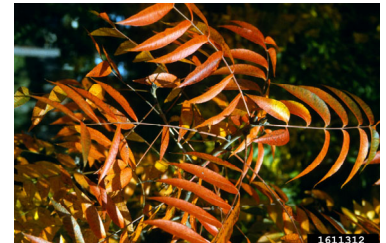




# Deciduous Trees

## Chinese Pistache

The Chinese pistache (*Pistacia chinensis*) is an excellent tree for most areas of Yavapai County. It is a medium to large deciduous hardwood tree that will fit into larger home landscapes. It is suitable for USDA Plant Hardiness Zones 6-9 and at maturity, reaches a height of 30-35 ft and width of 20-30 ft. The leaves are compound pinnate (a long leaf stem with 11 to 17 leaflets) and alternately arranged on the stems and branches. It has impressive fall color (scarlet, crimson, orange, sometimes yellow), even in milder climates. This tree is also resistant to insects and many plant diseases.



Chinese pistache tree (*Pistacia chinensis*) showing leaves in fall color (Photo by John Ruter, University of Georgia, Bugwood.org).

The Chinese pistache is dioecious. This means each tree is either a male that produces pollen (with little or no allergenic qualities) or female producing attractive (but inedible) berries that are attractive to birds. Once established, it is very drought, wind, and heat tolerant. The Chinese pistache is a close relative of the pistachio nut tree (*Pistacia vera*), but is much more cold hardy. The wood is also very hard and rot resistant. Waterlogged soils are not suitable for Chinese pistache trees.

Young Chinese pistache trees should be planted in spring or fall. They must have full sun and do best in well-drained soil. However, they tolerate a wide range of soils, some alkalinity, and can live a very long time (several centuries). If there is a downside to the Chinese pistache, it is that young trees appear spindly and awkward. Trees planted from #5 and #15 containers will probably require staking and grow slowly for the first three years after planting. Some structural pruning may also be necessary in the early years to develop an even canopy and proper branch spacing. Once established, they can grow up to two feet in height and width per year.

## Liquid Amber

The Liquidambar tree (*Liquidambar styraciflua*) is native to the warm temperate areas of the southeastern United States and tropical montane (cloud forest) regions of Mexico and Central America. This tree is well suited to the mid-elevations of north central Arizona including Prescott, Payson, and the Verde Valley. They are not commonly planted in our region, but they do well. They do require supplemental irrigation and are not a replacement for more drought-tolerant species such as mesquite and desert willow. However, Liquidambar trees do produce excellent fall colors ranging from burgundy and red to orange and yellow.

Before rushing to plant a Liquidambar tree, you should consider your soils and the tree's irrigation requirements. Highly alkaline, rocky soils are probably not best suited for Liquidambar. Granitic or sandstone derived soils as well as streamside alluvium should be less alkaline and provide a more hospitable soil environment for these trees. Avoid limestone derived soils for this tree. Irrigation requirements would be comparable to ash or Arizona cypress.

At first glance, you might mistake a Liquidambar, commonly called sweetgum, for a maple. The leaves are palmate (almost star-shaped) and have alternate arrangement on the stem. Maples can be differentiated by their opposite leaf arrangement. Liquidambar trees can get 60 to 75 feet tall in their native range, but mostly stay within 30 to 35 feet in Arizona. It is deciduous and is most often shaped like a pyramid. Liquidambar has glossy, green leaves with inconspicuous flowers and the fruits are round and covered with soft, rounded (not prickly) spines. It prefers full sun and is hardy to USDA Plant Hardiness Zone 5B (-10 to -15 degrees F). Another interesting feature of some liquidambar cultivars are flattened, corky bark projections on the trunk and larger stems. Many cultivars are sold and 'Moraine' is said to be the hardiest cultivar tolerating -25 degrees F.



Sweetgum (*Liquidambar styraciflua*), John Ruter, University of Georgia, Bugwood.org.

Disease problems are not known to occur in north central Arizona, but this could be due to their relative scarcity. In their native range, they are known to be impacted by some fungal diseases much like aspens, cottonwoods and willows are impacted by fungal diseases here. Some potential insect pests of Liquidambar include fall webworm, cottony cushion scale, and tent caterpillars. All can be found in our area. However, cottony cushion scale is the worst of those listed.

### Desert Willow

The desert willow (*Chilopsis linearis*) is an excellent drought tolerant tree for north central Arizona. It is not a willow at all, but a close relative of the catalpa tree and a member of the trumpet vine family (Bignoniaceae). This deciduous, native tree/shrub can be found along dry washes and seasonal creeks in desert, chaparral, and grassland habitats between 1,500 and 5,500 foot elevations. Its native range extends from western Texas to southern Nevada, Arizona, southern California, and northern Mexico, and as far north as Kansas. Some cultivars are hardy to 0 degrees F and all require little supplemental irrigation once established.

The desert willow is very graceful with an airy, open canopy. Hence, it does not make dense shade or a highly effective windbreak. In the wild, they can grow to 20 feet tall by 20 feet wide. With irrigation, they can get slightly larger. Desert willows are usually multi-trunked, but they can be pruned to a single trunk if desired. If training to a single trunk, the tree will likely have basal suckers that will need to be pruned out periodically.

The narrow, curving leaves are 3 to 5 inches long and 1/4 to 1 inch wide. They look very graceful but have a surprisingly tough, leathery texture. Desert willows are best known for their showy flowers that appear in clusters on branch tips from late spring to late summer and can vary in color from pinkish white to deep purple. Normally, they are off-white to pale lavender with yellow spots or stripes in the throat of the trumpet-shaped blossoms. The flowers have a sweet fragrance that attracts bees, butterflies, and hummingbirds. The flowering season can be extended with supplemental irrigation during hot droughty periods (usually May and June).

Long, narrow seedpods form after the flowers bloom and persist on the tree through the winter and then split open to release hundreds of fuzzy seeds. A downside to desert willow is the messy seasonal dropping of pods and seeds. On many cultivars and native grown trees, the seeds may germinate in a moist seedbed. Some cultivars do not produce seed pods.

Being a native, the desert willow has relatively few pests or diseases. Aphids may appear on the new leaves and blossoms in the spring. These can be treated with a high pressure spray. If they persist, mix 1 TBSP dish detergent (a non-citrus scented type) with a gallon of water and spray it on. Better yet, let the natural predators and hummingbirds eat them. Hummingbirds and pollinating insects love the nectar produced by desert willow flowers.

### London Plane

The London plane (*Platanus x acerifolia*) is a large landscape tree that is widely planted in landscapes, parks, and streets in north central Arizona. It is well-adapted for planting in temperate climates worldwide from Johannesburg, South Africa to Sydney, Australia. Most horticulturists believe the London plane is a hybrid between American sycamore (*P. occidentalis*) and the Oriental plane (*P. orientalis*). At maturity, the London plane is often 60-80 feet wide and can be 50-60 feet tall. However, northern Arizona specimens are not usually this large.

Given its size, care should be taken to plant a London plane in a space where it can fully express its beauty. This includes keeping it 30 feet away from structures and providing ample rooting space and avoiding areas with underground utilities. They have also been known to lift sidewalks and patio slabs when planted too close.

London plane trees need full sun and are hardy to USDA Plant Hardiness Zone 5 (lows of -20 degrees F). These trees do tolerate the alkaline soils found across Arizona and require regular irrigation. However, large specimens of London plane in Yavapai County seem to survive with little irrigation beyond natural rainfall once they have become established.



Desert willow (*Chilopsis linearis*). Vanessa Richins Myers, About.com, Bugwood.org.

London plane trees tend to be a somewhat messy, seemingly dropping something every day of the year. In fall, when other deciduous trees are dropping their leaves, the London plane leaves die, but persist on the branches throughout the entire winter. Many leaves may drop on a windy winter day, but many seem to hang on for months. London planes also have interesting spherical fruits which when broken apart hold hundreds of fluffy seeds.

If you were thinking about planting a sycamore, the London plane is a better option, due to the anthracnose disease which affects sycamore trees.



London plane tree on Gurley St. in Prescott, AZ near the Sharlot Hall Museum. Leaves and fruit are shown in the upper left photo and the bark is shown in the upper right photo. (*Platanus x acerifolia*, Jeff Schalaus, University of Arizona).



Foliar symptoms of sycamore anthracnose (*Apiognomonina veneta*, Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org).

### Mesquite

Mesquite trees are often removed from residential areas without consideration of their many virtues. Sure, they are spiny and often shrubby in form, but they also require little or no irrigation, provide food and cover for wildlife, attract bees and other interesting insects, and provide nesting sites and habitat for migratory songbirds. In other words, they have value that extends far beyond being a charcoal source for your backyard barbecue.

Velvet mesquite (*Prosopis velutina*) is the native species found in the Verde Valley. It grows as a tree on the floodplains and terraces near the Verde River and its tributaries. It often becomes shrubbier when on slopes and rocky areas. Mesquite has the ability to extract water from deep within the soil and where it grows near rivers and streams. It can also develop a two-tiered root system: one shallow and one deeper (near groundwater). In Yavapai County, mesquites are rarely seen above the 5,000 feet elevation.



Velvet mesquite (*Prosopis velutina*) tree. This deciduous, shrub-like species forms thickets along rivers, streams, and arroyos (photo by Sue Smith <http://cals.arizona.edu/yavapaiplants>).

Mesquite bosques (Spanish for "forests") once lined the Verde River on the remnant floodplain terraces. Some remnant bosques are still present along the Verde and in these areas, mesquite trees can be up to 30 feet tall. Alteration of riparian areas and development has greatly decreased the number and overall acreage of mesquite bosques across Arizona. In some areas where mesquite bosques have been removed, invasive woody species such as tree of heaven, saltcedar, and Russian olive have replaced them.

Mesquite trees are also legumes (relatives of beans and peas) which have the ability to "fix" atmospheric nitrogen, thus increasing nitrogen available to plants in the soil. Here, legume roots become associated with beneficial soil bacteria (*Rhizobium* sp.) which have the ability to convert inert nitrogen gas (78% of earth's atmosphere) to a form that plants can use. In essence, they fertilize themselves and neighboring plants through this symbiotic process. This process is also utilized by many gardeners when they plant nitrogen fixing cover crops to enrich garden soil.



Clusters of fragrant cream colored mesquite flowers bloom in the late spring – in fact, many vegetable gardeners wait until the mesquite trees bloom to plant warm season vegetable crops. Honeybees are often brought into mesquite stands to gather nectar to make flavorful, light-colored honey.

The flowers develop into seedpods and ripened seeds become hard shelled beans. These beans are valuable wildlife and livestock forage. The mature beans can be ground into sweet flour. This flour tastes sweet all by itself and makes an excellent addition to cookies, pancakes, and cornbread.

Other Arizona native mesquites are honey mesquite (*Prosopis glandulosa*) and screwbean mesquite (*Prosopis pubescens*). Both species are found at lower elevations than velvet mesquite, but are suitable for planting below the 4,000 feet elevation and would be an excellent choice for drought tolerant landscaping in Arizona. Honey mesquite is popular in the nursery trade as it becomes an attractive, almost stately, tree. Screwbean mesquite has a twisted branching habit and an attractive, twisted seedpod. These are less common in nurseries. Avoid the Chilean mesquite hybrids as they will not tolerate our winter temperatures.

Urban legends sometimes say that mesquites harbor Texas root rot (caused by the fungus *Phymatotrichopsis omnivora*) also called cotton root rot. Texas root rot is a disease that is present in some areas of the Verde Valley and it can infect a broad range of host plants. Mesquite trees tend to tolerate the presence of Texas root rot. This does not mean that it harbors the disease, but since it is somewhat tolerant, the disease could be present and have little or no effect on the mesquite. When a more susceptible host is planted in these areas, it could succumb to the disease while mesquites continue to survive. Fruit and nut trees, grapes, roses, sycamore, cottonwood, ash, oleander, xylosma, and many other species are very susceptible to Texas root rot.

Mesquites are an excellent choice for drought tolerant landscaping, compatible with birds and wildlife, produce food, and have a lot of character.



Screwbean mesquite fruit. Photo by Patrick Alexander @<http://swbiodiversity.org>, Usage Rights: Creative Commons Attribution-ShareAlike (CC BY-SA)



Velvet mesquite fruit. Photo by Sue Smith, <https://cals.arizona.edu/yavapaiplants>



Honey mesquite fruit. Photo by Sue Smith, <https://cals.arizona.edu/yavapaiplants>

## March 2, 2023

Adapted from original Backyard Gardener publications by Jeff Schalau, Agent, Agriculture & Natural Resources, University of Arizona Cooperative Extension, Yavapai County

The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information in its programs and activities.