herpy

SNAKES

Corn snake

Pantherophis guttatus

A slender, calm and hardy snake from the south-eastern USA with red, black-edged blotches on an orange ground colour. It reaches 90-150 cm, tolerates handling and forgives most beginners' mistakes, which makes it one of the most obvious choices for anyone wanting a first snake.

Family: Colubridae Former name: *Elaphe guttata*

KEY FACTS

THE ANIMAL

Adult size	**90-150 cm** total length incl. tail
Lifespan	**15-25 years**
Active	**At dusk and at night**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Rocky terrain and temperate woodland and meadow**
Difficulty	**Beginner**

CARE

Min. enclosure	**120 × 60 × 60 cm** L × W × H for 1 adult
Temperature, day	**24-27 °C**
Basking spot	**30-32 °C**
Temperature, night	**20-24 °C**
Humidity	**50-70%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**16-24 months**
Clutch size	**10-30 eggs**
Clutches per year	**1-2**
Incubation	**55-65 days** at 27-28 °C

PROTECTION AND PAPERWORK

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

About the species

Pantherophis guttatus is a slender, non-venomous snake with an oval head and round pupils. The wild form is orange or brownish-yellow with large, black-edged red or brown blotches down the back and two rows of smaller blotches along each side. The belly often has a black-and-white checkerboard pattern. The blotches explain the scientific species name: *guttatus* is Latin for spotted. The genus name comes from Greek and means panther snake, probably referring to the spotted, colourful pattern.

Newly hatched young measure 20-35 cm and are paler and more uniform in colour than the adults. Adults typically reach 90-150 cm including the tail; the smallest adults are around 60 cm, and a few reach 180 cm. Males can grow slightly larger than females, but the difference is small. Colours and patterns vary with locality, and a large number of morphs with completely different colours and patterns have been bred in captivity, for example albino, snow-white and almost black animals. Care is the same for all morphs.

The species was formerly called *Elaphe guttata*, and that name still appears in older literature. It is inquisitive and happily climbs, but also spends a lot of time underground and in hiding. It has a calm temperament and tolerates regular handling, which is one of the reasons it is so widespread in terrariums.

Distribution and habitat

Pantherophis guttatus is native to the south-eastern USA. The range runs from southern New Jersey, Delaware and Maryland south through Virginia, North and South Carolina and Georgia to the whole of Florida, and west through Kentucky, Tennessee, Alabama and Mississippi to Louisiana. Populations further west, from south-western Illinois across the Great Plains to Texas, are now assigned to the closely related *Pantherophis emoryi*, which was formerly a subspecies.

The species has also been found on a few Caribbean islands, including the Cayman Islands, the US Virgin Islands, Anguilla, Antigua and Saint-Barthélemy, and there is an introduced population in Bahia, Brazil. The map shows the distribution in the USA.

> **Native range:** United States.

HABITAT

Pantherophis guttatus lives in many kinds of terrestrial habitat: deciduous and mixed woodland, rocky slopes, meadows, open grassland, woodland edges and farmland. It is also seen in and around houses, barns and abandoned buildings, where there are good hiding places and plenty of rodents. It occurs from sea level up to about 1,800 m, but most often stays at lower elevations.

The snake is most active at dusk and at night. It climbs trees and bushes in search of birds and eggs and follows rodents down into their burrows. When not hunting, it rests under bark, in stumps, in crevices and in holes in the ground. It also basks on rocks. In winter it is less active, especially in the northern part of its range, while in the south it can be active almost all year.

Care

THE ENCLOSURE

An adult *Pantherophis guttatus* needs an enclosure of at least 120 × 60 × 60 cm (length × width × height). The rule of thumb is that the length should at least equal the snake's own length, and the width half of that. A height of 60 cm leaves room for branches, which the species climbs on. Bigger is always better. The species should be kept singly.

Young snakes are small and good at hiding, but can usually move straight into a well-secured adult-sized enclosure, provided there are plenty of snug hides. For the first few months a smaller enclosure with hinged front doors can make it easier to keep an eye on the animal.

Furnish with at least two hides, one in the warm end and one in the cool end, plus a humid hide for shedding. Add branches, cork bark and artificial or live plants so the snake can climb and stretch out. For substrate use a thick layer of moisture-retaining material, for example a mix of organic topsoil, coconut fibre and a little play sand, so it can burrow. Remove faeces immediately and replace the substrate completely every 3-4 months. Avoid pine and cedar shavings, because the aromatic oils can harm the snake.

The enclosure must have a lid that can be locked. The species is a skilled escape artist, and a young snake can slip out through very small openings. Enclosures with front doors and mesh lids are the safest.

TEMPERATURE

There must be a clear temperature gradient so the snake can choose for itself. The basking spot under the heat source should be 30-32 °C, and the cool end 24-27 °C. At night the temperature may fall to normal room temperature, 20-24 °C, and the heat is switched off. Hatchlings and young animals under a year old are kept warm at night too.

Use a halogen spotlight or another incandescent bulb above the mesh lid to heat a basking spot where the snake can lie. Under a hide by the basking spot, a heat mat can be added, but it must always be controlled by a thermostat and placed under the substrate or under the hide so the snake cannot come into direct contact with it. Measure the temperature with digital probe thermometers: one at the basking spot and one in the cool end. Always keep the heat source out of the snake's reach so it cannot be burned.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be around 50-70%. The species copes well across the whole range as long as there is a damp hide for shedding. A thick, moisture-retaining substrate with a layer of leaf litter and a large water bowl helps, but at the high end of the range the enclosure must also be misted. Humidity is highest at night and at the cool end. A permanently wet substrate and still air cause mould, so ventilation must be good.

A large, heavy bowl of fresh water must always be available. Change the water daily, and scrub the bowl if it is dirty. The snake drinks from the bowl and may also soak in it. Choose a bowl that will not tip over.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Pantherophis guttatus is most active at dusk, but needs a clear day and night. The light is on for 12 hours a day, preferably 13 hours in summer and 11 hours in winter, controlled by a timer. Night lighting, even coloured, is unnecessary and can disturb the daily rhythm.

The species can live without UVB, but UVB is recommended because it benefits both wellbeing and health. It belongs to Ferguson zone 1-2. Use a T5 HO tube of 5-6 % over the warm end, and aim for a UV index of no more than 2-3 at the basking spot. With the tube over a mesh, the distance from tube to the snake's back at the basking spot is about 25-35 cm, without a mesh about 35-45 cm; ideally measure with a UV meter. Provide shade and hiding places in the rest of the enclosure. Replace the tube every 12 months, because UV output declines even though the tube still lights up. Glass and plastic in front of the tube block UVB.

Read more: Lighting and UVB

FEEDING

Pantherophis guttatus eats whole frozen-thawed rodents. Mice are the most commonly used food, and larger animals are given small rats. Quail chicks, quail eggs and small lizards add variety and a more varied diet, but are not necessary. Live prey is not recommended, because the rodent can injure the snake. If a snake will only take live prey, feeding must be supervised, and the prey must be removed from the enclosure after one hour at most. Never stun live prey.

The width of the prey should equal 1-1.5 times the widest part of the snake. Several prey items together should weigh no more than about 10% of the snake's weight. Guideline feeding intervals:

- Newly hatched young (20-50 cm): every 5-7 days.
- Juveniles (50-90 cm): every 7-10 days.
- Subadults that are still growing (90-125 cm): every 10-12 days.
- Fully grown adults: every 14-21 days.
- Older animals over 18 years: every 10-14 days.
- Overweight or underweight animals: a different interval, but only after a vet's assessment.

Thaw the prey slowly in the fridge the night before, and warm it to about 38 °C in a sealed bag in warm water just before feeding. Weigh the snake monthly, and adjust interval and prey size so that its weight stays steady. Captive-bred feeder animals can lack vitamin D, so dust the prey lightly with a combined calcium and vitamin supplement now and then, especially without UVB. Never use wild-caught rodents, which can transmit diseases and parasites.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements Read more: Buying animals: captive-bred, wild-caught and transport

BEHAVIOUR AND HANDLING

Pantherophis guttatus tolerates regular handling better than most reptiles and usually becomes calm and inquisitive. Let a new animal settle in for two weeks and eat regularly before it is handled. Start with no more than 5 minutes at a time, and increase gradually. Handle 1-2 times a week and no more than once a day.

Touch the snake lightly with a paper roll, or stroke its body with a snake hook, so the snake knows it is handling and not feeding time. Approach the snake from the side, and support as much of the body as possible. Never grab the tail, and keep the head away from your face. Wait at least 48 hours after a meal, because regurgitation is dangerous and can be fatal. Do not handle the snake either when it is shedding with bluish, milky eyes. It sees poorly and is more defensive.

Young snakes are nervous and strike at most things, but the bites are weak and usually stop with age. The species is solitary and must be kept alone.

Breeding

SEXUAL MATURITY AND SEXING

Males and females cannot be told apart externally in young animals. Sexing requires a probe or experience in everting the tail, so it should be done by an experienced person or a vet. The male usually has a longer, thicker tail base. Sexual maturity depends more on size than on age and typically occurs after 16-24 months, at a length of about 75 cm or a weight of about 250 g. The female must be adult and in good condition before she is bred.

MATING

Mating typically takes place in spring after a cool period in winter. The period is not necessary, but is common in breeding: the animals are cooled to about 10-16 °C for 60-90 days in a place without disturbance and without bright light. They are then warmed up again and fed well.

The male finds the female by scent and touch. Several males must not be put together, because they fight over the female. The female must be in good condition.

EGG-LAYING AND CLUTCHES

The female lays eggs one to two months after mating, usually in early summer. The clutch is typically 10-15 eggs, occasionally up to 30, and in captivity a female can lay two clutches in the same season. The eggs are white, leathery and elongated, about 4-6 cm long.

Give the female a laying box with moist sphagnum or vermiculite and an opening so she can dig in and lay the eggs. Move the eggs to the incubator after laying. The female must be fed generously afterwards, because laying drains her.

Read more: Incubating eggs

INCUBATION

The eggs are moved to a box with moist vermiculite or perlite without being turned, so they lie in the same position as in the laying box. The box must have small ventilation holes and stand in an incubator at 27-28 °C. The substrate must be evenly moist.

The eggs hatch after about two months, 55-65 days. The young cut their way out with an egg tooth. Occasionally young from healthy eggs do not get through the tough shell. Eggs that collapse or go mouldy are discarded only once it is clear that they are dead.

REARING THE YOUNG

Newly hatched young measure 20-35 cm and shed within the first few days, before they start to eat. Keep them singly in small, secure enclosures with snug hides, a humid hide and a water bowl. Young under a year old must also be kept warm at night. Offer a small pinky mouse every 5-7 days.

Weigh and measure the young regularly. They grow quickly and are fully grown after one and a half to two years. The young must not be kept together, not even siblings, because the species may eat smaller conspecifics.

Health and common mistakes

Pantherophis guttatus is hardy, and most problems are caused by incorrect heat, humidity or feeding. The typical mistakes are:

- Obesity from feeding too often or too much. Weigh the snake monthly, and cut back if the body becomes round and the spine disappears.
- Regurgitation if the snake is handled too soon after a meal or gets cold. Leave it in peace for at least 48 hours after feeding.
- Poor sheds with skin remains on the eyes and tail tip when the air is too dry. Provide a humid hide and a water bowl so the snake can soften its skin.
- Mites, seen as small black dots in the water bowl and on the snake. They require treatment and thorough cleaning of the enclosure.

- Respiratory infections with wheezing breathing, mucus from the nose and mouth or an open mouth. They are often caused by too low a temperature or poor hygiene.
- Injuries from unprotected heat sources or from live prey.

A healthy animal has clear eyes, smooth skin and a firm grip. Contact a vet with reptile experience if the snake refuses food for several weeks, loses weight, has breathing problems or has changes in the skin.

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.