

Grasses and Sedges

"Sedges have edges,
and grasses have...
long leaves."



Photo courtesy of David and Liz Smith

Healthy, functional riparian areas provide the richest and most valuable habitat for wildlife; their importance to wildlife cannot be overestimated. Here wildlife find a rich food supply, abundant cover and clean permanent water all in close proximity, even in times of severe drought. Whether we are talking about white-tailed deer, songbirds, or fish, healthy and diverse riparian vegetation is critically important.

Steve Nelle
Wildlife biologist with NRCS

Emory sedge

River sedge

(*Carex emoryi*)
CYPEraceae

Wetland Indicator Status:

OBL

Stability Rating:

9

Emory sedge is large and leafy, a colony-forming sedge that often occurs in long narrow bands along the water's edge. With an extensive and strong network of rhizomes, its roots can hold banks in place even during severe floods. The leaves are long and arching, the tips often touching the ground or the water. It can grow in full sun or moderately shaded locations. Leaves have extremely fine serrations along the edge that are not discernable to the eye, but can be felt. Sedges are known for their dense root mass. Root length of a similar species, Nebraska sedge, has been documented to contain 20 miles of roots in a single cubic foot of soil. This kind of root mass is extremely important for stabilizing high-energy creeks and rivers. Emory sedge can be transplanted by digging clumps and dividing them into smaller units for replanting in similar locations. Transplanting should be done in winter or early spring.



Grasses and sedges

Roots often become so tightly woven they can only be separated from the soil with great effort.



Sawgrass

(*Cladium mariscus*)
CYPERACEAE

Wetland Indicator Status: **OBL** Stability Rating: **9/10**

Sawgrass is not a grass; it is a sedge, the largest sedge in Texas. The leaves are long and coarse with a V-shaped cross section and sharp serrations along the edge and midrib. They can cut your fingers to the bone. The plants can grow to 6-feet in diameter, and the seed heads can stand 8-feet tall. Unlike Emory sedge, Sawgrass does not usually form continuous interconnected colonies, but rather grows in well-anchored individual clumps. The rooting characteristic of Sawgrass gives it one of the highest stability ratings of any riparian plant in the region. In addition to a strong stabilizing root system, the large robust top growth effectively dissipates energy and traps sediment. The plant is not palatable to livestock under normal conditions, but the seeds are favored by birds.

Grasses and sedges



Flat sedge

Umbrella sedge

(*Cyperus sp.*)
CYPERaceae

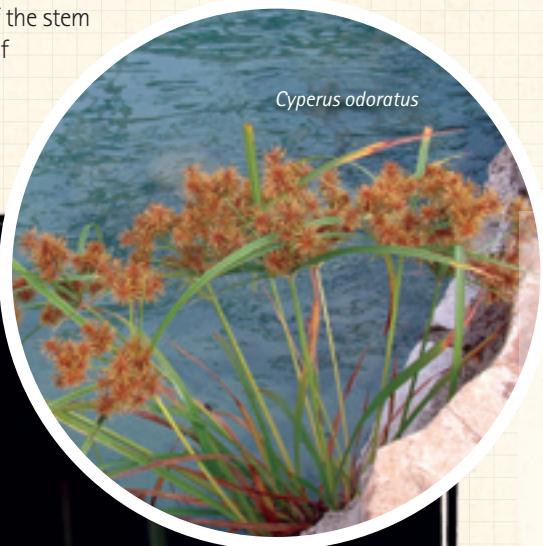
Wetland Indicator Status:

FACW

Stability Rating:

5

There are several species of Flat sedge in the region; most are less than 18-inches tall. They grow right near the water's edge or in other wet or seepy areas. Flat sedges usually grow as individual clumps. They serve as colonizers; their root systems are not strong enough to provide good, long-term stability. The stems are triangular and the leaves are shiny green. Distinctive large seed heads form at the top of the stem and produce thousands of tiny seeds. Other species of Flat sedge common in the area but not pictured: *Cyperus acuminatus*.



Grasses and sedges

Spikerush

Spikesedge

(*Eleocharis sp.*)
CYPEraceae

Wetland Indicator Status:

OBL

Stability Rating:

6

Spikerush is a bright green grassy looking plant that grows at the water's edge on many creeks and rivers. Most spikerush grows in colonies by extensive underground rhizomes. It appears as a tight mass of soft slender stems without leaves. Very small, almost inconspicuous seed heads form at the tip of the stems. Spikerush is considered either a strong late-stage colonizer or a weak stabilizer. It has the ability to quickly colonize newly deposited sediment, yet it has strong enough roots to withstand moderate floods. It does not have the strength or depth of root to withstand severe disturbance. There are several different species of spikerush in the area, some larger and some smaller, but they have a similar appearance. Under conditions of high livestock numbers, spikerush is sometimes grazed short, which reduces its usefulness.



Eleocharis interstincta geniculata

Other species common but not pictured:
Sand Spikesedge *Eleocharis montividensis*,
Mat Spikesedge *Eleocharis parvula*, and
Spikesedge *Eleocharis interstincta cellulosa*.



Tussock Spikesedge *Eleocharis rostellata*



Porcupine sedge

(*Fuirena simplex*)
CYPERACEAE

Wetland Indicator Status:

OBL

Stability Rating:

5

This small perennial sedge is found in many riparian areas but is seldom abundant. It forms individual clumps, not colonies. The plants with distinctive triangular stems are usually less than 12-inches tall. The distinguishing characteristic is the burr-like seed heads that form at the top of stems. Porcupine sedge is weakly rooted but can help colonize barren areas.



Grasses and sedges

White-top sedge

Star sedge, Starrush whitetop

(*Rhynchospora colorata*)
formerly *Dichromena*
CYPEraceae

Wetland Indicator Status:

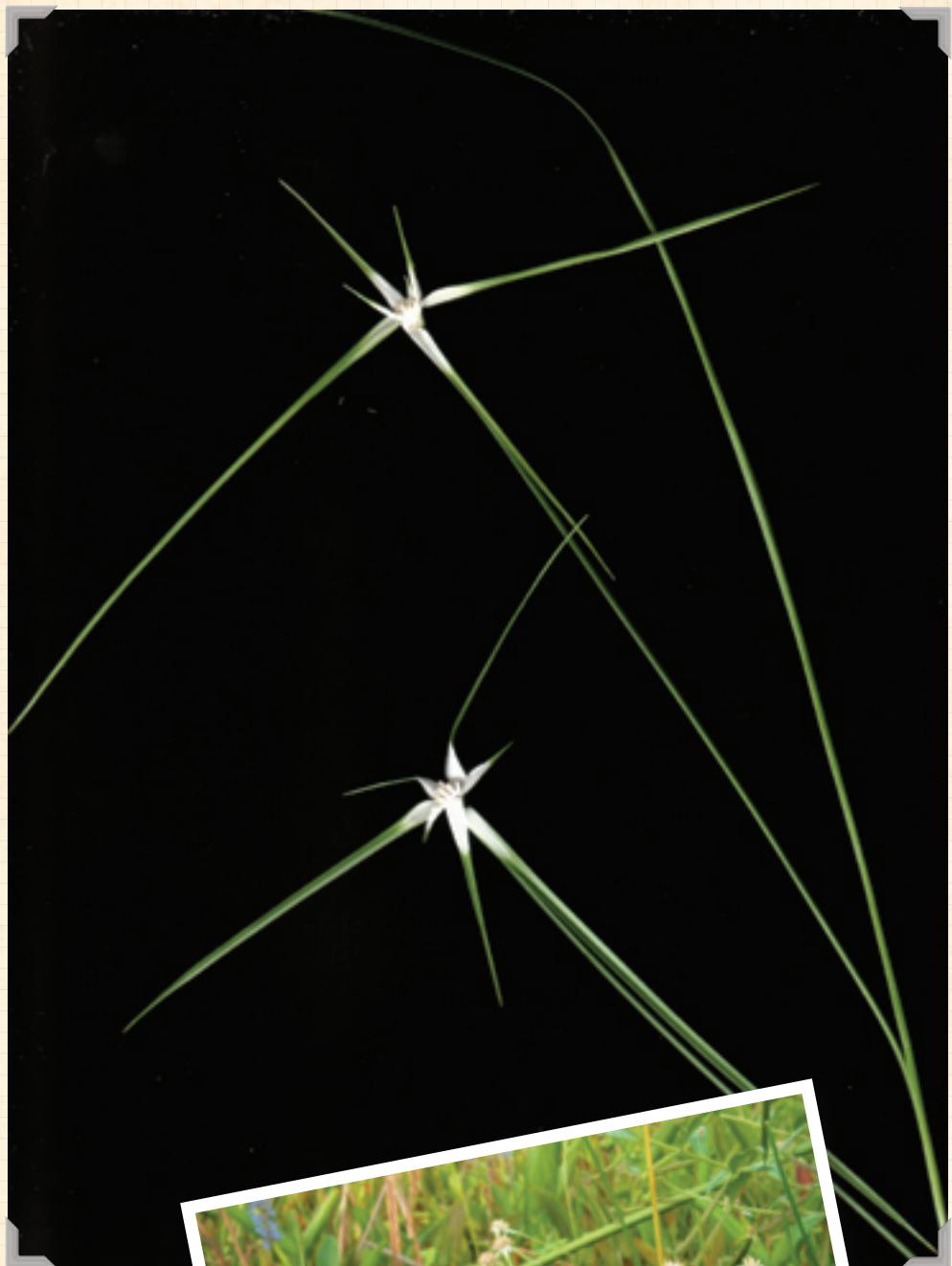
FACW

Stability Rating:

6

This sedge is easily recognized, with attractive white patches on its upper leaves and white seed heads. White-top sedge grows in colonies from orange rhizomes. Unlike most sedges, which are pollinated by wind, this species is pollinated by insects attracted to the white flowers. Other species not pictured: Snowy white-top sedge, *Rhynchospora nivea*.

Grasses and sedges



Switchgrass

(*Panicum virgatum*)
POACeae

Wetland Indicator Status:

FAC

Stability Rating:

8/19

Switchgrass is the most common and most important stabilizer grass in the Upper Nueces region. It grows in large, dense clumps often 5-feet across and 6-feet high. Switchgrass has superior root strength for holding banks and large stiff leaves and stems that can dissipate energy and catch sediment during high flows. Deergrass, another riparian grass with a similar growth form, has been documented to produce more than 30 tons of roots per acre. This incredible root mass is what allows these strong riparian grasses to hold banks in place during severe floods. Switchgrass is a good example of the versatility of a facultative plant. It does not require access to the water table for survival but can become very productive when it does. It grows equally well down near the water or in drier locations, even on barren gravel bars where it can catalyze rapid improvements in riparian function. During the growing season the leaves are a distinctive grayish green color. It provides desirable habitat for game birds and forage for cattle; the plant is often found grazed short. Switchgrass will usually regenerate naturally with proper grazing management, but seed is commercially available for those who desire to accelerate natural recovery. It can also be transplanted by dividing a large clump into many smaller clumps.



Grasses and sedges

Bushy bluestem

Bushy beardgrass

(*Andropogon glomeratus*)

POACeae

Wetland Indicator Status: **FACW**

Stability Rating: **5**

Bushy bluestem is one of the most familiar and easy to recognize riparian tall grasses. It is a bunchgrass growing 3- to 4-feet tall. In the fall it appears erect and bronze in color with the large fluffy seed heads and can present a striking pose on white gravel bars. In spring and summer, it can be recognized by the very flat stems at the base of the plant. Bushy bluestem can establish quickly from windblown seed and helps to provide cover on new gravel deposits. The roots are not extremely strong, but the plant does catch some sediment and improve conditions for other stronger species. It is not one of the most preferred grasses for cattle, but will often be grazed short where livestock are not well managed and thus indicates grazing pressure.



Photo courtesy of Lady Bird Johnson Wildflower Center

Knotgrass

(*Paspalum distichum*)
POACeae

Wetland Indicator Status:

FACW

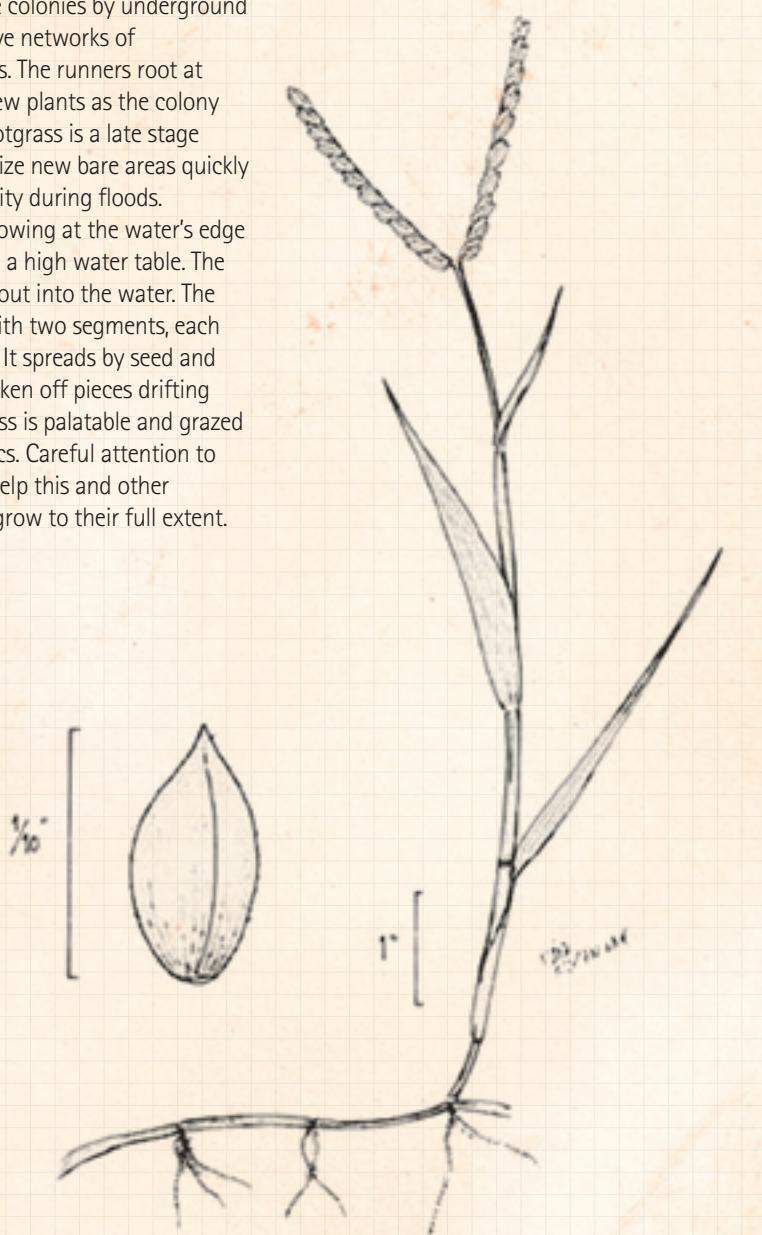
Stability Rating:

6

Knotgrass forms large colonies by underground rhizomes and extensive networks of above-ground runners. The runners root at each node creating new plants as the colony expands outward. Knotgrass is a late stage colonizer. It can colonize new bare areas quickly and provide fair stability during floods.

Knotgrass is found growing at the water's edge or on gravel bars with a high water table. The runners often spread out into the water. The seed head is forked with two segments, each bearing several seeds. It spreads by seed and runners as well as broken off pieces drifting downstream. Knotgrass is palatable and grazed by livestock and exotics. Careful attention to riparian grazing will help this and other important species to grow to their full extent.

Root mass of knotgrass has been measured to contain 18 miles of root per cubic foot of soil.



Grasses and sedges

Paspalum Grasses

(*Paspalum sp.*)
POACeae

Wetland Indicator Status:

FAC & FACW

Stability Rating:

5/6

Hairyseed paspalum

(*Paspalum pubiflorum*)

Hairyseed paspalum is found in many creek areas but seldom abundant and often inconspicuous. It frequently grows on gravel areas under the shade of riparian trees.



Rustyseed paspalum

(*Paspalum langei*)

Rustyseed paspalum can be found in wooded riparian bottomlands in dense shade. The leaves are a distinctive and attractive shiny green with crinkled margins. This native can be easily seeded into disturbed shady sites.

Vaseygrass

(*Paspalum urvillei*) NN

Introduced from South America but now naturalized in Texas, this tall slender grass sprouts seed heads up to 6-feet tall with densely hairy purple basal stems. The grass provides some riparian stability and often grows along with Bushy bluestem.



Dallisgrass

(*Paspalum dilatatum*) NN

Also introduced from South America, Dallisgrass is considered a noxious weed in parts of East Texas. Though present, it is not abundant in the Nueces Basin.



Teal lovegrass

(*Eragrostis hyponides*)
POACeae

Wetland Indicator Status: **OBL**

Stability Rating: **4**

Teal lovegrass is a low mat-forming grass. The stems, which are weak, often lay over and root at the nodes giving the impression of runners. This grass is common in the Rio Grande Plains but is not commonly found in the Edwards Plateau. It is an annual, meaning it must come up from seed each year. Teal lovegrass serves as a colonizer plant and can cover wet mud in a short period of time during favorable growing conditions.



1842—Sterling Brown Hendricks in The Somervell Expedition to the Rio Grande tells of missing the Laredo road crossing of the Nueces and finding the riparian wetland difficult to cross "...none of the men were lost in crossing the river, but we had now to encounter a marshy bog, two miles wide, and filled with numerous sloughs, which we were all day crossing—fifty horses were lost in this bog, including General Somervell's."

Southwestern Hist. Quarterly, Vol 23, #2 (Oct., 1919) pp112-140.

Grasses and sedges

Eastern gamagrass

Zacate granilla

(*Tripsacum dactyloides*)
POACEAE

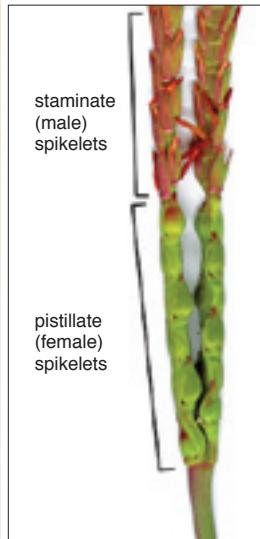
Wetland Indicator Status:

FAC

Stability Rating:

9

Eastern gamagrass is a big green leafy cousin of corn with finger-like seed heads. Dactylus is Greek for finger and 'oides' means *like* or *resembling*, hence the origin of its Latin name dactyloides. Gamagrass grows in bunches and has extremely good root stability, sometimes called "riparian rebar" for its stabilizing function in riparian areas. It prefers to grow in deeper soil, rather than on raw gravel bars. Clumps are often 6-feet across and 6-feet tall or taller with their towering seed head. Their short knotty rhizomes serve to enlarge the diameter of clumps, but colonies are not actually interconnected. Gama clumps can act as a seedling nursery for trees like pecan and cypress. Their nuts, often trapped along with silt, are protected from herbivores by gamma's umbrella of long leaves. Gama plants reproduce and can be propagated from seed. The seed head is a segmented stack of large hard kernels resembling corn at the lower end of the stalk and the male flower parts above. This riparian grass is highly palatable to livestock and therefore is not common on creeks where continuous grazing is practiced. It can produce huge quantities of livestock forage and wildlife habitat under the right rotation program. Those landowners who have suspended grazing in their riparian areas or who practice conservative rotational grazing often notice a remarkable comeback in this desirable grass.



Lindheimer muhly

(*Muhlenbergia
linheimeri*)
POACeae

Wetland Indicator Status:

FAC

Stability Rating:

7



Lindheimer muhly is a large coarse bunchgrass, more commonly found on small seasonal headwater tributaries and seepy areas. It is occasionally found on larger creeks. Its leaves are narrow and rigid and have a grayish green color and the seed head is an attractive silver plume. Lindheimer muhly is a very unpalatable grass, seldom eaten by cattle or deer. For this reason, it persists very well in many areas. It is sometimes planted in native landscapes as an ornamental grass.

photo courtesy of Lady Bird Johnson Wildflower Center

Ferdinand Jacob Lindheimer (1801-1879) is often called the Father of Texas Botany because of his work as the first permanent-resident plant collector in Texas. Lindheimer is credited with the discovery of several hundred plant species and his name is used to designate forty-eight species and subspecies of plants.

Grasses and sedges

...The Nueces was full of fish and woods were full of bear, deer and turkey, so they decided to build a log house in order to have shelter for the winter...1882 and later in 1889 when one of the Thurman sons married, he and his bride built a picket house on Bluff Creek near Kickapoo Spring. The house was chinked and daubed with mud and cedar bark and covered with grass.

Except from Nueces Headwaters Country by Alan A. Stoval,
published by The Naylor Company, 1959.

Big sacaton

Zacate granilla

(*Sporobolus wrightii*)

POACeae

Wetland Indicator Status:

FAC

Stability Rating:

8/9



Photo courtesy of Lady Bird Wildflower Center

Big sacaton occurs on some deep-soil banks and floodplains in the Rio Grande Plains. It is not common in the Edwards plateau portion of the Nueces. It is a very large, densely rooted bunchgrass, with similar characteristics as Switchgrass. Ranchers sometimes burn areas of big sacaton to improve palatability. However its best use is for riparian stability rather than for livestock forage. Alkali sacaton, a smaller cousin, is likewise not very palatable.

"I have observed large areas of Big sacaton dying after a winter burn followed by a dry spring and summer."

Steve Nelle

Gulf cordgrass

Sacahuiste

(*Spartina spartinae*)

POACeae

Wetland Indicator Status:

FACW

Stability Rating:

8/9

Gulf cordgrass grows mostly in the lower part of the Nueces in saline soils of the Rio Grande Plains. It is a dense bunchgrass with a dense root system that provides erosion control and energy dissipation. In coastal areas it is sometime considered a wetland obligate plant and is saline tolerant, found in salt marshes and sand dunes throughout the Nueces-Rio Grande Coastal Basin. Gulf cordgrass is coarse and unpalatable to cattle. Ranchers commonly burn cordgrass areas to promote new tender growth and improved grazing value. Repeated burning followed closely by grazing can inhibit riparian function.



Common reed

(Native)

Phragmites australis
(*communis*)
POACeae

Wetland Indicator Status:

FACW

Stability Rating:

8/9



Common reed is a large native reed grass but much smaller than Giant reed. It is not common in the region, but is found on some creeks in the Rio Grande Plains and western Nueces Basin. It is a strong-rooted stabilizing grass that forms colonies interconnected by rhizomes. Common reed has excellent ability to hold and stabilize banks, even during flooding.



Phragmites or Common reed is a native riparian grass.



Arundo Donax or Giant reed (described on following page) is an invasive non-native riparian grass.

Grasses and sedges

Giant reed (Invasive Non-Native)

Georgia cane

(*Arundo donax*)

POACeae

Wetland Indicator Status:

FAC

Stability Rating:

7

This gigantic, cane-like grass is found scattered throughout the region. It can grow up to 20-feet tall with stout hollow stems, 1- to 2-inches in diameter. It forms dense colonies, interconnected by a network of fibrous rhizomes. Brought to North America by early Spanish settlers because of its usefulness, *cana* was cut for animal forages, used as building and roofing material, woven into mats and used for piping to transport water. With a decline in human use and absence of natural predators, it has overgrown and completely dominated some riparian areas to the detriment of native plants, fish and wildlife diversity. Along sections of the Rio Grande, Giant reed has interrupted geomorphic and hydrologic processes creating a narrow, highly channelized in-stream habitat reducing diversity for aquatic species. Although it has been issued a stability rating, its roots are relatively shallow compared to native tall grasses. Giant reed is becoming a problem in some areas of the Nueces Basin where it has formed monocultures. The plant does not produce fertile seed in this area but spreads readily from disturbed clumps and segments that float downstream to form new plants. Chemical control has been successful in managing infestations in some areas. Landowners should be aware of the potential invasiveness of the plant and be prepared to take measures to control it before it begins to increase.



The familiar name (Carrizo cane) has been loosely used to refer to Phragmites and Arundo.

St. Augustine grass

Carpetgrass

(*Stenotaphrum secundatum*)
POACeae

Wetland Indicator Status:

FAC

Stability Rating:

6

St. Augustine is a familiar turfgrass commonly used in yards. It is not a native grass but has escaped into the wild in some places. It is a dense, low-growing grass that spreads by short, stout runners. Although not preferred over the native deep-rooted tall riparian grasses, it does function to cover bare ground and provides some erosion protection.

Bermuda grass

(*Cynodon dactylon*)
POACeae

Wetland Indicator Status:

FACU

Stability Rating:

6

Bermuda grass is the most common yard grass used in the region, and is also a common forage grass for livestock grazing. Originally from Africa it has become widely "naturalized" across large parts of Texas, especially along some creeks and rivers. Bermuda grass spreads by three methods: underground rhizomes, above ground runners and seed. It serves the function of a riparian colonizer since it can spread rapidly to cover bare ground but provides only moderate stability, not enough to hold banks together during flooding. One disadvantage of some of the aggressive exotic plants is that they can dominate an area and 'out compete' the native plants.

King Ranch bluestem

K. R. bluestem

(Invasive Non-Native)

(*Bothriochloa ischaemum*)
POACeae

Wetland Indicator Status:

UPL

Stability Rating:

5

King Ranch bluestem is an exotic grass introduced into Texas many years ago as a range forage grass. It is a bunch grass, but can grow thick enough to form a mat. It has been widely planted on roadsides and ranches, and has spread aggressively across the region, including many riparian areas. The seeds are fluffy and readily spread by wind. K. R. can dominate riparian areas especially following mechanical disturbance or regular mowing, or when the more desirable grasses have been overgrazed. It provides a degree of erosion control, but is inadequate to dissipate the energy of high flows. There are several other closely-related exotic bluestem grasses with similar characteristics, which are generically referred to as "old world bluestems." These include Kleberg bluestem, Caucasian bluestem, Yellow bluestem and Old World bluestem. These should not be confused with the desirable native bluestems.

Grasses and sedges



Broadleaf uniola

Inland sea oats, Creek oats, Wood oats, Fish-on-a-pole grass

(*Chasmanthium latifolium*)
POACae

Wetland Indicator Status:

FAC

Stability Rating:

5

Broadleaf uniola is a distinctive grass that grows in heavily wooded riparian areas. It is one of the few grasses that thrive under dense shade. Both the leaves and the seed head spikelets are abnormally broad, compared to most other grasses. The seed head is rather large and heavy causing the weaker stalk to bend over. Uniola helps to stabilize soils on steep creek bank slopes where stronger stabilizers may not want to grow. It is a larval host for several skipper butterflies and is readily grazed by livestock and exotics.

Grasses and sedges

