

Pine Grove: Loblolly and Longleaf Pines: Texas' Most Famous Pines

Loblolly Pine (*Pinus taeda*)

- One of the most prominent forest trees in America, most abundant pine tree in Texas
- Most rapidly growing southern yellow pine. Can grow 3.5 feet in height and .5 feet in diameter each year.
- Most common timber tree planted in Texas. The wood, although weak and brittle, is commonly used for plywood, Kraft paper, newsprint, and rayon fiber
- Texas' famous "lost Pines" in Bastrop are well-known for their isolation from the pine forests of East Texas. They are 100 miles farther west than any others and represent the western edge of the distribution of this species. The Lost Pines are shorter and more drought tolerant than their Eastern relatives. Recent genetic research suggests that all extant East Texas loblolly pines descended from this isolated population.

Longleaf Pine (*Pinus palustris*)

- Not as abundant as other pines, but considered the largest and most important of the Southern yellow pines.
- It is one of our most stately and striking trees and its timber is the most valuable of all American pines. The wood is durable, heavy, hard, stiff, and very strong. It has been used in the construction of buildings and furniture. Unfortunately, its popularity has led to its decline and while it once occupied 90 million acres, and now, only 12,000 acres of old growth forest remain.
- Longleaf pines are slow to start growing and have a "grass stage" that can last anywhere from 3-25 years. During this stage, only root growth is happening, and a mere tuft of needles is visible above ground, resembling evergreen grass. This stage is extremely fire resistant. Fires eliminate competition and fungal disease and are very beneficial for the trees. Longleaf pine forests are uniquely free of undergrowth and truly park-like. Once the roots are well-developed, the tree starts rapid growth of 3-6 feet per year.
- Interesting article: [Photos Document the Last Remaining Old-Growth Pine Forests of the American South | Smithsonian \(smithsonianmag.com\)](https://www.smithsonianmag.com/history/photos-document-the-last-remaining-old-growth-pine-forests-of-the-american-south-180-photos-180/)

Global Garden

Sanctuary: Live Oak (*Quercus virginiana*)

- Live Oak wood is the heaviest of all oak wood and among the heaviest of all American wood. It is hard strong, heavy, and extremely dense. It resists decay, even when consistently exposed to wetting and drying.
- These qualities led to the wood being used extensively in wooden ships throughout the 18th century and during the last decade, massive amounts of live oak were used to construct the Navy's first frigates.
- Among these was the 44 gun *USS Constitution*, which earned the nickname *Old Ironside*, when British shots reportedly bounced off her sides in the historic victory over *HMS Guerriere* during the war of 1812.

- The Constitution is the oldest commissioned warship afloat in the world today
- Oak galls, a swelling produced by parasitic insects, mostly wasps, was used in oak gall ink. Most permanent record from the middle ages to the 20th century, were recorded with oak gall ink. Notable documents include Leonardo Davinci's notebooks, JS. Bach's manuscripts, and the US Constitution!
- Acorns were a food staple of indigenous people of Texas. They are rich in protein, fat, calcium, and other minerals. They could be boiled to remove tannins, then cooked and/or preserved in many different ways.
- Oaks are keystone species in every ecosystem they exist in. They provide food, shelter, nesting sites, and nesting material for countless animals. In recent years, entomologist and conservationist Doug Tallamy has shed light on the ecological importance of oaks, namely the amount of caterpillars that use them as a host plant. Collectively, oak trees support 897 caterpillar species, which are the main food source for terrestrial nesting birds.
- Live oaks carry significant cultural and aesthetic value as a monarch of trees and a long-lived memorial. They can live hundreds of years and have seen many historical moments through time. Notable Texas Live Oaks are many, but some significant ones are:
 - The Freedom Tree – this live oak, located in Missouri City, TX is where enslaved workers on the Palmer Plantation learned of their freedom. The news of the emancipation of slaves reached Galveston, TX on June 19, 1865.
 - Treaty Oak – This famous live oak in Austin is reported to be where Stephen F. Austin signed the first boundary line agreement with native tribes
- The current state champion, largest live oak in Texas, is located in San Bernard National Wildlife Refuge in Brazoria County, and is 62 feet high, and 10 1/4 feet wide.

Mediterranean: Eastern Red Cedar (*Juniperus virginiana* 'Taylor')

- Many early homes in the Texas Hill Country were built from eastern red cedar due to its durability and lovely fragrance.
- Cedar wood contains a fragrant oil known as cedrol, which inhibit rot and repel insects, like termites and moths.
- Many Native Americans have used the smoke from various types of cedar for purification and cleansing. Many revered the Eastern red cedar as a "tree of life", using its aromatic oils in sweat lodges and for purification rituals.
- It is a pioneer species, meaning it is one of the first trees to recolonize disturbed sites, and it can spread aggressively. It is blamed for altering the prairie ecosystem in many parts of its range.
- Eastern Red Cedar is a species of Juniper and (*Juniperus*) and it is very similar in appearance to other juniper species in the state, like the ashe juniper. It is not a "true" cedar.
- All junipers produce cones that resemble berries and are called juniper berries. They are often aromatic and can be used as a spice.

Confetti: Texas Redbud (*Cercis canadensis*)

- This iconic native tree is known for its bright pink, early spring blooms that cover the branches before the leaves arrive. Blooming early is an ecological strategy for the tree because it blooms before most other plants and has the undivided attention of early spring pollinators. It is pollinated by long-tongues bees like carpenter bees, bumble bees, and mason bees.

- The glossy, heart-shaped leaves are later eaten by several species of butterflies and moths, as well as being cut by leaf-cutter bees for nest provisioning.
- This tree is used for ornamental purposes, but has so many ecological benefits, making it a wonderful choice for the landscape.

Savannah: Honey Mesquite (*Neltuma glandulosa*)

- Mesquite trees are found all over our state, but is more common in the arid central and western territories. It is and has always been an important source of food, wood, and fuel in its native range.
- The wood, which is very hard and beautiful, making it desirable for furniture, and when burned, it imparts a pleasant smoky flavor.
- Mesquite pods were once hugely important as a source of food, they were the single most important food source for Native Americans in the desert Southwest. Its 3 most important qualities being its nutritional content, its reliability, and ability to be stored.
- The pods are roughly 15-35% sugar, and rich in calcium, iron, and other minerals. They contain 7-10% soluble fiber and 39% protein, almost twice what is found in commercial legumes like peas.
- It reliably flowers and produces fruit each year, even during drought, which may cause it to produce more fruit than usual. Making surviving harsh times attainable for indigenous people
- Traditional people of the Southwest chewed the green, unripe pods like a sweet candy, and unripe pods could also be made into a nutritious syrup, which is supposed to be great on pancakes, or a simple jelly
- Mesquite meal, was made from the mesocarp, or substance within the pods and between the seeds. The pods would be dried, roasted, and pounded, and then the seeds and hard husks removed. The meal could be used right away or dried into a cake or bread-like substance that could be kept indefinitely without spoiling.
- The mesquite meal would also be mixed with water to make a beverage called atole. It could be fermented into a beer-like drink as well.
- Mesquite bark contains an amber-colored gum that could be used a glue or a black stain for hair dye, face paint, or pottery glaze. The gum soaked in water was used to make a drink that would help with diarrhea, sore throat, stomach flu, or food poisoning.
- The pods are also food for deer, javalina, feral hogs, coyotes, jackrabbits, skunks, turkeys, dove, and quail and make excellent feed for cattle, hogs, horses, and mules.
- In the southwest, mesquite flowers are a major source of nectar for desert dwelling pollinators, and it is the principal source of nectar for honeybees, making a delicate, mild-flavored honey.

Sabal Palm (*Sabal mexicana*)

- One of the most widespread and common palm trees found in Mexico and was once abundant in Texas, inhabiting thick bottomland forests along many Texas rivers dozens of miles from the gulf coast. While these palms have been planted ornamentally throughout Texas, agricultural clearing has destroyed much of the natural population aside from the Sabal Palm Audubon Center and Sanctuary near Brownsville, and scattered populations near Vanderbilt, TX and in the San Bernard National Wildlife Refuge in Brazoria County.

- The Sabal palm has valuable wood that lasts indefinitely and was used to construct rural houses in its native range.
- The leaves were used for thatching for roofs and are currently used to manufacture chair seats, hats, handbags, and briefcases.
- The fruits are edible and are said to taste similar to a date, which also comes from a palm. The date palm, an old world species, are located right across from the sabal palms, in the savannah.

Sweetgum (*Liquidambar styraciflua*)

- Once a very Popular ornamental tree because of its striking fall foliage displaying beautiful red, purple, yellow, and orange leaves. But, it has become undesirable in some places because of its sometimes difficult to deal with fruits
- It is known for its hard, spiky fruits which you will never forget stepping on with bare feet!
- The name “sweetgum” comes from the resin that exudes from the bark when it is injured. Historically it was used medicinally, to treat diarrhea and as a salve for wounds, and to make chewing gum!
- The resin was used to add a distinctive balsamic flavoring to the first pipe of tobacco Aztec Emperor Moctezuma shared with Conquistador Hernando Cortez.

Upland Forest:

Cedar elm (*Ulmus crassifolia*)

- the “cedar” refers not to any trait of the tree itself, but to the junipers it likes to hang around with. And even those junipers are not really cedars.
- This tough and adaptable shade tree is the most wide-spread native elm in Texas. While it prefers the limestone “cedar breaks”, it does well in heavy clay, compacted soils, and tolerates alkaline or salty soils.
- It is an upright or vase-shaped tree, excellent for casting shade from summer heat, yet deciduous so that it drops its golden yellow fall leaves to let in warming winter sun.
- Cedar elm wood is extremely strong and has exceptional shock resistance. It’s often sold mixed with other elm hardwoods as “rock elm”. It is used in a variety of manufacture, from caskets and furniture to fence posts and bee frames. It’s fine grain bends well, so is used to make curved containers, boxes, crates, barrels and baskets.
- Several bird species thrive on the elm seeds, including the wild turkey and plain chachalaca; squirrels eat the buds and seeds.

Wax Myrtle (*Morella cerifera*)

- A wispy, 6-12 ft., multi-trunked, evergreen shrub, southern bayberry or wax myrtle can reach 20 ft. in height. The light olive-green foliage has a spicy fragrance. Pale blue fruits occur on female plants in the winter. Handsome gray bark is almost white on some plants.

- This popular evergreen ornamental is used for screens, hedges, landscaping, wetland gardens, habitat restoration, and as a source of honey. Essentially a shrub, it serves as an excellent screen plant, with both standard and dwarf varieties available. Because there are separate male and female plants, if you want berries you must have male plants close enough to the berry-producing female plants for pollination to occur.
- The leaves are aromatic, with an appealing, spicy fragrance when crushed, which repels mosquitoes
- Colonists separated the fruits' waxy covering in boiling water to make fragrant-burning candles, known as Bayberry Candles, a custom still followed in some countries.
- The berries have high nutrient content and are an important food source for migrating birds in the fall

Culinary Garden:

Pecan (*Carya illinoensis*)

- The Pecan is the official state tree of Texas! It has played a major role in the history of our state from prehistoric times through present day!
- The pecan tree is the largest species of the genus hickory, in the walnut family. It is native to south-central North America and typically found along rivers, streams and fertile bottomlands.
- The delicious pecan is rich in fats, protein, and minerals. During pre-Columbian times, fats were far scarcer, and pecans provided a critical and reliable source of protein in fat, so much so that they influenced the migration patterns of indigenous people. Cabeza De Vaca in 1530, described pilgrimages of Texas Indian tribes who would travel more than 100 miles to harvest pecans and subsist on them for 2 months.
- It is the only commercially grown nut in Texas, native to 152 counties and grown commercially in some thirty additional counties. Texas is usually the second largest producer of pecans, with average annual yields around 60 million pounds

Mexican Plum (*Prunus Mexicana*)

- This tree is known for clusters of fragrant white blooms that cover the branches in early spring, similar to the redbud tree
- Just as the name implies, Mexican plum has an edible plum that ripens in late summer that is dark-purple red in color. Birds and other small animals enjoy the small fruit, so plum-pickers should be ready to quickly pick the ripened fruit in late summer. Plums can be eaten straight from the tree or used to make jams and jellies.
- 270 species of butterflies and moths use these trees and their relatives like black cherry, as a host plant, giving them high ecological significance.

Corkscrew Willow (*Salix scaruzam* 'Scarlet Curls')

- While considered a weed by many, willow trees in the genus *Salix* have many uses throughout history
- It is wonderful in erosion control. It easily establishes along waterways. It's interlacing, far-reaching roots form mats that buffer riverbanks from the scouring action of fast moving water. Willow roots function as well, if not better than any other man-made method.

- Willow is probably most well-known for its medicinal uses. The bark, roots, and leaves have been used around the world as an analgesic and for relief of fever.
- The very earliest recorded use of willow for pain and fever relief dates back to 3000 BC with the Sumerians, and it was subsequently used by the ancient Egyptians, Greeks, Romans, and in Traditional Chinese Medicine.
- Many Native Americans, including the Cherokee, Alabama, Chickasaw, Cree, Crow, and Thompson tribes used it in various ways to treat fevers, headaches, pain, and swelling.
- In our area, the Kiowa chewed willow bark for toothaches and a tea of the leaves applied to the body for pneumonia and rheumatic aches.
- Willow is the source of salicin, the natural compound used to make aspirin, a very significant pharmaceutical in modern times!
- Willow trees support 229 species of butterflies and moths and help support biodiversity.