herpy

MONITOR LIZARDS

Spencer's Monitor

Varanus spenceri

Varanus spenceri is a heavily built, ground-dwelling monitor of up to 120 cm that lives on the treeless black-soil plains of north-eastern Australia and shelters in cracks and burrows in the ground. It eats almost anything it can overpower and plays dead when threatened. The species is extremely rare outside Australia, and little is known about its care.

Family: Varanidae Former name: *Varanus ingrami*

KEY FACTS

THE ANIMAL

Adult size	**100-120 cm** total length incl. tail
Lifespan	**10-20 years**
Active	**By day**
Lifestyle	**Terrestrial and burrowing**
Habitat	**Semi-desert and savanna**
Difficulty	**Expert**

CARE

Min. enclosure	**300 × 120 × 120 cm** L × W × H for 1 adult
Temperature, day	**25-35 °C**
Basking spot	**50-58 °C**
Temperature, night	**20-24 °C**
Humidity	**30-60%**
Water	**Water dish**
UVB	**Recommended** Ferguson zone 3
Diet	**Insects and vertebrates**
Kept	**Singly**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**11-30 eggs**
Incubation	**180-190 days** at 27-29 °C

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Varanus spenceri is heavier than other monitors of the same length. The body is stout and thickset, and the four legs have sharp claws, which the animal uses to dig burrows. The species reaches up to 120 cm including the tail, and the tail is on average longer than the body and head together. The base colour is light greyish brown, but it ranges from pale, dirty cream to dark rusty brown with scattered dark brown and cream spots. On the back, neck and tail there may be narrow, irregular, pale yellow or grey crossbands, and the lips have distinct light and dark stripes. The underside is cream with dark grey or brown spots, especially on the throat. The scales of the head are smooth and irregularly arranged, and the last half of the tail is compressed from the sides and has two median keels. Juveniles are strikingly patterned in brown and white.

The species was described in 1903. The scientific name honours the biologist Walter Baldwin Spencer, who moved to Australia in 1887. The name *Varanus ingrami* from 1906 is a junior synonym of the same species. The species belongs to the subgenus *Varanus* together with, among others, *Varanus giganteus* and *Varanus gouldii*.

The species hisses and puffs out its throat when it feels threatened, and it can lash with its tail. The most distinctive thing, however, is that it plays dead: it presses itself flat against the ground, stretches out one hind leg, holds the other legs close to the body, curls the tail in S-bends and keeps the head raised to follow the danger. The other monitors in the same area flee or take up a defensive posture instead.

Outside Australia the species is very rare. It is kept almost only in a few zoological gardens, so there is almost no experience from private enclosures.

Distribution and habitat

The species is found only in Australia. It lives on the dry plains in the eastern Northern Territory and north-western Queensland. The core area is the Barkly Tableland, and in Queensland it is known from, among other places, Astrebla Downs National Park and Diamantina National Park as well as the open country around Ilfracombe. The type locality is the plains about 80 km north-east of Tennant Creek in the Northern Territory.

The range follows the great black-soil plains. Outside them the species has not been found.

> **Native range:** Australia.

HABITAT

Varanus spenceri lives on open, almost treeless plains with dark, clayey soil, where Mitchell grass (*Astrebla*) dominates. The soil is highly expansive clay, which cracks in dry periods. The cracks and the burrows the animal digs itself are its shelter. The same cracks make it difficult for trees to grow, so the landscape is open, and most trees stand along the dry watercourses. The species is shy and keeps to open country far from settlement, and it is seldom seen.

On the black-soil plains the watercourses are dry for most of the year. They hold water for a few weeks in the wet season, typically around February-March. The animal is most active in the morning and late afternoon, when it is cooler, and it is less active from May to August. Adults do not climb, but young animals can climb if given the chance. In the wild the species eats almost anything: venomous snakes, small mammals, small lizards, eggs and carrion.

Care

THE ENCLOSURE

Little is known about the care of *Varanus spenceri*, because the species is hardly kept outside zoological gardens. Australia does not permit the export of wild reptiles, so animals outside the country are rare and come from a few zoological gardens. The figures here are therefore borrowed from *Varanus gouldii* and *Varanus giganteus*, which live in related, dry landscape, and from the general rules for ground-dwelling monitors. They apply until there is more experience with the species.

An adult needs a whole room or a custom-built enclosure of at least 300 × 120 × 120 cm (length × width × height). The dimensions follow the rule of thumb for ground-dwelling monitors: five times the snout-vent length for the length and twice for the width and height. The snout-vent length has not been documented for the species; since the tail is longer than the body and head, it is estimated at about 55 cm, and the dimensions are rounded up. More space is always better, and a pair needs considerably more. Juveniles can start in a smaller but deep box, where they easily find their food, and are moved up quickly as they grow.

The substrate is the most important thing. The species digs in cracked clay soil, so the substrate must be deep: at least 40 cm and preferably more of sandy soil that can hold a burrow without collapsing. The substrate should be slightly moist at depth so the burrows hold, while the surface is dry. Furnish with hides of large cork tubes, hollow logs and stable rocks the animal can wedge itself into. Rocks must rest on the floor of the enclosure so they do not topple when the animal digs beneath them. Plants do not survive. Provide a tight, lockable door and good ventilation, and shield all heat sources so the animal cannot come into direct contact with them.

TEMPERATURE

Monitors are diurnal, and *Varanus spenceri* needs a large temperature gradient: a warm basking spot and cooler zones where the animal can withdraw. The figures are borrowed from the closely related *Varanus gouldii* and *Varanus giganteus*. By day the enclosure should be 25-35 °C. The surface of the basking spot should be 50-58 °C, measured with an IR thermometer on the

surface itself and not in the air. Spread the heat out with several bulbs and large surfaces, so a large animal can lie fully in the warmth. A single spot with a narrow beam can burn a large animal, because the part of the body under the bulb gets too hot before the rest of the body warns the animal.

At night the heat is switched off, and the temperature should fall to 20-24 °C. The animal is less active in the cold season, so in winter the heat and day length can be reduced. The animal must always have water to drink. A true winter rest without light and heat is not recommended. Measure the temperature both with an IR thermometer at the basking spot and with a digital thermometer in the air, and ensure ventilation so the enclosure does not overheat.

Read more: Heat and temperature

HUMIDITY AND WATER

The species comes from dry plains, so humidity in the enclosure should be low: 30-60 %, with good ventilation. The figures are borrowed from *Varanus gouldii*. The most important thing is that the substrate is slightly moist down in the depths so the burrows hold, and that the surface is dry. A slightly damp hide helps with shedding if the skin sticks.

Place a large, stable water bowl on the floor, and change the water daily.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

Varanus spenceri is diurnal and lives in open landscape without shade, where it basks a great deal. UVB equivalent to Ferguson zone 3 is therefore recommended: a strong UVB tube (T5 HO, 12-14 %) that gives a UV index of about 4-6 at the basking spot and covers about half the length of the enclosure. The zone is an estimate for a diurnal species that basks a great deal, and the figures are borrowed from *Varanus gouldii*. The UV light must have direct access to the animal, with no glass in between to block the rays. There must always be shade in the rest of the enclosure.

Let the day length follow the seasons: about 12 hours in summer and shorter in winter. Strong light is important for monitors, and ordinary fluorescent tubes and weak bulbs are not enough. Place all lamps out of the animal's reach, and replace the UVB tube according to the manufacturer's instructions, even if it still lights.

Read more: Lighting and UVB

FEEDING

In the wild the species eats almost anything it can overpower: snakes, small mammals, small lizards, eggs and carrion. In captivity the diet should be varied and consist of whole prey. Amounts and frequency have not been documented for the species and are borrowed from *Varanus gouldii*. Juveniles get insects (crickets, cockroaches, large mealworms) and chopped newborn mice. Adults get whole mice, rats, chicks, quail and meat from chicken and kangaroo. Eggs and insects can be included throughout life.

Juveniles are fed every day. Adults are fed every 3-5 days, depending on how large the last meal was. Prey must not be wider than the animal's head. Overfeeding is the most common problem in captivity: when rodents become the staple diet, monitors quickly become fat, and food that is too fatty puts a strain on the liver.

Whole prey with bones covers most of the calcium requirement. Insects are dusted with a calcium and vitamin mix. Offer prey dead, so live prey cannot bite the animal. Avoid tinned dog and cat food, which has too much protein and too little minerals and fibre. Remove uneaten insects so they do not attack a sleeping animal.

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

BEHAVIOUR AND HANDLING

Safety: *Varanus spenceri* is strong and has sharp claws and a powerful tail, and a bite from an animal of up to a metre can cause deep wounds. A threatened animal hisses, puffs out its throat and lashes with its tail. It can also play dead, and an animal lying flat and motionless with an S-shaped tail is not necessarily sick or dead. It gets up by itself when the danger is over, so leave it in peace.

The species is shy and prefers to keep its distance. Give a new animal several weeks in peace, and then be calm and predictable. Handle the animal only when necessary, and use leather gloves. Use long tweezers or tongs when feeding, and do not have your hands in the enclosure when there is food nearby. Use each handling to check the animal for signs of illness.

Reptiles often carry salmonella. Wash your hands thoroughly after any contact with the animal, the substrate, the water and the food, and do not leave children alone with the animal.

The animals are solitary in the wild and should be kept singly. Adult monitors may eat smaller animals of the same species. The male and female are put together only for mating, and only under supervision.

Read more: Quarantine and hygiene

Breeding

SEXUAL MATURITY AND SEXING

Sex cannot be determined reliably from external features in monitors. A probe at the base of the tail does not work, because females have a fold corresponding to the male's hemipenial pocket (hemiclitoris), and spurs at the base of the tail do not always indicate the male. Reliable sexing requires endoscopy by a vet who knows reptiles. Age and weight at sexual maturity have not been documented for the species.

MATING

The species has a distinct season in the wild: the adult animals are most sexually active from about August to October. The rest of breeding in captivity has not been documented for the species, and the usual advice for monitors applies: keep the animals separately, and put them together only for a short period. After mating the male is removed, so the female can eat and bask in peace. Separation for several weeks up to three months several times a year can help to synchronise the animals. Mating must be monitored, as a male can injure a female.

EGG-LAYING AND CLUTCHES

A clutch is 11-30 eggs. The eggs are white and about 50 mm long and 35 mm wide. In the wild the females bury the eggs in the ground and lay from the end of September to the beginning of November. The timing of egg-laying in captivity has not been documented. The female needs a laying box with slightly moist soil or vermiculite that is large enough for the animal's size, has a dark, safe space and can be reached from above. Females often stop eating before laying and dig trial holes. See a vet if the female digs for days without laying, or if she seems limp.

INCUBATION

The eggs are lifted out carefully after laying, as otherwise they may be eaten or destroyed. They must not be turned, and the top is marked with a pencil. The eggs are placed in a closed box with vermiculite or perlite mixed with water in a ratio of 1:1 by weight. The incubation temperature for monitors is generally 27-29 °C at 80-90 % humidity. The incubation period has not been documented for the species, but it is related to the adult size of the species and the temperature. The figure of 180-190 days is borrowed from *Varanus gouldii* and may differ. An overdue egg that looks healthy is not opened.

Read more: Incubating eggs

REARING THE YOUNG

In juveniles of the species the pattern is brown and white. Everything else about rearing the species has not been documented, so the following is general advice for monitors. The young live off the yolk for the first few days and should then be offered small prey they can overpower, for example small crickets and cockroaches dusted with calcium and vitamins. Keep the young singly or under close supervision until it is clear that they can be together. Give them a box with a deep substrate, hides and a small water bowl, and make sure loose rocks and cork lie stably, so they do not crush the young. Weigh them regularly.

Health and common mistakes

Varanus spenceri is rare, and there is no collected knowledge about the species. The typical mistakes and risks apply to all large, ground-dwelling monitors:

- Burns from unshielded or overly concentrated heat sources, especially when a large animal lies under a single bulb.
- Overheating: the animal must always be able to get away from the heat into shade or a cool burrow.
- Temperatures that are too low, which cause poor digestion and a weakened immune system.
- Obesity and liver problems from too many rodents and too frequent feeding.
- Metabolic bone disease from too little calcium, D3 and UVB, especially in juveniles and egg-laying females.
- Parasites and stress in newly arrived animals. Have a faecal sample examined, and let new animals settle in peace.
- Bites from live prey, which can cause infected wounds.
- Egg-laying problems if the female does not have a suitable place to dig.

- Salmonella, which can infect humans.

See a vet with reptile experience if the animal loses weight, does not eat for several weeks or seems limp.

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.