YOUTH MAGAZINE OF THE TEXAS WILDLIFE ASSOCIATION FALL 2025

CRITTER CONNECTIONS

HIGH PLAINS ECOREGION

TEXAS WILDLIFE ASSOCIATION

BLUE GRAMA

Blue grama, scientific name *Bouteloua gracilis*, is a native Texas grass found in the High Plains ecoregion. This grass has the largest range of all grama grass species, found in shortgrass prairies in Canada, through the United States, and into Mexico. Despite being one of our shortest native grasses, only growing up to 20 inches tall, blue grama is one of the most important plants in the Great Plains, including the High Plains!

Sometimes called the eyebrow plant due to its thick curved seed head, blue grama is very drought tolerant, meaning it can withstand long periods with little water. This native Texas grass has adapted to dry environments by quickly using water when available, then going dormant or inactive during dry periods. Additionally, this plant can survive low temperatures and grazing pressure. The taller this plant grows, the stronger its roots become, making it more tolerant or accepting of drought, cold, and grazing. The large root system of this native Texas grass also helps reduce erosion by absorbing water and holding the soil in place. How neat!

The small but mighty blue grama is important to wildlife, too. Critters like bison, mule deer, prairie dogs, rabbits, mice, grassland birds, and grasshoppers rely on this plant as a food source. This grass is also a host plant for pollinators, providing food and habitat to these beneficial critters. Once disturbed, blue grama can take a long time to recover. That is why it is important that we care for the High Plains grasslands, so this hero of the prairie can keep supporting wildlife and soil health!

Cover photo by Logan

HIGH PLAINS POP-UP

For this craft you will need toilet paper rolls, craft sticks, scissors, glue, colors or markers, and coloring pages (found on our enrichment page at *www.texas-wildlife.org/critter-connections-magazine*). Shoebox, construction paper, and pipe cleaners are optional.

1. To begin, color and cut out the Burrowing Owl, prairie dog, and prairie rattlesnake. Glue your critters to craft sticks.
2. Grab the empty toilet paper roll(s). This is your burrow.
3. Carefully slide the Burrowing Owl, prairie dog, and prairie rattlesnake into the empty toilet paper roll(s). Now you have a High Plains pop-up!
4. *Optional:* Take it a step further and create your own prairie dog town! Cut holes on one side of an empty shoebox. Create grass and mounds by coloring or using construction paper and pipe cleaners. Use the critters you made to bring this prairie dog town to life!

Read the feature article to learn more about the High Plains ecoregion of Texas and how these critters interact in their ecosystem.

Adapted from: Lisa M. Herrington

DID YOU KNOW...

... that Texas has 10 different ecoregions?

... that cities like Amarillo and Lubbock can be found in the High Plains ecoregion of Texas?

... that blue grama is a native Texas grass?

... that black-tailed prairie dogs live in colonies called prairie dog towns?

... that some critters are ecosystem engineers?

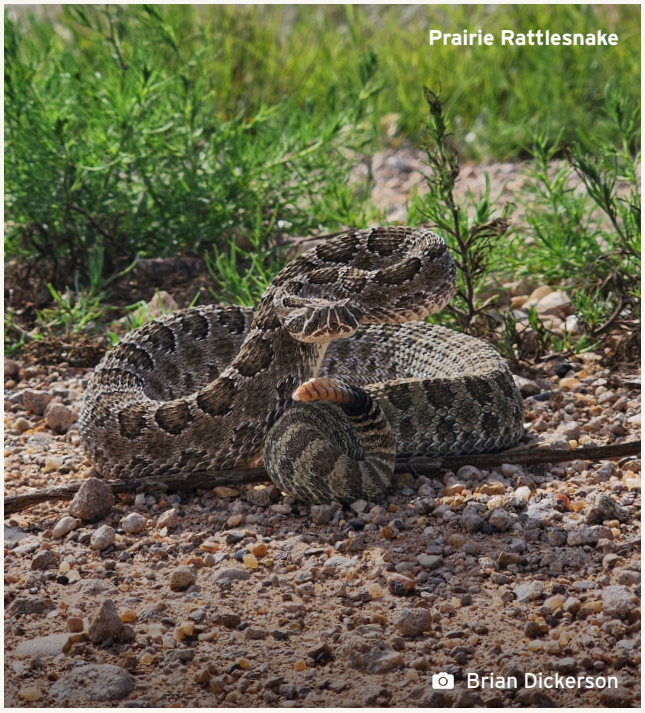
... that the Burrowing Owl is the only owl species that nests below ground?

... that prairie rattlesnakes have the largest range of all rattlesnake species?

... that playa lakes are keystone ecosystems?

... that barred tiger salamanders have three different morphs, based on a playas' wet-dry cycle?

... that the Soil Conservation Service was created because of the Dust Bowl?


Prairie Rattlesnake
Brian Dickerson


Barred Tiger Salamander
crotrox

COLOR ME

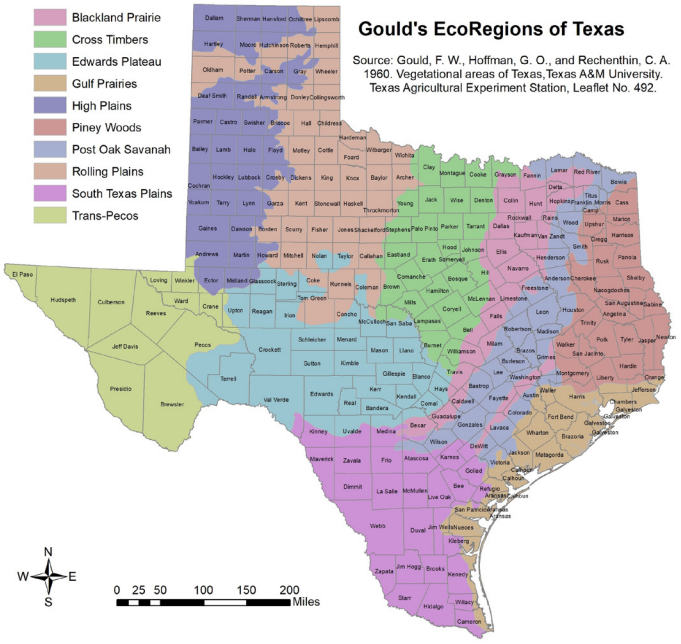
BARRED TIGER SALAMANDER

(Ambystoma tigrinum mavortium)

HIGH PLAINS ECOREGION

By Amber Brown

USDA NRCS Texas

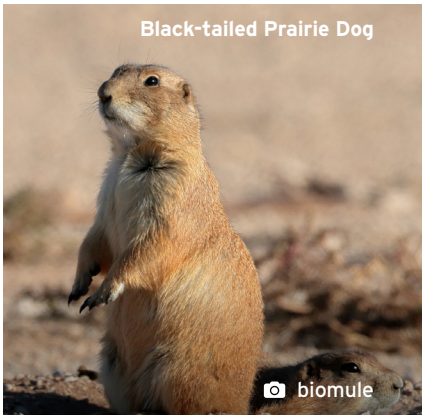


Texas is home to 10 different Gould's ecoregions as seen on the map above. Ecoregions are areas of land that share similar climate, **topography**, and soils. In this series, we will dive into each of Texas' 10 ecoregions one Critter Connections issue at a time. Next up – the High Plains!

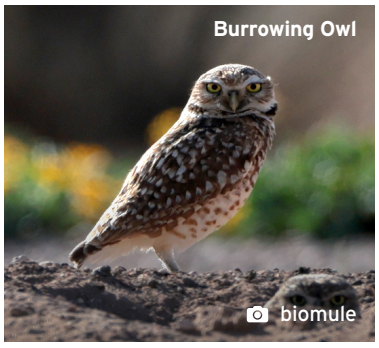
The High Plains ecoregion of Texas, also known as the Llano Estacado, which is Spanish for the Staked Plains, makes up much of the Texas Panhandle and includes cities like Amarillo and Lubbock. A part of the larger Great Plains, the Texas High Plains was once a sea of waving short grass prairies, also called grasslands, dotted with thousands of playa (plah-yah) lakes. Naturally occurring fires encouraged grass growth, allowing diverse prairie ecosystems to thrive. Among these endless grasslands, you could find thundering herds of pronghorn and bison, massive prairie dog towns, flocks of migrating birds, and thousands of wintering waterfowl. The morning air was filled with the songs of grassland birds, and if you were lucky, you could hear the booming calls of a Lesser Prairie-Chicken in the spring. Over time, these historic prairies were changed by settlement, farming, and ranching.

Still, many fascinating critters like pronghorn, prairie dogs, sand dune lizards, Sandhill Cranes, waterfowl, migratory birds, and mule deer call the High Plains ecoregion home. Despite mesquite and juniper finding their way into the grasslands due to fewer prescribed fires, this ecoregion is still known for its short grass prairies mixed with croplands, shinnery oak-covered sandhills, and playa lakes. For a place that is often described as flat and empty, the High Plains ecoregion sure has a lot to offer!

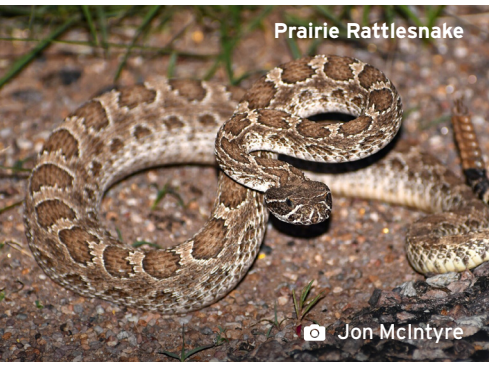
One iconic grassland species you can find in the High Plains and parts of West Texas is the black-tailed prairie dog. Over the years, black-tailed prairie dogs have faced many challenges that have greatly reduced their population like pest control and disease.



Still, these small critters play a big role in their ecosystem! The black-tailed prairie dog is a **keystone species** in grassland ecosystems, and many predators including coyotes, bobcats, foxes, badgers, weasels, and hawks rely on them as a food source. Meanwhile, prairie dogs eat grass, wildflowers, and occasionally insects. These pint-sized critters are so well adapted to their dry environment that they get all the water they need from the plants they eat. Black-tailed prairie dogs are ecosystem engineers, meaning they make big changes to their environment that impact other animals. Prairie dogs live in colonies, or large groups, in underground burrows and dens called prairie dog towns. Mounds at the entrance to the burrows keep flood waters out and serve as lookouts where prairie dogs can spot predators and alert their colony with alarm calls. These prairie dog towns provide habitat for over 150 other species, creating many **symbiotic relationships** within the High Plains.



One critter that benefits from prairie dog towns is the Burrowing Owl. These short-bodied, long-legged birds are the only owl species to nest below ground, using empty prairie dog dens to shelter their young. To protect themselves while in the nest, young Burrowing Owls, also called owlets, use a neat defense mechanism – they will mimic a rattlesnake by making a buzzing sound when threatened. This adaptation allows the owlets to protect themselves while in the small, underground nest. Burrowing Owls have been observed lining the walls of their tunnels with excrement, or feces, from other animals like bison and cattle. It is believed that insects found in the excrement act as a local food source. These native Texas birds mostly eat small mammals, birds, and insects. In turn, they provide a food



source for badgers, skunks, bobcats, coyotes, snakes, hawks, and even other owls.

Another critter that can be found in old prairie dog burrows is the prairie rattlesnake. Prairie rattlesnakes have the largest range of all rattlesnake species in the country – they can be found in the Great Plains from Canada to Mexico! The rattlesnake makes its well-known rattling sound by shaking muscles at the base of its tail, causing the empty chambers to knock on each other, alerting predators that they are too close. A chamber is added to the tail each time a rattlesnake sheds its skin, though it is not a reliable way to age the snake since it can break. Prairie rattlesnakes can grow up to five feet long and are active in the warmer months. In the winter, they undergo brumation, which is a state of dormancy or very little activity when an **ectothermic** animal slows down and becomes sluggish. Unlike when preparing for hibernation, animals do not need to store fat before undergoing brumation, since they are still active enough to eat and drink small amounts. In addition to their other senses, rattlesnakes use heat-sensing pits on the sides of their heads when looking for prey. These carnivores are ambush predators, hiding until prey gets within striking distance, then using their fangs to inject venom. Prairie rattlesnakes commonly prey on small birds and mammals. In turn, predators like hawks and other snakes rely on this native Texas reptile as a food source. It is important to remember that prairie rattlesnakes are venomous to humans too, and a bite from this critter can cause serious injury. When outdoors, be sure to watch where you step, give these snakes plenty of space, and leave them alone!

We know there are keystone species like the prairie dog in the High Plains ecoregion, but did you know there are **keystone ecosystems** too? The playa lakes cover about two percent of this ecoregion, but their importance is much greater. These shallow, temporary wetlands collect rainfall and become vital habitat for many different critters like wintering waterfowl and migratory birds making them one of the most important features of this ecoregion. Additionally, these playas help recharge the Ogallala Aquifer, impacting wildlife and humans alike. Despite losing playas over the years to human impact, the High Plains ecoregion has over 19,000 playa lakes. Some playas have been modified to stay wet year-round, while others rely on rain and experience seasonal wet-dry cycles. One critter that has adapted to life in the playas is the barred tiger salamander. This native Texas amphibian can adjust its **metamorphosis** based on water availability, creating three distinct morphs or types! In playas that are wet year-round, the barred tiger salamander will keep its gills and fin-like tail, remaining **aquatic**. In playas that dry out seasonally this critter will go through rapid metamorphosis, passing through its aquatic stage before the water has evaporated. The third morph, the cannibal morph, is the largest and most rare. They grow a wider mouth and larger teeth, and can be found when food is scarce. How fascinating!

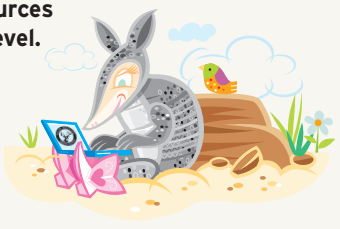
Life on the High Plains is full of challenges, and to survive, wildlife and humans must be adaptable. In the 1930s, lengthy drought, high winds, severe dust storms, and farming practices not fit for the region caused the Dust Bowl. This environmental and economic disaster devastated much of the Great Plains region of the United States, including the Texas Panhandle. From this hardship came hope in the form of innovative land management practices and a new federal agency devoted to natural resource management, the Soil Conservation Service, now called the Natural Resources Conservation Service. Wildlife have faced additional hardships through human settlement, overhunting, ongoing pest control such as poisoning programs, prescribed fire suppression, and habitat loss. As you have learned, the critters of the High Plains ecoregion, including humans, are interconnected and impacts often ripple beyond a single species. It is up to scientists, conservationists, and citizens alike to care for our natural resources and ensure the continued success of these wonderful critters for years to come!

WORD BANK

Topography - an area's physical shape; for example rivers, hills, and valleys
Keystone species - an animal or plant that holds their food web together
Symbiotic relationship - a close relationship between two different critters
Ectothermic - critters whose body temperature is controlled by its surroundings; cold-blooded
Keystone ecosystem - an ecoswystem that provides crucial resources for a wide variety of plants and animals
Metamorphosis - the process by which a critter grows and changes
Aquatic - lives in, or is found in, water

LEARN MORE ONLINE

www.texas-wildlife.org/critter-connections-library
Visit the *Critter Connections* library for enrichment activities and resources to take your learning to the next level.

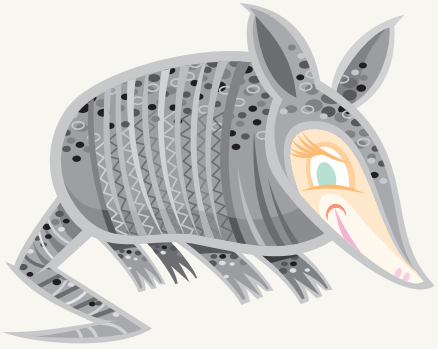


Article Source:
The Natural History of Texas by Brian R. Chapman and Eric G. Bolen

HIGH PLAINS FOOD WEB

Food webs show the flow of energy in an ecosystem. Using information from the feature article, draw arrows between the objects and critters below to create a High Plains food web! Remember, point the arrow to the species that is receiving the energy. For example - draw an arrow from the sun pointing to the grass, or from the grass pointing to the kangaroo rat.

Visit the Critter Connections library at www.texas-wildlife.org/critter-connections-library to view the answer key.



NANCY'S CORNER

As you learned in the feature article, we can find keystone ecosystems, keystone species, ecosystem engineers, and symbiotic relationships all around us! Research the plants and wildlife in your ecoregion. Can you name the keystone ecosystems, keystone species, and ecosystem engineers of your ecoregion? What critters have symbiotic relationships? What can you do to help steward the natural resources in your area? Use a nature journal or the space below to write about what you have learned!

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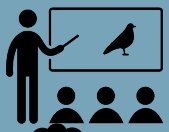

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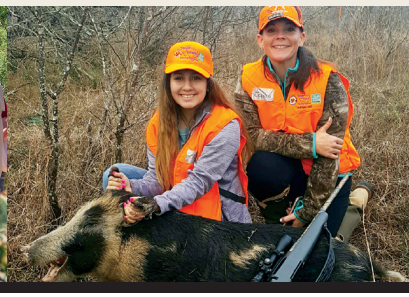

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