

Gecko Monitoring

FIELD GUIDE

for Motuihe Island



Copyright © 2017 Motuihe Island Restoration Trust
April 2017

All rights reserved. No part of this publication is to be reproduced other than for educational or non-commercial purposes without the prior approval of the copyright owner.

Prepared by Dylan van Winkel

Acknowledgements

Thanks to the Motuihe Island Restoration Trust Inc. for funding the development of this programme and production of this Field Guide, and thanks to Dr. Matt Baber, Art Polkanov (DOC) and Mark Delaney for constructive comments on the Gecko Monitoring Programme.

Front cover

Duvaucel's gecko (*Hoplodactylus duvaucelii*)

Photo – Dylan van Winkel

Photo & Illustration credits

Dylan van Winkel, Marleen Baling, Dr. Dave Towns, Dr. Brian Gill, and Dhahara Ranatunga

Cited as:

van Winkel D. (2017) *Gecko Monitoring Field Guide for Motuihe Island*.
Motuihe Island Restoration Trust, Auckland.



Bioresearches 
A Babbage Company

Contents

	Page
Introduction	4
Preparing for Monitoring	5
Monitoring Equipment	6
Step-by-step Procedure	7
Monitoring Methods	
Tracking Tunnel (TT)	8
Cell Foam Cover (CFC)	9
Artificial Cover Object (ACO)	10
Species Identification	
Raukawa Gecko (<i>Woodworthia maculata</i>)	11
Pacific Gecko (<i>Dactylocnemis pacificus</i>)	12
Duvaucel's Gecko (<i>Hoplodactylus duvaucelii</i>)	13

Contents

	Page
Quick Guides	
Gecko Footprint Comparison	14
Size Guide – Raukawa Gecko	15
Size Guide – Pacific Gecko	16
Size Guide – Duvaucel’s Gecko	17
Other Reptile Species	18
Plague Skink (<i>Lampropholis delicata</i>)	19
Gecko Gender	20
General Observations	21
Frequently Asked Questions	22
Contact Details	23

Introduction

This Field Guide was developed to aid the Motuihe Island Restoration Trust volunteers while undertaking gecko monitoring surveys on the island. The Guide focuses on three species of native gecko, including Duvaucel's gecko (*Hoplodactylus duvaucelii*), raukawa gecko (*Woodworthia maculata*) and pacific gecko (*Dactylocnemis pacificus*). The geckos were translocated to the island as part of a wider restoration and conservation effort.

The Guide features simple step-by-step instructions on how to prepare for monitoring surveys, how to undertake monitoring station inspections and how to accurately record data. This Guide should be read in conjunction with the more comprehensive 'Gecko Monitoring Programme' document. Images and brief descriptions of each gecko are provided and "comparison pages" provide a reference for readers, allowing the rapid identification of species in the field. The life-size guides provide a quick and easy reference for determining the age-size classes of individuals while in the field. Supplementary information and answers to some frequently asked questions are also provided.

All gecko surveys must be led by trained and experienced personnel, and conducted under a valid DOC Wildlife Authorisation (permit). Please refer to page 23 for relevant Contact Details.

Preparing for Monitoring

Prior to monitoring, the team leader(s) will advise each volunteer group which monitoring grid they will be working in (e.g. Duvaucels/Pacific gecko or Raukawa gecko). All team leaders, should be familiar with the monitoring protocols outlined in the Gecko Monitoring Programme document, and familiar with the location of the monitoring stations, field equipment and potential health and safety hazards on the island (e.g. location of streams, steep terrain, etc).

Some monitoring stations are located in areas that may require moving through dense vegetation, and/ or areas where gorse and wasp nests may be present. Please take all precautions to avoid being injured. If deemed unsafe, do not attempt to inspect the monitoring station.

Team leaders will be responsible for briefing volunteers on the daily tasks and ensuring that all field data is accurately recorded and ultimately saved in electronic format (e.g. excel spreadsheet) for analyses at a later date.

Monitoring Equipment

- Gecko Monitoring Field Guide
- Maps of monitoring grids
- Data sheets
- GPS
- Digital camera
- Pencil(s)
- Paint pen for re-marking monitoring stations (where necessary)



- Bait (bananas)
- Tracking cards (only when setting-up survey)



Step-by-step Procedure

1. Record volunteers names, date, weather conditions and start time on datasheet.
2. Use GPS to locate a monitoring station.
3. Arrive at monitoring station, inspect ACO, inspect CFC (if present) and collect tracking card (see pages 8-10 for details on inspecting devices).
4. Record the number and species of geckos found in the appropriate section of the datasheet and use Field Guide to help identify the geckos and their footprints.
5. Move on to the next monitoring station and repeat the process.
6. Make sure that all 'activated stations' have been inspected and all data has been recorded.
7. Input the data into an Excel spreadsheet and save.



Monitoring Station

Monitoring Methods:

Tracking Tunnel (TT)

Equipment

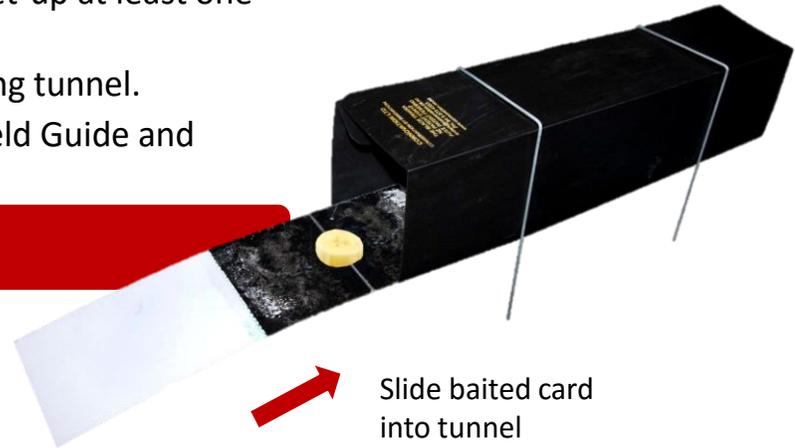
- Spare tracking cards
- Banana (bait)

Procedure

- Baited tracking cards should have been set-up at least one week prior to the inspection.
- Slide tracking card out of the black tracking tunnel.
- Identify the gecko footprints using the Field Guide and record the species on the datasheet.

What to record

- Presence / absence of gecko footprints
- Species of gecko(s) footprints
- Other footprints (e.g. weta, skink)



Monitoring Methods:

Cell Foam Cover (CFC)

Equipment

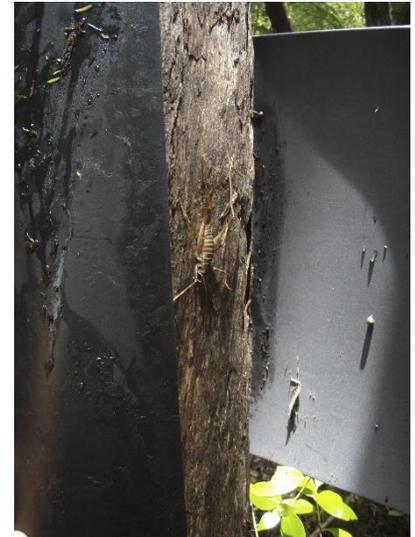
- Tag/ paint pen
- Spare nails & hammer

Procedure

- Unclip the CFC from nails on one side only.
- Look for geckos between the first fold.
- Peel back the cover from the tree and look for geckos on bark.
- Replace cover after inspection.

What to record

- Number of gecko(s)
- Species of gecko(s)
- Size class of gecko(s)



Monitoring Methods: Artificial Cover Object (ACO)

Equipment

- Camera

Procedure

- Approach ACO stack.
- Quickly lift the upper ACO.
- Record number of geckos or take photograph.
- Quickly lift lower ACO.
- Record number of geckos or take photograph.
- Replace ACO stack and spacers.

What to record

- Number of gecko(s)
- Species of gecko(s)
- Size class of gecko(s)



Raukawa gecko

Woodworthia maculata

Body length (SVL): 53 - 82 mm

Description:

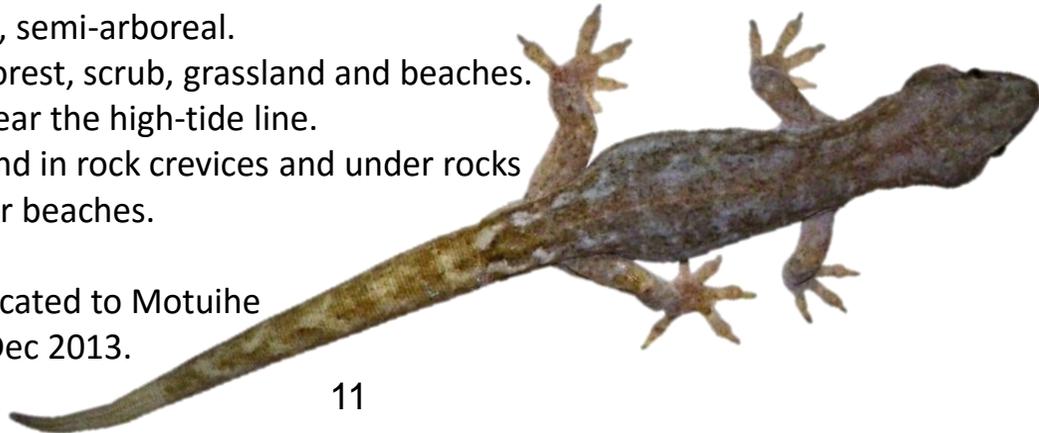
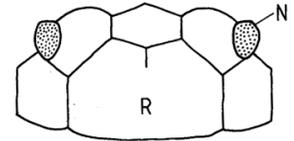
Grey or brown colour, often with variable markings that may involve bands, stripes, blotches or chevrons.

Rostral scale on tip of snout does contact nostrils (see diagram).
Toes have greatly expanded toe pads.

Habitat and behaviour:

Nocturnal, semi-arboreal.
Inhabits forest, scrub, grassland and beaches.
Forages near the high-tide line.
Often found in rock crevices and under rocks on boulder beaches.

60 translocated to Motuihe Island in Dec 2013.



Pacific gecko

Dactylocnemis pacificus

Body length (SVL): 70-80 mm

Description:

Grey or brown colour with variable markings that may involve bands, stripes, blotches or chevrons. Markings often bright and distinctive. Occasionally have mustard-yellow patch across nape.

Rostral scale on tip of snout in broad contact with nostril (see diagram).

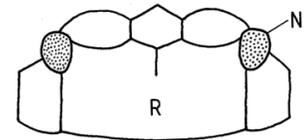
Expanded toe pads with long claw.

Habitat and behaviour:

Nocturnal.

Inhabits forest, scrub (kanuka), grassland and rocky coastlines.

54 geckos translocated to Motuihe Island in Dec 2014



Duvaucel's gecko

Hoplodactylus duvaucelii

Body length (SVL): 100-161 mm

Description:

Large robust gecko; mainly grey with olive-green or dark brown blotches. Large green or brown eyes. Lower surface uniform or speckled.

Toes have expanded toe pads with long claw.

Habitat and behaviour:

Nocturnal, semi-arboreal.

Lives in forest and scrub vegetation.

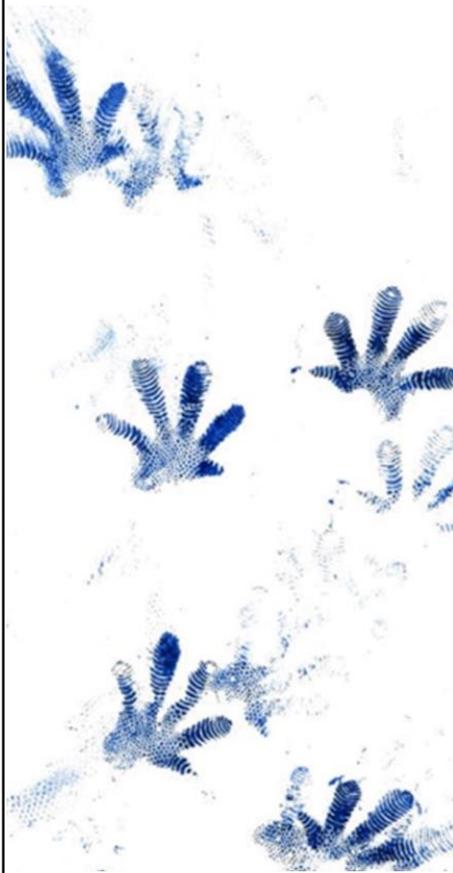
Often found in rock crevices and close to the shoreline. Forages in trees and on the ground. May bite when handled.

88 geckos translocated to Motuihe Island in Mar 2014.



Quick Guide: Gecko Footprint Comparison (Pictures to scale)

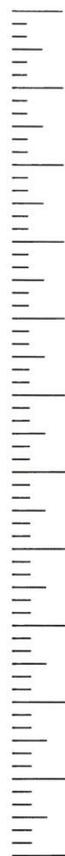
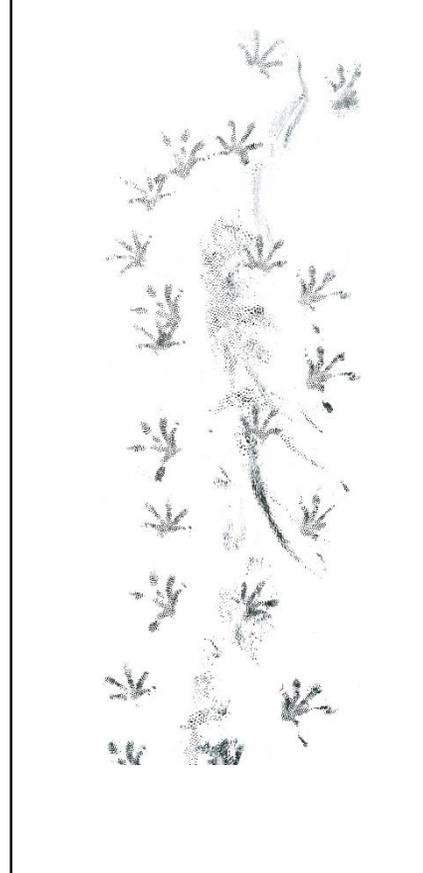
Duvaucel's gecko



Pacific gecko



Raukawa gecko



Size Guide – Raukawa gecko

Sizes refer to body length (SVL). Pictures to scale.



Neonate
25-35 mm



Sub-adult:
36-53 mm



Adult:
≥ 53 mm



Size Guide – Pacific gecko

Sizes refer to body length (SVL). Pictures to scale.



Neonate
24-34 mm



Sub-adult:
35-49 mm



Adult:
≥ 50 mm



Size Guide – Duvaucel's gecko

Sizes refer to body length (SVL). Pictures to scale.



Neonate:
50-79 mm



Sub-adult:
80 -109 mm



Adult:
≥ 110 mm



Other Reptile Species

Motuihe Island is home to 7 reptile species. In addition to the 3 geckos described above, the shore skink (*Oligosoma smithi*), moko skink (*Oligosoma moco*), copper skink (*Oligosoma aeneum*) and tuatara (*Sphenodon punctatus*) may be detected in monitoring equipment. Although not strictly part of this programme, it would be valuable to record information on these species where observed.

Shore skink



Copper skink



Moko skink



Tuatara (juvenile)



Plague skink

Lampropholis delicata

Introduced species and Unwanted Organism!

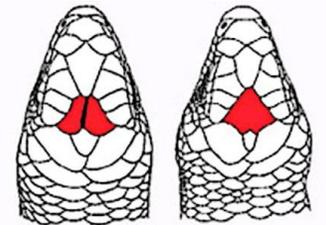
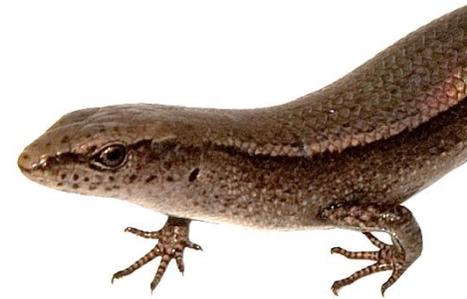
Size: 40–55 mm SVL

Description:

Fast-moving, egg-laying skink from Australia. Grey to dark brown, occasionally speckled. Broad dark stripe runs along the sides of the body. Belly pale grey-white. Single scale on top of head, vs. divided scale in native skinks (see diagram). May shimmer iridescent in the sunlight. Long, skinny tail. Lays eggs. Diurnal; avid sun-basker.

Not known to be present on Motuihe Island.

If observed, promptly report the sighting to DOC.



Native skink

Rainbow skink



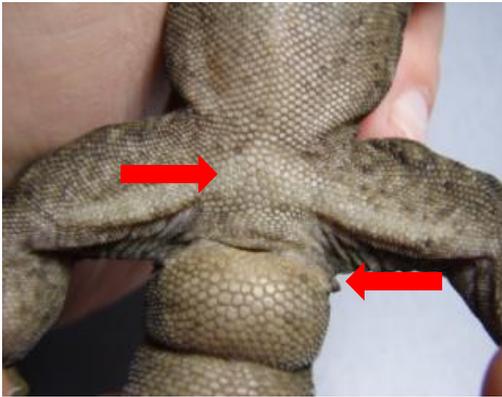
Eggs



Gecko Gender

Male

- Large hemipenial sac (bulge) at base of tail
- Distinct pre-anal pores
- Large cloacal spurs



Female

- Absence of large sac (bulge) at base of tail
- Absence of pre-anal pores
- Small cloacal spurs
- Swollen abdomen (over summer), may indicate gecko is gravid (pregnant)



General Observations

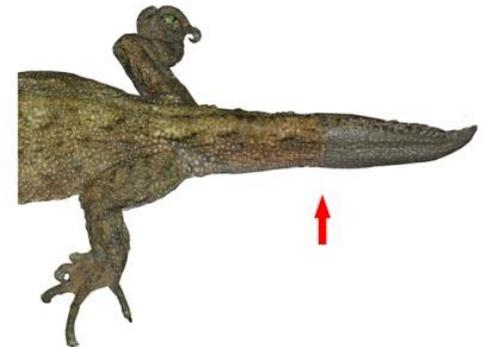
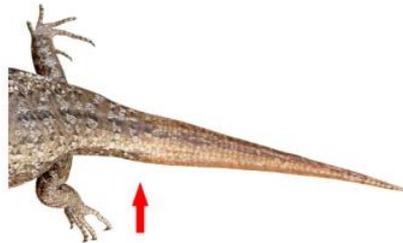
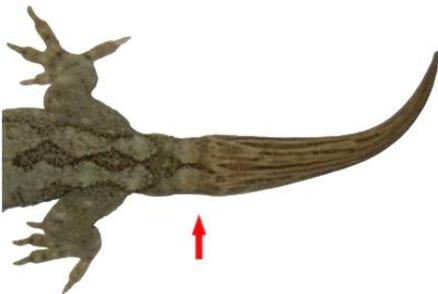
Parasites (mites and ticks):

Mites are often observed as very small red 'dots' on the eyes, ears, and body of a lizard. Often seen in the folds and creases of the skin. Tuatara ticks are found attached to the skin of tuatara, primarily along the flanks and under the hind legs. Tuatara ticks are rare and a threatened species in New Zealand.



Tail loss and regeneration:

Lizards and tuatara can drop and regrow their tails. This can be identified as either a part of the tail completely missing or a regenerating tail, which generally has an obviously different colour and pattern.



Frequently Asked Questions

What species is this?

If you can't identify the lizard using the species identification pages in this Guide, then take photos of the animal's back and face, record where it was seen and contact one of the herpetologists listed in the *Contact List* (page 23).

The lizard dropped its tail, what can I do?

Release the lizard as soon as possible, close to a refuge and away from the area you are working in. Record the tail loss in your notes. Don't worry too much, the lizard will eventually regrow its tail.

Is this unusual mark, lump, scar usually found on lizards?

If you are unsure, take a photo, with a size reference (e.g. pen, ruler), and contact one of the herpetologists listed in the *Contact List* (page 23)

What do I do if a gecko dies or is found dead?

Place the gecko in a plastic bag, noting what species it is, the date, time, and location it was found, and store it in the fridge. Notify a DOC ranger immediately or alternatively one of the herpetologists listed in the *Contact List* (page 23)

Contact Details

Position	Name	Phone	Email
Island Ranger	Michael Jenkins	027 437 2576	mjenkins@doc.govt.nz
Herpetologist	Matt Baber	021 825 411	MBaber@tonkintaylor.co.nz
Herpetologist	Dylan van Winkel	027 341 3497	dylan.vanwinkel@hotmail.co.nz
Coordinator of Monitoring	Julie Thomson	021 1211 340	motu.julie@gmail.com
Trustee	John Laurence		Jlaurence@xtra.co.nz
Department of Conservation	Art Polkanov	09 445 9653	apolkanov@doc.govt.nz