

The “Big Four” Native Perennial Forbs of Texas

It is common in range science, land management and naturalist circles to hear references made to the “Big Four grasses of the tall grass prairies”, which were the dominant grasses of the prairies from Texas to Canada in the 1800s. These grasses not only made up the bulk of the vegetation, but each one is among the tallest grasses as well as the most palatable and nutritious for grazers. The Big Four grasses are little bluestem, big bluestem, yellow Indiangrass and switchgrass, all grasses that are desirable and species that land stewards strive to establish on their properties.

Grasses were certainly not the only vegetation growing on the prairies. There were numerous forb species as well. But I had never heard a similar “Big Four” term applied to forbs until Ricky Linex, NRCS agent, used it in his recent book, “Range Plants of North Central Texas”. According to Linex, the “Big Four” native perennial forbs in Texas are: bush sunflower, Engelmann daisy, Illinois bundleflower, and Maximilian sunflower.

These species are not necessarily the tallest or largest forbs found in native prairies, but what they have in common is that they are all highly palatable to all classes of livestock and deer, they are high in protein, attractive to pollinators, and the seeds are used by quail, dove, turkey, and many songbirds. They are thus all very desirable species to have in any native grassland habitat.

Bush sunflower (*Simsia calva*) is a native, perennial, warm-season forb in the *Asteraceae* or sunflower family. It grows as a multi-stemmed bush about 1 to 3 feet in height and diameter. The leaves are oppositely arranged, 1 inch to 1.5 inches long, triangular, with small lobes. Both the leaves and stems are rough to the touch. The flowers are 1 to 1.5 inches in diameter on the end of a stem with 10 or more yellow petals and a slightly orange center. With moisture, it can bloom from April to October.

Engelmann daisy (*Engelmannia peristenia*), also called cut-leaf daisy, is a native perennial cool-season forb, also in the *Asteraceae* family. It grows about 2 feet tall with long (6 to 12 inches) deeply pinnately-lobed leaves (thus the name “cut-leaf”). The flowers appear from March to July and are about 1.5 inches in diameter with 8 yellow petals.

Illinois bundleflower (*Desmanthus illinoensis*) is, in spite of the name, a perennial warm-season legume native to Texas. It grows up to three feet tall, usually with several stems. Typical of many legumes, the leaves are twice pinnately compound with 6 to 12 branches each containing 20 to 30 tiny leaflets ($1/8^{\text{th}}$ inch or less), giving the plant a fern-like appearance. Flowers are a whitish spherical puff-ball less than 1/2 inch in diameter from May to June, or later with moisture. The seed pods are bunched together in a distinctive tight spherical cluster or “bundle” up to 1 inch or so in diameter.

Maximilian sunflower (*Helianthus maximiliani*) is a native perennial warm-season forb. It grows in large colonies of unbranched stems that can reach 6 feet tall under ideal conditions. The leaves are alternate, lanceolate, pointed at both ends and average about 4 inches long. The bright yellow flowers, up to 3 inches in diameter, grow along the upper part of the stems at the axils of the leaves in September and October. The colonies expand over time and can be 8 to 10 feet across.

The irony of the big four grasses and the big four forbs, which are all highly desirable in any grassland or savanna, is that in many cases, they are among the hardest to find—for the very reason that they are highly desirable. They are the most often eaten by grazers and/or browsers and therefore the most likely to be the first species lost on overgrazed or overbrowsed properties.

And of course, the opposite effect is also observed. In heavily overgrazed/overbrowsed properties, it is species that are seldom if ever eaten that are most abundant—species like purple threeawn, Texas grama, hairy grama and windmillgrass for the grasses and Mexican hat, buffalo bur, queen's delight and mealy blue sage for forbs.

To purchase a copy of Linex' book, contact him at Ricky.Linex@tx.usda.gov. or go to the Natural Resources Conservation Service office at 2104 Memorial Blvd in Kerrville, or go to www.seedsource.com

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Until next time...

Jim Stanley is a Texas Master Naturalist and the author of the books "Hill Country Landowner's Guide" and "A Beginner's Handbook for Rural Texas Landowners: How to Live in the Country Without Spoiling It". He can be reached at jstmn@kvc.com. Previous columns can be seen at www.hillcountrynaturalist.org.