

The Elms of Texas

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Texas is fortunate to have five species of trees known as elms growing across the state. Four of these are native and one is introduced. The elm family is known as Ulmaceae and has the heritage of the long standing Latin name *Ulmus* for the genus. The elms have been valued for centuries for their use as shade trees, tool handles, veneer, furniture, wagon hubs, fence posts and in shipbuilding. One or more of these trees can be found in all vegetational regions of Texas. The High Plains and Trans Pecos regions do not have native elms but the introduced Siberian elm is found there.

American elm, *Ulmus Americana*, occurs in all regions with the exception of the High Plains and Trans Pecos. This elm will certainly be found in towns within these two regions but were not native prior to being brought in for landscaping and shelter belts. This is the most common species of elm over much of Texas and was widely used as an ornamental along streets as shown by the number of towns and cities with the name "Elm Street". American elm is predominately found along moist bottomland sites but can also be seen in upland areas which have good soils. This is the tallest elm to grow in Texas with heights reaching 60 feet on uplands and to 90 feet in riparian areas. The growth is from a straight trunk with outward spreading branches and presents a stately appearance. American elm provides excellent browse value for goats and deer and good browse for cattle. The only problem is that the leaves and twigs soon outgrow the reach of these animals. The fruits of all elms are called samaras which are oval flattened discs about ½ inch long containing a flattened seed surrounded by a membranous wing. These fruits are eaten by turkeys, wood ducks and small mammals. The leaves grow 2 to 3 inches in width and 4 to 6 inches in length, roughly oval with a sharp tip and being asymmetrical at the base with one side round and the other wedge-shaped. The leaf margins of most elms are double-toothed. The upper surface of leaves will be smooth with the lower surface showing fuzz that later becomes smooth. Most elms, and especially American elm, have a deep tap root that resist movement from bulldozers or floodwaters, making this species especially valuable as a strong stabilizer whose roots help to hold riparian banks in place.

Cedar elm, *Ulmus crassifolia*, is seen across the same regions as American elm. The species name *crassifolia* refers to the thick leaves that are very rough to the touch. Rubbing your thumb up a leaf will feel like rubbing against sandpaper. Cedar elm is commonly found on upland sites but will also be seen in bottomland areas. Abandoned cropland in floodplains of the Blackland Prairies will quickly become established in thousands of seedling cedar elms. Grasslands operated strictly for wildlife management in the Blackland Prairie bottoms will also grow cedar elms if livestock are removed or significantly reduced in number. This tree grows to 80 feet with slender spreading branches forming a rounded crown. The trunk and reddish-brown, hairy twigs of younger cedar elms will often show thin, lateral corky wings, although not all cedar elms show this characteristic. As the trees mature the corky wings are seen less. The leaves are double-toothed and grow so closely that they often appear to slightly overlap onto adjoining leaves. Cedar elm leaves will be ¾

to 1 inch in width and 1 to 2 inches in length giving a long-oval appearance, stiff, thick and rough on the upper surface with hairs on the underside. The tip will usually be rounded but occasionally pointed while the base will be rounded or wedge-shaped. When it comes to flowers and production of samara the cedar elm differs from all other elms in that it flowers and produces seeds in late summer while the other elms produce seeds in late spring. The leaves of cedar elm are frequently browsed by cattle and provide good browse value. Cedar elm leaves and new twigs provide excellent browse value for goats and deer. Turkeys and small mammals are known to eat the seeds in the fall when the samaras ripen. These $\frac{1}{4}$ to $\frac{1}{2}$ inch samaras have been tested at 6 percent crude protein. Cedar elm is a common woody within its known range and should be protected from indiscriminate chemical or mechanical treatments. Mature trees of both cedar and American elm are used as roost trees by turkeys.

Winged elm, *Ulmus alata*, occurs across the eastern half of Texas with the exception of the South Texas Plains, Rolling Plains, High Plains and Trans Pecos regions. This is the true winged elm and can be distinguished from cedar elm by observing the breaks in the wings. The wings of winged elm start and stop at the leaf nodes, as compared to cedar elm whose wings are continuous along the limbs. These leaf nodes eventually become twigs and branches. However, these wings may be absent on large fast growing winged elms. The wings are opposite one another on the twigs and show reddish stripes. Winged elm is an attractive shade tree with a rounded or oblong crown, fast-growing and relatively free of disease and insects. This elm can reach heights of 40 feet, occasionally to 60 feet in the Piney Woods region. Winged elm is common in east Texas, and appears in north-central Texas in sandy areas usually associated with post oak and blackjack oak. The leaves appear as long-oval in shape being $\frac{3}{8}$ to $1\frac{1}{2}$ inches in width and 1 to 3 inches in length, margins coarsely double toothed, tips pointed and with a wedge-shaped base. The upper surface is smooth while lower surface is slightly fuzzy. Winged elm provides good to excellent browse value for deer, goats and cattle. Squirrels and songbirds eat the samara and buds. It does best in slightly acidic soils and will grow along bottomlands, fence lines, abandoned fields and hillsides. Winged elm is easily transplanted and germinates rapidly from seed making it an ideal candidate for woody plants during restoration projects. Author Robert A. Vines reported that the bark was used locally for bailing twine.

Slippery elm, *Ulmus rubra*, is found over the eastern and central portion of the state with the exception of the Gulf Prairies, Rolling Plains, High Plains and Trans Pecos regions. Sometimes called red elm because of the rich reddish-brown wood, this tree can reach 60 feet in height though 40 feet may be more common, with a broad, open crown. As compared with the previous elms, slippery elm is rather short-lived and is prone to insect damage. The leaves are oval to oblong, 2 to 3 inches in width and 3 to 6 inches in length, margins coarsely and sharply double toothed, coming to a sharp point at the tip and either rounded, wedge or heart shaped at the base and being asymmetrical at the base. The upper surface is very rough with tiny, pointed bumps and short hairs when young but later smooth as the leaves mature. The under surface has soft hairs. Deer, goats and cattle will browse upon the twigs and leaves. Slippery elm is found growing on wetter uplands and in most bottomlands. One quick way to differentiate slippery elm from the very similar American elm is to grab a twig and pull it back toward the main branch. With slippery elm

you will be able to easily pull a thin strip of bark 12 to 24 inches in length, while American elm will only pull a few inches before breaking. The inner bark has long been valued for its medicinal and thirst-quenching properties. This inner bark, when mixed with water or chewed, produces a mucilaginous substance almost jelly-like in consistence. Native Americans and early settlers would drink the concoction as a cure for coughs, diarrhea and urinary tract infections. Apparently if it was good for your insides then rubbing it on cold sores and skin irritations would help on the outside as well. Robert A. Vines reported a treatment for coughs was prepared by stirring an ounce of powdered bark into a pint of hot water. Chewing the end of twigs would cause them to fray and were used as a basic toothbrush. Matrons in rural areas of the South were known to chew the twigs and dip the frayed ends into a powdered snuff tin to “discretely get a taste”. Slippery elm even had a place in the great American pastime of baseball. Though banned in 1920, the spitball was perhaps the earliest form of manipulating a ball. Pitchers would chew the inner bark and then apply the mucilaginous product to the ball to alter the spin hampering the efforts of the batters.

Chinese elm, *Ulmus parvifolia*, is sold in the landscaping trade but has not widely escaped cultivation and does not frequently appear on farm and ranch land. It is mistakenly thought to be the same tree as Siberian elm but botanists have shown it to be a separate species in the elm family. Siberian elm, *Ulmus pumila*, is an introduced species and in Texas is largely found in the western regions growing on the High Plains and Trans Pecos regions. This elm is native to Siberia, Asia and China. A long-time resident of the northern Texas panhandle told me that when organizations in Texas began a search for suitable tall trees to grow on the High Plains Siberian elm was suggested. It was facetiously assumed that “if it could grow in Siberia than it could make it on the High Plains”. It has been used for windbreaks, planted in highway medians and across many towns in the western parts of Texas. Siberian elms can reach 40 feet in height with a rounded crown if grown in the open but if crowded together the growth will be more upright. Leaves appear long oval in shape being ½ to 1 inch in width and 1 to 2 inches in length, margins double toothed with a sharp point and a rounded, asymmetrical base. Siberian elms are especially afflicted with damage from another introduced pest, the elm leaf beetle. Multiple generations of this beetle grow throughout the summer skeletonizing the leaves between the veins. This damage results in the leaves dying during the summer. The tree will initiate new growth in early fall and will have green leaves growing again by first frost. This is not a desirable tree and should not be planted. Perhaps this Siberian import is not as tough as our native Texas trees that can withstand the yearly extremes of insects, moisture and temperature. Photos taken three months apart at the same site in the eastern panhandle show browned leaves in August but green leaves in October of 2012.

We should all learn to understand, appreciate and value the native trees and shrubs of our great Texas. “Go native” is not just a slogan on a bumper sticker; it should be our commitment to future generations of Texans.

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Photo captions:

1 American elm seedlings will grow into mature trees approaching 90 feet in height.



2 Mature American and cedar elm species are valuable for stabilizing riparian banks and provide roost sites for turkeys.



3 Winged elm showing breaks in the wings where leaf and twigs originate. Note browsing of new twigs by deer.



4 Leaf of slippery elm reveals the characteristic double toothed margin and asymmetrical base of all elms.



5 Leaves of Siberian elms on August 2, 2012 showing effects of elm leaf beetles.



6 Siberian elm leaves showing healthy appearance at same site on October 11, 2012.



7 Cedar elm leaves show close overlap arrangement, asymmetrical bases and double toothed margins.

