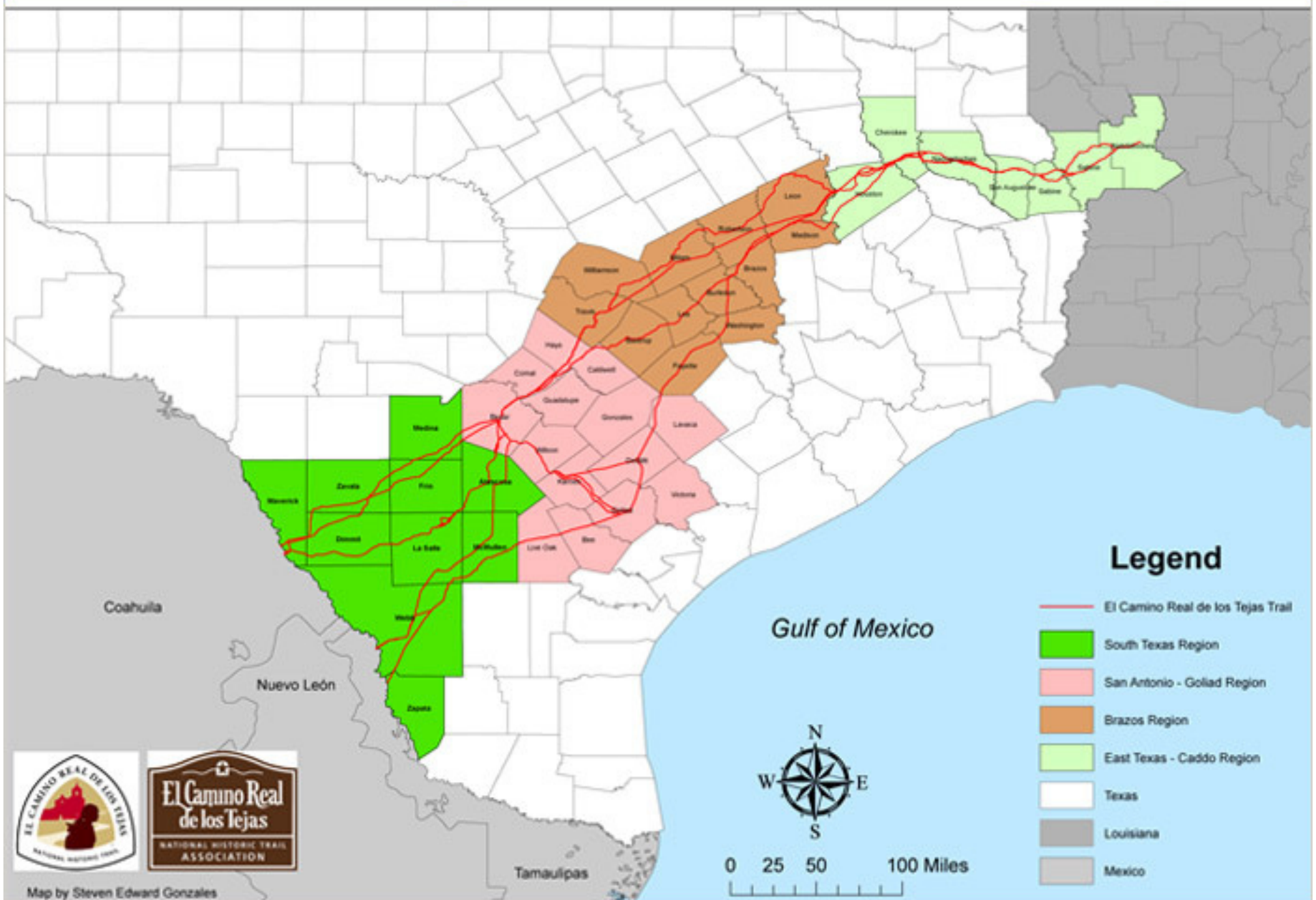


El Camino Real de los Tejas Field Guide: Exploring the Ecology of the Royal Road



Produced in Celebration of the
National Trails Lands Summit 2025
San Antonio, Texas

El Camino Real de los Tejas National Historic Trail Association Regional Map



Your Local Naturalist



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Why should we care about the local flora and fauna of a region or an area? Whether the wildlife are important to the ecosystem or for human use (past and present), they serve major roles in their environment through presence and activity. This field guide focuses on endangered (or at risk) animal species that impact the region along the El Camino Real de los Tejas trail, and plant species that were utilized by the indigenous peoples of the region long before we were born. As an avid hiker and gardener with over 5 years of conservation experience through education, careers, and volunteer work, I've worked in wildlife rehabilitation, with local organic community gardens, and obtained a Bachelor of Science in Biology from Texas A&M University- San Antonio. I am currently working on my Wildlife & Forestry Conservation diploma, to expand my current knowledge of wildlife and discover new career opportunities to share my passions in sustainability and environmental conservation.

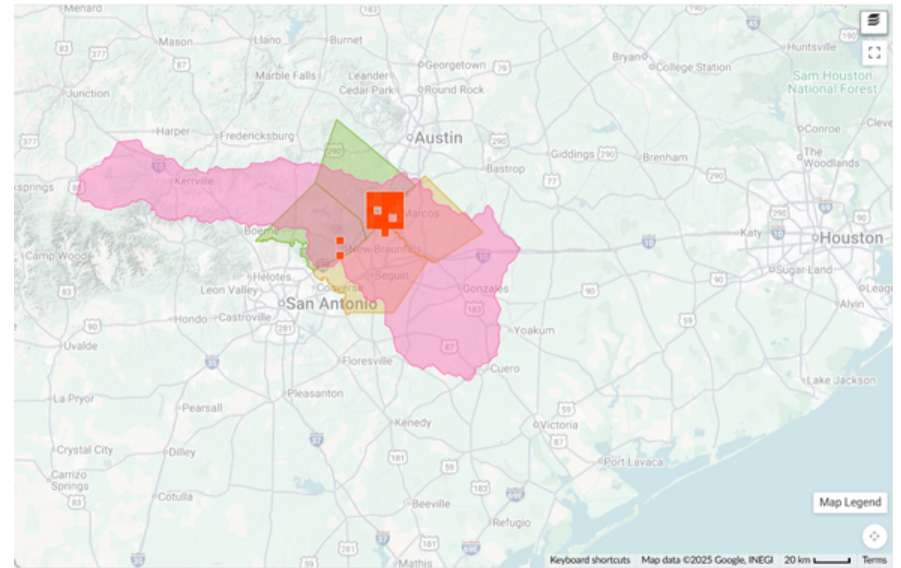
With this guide, I hope to bring awareness to native species, indicator species, and ancient plant medicine and food seen around the El Camino Real trail in Texas, to promote sustainability and preservation of history and wildlife. I believe it is significant to highlight the indigenous people who roamed these lands, those who utilized traditional plant medicine and foraged food sources right from the ground they walked through. As well, some of the species, endemic to this region, are at risk of extinction. These native species require population/habitat management and recovery solutions to continue contributing to the larger community around them. Thank you for taking the time to learn about some of the incredible species we get to share our communities with.

Fountain Darter (*Etheostoma fonticola*)

Classification: Freshwater Ray-finned Fish



Fountain Darter, Taylor James, U.S. Fish and Wildlife



Fountain Darter Research Grade ID Map, iNaturalist

● Endangered

Federally listed Endangered species of the United States; also listed as Endangered by the IUCN.

Quick Facts

- Range: San Marcos & Comal Rivers (Central Texas)
- Size: ~1 inch long
- Color: Reddish-brown
- Lifespan: 1–2 years
- Habitat: Clear, spring-fed waters with aquatic plants
- Diet: Small invertebrates

Description

The fountain darter is one of the smallest freshwater fish in North America, rarely growing longer than an inch. Despite its size, it plays a key role in its river ecosystem. Females lay eggs year-round on leaves, algae, and rocks, providing food for other species. Because they depend on clean, spring-fed rivers, fountain darters are a valuable indicator of water quality and river health.

Fun Fact

The fountain darter is so sensitive to water quality that its presence signals a healthy river system — making it a living “eco-thermometer” for the El Camino Real waterways.

Conservation & Recovery

While subject to disease and predation, conservation efforts include habitat restoration, population monitoring, and removing debris from river systems to keep waters flowing clean and clear.



Comal Springs, Oklahoma-Texas Science Water Center, U.S. Geological Survey

Texas Tortoise (*Gopherus berlandieri*)

Classification: Gopher Tortoise



Texas Tortoise, Cheryl Rosenfeld, iNaturalist

● Threatened

Texas state listed species as Threatened; listed as Low Concern by IUCN (last evaluation in 1996).

Quick Facts

- Range: Southern-third of Texas and northern Mexico
- Size: shell length of about 8 1/2 inches, weigh 1.5-2.5 lbs
- Color: Yellowish-orange, "horned" scutes, dark brown shell
- Lifespan: 15-60 years
- Habitat: Semi-arid regions, with mesquite shrub and cactus dominated landscapes
- Diet: Native plants like prickly pear cactus, yucca, and various grasses

Description

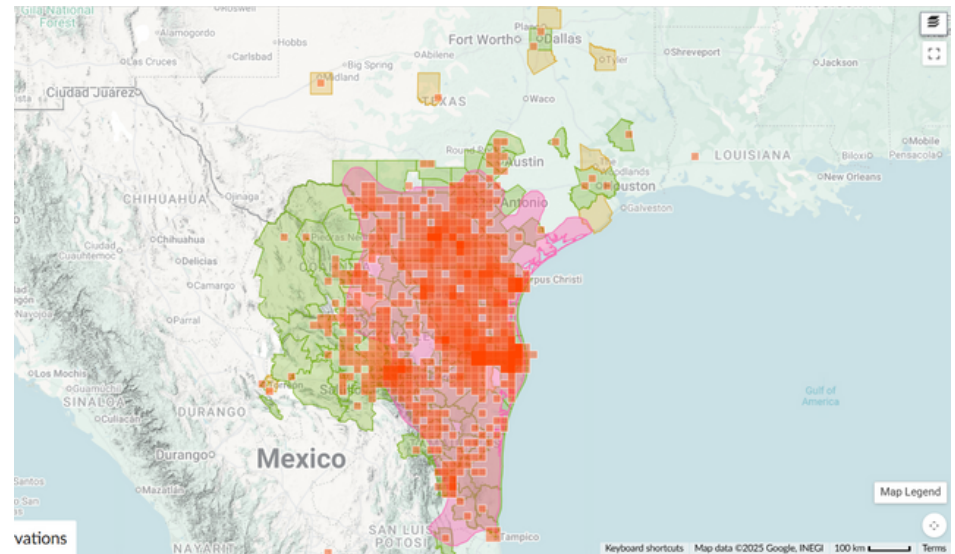
The Texas tortoise is only land tortoise species native to Texas, living up to 60 years or more in the wild. They play a vital role in native ecosystems by dispersing seeds and maintaining soil health through aeration and organic waste decomposition. These tortoises have a low reproductive rate, with females laying only 1-5 eggs that hatch late summer to early fall. Historically, they have been heavily exploited by pet suppliers, but since 1977 have been protected as nongame species under Texas law, though that hasn't fully stopped its possession and selling in the state.

Fun Fact

The genus which contains the Texas tortoise has fossil remains dating back to the Pliocene (10 million years B.C.), found in Central Texas.

Conservation & Recovery

While subject to habitat destruction and vehicle collisions, conservation efforts include habitat restoration, population monitoring, legal protection, as well as education outreach through social media and websites to spread awareness. Establishing wildlife rehabilitation refuges for confiscated and injured tortoises are currently in the works.



Texas Tortoise Research Grade ID Map, iNaturalist



Texas tortoise habitat in South Texas, Paul Crump, Texas Wildlife Alliance

Golden-cheeked Warbler (*Setophaga chrysoparia*)

Classification: New World Warblers



Adult Male Golden-cheeked Warbler, Christian Moynihan, Audubon Field Guide

● Endangered

Federally listed Endangered species of the United States; also listed as Endangered by the IUCN.

Quick Facts

- Range: Central/ South Texas and Mexico
- Size: ~5 inch long, weight ~10 grams
- Color: Yellow-cheeked with black lines, black streaking on body
- Lifespan: ~ 4 years
- Habitat: mature mixed Ashe juniper/oak woodlands
- Diet: Insectivore, mainly soft-bodied insects

Description

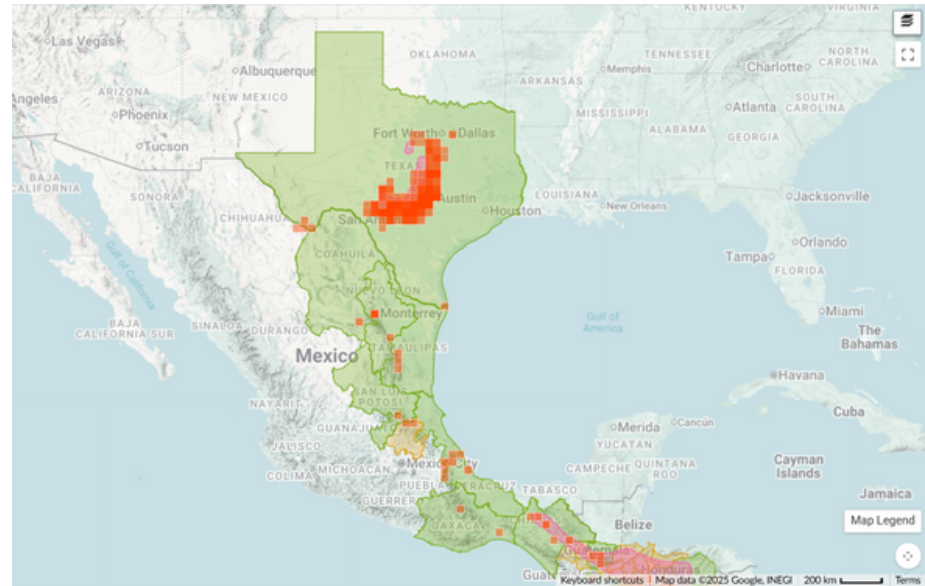
The golden-cheeked warbler is the only bird species with a breeding range endemic to Texas. They depend on the Ashe juniper in its breeding range for nesting material and refuge from predators. Females lay clutches of 3-4 eggs each year, with both parents tending to offspring. They can be identified by their unique buzzing songs, two distinct sounds that signal either male territory or female egg laying, the latter often heard before sunrise.

Fun Fact

The golden-cheeked warbler travels several thousands of kilometers each year between their nesting grounds in Central Texas (March-June) to their nonbreeding grounds as far as Nicaragua. That's about the distance of the entire El Camino Real de los Tejas trail!

Conservation & Recovery

While subject to habitat fragmentation and urban development, conservation efforts include habitat restoration, such as the Balcones Canyonlands Conservation Plan and The Safe Harbor agreement between Environmental Defense and the U.S. Fish and Wildlife Service, as well as educating landowners to preserve and properly maintain the warbler habitats on private lands.



Golden-cheeked Warbler Research Grade ID Map, iNaturalist



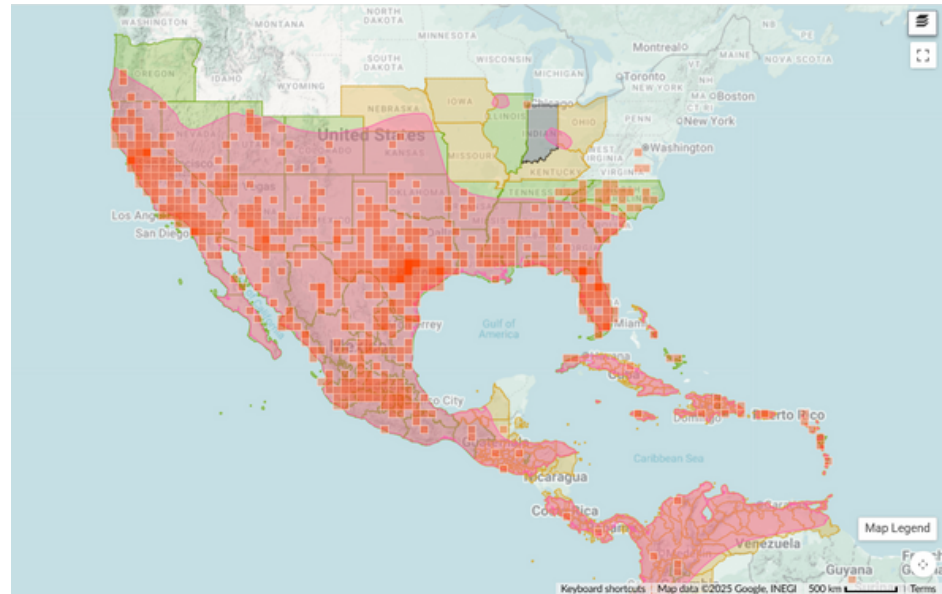
Ashe Juniper Hills, Balcones Canyonlands Wildlife Refuge, Claire Hassler/USFWS

Mexican Free-Tailed Bat (*Tadarida brasiliensis*)

Classification: Vespertilionoid Bats



Mexican Free-tailed Bat, Ann Froschauer, U.S. Fish and Wildlife



Mexican Free-tailed Bat Research Grade ID Map, iNaturalist

● Least Concern

According to the IUCN Red List

Quick Facts

- Range: Southern US, Central America, & South America
- Size: ~3.5 inch long (11-14 in. wingspan), weigh 7-10 grams
- Color: Dark brown- gray
- Lifespan: 8-10 years, up to 18 years
- Habitat: Hot, humid caves, abandoned mines, bridges, culverts
- Diet: Insectivore



Bat Cave, Bracken Cave Preserve, Texas Parks & Wildlife Department

Description

The Mexican free-tailed bat is the fastest horizontal flyer, reaching up to 100 miles per hour, and flies the highest of bat species at ~10,800ft. While it's one of the most abundant North American mammals, there are only a small number of suitable sites for large colonies, one of them being the Bracken Cave Preserve in central Texas, home to the world's largest bat colony. Females have only one pup, left with all pups in "creches", which roost in the highest reaches of the cave. This species aids the agricultural industry by being a prominent predator of crop pests.

Fun Fact

The largest urban colony of Mexican free-tailed bats is located under the Congress Avenue Bridge and attracts 100,000 tourist each year, giving them major economic value to the local community. In the early 20th century, their economic importance in Texas was providing bat guano, which was Texas' largest mineral export, before oil.

Conservation & Recovery

While subject to disease, habitat disturbance, and wind energy development, conservation efforts include habitat preservation and research on the effect of wind turbines and solutions (Estimating bat fatality at a Texas wind energy facility: implications transcending the United States-Mexico border, Weaver, Sara, et al., Journal of Mammalogy, 2020).

Texas Horned Lizard (*Phrynosoma cornutum*)

Classification: Phrynosomatid lizards (Arid North American Lizards)



Texas Horned Lizard, Texas Parks & Wildlife Department

● Threatened

Texas State listed as a Threatened Species, possibly Endangered soon

Quick Facts

- Range: South-central regions of the US & northeastern Mexico
- Size: 3.5-5 inch long
- Color: Yellow or reddish-brown (deserts); tannish brown (prairies)
- Lifespan: ~8 years in captivity (unknown in the wild)
- Habitat: Arid or semi-arid regions with access to open ground, scattered vegetative cover
- Diet: Primarily harvester ants, also termites, beetles, and grasshoppers

Description

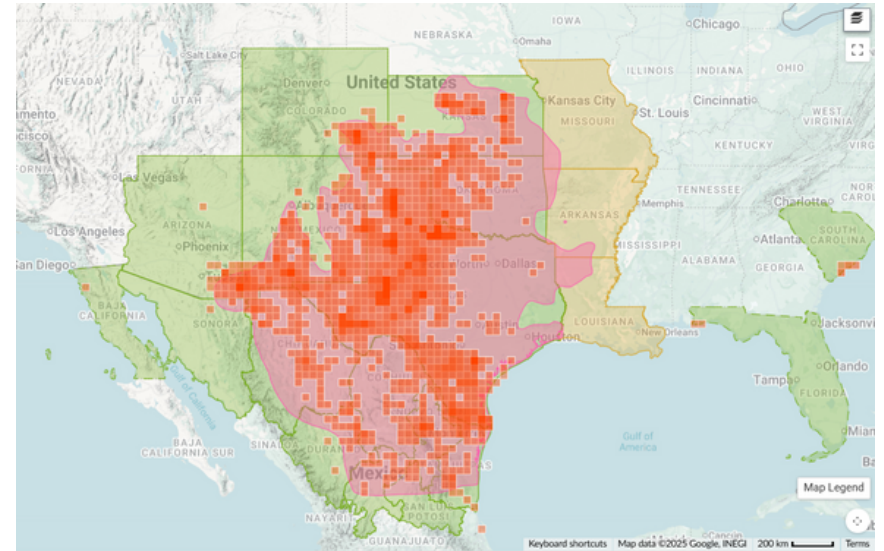
The Texas horned lizard is recognized as the state reptile of Texas since 1993. While they use their spikes for predator deterrent, they can also shoot blood from their eyes up to 5 ft. Females lay an average of 25 eggs per clutch, deposited in a burrow. This species has lost about 30% of their native habitat to habitat fragmentation and habitat encroachment by feral domestic dogs and cats.

Fun Fact

In some historical native cultures, such as with the Apache and Comanche, they were known as sacred animals. They were a symbol of strength and resilience, often seen in artwork.

Conservation & Recovery

While subject to habitat encroachment, introduction of invasive species (red imported fire ant), and pet trade, conservation efforts include captive breeding and reintroduction, population monitoring, and working with private landowners to maintain suitable habitat and introduce this species to previous-used and new habitats.



Texas Horned Lizard Research Grade ID Map, iNaturalist



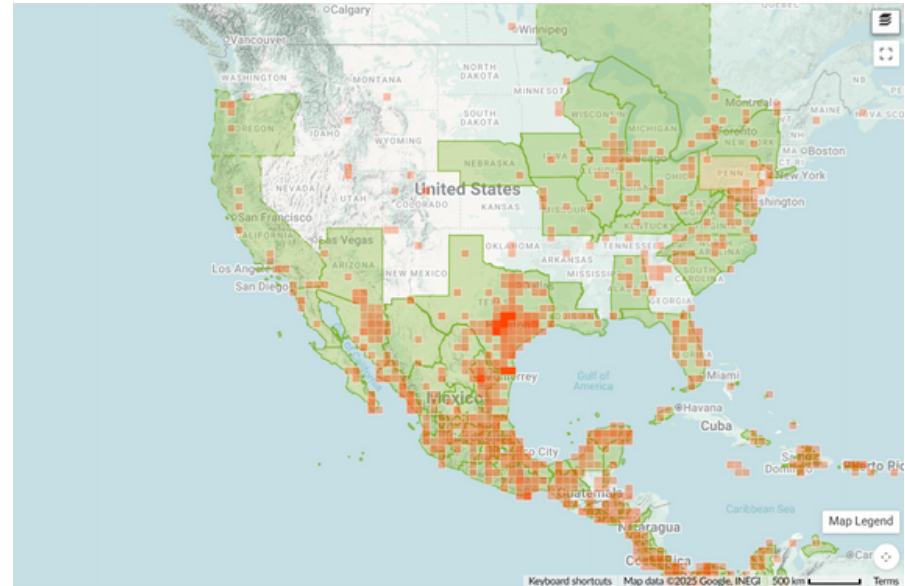
Texas Horned Lizard, Kevin Bonine PhD, Horned Lizard Conservation Society

Chile Pequin or Chili Pepper (*Capsicum annuum*)

Classification: Nightshade family



Chili Pequin, Sally and Andy Wasowski, Texas Master Naturalists



Chile Pequin- North/Central America Research Grade ID Map, iNaturalist

 **Edible/Medicinal**

Quick Facts

- Range: Southern United States to Central America (all over the world)
- Size: ~ 2ft tall, some varieties can grow over 6 ft tall
- Color: green leaves; white or purple flowers; red, yellow, green, and black flowers
- Season: spring (begins); late summer-fall (fruit harvest)
- Pests/Disease: whiteflies, aphids, weevils, phytophthora blight
- Habitat: well-drained sand, loam, clay, caliche and limestone; along rivers and arroyos, in thickets and groves

Description

The chile pequin is the official state native pepper of Texas, also called the “Mother of all peppers” and is the only native pepper to the United States. While indigenous groups used it mainly as a spice, as we do now, recent research has discovered its high antioxidant content. Further back, ancient civilizations, such as the Mayans and Aztecs, used this species to treat illnesses including asthma, toothaches, coughs, and sores. Today, it is still used for its antioxidant, antifungal, antiviral and antimicrobial properties.

Fun Fact

It is also called the bird pepper, because the seeds are commonly dispersed by birds through their droppings, unaffected by the compound capsaicin when they eat the fruit/seeds.



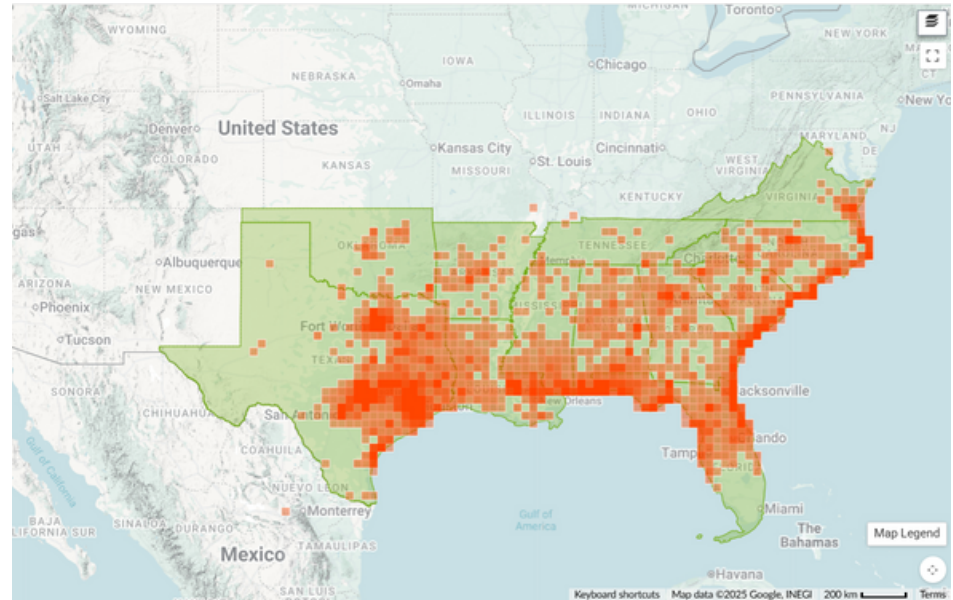
Chile Pequin, Central Texas Gardener

Yaupon Holly (*Etheostoma fonticola*)

Classification: Holly Family



Yaupon: Fruit, Texas A&M Agrilife Extension



Yaupon Holly Research Grade ID Map, iNaturalist

 **Edible/Medicinal**

Quick Facts

- Range: East Texas to Eastern shore of Virginia and Florida
- Size: 16 ft to 29ft
- Color: Glossy dark green leaves; white flowers; red (or yellow) fruit
- Season: spring (blooming); late summer-fall (fruit harvesting)
- Pests/Disease: leafminers, spider mites, white flies, fungal diseases
- Habitat: Floodplains, wet woodlands, salt marshes, coastal sand dunes; need well-draining sandy soils

Description

Yaupon holly was used by indigenous tribes to make drinks containing caffeine and theobromine, one of only two endemic plants to North America that produce caffeine. It was also used in an infusion as a laxative. The fruits are rich in antioxidants, and are important to many bird species, such as the bobwhite quail, wild turkey and American robin, and are fed on by the nine-banded armadillo, gray fox, racoon and skunks (all Texas native species). The foliage is browsed by white-tailed deer, one of only two native deer species in Texas, currently listed as Threatened.

Fun Fact

The leaves and stems were brewed to make a ceremonial beverage by some native tribes, called “black drink”. The rituals involved induced vomiting as a form of spiritual or physical purification, effects not brought on by the properties of the drink, as previously thought by early European observers, but by the excessive consumption for the ritual.



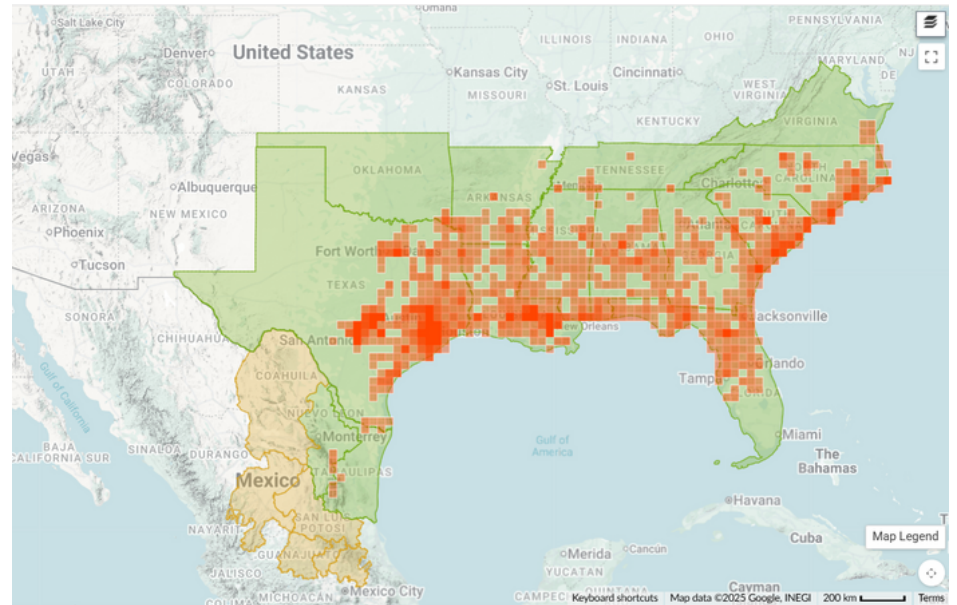
Yaupon: Whole Plant, Texas A&M Agrilife Extension

Dwarf Palmetto *(Sabal minor)*

Classification: Palms



Dwarf Palmetto, Palmetto State Park, Texas Parks & Wildlife



Dwarf Palmetto Research Grade ID Map, iNaturalist

Edible/Medicinal

Quick Facts

- Range: Along the southern Atlantic coast and Gulf coast
- Size: ~10 ft tall
- Color: Green fan leaves; yellowish-white flowers; black fruit
- Season: early spring (begins); late fall (fruit harvesting)
- Pests/Disease: none known
- Habitat: maritime forests, swamps, floodplains, and occasionally on drier sites (below USDA Zone 7)



Dwarf Palmetto- Fruit, Claire Sorenson, Native Plant Society of Texas

Description

The dwarf palmetto has been used medicinally and as building material by indigenous nations from their roots to fruits. Juice from crushing the small roots was used to aid eye irritation, tea from dried roots was used to treat kidney ailments and as a stimulant, and the fruits were eaten as “famine food”, due to their high carbohydrate content. Fruits of this species are eaten by various wildlife, birds and mammals alike. They can be found in abundance at Palmetto State Park, an hour from Austin and San Antonio, along with other Texas native flora and fauna along the San Marcos river and park trails.

Fun Fact

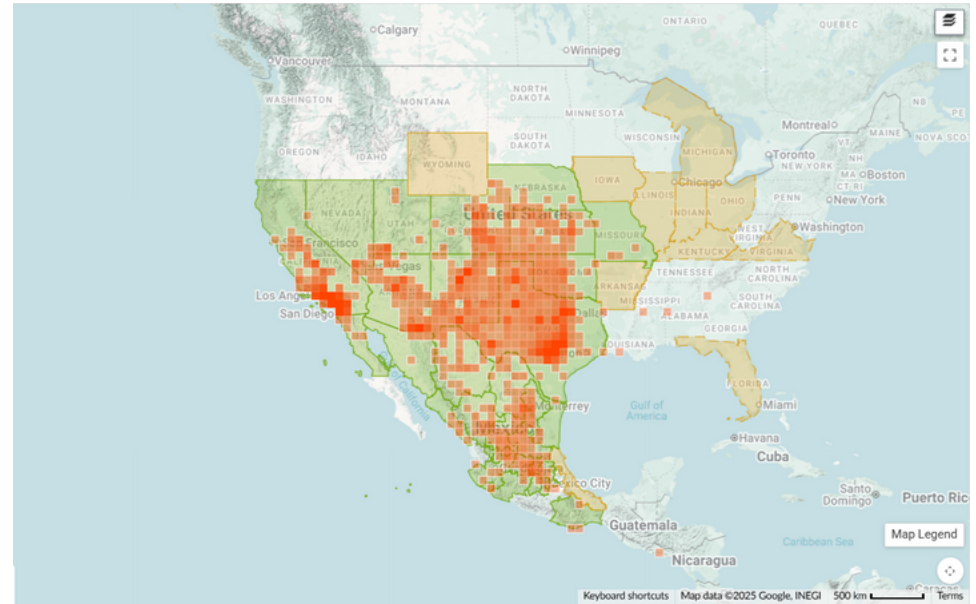
The dwarf palmetto is under study by the pharmaceutical industry for its potential in assisting prostate ailments. Native tribes used the fruit extracts to treat prostate enlargements and inflammation, urinary dysfunction, colds, asthma, coughs, and migraines, which led to researching its effect on the body and conducting clinical trials on its therapeutic remedy effects.

Buffalo Gourd (Squash) (*Cucurbita foetidissima*)

Classification: Gourd Family



Buffalo Gourd: Fruit and Leaves, Texas Beyond History



Buffalo Gourd Research Grade ID Map, iNaturalist

🌿 **Edible/Medicinal**

Quick Facts

- Range: Central and southwestern United States and northern Mexico
- Size: 0.5- 1ft tall; spreads 20-30 ft
- Color: Large green leaves; yellow flowers; fruit green with white strips, yellow when ripe
- Seasons: summer (bloom); late summer (fruit harvesting)
- Pests/Disease: spider mites and scale insects
- Habitat: Grasslands; arid or semi-arid environments



Buffalo Gourd: Flower and Fruit, Alan Cressler, Native Plant Society of Texas

Description

The buffalo gourd can be eaten like a squash when young, and the seeds are eaten roasted or boiled. The root and fruit of the plant were previously eaten by indigenous groups for food consumption, containing high amounts of protein, carbohydrates, and digestible oils, as well as for medicinal benefits. The leaves and shoots were used to thatch homes, weaved for baskets, and used as fans in ceremonial dances. They were believed to be a powerful plant! The roots were used as a topical infusion for chest pains and ingested as a laxative. The seeds and flowers of mature plants were ground into a powder to reduce swelling, and mashed whole plants were used to treat skin conditions like sores.

Fun Fact

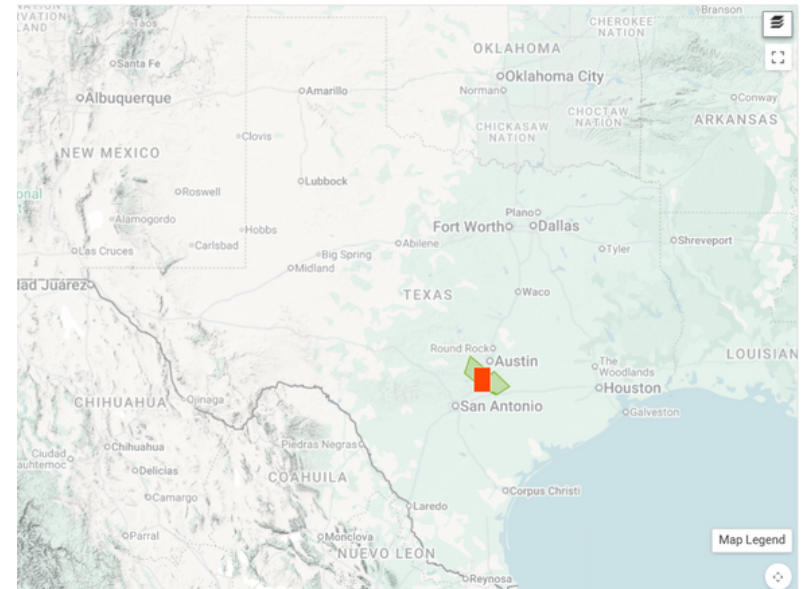
While the buffalo gourd has many uses from soaps to aiding sores, even creating biofuel, the chemical components in the roots can also be potentially poisonous to us if misapplied and can cause skin irritation.

Texas Wild Rice (*Zizania texana*)

Classification: Aquatic Grasses– Rice



Upper Stems of Texas Wild Rice, Jackie Poole, Texas Parks & Wildlife Dept.



Texas Wild Rice Research Grade ID Map, iNaturalist

🌿 **Endangered/ Edible**

Federally listed Endangered species of the United States; also listed as Endangered by the state of Texas.

Quick Facts

- Range: First 2 miles of San Marcos River
- Size: 3-6ft
- Color: Green stalk and leaves; black, brown or greenish seeds
- Season: Spring- summer (flowering)
- Pests/Disease: unknown due to limited population
- Habitat: clear water of the San Marcos River, fed by springs



Habitat of Texas Wild Rice, Wyatt McSpadden, Edwards Aquifer Authority/TPWD

Description

The Texas wild rice is endemic to Texas, only occurring in a small section of river in San Marcos, and is one of three species of native wild rice in the United States. It forms large clone clusters or clone colonies in the riverbank. This species relies on high levels of carbon dioxide from constant flowing spring water, and the reduced river flow seen today has been carbon-limiting. Some indigenous tribes considered the wild rice to be a staple, nutrient-rich superfood, referred to as “the good berry”. The traditional harvesting they performed has been preserved for generations, and ensures only the ripest grains are harvested while protecting the sensitive wetland ecosystem.

Fun Fact

The Texas wild rice is sensitive to water conditions including temperature, pH and turbidity, flow rates, and substrate types, which help signal a healthy river system - a built-in working carbon-cycle and water-flow indicator.

Conservation & Recovery

This species was once locally common in the area, growing thick enough to become a nuisance as recently as the 1930s, however, the draining of the Edwards Aquifer, recreational impact (pollution/ plant damage), and non-native species introduction have had major limiting impact. Conservation efforts include ensuring springs and groundwater will continue to provide clean and healthy freshwater to related microhabitats, and supporting the important life history and biological research of the Texas wild rice.

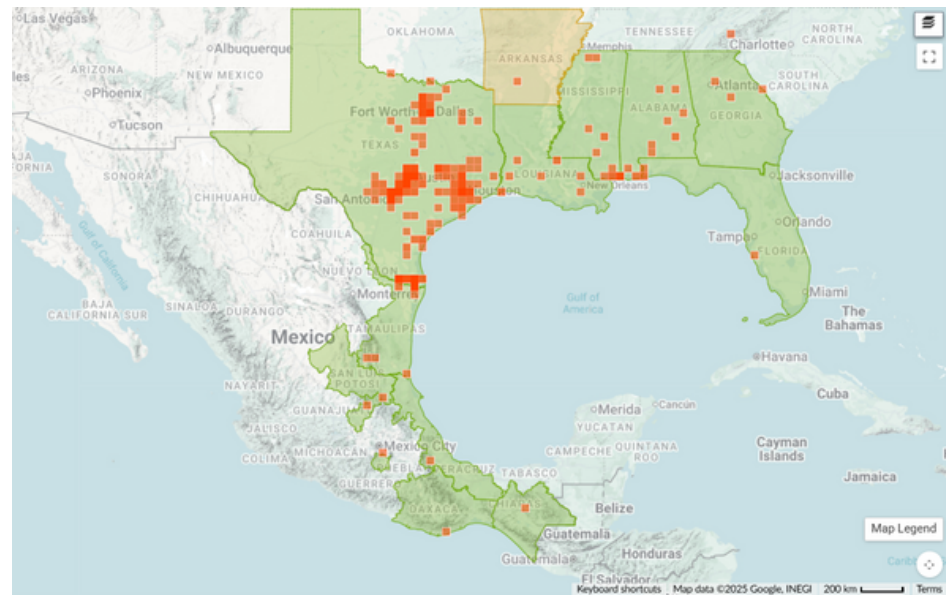
Turks Cap/ Texas Mallow

(*Malvaviscus arboreus* var.
drummondii)

Classification: Hibiscus Family



Turk's Cap, Lee Page, Woodland Garden, Lady Bird Johnson Wildflower Center



Turks Cap- North America Research Grade ID Map, iNaturalist

 **Edible/Medicinal**

Quick Facts

- Range: Texas Coastal Plain east to Florida; also the West Indies, Mexico, and Cuba.
- Size: 2-3 ft tall on avg., up to 10 ft
- Color: Green leaves; flowers bright red, white or pink, and hibiscus-like
- Season: year-round, other than frost heavy months
- Pests/Disease: no major pests known
- Habitat: Shady spots on limestone hills and forms colonies on wooded stream banks

Description

The Turk's Cap enhances local ecosystems and gardens, being drought tolerant and low maintenance. It attracts essential pollinators like hummingbirds and butterflies (such as Texas natives; Zebra swallowtail, Turk's-cap white-skippers, and glassy-winged skippers), as well as provides shelter for small animals. It serves as the primary host plant for the caterpillars of the Turk's-cap White Skipper (*Helipetes macaira*). This species can be found at McKinney Falls State Park, which lies along the central region of the El Camino Real trail. In Mexico (and in past indigenous nations), they use the flowers as a tea to treat inflammation of the digestive tract and as a menstrual aid, and the leaves as an emollient or steamed like spinach when young.

Fun Fact

The Turk's Cap (related to the hibiscus plant) tastes rather like apple, hence its Spanish name, Manzanilla (Little Apple), that birds and other wildlife enjoy to eat.



Turk's Cap, McKinney Falls State Park,
Texas Parks & Wildlife