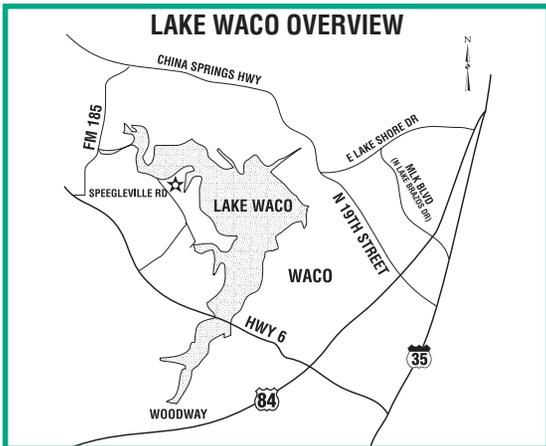


# 6

## Riparian areas.

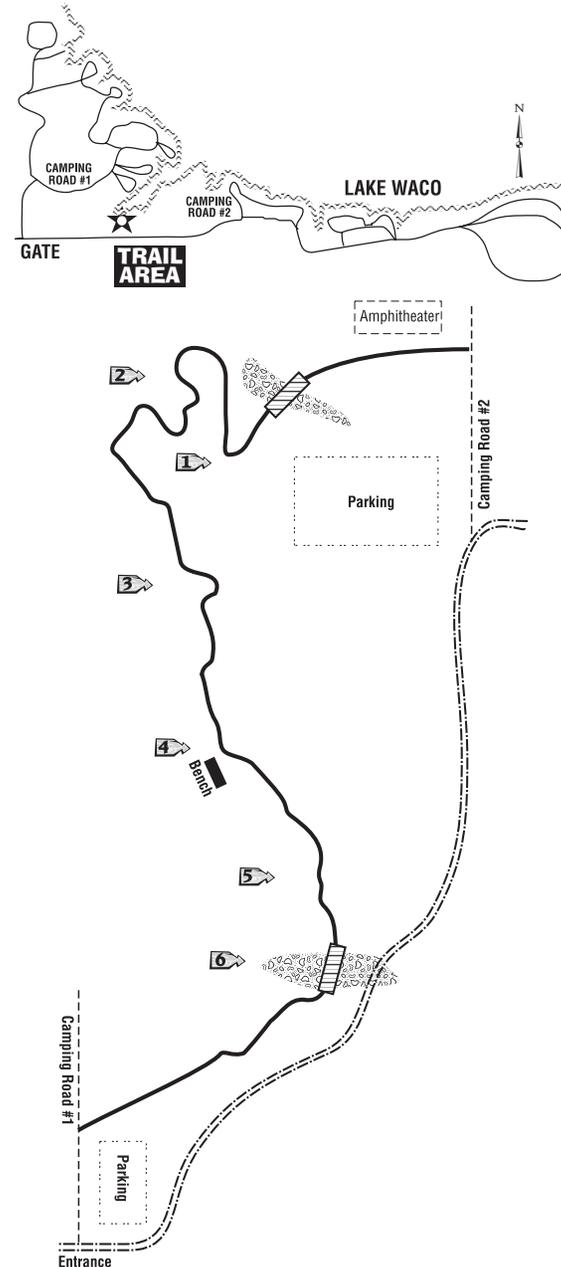
"Riparian" areas are found along a stream or river. When a stream or river is present all year, the plants and animals that live by it are quite different than those of drier upland areas. What different organisms do you see here? Water is a critical resource for animals, large and small. Mosses, algae and aquatic plants grow quickly in this productive resource, where temperature is less changing. Many flying insects (like dragonflies and mosquitoes) spend much of their lives in an aquatic larval stage. Fish (especially baby fish) migrate up and down streams in search of food. Amphibians like frogs and salamanders depend on water for their larval stage too. Even when they transform from tadpoles into adults, most species prefer a wet environment and must return there to lay eggs. Snakes often hunt along streams, as do mammals like raccoons and bobcats.

In larger, frequently flooded areas like the Wetlands project along the North Bosque River of Waco Lake, Sycamores *Platanus occidentalis*, Black Willows *Salix nigra* and Plains Cottonwoods *Populus deltoides* dominate the shoreline, while cattails, rushes and other vegetation attracts ducks and waterbirds. These wetland ecosystems are one of the most productive on earth in terms of growth and biomass, but have largely disappeared from the United States. In the US, less than 10% of wetlands present in 1800 still exist.



### Reynolds Creek Interpretive Trail

To get to Reynolds Creek Park take the second exit off of Hwy. 6 after you cross Lake Waco. Stay on the service road. Turn right on Speegleville Road and follow approximately 3 miles. Turn right into Reynolds Creek Park.




# Reynolds Creek Tejas Nature Trail

#### Field Safety Tips

1. Be aware of your surroundings at all times. Don't wander off the trails. Stay on designated hiking trails.
2. Avoid snakes and poisonous insects, and spider habitats, for example brush piles, debris mounds, logjams, root systems, marsh areas or abandoned buildings.
3. Wear leather boots or hiking shoes when in the trails.
4. Never sit or climb on logs, rocks or benches without first inspecting and observing around the area.
5. Be alert when hiking near the water, this is a good hunting and sleeping area for many animal species.
6. When hiking with a pet dog, be aware of what they sense while in the trails. Often times your dog is the first one alerted of a snake or any other animal species.
7. When a snake is sighted in the trails, leave it alone! Be aware that snakes, as well as other animal species try to avoid human contact, they will leave the area as soon as they can.
8. For your safety and the safety of the native animals, learn more about what makes its habitat in the Waco Lake trails.
9. Always expect the unexpected, learn what to do if snake bitten. Try to remember what the snake or spider looked like, and call ahead to the hospital.



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1

## What type of environment are we in?

The “Mountain Cedar” trees around us are actually Junipers *Juniperus ashei* and *J. virginiana*, short evergreen conifers that are increasing in central Texas. “Conifers” means “cone-bearing” plants, and includes trees that dominated the Earth in the time of dinosaurs, before flowers existed. In many places around the world, as in the southeastern US, conifers are still dominant trees, since their evergreen, needle-like leaves and tolerance for sandy soils give them an edge on flowering trees like Oaks.

### Do you see any cones on these Junipers?

What looks like little blue berries are actually fleshy cones, adapted so their seeds will be spread when hungry birds and mammals consume them and move on. Native Americans ate the “berries” fresh or dried and mixed with other foods into pemmican, an early version of trail mix.



2

## Is this environment “natural?”

The Army Corps of Engineers has not planted these Junipers, which have been present in Texas for thousands of years. However, Spanish explorers of the 1500’s and settlers that began arriving in the 1800’s described endless grasslands in this area. Apparently the Prairie ecosystem was much more dominant than Juniper woodland.

**Why has this changed?** Try to think of some reasons as we walk to the next stop.

### What does “natural” mean to you?

Does it mean things that would grow without the alteration of people? Native Americans are thought to have been in this area since before the last Ice Ages approximately 10,000 years ago. They altered the landscape in different ways hard to separate from nonhuman alterations of climate change. It would be impossible to restore conditions to those present before the arrival of the first people in the Waco area.

Or maybe “natural” means the environment before large migrations of European descendents settled here

and began raising plants and animals that could not have arrived without being imported. This is the approximate guideline used by many US nature conservation agencies.

Or could “natural” signify “unimproved,” the environment that occurs outside of the artificial concrete and steel of cities, or the homes and yards of the suburbs? The trail you are walking on and the asphalt road to drive here are both “improvements” that allow us to enjoy this “natural” area. Everyone has a different idea of what “natural” is . . .

3

## Where did the Prairie go?

If the Waco region was covered in prairie grass when settlers began arriving from the east in the 1800’s, what happened to the grass? Juniper forest will take over an area over time as it grows taller than grasses and shades them out. One key element is necessary to support the faster-growing Prairie grass . . . FIRE. Frequent fires (approximately every 3-6 years) kill young shrubs and trees, allowing grasses to maintain dominance over the landscape. Wildfires, started by lightning strikes during dry periods, are a natural part of the Prairie ecosystem.

As settlers began year-round intensive agriculture and grazing, it was in their best interest to suppress wildfires. Native Americans used fire extensively to maintain the prairie for the animals they hunted. Large mammals, primarily Bison, would graze the prairie seasonally, which promoted grass growth as well. When their numbers dwindled and settlers began putting out fires, Juniper and Mesquite trees began to spread through the Prairie. What you see around you is the “natural” result of allowing growth without allowing fire.

The Army Corps of Engineers does maintain Prairie areas around Waco Lake by periodic prescribed burning. Small, controlled fires are set and monitored to mimic the natural fire cycle without causing damage to surrounding private lands.

4

## What do you do with an acorn?

Texas Oaks *Quercus buckleyi* are intermixed with Junipers on these uplands, and occasionally you will find Escarpment Live Oaks *Quercus fusiformis*, Blackjack Oaks *Q. marilandica*, Post Oaks *Q. stellata* and Bur Oaks *Q.*

*macrocarpa* growing naturally around the lake. With all these oaks, it’s only logical that tribes would use them. Many cultures in North America relied upon acorns as a major source of food.

While oak trees now are used primarily for wood, Native Americans would grind up the acorns for acorn-meal bread. The Red Oaks (including Texas Oak), named because their leaves turn red in Autumn, contain a lot of tannin, which is poisonous to humans. To use these acorns, people not only needed to grind them, but also rinse the acornmeal several times to leach out the tannin so it would be edible.



5

## Where’s the desert?

Prickly Pear cactus *Opuntia spp.*, symbol of the desert, can be found growing throughout Texas, and in all 48 contiguous states. You can also find clusters of Yucca around Lake Waco, another plant typical of New World deserts. So are these “desert plants” leftovers from a time when desert was here long ago, or are they signs that the area is becoming a desert?

While pollen samples and fossils indicate drier climates prevailed around Lake Waco at one time, that is not why the cactus is still here. And although the Chihuahuan desert of West Texas is expanding eastward, these prickly pears are not the first wave of that expansion. Cactus is well adapted for deserts because its spine-like leaves and tough stem skin resist water loss, but the origins of cactus are thought to be in tropical America, where there is enough water. Spines and thick skin are more useful as a defense against being eaten.

If you’ve ever eaten a delicious prickly pear fruit, you can understand why cacti need protection from hungry animals. Their protection is useful not only in dry climates, but in cold climates. Presence of a lot of cactus is a good indicator that an area has been overgrazed, because the spiny cactus is one of the few plants that remain when animals are eating everything else to keep from starvation.

