BOUNTIFUL BLOOMERS

Article by **MARY O. PARKER**

Each spring, Texans put on at least 20 festivals in honor of our native wildflowers. We love celebrating our blossoming beauties almost as much as we love gazing at the colorful cornucopias they create. But, when it comes to these particular Texans (biologists refer to them as "forbs"), there's a lot more to celebrate than meets the eye.

Native forbs provide us with a better looking place; and, through the ecological roles they play, they also help provide us with a sense of place. Texas Parks and Wildlife Department (TPWD) Wildlife Biologist Eric P. Garza, a TWA member, explained, "The interaction of soils and climates within the State of Texas are able to produce a large variety of wildflower species that not only rank amongst the best food available for our game animals but also provide the necessary habitats for our vast diversity of birds, reptiles, insects and other creatures that call Texas home. Without this large diversity of wildflowers, wildlife as we know it today could not exist in Texas."

Native wildflowers not only support wildlife by furnishing food and shelter, but many also perform valuable services including: water filtration and retention, erosion control, reparation of disturbed soils, and crowding out exotic vegetation.

Texas has thousands of species of wildflowers, each designed by nature to play their parts in making whole ecosystems work more efficiently. The following represents some standouts, but in no way does it include all of the blooms delivering beneficial bounty:

Lazy Daisy (Aphanostephus riddellii-perennial)

DISTRIBUTION: Throughout Texas, except the Trans-Pecos region
BLOOMS: March-June

It's a well-known fact that white-tailed deer favor forbs and, when available, will fill up on these flowering plants first. Forbs contain 35 to 40 percent more energy content and 45 to 50 percent more antler-enhancing phosphorus than browse (bushes). Two studies conducted in South Texas dug into the dirt a little deeper to determine exactly which forbs deer would choose if they had their druthers. The result? Lazy daisies, one of the most nutritional forbs in Texas, consistently ranked as a top five favorite forb of the ruminates.


Photo by Steven Schwartzman

Once considered a bothersome "weed," clammyweed now enjoys growing popularity among those who've discovered the benefits it provides to game birds such as quail and dove.

The delicate white daisy gets its name from the "lazy" way its flowers droop in the morning and the fact that its blooms don't fully open until mid-day. But, when it comes to producing delectable new growth, there's nothing lazy about these Texas natives; perennial lazy daisies produce tender young shoots pretty much continuously, even during drought, making them a great source of sustenance even during times of slim pickings.

Look for them statewide since they tolerate both wet and dry conditions. However, perennial lazy daisies grow best in well-drained soil, so they don't propagate with abundance in East Texas.


Photo by Steven Schwartzman

While long known that white-tailed deer prefer forbs over browse, two South Texas studies found that perennial lazy daisy is one of their favorites.

Clammyweeds (Polanisia dodecandra [L] DC.)

DISTRIBUTION: Throughout Texas, especially the drier areas
BLOOMS: May-September

With "clammy" feeling leaves and the strange, strong odor they release when touched, Clammyweeds have historically been dismissed as unwanted "weeds." But with quail and dove hunting now, more than ever, contributing crucial revenue to many Texas landowners, folks are taking another look at this native annual.

TWA member Daniel Kunz, a Technical Guidance Biologist with TWPD, said, "Generally speaking, many annual forbs that sprout after soil disturbance produce an abundance of seeds that are very beneficial for seed and insect eating animals like birds."

Clammyweed fits that bill; each fall, before dying back, this hardy re-seeder puts forth a plethora of chow for game birds. This makes it a good candidate for food plots, especially in drier terrains. Bugs also love it, and that provides fledglings with ready sources of pluckable protein.

Clammyweed proliferates in disturbed soils – e.g. bare spots left behind by energy-production activities – and can crowd out exotic grasses before exotics really get going. More good news: this native assists other natives – in this case perennial native grasses – by serving as a nurse plant and supplying shade and protecting its slower growing soil-mates. Clammyweed presents no threat to livestock, but they don't tend to eat it. Thus, it works well to restore pastures where erosion and/or exotic grass domination are problematic.

Interestingly, its showy flowers have no scent, yet are quite popular with various pollinators. As an acclaimed "butterfly magnet," clammyweed has grown into a desired addition to residential butterfly gardens.

In the fall, as Ruby-throated Hummingbirds along Texas' coast prepare for their long migration across the Gulf of Mexico, the birds will visit 1,000-2,000 Turk's cap flowers per day in the absence of feeders.

Turk's Cap (Malvaviscus drummondii)

DISTRIBUTION: Statewide, except Trans-Pecos and Panhandle regions
BLOOMS: May-October in most places; year-round in Lower Rio Grande Valley

This hardy perennial – also called Drummond wax-mallow and Texas mallow – plays a crucial role in sustaining the thousands of Ruby-throated Hummingbirds migrating through Texas each fall. Turk's cap blooms most happily in August and September, when Texas teems with some of its worse heat, but also Ruby-throated hummers. The birds hang-out in coastal regions in order to stock up on glucose and lipids as they prepare for their long migration south – a journey beginning with five hundred miles of open Gulf waters.

This extremely adaptable Texas native does best in the shade. In warmer climates, it flowers year-round; however, no matter where it lives, when temps grow their hottest, Turk's cap grows its prettiest. While its nectar nourishes hummingbirds – that, in the absence of feeders will visit 1,000-2,000 flowers per day in order to fulfill their need to increase pre-migration body weight by 50 percent – several species of passerine birds favor the fruit, including our Texas State Bird, the Northern Mockingbird.

Because it creates particularly potent nectar, pollination ecologists classify purple horsemint as a forb with "special value to native bees." Of Texas' 500-plus species of native bees, 18 are at risk.

Purple Horsemint (Monarda citriodora):

DISTRIBUTION: Throughout Texas except those counties along the New Mexico border
BLOOMS: May-August

Because of its potent nectar, many of Texas' 500-plus species of native bees (which includes nine bumblebee species) flock to horsemint. Pollination ecologists classify the plant – also called Lemon Beebalm – as one with "special value to native bees." Horsemint nectar contributes key carbohydrates to about a third of the 18 native bees listed by TPWD as "species of greatest conservation need" (three are bumblebees). Habitat alteration, overuse of herbicides and pesticides, and parasites brought here by non-native bees used for pollination in commercial greenhouses are factors attributed to steep declines in the number of natives buzzing about.

As nature's most efficient pollinators, bees play a role in our ecosystems that we cannot duplicate; another reason their decreasing populations concern many. The insects pollinate at least one-third of Texas' commercial crops and fruit-trees. In addition, while busy as bees gathering sustenance, their actions perpetuate the growth of wild fruits and seeds, which, in turn provide sustenance to approximately 25 percent of all birds and mammals. As Kunz reminds us, "Wildflowers are the foundation of many food chains…"

Ninety percent of Texas' bees don't live in hives. Solitary bees tend to be less aggressive than hive-dwellers and must rely on their own abilities to gather pollen and nectar, with females often laying eggs on top of a nutritious collection of both. Hummingbirds and over a dozen species of butterflies also favor horsemint, an annual and member of the mint family, which grows in large colonies, re-seeding itself each year.

As legumes, bluebonnets help enrich the soil by fixing nitrogen into organic compounds used later by other plants.

Bluebonnets (Lupinus [L])

DISTRIBUTION: At least one of the six species can be found in each part of the state
BLOOMS: March-April

"Lupines" come from the Latin word "lupus," which means wolf. This dramatic name refers to an outdated and misguided belief that the plants robbed the soil of nutrients. But, in reality, as legumes they contain a spe-

cial bacteria at their root nodules which helps enrich the soil by fixing nitrogen into organic compounds used later by other plants.

Texas hosts six bluebonnet species, two of which grow in our slice of the Chihuahuan Desert. The dune bluebonnet, which grows only at the very tip-top northwestern corner of the Panhandle, is extremely rare. Most folks are most familiar with the Texas bluebonnet. It and the sandyland bluebonnet are the only two endemic to Texas. All are legumes and, in 1971, an old "battle" from 1901 was finally settled that officially proclaimed all six species as the state flower.

Each flower really consists of a cluster of up to 50 mini-flowers (depending upon species). Note that when bluebonnets bloom each mini-flower starts out white. The blue and white colors found in bluebonnet clusters act as "bee guides." Since white mini-flowers are newer, they contain stickier pollen, which bees can transport much easier. This color-coded communication works well for the bee, obviously, but it also works well for the flower by ensuring that its most potent pollen gets chosen most.

While toxic to livestock, broom snakeweed provides wildlife – such as pronghorns, mule deer, Lesser Prairie-Chickens and quail – with cover and food.

Broom Snakeweed (Gutierrezia sarothrae):

DISTRIBUTION: Mostly in the Panhandle and Trans-Pecos region
BLOOMS: Summer and early-fall

Look for the yellow blooms of the broom snakeweed – so named because the Comanche used its stems to sweep out their abodes – in summer. Indians also used this short shrub medicinally, including for snakebite.

Broom snakeweed has a bad rap with those who own livestock; understandably so, considering the plant's toxicity to cattle, horses, goats, sheep and swine. Earlier growth stages pack more poison – especially late-winter/early-spring plants rooted in sandy soils. When growing in clay soils, toxicity greatly decreases.

But, in nature, broom snakeweed provides up to 28 percent of the pronghorn diet, while also feeding ule deer. Quail and Lesser Prairie-Chickens eat its seeds as a portion of their spring and summer diets.
The Texas native, said Kunz, also provides aerial cover (especially for quail) since it forms a canopy with bare ground underneath. The shrub also creates cover for Black-tailed jackrabbits, nesting birds and pronghorn fawns.

Texas hosts 35 species of milkweed (shown here: antelope horn), a plant vital in the lifecycle of the Monarch butterfly. Monarchs and milkweeds have a unique symbiotic relationship that helps both species survive.

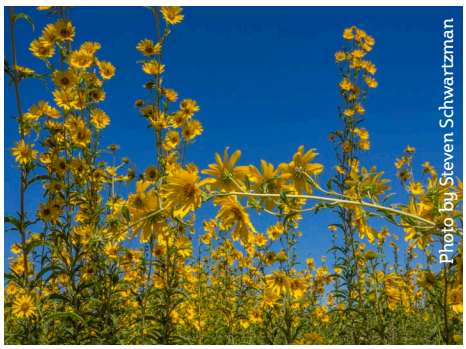
Milkweeds (Asclepias L.):

DISTRIBUTION: Various species grow statewide
BLOOMS: Depends on species, but typically March-November

Texas hosts 35 species of milkweed and all contain a milky white sap, which is extremely poisonous to humans and most other vertebrates. All provide crucial food sources for Monarch butterflies.

In fact, a unique symbiotic relationship exists between Monarchs and milkweeds. Female Monarchs lay eggs on milkweed leaves, and the tiny caterpillars that emerge voraciously scarf up nearly every leaf in sight. In the process, they fill themselves not only with sustenance but also with self-protection; that same white milky sap that's so poisonous to us (and other animals) imparts the caterpillar with its toxicity. The caterpillar then sequesters the plant's toxic compounds, which it will retain for life (as an adult, specifically in its wings and exoskeleton).

Flowers from the plants benefit adult Monarchs, as their nectar packs high amounts of glucose. But, such a valuable meal comes at a higher-than-usual price. Milkweeds have sophisticated pollination systems that temporarily trap the leg of the visitor that's come for a sip of nectar. When the insect jerks its leg free, pollen attaches to it. When the insect visits the next flower, the process is repeated, except this time when the insect jerks its leg free, it activates a mechanism designed to deposit pollen brought from the last flower.
Monarch butterflies are facing increasingly tougher odds and milkweeds are an important component to helping the species survive. In addition to losing key habitat in their wintering site in Mexico, a highly-contagious (to butterflies, not humans) protozoan parasite, Ophryocystis elektroscirrha (OE), is killing Monarchs with increasingly regularity. The parasitic spores of OE have always lived on milkweeds, but with average temperatures increasing, the plants have not been dying back and keeping the spores in check. Botanists suggest cutting back all milkweed plants each winter and destroying the cuttings in order to eliminate the build-up of OE spores.



Maximilian sunflowers generate heavy autumn seed crops, which helps get game birds and other wildlife through the lean days of winter.

Maximilian Sunflower (Helianthus maximiliani)

DISTRIBUTION: Throughout central and north-central Texas
BLOOMS: August-October

Biologists consider this native sunflower – named for the German naturalist, Prince Maximilian, who led an 1830s expedition into the American West – a great choice for habitat restoration. Maximilian sunflowers help secure disturbed soils and crowd out exotics. They grow in large colonies and, if left to re-seed, come back thicker each year.
Native bees and butterflies take nourishment from its nectar and pollen. Several bird species (including song birds and game birds) rely on its seeds for energy, and the plant – which grows up to 7 feet tall – for cover. Deer and livestock (especially sheep and goats) readily eat its many narrow, elongated leaves. This fall bloomer provides a heavy seed crop, which helps get wildlife through the lean days of winter.