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GECKOS

Wheeler's knob-tailed gecko

Nephrurus wheeleri

Nephrurus wheeleri is a small, sturdily built ground gecko from the arid interior of Western Australia with a reddish-brown body, pale crossbands and a tail ending in a round knob. It is nocturnal, feeds on insects and needs a dry sand-based enclosure with a humid hide. An interesting species for anyone who wants to move on from *Eublepharis macularius*.

Family: Carphodactylidae Former name: *Nephrurus wheeleri wheeleri*

KEY FACTS

THE ANIMAL

Adult size	**8-10 cm** snout-vent length
Lifespan	**10-15 years**
Active	**At night**
Lifestyle	**Terrestrial**
Habitat	**Semi-desert**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 45 × 30 cm** L × W × H for 1 adult
Temperature, day	**22-27 °C**
Basking spot	**30-35 °C**
Temperature, night	**15-22 °C**
Humidity	**30-40%**
UVB	**Optional**
Diet	**Insects**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Clutch size	**2 eggs**
Clutches per year	**2-6**
Incubation	**60-90 days** at 29-30 °C

PROTECTION AND PAPERWORK

CITES	**Appendix III**
EU annex	**Annex C**
IUCN	**Least Concern (LC)**

About the species

Nephrurus wheeleri belongs to the knob-tailed geckos, whose short tail ends in a small, round knob. What the knob is used for is not known for certain, but it gives the animal a very distinctive appearance. The body is short and compact, with a large head and big eyes, and the animal looks a little like a small toad. The skin is rough, and the base colour ranges from salmon and rusty brown to dark brown, with broad, pale bands across the back and tail.

The species was described by Arthur Loveridge in 1932 and is named after the American ant researcher William Morton Wheeler. The northern form was long regarded as a subspecies, *Nephrurus wheeleri cinctus*, but in 2020 it was split off as a separate species, *Nephrurus cinctus*. This page deals with the southern form, *Nephrurus wheeleri* in the strict sense.

Older care information uses the old name for both forms, and a large share of the animals in the trade are *N. cinctus*, as is most of what is known about breeding. Several of the figures here are therefore borrowed from the northern sister species. Always check which species a breeder is actually selling.

Adults are small, about 8-10 cm from snout to vent, and the tail is short and broad. The weight is not known. Knob-tailed geckos often live for more than 10 years in captivity, and 10-15 years is a reasonable estimate.

The animal is quiet and calm and rarely becomes aggressive. It is mostly an animal to watch, and it is best seen in the evening, when it goes hunting for insects.

Distribution and habitat

The species is found only in Western Australia, in the arid interior. Records lie mainly in the Murchison region and the northern part of the goldfields, from the area around Paynes Find north past Cue, Meekatharra and Wiluna to around the upper reaches of the Murchison River. The type locality is Yandil, about 50 km north-west of Wiluna.

North of this area, in the northern Gascoyne and the southern Pilbara, *Nephrurus cinctus* lives instead. Many records of the northern species are still registered under *N. wheeleri*, so the dots north of the edge of the map probably belong to *N. cinctus*.

> **Native range:** Australia.

HABITAT

The gecko lives in dry scrub and on stony ground with scattered acacia bushes and grass tussocks. The climate is hot and dry, with very hot summers and cool winter nights. During the day the animal lies hidden in holes, crevices or under rocks and pieces of wood, and at night it comes out and hunts insects, spiders and other small animals on the ground.

It does not dig deep burrows itself like its smooth-skinned relatives, but uses holes and crevices where the air is cooler and more humid than at the surface. This is why the species copes in a dry enclosure, as long as it has a humid hide.

Care

THE ENCLOSURE

An adult needs an enclosure of at least 60 × 45 × 30 cm (length × width × height). Height matters little for a ground-dwelling species; floor area does. Plastic boxes in racks are often used for breeding, but a somewhat larger, furnished enclosure gives a better chance of seeing the animal's natural behaviour. Juveniles are kept separately in small boxes.

The substrate is fine sand, preferably mixed with a little clay, so that hides and burrows hold their shape. Provide several dark hides with a single opening, for example of cork, and one that is kept damp with sand or sphagnum. Rocks and heavy decor must stand directly on the floor of the enclosure, not on top of the sand, so that the animal is not crushed when it digs. The lid must fit tightly but allow good ventilation.

Males must not be kept together, and the most common set-up is one animal per enclosure. A male and a female can share an enclosure of at least 90 × 55 × 60 cm with many hides, but this is an exception.

TEMPERATURE

The species needs a clear difference between a warm end and a cool end. Keep the background at 22-27 °C by day and a warm spot in one end at 30-35 °C. At night the temperature may drop to 15-22 °C. In winter the temperature is lowered to 15-22 °C in the air and 24-28 °C at the warm spot.

Heat from below with a heat mat under one end, controlled by a thermostat, and measure with a digital thermometer at floor level. Strong light and heat from above probably stress this nocturnal animal. In winter the temperature can be lowered and the days shortened, so that the animal gets a light winter rest. This is the best way to trigger breeding.

Read more: Heat and temperature

HUMIDITY AND WATER

The species comes from dry regions and must be kept dry, at a humidity of 30-40 %. Mist once or twice a week, no more, and make sure the ventilation is good enough that surfaces are dry again after a few hours. Constant moisture causes skin problems and fungus.

However, there must always be one humid hide with slightly damp sand. This is where the animal lies when it is about to shed, and if the hide is missing, remnants of skin easily stick. Mist the top of the hide now and then too, so that the moisture lasts a couple of days. A shallow dish of fresh water can be left out, but many animals never drink from it.

Read more: Humidity, misting and ventilation

LIGHTING AND UVB

The species is nocturnal and does not need bright light. Lamps from above can stress the animal, but a low-output UVB light, at most corresponding to Ferguson zone 1, can be used over part of the enclosure when there are plenty of hides. UVB is optional.

If you choose UVB, use a low strength, and make sure the animal can always hide from the light. Day length can be 12-14 hours in the breeding season and shorter in winter. The most important thing is that it is dark at night.

Read more: Lighting and UVB

FEEDING

The species lives exclusively on insects and other small arthropods. Offer crickets or small roaches as the staple and now and then soldier fly larvae, mealworms or waxworms as a treat. Juveniles should have insects of about 6 mm, adults about 12 mm. Feed juveniles daily and adults three to five times a week.

Dust the insects lightly with calcium, and give calcium with D3 and a multivitamin about once a week. Adjust the amount according to the animal's condition. A plump tail base shows that the animal is getting enough, but it should not become fat either.

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

BEHAVIOUR AND HANDLING

The animal is calm and tolerates brief handling, but it rarely becomes as tame as *Eublepharis macularius*, and too much handling stresses it. Keep sessions short and close to the floor, and do not pick it up during the day, when it sleeps.

A male and a female can be kept together, but males must be kept apart, because they fight. Otherwise the safest option is to keep the animals singly. The tail can be dropped when the animal is frightened, and a new tail often looks different, so never grab it. The animal may also close the entrance to its hide with sand, and this is entirely normal behaviour.

Breeding

SEXUAL MATURITY AND SEXING

Males can be recognised by a distinct bulge at the base of the tail, where the hemipenal pouches sit, and they are often smaller and slimmer than the females. Age and weight at sexual maturity are not known. Wait to breed a female until she is fully grown and in good condition.

MATING

Breeding is triggered by a light winter rest with lower temperatures and shorter days, followed by longer and warmer days in spring and summer. Keep 15-22 °C in winter and the normal temperatures in summer (see Temperature). Put the female with the male in a spacious enclosure with many hides, and separate them if any unrest arises.

EGG-LAYING AND CLUTCHES

The female lays two eggs at a time and does so several times during the season. A female lays 2-6 clutches a year, often at intervals of 30-40 days.

The eggs are laid down in the sand, so provide a laying box with 2-4 cm of damp sand, or dig carefully for them. Give the female plenty of calcium and insects so that she is not drained.

INCUBATION

Incubate the eggs at 29-30 °C in perlite or vermiculite mixed with water 1:1 or 2:1; under these conditions almost all eggs hatch. The eggs must lie as they were laid, without being turned, and they must not dry out.

Expect 60-90 days to hatching, often about 67 days. It is not known whether temperature determines sex.

REARING THE YOUNG

Keep each juvenile separately in a small box with fine sand, a small hide and a slightly damp corner at the same temperature as the adults. Offer small insects of about 6 mm dusted with calcium every day, and weigh the young regularly so that you can see that they are growing.

Health and common mistakes

The typical problems are the same as in other desert geckos:

- Too much moisture, which causes fungus and skin problems. Keep the enclosure dry with one humid hide.
- Remnants of skin on the toes and tail tip, if the humid hide is missing.
- Too little calcium, especially in young animals and egg-laying females. Dust the insects.
- Stress from strong light or too much handling, which can cause loss of appetite.
- Dropped tails after fright or fighting.

A healthy animal has clear eyes, a plump tail and is active at night. See a vet with reptile experience if the animal loses weight, does not eat for several weeks or seems limp.

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.