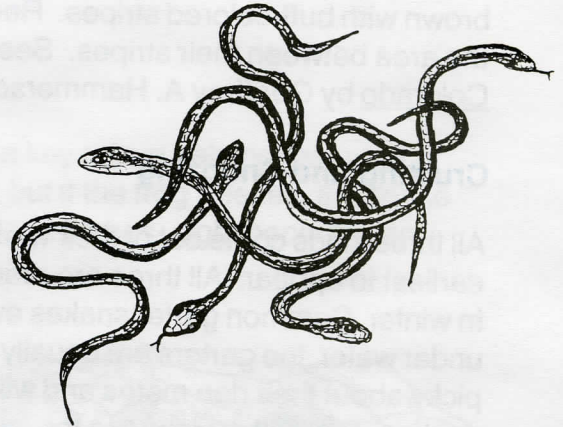


NATURE DETECTIVES

Summer 2002

Cool Facts About Garter Snakes

- You might find one in your backyard or garden; they are the most common snakes in North America.
- Garter snake moms can have 20-40 babies at one time. Records show one litter of 98!
- Sometimes *thousands* of garters will hibernate in the same den.
- Garters do not use venom and do not constrict their prey. They grab their prey fast and swallow it whole...and sometimes alive.
- A garter may squirt out a stinky fluid if you try to pick it up.



Cold-blooded Snakes? Not Exactly!

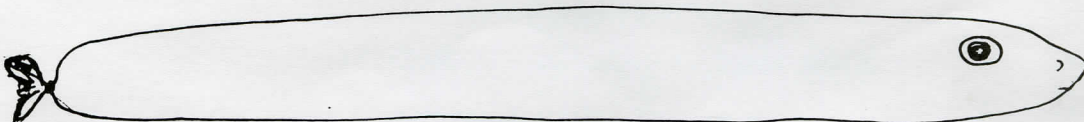
Snakes are ectotherms, which means their bodies are the temperature of their surroundings. They don't convert food calories to body heat, so snakes bask in the sun to get warm, but seek shade when the sun is too hot. In winter, they must find a place underground or under water to keep from freezing. (People are endotherms. We use food calories to warm our bodies. Sweating cools us. Our body temperature stays fairly constant.) Snakes must be warm to digest their food, and if the food stays undigested too long inside the snake, the food can rot and kill the snake.

Some Like It Hot: A Simple Experiment in Snake Body Temperature

Try this activity to see why snakes move around to keep their bodies at a comfortable temperature. You will need:

two balloons (long, skinny balloons work best)
permanent marker (optional)

Partially fill the two balloons with the same amount of water from a faucet. Tie the balloons closed. These balloons are your two "snakes." Don't overfill the balloons or your "snakes" will burst. With the marker, if you like, draw two eyes on each balloon "snake." Place one "snake" in a sunny spot. Place the second "snake" in the shade. Wait for about an hour. Pick up your "snakes." How much warmer is the "snake" in the sun?



Our Very Own Garter Snakes

Three kinds of garter snakes live in Boulder County: Western Terrestrial, Plains, and Common. Western Terrestrial (*Thamnophis elegans vagrans*) are light grayish brown to gray or even reddish with buff-colored stripes and black spots overlapping part of the stripes. Plains (*Thamnophis radix*) are olive green to brown or sometimes reddish with bright yellow or orange stripes and black spots beside the stripes. Common (*Thamnophis sirtalis parietalis*) are grayish brown with buff-colored stripes. Red splotches and black spots color the area between their stripes. See Amphibians and Reptiles in Colorado by Geoffrey A. Hammerson for good photos.

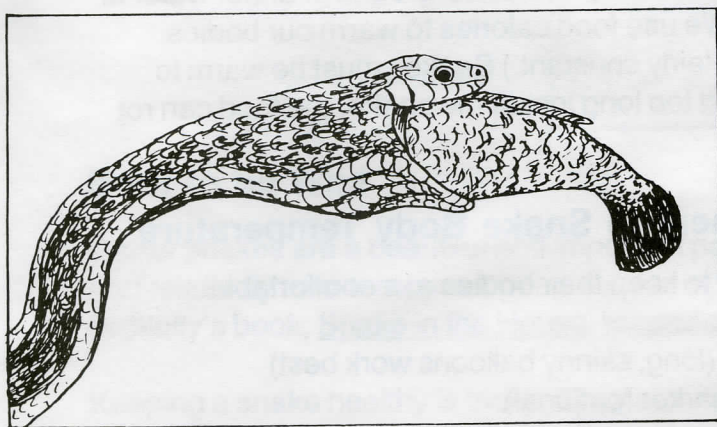


Cruising and Snoozing

All three kinds come out of their winter shelter in early spring, but the Common are usually the earliest to appear. All three are readily found close to streams, ponds, marshes, and ditches. In winter, Common garter snakes even hibernate under water. Whether they go to a den or under water, the garters are usually snugly tucked away in October. Garter snakes are not picky about their den mates and will den with other kinds of snakes as well as fellow garter snakes. Often, they return to the same den every year.

Mealtime

Because snakes are ectotherms, they need only about a tenth of the food needed by a similar-sized endotherm such as a squirrel. One fish may be enough food for a snake for a week.



Garter snakes are numerous partly because they will eat a variety of prey. Our Boulder snakes' favorite foods include: frogs, toads, tadpoles, fish, earthworms, snails, leeches, grasshoppers, slugs and salamanders. They will also eat mice, shrews, voles, chipmunks, birds, and other reptiles including other snakes. Of course, baby snakes can't eat a whole mouse or big fish so they stick to earthworm-sized prey.

Beautiful Babies

Garter snake babies are born alive, not hatched from eggs like most snakes. The babies are 8-9-inch miniature versions of their parents. They instinctively know how to hunt and hide and are on their own from birth. Successful hunters can grow up to be 30-inches long or even longer.

Moving and Shedding

Wriggling their bodies from side to side in an s-shape, snakes can move amazingly fast. The scales making up their outer skin push against rough ground. (Snake scales are made of keratin, as are your fingernails, and cover even their lidless eyes.) Garters swim with the same side-to-side motion, pushing against the water.

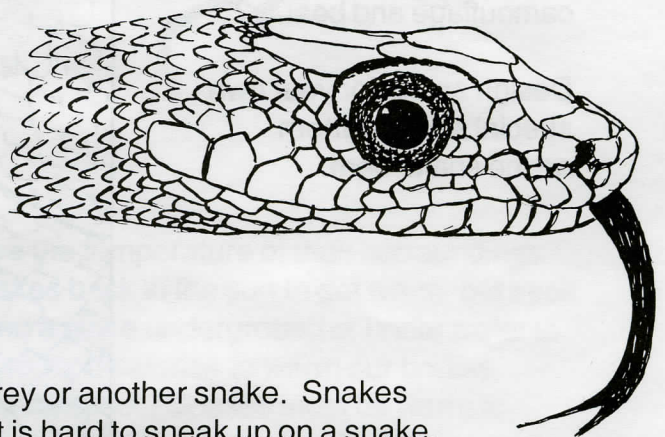
Because their outer skin, unlike our skin, doesn't grow, the snake must shed its old skin to make room for its bigger size. The skin starts shedding at the snake's lips and peels back in one piece, kind of like we would peel off a glove.

Seeing, Up Close Only

Snakes have good vision only up close so movement plays a key role in helping them catch prey. For example, a snake sees a frog jump and chases it, but if the frog freezes, the snake may not be able to find it. When their prey is within about fifteen inches, sight becomes an important part of hunting.

Smelling by Taste and Hearing by Feel

Snakes have nostrils on the top of their heads for breathing. But, they use their tongues to smell. Flicking their tongues in and out, they collect tiny pieces of dust. Inside their mouths, they have special sensory cells that send signals to the brain telling the snake if the dust smells like another snake or food, etc. Snakes are very good at following smells and use this sense to find their way back to their den or to track prey or another snake. Snakes readily "hear" vibrations on the ground. That is why it is hard to sneak up on a snake.



Dangers to Garter Snakes

Hawks, birds, skunks, raccoons, foxes, badgers, minks, bullfrogs, and other snakes all prey on garter snakes. Even house cats kill them. Snakes also die from starvation, cold, habitat loss, and pollution. Thousands are run over by cars every year.

If threatened, a garter will use its speed to flee. But, if cornered, the snake may wave its tail while hiding its head, or it will strike, but rarely bite. If a garter snake gets caught, it may squirt out a stinky, greasy fluid called musk. The musk is produced by glands at the base of the snake's tail. Musk not only smells bad, but many animals think it tastes bad too. For that reason a predator may drop the snake and choose a different meal. If you pick up a garter snake, you might get musked too!

"Camo" Snakes

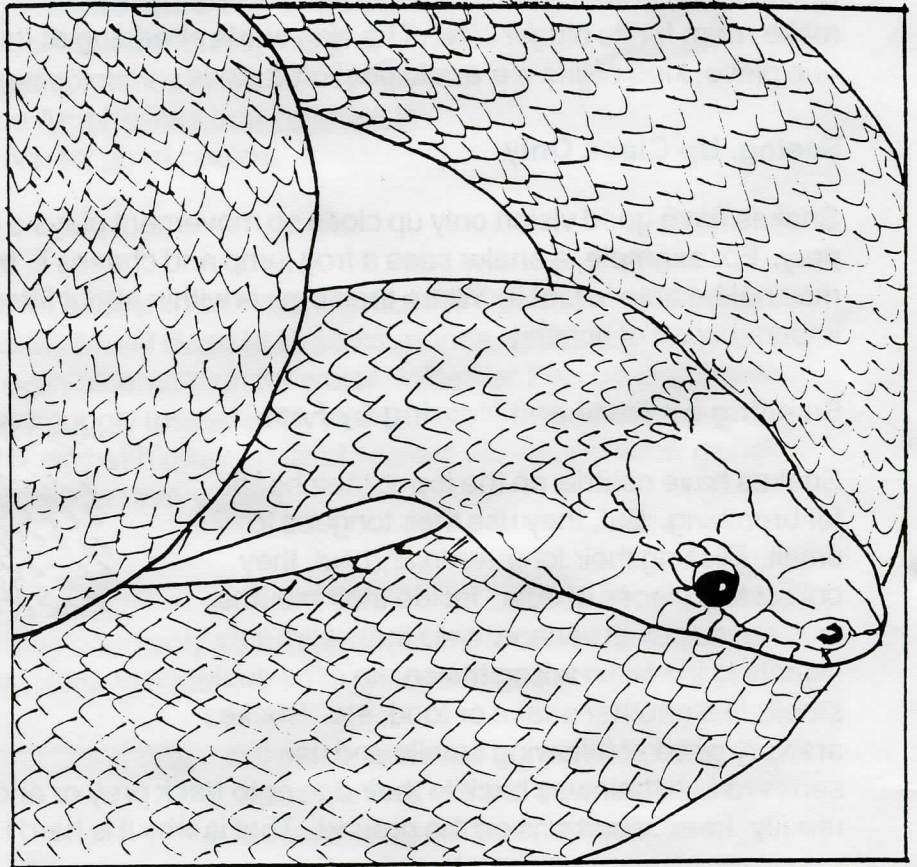
A garter snake's long stripes make it hard to tell that the snake is moving forward in underbrush until, suddenly, the tail end appears. In the blink of an eye, the snake is gone, safe in its hiding place. Garter snakes' spots, blotches, and dull-colored skin are good camouflage against the leaves, rocks, and dirt where they live.

Design Your Own Snake

Imagine you are a snake.
Where would you live?
Think about your
surroundings and your
possible predators.

What colors and patterns
would you have for good
camouflage and beauty?

Design and color your own
special snake pattern
on the snake here.



Born to be Wild

Garter snakes are a beautiful and important part of our environment. Because they are pretty and relatively mild-tempered, people are tempted to catch them for pets. Check out Faith McNulty's book, Snake in the House, to read about one garter snake's misadventures.

Keeping a snake healthy is tricky. They can develop infections when conditions are not right, and handling causes them stress. If you decide to catch a garter snake to observe it, you must release it where you found it and soon.

In Colorado, it is illegal to kill a garter snake or catch any to sell. It is also unlawful to release pet store snakes or any snake caught in another area. The best place for garter snakes is in the wild, where they play an important part in the balance of nature, eating critters such as grasshoppers and getting eaten in return by animals such as burrowing owls.

To observe a snake in the wild, listen for slithering sounds along a pond or watch for a snake basking in the sun.