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SNAKES

Baird's Ratsnake

Pantherophis bairdi

Pantherophis bairdi is a slender and elegant ratsnake from the dry, rocky regions of western and central Texas and north-eastern Mexico. It is orange-yellow to yellow with four dark stripes along the body, grows to 65-140 cm and climbs both in shrubs and among rocks. It is hardy, feeds willingly and is also suitable for beginners.

Family: Colubridae Former name: *Elaphe bairdi; Coluber bairdi*

KEY FACTS

THE ANIMAL

Adult size	**65-140 cm** total length incl. tail
Lifespan	**12-20 years**
Active	**By day, at dusk and at night**
Lifestyle	**Arboreal, rock-dwelling and terrestrial**
Habitat	**Semi-desert and rocky terrain**
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	**18-21 °C**
Humidity	**40-60%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 2
Winter rest	**17-22 °C** 10-11 weeks
Diet	**Vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**24-60 months**
Clutch size	**5-10 eggs**
Incubation	**60-65 days** at 28 °C

PROTECTION AND PAPERWORK

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

About the species

Pantherophis bairdi is a slender, non-venomous ratsnake with an oval head and round pupils. The ground colour is orange-yellow to bright yellow or a darker salmon, and four dark stripes run from the nape to the tail. The belly is grey to yellow and becomes darker towards the tail. The scientific species name *bairdi* honours the American naturalist Spencer Fullerton Baird.

Adults measure 65-140 cm including the tail. Newly hatched young are about 30 cm. The species is closely related to *Pantherophis obsoletus*. Where the two meet, hybrids occasionally occur, but the two do not grade gradually into each other, and they are therefore regarded as two separate species. *P. bairdi* was formerly treated as a subspecies of *P. obsoletus* and is called *Elaphe bairdi* in older literature.

In the wild it is hard to find and poorly studied. In captivity a few colour variants exist, but the guide here applies to the species in its natural colour. Young animals can be nervous and defensive, but usually become calm with time.

Distribution and habitat

Pantherophis bairdi lives in south-western and central Texas, especially in the Big Bend region and the Trans-Pecos, and south into northern Mexico in the states of Coahuila, Nuevo León and Tamaulipas. The type locality is in the Apache Mountains near Fort Davis in Jeff Davis County, Texas.

The species occurs together with *Pantherophis obsoletus* in parts of the area. It is hard to find in the wild, but is assessed as least concern.

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

HABITAT

Pantherophis bairdi prefers dry, rocky habitats. It is found in rocky canyons, on limestone slopes and in scrub in the Chihuahuan Desert, and in mountain regions also in wooded areas up to about 2,000 m. The climate has hot summers, cool nights and little rainfall, and the animals often seek shelter in crevices between stones and in rodent burrows.

The species is partly arboreal and climbs both on rock faces and in shrubs. The activity pattern is poorly known: it is active by day in the milder periods, but avoids the midday heat and in summer is probably most active at dusk and at night. The prey is first and foremost rodents and birds, and the young also take lizards. In the cold season it withdraws into crevices and caves and rests for several months.

Care

THE ENCLOSURE

Only limited knowledge exists on the care of *Pantherophis bairdi* itself. It is kept like the closely related *Pantherophis guttatus* and *Pantherophis obsoletus*, which have almost the same requirements.

An adult *Pantherophis bairdi* needs a terrarium of at least 120 × 60 × 60 cm (length × width × height). The species is active and climbs, so height is important. Larger is always better. The species must be kept singly. Young can live in a small box or a smaller terrarium with many close hides, but must move on to something larger quickly.

Furnish with at least two hides, one in the warm and one in the cool end, plus a humid hide for shedding. Add sturdy branches, cork bark and stones, so that the snake can climb and crawl among rocks. A mix of topsoil, coconut fibre and a little play sand suits as substrate, or aspen shavings. Remove droppings immediately, and change the substrate completely every 3-4 months. Avoid pine and cedar shavings, because the aromatic oils can harm the snake.

The terrarium must have a lid that can be locked. The species is a persistent explorer, and a snake of this size will find any gap. Terrariums with front doors and a locked lid are the safest.

TEMPERATURE

There must be a distinct temperature gradient, so that the snake can choose for itself. By day the terrarium should be 24-27 °C, down to 22 °C in the cool end, and the basking spot should be 30-32 °C. At night the temperature falls to 18-21 °C, and the heat is switched off. Young under a year old also need a little warmth at night.

Use a halogen spot or another incandescent bulb over a branch or stone, so that the snake can lie in the warmth. Under a hide at the basking spot a heat mat can be added, but it must always be controlled by a thermostat. Measure with digital thermometers with a probe: one at the basking spot and one in the cool end. Keep the heat source out of the snake's reach, so that it cannot be burned.

In the cool season the animals can be given a winter rest at 17-22 °C for about ten weeks in midwinter with shorter days. The rest is not necessary for care, but is usual for breeding. Only healthy animals in good condition should be put through a winter rest.

Read more: Heat and temperature

HUMIDITY AND WATER

Humidity should be 40-60 %. The figure is borrowed from the close relative *Pantherophis guttatus*, as there are no measured figures for the species itself. The species comes from dry regions and tolerates lower humidity than many other ratsnakes, but a humid hide is necessary for shedding. Fill the hide with moist sphagnum, and change it regularly so that it does not go

mouldy. When the snake's colour becomes dull and the eyes turn bluish, the terrarium can be misted lightly with room-temperature water until the shed is over.

A large, heavy water bowl with fresh water must always be available. The snake drinks from the bowl and can also lie in it. Choose a bowl that does not tip over, and scrub it weekly. Good ventilation is more important than high humidity, because a wet substrate and stagnant air cause mould and respiratory infections.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Pantherophis bairdi needs a distinct day and night. The light is on for about 12 hours a day and preferably follows the seasons, controlled by a timer. Night light 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. Like the related *Pantherophis* species 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 a tube above mesh the distance from tube to the snake's back is about 25-30 cm, without mesh about 30-35 cm. Preferably measure with a UV meter. Provide shade and hides in the rest of the terrarium, and replace the tube every 12 months. Glass and plastic in front of the tube block UVB.

Read more: Lighting and UVB

FEEDING

Pantherophis bairdi eats whole, frozen and thawed rodents. Mice are the most used food, and larger animals get small rats. Day-old chicks, quail and quail eggs give variety. Live prey is not recommended, because the rodent can injure the snake. Newly hatched young eat for the first time after their first shed.

The prey must be no more than 1.5 times as wide as the snake's widest point. Several prey items together must weigh no more than about 10 % of the snake's weight. Guideline feeding intervals:

- Hatchlings and juveniles: every 5-7 days.
- Subadults: every 7-10 days.
- Adults: every 10-14 days.

Thaw the prey slowly in the refrigerator, and warm it to room temperature or slightly above in a sealed bag in warm water just before feeding, never in a microwave. Weigh the snake monthly, and adjust interval and size so that its weight stays steady. 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: Calcium, vitamins and supplements Read more: Buying animals: captive-bred, wild-caught and transport

BEHAVIOUR AND HANDLING

Pantherophis bairdi is curious, active and a skilled climber. Young animals are quick and can be nervous and defensive: they may whip the tail, snap and release foul-smelling secretion. They usually become calm with regular, quiet handling, but a few animals remain defensive all their lives.

Let a new animal settle in for two weeks and eat regularly before it is handled. Start with at most 5 minutes at a time, and increase gradually. Handle 1-2 times a week. Lift the snake from below, support as much of the body as possible, and never grab the tail. Wait at least 48 hours after a meal, so that the snake does not regurgitate, and do not handle it during shedding: with bluish eyes it sees poorly and is more defensive.

The species is solitary and must be kept alone.

Breeding

SEXUAL MATURITY AND SEXING

Males and females cannot be told apart externally in young. Sexing requires a probe or experience and should be carried out by an experienced person or a vet. Adult males are slimmer than females and have a longer and thicker tail base. The animals become sexually mature after 2-5 years, the males slightly before the females; size and condition matter more than age. The female must be adult and in good condition before she is put to breeding.

MATING

Mating takes place in spring after a cool winter rest at 17-22 °C for about ten weeks with short days, in quiet and without bright light. Then the animals are warmed up gradually again and fed well. The procedure is the same as for the related *Pantherophis* species.

The animals are put together in pairs. Several males must not be put together with a female, because they fight over her. The male seeks out the female by scent and touch.

EGG-LAYING AND CLUTCHES

The female lays eggs in early summer or midsummer, some weeks after mating. The clutch is up to about 10 eggs. The number of clutches per year is not documented. Winter rest, incubation period and incubation temperature are also not documented for the species, and the figures here are borrowed from the close relatives *Pantherophis guttatus* and *Pantherophis alleghaniensis*.

Give the female a laying box with moist sphagnum or vermiculite and an opening, so that she can burrow in and lay the eggs. Move the eggs to the incubator after laying. The female must have plenty of food afterwards, because laying drains her.

Read more: Incubating eggs

INCUBATION

The eggs are moved, without being turned, to a box with vermiculite mixed with water in equal parts by weight or with moist perlite, so that they lie in the same position as in the box. The box must have small air holes and stand in an incubator at about 28 °C with high humidity.

The eggs hatch after 60-65 days at this temperature; at lower temperatures it takes longer. The young cut their way out with an egg tooth. Eggs that collapse or go mouldy are discarded only when it is clear that they are dead.

REARING THE YOUNG

Newly hatched young measure about 30 cm and shed before they begin to eat. Keep them singly in small, secure terrariums with close hides, a humid hide and a water bowl. Offer a small pinky mouse every 5-7 days once they have shed.

Weigh and measure the young regularly. They grow steadily and are adult after 2-5 years. The young must not be kept together, because ratsnakes can eat smaller members of their own species.

Health and common mistakes

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

- Overweight from too frequent or too large feeding. Weigh the snake monthly, and cut down if the body becomes round.
- Regurgitation, if the snake is handled too close to a meal or becomes cold. Leave it in peace for at least 48 hours after feeding, and wait at least a week before the next meal after a regurgitation.
- Poor shedding with stuck shed on the eyes and tail tip when the air is too dry. Provide a humid hide and a water bowl.
- Mites and ticks, which show as small black or red dots on the snake and in the water bowl. They need treatment and thorough cleaning of the terrarium.
- Intestinal worms and other parasites, which show as lethargy, weight loss and foul-smelling or bloody droppings. New animals should be quarantined.
- Respiratory infections with wheezy breathing and mucus from the nose and mouth, often because of a damp terrarium and too low a temperature.
- Injuries from heat sources that are not guarded.

A healthy animal has clear eyes, smooth skin and a firm grip. Contact a vet with experience of reptiles if the snake will not eat for several weeks, loses weight or has problems with breathing or 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.

The full guide with map and updates: herpy.org/en/snakes/pantherophis-bairdi