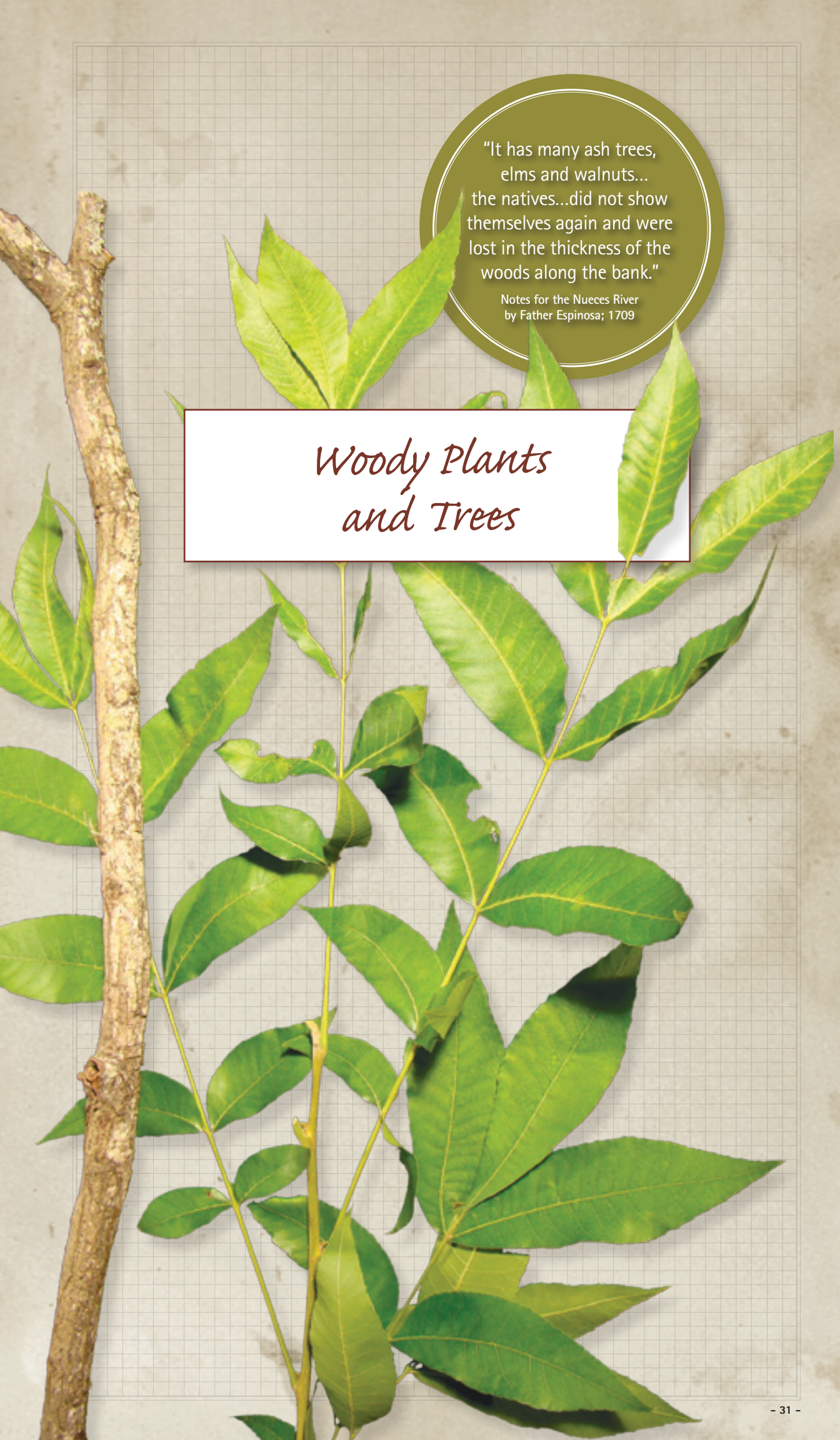


"It has many ash trees, elms and walnuts... the natives...did not show themselves again and were lost in the thickness of the woods along the bank."

Notes for the Nueces River
by Father Espinosa; 1709

Woody Plants and Trees

1844–"When almost exhausted and ready to sink in his tracts, Ackland came to a large drift that covered an acre or more of ground which had been deposited there during some great rise in the river and this afforded a good hiding place. Crawling in under the drift he dragged (his blinded comrade) Perry after him as far as he could…..(the two rangers hid from their enemy)… The drift covered so much ground and had so many openings in which a man could crawl that they (the Indians) failed to find the right one and finally went on down the river."

Describing four rangers caught swimming unarmed in the Nueces near present day Barksdale and their attempt to hide after being severely wounded by arrows. From *Early Settlers and Indian Fighters of Southwest Texas* by A.J. Sowell, published 1900 by Argosy-Antiquarian, Ltd. Incident of Ranger Life.

Buttonbush

Button willow

(Cephalanthus occidentalis)
RUBIaceae

Wetland Indicator Status: *OBL* Stability Rating: *8*

The gnarly Buttonbush is a strong-rooted riparian shrub, able to hold banks in place during severe flooding. While its central trunk can grow to a diameter of 8-inches or more, it is often seen with a multi-branched base from being broken off in floods and re-sprouting from the stump. Buttonbush can grow out in the open, on a naked gravel bar, or under the shade of riparian trees. It has large shiny leaves that occur in pairs or triplets at each node. The flowers are distinctive white balls with many stamens offering an important source of nectar for birds and insects. After flowering, the seed heads harden into a cluster of brown balls that float and can be indentified in flood debris. Buttonbush is palatable and can be heavily browsed by deer, exotics or livestock reducing the root mass of the shrub and preventing adequate reproduction. Buttonbush is reportedly easy to propagate by pushing fresh cut stems into wet soil.

Bald cypress

Sabino

(Taxodium distichum)
TAXOdiaceae

Wetland Indicator Status: OBL Stability Rating: 9

Cypress is the largest and most characteristic riparian tree on many creeks and rivers in the Nueces headwaters. Trunk diameters of 2- to 4-feet are common, but many 8- to 12-foot diameter trees can still be seen. The state champion bald cypress on the Frio River near Concan is 96-feet tall and has a trunk diameter of 30-feet.

In the early days of European settlement, cypress was highly valued as lumber since the wood is very durable and resistant to rot. Cypress was extensively used as shingles by early settlers. Much of the original stand of Bald cypress on Nueces headwater rivers and creeks had been logged by the late 1800's.

The woody roots of cypress form an exceptionally strong bulwark of reinforcement along banks which effectively resist the flash flooding common in the area. Fine feeder roots also aide in holding loose soils together. During floods, some cypress will either get washed out or will break off. These whole trees and logs can become lodged in the channel or floodplain, and play an extremely important role in initiating and sustaining riparian stability.

Cypress seeds float and help spread populations downstream. Young cypress plants are vulnerable to heavy browsing by deer, livestock and exotics. Landowners who wish to see more reproduction of cypress may need to apply very aggressive control of wildlife populations. Seedlings can also be planted to help restore or improve cypress communities.

"He drove ox teams to Uvalde and San Antonio, hauling cypress lumber and shingles from the Leakey mill ... I worked for Old Man Leakey four or five years. Cypress was the main thing he milled, though he used a certain amount of ash timber and white oak. He had the timber sawed, and we hauled it to mill, then we hauled the lumber to town. I remember one old cypress tree that measured 18-feet through the base of it. It was a common thing to see trees that was eight and ten feet through."

Ox Wagon Bring Cypress from Leakey, documented by Florence Fenley in interview with J.H. Thompson

Photo courtesy of Ron Sprouse

Retama

(Parkinsonia aculeata)
FABAceae

Mexican palo verde, Jerusalem thorn, Lluvia de oro

Wetland Indicator Status: FACW Stability Rating: 6

Retama is often the dominant riparian tree in the deep-soil floodplains of the Rio Grande Plains portion of the Nueces Basin. It is rare in the Edwards Plateau. Growing to a height of 10- to 15-feet, retama has green twigs and branches, armed with numerous vicious thorns. The leaves are unique, having dozens of very small leaflets growing from a long central leaf stalk.
The flowers are showy and intricate with five yellow petals. One of the flowers has a honey gland at its base which turns red and remains on the stalk longer than the others. Bean pods contain a few large seeds. Retama is a legume and thus helps to enrich the soil with nitrogen. Retama is sometimes considered a pest, especially when it becomes very thick, but it is an important riparian plant, helping to stabilize banks and floodplains. It is also browsed by deer.

"...we reached the banks of a river...we worked our way...through timber... cutting a passage for the troops"

Nueces River; Zavala Co; Domingo Terán de los Ríos; 1691.

Sycamore

Eastern sycamore

(Platanus occidentalis)
PLATanaceae

Wetland Indicator Status: FAC Stability Rating: 6

Sycamore is well known to most creek and river enthusiasts with its characteristic leaves, bark and seed balls. It can grow to a large tree more than 50-feet in height, but more commonly it's found in clusters of medium-sized trees or colonizing freshly disturbed gravel bars. Where cypress is absent, sycamore may be the largest riparian tree and only source of large wood on some streams. It is a moderately fast-growing tree and readily establishes from seed under the right conditions. Sycamore is an important tree to help stabilize gravel bars. The roots are not as strong as cypress, but a large colony of sycamore provides acceptable stability. When sycamore trees are uprooted and washed out, the downed trees serve as small dams to trap gravel and sediment, and often form nursery pools for fish and other aquatic species. Medium-sized trees can help catch and hold larger trees and floating logs during floods. Catching and anchoring large wood in channels and floodplains is an important riparian function, especially on high-energy, high-sediment creeks and rivers. Sycamore is not preferred for browsing, but beaver are fond of stripping and eating the bark.

Obvious browse line on riparian Sycamore indicates a serious deer, exotic or goat problem.

Spring-dwelling Caddis fly larvae makes its tiny home from circles it cuts from sycamore leaves.

This young stand of Sycamore was poisoned by uninformed riparian landowners cleaning up their riverbank and hoping to have a better view of the river.

Pecan

Nuece

(Carya illinoinensis)
JUGLandaceae

Wetland Indicator Status: FAC

Stability Rating: 6

No other tree in Texas is more clearly associated with creeks and rivers than the Pecan, the Texas state tree. Nueces is a Spanish word for the pecan nut. Pecan groves, often called pecan bottoms line much of the major Nueces Basin floodplains and play an important role in riparian ecology. They are often the largest riparian tree, reaching heights of more than 80-feet and living up to 300 years. Pecan grows best in deep, fertile alluvial deposits. They grow on active floodplains or on abandoned terraces with access to a shallow water table. Pecan, like other bottomland trees, provides bank reinforcement and energy dissipation during flooding. When left unmanicured, pecan bottoms can provide protected incubator space for tall riparian grasses and baby replacement trees to establish and flourish. However, these areas are often kept 'clean' and mowed, reducing their riparian function and inhibiting regeneration. Pecans that grow near the active channel may eventually be undercut by flood water and fall into the river, creating an important source of large wood. Pecan trees, especially the tall mature trees, provide roost sites for the Rio Grande turkey and a variety of other large birds; their nuts are a rich source of energy and protein for many species of wildlife.

"They set off at a brisk pace for about forty miles through the Nueces valley; a delightful region, adorned with beautiful trees and picturesque rocks, and watered by many fair rivers, tribute to the great Rio del Nueces, River of Nuts."

A historic note from *Recollection of Western Texas 1852–55 by Two of the U.S. Mounted Rifles* published by Texas Tech Press.

Little walnut

(Juglans microcarpa)
JUGLandaceae

Nogalito

Wetland Indicator Status: FAC Stability Rating: 6/7

Little walnut is a smaller cousin to the larger black walnut. It is usually a multi-stemmed gnarly shrub or small tree growing to a height of 10- to 15-feet. Little walnut occurs on even the largest and deepest gravel deposits, often being the only species to thrive in that harsh environment. It is an important plant to help stabilize gravel bars, dissipating the energy of floodwater, allowing some fine sediment to settle out and capturing organic debris. The leaves are similar to pecan, having many smaller leaflets growing from a central leaf stalk. The walnuts are small and very hard with only a small amount of meat and not worth the effort to extract. Walnuts will float downstream and germinate on new gravel bars. Walnut is not a preferred browse plant although deer and exotics will sometimes use it.

1930's–"Mr. Henderson also did considerable business in marketing walnut stumps and timber. The walnut stumps were very valuable in making veneer for furniture, on account of the beautiful patterns that are brought out when the timber is sawed in cross sections. Bud Reagan also worked at the business of getting walnut stumps. He dug stumps all over the river beds of the Nueces Canyon... The competition between the various groups soon cleaned out the stands of walnut timber in the canyon and the people thus engaged turned to other means of livelihood."

From *Nueces Headwaters Country*, by Alan A. Stoval, published by The Naylor Company, 1959.

Baccharis

(Baccharis neglecta)
ASTEraceae

Roosevelt weed, New deal weed, False willow, Poverty weed, Jara Dulce, Dryland willow

Wetland Indicator Status: FAC Stability Rating: 6

Most people think baccharis is ugly, but it is important in the early stages of riparian recovery. Baccharis is a multi-stemmed bush growing from 4- to 8-feet tall. It can resist moderate flows, and its brushy tops help to dissipate energy, catch sediment and organic debris which creates a micro-environment suitable for propagation of other riparian plants. It is common to find young sycamore and switchgrass plants getting started in a thicket of baccharis. The flower heads form in the fall in silvery white clusters. There are separate male and female plants. The prolific fluffy seeds are spread by the wind to vegetate new gravel deposits. Baccharis can be troublesome in upland pastures and control may be warranted, but in riparian areas, it should be left alone. There is another less common species of baccharis sometimes found in the region, Seepwillow baccharis (Baccharis salicifolia). It has similar characteristics, except that it is FACW.

Desert willow

(Chilopsis linearis)
BIGNoniaceae

Wetland Indicator Status: FACU Stability Rating: 6

Desert willow is not a true willow. It is a large shrub or small tree, growing to a height of 10- to 15-feet. It normally grows on the uppermost parts of gravel bars, where it helps dissipate stream energy, stabilize sediments, and trap debris. Flowers are showy and range in color from pinkish white to light purple. Seed pods are pencil-shaped and contain many hairy seeds. Desert willow is a desirable ornamental tree for landscaping and is not heavily browsed by deer.

Brickellbush

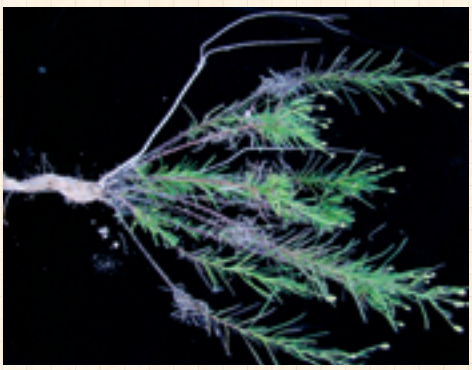
(Brickellia sp.)
ASTEaceae

Wetland Indicator Status: UPL

Stability Rating: 4

This scrubby bush is often one of the first species to colonize new gravel deposits; a gravel bar pioneer. Two species are equally common along the upper Nueces and its tributaries. Both are less than 3-feet tall and grow exclusively on barren gravel bars. They have an impressive taproot for such a small shrub. The roots help hold the sediments in place until stronger-rooted plants such as Little walnut or Sycamore can get established. The seeds are dispersed by the wind and can quickly re-seed new gravel bars. The leaves of one species are covered by sticky resin.

A tea of Brickellbush leaves used repeatedly may lower elevated blood sugar levels.



Slinder brickellbush; *Brickellia eupatorioides var gracillima*

Gravel bar brickellbush; *Brickellia dentata gracillima*

Lindheimer indigo

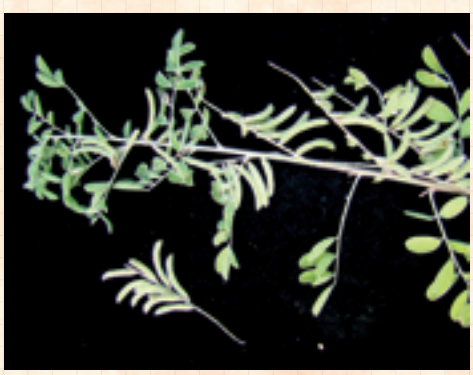
Lindheimer scarlet pea

(Indigofera lindheimeri)
FABAceae

Wetland Indicator Status: UPL

Stability Rating: 4

Lindheimer indigo is a small shrub, rarely growing to waist height. It is another gravel bar pioneer, often found along with Brickellbush. It has a distinctive gray appearance due to the dense covering of fine hairs on the leaf, peachy red flowers, and banana-shaped seed pods. It is not particularly strong rooted, but it is able to establish and survive on new gravel deposits making it a valuable plant in the early stages of recovery. Since it is a legume, it does help improve the barren soil by fixing nitrogen. It is not browsed by livestock or deer.



Cedar elm

Olmo

(Ulmus crassifolia)
ULMAceae

Wetland Indicator Status: FAC

Stability Rating: 6

Cedar elm often grows in rich bottomland soils and sometimes on steep banks. It can grow to a large tree of 50-feet in height. It is one of the components of mature riparian woodlands and associated with live oak, pecan, hackberry and other deciduous hardwoods. Leaves are small and rough with serrated edges. Stems and smaller limbs are sometimes characterized by a woody flag. Seeds produced in spring, are flat, surrounded by a thin wing, and are eaten by turkey. Cedar elm, especially seedlings, are a preferred browse plant and often heavily used by livestock, deer and exotics. Another species, American Elm (*Ulmus americana),* is also found in the area.

Red mulberry

Moral

(Morus rubra)
MORAceae

Wetland Indicator Status: FACU

Stability Rating: 6

Red mulberry is a medium-sized tree, found on many creeks, but seldom common. It is another important component of riparian woodlands and is associated with elm, pecan, hackberry and other hardwoods. In combination with other trees, it helps provide bank stability and some large wood to dissipate energy and the catch debris. Leaves are large, palm-shaped, often with scalloped edges. The berries, which appear on female trees, are good to eat and relished by a variety of birds and small animals. Asian mulberry *(M. alba)* is similar in appearance but is non-native.

Hackberry

Palo blanco

(Celtis laevigata and *Celtis reticulata)*
ULMAceae

Wetland Indicator Status: FAC Stability Rating: 5/6

There are two species of Hackberry trees in the region which look very similar and provide equivalent riparian value, Sugar hackberry and Netleaf hackberry. The leaf of sugar hackberry is smooth to the touch, while the leaf of netleaf hackberry is rough. Hackberry grows to a medium-sized tree of 25- to 40-feet at maturity. The bark is gray with warty bumps. The reddish brown berries that mature in the fall are used by many species of birds and other wildlife. Hackberry is often a component of riparian bottomlands and is found in the Rio Grande Plains as well as the Edwards Plateau. Hackberry furnishes excellent browse for deer and livestock.

Spiny hackberry

Granjeno, Desert hackberry

(Celtis ehrenbergiana or *pallida)*
ULMAceae

Wetland Indicator Status: UPL Stability Rating: 5/6

Spinny hackberry or Granjeno is common along creeks and rivers especially in the Rio Grande Plains portion of the Nueces Basin. It produces bright orange edible berries and is the larval host for the snout nose butterflies that periodically defoliate entire stands of this plant. Granjeno is an important wildlife browse plant found in drier marginal riparian sites, often along the banks of ephemeral and seasonal stream. It performs erosion control and bank stabilization in the absence of FACW and OBL species.

1850's–"Several of these, dry in later months, contained running water and in their valleys, here and there, the gravelly soil was black, and the grass was abundant beneath the shrubs ...The bottoms of two or three of these creeks were marked by a thin belt of wood—hackberry and elm—and those [bottoms] of the Nueces and Turkey creek ... were well shaded by timber ... pasturage ... would be impracticable, where sheep would loose their whole fleece in the labyrinths of thorns and cattle stray instantly out of sight and beyond possible control."

Historic description of a Nueces River tributaries by Fredrick Olmsted.

Black willow

(Salix nigra)
SALIcaceae

Sauz

Wetland Indicator Status: FACW Stability Rating: 7

Black willow is the most common species of willow in the region. It can grow more than 40-feet in height in protected areas, but it seldom gets that big. Their extensive root system provides very good bank stability. Black willow is recognized by its long, narrow leaves, finely serrated margins and pointed tip. Flowers occur in early spring as drooping yellow catkins, followed by the white fluffy seed, which is dispersed by the wind. The wood of willow is weak, and branches and limbs are often broken off in flooding. The branches that get broken off can float downstream and root if they land in a suitable location. This characteristic can also be used to transplant willow. Poles or limbs are cut in the winter, kept moist, then planted while still dormant. The butt of the pole must be buried deep enough to stay wet. In the spring, the pole will sprout roots and new leaves. Willow is a preferred browse plant for deer, exotics and livestock. Heavy browsing will limit the recruitment of new plants and the success of transplants. Control and management of deer and livestock is an important consideration to help restore willow. Beaver are also very fond of willow as a food source. There are two other less common species of willow found in the region—Sandbar willow *(Salix exigua)* can be found in the Rio Grande Plains, and Arroyo willow *(Salix lasiolepis)* can be found in the Edwards Plateau.

Mexican ash

Fresno

(Fraxinus berlandieriana)
OLEAceae

Wetland Indicator Status: FAC Stability Rating: 6

Mexican ash is a common component of some riparian areas in the Rio Grande Plains, but seldom found in the Edwards Plateau portion of the basin. It is associated with cedar elm and other riparian hardwoods that can form nearly continuous canopies on banks and can provide good stability. Known locally as Fresno, these trees grow quickly and have expansive root systems that reinforce banks and minimize erosion. In the lower gradient creeks and rivers of the Rio Grande Plains, a Stability Rating of 6 is often adequate to hold banks in place and this tree is a key component of that stability. Fresno serves as a larval host for a number of butterflies including Two-tailed tiger swallowtail, Tiger swallow-tail, Orange sulphur, Sleepy orange and Cloudless giant sulphur.

Large, strong root systems of Ash and other hardwood trees stabalize banks.

"... in the afternoon arrived at the Nueces River... Its groves consist of ash trees, elm, and poplars. Its bed is spread with loose rocks and its deep ravines can flood right and left over much ground, and the soil of its banks is hard, and the forest on the right bank very dense"

Historic note from Brevet Colonel Jose Maria Carrasco, of General Woll's army, 1842, probably near present La Pryor in Zavala County.

Large wood in riparian areas helps dissipate the energy of floodwater so that sediments can be trapped and new banks and floodplains can be built. Large wood often gets buried in sediment or gravel which helps hold it in place. Large wood also helps create meanders in the channel and helps create good fish habitat. Logging has contributed to the degradation of many rivers in the world. Some riparian experts believe that the massive mobile gravel deposits in Nueces Basin headwater streams will not stabilize and recover until a sufficient quantity of large wood gets caught and anchored into the floodplain. Downed trees and logs should be left in place in riparian areas and floodplains.