

## 11 Terrestrial Reptiles and Amphibians - Lizards and Frogs

### Reptiles

Thirteen species of lizards have been definitely recorded on Great Barrier Island, and others were probably formerly present (Table 11.1) This compares with 97 lizard taxa recognised nationally, and 15 species in the Auckland Conservancy. Great Barrier Island has the highest lizard diversity of any island in New Zealand. The tuatara was also formerly present on Great Barrier Island. Tuatara is not really a 'lizard', but belongs to a much older order of reptiles.

Table 11.1 Status Of reptiles on Great Barrier Island. National threat status follows Hitchmough et al. 2007<sup>1</sup>: 2 = Nationally endangered; 5 = Gradual decline; 6 = Sparse; 7 = Range restricted. Species indicated by yellow fill are considered at risk on Great Barrier Island or nationally. **Grey**: no longer present on Great Barrier Island; **light grey**: No confirmed sightings for 20 years; **yellow**: species with restricted distributions at risk through rat predation on Great Barrier Island. **Bold** text indicates a species for which Great Barrier Island is the main population.

Common name	Scientific name	National threat status	Great Barrier Island Notes
Tuatara	<i>Sphenodon punctatus</i>	6	Present in European times, now probably extinct.
Robust skink	<i>Oligosoma alani</i>	7	Probably formerly present. Currently on Pokohinu/Mokohinau.
Striped skink	<i>Oligosoma striatum</i>	Data deficient	Two records only on Great Barrier Island - 1983 - 2009 at Windy Hill
Green gecko	<i>Naultinus elegans</i>	5	Rare, but recorded 2009
Duvaucel's gecko	<i>Hoplodactylus duvaucelii</i>	6	No sightings since 1988
<b>Chevron skink</b>	<i>Oligosoma homalonotum</i>	2	Only on Great Barrier Island and possibly Little Barrier Island
Egg laying skink	<i>Oligosoma suteri</i>	5	Threatened by rat predation
Towns's skink	<i>Oligosoma townsi</i>	7	Northern block Great Barrier Island, Little Barrier Island, Pokohinu and Hen & Chickens .
Pacific gecko	<i>Hoplodactylus pacificus</i>	5	Susceptible to rat predation
Ornate skink	<i>Oligosoma omatum</i>	5	
Moko skink	<i>Oligosoma moco</i>		Not threatened
Shore skink	<i>Oligosoma smithi</i>		Not threatened. Common on Great Barrier Island.

## Terrestrial Reptiles and Amphibians – Lizards & Frogs


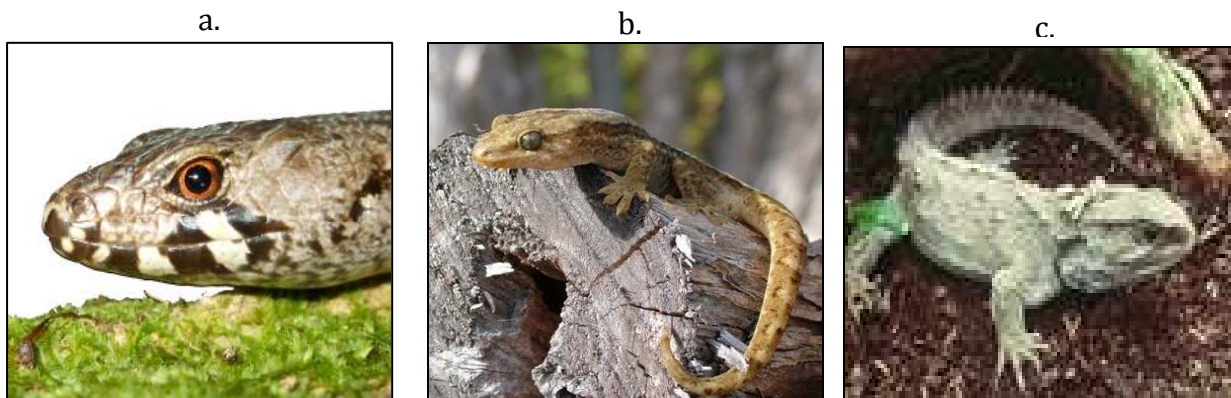
Copper skink	<i>Oligosomaa aeneum</i>  Copper Skink	Not threatened; probably the most frequently seen lizard on Great Barrier Island.
Common gecko	<i>Hoplodactylus maculatus</i>	Not threatened
Forest gecko	<i>Hoplodactylus granulatus</i>	Not threatened

Photo: Dick Vietch. DOC website

Although five of the species in Table 11.1 are regarded as not threatened (nationally), they are never-the-less subject to predation by rats and cats, and their continued survival cannot be assured. Chevron skink is Great Barrier Island's best-known lizard 'rarity'; a large skink almost confined to the Island. Recent research has identified its preferred stream-side and debris-dam habitat. Improved trapping techniques suggest that there may be more of them than formerly supposed. However, this research work has also identified rats as a significant predator.

Town's skink was differentiated from marbled skink in May 2008. This species is present on Great Barrier Island and Little Barrier Island, the Mokohinau and Hen and Chicken Islands, where it survives in rock piles providing good hiding places from rodents and feral cats.

Fig 11.1 Reptiles. (a) Chevron skink in close-up. (b) Pacific gecko at Windy Hill. (c) Tuatara on Poor Knights



Photos: Chevron Skink; Ben Barr, DOC, Pacific Gecko; Trent Bell, Tuatara; Rob Morris DOC website

The tuatara belongs to the order *Sphenodontia*, which otherwise apparently became extinct throughout the world 60 million years ago. It is perhaps New Zealand's most remarkable relict organism, and it is sad that it has probably been lost from Great Barrier Island within living memory. There is one unconfirmed report from the Aiguilles Island (northern tip of Great Barrier Island) in 2006.

## Amphibians

The native frogs of New Zealand, *Leiopelma* spp., belong to the “archaic frogs” (*Archaeobatrachia*) and are regarded as amongst the most primitive living in the world today.<sup>ii</sup> Worldwide, the populations of many amphibians have declined (e.g., Pechmann et al. 1991<sup>iii</sup>, Tyler 1991<sup>iv</sup>). The distributions of all *Leiopelma* species have been reduced during human occupation New Zealand and three species have become extinct<sup>v</sup>. Although legally protected since 1922, populations are still being lost through habitat degradation<sup>vi</sup>. The Department of Conservation has an active recovery programme<sup>vii</sup>.

One native and one introduced frog are known to be present on Great Barrier Island. Hochstetter’s frog (*Leiopelma hochstetteri*) was discovered in 1980 in Te Paparahi, and populations have recently been relocated there and near the kauri dam in the Kaiaraara valley<sup>viii</sup>. This species occurs (or occurred) with the rarer Archey’s frog (*Leiopelma archeyi*) on Mt Moehau at the end of the Coromandel Peninsula, so it is possible that Archey’s frog also occurs on Great Barrier Island.

Hochstetter's frogs are semi aquatic, inhabiting stream verges and seepage areas in forested areas, where they form small localised populations. Goats, now eliminated from Great Barrier Island, have been recognized as a serious risk to Hochstetter’s frog through causing soil erosion and stream-side siltation. Pigs are likely to be even worse in this respect. The species is classified as ‘sparse’<sup>ix</sup> and as ‘at risk’ in the IUCN<sup>x</sup> Red Data Book.



Fig 11.2 Hochstetter’s frog,

This tiny frog is very well camouflaged, so populations are hard to find and its status on Great Barrier Island is uncertain.

*Photo: recently photographed in the Kaiaraara Valley by Halema Jamieson (DOC).*

The introduced growling grass frog (*Litoria raniformis*) is larger, green and vocal, and belongs to a modern group of frogs. As it usually occurs in different (non-forest) habitats, it is unlikely to compete with the native *Leiopelma*.

## Summary – Lizards and Frogs

### Reptiles - Lizards

- Great Barrier Island has a rich reptile fauna (skinks and geckos), with thirteen species definitely recorded, and two others (including the archaic lizard-like tuatara) having recently gone extinct on the Island.
- However, Duvaucel’s gecko has not been recorded for 20 years, and a further four species have restricted distributions and/or are threatened by predation from rats and feral cats.

## Terrestrial Reptiles and Amphibians – Lizards & Frogs

- Chevron skink (*Oligosoma homalonotum*) is a large skink regarded as Nationally Endangered (category 2). It is now found only on Great Barrier Island, and Little Barrier Island (Hauturu).
- No introduced (non-native) lizards have established on Great Barrier Island.

### Amphibians - Frogs

- Hochstetter's frog (*Leiopelma Hochstetteri*) is a New Zealand endemic archaic frog regarded as 'at risk' in the IUCN red data book. Its populations elsewhere in New Zealand appear to be declining. It is known from the northern end of Great Barrier Island, but its numerical status remains to be assessed.
- The introduced growling grass frog (*Litoria raniformis*) is present on Great Barrier Island in wet eastern paddocks and swamps.

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i Hitchmough, R. Bull, L. & Cromarty, P. (Compilers). 2007. *New Zealand threat classification system species lists 2005*. Science & Technical Publishing, Department of Conservation, Wellington, NZ. (ISBN 0-478-14128-9).

ii Duellman, W.E. 1975. On the classification of groggs. *Occasional papers of the Museum of Natural History, University of Kansas* 42:1-14

iii Pechmann, J.H.K.; Scott, D.E.; Semlitsch, R.D.; Caldwell, J.P.; Vitt, L.J.; Gibbons, J.W 1991. *Declining amphibian populations: the problem of separating human impacts from natural fluctuations*. *Science* 253: 892 -895.

iv Tyler, M.J. 1991. Where have all the frogs gone? *Australian natural history* 23:618-620.

v Worthy, T. H. 1987. Osteology of *Leiopelma* (Amphibia: Leiopelmatidae) and descriptions of three new sub fossil *Leiopelma* species. *Journal of the Royal Society of New Zealand* 17: 201-251.

vi Bell, B.D. 1985. Conservation status of the endemic New Zealand frogs. In: Grigg, G.; Shine, R.; Ehmann, H. (Eds). *Biology of Australasian frogs and reptiles*. Chipping Norton, Surrey Beatty. Pp. 449-458.

vii Newman, D. G. 1996. Native Frog (*Leiopelma* spp.) Recovery Plan. *Threatened Species Recovery Plan No 18*. Dept. of Conservation, Threatened Species Unit, Wellington.

viii H. Jamieson, DOC., personal communication

ix (Category 6) in Hitchmough et al's (2007) list

x International Union for the Conservation of Nature