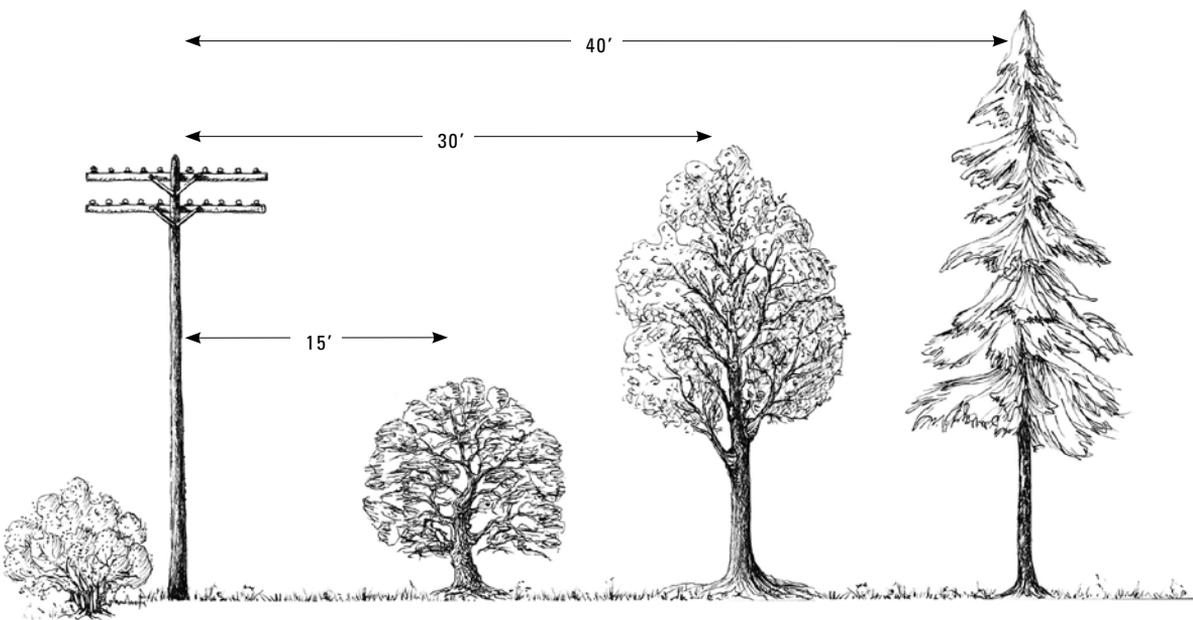
## DECIDUOUS *vs.* EVERGREEN

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 New Mexico

Professional arborists do not recommend planting the following trees in New Mexico. 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>Basswood</i>	weak structure
<i>Birch</i>	weak structure and insect and disease problems
<i>Black Locust</i>	prolific root sprouts
<i>Boxelder</i>	weak structure and insect problems
<i>Bradford Pear</i>	weak structure, prone to storm damage
<i>Hackberry</i>	weak-wooded, short-lived
<i>Mimosa</i>	weak-wooded, short-lived
<i>All Poplars</i>	weak structure and 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
<i>Silver Maple</i>	does poorly in alkaline soil, weak structure and shallow roots



### 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 New Mexico.

TREE SELECTION	ZONE	MATURITY SIZE	WATER
<i>Afgban Pine — Pinus eldarica</i> pyramidal — 3 inch ovate to oblong reddish cone	6 to 9	30 - 50'	High
<i>American Elm*</i> — <i>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>Amur Maple — Acer ginnala</i> multi-stemmed, rounded — yellow white flowers, fragrant	3 to 8	to 20'	Med
<i>Apples and Crabapples — Malus spp.</i> oval — white to pinkish flowers, fruit tree, many varieties	4 to 8	10 - 25'	Med-High
<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>Balm of Gilead — Populus candicans</i> conical — green female catkins, has medicinal value	3 to 10	40 - 60'	Low-Med
<i>Bigtooth Maple — Acer granidentatum</i> round — yellow flowers	5 to 8	20 - 45'	Med
<i>Black Walnut — Juglans nigra</i> rounded — nut covered with green flesh	4 to 9	50 - 75'	Med-High
<i>Blue Spruce — Picea pungens</i> pyramidal — 2 to 4 inch cones	2 to 7a	30 - 90'	High
<i>Bristlecone Pine — Pinus aristata</i> irregular — 5 to 6 inch cones	4 to 7	20 - 40'	Low
<i>Bur Oak — Quercus macrocarpa</i> pyramidal — acorn producing tree	3 to 8	50 - 80'	Med
<i>California Buckeye — Aesculus californica</i> vase — white clustered flowers	6 to 8	30'	Med

\*Note: Elms and Junipers (male) cannot be planted in Albuquerque, NM due to pollen ordinance.

TREE SELECTION	ZONE	MATURITY SIZE	WATER
<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
<i>Chinquapin Oak — Quercus muhlenbergii</i> rounded — needs lots of space	5 to 9	40 - 60'	Med
<i>Chitalpa — Chitalpa tashkentensis</i> open, upright — white to lavender flowers	8 to 11	to 30'	Low-Med
<i>Chokeberry (Canada Red Cherry) — Prunus virginiana</i> rounded — white flowers; dark red to purple fruit	2 to 6	20 - 30'	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>Douglas-fir — Pseudotsuga menziesii</i> pyramidal — forked cones	4 to 8	70 - 250'	High
<i>Eastern Red Cedar* — 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>Engelmann Spruce — Picea engelmannii</i> pyramidal — ovoid 1 to 3 inches	3 to 4	80 - 100'	Med
<i>English Walnut — Juglans regia</i> rounded — nut bearing landscape tree	5 to 9	40 - 60'	Low
<i>Fremont Cottonwood — Populus fremontii</i> rounded — male has yellow to red catkins; female has green flowers	5 to 9	40 - 80'	Low-Med
<i>Gambel Oak — Quercus gambelii</i> oval — yellow flowers, good fall color	4 to 8	15 - 20'	Low

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TREE SELECTION	ZONE	MATURITY SIZE	WATER
<i>Ginkgo (male) — Ginkgo biloba</i> upright — good fall color	3 to 8	70'	Low-Med
<i>Globe Willow — Salix matsudana</i> rounded — cluster of small fuzzy seeds	5 to 8	50'	Med-High
<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
<i>Horsechestnut — Aesculus hippocastanum</i> round — cream colored flowers	4 to 7	50'	High
<i>Italian Stone Pine — Pinus pinea</i> rounded — ovoid 3 to 6 inch cone	8 to 9	20 - 50'	Low
<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 jujuba</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>Lace Bark Elm* — Ulmus parvifolia</i> rounded — good street tree, durable, good fall color	4 to 9	40 - 50'	Med
<i>Limber Pine — Pinus flexilis</i> pyramidal at youth/flat top at maturity — 3 to 6 inch cone	4 to 7	30 - 60'	High

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TREE SELECTION	ZONE	MATURITY SIZE	WATER
<i>Littleleaf Linden</i> — <i>Tilia cordata</i> oval — flowering	3 to 7	60'	Med
<i>Live (Southern) Oak</i> — <i>Quercus virginiana</i> rounded — acorn producing tree	7 to 10	40 - 80'	Med
<i>London Plane Tree</i> — <i>Platanus x acerifolia</i> pyramidal — deep red flower, good street tree	5 to 9	75 - 100'	Med
<i>Magnolia</i> — <i>Magnolia spp.</i> pyramidal, rounded, or oval — various flowers depending on species	3 to 10	15 - 80'	Low-Med
<i>Mexican Elder</i> — <i>Sambucus mexicana</i> round — showy white flowers	7 to 10	15'25'	Med
<i>Modesto Ash</i> — <i>Fraxinus velutina</i> upright, rounded — good shade tree	5 to 10	25 - 50'	Low-Med
<i>New Mexico Locust</i> — <i>Robinia neomexicana</i> oval — pink and red flowers	4 to 8	40 - 50'	Low-Med
<i>New Mexico Olive</i> — <i>Forestiera neomexicana</i> upright — yellow fall color and attractive blue fruit (females)	7 to 10	15 - 18'	Low
<i>Newport Plum</i> — " <i>Prunus cerasifera</i> "Newport" rounded — pink and white flowers	4 to 9	15 - 25'	Med
<i>Northern Red Oak</i> — <i>Quercus rubra</i> rounded — acorn producing tree	3 to 8	60 - 75'	Med-High
<i>Peach</i> — <i>Prunus persica</i> rounded — various flowers and fruit depending on variety	5 to 8	15 - 25'	Med
<i>Pecan</i> — <i>Carya illinoensis</i> upright, rounded — nut drop tree	5 to 9	70'	Med
<i>Pink Flowering Locust</i> — <i>Robinia x ambigua</i> oval — fragrant pink flowers	4 to 8	25 - 40'	Low
<i>Piñon Pine</i> — <i>Pinus edulis</i> irregular — ovoid 2 inch cone	6 to 8	10 - 20'	Low

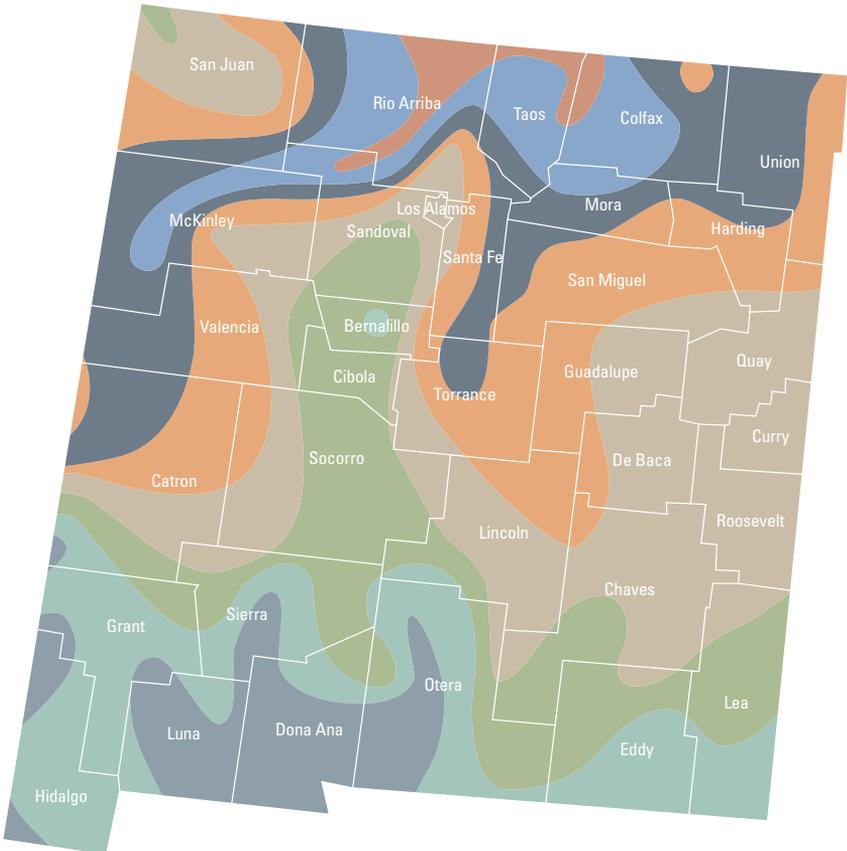
TREE SELECTION	ZONE	MATURITY SIZE	WATER
<i>Plains Cottonwood — Populus sargentii</i> rounded — catkins with cottony seeds	2 to 7	40 - 80'	Low-Med
<i>Ponderosa Pine — Pinus ponderosa</i> irregular at maturity/pyramidal in youth — ovoid 3 to 6 inch reddish cone	3 to 7	60 - 100'	Low
<i>Raywood Ash — Fraxinus oxycarpa</i> round — fruitless tree	5 to 7	30 - 40'	Low-Med
<i>River Birch — Betula nigra</i> multi-stemmed, upright — popular landscape tree	4 to 9	40'	High
<i>Rocky Mountain Juniper* — Juniperus scopulorum</i> narrow, pyramidal — good as screen or buffer	4 to 9	30 - 40'	Low
<i>Scotch Pine — Pinus sylvestric</i> irregular at maturity — small cones	3 to 7	50'	Low
<i>Texas Live Oak — Quercus fusiformis</i> spreading — evergreen leaves, drought tolerant	7 to 10	20 - 50'	Low
<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	20'	Low-Med
<i>Western Catalpa — Catalpa speciosa</i> upright — white clustered flowers	4 to 8	50'	Low
<i>White (silver) Poplar — Populus alba</i> oval — inconspicuous yellow flower	4 to 9	60 - 100'	Med-High
<i>White Fir — Abies concolor</i> pyramidal — elongate	4 to 7	50'	Low

\*Note: Elms and Junipers (male) cannot be planted in Albuquerque, NM due to pollen ordinance.

*Find your zone.*

USDA hardiness zones and average annual minimum temperature range for New Mexico.

- 4B -20 to -25F
- 5A -15 to -20F
- 5B -10 to -15F
- 6A -5 to -10F
- 6B 0 to -5F
- 7A 0 to 5F
- 7B 5 to 10F
- 8A 10 to 15F



# 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 before you dig!** PNM will come out to your home and locate all of your underground utilities. Call 811 statewide.

*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

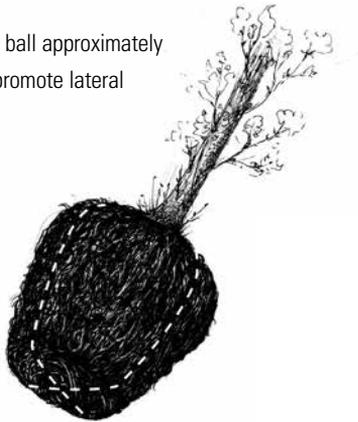
First and foremost, plan ahead and have a reason to prune your tree. Correct pruning techniques help trees develop strong structures and defend against insects and disease. When you plant a new tree, be sure to prune off any broken or dead branches and branches that are rubbing together. Allow the tree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

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### *Bound Root Ball*

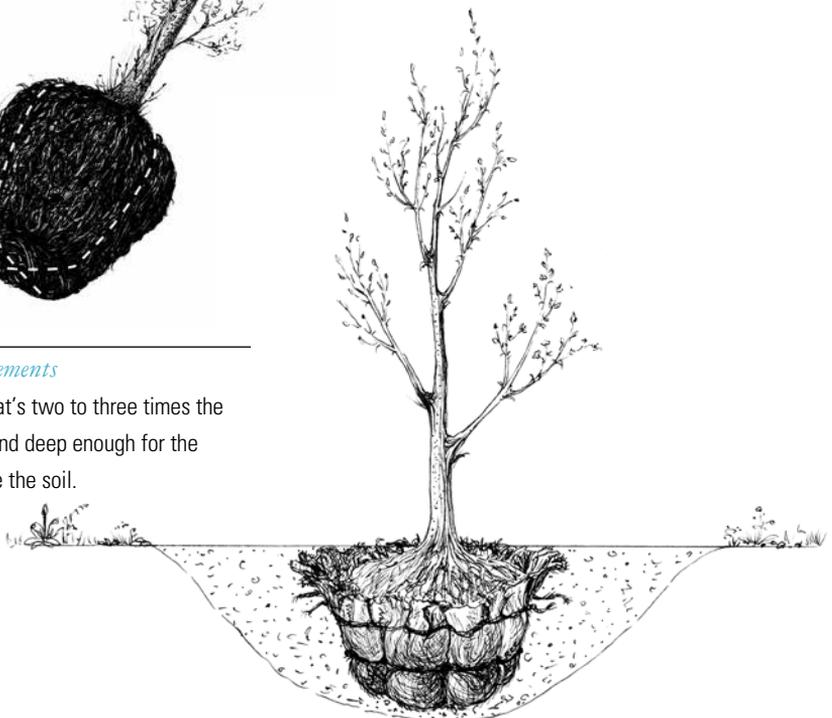
Make cuts to the root ball approximately 1" to 1 1/2" deep to promote lateral root growth.




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### *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 [PNM.com/tree-trimming](http://PNM.com/tree-trimming).

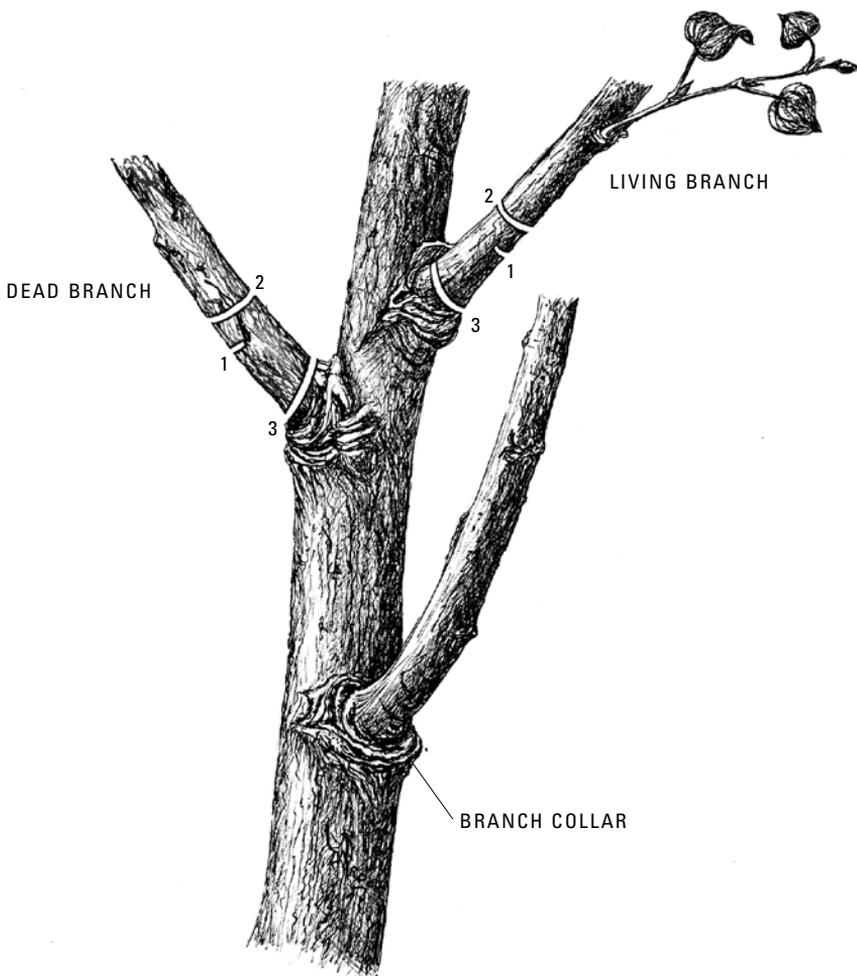
*Step 3* Use a clean, sharp pruning saw.

*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. 888-DIAL-PNM (888-342-5766)

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 PNM 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 [PNM.com/tree-trimming](http://PNM.com/tree-trimming).

*The International Society of Arboriculture (ISA)*

*also has a list of Certified Arborists on its*

*web site at [www.treesaregood.com](http://www.treesaregood.com)*



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

## Learn More About Trees

### [PNM.com](http://PNM.com)

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

### [www.treesaregood.com](http://www.treesaregood.com) – *International Society of Arboriculture*

The ISA site educates the public about the importance of tree care. This site is an excellent resource for tree maintenance.

### [www.thinktreesnm.org](http://www.thinktreesnm.org) – *Think Trees New Mexico*

Think Trees New Mexico is non-profit organization that provides education and training about arboriculture and horticulture. This site has links to a number of tree care sites.

### [www.arborday.org](http://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.



FOR MORE INFORMATION, CALL 888-DIAL-PNM (888-342-5766)



From Seed to Shade A TREE CARE GUIDE *from* PNM

Use this free resource guide from PNM to help select, plant and maintain the right tree for your home. For more information, call 888-DIAL-PNM (888-342-5766) or visit us online at PNM.com.



Talk to us. →

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