

Selecting Ornamental Trees for New Mexico

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Trees provide many benefits to us and our environment. They cool our cities, cleanse the air, recycle oxygen and reduce noise levels. In addition, trees enhance our quality of life by providing habitat for desirable wildlife and creating a restful environment.

However, with New Mexico's varied landscape, where less than one-third of the state covered with native forests, selecting trees that will thrive in this environment is challenging. Trees planted in our cities and around our homes grow under climatic and soil conditions that may not naturally support tree growth. Nevertheless, New Mexicans need trees that tolerate our soils and climate. The purpose of this publication is to provide a description of trees that are adapted to New Mexico. While, many of the trees recommended in this publication are not native to New Mexico, they will adapt and thrive with appropriate care.

Selecting a Tree

An important consideration when selecting a tree should be the planned function of the tree in the landscape. This planned function will determine which tree is chosen and where it is planted. Trees may be chosen for their shade, flowers, seasonal leaf color, fruit (presence or absence), wildlife habitat, size and architectural form. Growth rate also is a consideration, but often not be the primary reason for selecting a tree. Trees that grow rapidly tend to have a short life and create hazards, because they often have weak wood and increased disease and insect problems. Trees should be considered a long-term investment as a well-placed, attractive part of the landscape that can substantially enhance the property value.

When choosing a tree for the landscape, consider the location in which the tree will be planted. Mature tree height and spread should be considered when selecting a site. Distance from structures, roads, walkways, walls and other paved areas are factors that must be considered. For example, if planted under power lines, trees eventually will interfere with power line maintenance and create electrical hazards. Poor site selection eventually could lead to structural damage, necessitating removal of the tree or pruning that could decrease the tree's form, function and value. Potential problems can be avoided by matching the tree to the site. If you desire a specific tree, be sure to find a site appropriate for that tree. If your concern

is a specific site, select a tree appropriate for that site. Many tree problems in New Mexico result from a failure to match trees and sites.

An unseen potential problem is the root system of an actively growing tree. As a tree grows, the root system expands beyond the tree's drip line. (The drip line is the area of soil beneath the ends of the tree's branches.) Trees planted close to walkways or other pavement can cause the pavement to lift up due to root growth creating a hazard to foot traffic. Roots also can clog sewer or septic lines, resulting in costly repairs. Most of the tree's roots are in the first 18 inches of soil. However, the roots can spread a distance 1.5 or more times the height of the tree from the trunk. Thus, a 40-foot tree can have roots exploring soil 60 feet or more beyond the trunk. As a general rule, most of the large roots, which cause structural damage, will be found under the dripline of the tree at maturity. Smaller, less destructive roots extend much further. However, as these roots absorb water and nutrients, they may cause problems with septic systems.

To adequately care for trees, homeowners must irrigate and fertilize well beyond the drip line. The homeowner should anticipate the future size of the tree (above and below ground) in the landscape.

Another way to avoid problems is to choose trees adapted to the soil and climate. Soil conditions to consider include depth, drainage, caliche layers, texture, pH and salinity. Problems resulting from these factors can often be avoided by knowing your soil conditions and selecting trees adapted to these conditions. Your county extension agent can help determine your soil conditions.

Finally, consider selecting trees adapted to New Mexico's planting zones (Fig. 1). These planting zone guidelines are based on climatic conditions under which the trees must grow. However, these guidelines do not consider microclimates due to changes in elevation over short distances and location relative to structures. Sites near the zone boundaries should expect harsh conditions more often than areas located farther from the zone boundaries. In New Mexico, extreme weather will sometimes damage or kill trees. However, planting within the zones indicated (Table 1) should minimize the risk of tree death due to climatic stress.

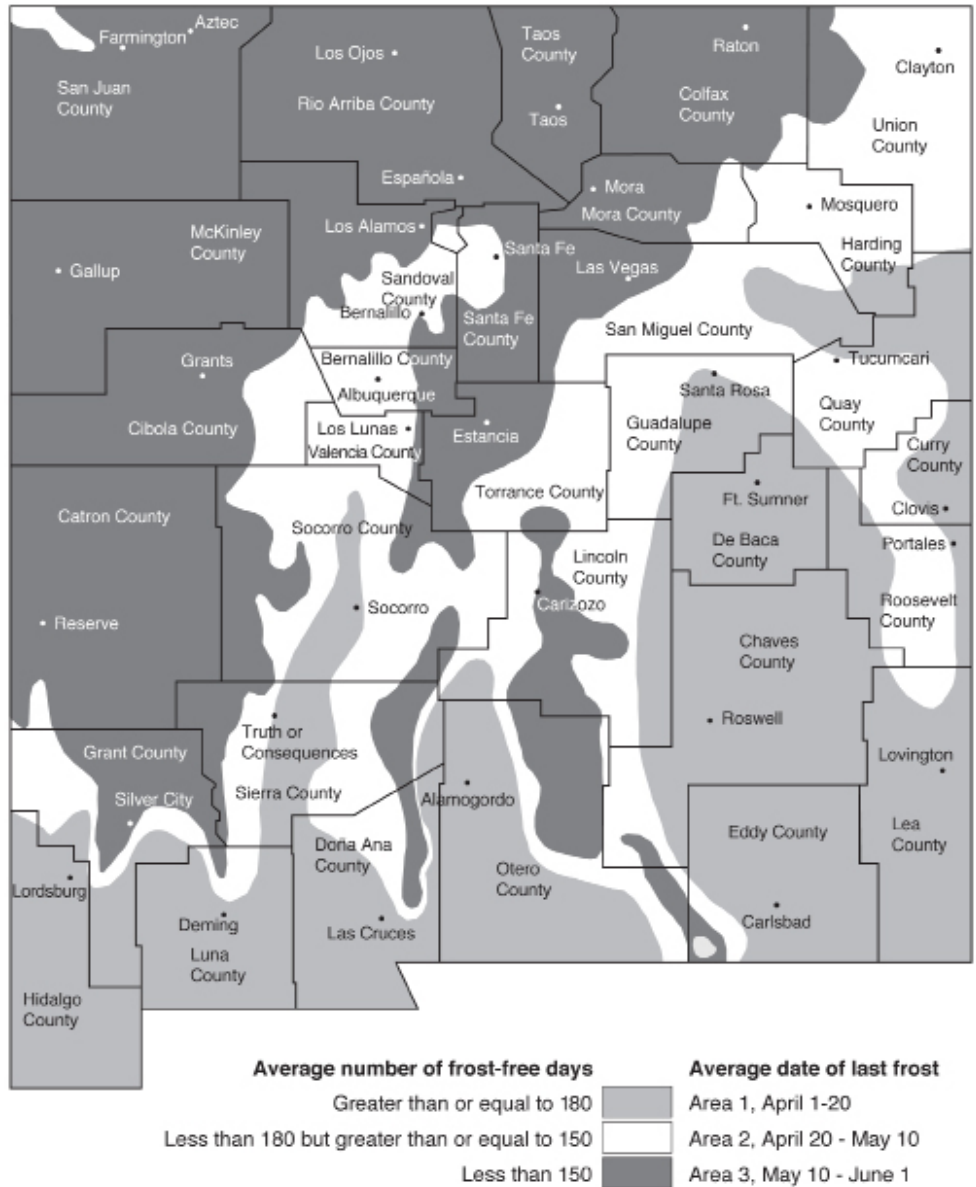


Figure 1. Average number of frost-free days and average date of last frost in three growing zones. From *Climatological Data, Annual Summary-New Mexico, 1982*, National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Some tree species may suffer winter injury from severe winter storms. Winter injury can vary from death of succulent tissue, to small branch dieback, to damage to the southwest side of the trunk, to death of the entire tree. However, this should not discourage experimentation in the landscape. A tree's unique beauty may be enjoyed for many years, even if it is eventually replaced. Additional information can be obtained from your County Extension agent or nursery professional.

The list of trees in Table 1 is not intended to be comprehensive. This list is intended to provide guidance in selecting trees, identifying their positive and negative characteristics, and offering suggestions on where these trees can be planted safely. Do not let this list discourage the use of other interesting tree species that may do well in the care of a conscientious homeowner.

Table 1. Selected tree species for New Mexico. N.B. *Eleagnus angustifolia* (Russian olive) and *Ailanthus altissima* (Tree-of-heaven) are not recommended for planting in New Mexico. These two species are prolific seed producers and spread rapidly.

Scientific Name	Common Name	Growing Zone	Height (feet)	Irrigation Frequency	Selecting and Planting Criteria	Potential Problems
Broadleaf Trees						
<i>Acacia smallii</i>	Sweet Acacia	1	20	L		T
<i>Acer grandidentatum</i>	Bigtooth Maple	2, 3	35+	M-H	Fa	F, Y
<i>Acer saccharinum</i>	Silver Maple	2, 3	50+	M-H		F
<i>Acer saccharum</i>	Caddo Sugar Maple	2, 3	35+	M	Fa	F
<i>Albizia julibrissin</i>	Mimosa	1, 2	20+	M	Fl	D, I, F
<i>Arbutus xalapensis (A. texana)</i>	Texas Madrone	1, 2	20+	L-M	well-drained soils	
<i>Betula spp.</i>	Birch	2, 3	40+	H		D, I
<i>Carpinus betulus</i>	European Hornbeam	3	60	H		
<i>Carya illinoensis</i>	Pecan	1, 2	60+	M	F	A, I, F
<i>Catalpa bungei</i>	Umbrella Catalpa	1, 2	20	M		D, S
<i>Catalpa speciosa</i>	Catalpa	1-3	80	M	Fl	D, I, F, W
<i>Celtis occidentalis</i>	Hackberry	1-3	60	M	F	D, I
<i>Celtis reticulata</i>	Western (netleaf) Hackberry	1, 2	30	M	F	I
<i>Cercis canadensis</i>	Eastern Redbud	1-3	30	M-H	Fl	F
<i>Cercis occidentalis</i>	Western Redbud	1-3	15	M	Fl	F
<i>Chilopsis linearis</i>	Desert Willow	1, 2	25	M-L	F, Fl	F, W
<i>X Chitalpa tashkentensis</i>	Chitalpa	1-2	25	L-M	Fl	C, D
<i>Cotinus coggygria</i>	Smoketree	1, 2	30	M	Fa	
<i>Crataegus laevigata</i>	Hawthorn	1-3	35	M	Fl	D, T
<i>Crataegus phaenopyrum</i>	Washington Hawthorn	1-3	30	M	Fa, Fl	T
<i>Elaeagnus angustifolia</i>	Russian Olive	2, 3	35+	M-L	F	D, F, I, S,
<i>Forestiera neomexicana</i>	New Mexico Olive	1-3	20	M	F	F, I
<i>Fraxinus greggii</i>	Littleleaf Ash	1	20	M		I
<i>Fraxinus oxycarpa</i>	Raywood Ash	1, 2	35	M-H	Fa	A, I
<i>Fraxinus pennsylvanica</i>	Green Ash	1-3	60	M-H	Fa	A, I
<i>Fraxinus velutina</i>	Arizona Ash	1-3	40	M	Fa	A, I
<i>Fraxinus velutina 'Modesto'</i>	Modesto Ash	1-3	40	M	Fa	A, I
<i>Ginkgo biloba</i>	Maidenhair Tree	2	40+	M-H	Fa	F
<i>Gleditsia triacanthos var. inermis</i>	Thornless Honey Locust	1-3	60+	M	Fa	D, F, I
<i>Gymnocladus dioica</i>	Kentucky Coffeetree	1-2	50	M		F
<i>Juglans major</i>	Arizona Walnut	1-3	50+	M-H	F	A, F
<i>Juglans nigra</i>	Black Walnut	1-3	80	M	bottomlands	
<i>Juglans regia</i>	English Walnut	1-3	60	M-H	F	
<i>Koelreuteria paniculata</i>	Golden Raintree	1, 2	35	M	Fl	F, I
<i>Koelreuteria bipinnata</i>	Chinese lantern	1, 2	30	M	Fl	
<i>Liquidambar styraciflua</i>	Sweetgum	2, 3	50+	M-H	Fa	F
<i>Liriodendron tulipifera</i>	Tulip Poplar	2	50+	M-H	Fl	
<i>Malus spp.</i>	Crabapple	1-3	30+	M-H	F, Fl	D, F, I
<i>Melia azedarach</i>	Texas Umbrella Tree, Chinaberry	1	35+	L-M	F, Fl	W, F
<i>Pistacia atlantica</i>	Mt. Atlas Pistache	1	35+	M		
<i>Pistachia chinensis</i>	Chinese Pistache	1, 2	35+	M	Fa	
<i>Platanus wrightii</i>	Arizona Sycamore	1, 2	60	M-H	A	F
<i>Platanus x acerfolia</i>	London Plane Tree	2	50+	M-H		A, F
<i>Platanus occidentalis</i>	Sycamore	2	50+	M-H		A, F
<i>Populus fremontii</i>	Valley Cottonwood	1-3	80	M-H		A, W
<i>Populus tremuloides</i>	Quaking Aspen	2, 3	50	M-H	Fa	A, D, I, W
<i>Prosopis glandulosa</i>	Mesquite	1	20	L		F, T
<i>Prunus cerasifera</i>	Purple Leaf Plum	1-3	30	M-H	F, Fl	F, I
<i>Prunus virginiana</i>	Choke Cherry	2, 3	20	M	F, Fl	F, Su
<i>Ptelea trifoliata</i>	Hoptree	1, 2	20	M		Su
<i>Pyrus calleryana 'Bradford'</i>	Callery Pear	1, 2	50	M-H	Fa, Fl	D
<i>Quercus buckleyi</i>	Texas Red Oak	1, 2	40+	M	F	A, F, I
<i>Quercus emoryi</i>	Emory Oak	1, 2	60	L-M	F	A, F, I
<i>Quercus muehlenbergii</i>	Chinquapin Oak	2, 3	60+	M-H	F	A, F, I
<i>Quercus shumardii</i>	Shumard Oak	1, 2	60	M-H	F	A, F, I
<i>Quercus lobata</i>	California White Oak	1, 2	50+	M	F	A, F, I
<i>Quercus suber</i>	Corkbark Oak	1	25+	M	E, F	A, F, I
<i>Quercus gambelii</i>	Gambel Oak	1-3	40+	M	F	A, F, I
<i>Quercus macrocarpa</i>	Bur Oak	1-3	70+	L-M	F	A, F, I
<i>Quercus virginiana</i>	Southern Live Oak	1, 2	50	M-H	E	A, F, I
<i>Rhamnus cathartica</i>	Buckthorn	1-3	20	M-H	F	F, T
<i>Robinia neomexicana</i>	New Mexico Locust	1-3	25	L-M	Fl	F, P, T
<i>Sapindus drummondii</i>	Soapberry	1, 2	40	L-M	Fa	F
<i>Sophora japonica</i>	Japanese Pogoda	1, 2	40	M	Fl	F, P
<i>Sophora secundiflora</i>	Mescal Bean	1	20	M		P

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Scientific Name	Common Name	Growing Zone	Height (feet)	Irrigation Frequency	Selecting and Planting Criteria	Potential Problems
<i>Sorbus acuparia</i>	Mountain Ash	2, 3	30	M-H	F, Fa	D, I
<i>Tamarix aphylla</i>	Tamarisk (not salt cedar)	1	30	L	E	S
<i>Tilia americana</i>	American Linden	1-3	60+	M-H		
<i>Tilia cordata</i>	Littleleaf Linden	2, 3	40+	M-H		Su
<i>Ulmus parvifolia</i>	Chinese Elm, Lacebark Elm	1, 2	40+	M		B
<i>Ulmus procera</i>	English Elm	2	40+	M		B, Su
<i>Ungnadia speciosa</i>	Mexican Buckeye	1, 2	25	M	Fl	
<i>Vitex agnus-castus</i>	Chaste Tree	1, 2	25	M	Fl	
<i>Zelkova serrata</i>	Japanese Zelkova	1, 2	60	M-H		
<i>Ziziphus jujuba</i>	Chinese Date	1, 2	30	L-M	F	F, S
Conifers						
<i>Abies concolor</i>	White Fir	2, 3	50+	M-H		
<i>Cedrus atlantica</i>	Blue Atlas Cedar	1, 2	50+	M		
<i>Cedrus deodora</i>	Deodar Cedar	1, 2	50+	M		
<i>Cedrus libani</i>	Cedar of Lebanon	1, 2	50+	M		
<i>Cupressus arizonica</i>	Arizona Cypress	1, 2	40+	M		
<i>Cupressus sempervirens</i>	Italian Cypress	1, 2	60	M		
<i>X Cupressocyparis leylandii</i>	Leyland Cypress	1, 2	40+	M		
<i>Juniperus chinensis</i>	Chinese Juniper	1-3	40+	L-M		B male
<i>Juniperus deppeana</i>	Alligator Bark Juniper	1-3	50+	L-M		B male
<i>Juniperus monosperma</i>	One-Seed Juniper	1-3	30	L		B male
<i>Juniperus scopulorum</i>	Rocky Mountain Juniper	1-3	50	L-M		B male
<i>Juniperus virginiana</i>	Eastern Red Cedar	1, 2	40	L-M		B male
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	1, 2	60+	M	D	
<i>Picea engelmannii</i>	Engelmann Spruce	2, 3	60+	M-H		I
<i>Picea pungens</i>	Colorado Spruce	2, 3	60+	M-H		I
<i>Pinus brutia</i> var. <i>eldarica</i>	Eldarica Pine, Afghan Pine, Mondell Pine	1, 2	70	M		I
<i>Pinus edulis</i>	Piñon, Pinyon	1-3	30+	L-M		I
<i>Pinus flexilis</i>	Limber Pine	2, 3	30	M		
<i>Pinus nigra</i>	Austrian Pine	2, 3	40	M		
<i>Pinus pinea</i>	Italian Stone Pine	1, 2	60	M		
<i>Pinus ponderosa</i>	Ponderosa Pine	2, 3	60+	M		I
<i>Pinus sylvestris</i>	Scots Pine	2, 3	60	M		
<i>Pinus thunbergiana</i>	Japanese Black Pine	1, 2	45+	M		
<i>Pseudotsuga menziesii</i>	Douglas-Fir	2, 3	50+	M-H		
<i>Sequoiadendron giganteum</i>	Giant Sequoia	2	80	M-H	D	lightning rod
<i>Taxodium disticum</i>	Bald Cypress	1, 2	60+	M-H	D	
<i>Taxodium mucronatum</i>	Mexican Bald Cypress	1, 2	60+	M-H	D	
Palms						
<i>Phoenix dactylifera</i>	California Date Palm	1	40+	M	C	
<i>Trachycarpus fortunei</i>	Windmill Palm	1, 2	30	M	C	
<i>Washingtonia robusta</i>	Mexican Fan Palm	1	60+	M	C	
<i>Washingtonia filifera</i>	California Fan Palm	1	60+	M	C	
Key:	Irrigation frequency	Growing zone	Selection criteria	Potential problems	P = poisonous parts	
	L = low (1x/month)	1 = southern	D = deciduous	A = pollen allergy	S = short-lived	
	M = medium (2x/month)	2 = central	E = evergreen	B = banned in Albuquerque	Su = suckers	
	H = high (3x/month)	3 = northern	F = fruit/wildlife	C = cold sensitive	T = thorns	
	(for established trees)	and mountain	Fa =fall color	D = diseases	W = weak wood	
			Fl = flowers	F = dropped fruit	Y = iron chlorosis	
				I = insects	(yellowing between leaf veins)	