

# GARTER SNAKES

# in and around the HOME



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*Figures 1-5.*

Garter snakes are usually 2-3 feet in length when full grown. However, Common garter snakes have been recorded in lengths nearing 4 feet. At birth most garter snakes are less than 6 inches long. They grow little from birth in the late summer until their first spring. From that point, they grow fairly fast, reaching a young adult length of almost 2 feet by the end of their first year.

Snakes shed their outer layers of skin as they grow through a process called ecdysis (*Figure 6*). It is fairly common to find several



*Figure 6. Shed skin of a common garter snake.*

of these shed skins in your garden as growing snakes shed three to four times a year. The shed skins are colorless, yet retain all the fea-



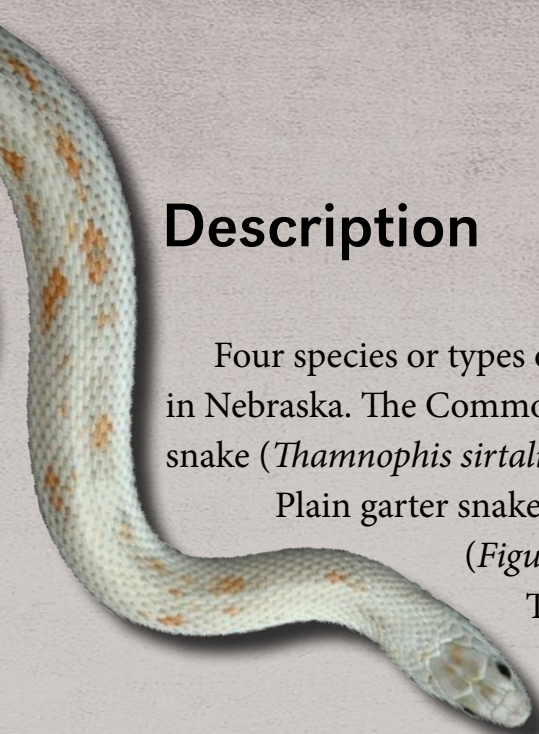
**H**erpetologists revere them, but many people fear them. We're talking garter snakes — those slithering, shedding reptiles that can make us shudder. Herpetologists, those who study amphibians and reptiles, appreciate the important role garter snakes play in the natural world. Even if you're not a fan of snakes, enjoy learning where garter snakes like to hang out, what they eat — and don't eat, and how best to deal with them if you find some in your home or garden.

## Description

Four species or types of garter snakes reside in Nebraska. The Common or Red-sided garter snake (*Thamnophis sirtalis*) (Figure 1) and the Plain garter snake (*Thamnophis radix*) (Figure 2) are found statewide.

The Ribbon garter snake (*Thamnophis proximus*) (Figure 3) is uncommon and is found in

isolated areas in the far eastern portion of Nebraska. The Western Terrestrial or Wandering garter snake (*Thamnophis elegans*) (Figure 4) is rare and has been found only in the extreme northwest corner of the state. Garter snakes have contrasting colored lines running lengthwise down their entire body; three lines on the middle of the back and one on each side. The position of the lateral or side lines differs with each species. The coloration of these line patterns and background pattern is extremely variable. While commonly cream, yellow, and orange stripes, some may be very dark or even bright red markings (Figure 5). Garter snakes with white and bluish coloration have been found in some urban areas of Nebraska. A rule of thumb in Nebraska is any snake with a line running down its body length mid-center and on each side is one of our garter snakes.



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*Figure 7. Garter snake eating an earth worm.*

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tures of the snake's pattern. A shed skin is usually 20 percent larger than the actual snake, as sloughed skin stretches during the process. These shed skins make an excellent learning tool for youth who want to engage with the natural environment. Wash the shed with 70 percent isopropyl alcohol (available over the counter at any pharmacy), dry thoroughly, and keep in an airtight, clear plastic bag.

Garter snakes are harmless and nonvenomous. Although possessing saliva and oral digestive glands, the secretions from these glands aren't harmful to the average human or pet.

## Diet

Garter snakes have a wide range of prey and are very opportunistic predators. They are obligatory carnivores, only feeding on other animal matter. They prefer soft-bodied prey such as earthworms, grubs, termites, and other soft insects. If near a garden pond or water source, minnows and frogs become preferred prey. Garter snakes do not constrict their prey but rather rub them against the ground or squeeze them against a fixed object with their bodies until the prey can be swallowed. As with other snakes, garter snakes must swallow their prey whole and are incapable of procuring a bite out of it. The size of the snake's mouth gap is its primary limiting factor. A garter snake seldom will be able to feed on a mouse or rodent. These snakes also feed on carrion, especially dead worms. In the home garden, earthworms and grubs are by far their No. 1 food (*Figure 7*).





# Reproduction and Growth

Garter snakes mate upon emerging from brumation (hibernation). This usually occurs in early spring when the ground begins to thaw. Males usually emerge first and wander around trying to locate the scent of a female. There may still be some snow cover remaining when this occurs. When temperatures begin to rise above freezing during the day, females emerge and immediately release a pheromone scent that attracts every male snake of that species in the area. These are the mating aggregations that you see in the spring. The large grouping of snakes in lawns, gardens, and on rock walls comprise one female and maybe a dozen males — an annual garter snake mating event (*Figure 8*).

Once mated, the female will wander off to hide and feed, and the males will leave and return to their original location. Female garter snakes give birth to 12-20 young in late summer. There is only one mating and one litter per year. The young are less than 6 inches long and thin as a stirring stick. The females offer no care. The young must fend for themselves and find food, primarily small worms, ant larvae, and termites. In the fall, clusters of young snakes can be found in gardens, where ant nests with eggs are common.



*Figure 8. Garter snakes in an early spring “mating aggregation” or group.*

A garter snake reaches maturity and reproduces in two to three years. These snakes can live for over 12 years. However, the chances of a snake reaching 12 years of age are less than 1 in 5,000. Over 90 percent of the young will die before the next spring. Snakes require food and heat from an outside source to grow.

All temperate zone snakes are attracted to warm objects, which give them the heat they need for digestion, growth, and reproduction. They sun themselves during the day and hide at night. If snakes do not bask in the sun, they

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**G**arter snakes are considered terrestrial and subterranean animals. However, they can climb if needed.

and slabs. Rock walls known to harbor large numbers of garter snakes can be removed and replaced as solid cement structures. Using rock or lumber walls that fit tight, with few areas where snakes can find refuge, may decrease snake numbers. Trimming plants, shrubs, and bushes, and eliminating branches close to the ground lessens the favorability of habitat. Also, removing debris and high vegetation may increase predation pressure on snakes.

## How Garter Snakes Get into Structures

Snakes are incapable of making a hole or entry into a structure either by gnawing holes or forcing their way in by pushing with their head through any solid material. They are able to squeeze through extremely small and tight openings as small as 1/4 inch. Some of the most common entry points include garage and basement doors, foundation cracks, basement window frames, dryer vents, outdoor water faucets, sump pump drain lines, and around utility lines.

Garter snakes are considered terrestrial and subterranean animals. However, they can climb if needed. Snakes have the ability to find friction points and wedge their long, slender bodies against the smallest projections to climb vertically on structures. Smaller snakes have been noted to climb up on brick- and stucco-sided homes. Garter snakes commonly wind their way to the top of shrubs and spread their weight across small branches to bask and warm up (thermal regulate) in the sun. They also will use

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may starve to death even though they have eaten prey. When approached they will try to take cover. If attacked or approached, garter snakes try to defend themselves by lunging with their mouth open (*Figure 9*). They will never offensively attack any person or pet as their instinct is to flee predators or danger. However, if they perceive that they cannot flee, they will strike repeatedly in defense.

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## Predators

Crows, hawks, owls, badgers, raccoons, foxes, skunks, opossums, and other predators kill snakes. Human agricultural practices (row crops, vegetation removal, and marsh drainage) can make snakes more vulnerable to natural predators. Domesticated cats and dogs kill many garter snakes each year.

## Parasites/Diseases

No data indicates that snake parasites or diseases carried in wild populations transfer to humans or mammalian pets. Recent UNL research indicates that native, wild garter snakes in Nebraska did not test positive for *Salmonella* bacteria or other health risks transmittable to humans.



## Encounters

It may be common to see many garter snakes around your home and garden. Plains garter snake densities have been estimated at more than 200 per hectare in some urbanized areas of Nebraska. Retaining walls, as well as decorative gardens containing rocks or concrete components, are a popular part of landscapes in residential locations. Garter snakes favor these objects, as well as debris piles, as refuge. Human-snake encounters become very common during spring and summer when snakes move about searching for mates or food, and people enjoy the outdoors.

While garter snakes are a beneficial element in any ecosystem, many people fear them. Garter snakes may frighten you, but they are actually harmless. Ophidiophobia, the fear of snakes, is noted in American literature and history. This fear is widespread; it may be initiated by religious beliefs, folklore, an unpleasant experience, or psychological attitude. Whatever the reason, many people consider garter snakes a nuisance around the home and garden.

## Habitat Modification

When a portion of the home range of snakes is disturbed in such a way that vegetation is removed and cover habitat is destroyed, snakes are no longer sighted in that area. Reducing the attractiveness of your property to snakes by removing debris, rocks, brush, woodpiles, and tall grass that provide cover for snakes may help reduce their numbers. Locations that are more “sterile” looking, with less weedy vegetation and little cover, have very few snake populations. Garter snakes can only burrow in loose soil. Cover loose soil with sharp gravel (lava rock) and caulking around stoops



*Figure 9. Garter snake exhibiting defensive behavior strike position.*

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windowsills, window boxes, and other construction ledges on homes and other structures.

Garter snakes of any size can climb up the exterior of a building under siding. This is particularly the case when homes have steel or aluminum siding installed over wood. The

snakes may overwinter under the siding or advance their way to the attic. Once in the attic, snakes usually burrow under the insulation and seek areas above light fixtures. On a number of occasions, homeowners have found snakes hanging from their upper floor bedroom lights.



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## Signs of Garter Snakes in and Around a Structure

When garter snakes are living around homes, the most visual signs are the snakes themselves. Garter snakes don't create and burrow their own holes. They utilize the holes of other animals or natural cracks in the soil. Shed skins may be found in the spring or late summer. Most adult garter snakes shed two to three times per year. These skins are generally eaten by rodents or insects in a few days. Occasionally, fecal material or droppings of a garter snake are sighted on the surface of structures (*Figure 10*). This material is paste-like and appears as thick, dark-brown to black smears with a white uric patch. On soil this fecal material breaks down readily.

## Snake Proofing a Home or Structure

Fortunately, snakes are easily excluded from structures. Seal and caulk all cracks and crevices in a manner consistent with proper weatherproofing. Fill gaps around all utility lines, pipes, and vents. Seals and barriers around windows, doors, and garage doors should be tight and made of a stiff, rubber-type material. Snakes can squeeze under brush or loose foam sweep barriers. Dryer vents

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need to have 1/4-inch screen covers. These covers should be installed so they don't impede air flow or clog with lint. The base of all siding needs to be tight and firmly attached. All siding drain holes should be less than 1/8-inch in diameter. The exterior outlets of drain tiles and sump pumps need to have one-way valves or 1/4-inch mesh wire. Plants, shrubs, and trellises adjacent to the structure will aid a snake's ability to climb and enter. A space of 2-3 feet between plants and the structure is recommended. A layer of copper wool or fine stainless steel fibers placed between downspouts and the siding will deter snakes from climbing to attics.

then turn the bucket upright, and carry the snake out. Once a snake is released outdoors, it will flee. Being trapped and captured is a negative experience for any snake, and it will attempt to avoid a repeat encounter.

If the snake cannot be located in a home or structure, look in dark areas that are warm and moist. Primary hiding locations include: under hot water heaters, dryers, washing machines, and clothing piles on floors; and in heating vents and plumbing walls. Placing a pad covered with a slightly moist towel in a quiet corner of a room may entice the snake to hide in that location. A garter snake indoors is not

## Removing a Garter Snake from a Home or Structure

If you know where the snake is located, simply grasp the mid body with a gloved hand (leather, rubber, or vinyl gloves work fine) and either carry the snake outdoors or place it in a tall plastic bucket. You also may sweep the snake into a bucket horizontally,



*Photo courtesy of Pam Gabriel*

**Figure 10.** *Garter snake fecal matter dripping out from under the siding of a home.*

**W**hile there are repellents on the market, most are ineffective in deterring snakes.

looking for food but is trying to find a way to get outdoors or find a warm hiding place.

## Repellents

Most repellents on the market are ineffective in deterring snakes. The result of one of the author's investigations clearly demonstrates that naphthalene, sulfur, or combinations of these chemicals failed to deter or repel the garter snakes tested. Application of these substances in either a snake's home range or unfamiliar habitat failed to alter its normal behavior. For a copy of this study, go to <http://digitalcommons.unl.edu/gpwwdcwp/432/>. Garter snakes in this study clearly ignored the potential repellents. The use of chemical repellents is not recommended. A habitat of dense vegetation provides garter snakes with cover against predation. These snakes utilize chemical traces to locate cover they previously used.

The presence of any foreign chemical odorant in the home range during birthing or when snakes are seeking replacement cover can be a cue. In this case, normally adverse odorants or repellents may act as an attractant. Homeowners applying a chemical repellent both in the snake's home range and nearby unfamiliar areas, such as next to a patio, in hopes of curtailing snake encounters may be creating the undesired effect. Chemicals placed in the home range may be ignored, since odor cues and related resources are already present. Over time, the snakes habituate to the chemical repellents and associate the odor of the repellents with the home range. Hence, when migrating or

searching for food, these snakes may be temporarily drawn to the unfamiliar location where the chemical was applied.

It may be argued that if a repellent gives any results or is perceived to help, it should be available because the use of a “pseudo-repellent” may prevent people from illegally using poison to kill snakes. However, it is irrational to place chemicals in the environment to act as a placebo and give an uninformed person temporary “peace of mind.”

Recently, several additional substances have been marketed as snake repellents. They include mint oil, castor oil, cedar oil, and citrus acid oils. Preliminary data indicates these repellents offer little deterrence (*Figure 11*). Extensive university tests are planned to determine the effectiveness of these materials.

## Garter Snake Traps

The most common outdoor traps are funnel traps (*Figure 12*). They are long, screened cylinders or wooden boxes with funnels at



*Figure 11. Garter snake crossing a repellent barrier.*



*Figure 12. Funnel trap used for capturing garter snakes.*

each end. The cylinders or boxes are usually 6 inches in diameter or square and 2-3 feet in length. Plastic or metal funnels are secured in each end; the narrow ends (approximately 1 inch) of the funnels are directed inward



toward each other while the wider (5-6 inch) openings become the ends of the trap. Place the trap along a structure or wall where snakes have been seen. Leave overnight and check at least every 12 hours.

Sticky glue traps are another trapping device used indoors. These are commercially available or can be made on site. Cut the ends out of a narrow, wide box. The box should be at least 1 square foot, yet less than 3 inches tall. Secure strips of double-sided carpet tape inside the bottom of the box. Place the box in a warm, quiet location within the structure. Check frequently; if a garter snake is in the box, take the box outdoors and pour a couple ounces of vegetable oil along the snake. The snake will then be able to work itself free.

**R**emember that garter snakes are beneficial, **harmless** to you and your pets, and should not be killed.

## Toxicants and Baits

There are no toxic baits, sprays, poisons, or fumigants registered for snake control in Nebraska. Remember that garter snakes are beneficial, **harmless** to you and your pets, and should not be killed. Snakes fear people and pets, and if left alone, they will make every attempt to escape.



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