herpy

SNAKES

Common Garter Snake

Thamnophis sirtalis

Thamnophis sirtalis is a slender, diurnal and curious snake with pale stripes along the body. It lives near water from southern Canada through most of the USA to northern Mexico. It is hardy, stays awake and visible by day and can live on thawed mice, but it is a master escape artist and needs a completely secure enclosure.

Family: Colubridae

KEY FACTS

THE ANIMAL

Adult size	**50-100 cm** total length incl. tail
Lifespan	**6-10 years**
Active	**By day**
Lifestyle	**Terrestrial and semi-aquatic**
Habitat	**Wetland and temperate woodland and meadow**
Difficulty	**Beginner**

CARE

Min. enclosure	**100 × 50 × 50 cm** L × W × H for 1 adult
Temperature, day	**23-27 °C**
Basking spot	**29-32 °C**
Temperature, night	**18-22 °C**
Humidity	**35-60%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Winter rest	**8-15 °C** 8-16 weeks
Diet	**Vertebrates and worms/snails**
Kept	**Singly or in groups**

BREEDING

Reproduction	**Live-bearing**
Sexually mature	**18-24 months**
Litter size	**10-40 young**
Clutches per year	**1**
Gestation	**60-90 days**

PROTECTION AND PAPERWORK

CITES	**Not listed**
EU annex	**Not listed**
IUCN	**Least Concern (LC)**

About the species

Thamnophis sirtalis is a slender snake with large, round eyes, keeled scales and long stripes along the body. The pattern varies greatly: most have yellow or white stripes on a black, brown or green ground colour, some have red or orange sides, and others are almost uniform or spotted. The species name *sirtalis* is New Latin for "like a garter" and refers to the striped pattern.

The average length is about 55 cm, and the largest animals reach about 130 cm. Females are larger and heavier than males: adult females are typically 70-100 cm, males seldom over 60 cm. An adult weighs on average about 150 g. Newborn young are 15-20 cm long.

The species is divided into a long series of subspecies, for example *T. s. parietalis* with red spots on the sides, *T. s. infernalis* from California and the blue-striped *T. s. similis* from the west coast of Florida. The colour forms vary so much within a single population that several of the subspecies are disputed. Care is the same for all of them. *T. sirtalis* is one of the most widespread snakes in North America.

The saliva is mildly toxic to small prey, but harmless to humans; a bite causes at most a little itching or swelling. When threatened the snake would rather release a foul-smelling secretion from the cloaca than bite. Wild-caught animals are often defensive, while captive-bred animals generally become calm if handled regularly.

Read more: Buying animals: captive-bred, wild-caught and transport

Distribution and habitat

Thamnophis sirtalis has the widest range of all North American snakes. It lives from southern Canada, including the Northwest Territories, Alberta, Saskatchewan, Manitoba, Ontario and New Brunswick, through almost the whole of the USA to the Gulf Coast and Texas. In the west it is found all the way to the Pacific in California, Oregon and Washington, and along the Rio Grande the range extends into northern Mexico (Chihuahua).

Many subspecies are tied to particular areas, for example Puget Sound in Washington (*T. s. pickeringi*), the west coast of Florida (*T. s. similis*) and the San Francisco Peninsula (*T. s. tetrataenia*).

> **Native range:** Canada, Mexico and United States.

HABITAT

Thamnophis sirtalis lives in humid and semi-humid habitats: meadows, woodland edges, marshes, streams, lake shores, ditches and gardens close to water. It is diurnal and active at lower temperatures than most snakes. It moves mostly on the ground, climbs a little and swims well, but is not truly aquatic. At night and in cold weather it lies hidden under stones, planks and leaf litter.

In the cold parts of the range the snakes hibernate from late October to March or April, often many together in caves, crevices and rodent burrows underground. The males emerge first and wait for the females, and mating takes place straight afterwards, often in so-called mating balls, where ten or more males coil around one female. The food is mainly frogs, toads, salamanders, earthworms and fish, and the young take mostly worms.

Care

THE ENCLOSURE

An adult *Thamnophis sirtalis* needs an enclosure of at least 100 × 50 × 50 cm (length × width × height), and a female over 80 cm needs 120 × 60 × 60 cm. The species is active and inquisitive and likes to climb, so height and furnishings matter. Juveniles under a year can be kept in a small box of about 40 × 20 × 25 cm, because an enclosure that is too large makes them feel exposed. Move them up as they grow.

The substrate must be clean and dry, but absorbent. Aspen shavings, cypress, coconut fibre or paper pulp in a layer of 3-5 cm work. Kitchen roll and newspaper can be used for juveniles and temporarily, but are less suitable for adults. Avoid sand, cat litter and cedar, pine and other aromatic wood. A layer of leaf litter on top retains moisture and provides cover.

Use at least two hides, one at the warm end and one at the cool end, so small that the snake lies tightly coiled in them. Branches, cork bark and robust plants provide structure and climbing opportunities.

The species is a master escape artist: if it can get its head past the eyes through an opening, the rest will follow. The lid must fit tightly and be locked, all gaps and cable holes must be closed, and the mesh must be so fine that a juvenile of 15 cm cannot squeeze through. Enclosures with front doors and tight joints are the safest. Remove droppings daily, and change the substrate completely every third to fourth month.

TEMPERATURE

There must be a clear heat gradient. The basking spot must be 29-32 °C measured on the surface, the cool end 23-27 °C and the night 18-22 °C. The heat source is switched off at night. Use a halogen spot over the enclosure, and place a hide with a flat stone or plank on top underneath it, so the snake can lie in the warmth. If the bulb is inside the enclosure, it must have a protective guard.

Air temperatures above 33 °C are dangerous. An overheated snake rushes about with its mouth open or lies in the water dish; put it immediately in cool, running water. Never put the enclosure in direct sun, and never use heat rocks. Measure with a digital thermometer with the probe at the basking spot and at the cool end.

In winter the daytime temperature can be lowered to 16-20 °C. For breeding, or if the snake itself stops eating in autumn, it can hibernate (see Breeding).

Read more: Heat and temperature

HUMIDITY AND WATER

The humidity must be 35-60 %, highest at the cool end and at night. The enclosure must not be wet, because persistent damp causes blisters on the belly. Mist lightly when needed, and place damp sphagnum in the cool hide as a humid chamber for shedding.

The snake must have a water dish large enough for its whole body to lie in. It bathes often, especially before shedding, and often leaves droppings in the water. Change the water at least once a week and immediately if it is dirty. A water area of up to about 50 × 30 cm at the cool end gives room to swim, but is not a requirement.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is diurnal and thrives in strong daylight. UVB is not strictly necessary, but is recommended and often makes the snake more active. Use a T5 HO tube of 5-6 % (Ferguson zone 2) covering half of the enclosure over the warm end, and aim for a UV index of 2-3 at the basking spot. With mesh between tube and snake the distance to the basking spot is about 25-30 cm, without mesh about 30-35 cm; preferably measure with a UV meter. A 6500 K LED bar provides ordinary daylight and helps live plants.

The light is on for 14 hours in summer and 10 hours in winter, with gradual transitions. Without UVB the food should occasionally be dusted with a supplement containing vitamin D3.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

FEEDING

Thamnophis sirtalis takes different prey from most snakes: earthworms, fish and rodents. It does not eat insects such as crickets and mealworms. The best diet is frozen and thawed mice: they provide full nutrition without supplements, no risk of intestinal worms and less frequent and less foul-smelling droppings, and the snake can live on mice alone. Young too small for a whole pinky mouse can be given pieces of frozen pinkies. Rub the prey with fish or earthworm if the snake will not take it, and move it with tweezers, because the species hunts largely by sight.

Young that will not take mice can be given earthworms cut into pieces so that they still move a little, small guppies or platies and pieces of fish fillet. Move them on to mice as soon as possible. Never use red compost worms (*Eisenia fetida*), which are toxic to the snake, nor earthworms from roads and golf courses, which may contain toxins. Earthworms lack calcium.

Fish require thought. Many feeder fish contain thiaminase, an enzyme that breaks down vitamin B1, and a fixed diet of them causes a dangerous B1 deficiency. Freezing does not destroy the enzyme, and B1 supplements on the fish do not help. Goldfish are unsuitable. Rudd and salmonids such as trout and salmon are free of thiaminase and can be used as fillet in a mixed diet, but not alone, because fillet lacks the nutrition from the whole fish. Live fish and frogs are the most common source of intestinal worms; frozen fish are harmless on that point once they have been frozen for at least 30 days. Frogs, toads and salamanders should not be used.

The prey must be no more than 1.5 times as wide as the snake at its widest point. Newborns are fed every other day and young animals every 3-5 days. Adults are fed once a week with mice, every 5-6 days with fish and twice a week with worms. Never feed every day, because that causes obesity. Snakes living together are fed separately, so that they do not seize the same prey.

On a diet of worms and fish the prey is lightly dusted once or twice a month with calcium, vitamin B1 and vitamin D3. Use small amounts, as too much calcium and D3 is harmful. Mice need no supplement.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Thamnophis sirtalis is fast and curious and usually becomes tame if handled regularly from a young age. Let new animals settle in for about two weeks, and only start handling them once they are feeding steadily. Keep the first sessions to no more than 5 minutes, and lift the snake from below with a flat hand so that the body is supported. It does not hold on like a constrictor and slips easily between the fingers. Wash your hands after handling.

When startled the snake releases a foul-smelling secretion and may bite. The bite is harmless but can cause small scratches. Wild-caught animals are often defensive and should be avoided.

The species can be kept alone, and it does well that way. It is more sociable than most snakes, and young seem calmer together with others. Cannibalism does occur, most often by accident when two snakes seize the same prey. If several are kept together, they must be the same size and have a substantially larger enclosure, new animals must be quarantined for 1-2 months first, and all are fed separately. Do not keep males and females together unless young are wanted.

Breeding

SEXUAL MATURITY AND SEXING

Females are larger and heavier than males, while males are slimmer. Sex can be confirmed by probing, which should only be done by an experienced keeper or a vet. Males are sexually mature after about 1.5 years and females after about 2 years. The female must be in good condition before she is put to breeding.

MATING

Mating takes place in spring, when the snakes emerge from hibernation. A hibernation of 8-16 weeks at 8-15 °C increases fertility and puts the animals in the mood for mating. Stop feeding about three weeks before the cooling so the gut is empty, give the snake a lukewarm bath so it empties itself, and lower the temperature gradually. The temperature must never fall below 5 °C. The snake must always have access to water.

When hibernation is over, the temperature is raised gradually, and after a few days food is offered again. Put the male with the female, and take him out again after a few days. Males may refuse food for a long time during the mating season. The female can store sperm from an autumn mating until spring.

Read more: Brumation and the seasons

EGG-LAYING AND CLUTCHES

Thamnophis sirtalis gives birth to live young and does not lay eggs. Gestation lasts 2-3 months, and the young are born from late July to October. A litter is typically 10-40 young, and large females can have up to about 80. The female has at most one litter a year.

Give the pregnant female plenty of food, warmth and water, and keep the enclosure quiet. After birth she is thin and needs extra food during the first month.

INCUBATION

There is no incubation, because the young develop inside the female's body and are born live in a thin membrane, which they break out of themselves. The pregnant female must have the same heat gradient as usual and must not become too cold, so the embryos develop evenly.

Remove foetal membranes and dead young quickly. The young are independent from the first day and look like small versions of the adults. The female does not care for them.

Read more: Incubating eggs

REARING THE YOUNG

Move the young to small, completely secure boxes, singly or in small groups of the same size. The boxes must have a warm and a cool end, kitchen roll as substrate, a hide and a shallow water dish. The young can squeeze through very small gaps.

The young typically eat after their first shed. Offer pieces of frozen pinky mice, preferably scented with earthworm or fish, and otherwise earthworm pieces or small guppies and platies. Feed every other day at first, and get them on to mice as soon as possible. The young grow quickly and reach full size after 3-4 years.

Health and common mistakes

Thamnophis sirtalis is hardy, but errors in diet and climate cause typical problems:

- Internal parasites, especially from live fish, wild-caught frogs and worms. Worms can live in the lung for years without signs. Symptoms are swelling beside the lung, a hollow, popping sound when breathing, weight loss or small lumps under the skin. Frozen food (at least 30 days) prevents it. Have a faecal sample examined by a vet on new purchase and on suspicion.
- B1 deficiency in snakes that live on fish with thiaminase. Signs are poor coordination and the snake being unable to right itself, later convulsions. It is fatal without treatment, but easy to treat: the vet gives vitamin B1, and the diet is switched to mice or fish without thiaminase.
- Blisters on the belly (white, swollen sores) from a persistently damp substrate. Keep the substrate dry and change it when it is dirty.
- Overheating, if the enclosure stands in sun or the heat is too strong. The snake rushes about with its mouth open. Cool it immediately in cool, running water.
- Shedding problems, especially retained eye caps or tail tip. Provide a humid hide during shedding.
- Mites, which require treatment of both snake and enclosure.
- Obesity in snakes that are fed too often, especially with mice.

A healthy animal has clear eyes, smooth skin and eats willingly. Seek a vet with experience in reptiles if the snake loses weight, stops eating outside the winter period, gapes or breathes differently, or if lumps appear on the body.

Read more: Common diseases and signs of illness

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.