



## REPTILES

Status: Common, Native Resident

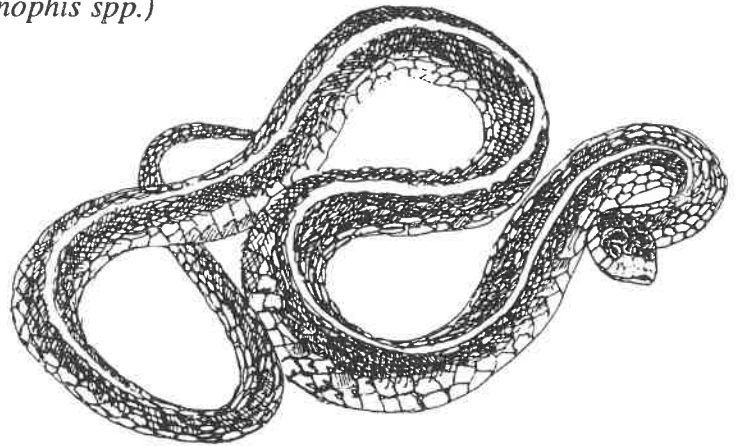
# GARTER SNAKES

(*Thamnophis spp.*)

## Description

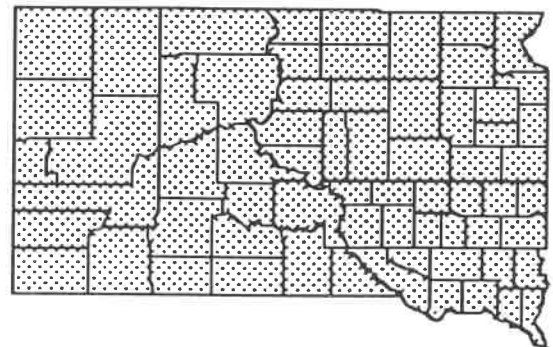
Garter snakes are the snakes that many children find at one time or another and bring home. Some refer to them as garden snakes, because they are often found in gardens. The name "garter" was probably chosen because these snakes, like the fancy garters that once were used to hold up men's socks, have colorful, longitudinal stripes. The Lakota name is "sinte wagleza." The length of garter snakes ranges from 20 to 30 inches (50-75 cm), although some may be longer. They have a slim, agile body. Their coloring can be many shades of green, yellowish, or gray, but they nearly always have three yellow or red longitudinal stripes that extend along the length of their back and sides. When alarmed, many flatten their bodies, making the pattern more prominent.

There are 3 species of garter snakes that occur in South Dakota: *Thamnophis radix haydeni* is the western *subspecies* of the plains garter snake; *T. sirtalis parietalis* is a *subspecies* of the common garter snake called the red-sided garter snake; and *T. elegans vagrans* is a *subspecies* of the western terrestrial garter snake called the wandering garter snake. Although these snakes differ in subtle details of location and color of their longitudinal lines and spots, they



would all be recognizable as garter snakes. For example, red-sided garter snakes have red longitudinal lines on their sides and are darker than the light-colored western plains garter snake with yellow longitudinal stripes.

## Distribution



The western plains and the red-sided garter snakes are found throughout South Dakota, although the red-sided snakes prefer places near aquatic habitat. The wandering garter snake is found only in the Black Hills.

## Natural History

Like all reptiles, garter snakes have hard, dry scales and are cold-blooded. Underneath their scaly skin, snakes have internal organs and bones like those of other *vertebrates*. Most of these organs have been modified for the snake way of life, in particular for swallowing prey whole and the need for speed, both to catch prey, and to escape predators. If the prey is small enough, it is quickly swallowed alive. If the prey animal is large, the garter snake will unhinge its jaws before swallowing. This ability allows an extremely wide variety of prey to be swallowed without too many problems. The backward-pointing teeth and throat muscles are used to work the prey slowly down into the stomach.

Garter snakes are opportunistic hunters. They will eat almost any animal that they can catch: grasshoppers, earthworms, frogs, toads, salamanders, and small birds and mammals. Garter snake habitat can be found in parks, meadows, woodlands, and yards, wherever there are ponds or streams nearby. They hunt in the early morning, late afternoon, and early evening when the temperature is warm without the strong direct heat of the mid-day sun. Their sight is good by snake standards and, if prey comes within striking distance of the snake, it will usually be pursued. They rely on speed and agility to capture prey.

Garter snakes also gather information about their environment from their sense of smell. They use their forked tongue for this. They flick their tongue in the air to pick up scent particles. The tongue is returned to the mouth where each fork of the tongue is inserted into two openings in the top of the inside of

their mouth. This enables them to process information about their surroundings.

As snakes grow, their skin does not grow with them. Instead they shed their skin all at once in one large piece, revealing a new skin underneath. The snake initiates the shedding by rubbing its nose and mouth on the ground until the skin is pushed up and then it crawls forward and out of the old skin, much as a sock would be unrolled off a foot. The whole skin can come off in one long inside-out strip. The shed skin is not exactly the same size as the snake though, because it may have stretched during the process of shedding. The faster a snake grows the more often it sheds its skin. Young snakes which are growing rapidly may shed every 4 to 5 weeks to keep pace with the rapid growth of the body, while a fully grown, mature snake may need to shed only a couple of times a year. Snake eyes are protected by transparent shields and these are removed along with the skin during shedding. Prior to shedding a milky fluid separates the new and old skin and the snake is blind for a few days. They will usually hide during this time and are very irritable.

Because garter snakes are reptiles, they cannot maintain their own body temperature and depend upon the environment for body warmth. They do this by basking for considerable periods of time each day and moving between sun and shade to regulate body temperature. Garter snakes frequently bask on rocks or in plants close to water. Reptiles in South Dakota must *hibernate* to escape the freezing cold of winter. Garter snakes are hardy and very cold-tolerant and are one of the last snakes to retreat in the fall and one of the earliest snakes to come out of hibernation in the spring. Snakes *hibernate* in dens that are usually in rocks below the frost line. They often return to the same den every year. As the weather warms in the spring, first the males and then the females leave. It is a gradual process of warming up after hibernating all winter and clusters of

snakes may be seen at the entrances to dens. This writhing mass of intertwined snakes, sometimes bigger than a basketball in size, is quite a spectacular sight. Mating takes place at this time and then the snakes go their separate ways; they are not social creatures.

About 4 months after mating the young are born alive. The western plains garter snake gives birth to about 20 to 30 young, but 85 have been born in one litter. They are 7.5 to 9 inches (19-23 cm) long and are miniature versions of the adults, fully capable of hunting. Garter snakes reach maturity in 3 years.

Garter snake predators include *raptors*, such as hawks, kestrels, and harriers. Skunks, raccoons, and mink will all prey on garter snakes if they have the opportunity. House cats also are a threat to garter snakes. When picked up by humans, many garter snakes are docile, but others may be aggressive and bite in self-defense. When first captured, garter snakes discharge musk, which has an unpleasant, sweetish odor, from glands at the base of the tail.

## Management Considerations

Garter snakes are not dependent on just one source of food but tend more to be opportunistic hunters and feed on a wide variety of prey animals encountered over the course of a day. This is probably one of the main reasons why garter snakes are so successful and widespread across America and why they can be found in such a diversity of natural habitats ranging from the almost entirely aquatic to woodland and open grassland.

Although at one time they were common in urban and suburban areas, garter snake populations have decreased as these areas have become more developed with fewer vacant lots and other suitable habitats. Many garter snakes are captured for the pet trade as they sluggishly come out of their winter dens. Collecting snakes for commercial use requires a commercial collecting permit. To capture snakes for personal use, a person needs a fishing license. In some places, the spring emergence of snakes from hibernation is so spectacular that it is a tourist attraction.

## Glossary

**Aquatic** - referring to fresh water.

**Hibernate** - to pass the winter in a dormant or inactive state with lowered metabolism and heart rate.

**Raptors** - birds of prey such as hawks.

**Subspecies** - is a population of a species that is physically or behaviorally different from other populations of the species but still capable of interbreeding with them.

**Vertebrates** - animals with an internal skeleton of cartilage or bone. These include fish, reptiles, amphibians, birds and mammals.

### **Selected References**

- Conant, Roger, 1975. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Boston: Houghton Mifflin. 2nd ed. Peterson Field Guide Series.
- Halliday, Tim and Kraig Adler, ed. , 1986. The Encyclopedia of Reptiles and Amphibians. New York: Facts On File.
- McMehrtens, John, 1987 Living Snakes of the World in Color. New York: Sterling Publishing Company.
- Sharps, Jon C.. and Ted Benson, 1984. A Compiled List of South Dakota Wildlife, South Dakota Department of Game, Fish and Parks, Pierre, SD.
- Sweeney, Roger, 1992 Garter Snakes, Their Natural History and Care in Captivity. London: Blandford.

### **Selected Resources for Teachers**

- Caduto, Michael and Joseph Bruchac. Keepers of the Earth: Native American Stories and Environmental Activities for Children. Golden, CO: Fulcrum Press. 1988.
- Caduto, Michael and Joseph Bruchac. Keepers of the Animals: Native American Stories and Wildlife Activities for Children. Golden, CO: Fulcrum Press. 1991.

### **Written by:**

Donna Graham, Rapid City, SD 57701. ©1997.

### **Reviewed by:**

Doug Backlund and Steve Thompson, Resource Biologists, S.D. Department of Game, Fish, and Parks, Pierre, SD.

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