



AN IDENTIFICATION GUIDE TO VENOMOUS SNAKES OF NORTH CENTRAL TEXAS

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This guide introduces you to the venomous snakes found in North Central Texas and gives some information about safety and venomous snake bite. For more information, I suggest Andrew Price's *Venomous Snakes of Texas: A Field Guide*. That guide covers all of Texas, with information about snake bite, venom, and first aid.

Most of the snakes we see in Texas are harmless. A few species are venomous, meaning that they can bite and inject venom, resulting in medically serious symptoms. Even the venomous snakes would rather be left alone and often either retreat or sit still, hoping you will leave them alone. Nevertheless, people who spend time hiking, hunting, fishing, or being outside for other reasons should know how to identify venomous snakes and stay safe around them.

Our Four "Kinds" of Venomous Snakes

In North America, we have four "kinds" of snakes that are venomous to a medically significant degree:

Copperheads ❖ Cottonmouths ❖ Rattlesnakes ❖ Coralsnakes

Any other North American snake is not dangerous to the average person. There are different species within the groups I listed above, and they don't all look exactly alike—as you will see in the pages that follow. But as a basic way of thinking about the groups of snakes found in North America, it works.

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Pit-Vipers: Copperheads, Cottonmouths, and Rattlesnakes

The copperheads, cottonmouths, and rattlesnakes are all members of a group of snakes called “pit-vipers.” These snakes have:

- Fangs that fold against the roof of the mouth when not in use
- Venoms that mostly (with some exceptions!) affect tissues, causing pain, swelling, bruising, and other medical problems
- Elliptical pupils (like a cat’s)
- A small heat-sensing pit in the face between the eye and the nostril
- Rather chunky bodies, and some have broad or arrow-shaped heads

Copperheads

The Eastern Copperhead & Broad-banded Copperhead

(The Eastern copperhead used to be called the Southern copperhead)



Eastern copperhead



Broad-banded copperhead

These are relatively small, shy snakes that blend in very well with leaves on the ground. Copperheads have a pattern of darker and lighter reddish-brown bands that are broad in the broad-banded copperhead, and hourglass-shaped in the eastern copperhead. Newborns have bright yellow tail tips that fade to greenish as they get older. These snakes average around two feet long or so. The small size and relatively mild venom of the copperhead mean that a bite is usually considered non-life threatening, but it is still a medical emergency and should never be treated lightly. Different people react differently and bites result in very serious medical consequences for some.

Cottonmouths (sometimes called "Water Moccasins")



The Northern Cottonmouth

(Previously called the "western cottonmouth")

These snakes are often found near or in water. They are larger and bulkier than copperheads and have a darker pattern, but they are closely related to copperheads. Cottonmouths have flat, chunky heads, elliptical pupils, and a heat-sensing pit in the same location as the copperhead. The cottonmouth pattern is dark brown or nearly black, with some indication of broad crossbands that are wider on the snake's sides. Newborns have a lighter, reddish pattern that is similar to that of a copperhead. Most of the cottonmouths in Texas grow to around three feet in length but may look bigger because of their chunky proportions.

Cottonmouths have a bad reputation for being aggressive or even chasing people. However, it turns out that they would rather hide or get away than strike. Sometimes they provide a warning by gaping their mouths open to show the light, whitish inside (thus the name "cottonmouth"). Like other pit-vipers, the venom is primarily tissue-destroying, with relatively high hemolytic properties (attacking blood cells) according to Andrew Price's field guide.

Rattlesnakes

The Western Diamond-backed Rattlesnake

This is the largest and most dangerous snake in north Texas. The danger comes from the fact that these snakes can deliver a large dose of fairly potent venom, and they can defend themselves aggressively. Most western diamondbacks grow to about 3 to 5 feet, but the record is just under seven feet. These snakes have white-edged dark diamonds running down much of the back, two diagonal white stripes on the face, framing the eye, and a black-and-white banded tail ending in a rattle (unless it has been broken off). The scales on the top of the head are small. When nervous, the rattlesnake may twitch or briefly shake the tail, resulting in a few “chick- chick- chick” sounds. If more agitated, the tail is vibrated vigorously, producing a steady buzzing sound.



The Timber Rattlesnake (The southern form is sometimes called the “canebrake” rattlesnake)



Key identifying features include: rusty brown or reddish vague stripe down the back, black chevrons or blotches, scales on the top of the head are small, elliptical (cat-eyed) pupils, pattern darkens toward the tail, and a black tail with rattle segments at the end. Adults may be around four feet in length, with the maximum reported length a little over six feet.

In most places, these snakes are not seen often, and tend to be found in scattered areas in or around woodlands. This is the only protected venomous snake in Texas -

it cannot be collected and should not be harassed or killed. However, be assured that this protection is not enforced against anyone who kills one in the belief that they were in danger from it.

Timber rattlesnakes often do not rattle and may sit quietly, relying on camouflage to escape harm. When they do bite, it is a serious emergency as they can inject a large dose and the venom is potent. There is variability in the degree to which the venom affects the nervous system and/or destroys tissue.

The Western Pygmy Rattlesnake



These little snakes only reach about 18 inches in length, and the rattle is very small and not easily heard. They have large scales on the top of the head (as opposed to the small scales between the eyes and behind the snout for the larger rattlesnake species). The ground color may be grayish, brownish, or have a slight purple cast to it. A series of dark blotches run down the back, and a vague reddish stripe runs down the center of the back. These snakes are found in east Texas and in a small area of north Texas near the Red River. They occur in forested areas with deep sandy soil.

The fangs are short and the amount of venom injected is small, and there are no recorded fatalities from bites of this species. However, a bite should still be treated as a medical emergency, so don't be careless around them!

The Western Massasauga

There are records of these small rattlesnakes from Dallas westward, but it is more likely to be seen west of Tarrant County. Massasaugas grow to about two feet in length. Like the related pygmy rattlesnake, they have large scales on the top of the head. The rattle is small but more noticeable and more visible than would be the case with pygmy rattlesnakes. Down the back is a series of rounded or vaguely heart-shaped blotches, and there is no reddish stripe down the back. The massasauga is colored mostly in grays or brownish-gray.



This little snake used to be a common sight at sunset on the prairie west of Fort Worth, but it is much less common these days. Most of them either sit still and hope humans will walk past them, or else try to get away. If

touched or threatened at close quarters, however, it strikes in little lunging jabs. Like the pygmy rattlesnake, it should be treated with respect, though there are no fatalities recorded in Texas.

Elapids: Coralsnakes

The only Texas snake in the “Elapid” group of venomous snakes is the coralsnake. Coralsnakes have:

- Fangs that are short and fixed in position
- Venoms that mostly affect the nervous system, with little tissue damage near the bite
- Round pupils, but the eyes are small and this is not easy to see
- Long, fairly slender bodies and small heads

Coralsnakes

The Texas Coralsnake

These are secretive snakes that are not often seen, even though they may be fairly common in some places. Coralsnakes usually have wide black and red bands separated by narrow yellow bands. The first yellow band is at the back of the head, and the head and initial part of the neck



are black. The last few wide bands of the tail are black. Additionally, the red bands have some amount of black mottling in them, sometimes to the point that the red is not very apparent. Occasional coralsnakes show up with odd patterns such as very little red color, so don't rely on the rhyme about “red touch yellow, kill a fellow.” The best rule is: *if you don't know what it is, leave it alone.*

Coral snakes are very nonaggressive if left alone and so the best and safest strategy when finding one is to let it go. The fangs are in the front of the mouth, so it is not true that coral snakes have to chew in order to envenomate a person. On the other hand, the small size and nonaggressive nature of this snake result in few human bites. Do not assume that this means coralsnakes are not dangerous! In a review of 14 cases of bites by the Texas coralsnake, none of the patients required antivenom but all of them had paresthesias (altered sensations) and 3 of them rated pain as “severe.”* As noted above, coralsnake venom is primarily neurotoxic. There may be little swelling immediately following a bite, but do not assume that this means no envenomation occurred. Get to a hospital as soon as possible!

* Greene, S., Ruha, A., Campleman, S., Brent, J. & P. Wax. 2020. Epidemiology, clinical features, and management of Texas coral snake (*Micrurus tener*) envenomations reported to the North American Snakebite Registry. *Journal of Medical Toxicology*, DOI: 10.1007/s13181-020-00806-3

It is worth adding a note about using round vs. elliptical pupils to identify venomous snakes – if you are close enough to a coral snake to see the round pupil, you are way too close! The eye is small and dark, nearly matching the surrounding black scales.

A couple of things about safety around venomous snakes:

1. When you are in a place where there could be venomous snakes, always look where you are about to put your hands or feet. Snakes are often partly camouflaged among leaves or grasses, and they are often found at the edge of, or underneath, rocks, logs, boards, etc. Do not reach underneath such things without knowing what is there. Don't walk barefoot in darkness or where you can't see where you are stepping.
2. If you see a venomous snake (or any snake), stay calm. If you are several feet from the snake, move away; once you're ten feet or so from the snake, you could watch it or take a photo without taking much risk, just keep track of the snake's movements and move further if needed. Despite what you may have heard, snakes do not attack you or chase you – though they have been known to move toward someone if they think the best escape is in the direction where that person happens to be standing.
3. I would suggest that you do not try to kill the snake – not because I like snakes (though that is true), but because trying to kill the snake with something like a shovel brings you very close to the snake and the panicked snake will move unpredictably and likely try to bite when attacked. It may be safer to let it go.
4. A recently killed snake continues to have some automatic reaction to touch and movement, and may be able to bite, so do not handle it. Additionally, snakes die fairly slowly from some mortal wounds, so the snake may still be alive and capable of biting for a time.

A few words about venomous snake bite

As noted above, the field guide by Andrew Price discusses snake venoms as well as the symptoms and treatment of snake bite in enough detail for most readers, but I'll make a couple of comments here. ***First, to be clear, nothing that follows should be considered individual medical advice. If bitten, you should consult a physician as soon as possible.***

1. Keep the website and number for the American Association of Poison Control Centers handy. The website is: <http://www.aapcc.org> and they also have a site for specific help regarding poisoning: www.PoisonHelp.org. Their toll-free number is 1-800-222-1222. Additionally, on Facebook the National Snakebite Support group is run by experienced physicians and other professionals. See <https://www.facebook.com/groups/national.snakebite.support>
2. The AAPCC and BTG (maker of CroFab antivenom) have developed an app called "SnakeBite911" that can be downloaded to a smart phone. It provides a number of features, including snake information, hospital locator, and with your camera it prompts you to take photos of the snakebite site every 15 minute on the way to the hospital to track the progress of symptoms.
3. Venomous snakes are capable of biting without injecting venom. Such "dry bites" may produce minimal or no symptoms because no venom was injected. While you could get lucky, don't count on it – get to the hospital!

4. A bite from a pit-viper generally produces immediate pain which some describe as like a wasp sting, and swelling, bruising, and deeper pain (and other symptoms) soon follow. Bites from nonvenomous snakes feel like sharp scratches, without much pain and little or no bruising or swelling. However, differences in pain tolerance and state of mind may lead to different experiences. Unless you can positively identify the snake as harmless, it is best to seek treatment.
5. If bitten, immediately move away from the snake and remove rings and other jewelry from the bitten area (because of the swelling that will quickly follow). Most authorities – including the information on the SnakeBite911 app – recommend that you DON'T try to kill the snake or take it with you, and that you DO NOT take aspirin-containing or other pain medicine or drink alcohol, DO NOT cut the bite or use a tourniquet, DO NOT pack it in ice, and DO NOT use electric shock to try to neutralize the venom. Your "to-do" list is short: keep calm, remove the jewelry, get someone to drive you to a hospital, and if you have it, use the SnakeBite911 app.

Space for your notes:

You might be interested in:

Michael Smith is a Texas naturalist and author or co-author of two books on reptiles and amphibians (see images to the right), both from Texas A&M University Press.

