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GECKOS

Auckland green gecko

Naultinus elegans

Naultinus elegans is an emerald-green, diurnal gecko from forests and scrub on New Zealand's North Island. It gives birth to live young, typically lives for about 20 years and likes it cool. The species is protected in its homeland.

Family: Diplodactylidae Former name: *Naultinus sulphureus; Hoplodactylus elegans*

KEY FACTS

THE ANIMAL

Adult size	**7-8 cm** snout-vent length
Lifespan	**20-30 years**
Active	**By day**
Lifestyle	**Arboreal**
Habitat	**Temperate woodland and meadow**
Difficulty	**Experienced**

CARE

Min. enclosure	**50 × 50 × 100 cm** L × W × H for 3 adults
Temperature, day	**15-25 °C**
Basking spot	**25-30 °C**
Temperature, night	**10-16 °C**
Humidity	**60-70%**
Water	**Water dish**
UVB	**Essential** Ferguson zone 3
Diet	**Insects, fruit and nectar**
Kept	**Singly, in pairs or one male with several females**

BREEDING

Reproduction	**Live-bearing**
Litter size	**1-2 young**
Gestation	**240-270 days**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Vulnerable (VU)**

About the species

Naultinus elegans is a slender, pale green gecko with white or yellowish spots and broken stripes along the back and sides. The scales are small and granular and give the skin a matt, velvety appearance. The mouth lining is deep blue, and when the animal feels threatened it gapes to show it off. Green colour and daytime activity are shared in the genus only with the day geckos; almost all other geckos are brown or grey and active at night. Unlike its relatives in *Hoplodactylus*, it cannot change the intensity of its colour. In captivity a number of canary-yellow animals are found, which presumably lack the ability to produce the blue pigment in the skin.

The species was described in 1842 by John Edward Gray and is the type species of the genus *Naultinus*, which has nine described species. For a period *Naultinus punctatus* was regarded as a subspecies of *N. elegans*, and the two can interbreed where their ranges meet. *N. elegans* is slightly smaller and more slender, and the soles of the feet are greyish green, where they are yellow in *N. punctatus*. The species name *elegans* is Latin and means fine or elegant.

It grows to about 8 cm from snout to vent, plus the tail. The tail is long and thin and grips the branches like a fifth hand, so the animal is very reluctant to drop it. The young are born deep green with pale markings along the spine and acquire the adult colours when they are 15-18 months old. The weight is not documented.

The animals typically live for about 20 years, and the genus is known to reach 30 years or more. The males can be very aggressive towards their own kind, and this is the greatest challenge when several animals are to be kept together.

Distribution and habitat

Naultinus elegans is found only in New Zealand, in the northern half of the North Island, except for the area north of Whangaroa. The species also lives on four of the islands in the Hauraki Gulf. The type locality is Auckland.

The range is smaller today than in the past. The whole genus has declined, and the populations are fragmented. Records outside this area on the map come from animals in captivity.

> **Native range:** New Zealand.

HABITAT

Naultinus elegans lives in lowland forest and scrub, often in stands of the myrtle-family shrubs manuka and kanuka in scrubby or swampy areas. The animals spend most of their time high up in the foliage. Precise altitude limits for the species are not documented.

New Zealand has a temperate, maritime climate with a lot of rain and cool winters. The gecko warms itself in the sun on top of the leaves and moves into the shade under them when it gets too hot. In cold and rain it climbs down and seeks shelter near the ground among the plants or under stones. Below about 5 °C reptiles become stiff and sluggish. It eats much more in spring and summer than in autumn and winter.

Care

THE ENCLOSURE

Naultinus elegans lives up in the vegetation, so the enclosure should be taller than it is wide. A small group of one male and two females needs at least 50 × 50 × 100 cm (length × width × height). If the enclosure stands in a room that stays reliably within 5-25 °C all year round, a pair can manage in a smaller enclosure, down to about 30 × 30 × 50 cm, but a large enclosure gives the animals far better opportunity to choose between warmth and cold, sun and shade.

Furnish with live plants with dense foliage that the animals can hide in, for example *Coprosma* and *Pittosporum* in pots, and with branches at several heights right up under the ceiling. Hanging *Tillandsia usneoides* is a retreat the animals use readily, and hollow bamboo or plastic tubes hung up near the top are also used. Provide two to three basking spots and retreats per animal, so that none is pushed away. The substrate can be a thick layer of dead leaves.

Mesh on at least three sides and in the ceiling provides good ventilation and lets the natural fluctuations in temperature and humidity come through. Glass and plastic filter out UVB, so they should at most be on the shaded side. Never keep different *Naultinus* species together, because they interbreed easily.

Read more: Lighting and UVB Read more: Humidity, misting and ventilation

TEMPERATURE

Naultinus elegans comes from a temperate climate and does best cool. The ambient temperature should be between 5 and 25 °C all year round: about 15-25 °C in summer and cooler in winter. Brief heat above 30 °C is more dangerous than cold, but long periods below 5 °C cause health problems, and frost is deadly. At night the temperature should fall to about 10-16 °C.

A halogen spot provides a basking spot of 25-30 °C in the same place that the UVB light reaches. In summer the spot is on for two to three hours in the morning and afternoon, in winter for about an hour in the morning and afternoon. An unheated room without direct sun is ideal, because it provides the natural seasonal variation. Do not heat the room in winter: the cool period with less activity and little or no food is part of the annual rhythm and helps breeding along. Never place the enclosure so that the sun shines in through a window pane, because it will quickly overheat.

Read more: Heat and temperature

HUMIDITY AND WATER

The ideal humidity is 60-70 %, as long as the animals themselves can seek out damper places in the enclosure, for example dense foliage. If the humidity is constantly below 50 % or above 90 %, problems arise: air that is too dry causes poor sheds, and air that is too damp causes fungus and respiratory infections. Good ventilation is therefore just as important as misting.

Mist the foliage so that the animals can lick the droplets off the leaves, and let the plants dry out in between. There must always be fresh drinking water. A small drip system over a plant provides an even supply of droplets throughout the day.

LIGHTING AND UVB

As a diurnal, basking gecko, *Naultinus elegans* needs UVB. Outdoors behind mesh the animals get it from the sun, but indoors a UVB fluorescent tube (T5) intended for reptiles must be used. Aim for a UV index of about 3-5 where the animals bask, corresponding to Ferguson zone 3, and preferably measure with a UV meter. The tube must shine in the same place that the spot warms, otherwise the animal does not make use of the UVB light.

Provide shade zones so that the animal can choose for itself. Control the light with a timer that follows the seasons: switch on a couple of hours after sunrise, switch off a couple of hours before sunset, and adjust the times every month. The night must be dark.

FEEDING

In the wild *Naultinus elegans* takes flying insects such as moths and flies, but also sandhoppers and spiders. It also licks nectar and honeydew and eats small berries. The diet is thus predominantly insects supplemented with something sweet.

In captivity it is fed live insects such as flies, moths, small beetles, spiders, crickets and grasshoppers. The animals are fond of fruit purée, mashed banana and diluted honey from a small dish. Captive-bred feeder insects must be dusted with a calcium and vitamin supplement, and finely chopped cuttlebone in a small dish is a good extra source of calcium. The animal must make vitamin D3 itself with the help of UVB; oral supplements are not recommended without the advice of a vet, because an overdose is dangerous.

One to four feedings a week are enough for adults, depending on age, season and condition. Give more in the warm period and less when it gets cooler, and stop completely below 10 °C. Pregnant females need extra. The animals easily become fat, so keep an eye on the thighs, pelvis and tail base.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements Read more: Buying animals: captive-bred, wild-caught and transport

BEHAVIOUR AND HANDLING

Naultinus elegans is calm and slow and hunts by ambush. It is not an animal to be handled much. When threatened it gapes with the blue mouth and may utter short, croaking or barking sounds. It is reluctant to drop its tail, but never grab it.

The genus is solitary by nature, and permanent enclosure companions can cause long-term stress. The males in particular can be very aggressive towards their own kind. A small group of one male and two females often works, and the animals can live peacefully in larger groups when the sex ratio and space are right. Keep an eye on the interaction, and remove an aggressive animal.

Small orange-red mites may sit by the eyes, limbs and ear openings. They are largely harmless but swell up when they suck blood.

Breeding

SEXUAL MATURITY AND SEXING

The males have distinct bulges at the base of the tail where the hemipenes sit, and visible pores under the thighs and in front of the vent; the females lack both. The young are born in a juvenile pattern with pale markings along the spine and change to the adult colours after 15-18 months. They should grow steadily but slowly and reach adult size at 2-3 years of age. Age and weight at sexual maturity are not documented, so the fact box shows no value.

MATING

In the species on the North Island, mating usually takes place in spring. The species of the genus have slightly different mating times, which presumably helps to keep them separate. A natural seasonal rhythm in temperature, humidity and day length is the most important thing for getting the animals to breed.

During courtship the male follows the female and licks and bites her, typically on the neck and over the shoulders, until she permits mating. Small bite marks are therefore not necessarily a sign of fighting. The mating itself lasts at most a few minutes. Separate the animals only in the case of persistent chasing or actual injuries.

EGG-LAYING AND CLUTCHES

Naultinus elegans does not lay eggs but gives birth to live young. Gestation is long, about 8-9 months. In the species on the North Island two young are born, more rarely one, between April and October, but in captivity *N. elegans* can give birth at almost any time of year. Green geckos often give birth in daylight, out in the vegetation.

Pregnant females bask more and switch between warm and cool spots to give the young the right temperature. Give them plenty of food and free access to finely chopped cuttlebone. After birth the female is hungry and dried out: mist her lightly, and give juicy, protein-rich food until she has regained condition.

INCUBATION

There is no incubation, because the species is viviparous. The 240-270 days in the fact box correspond to the gestation of 8-9 months. The mother regulates the embryos' temperature herself by moving between sun and shade, so the enclosure must have both a basking spot and cool, shaded places throughout the period.

Disturb the female as little as possible in the last months. Late in gestation she often loses her appetite when the belly becomes clearly distended.

Read more: Incubating eggs

REARING THE YOUNG

The young are fully independent from birth, and the parents do not care for them. It is safest to move them to a small enclosure of their own as soon as they are found, so that they are not chased or eaten by adults. There they can stay for about the first year before going into an adult enclosure.

Wait 1-2 days before feeding, so that the yolk sac is used up. Then give fruit flies, small houseflies and other small insects every day for the first six months. Keep the temperature even within 10-25 °C, and mist the young directly so that they get enough water. Kitchen roll as a substrate makes it easy to see whether they are eating and passing droppings. Small groups can be kept together, but keep an eye on animals that lag behind.

Health and common mistakes

The typical problems are caused by wrong conditions:

- Too high a temperature, especially heat above 30 °C. This causes stress and can be deadly for a species from a cool climate.
- Stagnant, damp air, which causes fungus and respiratory infection. Air that is too dry causes poor sheds.
- Calcium deficiency and metabolic bone disease, when UVB or calcium in the food is lacking. Glass and plastic between the lamp and the animal filter out UVB.
- Obesity, because the animals easily become fat in captivity.
- Stress and bite wounds when several animals, especially males, are kept together.
- Mites around the eyes and limbs, which are harmless in small numbers.

See a vet experienced with reptiles if the gecko loses weight, does not eat for several weeks outside the winter period or looks 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.