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SNAKES

Western Ratsnake

Pantherophis obsoletus

Pantherophis obsoletus is a large, slender and agile snake from the central USA. In the north adults are glossy black with a white chin and throat, further south often brown, grey or yellowish with dark blotches. It reaches 110-180 cm, climbs and swims well and is more defensive than *Pantherophis guttatus*. It needs a large enclosure, but is otherwise hardy and feeds willingly.

Family: Colubridae Former name: *Elaphe obsoleta; Pantherophis obsoletus lindheimeri*

KEY FACTS

THE ANIMAL

Adult size	**110-180 cm** total length incl. tail
Lifespan	**10-20 years**
Active	**By day, at dusk and at night**
Lifestyle	**Arboreal and terrestrial**
Habitat	**Savanna and temperate woodland and meadow**
Difficulty	**Intermediate**

CARE

Min. enclosure	**180 × 90 × 90 cm** L × W × H for 1 adult
Temperature, day	**22-25 °C**
Basking spot	**29-32 °C**
Temperature, night	**18-22 °C**
Humidity	**50-70%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Winter rest	**10-15 °C** 8-12 weeks
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**36-84 months**
Clutch size	**12-20 eggs**
Incubation	**65-70 days** at 27-28 °C

PROTECTION AND PAPERWORK

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

About the species

Pantherophis obsoletus is a large, slender and muscular, non-venomous snake with a rounded head and round pupils. Colour varies with range. Many adults are glossy black above, often with brown, orange or yellow flecks, and have white lips, chin and throat and a pale belly with dark checkered patches. Traces of the juvenile pattern can be seen between the scales, especially after a large meal. Newly hatched young are greyish brown with brown blotches and darken as they grow. South-western animals from Texas, Oklahoma, Arkansas and Louisiana often keep the blotches and are brown, grey or yellowish, some with orange or red tones. The species is one of the longest snakes in North America.

Adults are normally 110-180 cm long including the tail, and a few reach about 260 cm. Males grow slightly larger than females. Newly hatched young measure 28-41 cm and weigh about 12-14 g. A few morphs have been bred, for example leucistic, albino and scaleless, but they are far rarer than in *P. guttatus*.

The genus name comes from Greek and means panther snake. The species name is Latin for worn out or ordinary. The species was formerly called *Elaphe obsoleta* and is still called that in older literature. Its delimitation has changed: following DNA studies the eastern and central populations are now regarded as separate species, *Pantherophis alleghaniensis* and *Pantherophis spiloides*, but there are mixed populations along the contact zone, and the three resemble one another. Not everyone recognises subspecies; the form *lindheimeri* from Texas and neighbouring states is often treated in the hobby as a subspecies of its own. Animals in the trade are therefore sold under many names, so ask which delimitation the seller uses. Care is the same for all of them.

The animals are active, inquisitive and strong. Captive-bred animals are usually calmer than wild-caught ones, but the species is more defensive than *P. guttatus*. It is therefore best suited to keepers who have already kept snakes.

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

Distribution and habitat

Pantherophis obsoletus lives in the central USA west of the Mississippi. The range runs from the far south-eastern corner of Minnesota, south-eastern Iowa and south-eastern Nebraska across Kansas, Missouri and Oklahoma to Arkansas, Louisiana and Texas, where the species occurs along the Gulf Coast to southern Texas and west to the Edwards Plateau. To the east the species is replaced by *P. alleghaniensis* and *P. spiloides*.

> **Native range:** United States.

HABITAT

Pantherophis obsoletus lives in many kinds of habitat: deciduous and mixed woodland, scrub, meadows, prairie and farmland, rocky slopes, swamps and woodland edges. It prefers woodland, especially with oaks. It is also found in and around abandoned buildings, barns and old oil installations, where there are hiding places and rodents.

The species is diurnal, especially in the cool spring months, but in Texas it switches to nocturnal activity in summer. It climbs superbly, hunts birds and eggs in tree holes and is a good swimmer. It kills its prey by constriction and eats mainly mice, voles, rats and other small mammals, but also birds, bird eggs, lizards, frogs and other snakes. In the northern part of its range it hibernates, often in communal dens, while animals in Texas do not hibernate properly.

Care

THE ENCLOSURE

An adult *Pantherophis obsoletus* needs an enclosure of at least 180 × 90 × 90 cm (length × width × height). The species is active and climbs, so height and climbing opportunities are important. Bigger is always better. The species should be kept singly.

For the first few months young can live in a small enclosure or a ventilated box, but must soon move to something larger. Furnish with at least two hides, one in the warm end and one in the cool end, plus a humid hide for shedding. Add sturdy branches and cork so the snake can climb. For substrate use aspen shavings, cypress or a mix of topsoil and coconut fibre, so it can burrow. Paper is cheap and clean, but must be replaced completely every time the animal has made a mess. Avoid pine and cedar, whose oils can harm the snake. Remove faeces immediately.

The enclosure must have a lid that can be locked. The species is a skilled escape artist, and even small gaps can be too large. Use clips or locks and mesh or glass lids.

TEMPERATURE

There must be a clear gradient so the snake can choose for itself. The basking spot under the heat source should be 29-32 °C, and the cool end 22-25 °C. At night the temperature may fall to 18-22 °C, and the heat is switched off. Use several halogen spotlights above the mesh lid so that the whole coiled snake is heated, and provide a basking spot where it can stretch out. Under a hide a heat mat can be added, but it must always have a thermostat. Measure with digital probe thermometers: one at the basking spot and one in the cool end. Keep the heat source out of the snake's reach so it cannot be burned.

The species tolerates a cool winter. Animals to be bred are kept for 8-12 weeks at 10-15 °C and in darkness or dim light; the figures are borrowed from *Pantherophis guttatus*. Animals not being bred can be kept all year round with 12 hours of light; in a room with windows feeding can stop during the winter months.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be 50-70 %, lowest during the day and highest at night. Mist as needed, and put moist sphagnum in the hide in the cool end. Extra humidity is especially important during shedding, which shows as dull scales, bluish eyes and the animal hiding away. Then provide a humid hide filled with moist sphagnum or paper towels. A constantly wet substrate and stagnant 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 when it is dirty. The snake can lie in the bowl, so it must not be able to tip over.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Pantherophis obsoletus is active both day and night and needs a clear daily rhythm with strong daylight. The light is on for about 12 hours a day, controlled by a timer. The species can live without UVB, but UVB is recommended because it benefits both wellbeing and health. It belongs to Ferguson zone 2. Use a T5 HO tube of 5-6 % over the warm end, and aim for a UV index of 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 25-30 cm, without a mesh about 30-35 cm. 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.

Read more: Lighting and UVB

FEEDING

Pantherophis obsoletus eats whole, frozen and thawed rodents. Young snakes get mice, and in time they move on to rats. Quail eggs, quail chicks and small chicks can add variety. Live prey is not recommended, because the rodent can injure the snake. The prey should be as wide as or slightly wider than the snake's widest point, but no more than 1.5 times as wide. Thaw the prey slowly in the fridge, warm it to about 38 °C and move it with tongs so the snake does not mistake hand for food.

The species burns a lot of energy and readily eats often. Young are fed every 5-7 days and adults every 7-14 days. Weigh the animal monthly, and adjust the interval and the size of the prey so that its weight stays steady. Captive-bred feeder animals can be short of vitamin D, so occasionally dust the prey lightly with a calcium and vitamin supplement, especially without UVB.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Pantherophis obsoletus is more defensive than most colubrids. It gapes, vibrates its tail against the substrate so that it rattles, and can strike without hesitation. Some animals also release a foul-smelling fluid. The bites are small and not dangerous, but unexpected. Young are the most nervous. Captive-bred animals usually become calm with regular handling.

Let a new animal settle in for two weeks and eat regularly before it is handled. Pick it up from below and behind and support the body. Avoid squeezing or grabbing from above, because a squeezed animal strikes and can be injured, since the vertebrae are fragile. If the animal moves out of your hands, it can be guided from the side instead of being grabbed. Wait at least 48 hours after a meal, and do not handle the animal during shedding. Keep the animals separately.

Breeding

SEXUAL MATURITY AND SEXING

The sex cannot be seen externally in young and is determined with a probe, which an experienced person or vet should use. Males are slightly larger than females. In the wild, sexual maturity depends on size more than on age and occurs after 3-7 years, when the male reaches about 105 cm and the female about 95 cm (measured from snout to vent). In captivity the age is not documented; the female must be adult and in good condition before she is bred.

MATING

In the wild the species mates from April to June. The males fight over the females, and the male finds the female by scent and touch. Breeding normally follows a cool winter rest of 8-12 weeks at 10-15 °C, after which the animals are warmed up and fed well. Do not house several males together, because they fight over the female.

EGG-LAYING AND CLUTCHES

The female lays eggs about five weeks after mating. The clutch is normally 12-20 eggs, but in the wild can vary from 4 to 44. The eggs are white, leathery and elongated, 36-60 mm long. How many clutches a female can lay per year in captivity is not documented. Give the female a laying box with moist sphagnum or vermiculite, and feed her generously afterwards.

INCUBATION

The eggs are moved to a box with damp vermiculite or perlite without being turned and incubated at 27-28 °C. The eggs hatch after 65-70 days. The young cut their way out with an egg tooth.

REARING THE YOUNG

Newly hatched young measure 28-41 cm and weigh 12-14 g. They shed within the first week, before they eat. Keep them singly in small, secure enclosures with hides and water. Offer a small pinky mouse every 5-7 days. The young grow quickly and reach over 100 cm within a few years, but must not be kept together, because the species may eat smaller conspecifics.

Health and common mistakes

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

- 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.
- 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.
- Parasites in wild-caught animals: use captive-bred animals, and quarantine new animals.

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 or has problems with breathing or the skin.

Read more: Quarantine and hygiene

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.