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GECKOS

Southern Leaf-tailed Gecko

Saltuarius swaini

Saltuarius swaini is a large, nocturnal leaf-tailed gecko from the rainforests of the coastal mountains of south-eastern Queensland and northern New South Wales in Australia. The skin resembles lichen-covered bark, the tail is broad and leaf-shaped, and the toes have claws instead of adhesive lamellae. The species is almost unknown in terrariums and must be kept cool.

Family: Carphodactylidae English name: Southern leaf-tailed gecko Former name: *Phyllurus swaini*

KEY FACTS

THE ANIMAL

Adult size	**13 cm** snout-vent length
Lifespan	**5-10 years**
Active	**At night**
Lifestyle	**Arboreal**
Habitat	**Rainforest and montane forest**
Difficulty	**Intermediate**

CARE

Min. enclosure	**60 × 40 × 80 cm** L × W × H for 2 adults
Temperature, day	**22-26 °C**
Temperature, night	**19-21 °C**
Humidity	**55-100%**
UVB	**Not required**
Winter rest	**10-16 °C** 9-13 weeks
Diet	**Insects**
Kept	**Singly or in pairs**

BREEDING

Reproduction	**Egg-laying**
Sexually mature	**24-48 months**
Clutch size	**1-2 eggs**
Clutches per year	**2-3**
Incubation	**90-110 days** at 22-26 °C

PROTECTION AND PAPERWORK

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

About the species

Saltuarius swaini is a large, slender and flattened gecko with a triangular head, a narrow neck and long, thin limbs. The colour is light to dark brown with darker markings that make the animal almost invisible against bark and lichen. A narrow, prominent V-shaped mark runs backwards between the eyes, and the throat scales are smooth. The back, hands and feet are covered with pointed tubercles, and the tubercles reach all the way to the tip of the tail. The species has no pores in front of the vent, in either males or females.

The body reaches about 13 cm from snout to vent. The tail is broad and leaf-shaped and has broad, pale bands of cream and grey, in contrast to the narrow, pale crossbands in some of the close relatives. When in danger the animal can drop its tail to divert the predator's attention. The new tail grows back, but it lacks the tubercles and has a completely different colour and pattern from the original. The toes have claws and no adhesive lamellae, so the animal climbs on rough bark and stone and not on smooth glass.

The species was described in 1985 as *Phyllurus swaini* and moved to the genus *Saltuarius* in 1993. The species name honours Malcolm Swain of the New South Wales national parks service. A review in 2008 showed that several populations previously counted with it belong to other species, so older descriptions may concern animals that today belong to other *Saltuarius* species.

Distribution and habitat

Saltuarius swaini lives in the coastal mountain ranges of south-eastern Queensland and northern New South Wales in Australia, between about 27.9 and 28.8 degrees south. All the populations in New South Wales lie east of the Clarence River. The type locality is Richmond Range State Forest in New South Wales, and the species is also known from the Border Ranges area on the border between the two states.

The range is small and fragmented into mountain areas with rainforest. Australia does not permit the export of wild reptiles, so animals outside the country come from captive breeding, and they are very few. The map shows only the area where the species is documented.

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

> **Native range:** Australia.

HABITAT

Saltuarius swaini is a nocturnal tree-dweller in subtropical rainforest and related humid forest. It spends the day hidden in large tree root systems and in hollow trunks of strangler figs, where it sits tight against the bark. After dark it comes out and hunts on trunks and rock faces.

The mountains along the coast are humid and cooler than the lowlands, and the nights are cool all year. Temperature and humidity at the species' own habitats have not been measured. The gecko eats arthropods such as beetles, moths, cockroaches and spiders. Females normally lay one or two soft eggs in late spring and bury them in moist soil or in the leaf litter. The egg can be up to 28 mm long. The young hatch after about three months and catch insects a few days after hatching.

Read more: Humidity, misting and ventilation

Care

THE ENCLOSURE

Little is known about keeping *Saltuarius swaini*. The figures are borrowed from *Saltuarius salebrosus*, *Saltuarius cornutus* and *Phyllurus platurus*, which live in similar forest and are better known in captivity. Keep the species in pairs or singly in a terrarium of at least 60 × 40 × 80 cm (length × width × height), and preferably larger, because the animal is large and lives vertically.

Furnish with vertical pieces of stiff bark and a few branches, so that the animal can get around the whole terrarium. The geckos always sit wedged against bark or on branches, so hiding places on the floor are not necessary. About 1 cm of fine sand or a mixture of fine sand and coconut peat is enough as a substrate. Females that are to lay need a deep egg-laying substrate (see Breeding). The terrarium must be well ventilated, with openings both at the top and at the bottom, so that the air moves and does not become stagnant and mouldy.

TEMPERATURE

By day the temperature should be 22-26 °C and at night 19-21 °C. The species comes from cool mountain forest, so stay at the low end of the range.

Heat is the greatest danger. Even *Saltuarius salebrosus*, the most heat-tolerant species in the genus, tolerates only a few hot days in the high 30s and only in shade, and *S. swaini* lives in far cooler forest. A heat source is not necessary; if one is used, it must give at most 32 °C and must be switched off at night and in midsummer. Keep the terrarium away from direct sun, and mist on hot days, so that the temperature falls a degree or two.

A cool resting period is part of keeping the species (see Breeding).

HUMIDITY AND WATER

Humidity should fluctuate. Mist the terrarium thoroughly in the evening, at least two to three times a week, so that the humidity rises towards 100 %, and let it fall to about 55-60 % between mistings, so that bark and substrate can dry out. The animals drink the droplets that settle on bark and leaves. A water bowl is not necessary.

During the resting period the terrarium is misted every evening, so that the animals can drink and the humidity does not fall too low. The substrate must not be constantly wet, because that causes mould and skin problems. Air that is too dry causes problems with shedding, where pieces of shed skin stay stuck on the toes and tail tip.

LIGHTING AND UVB

The species is nocturnal and hidden by day, so UVB is not necessary for *Saltuarius swaini*. A weak light during the day with a fixed daily rhythm is natural. Do not use strong spotlights or coloured night lights, and keep the terrarium dark at night.

The terrarium must have shaded areas, and direct sun must never hit it. The animal does not seek basking spots.

Read more: Lighting and UVB

FEEDING

The species feeds on arthropods, and in terrariums ordinary feeder insects such as crickets and cockroaches work. Hunting is by ambush, so the prey must move. Feed three times a week in the breeding season and less often the rest of the year, down to once every two to three weeks in winter; during the cool resting period itself no food is given (see Breeding). Food must be no larger than the animal's head.

Dust the food regularly with calcium and multivitamin, and give only two to three insects per animal at each feeding, so that the animals do not become too fat. The tail stores fat and shows the animal's condition. Remove leftovers the next morning. Follow the weight and the fullness of the tail.

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

BEHAVIOUR AND HANDLING

Saltuarius swaini is a calm, secretive and nocturnal species that sits still against bark by day. It is not an animal to be handled, and it is easily stressed by being picked up. Keep handling to a minimum and never by the tail, which the animal drops.

When in danger the gecko arches its back, raises its tail and waves it, and it can open its mouth and hiss. Keep the animals singly or in pairs with only one male per terrarium. Keep an eye on the pair, and separate them if one becomes dominant or the other cannot eat in peace.

Breeding

SEXUAL MATURITY AND SEXING

Males have a distinct bulge at the base of the tail, where the hemipenes lie, which females lack. The large species in the genus grow slowly and become sexually mature after two to four years. Put only fully grown animals in good condition into breeding. Breeding of *Saltuarius swaini* in captivity has not been described.

MATING

Breeding is triggered by a cool resting period of two to three months, as in the close relatives. First fast the animals for a week at unchanged temperature, so that the stomach is empty, and then lower the daytime temperature 2-3 degrees a day to 10-16 °C. Keep the animals cool for 9-13 weeks, and mist every evening, so that they can drink. The animals must never be cooled with food in the stomach, because the food can rot and be fatal.

After the period the temperature is raised to normal over a week, and feeding resumes. Take an animal out of the resting period if it is clearly thinner. Matings are seldom seen, but eggs can be seen in the female one to two months after the rest.

EGG-LAYING AND CLUTCHES

The female lays one or two eggs at a time, in the wild most often in late spring. In the close relatives there are 2-3 clutches per season about a month apart. The female digs a nest in the moist substrate, lays the eggs in the middle and covers them.

Give the female a deep egg-laying substrate of moist peat or coconut fibre, 8-10 cm deep, which clumps but is not wet. It must never dry out. The female may sit on the nest. After laying she is thinner, and the two white ovals that can be seen through the semi-transparent belly are gone.

INCUBATION

Remove the eggs from the nest, and incubate them in a mixture of perlite and water in the ratio 1:1 by weight. Incubate at 22-26 °C, preferably at the cool end, because too high a temperature can kill the embryos.

The eggs hatch after about three months, 90-110 days depending on the temperature. The effect of temperature on sex has not been clarified.

REARING THE YOUNG

The young are independent from hatching and shed their skin almost immediately. Keep them in a small terrarium, for example 15 × 15 × 25 cm, furnished like the adults', with kitchen paper as the substrate and a piece of cork bark as a hide. Mist every other day, and offer the first food two to ten days after hatching.

Give small insects, no larger than the animal's head, dusted with calcium and multivitamin, and only two to three per animal. The young eat little during the first weeks and then thrive. The species grows slowly. Separate siblings if one grows larger or becomes dominant.

Health and common mistakes

Diseases in *Saltuarius swaini* have not been described, but in the genus's species the problems are almost always caused by the climate. The typical mistakes are:

- Temperatures that are too high, especially on hot summer days. Keep the terrarium cool and in shade.
- Air that is too dry, which causes problems with shedding.
- A constantly wet substrate and stagnant air, which cause mould and skin problems.
- Calcium deficiency, if the food is not dusted with calcium and vitamins.
- Weight loss during the cool resting period. Take an animal out of the period if it loses weight.

See a vet with experience in reptiles if the animal loses weight, does not eat or looks 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.