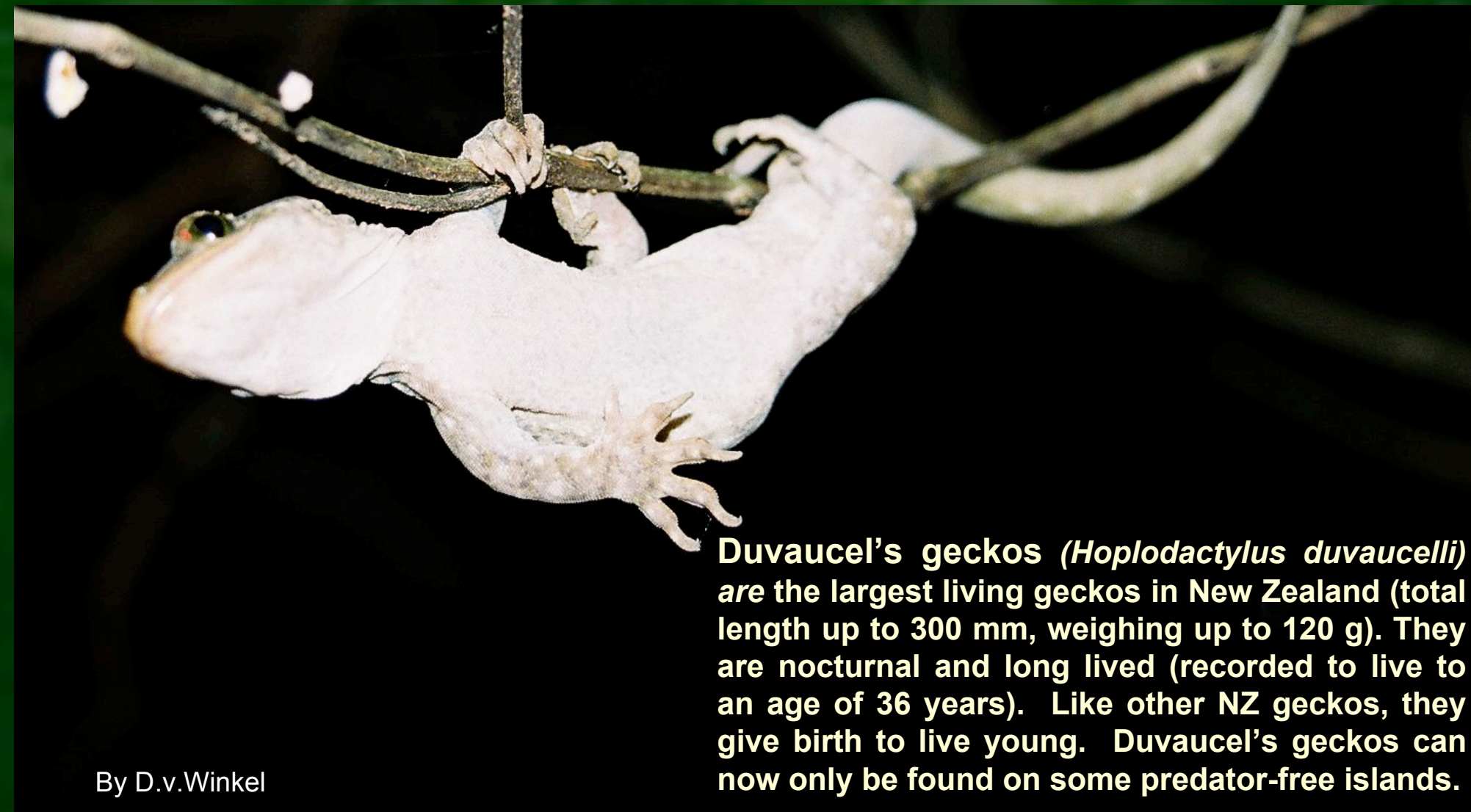


# Translocation of Duvaucel's geckos and shore skinks to Tiritiri Matangi Island, Motuora Island and Massey Captive Breeding Facility

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Duvaucel's geckos (*Hoplodactylus duvaucelli*) are the largest living geckos in New Zealand (total length up to 300 mm, weighing up to 120 g). They are nocturnal and long lived (recorded to live to an age of 36 years). Like other NZ geckos, they give birth to live young. Duvaucel's geckos can now only be found on some predator-free islands.

## Introduction

New Zealand reptiles have undergone a large geographical range contraction and extinctions over the past years of human colonisation and predator introductions. Translocation is a good way to promote conservation and increase distribution range of rare, or restricted species such as the Duvaucel's geckos. Continual harvesting from wild populations may reduce the health of that population because of their need to recovery from the sudden decline in numbers. Captive breeding of lizards as an alternate option will enable large number of individuals to be produced as founders for new metapopulations without negative effects on the smaller wild populations.

There are three main objectives to this project:

To establish self-sustaining wild populations of Duvaucel's geckos and shore skinks on two managed islands in the Hauraki Gulf to support ecological restoration and education objectives

To establish captive breeding populations that will be used as a source population for future translocations without the need for further impact on wild populations.

To assess the degree of risk posed by ground feeding native birds to the successful reintroduction of large ground-dwelling threatened lizards, using Duvaucel's gecko as an analogue for threatened *Cyclodina* skinks.



Shore skinks (*Oligosoma smithii*) are diurnal skinks live very close to the shoreline. They are still relatively common and can be found on the coast of northern part of North Island and at least 79 offshore islands.



## The team

Ecology and Conservation Group, Massey University (Dianne Brunton, Weihong Ji, Marleen Baling, Manuela Barry, Chris Wedding, Dylan Van Winkel, Ben Barr) with the support from ARC (Graham Ussher), Motuora Restoration Society (Robin Gardener-Gee, Melinda Habgood Kit Brown, Helen Lindsey) Supporters of Tiritiri Matangi, Department of Conservation, Ngati Hei, Ngati Whanaunga and Ngati Manuhiri, Dave Craddock, Simon Chapman and many volunteers.



## Source sites:

**Korapuki Island** where Duvaucel's geckos were sourced is a 18ha island about 5km off Coromandel. It supports a high density of Duvaucel's geckos. The other lizards found on the island include common geckos (*Hoplodactylus maculatus*), shore skinks, moko skinks (*Oligosoma moco*), Suter's skinks (*Oligosoma suteri*) and Whitaker's skinks (*Cyclodina whitakeri*). 69 adult Duvaucel's geckos (29 Males and 30 females) were collected from Korapuki Island during 23-27 November 2006.

**120 shore skinks** (80 Females and 40 males) were collected during 30 November-3 December 2006 from Tawharanui Regional Park. With a predator-proof fence completed in 2004, Tawharanui became a mainland island, a safer habitat for native species. Soon after the completion of the fence, a small population of bellbirds, a species disappeared from northern part of North island have self-introduced and now are thriving in the park. The shore skinks are abundant on the shoreline in the park. The population is likely to increase with the eradication of mammal predators such as rats.

## Pre-translocation survey and quarantine

- A lizard survey was carried out on each of the release site. Cloacal swab samples were taken from the lizards captured. The samples were analysed for diseases coordinated by Brett Gartrell (Massey University).
- No Duvaucel's geckos and shore skinks have been found on Tiritiri Matangi Island and Motuora Island.
- Four reptile species (*Cyclodina aenea*, *Oligosoma moco*, *Hoplodactylus maculatus* and *Sphenodon punctatus*) are present on Tiritiri Matangi Island and 2 species (*C. aenea*, *O. moco*) on Motuora Island.
- Salmonella* have been found on a small proportion of common geckos (10%), moko skinks (5.3%) on Tiritiri Island and copper skinks (8.7%) on Motuora Island. The strains of the *Salmonella* are to be confirmed.
- The 69 Duvaucel's geckos and 120 shore skinks collected from the source locations were housed in Massey University quarantine facility for the period before the releases. Cloacal swab samples from these animals were also analysed for diseases. Two Duvaucel's geckos and 1 shore skink were diagnosed with *Salmonella*. The strains of the *Salmonella* are to be confirmed.



## Release sites

**Motuora Island** is an 86ha island in Hauraki Gulf about 3.5km from the mainland. The Motuora Restoration Society has taken on the task of restoring this DOC administered recreation reserve. The island is free of mammalian predators. 20 Duvaucel's geckos (10 males and 10 females) and 40 shore skinks (13 Males and 27 females) were released on Motuora on 16 December 2006.

**Tiritiri Matangi Island** is a 220ha open island sanctuary 30 km Northeast of Auckland in Hauraki Gulf. The island support many endangered native species, such as takahe, little spotted kiwi, kakariki, kokako and tuatara, most have been translocated to the island from other locations. The lizards found on the island include copper skinks, moko skinks and a low number of common geckos. Nineteen Duvaucel's geckos (9 Males and 10 females) and 40 shore skinks (14 males and 26 females) were released on Tiritiri Island on 17 December 2006.

**Massey Reptile Captive Breeding Facility:** The project of establishing a reptile captive facility was initiated by Associate Professor Dianne Brunton and Dr Weihong Ji and funded by Massey Albany Strategic Fund in September 2005. The facility is located at Massey University Auckland Campus and has its first residents: 30 Duvaucel's geckos and 40 shore skinks. It will be managed by the reptile team of Ecology and Conservation Group lead by Associate Professor Dianne Brunton.

## Research projects following the translocations

- "Recovery of shore skinks in source population after harvesting and the effect of mice predation on recovery rate" lead by Chris Wedding (MSc)
- "Post-release monitoring, ACO use and predation by native predators" lead by Dylan Van Winkel (MSc, Duvaucel's gecko) and Ben Barr (MSc, shore skinks).
- "Breeding biology, mating systems and communications in captive Duvaucel's geckos" lead by Manuela Barry (PhD).
- "The colour morphs in shore skinks and the implications on their adaptation to the new environments" lead by Marleen Baling.
- "Monitoring changes in genetic diversity in translocated populations" Lead by Weihong Ji (Duvaucel's gecko) and Marleen Baling (shore skinks).

