

Geckos have adapted to surviving predation by more-porks, kingfishers, wekas and hawks but introduced predators like cats, rats, pigs, ferrets and stoats have reduced both the size and distribution of gecko populations.

Some species have had to alter the way they live to survive in the presence of these new predators. The Duvaucel's gecko is found on Lady Alice Island in the Hauraki Gulf. In 1994, kiore (Polynesian rats) were eradicated from Lady Alice, making it rat free. Before this, Duvaucel's geckos were not found on the ground and so were thought to live only in trees. However soon after the island was deemed rat free, Duvaucel's were found on the ground in large numbers.

Pohutukawa is a valuable food source for Pacific geckos that come out at night to lick nectar from the flowers, but possums are destroying these trees and many of the Pacific geckos that rely on them.

People often fail to realise the damage they do to lizards when they clear land. A patch of scrub may not look valuable, but is often home for at least one or two species of lizard.

You may be able to provide a refuge for lizards within your landscape plans and pest control of introduced mammals like possums will give both your garden and the lizards in it a fighting chance.

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Geckos



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There are two groups of New Zealand geckos, the genus *Naultinus*, the “green tree geckos” which are all diurnal (day active) and arboreal (tree dwelling). The other genus, *Hoplodactylus*, contains nocturnal (night active) earthy coloured geckos. Many of our geckos are endemic that means they are only found in New Zealand.

Gecko feet are well adapted to gripping smooth surfaces. Tiny claws are at the tip of each toe and microscopic hair-like structures called lamellae on the pads of the foot greatly increase the amount of contact (and grip) with surfaces. This adaptation works so well that some species of geckos can walk up glass.

Geckos have rather loose fitting skin with granular scales that can be seen on close inspection. “Old” skins are usually shed almost whole during the sloughing. How often sloughing occurs depends on the gecko's growth rate. At warm times of the year, a well fed gecko will “grow out of” its skin every six or so weeks, but may not slough at all during the colder months of winter.

Red mites the geckos' equivalent of fleas may be visible in the folds of a gecko's skin. Usually these parasites are just a nuisance, but a heavy infestation may contribute to the death of a weak animal.

Different species of geckos have different markings to camouflage themselves, according to their habitat. Individual geckos of the same species may also be quite different shades – forest geckos for example range from browns and greys to olivey greens.

Green tree geckos may sometimes have yellow off-spring!

Normal green geckos have blue and yellow pigments (colours) in their skin, but yellow geckos lack the blue pigment.

It is more difficult for these rare yellow animals to survive because their unusual colouring makes them more obvious to predators rather than camouflaging them. Geckos use their spoon shaped tongues to clean their eyes as they cannot blink. Their eyes are permanently covered by their eyelids, which are transparent and fused together, forming an ocular lens.

When geckos slough their skin, it is often possible to

see the “eye scale” part of the old skin. This “eye scale” is the top layer of the ocular lens, which peeled off with the rest of the old skin.

The lifespan of a smaller species like the common gecko (with a total length of about 15cm) is between 15-20 years in the wild, while a Duvaucel's gecko was recorded as surviving 36 years in the wild. Duvaucel's geckos are the largest in the New Zealand reaching lengths of up to 32cm.

Male gecko can be identified by the bulge at the base of the tail on the underside. This contains the hemipenes, the copulatory organ.

Geckos are usually found in trees or shrubs – tea tree is a particular favourite but there are also grassland and coastal species.

Geckos will use scent to detect food like the nectar from flowers (flowers themselves are often eaten also), fruit and berries. Usually it is insects which form the bulk of a gecko diet.

Although their eyesight is not very good, geckos are quick to spot movement and use this to locate prey and interact with other geckos. Geckos tend to stalk their prey and after creeping close enough snap the prey in their jaws. Sometimes they will lunge at their victim and simply jump on it, pinning it beneath them until they can bite it. Geckos have small sharp peg like teeth, which are used mostly for gripping struggling insects. Geckos do not chew their food.

Sound is important for geckos. Many geckos have quite a large vocal range with warning calls, chirps, squeaks and even barks. Some sounds deter predators some are used to communicate with other geckos. Many of these sounds are beyond the human range of hearing.

Geckos tend to be loners and many are territorial. Territorial disputes are often settled by one animal intimidating another, so geckos involved try to take advantage of one another's short-sightedness raising their bodies and opening their often brightly coloured mouths to scare their opponent away. The biggest gecko is

usually the most successful being able to hold a good patch with plenty of room and food sources. Smaller less dominant animals are left with much less desirable territories.

In spring, geckos become very active and males seek out females to mate. Courtship is typically brief and in the case of forest geckos, violent – male forest geckos will grab a females legs or tail in their jaws and shake here as a prelude to mating.

Gestation periods vary among different species of geckos. There have even been cases of females storing sperm and not giving birth until well after their known gestation period. One but more often two babies are born at a time.

Gravid (pregnant) females actually act as mobile incubators for their eggs, which hatch inside their bodies. This adaptation keeps the young from getting too cold and is called ovoviviparity.

Geckos have also adapted their behaviour to New Zealand's cooler conditions. Nocturnal geckos often come out during the day to sun bask.

New Zealand is the most southern place where geckos are found, so heating can be a problem especially for the harlequin gecko which lives only on Stewart Island. *Hoplodactylus* geckos (like the harlequin) react to light by becoming paler in bright light and darker as the light diminishes. This may help with thermoregulation because dark colours absorb more heat, allowing the gecko to make the best use of the warmth available.

When a gecko is sufficiently threatened (usually a predator) it will drop its tail. However different species will tolerate different levels of stress. Green tree geckos being arboreal are very reluctant to lose their prehensile (able to grip objects) tail whereas common geckos (having less use for a tail) have been known to abandon their tails simply on being disturbed. Regrown tails are often noticeable because the patterns will be slightly different to the original tail. Occasionally a dropped tail may not sever completely and another will grow beside it giving the gecko a two or sometimes three pronged tail!