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SKINKS

## Red-Eyed Bush Crocodile Skink

# *Tribolonotus gracilis*

*Tribolonotus gracilis* is a shy, crepuscular skink from the rainforest of northern New Guinea with a red-orange ring around the eyes and rows of pointed, backward-curving scales down the back that give it an armoured, almost dragon-like appearance. It lives hidden in damp forest litter, can make sounds and lays only one egg at a time. It is best suited as a display animal, not for handling.

Family: Scincidae

**KEY FACTS**

### THE ANIMAL

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|---|---|
| Adult size | **16-20 cm**<br>total length incl. tail |
| Lifespan | **10 years** |
| Active | **At dusk and at night** |
| Lifestyle | **Terrestrial and burrowing** |
| Habitat | **Rainforest and wetland** |
| Difficulty | **Intermediate** |

### CARE

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|---|---|
| Min. enclosure | **60 × 45 × 45 cm**<br>L × W × H for 1 adult |
| Temperature, day | **24-27 °C** |
| Basking spot | **27-28 °C** |
| Temperature, night | **22-24 °C** |
| Humidity | **70-90%** |
| Water | **Water dish** |
| UVB | **Recommended**<br>Ferguson zone 1 |
| Diet | **Insects and worms/snails** |
| Kept | **Singly or in pairs** |

### BREEDING

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|---|---|
| Reproduction | **Egg-laying** |
| Sexually mature | **36-48 months** |
| Clutch size | **1 eggs** |
| Clutches per year | **1-6** |
| Incubation | **65-85 days**<br>at 23-27 °C |

### PROTECTION AND PAPERWORK

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|---|---|
| CITES | **Not listed** |
| EU annex | **Annex D** |
| IUCN | **Least Concern (LC)** |

## About the species

*Tribolonotus gracilis* is a compact and sturdily built skink with a large, triangular head, short snout, large eyes and short, strong legs. The back and flanks are dark brown to blackish grey, the belly yellowish to cream. Along the back there are four rows of keeled scales, each ending in a backward-curving point and resembling the dorsal plates of a crocodile, and on the flanks there are small knobs (tubercles). The iris is dark brown and edged with a bright red-orange semicircle of scales.

The species reaches 16-20 cm including the tail, of which the body from snout to vent makes up 8-10 cm, and the tail is about as long. Young animals have the same body shape as the adults, but the head is cream-brown and the iris is pale blue without the red-orange ring. The adult colour appears after about six months.

The species was described in 1909 by Nelly de Rooij. It resembles its close relative *Tribolonotus novaeguineae*, with which it is often confused in the trade, and the two species have previously been proposed for merging. *T. gracilis* is recognised by the knobs along the flanks and the red-orange eye ring, while *T. novaeguineae* has small keeled scales on the flanks and only a small pale orange to yellow patch in front of the eye. The species name gracilis is Latin for slender or slight.

*T. gracilis* is one of the few skinks that can make sounds. When it is seized or defends its egg, it gives out squeals and chirping sounds, and males and females sound different. It is shy and best as an animal to look at. It rarely bites, but instead plays dead, tries to flee or drops its tail.

## Distribution and habitat

*Tribolonotus gracilis* lives in northern New Guinea, from the area around Jayapura and Lake Sentani in the Indonesian part of the island eastwards through Sandaun and East Sepik provinces to Madang Province in Papua New Guinea. The type locality is at the Moso River. The species is also found on coastal islands such as Karkar. Records from the Admiralty Islands (Manus) may be in error.

On Karkar the species lives in piles of discarded coconut shells on the plantations, so it can cope in cleared forest when there is damp cover and food.

> **Native range:** Papua New Guinea and Indonesia.

### HABITAT

*Tribolonotus gracilis* lives in tropical rainforest and in coconut plantations, where it stays under fallen branches, leaves and other forest litter, often near water. It burrows in under the litter and makes a nest between it and the soil. The ground is always damp, and although the animal climbs well, it spends most of its time on the ground, where it searches for small worms, larvae and insects at dusk. The species does not bask, but warms itself in its burrow or under dead wood warmed by the sun.

The climate is warm and humid all year. The daytime temperature averages about 27 °C and the night about 23 °C, and the humidity is above 70 % all year round. The rainy season from December to March is the breeding season of the species, and the dry season runs from June to September.

Read more: Humidity, misting and ventilation

## Care

### THE ENCLOSURE

A single animal needs a terrarium of at least 60 × 45 × 45 cm, and bigger is better. A pair needs at least 90 × 45 × 45 cm. A spacious terrarium with plenty of hides means the animals show themselves more often, and a front-opening terrarium is calmer than one that is opened from above.

The substrate is the most important thing. Use a moisture-retaining, earthy substrate, for example topsoil mixed with coconut fibre, in a layer of 5-10 cm, or 10-15 cm if planting directly in it, and place a thick layer of fallen leaves on top. A layered substrate with a drainage layer of clay balls at the bottom, where a little water always stands, and a layer of long-fibre sphagnum above, draws up water and keeps the substrate evenly damp without turning sour. Remove faeces and urates daily, and replace the substrate completely every 3-4 months.

Furnish with several hides, for example coconut shells, cork tubes and slightly curved pieces of cork bark, so the animal can choose for itself where to be. A pair often shares a hide, but there must be several to choose from. The terrarium must have good ventilation, so it can dry out a little between mistings. Non-toxic tropical plants and branches give extra cover and climbing opportunities.

Read more: Terrarium construction and bioactive substrate

### TEMPERATURE

*Tribolonotus gracilis* is tropical, but does not bask in the wild. Keep the terrarium at 24-26 °C at the cool end and 27-28 °C in a warm hide, and let the temperature fall to 22-24 °C at night.

A warm hide directly under a heat bulb of 50-60 W in a lamp with a ceramic fitting at one end is enough in most homes. If the hide becomes too hot, switch to a weaker bulb. If the room is colder than 22 °C at night, a ceramic heater on a thermostat or dimmer can be used. Measure the temperature inside the warm hide with a digital probe, or control the heat with a thermostat.

Read more: Heat and temperature

### HUMIDITY AND WATER

The species tolerates drying out very badly. The humidity must be 70-80 % by day and higher at night, preferably about 90 %, and the substrate must always be damp. Mist the terrarium morning and evening and preferably also in the middle of the day, or use an automatic rain system. In the breeding season the humidity is raised to 85-90 % by misting several times a day, and outside it can be kept at about 70 %.

Ensure good ventilation, so the air does not become stagnant and musty, and the terrarium dries out a little between mistings. If a fogger is used at night, it must have distilled or reverse osmosis water and be cleaned and disinfected every week. Provide a dish of clean water, partly sunk into the substrate, for both drinking and bathing. The animal can hold its breath for a long time and often dives into the dish when frightened. Change the water daily and scrub the dish every week.

### LIGHTING AND UVB

The species is active at dusk and at night. The animal can manage and breed without UVB when the food is supplemented with calcium and vitamin D3, but a weak UVB light gives the best results and is recommended. Use a tube for forest species that live in shade (Ferguson zone 1), for example a T5 tube at 20-25 cm from the animal's back or a stronger 6 % T5 tube at 28-35 cm. The tube should cover half, at most two thirds, of the length of the terrarium, and the UV index should be 1-2 at the highest point under the lamp. Measure with a UV meter, and replace the tube every 12 months. There must be plenty of shade and cover.

Keep the light on for 12 hours a day, even though the animal is nocturnal, so that day and night are kept distinct. Use white light, not coloured lamps.

Read more: Lighting and UVB Read more: Calcium, vitamins and supplements

### FEEDING

The species is insectivorous. The staple diet can be crickets, cockroaches (e.g. *Blaptica dubia* and *Blaberus discoidalis*), mealworms, superworms, hornworms, silkworms, black soldier fly larvae, earthworms and snails. Variety is important, and crickets and earthworms are a good basis. A live earthworm placed at the hide usually brings the animal out.

Young animals are fed every day, adults every other day. Give as many insects as the animal eats in five minutes. Prey must be no more than half the size of the animal's head, and for the smallest hatchlings the prey must be no wider than the distance between the eyes. Gut-load the prey with nutritious food beforehand. Dust the insects with calcium at every feeding, and give vitamin D3 and a multivitamin at every other one. A dish of fresh water must always be available.

Read more: Feeder animals: keeping and breeding

### BEHAVIOUR AND HANDLING

*Tribolonotus gracilis* is an animal to watch and not for handling. When seized, it squeals, plays dead, tries to flee or drops its tail, and this stresses it. Give a new animal at least two weeks in peace, and then train it to take insects from soft-tipped tweezers. The animal is mostly seen at dawn, at dusk and at feeding.

Animals of the same sex are aggressive towards each other, especially males. A pair and their young can live together in a spacious terrarium, and the pair often shares a nest and defends it loudly, especially when there is an egg. If the animal is kept only to be looked at, it is best kept alone. The species can be kept in a humid display terrarium with other small frogs and lizards with the same requirements, but eggs and young are vulnerable, and it requires a large terrarium.

## Breeding

### SEXUAL MATURITY AND SEXING

The animals are sexually mature at about 3-4 years of age, and adults develop an orange throat. The male is often larger and sturdier than the female, but size is never a reliable sign. The most reliable feature is a rectangular patch of four to six enlarged ventral scales at the navel in the male. The male also has grey to grey-blue, raised pores under the third and fourth

toes, occasionally also the fifth, on the hind feet. The underside can be seen by placing the animal in a small, empty glass container and photographing it through the base.

### MATING

In the wild the species breeds in the rainy season from December to March, but in the terrarium breeding can be started at any time of year with frequent misting and higher humidity. Choose a healthy, adult pair, and give them time to settle in a terrarium of at least 90 × 45 × 45 cm. Ideally put the pair together for a period corresponding to the dry season (June to September). Feed them every other day with a varied diet based on crickets and earthworms.

Provide several hides, so the pair can choose for themselves. If the animals suit each other, they end up sharing one hide. In the dry season keep the humidity at about 70 % with a little misting as needed. As the breeding season approaches, raise it to 85-90 % by misting several times a day. The temperature should stay between 23 and 27 °C. Mating probably takes place in the nest, and little is known about it.

### EGG-LAYING AND CLUTCHES

The female lays only one egg at a time, and there are 5-6 weeks between eggs. This gives up to six eggs in a breeding season. The egg is leathery and oval, about 2 cm long, and is buried just below the surface inside the hide. The female has two functioning ovaries, but only the right oviduct works, so eggs from the left ovary must travel through the body cavity before they are laid.

Make a hollow several centimetres deep in the substrate directly under the hide the pair has chosen, and fill it with a loosely packed, slightly damp mixture of peat moss and topsoil. Cover with cork bark. The female curls around the egg, covers it again if it becomes exposed, and defends it aggressively.

### INCUBATION

The eggs hatch best in an incubator. Carefully remove the egg from the nest, and place it half-buried in damp peat moss in a lightly ventilated container without turning it. The moss should be damp enough that no water drips out when a handful is squeezed hard. As long as the egg is firm and plump, no more water is added. If it becomes necessary, water the moss, never the egg.

The egg hatches after 65-85 days at 23-27 °C. A dented egg is usually dehydrated or dead, and an egg that sweats is dying or already dead. A little denting and moisture on the shell just before hatching is normal, however. The hatchling cuts one or more small slits in the shell and crawls out.

Read more: Incubating eggs

### REARING THE YOUNG

The hatchlings are 6-8 cm long and weigh 3-5 g at hatching, and within a few hours they seek food and cover. They can be reared in a plastic box or a small terrarium with damp kitchen paper or moss, a coconut shell as a hide and a shallow water dish.

Feed the young every day with small crickets and other live prey no wider than the distance between the eyes, and dust the food with calcium and vitamin D3 at every other feeding. The young have a pale blue iris and a cream-brown head, and the adult colour appears after about six months. A pair and their young can live together, but remove the young when there is not enough space, and no later than before they become sexually mature.

## Health and common mistakes

Little is known about diseases and parasites in the genus, and wild-caught animals that look healthy can die suddenly, even after several years in captivity. Typical problems and prevention:

- Parasites in newly acquired, wild-caught animals. Quarantine new animals singly in a small, simply furnished box with damp kitchen paper, a shallow water dish and a coconut shell, and have a vet examine a faecal sample for worms and protozoa as soon as possible.
- Bacterial infection with *Aeromonas hydrophila*, which can kill several animals within a few days. It mainly affects wild-caught animals that are stressed after transport and cold.
- Dehydration. Dull eyes and a limp body are signs of illness or too little moisture.
- Metabolic bone disease from too little calcium and vitamin D3. Dust the food with calcium and vitamins, and preferably use weak UVB.

- Lost tail from fright or handling.

A healthy animal is alert, has clear, shiny eyes and no wounds, parasites or deformities. It may stand perfectly still, but should react when touched. See a vet experienced with reptiles if the animal loses weight, does not eat or lies sluggishly.

Read more: Quarantine and hygiene Read more: Common diseases and signs of illness Read more: Buying animals: captive-bred, wild-caught and transport

### 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.