

Texas Field Notes



Reptiles and Amphibians of Texas and Places Where They Live

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The Big Thicket

Michael Smith

There was once a time when about three-and-a-half-million acres of southeast Texas was a great expanse of longleaf pine forest, cypress sloughs, beech-magnolia-loblolly pine forest, floodplains, open savannahs, and swamps. It was the Big Thicket, a region where in some places the thickets of trees and understory plants were just about impenetrable. In bottomland forests, dark, shaded pools alternated with areas of downed logs, ferns, and leaf litter. Five-lined skinks scurried amid that leaf litter and basked on the logs. Other areas had towering pine trees growing from deep, sandy soils, and slow-moving creeks

meandered quietly through the forest. In places of deep and darkly tannin-stained water, huge alligator snapping turtles lay in wait like ancient, underwater dragons. Open savannahs dotted with pines contained huge congregations of carnivorous pitcher plants. Their leaves form green tubes with a flap or hood at the top. Attracted by a sweet-smelling nectar, insects creep down into the tube but cannot get out because of downward-pointing hairs. The trapped insect winds up in fluids at the bottom, where their soft parts dissolve and feed the plant.

(continued on page 2)

Inside this issue:

THE BIG THICKET	1
GETTING STARTED HERPING—PART 2	6
NIBBLING AWAY AT THE BIG THICKET	12
CONTACT INFO	12

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Texas Field Notes

The Big Thicket (*continued*)

Finally, fifteen fragments – patches of land and corridors along rivers – were federally purchased and designated by Congress as the Big Thicket National Preserve.

Along came settlements and logging and then petroleum drilling, and the natural areas of southeast Texas shrank. Several national forests in the region helped preserve some of the area, but those forests tend to be dotted with houses and trailers. Finally, fifteen fragments – patches of land and corridors along rivers – were federally purchased and designated by Congress as the Big Thicket National Preserve. Those areas or “units” total over 95,000 acres. This remnant of the original Big Thicket region is a wonderland for botanists, birders, and nature-lovers of any kind, including herpers. It has been designated an International Biosphere Reserve, and recognized as a Globally Important Bird Area.

It is also a spectacular place to see various reptile and amphibian species. The tan racer, a forest-dwelling form of the more widespread eastern yellow-bellied racer, is found there. At least historically, the endangered Louisiana pine snake has been found in parts of the Big Thicket National Preserve. The protected canebrake (timber) rattlesnake is found there. Herpers would have a shot at seeing the secretive little scarlet snake. The alligator snapping turtle is a protected species that, in Texas, makes its home only in parts of east Texas (including the Big Thicket). Hardin

County (home of the Lance Rosier unit and part of the Turkey Creek unit) is one of only a handful of Texas counties where one

would have a chance to see, or hear, a pig frog. For the more common species, the Big Thicket is a backdrop against which the lowly green anole or



Pitcher plants

five-lined skink becomes a delight to see. What could be a more beautiful place to see a Texas rat snake than in a southern magnolia? Where would a western cottonmouth look more exotic than against the buttresses of a swamp tupelo or bald cypress?

I have stood in the darkness and listened to springtime choruses of cricket frogs, bullfrogs, bronze frogs, leopard frogs, green treefrogs, gray treefrogs, and gulf coast toads, all calling energetically, trying to attract mates and making the night come alive in the process. On a 2005 trip, our group found numerous dwarf salamanders. These small amphibians thrive



Five-lined skink

Alligator snapping turtle (juvenile)



in damp places under fallen wood or leaves.



Dwarf salamander

So far, on four separate trips, I have spent time in the Big Sandy Creek, Turkey Creek, and Jack Gore Baygall Units, and I feel like I've barely scratched the surface. (I might have seen more by now, but Turkey Creek and Big Sandy are such favorites.) Another wonderful place is the Roy E. Larsen Sandyland Sanctuary, which is not part of the Big Thicket National Preserve but is owned by the Nature Conservancy, Texas chapter. It is located along Village Creek, between Kountze and Silsbee. This is an area described as "arid sandylands," and its deep sands drain rainfall away quickly, allowing for prickly pear cactus and yucca to thrive in the dry, sandy surface. The sanctuary includes remnants of longleaf pine as well as woodlands contain-



Big Sandy Creek unit

ing oak as well as beech and magnolia. On visits there I invariably get to watch six-lined racerunners nervously scampering along sandy trails and through leaf litter, devouring the small insects they find. We



Eastern coachwhip
(this one was seen in the Jack Gore unit)



also spotted an eastern coachwhip under scrubby understory growth on one visit, and several of us surrounded the clump of vegetation hoping for a better view. The snake put up with this for only so long before streaking between us and off through the woodland. (We had no intention of collecting this snake, as everything within the sanctuary is protected.) (continued on page 4)

Texas Field Notes

The Big Thicket (*continued*)

Two
places in
the Turkey
Creek unit
(right and
below)



This year, in April of 2006, Mark Brown and I visited the area. It was my first opportunity to see it following the destruction of Hurricane Rita last fall. It was unnerving to see so many huge trees blown down, and we wondered about how the opened forest canopy will affect the various plant and animal communities there. It will take years for some areas to return to their former state, and one naturalist friend worries that the invasive plants that are always waiting for a foothold may take advantage of these openings and make recovery difficult. Such thoughts lead to further worries: with

warming climates increasing the odds of more frequent and more powerful hurricanes, will this area be spared for a while, or will there be more hurricanes knocking down more trees while the Big Thicket recovers from the last one?

Regardless of hurricane damage in some areas, the Big Thicket National Preserve is a great place to visit, and I hope to keep going back as often as I can. With a little tolerance for high humidity along with tropical heat, and with a little mosquito protection, anyone can have a memorable time there.

References

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Western
cottonmouth



Aftermath of Hurricane Rita

Tree trunks thrown around like matchsticks in the Turkey Creek unit. We imagined what it might have been like during the storm, and were glad we had not been there.



Walking down the trail, tree after tree can be seen blown down by the hurricane.



Notice the size of the root-balls pulled from the ground with the trees. Even with sandy soil, the force of the winds must have been tremendous.

(Photo by Mark Brown)

Getting Started “Herp-Watching” (aka “Field Herping”)

Part 2

Michael Smith

The first part of this article covered some ideas about where to go for field herping, and how to look for herps once you get there. So, once you have found something, how do you know what you’ve got? And how do you stay safe while you’re in the field? We will now address those questions.

Identifying what you see

There are a number of great field guides for identifying snakes in Texas, but only a few that cover lizards, turtles, frogs, and salamanders. The guide that most of us in Texas have used over the years was originally written by Roger Conant. In later editions he was joined by co-author Joseph Collins. Titled *A Field Guide to Reptiles and Amphibians of Eastern & Central North America*, it describes each species or subspecies, gives information about where it is found, and generally tells something about its life history. There is a small color illustration of almost every animal covered, and range maps make it easy to check whether a particular critter is found in the place where you happen to be herping. Once you have the Conant & Collins guide, you may wish to add a few more books with nice photos and a little more life history information. An excellent small guide to the venomous snake species in Texas is, *Poisonous Snakes of Texas*, by Andrew Price. It contains natural history, information about venomous snakebite and each species’ venom properties, as well as clear color photographs and maps showing in what counties each is found.

Frogs & Toads

First, a caution about the skin of these animals. No, they won’t give you warts, but frogs and toads do have toxic skin secretions. If you

handle one and then rub your eyes, you may get a mild to severe burning sensation. Additionally, their skin is fairly permeable, meaning that substances can pass through it fairly easily. If you have applied insect repellent and then handle a frog, you may kill it. Please be careful!

The terms “frog” and “toad” can be confusing. However, most frogs have smooth, wet skin and they may have long back legs for jumping. Most toads have skin that is more dry and warty, with back legs designed for hopping. Many of the toads are identified partly by the shape of some bony ridges on the top of the head called “cranial crests.” Additionally, the spadefoot toads are distinguished by a dark, tough projection on the bottom of the back feet. Shaped a little like a spade, it helps the toad dig in the soil. Frogs are identified by characteristics such as size and pattern, and sometimes by the presence of “dorsolateral folds.” The dorsolateral folds are two raised ridges of skin running down at least part of the back on either side.

Especially on spring nights, it may be possible to identify frogs and toads in the area by listening to their breeding calls. There’s more to frog calls than “croak” or “ribbet.” Green treefrogs make a nasal quacking sound, and bronze frogs sound a little like a banjo string being plucked. Quite often frogs have short, repeating calls, while toads may have extended trills. There are audio CDs available that have samples of the calls of most Texas species. It can be a lot of fun to listen to these and then go out and see how many calls can be identified. Texas Parks & Wildlife Department has some excellent CDs that are used in a citizen volunteer effort to monitor frog and toad populations.

Part Two is a quick introduction to identifying the reptiles and amphibians of Texas and staying safe while field herping.

There is much more to learn after you read this, but the learning is a lot of fun.

Take time to enjoy just being out there, even when you don’t see a lot of herps. As Mark Brown says, “If you have to see a lot of herps to enjoy field herping, you’re in the wrong hobby.”

Salamanders

Salamanders are often active during cold months, and may be breeding during cold winter rains. Occasionally they are seen moving during or right after rains, but in many places the most common way to find salamanders is to search under logs or rocks in damp areas. Remember that if you search in this way, avoid tearing up the log and make sure to put things back just as you found them. Wet “seeps” such as crevices or small caves where water trickles out may be excellent places to find some of our salamanders. Be careful – salamanders have delicate skin and can be harmed by handling just as frogs can be. A few salamanders in Texas are rare and/or live in very small, specific places, and these may be legally protected. Sometimes, people may be confused about the difference between salamanders and lizards. Salamanders are amphibians, with wet and generally slimy skin. Lizards are reptiles, with scaly skin. Even the skinks, whose scales may be so smooth and polished that the lizard looks shiny, have dry scales rather than wet skin.

Crocodilians

Unless you come upon someone’s escaped pet, the only crocodilian you will find in Texas is the American alligator. In parts of east Texas and the gulf coast, alligators may be fairly abundant. This is an animal best seen from a distance. Larger alligators can be quite dangerous up close, and in parts of the U.S. people are occasionally killed by a large alligator. One thing that can add to the danger is when homes and recreational facilities are built right by a population of ‘gators, and through frequent contact they become less shy. If you see an alligator, you are not likely to mistake it for anything else. A baby alligator might look superficially like a big lizard, but alligators have vertically flattened tails, elliptical pupils (shaped like a cat’s eye), and exposed teeth (a lizard’s very small teeth are covered by lips).

Turtles

By far our most common turtle is the red-eared slider, a fairly large semi-aquatic turtle with yellow-green stripes on its head and legs and a patch of red skin behind the eye. These are the turtles that used to be sold as babies in dime stores, doomed to a slow death by malnutrition or disease while living in a little plastic pond with a palm tree. There are several other species of sliders and cooters that can sometimes be seen basking in the sun on a log, only to plop into the water if we get too close.



Spiny softshell turtle from Balmorhea, in west Texas

Snapping turtles are sometimes seen, especially the common snapper that sometimes wanders away from water. These turtles have large heads and long tails, and may be an unattractive charcoal to gray-brown color. Another odd semi-aquatic turtle is the softshell turtle. These turtles have round, flat, rubbery shells, long necks, and a snout shaped like a snorkel.

Among our “land” turtles are the box turtles, which can pull into their shell and close the two parts of the hinged bottom shell (the “plastron”). They used to be seen commonly on the highway on spring mornings or late afternoons, but they appear to be declining in many parts of the country. Box turtle shells are only about five or six inches long. Another land turtle is the Texas tortoise, a reptile that is found in south Texas and is legally protected.

Texas Field Notes

Getting Started “Herp Watching” (*continued*)

Lizards

Most of our lizards are active during the day and are very fast. Lizards in Texas have scaly skin and four legs (with the exception of the glass lizard, which has no legs), and a tail that may break off if grabbed. One well-known lizard is the Texas horned lizard, which has disappeared or is much less common than it used to be in much of its Texas range. There are several other species of horned lizards, and they all have a somewhat similar overall shape: a flattened, somewhat spikey or spiny body and a short tail. They are occasionally confused with the Texas spiny lizard, a large mottled gray or brown lizard with a long tail (unless it has broken off) and a body that is not flattened. Another group of lizards, the skinks, have smooth, overlapping scales and may look satiny or shiny. Race-runners and whiptails are very fast and active lizards, most of whom have some sort of light stripes on a dark background. There are many other kinds of lizards in Texas, ranging from the small nocturnal



Green Anole from the Gus Engeling Wildlife Management Area near Palestine

Texas banded gecko of west Texas to the green anoles living in the shrubs and trees of east Texas. Anoles can change from bright green to brown, and were once sold in the pet trade as “chameleons.”

Snakes

There are a number of physical features that are helpful in identifying snakes. You have to look close to see some of these, so remember - *do not* handle or get overly close to an unidentified snake. Also remember that freshly “killed” snakes continue to have some ability to move about and bite for some time after being wounded. The process of dying can be slower for reptiles than for animals with higher metabolisms, so do not handle a recently killed unidentified snake.

Assuming that you were examining a motionless and limp snake, or one that is definitely harmless, you would look at the scales on its back, and notice if they are smooth or if they have a small raised ridge (keel) running lengthwise down each one. Presence or absence of keeled scales can help identify the snake. You could look down the belly to the vent (this opening is covered by a slightly larger scale). Is the scale covering the vent divided into two parts, or is it a single scale? Next you could look underneath the tail: most species have a double row of scales running down the underside of the tail, but a few have a single row. Obviously, if the tail ends in a dry rattle with interlocking segments, the snake is a rattlesnake. Be aware that a newborn rattlesnake will have one “button” at the end of the tail, and so it may appear to have a blunt tail with no rattle.

Now look at the head. At the tip of the snout is the rostral scale, and in some species it may be turned up or it may stick out (rather than being flush with the other scales). Look for the nostrils along the side of the snout, and check just behind and below them for a pit in the face. Rattlesnakes, copperheads, and cottonmouths have this facial pit, which is sensitive to infrared and allows them to detect a warm prey animal in the dark. Next, check the eye. An elliptical pupil does not automatically mean that the snake is venomous, but relatively few North

Volume 2, Issue 2

American harmless snakes have such “cat-eye” pupils. Now look at the overall head shape. You cannot reliably tell venomous from non-venomous snakes by the shape of the head. However, noticing if the head is distinctly wider than the neck will help in identifying various species.

The color pattern is obviously very helpful in identifying snakes, but I won't try to describe the various patterns here. It makes much more sense to flip through photographs in the field guides and see color patterns for yourself.

Nonvenomous Snakes

It might be a good idea to start by mentioning one particular snake that is found throughout most of Texas and is the subject of many, many nuisance snake calls, the Texas rat snake. I've had co-workers call me at night (more than once) to come get one that turned up in the neighborhood – or the garage. In Austin, Tim Cole answers snake calls as part of his work, and the snakes are very often Texas rat snakes. These snakes turn up so often because they're common, they are great climbers and can use trees to move about in suburban areas, and they're big enough to get noticed in a big way. Texas rat snakes have dark blotches down the back, but as adults the whole snake may become so dark that the blotches are a little hard to see. Other specimens have a fairly light ground color that may be yellowish, brownish, or gray. Juveniles have some pattern on the head that includes a broad, dark band across the snout. It is not uncommon to see adults around five feet long, and such a snake makes a strong enough impression that some people will be imagining that it is more like eight feet long. They are active, alert, and if they are cornered they are quite belligerent. A Texas rat snake that is threatened and has no escape will hold its mouth gaping open and follow any moving visual target, waiting for an opportunity to bite. When they do bite, it is not with much force, and the little needle-sharp teeth leave nothing more than scratches or tiny

punctures. Most of us who deal with these snakes have been bitten many times and don't even bother to wash the scratches (I'm not advising the reader not to wash such a bite, just making the point that the wound is not particularly dirty). Texas rat snakes have round pupils, weakly keeled scales, divided anal plates, and a double row of scales under the tail.

There is a wide variety of harmless snakes in Texas, and there is no simple rule for determining if a particular snake is harmless. Some, like the hog-nose snakes, put on an elaborate bluffing display and might seem very dangerous (though they are not). Others, like the delicate-looking green snakes, look as inoffensive as they are. These slightly pale-green snakes look like vines as they move through vegetation, and I have never heard of one biting, even when first captured.



Venomous Snakes

There are only a few basic kinds of venomous snakes in Texas. One group of venomous snakes are pit-vipers, and all of these have facial pits, elliptical pupils, heads noticeably wider than the neck (but sometimes not by much), keeled scales, a single anal plate, and a single row of scales under the tail. The pit-vipers include copperheads, the cottonmouth, and rattlesnakes. There are several kinds of copperheads in Texas, but all have a coppery to brown color, some sort of crossbands across the back, and

Texas rat snakes turn up so often because they're common, they are great climbers and can use trees to move about in suburban areas, and they're big enough to get noticed in a big way.

Texas Rat Snake
(harmless)

Texas Field Notes

Getting Started “Herp Watching” (*continued*)

all are relatively small. We only have one kind of cottonmouth, and the babies are rather bright colored and look similar to copperheads while adults become darker to the point of being a charcoal or

Staying safe in the field

For the most part, the safety issues in field herping are similar to those when you go hiking or camping, and with a couple of exceptions you should think of field herping as no more hazardous than those activities. You might consult articles or websites about safety issues when hiking and camping for further information.

If you are out very far from cities and towns, you should make sure you know the area and use maps, compasses, and perhaps a GPS to keep from getting lost. A very useful feature on many GPS units is one that plots your movements on the screen so that you can backtrack along the same route. I have found this very helpful on some night hikes in woods, where it is easy to become disoriented.

Remember to take water! Walking around in Texas in late spring or summer, you may quickly become dehydrated. Also, be aware of what heat exhaustion and heat stroke look like, and take breaks and avoid these hazards. (Also be aware that if you are walking around in the blazing heat, you are not likely to see many herps except some of the lizard species. In the hot seasons, the most active time for herps is in the morning, late afternoon, and at night.)

Do you know if you are particularly sensitive to bee and wasp stings? What about poison ivy? If you are not sure, you should bring appropriate first aid and consider talking with your doctor before going out in the field. Also be aware that some of the yuccas (particularly the dagger plant in west Texas) can actually give you a pretty bad wound if you fall against it. Look where you are moving and avoid cacti and yuccas.

Can you swim? Many a herper has slipped on a creek bottom or discovered a drop-off and suddenly is going swimming, like it or not. If you can't swim (or if you have expensive camera gear), consider avoiding the water. Just as important, be



Western diamondback rattlesnake

muddy brown color, with wavy bands that may be indistinct and barely noticeable. Texas has a number of kinds of rattlesnakes, ranging from the small pygmy rattlesnakes and slightly larger massasaugas to the large western diamondback rattlesnake. With the first shed skin, the baby rattlesnake begins to add segments to the rattle, which is a series of hollow interlocking segments that buzzes when vibrated. Many snakes vibrate their tails when nervous or threatened (including many harmless snakes), but rattlesnakes have developed this defensive strategy to a high art.

The only other dangerously venomous snake in Texas is the coral snake, a secretive and colorful snake that rarely bites unless it is handled. Because the alternating red, black, and yellow bands are quite beautiful, there is a risk of unsuspecting people or children picking up such a snake, and then a bite is quite possible. A popular rhyme warns, “red and yellow kill a fellow” (if the red and yellow bands are next to each other, it is the venomous coral snake), but “red and black, poison lack” (if the red is adjacent to the black bands, the snake is not venomous). Coral snakes have round pupils, but their eyes are small and dark and so this is very hard to see. Their heads are barely wider than their necks, their scales are smooth, the anal plate is divided, and there is a double row of scales under the tail.



Texas coral snake

aware that uneven and algae-covered rocky creek bottoms can be very slippery. A friend slipped in a very shallow situation such as that and hit his head pretty badly. Lucky for him that he is hard-headed! A head injury is a serious matter, especially if it occurs far from medical help.

Be aware that going out by yourself can be quite foolhardy. Go with another person, or a small group. Let others back home know where you are going and when to expect you to contact them. Taking a cell phone (if you will be in an area with mobile service) is a good idea.

Watch the weather. Spring storms can be wonderful for amphibian spotting, but they can also generate flash floods. If you are in a creek bed and a thunderstorm is approaching, think about where higher ground is – particularly higher ground that will not leave you cut off from where you need to go. Also be aware that getting struck by lightning is a sure way to put a damper on any field trip! Know the location of a safe refuge from storms.

What do you wear when field herping? A friend wears tennis shoes and shorts while herping the Trans Pecos, with all that cactus and yucca and rock. This is not a recommended practice! For the rest of us, think about hiking boots for protection and stability so you don't sprain an ankle. Consider long pants for protection from cactus or poison ivy or such things. A hat may help with heat and sunburn – or rain! Backpacks can help hold cameras, water, GPS, and so on.

Your vehicle can be a safety issue. If it's prone to breaking down, ride with someone else. I've imagined what it might be like to break down on some lonely ranch road, 100 miles from anything, at 2:00am. Friends who have had this experience simply sleep in the car until the next day and hope for a helpful passer-by. And hope **not** to see an unhelpful passer-by. Use a reliable car or truck; if you get sick or hurt, you need to be able to get to help.

In the first part of this article, I said that an introductory article like this is no place to teach people how to interact with venomous snakes. My advice is to learn a lot about the snakes and get mentoring with someone with lots of experience before you consider hooking or capturing venomous snakes or moving in close for photographs. To look at or photograph a small venomous snake like a copperhead, you could safely be within a few steps of it if you have good balance, you are positioned so that you will not fall, and can easily take a step or two away if the snake moves. For a larger rattlesnake, stay further away. If you have unobstructed room to move around, you could be ten or twelve feet away as long as you have good balance and watch the snake carefully. There is no reason to worry about an "attack," but these snakes sometimes decide to try to get away and it is hard to predict which way they may take off. Some venomous snakes sit still for a bit but ultimately feel threatened enough to strike. With a large diamondback rattlesnake, this can be a startling event and you need to be far enough away to keep your cool and simply step back. If you are crouched down close and lose your balance, it ain't gonna be pretty!

Needless to say, you should never tease or try to pin down a venomous snake. An agitated, scared snake and a foolish human are an accident waiting to happen. Similarly, alcohol and venomous snakes do not mix (but those foolish enough to have a few beers and then go "mess with" a venomous snake are often on the 10 o'clock news).

Finally, be aware that the Texas Parks & Wildlife Department requires a hunting license for collecting any wildlife. This article does not encourage collecting by those who are just starting. However, if you *look like* you are collecting, a game warden might ask to see your license even if you did not intend to take anything home.

Ready? Now get out and enjoy the wildlife and wild places of Texas!

Needless to say, you should never tease or try to pin down a venomous snake. An agitated, scared snake and a foolish human are an accident waiting to happen.



Visit us at:www.texasherp.info

Nibbling Away at the Big Thicket

Southeast Texas contains a natural treasure, the Big Thicket. It is an area of forests and wetlands and savannahs where pine, magnolia, and beech forests give way to cypress swamps and wet depressions called

“baygalls.” The protected alligator snapping turtle is found here, as is the tan racer. Dwarf salamanders are common.

The National Park Service maintains the Big Thicket National Preserve (BTNP), several undisturbed remnants of the original Big Thicket habitat. And while you would think that what is left of the Big Thicket would be “hands off” to drilling and development, gas wells are pumping away in parts of the BTNP and more are on the way.

And now, the Texas Department of Transportation (TxDOT) wants to enlarge US Hwy. 69 that runs right through the Big Thicket area. A news item at the website of the Houston chapter of the Sierra Club says that TxDOT wants an additional 800 acres of right-of-way

and they propose to take part of the Village Creek Corridor for some of it. TxDOT wants to get around the National Environmental Policy Act so that it will not have to draft an Environmental Impact Statement (EIS). In other words, they'd like to push their plan through without looking at the possible impact on the Big Thicket and with minimal opportunity for others to say what they think.

If you are concerned about this, you can write a letter to Ms. Jackie Anderson, Project Manager, TxDOT, 8350 Eastex Freeway, Beaumont, TX 77708. The Sierra Club recommends saying to her that TxDOT must do an EIS, should invite public comment, and must protect the Big Thicket National Preserve from noise pollution, habitat degradation, and loss of wildlife habitat.

How many times, for how many projects and gas wells and “improvements,” will we let people nibble away at the Big Thicket before we draw the line and really protect what is left?

More info is at the Houston Sierra Club website – www.texas.sierraclub.org/houston/

