

# Rangitata Skink

*Oligosoma* aff. *longipes* 'Rangitata'

## The hidden lizard



Adult Rangitata skink. Marieke Lettink

## Quickfacts

A new species of skink that inhabits a few isolated sites on the scree-slopes of the Ashburton Mountains

Is very rare, mainly because of mammalian predation

## In a few rocky slopes

Above the bush-line of the Ashburton Mountains, lizards live amongst unstable and precarious greywacke scree-covered alpine slopes. Each lizard species possesses a particular skill-set, specialised for various microhabitats which are characterised by different rock sizes. Patches of densely-branched divaricating shrubs and vines dotted across the scree slopes creates vegetation islands that provide shelter for the inhabitants of this transient habitat. Rangitata skinks, one of the nine lizard species known to live in the alpine scree of the Ashburton Basin/ Ō Tū Wharekai, bask on the edges of these islands at elevations around 1000 m. They hide deep within the spaces of the rocky scree (a behaviour known by biologists as saxicolous) - away from bad weather, and any researchers attempting to survey them! Despite extensive surveys over a wide area, they have only been a few discovered at four sites. The very small population size is almost certainly caused by mammalian predation, a common threat to many New Zealand lizard species.

The keen-eyed Tony Whitaker discovered the Rangitata skink, in 2004, distinguishing them from the similar McCann's skinks



*Oligosoma maccanni*, the most common skink in the alpine area, by their size and differences in their body proportions. From a distance, or to the untrained eye, Rangitata and McCann's skinks appear the same, as both have brown striped bodies. But Rangitata skinks are much larger (head to tail length of 23 cm versus 18 cm for McCann's), have proportionally longer hind toes and a longer tail (1.5 times their body length) and more obvious eyelids. Their behaviour is different too. Like other scree-dwelling skins, Rangitata skinks bask on the scree when conditions allow, but they are highly vigilant when basking, resting up on their forelimbs like a seal. Due to this highly vigilant nature, researchers must be extra sneaky to sight them and use binoculars from 10 to 20 m away, or catch them in funnel traps. As temperatures rise throughout the day, however, and the rocks they bask on become hotter, Rangitata skinks will hide away, giving researchers only a short opportunity to survey them. Because Rangitata skink numbers are so few and there are only short periods of time when conditions permit basking, it can take three surveying attempts in the same area before finding any.

Predicting areas inhabited by Rangitata skinks is difficult, as neither high resolution aerial photographs nor predictive modelling gives an indication of the all-important (to a Rangitata skink) size and depth of a scree slope. Aerial reconnaissance by flying-over an area is expensive, and there is virtually no money available for this. Thus, after reviewing aerial photographs and conducting predictive modelling based on geographic information to identify the most likely sites, the survey team sets out, on foot, into the remote and rough terrain. Often, however, the selected sites that appeared perfect, are found to be not inhabited by Rangitata skinks.

Rangitata skinks were discovered at two new sites in 2012 and 2014, and even following considerable search effort only one new site consisting of five captures and 35 sightings was found during the most recent surveys in 2016. This new site is thought to support around 100 individuals, highlighting that only tiny populations are persisting. While we need to conduct many more surveys to expand our knowledge of their known range, quantify population sizes, number and extent, we must also protect the known populations. We know so little about the Rangitata skink, and while monitoring will give us more insight into populations, pest control is desperately needed. Pest control over remote, steep, unstable scree slopes, has not been attempted in the areas inhabited by Rangitata skinks and development of tools to control mammalian predators in this type of environment is currently the biggest challenge for protecting this unique scree-dwelling skink species. Luckily their rocky habitat provides them some safety from predators - many are too large to chase them down into the rock piles.

## The biology of the Rangitata skink

The Rangitata skink is one of several recently discovered *Oligosoma* skink species in New Zealand. *Oligosoma* species of skink are found throughout the North and South, Stewart and Chatham Islands of New Zealand, but the Rangitata skink has only been found within the Ashburton Basin. Within the *Oligosoma* genus, Rangitata skinks are related to the long-toed skink *Oligosoma longipes*, but are genetically distinct from long-toed skinks inhabiting the same area (i.e. they are sympatric), giving support to the recognition of the Rangitata skink as a separate species from the long-toed skink. They both are closely related to the Chatham Island skink *Oligosoma nigriplantare*.

*Oligosoma* species generally have flat heads, a pointed nose and their limbs and toes are long – Rangitata skinks have noticeably long hind toes and tail, with a tail 1.5 times their snout to vent length. They are a medium sized brown striped skink. Rangitata skinks are soon to receive a formal scientific description, which is currently in preparation as a tribute to the work of the late Tony Whitaker, who pioneered much of the lizard work in New Zealand and the Pacific.

## What next?

The threats to the survival of the Rangitata skink are:

1. Predation by the full range of introduced mammalian predators
2. Lack of tools and techniques to effectively control predators in the environments that Rangitata skinks live

Successfully protecting the Rangitata skink from these threats must be achieved in order for the conservation programme to succeed. Ideally, this should be done by:

1. Investigate threats to the species

It is not known what has caused the Rangitata skink to become so rare. It is likely it was always rare as its habitat is patchy and not common. While predators are likely to be having some effect, the deep rock piles they inhabit afford them some safety. It may be that competition with other skink species has increased due to changes in the bird fauna and vegetation in the surrounding environment forcing other species into the few remaining safe habitat patches.

2. Implement mammalian predator control

Mammalian predators (mustelids, rodents, hedgehogs, feral cats, possums) are likely to be the main cause of the skink's decline and controlling these predators will also allow

recovery of other threatened skinks in the area. We currently do not have any predator control tools that we are certain will work in these rocky steep sites. Predator-exclusion fences and trapping would be useful if they could be developed for the transient and isolated nature of the alpine scree habitat.

3. Conduct annual monitoring efforts at known sites

By monitoring known sites, more information about population trends and demographic information can be discovered and investigated. Monitoring programmes could also aim to quantify Rangitata skink optimal habitats, which may improve predictability of areas to surveyed in the future.

4. Conducting continued targeted surveys within the Ashburton Basin and surrounding mountain ranges.

By continuing the existing surveying effort more populations and individuals may be discovered. Surveying teams must include some experienced surveyors and be conducted in early summer or autumn when weather conditions are consistent as the skinks are dramatically less visible in hot or cold temperatures.

5. Complete the formal (taxonomic) description of the Rangitata skink

A draft manuscript was written by the late Tony Whitaker in February 2014. This is currently being completed by scientists as a dedication to Tony, who was a pre-eminent New Zealand herpetologist.

Research and monitoring of the Rangitata Skink is likely to cost around \$150,000 over three years. It is not known how much it will cost to protect them from predators, but this work could hopefully be incorporated into the management of Ō Tū Wharekai and the Hakatere Conservation Park.

## More information

Website: DOC – Ō Tū Wharekai. [Link](#)

Report: Rangitata skink (*Oligosoma* aff. *longipes* “Rangitata”) survey in the mid-Canterbury high country, South Island. By Marieke Lettink. Unpublished report prepared for Auckland Zoo and Department of Conservation Raukapuka Office, Geraldine, New Zealand. 19 pp. 2016.

Scientific paper: Origin, diversification, and systematics of the New Zealand skink fauna (Reptilia: Scincidae). By David G. Chapple, Peter A. Ritchie and Charles H. Daugherty. *Molecular Phylogenetics and Evolution*. No. 52. Science Direct, 2009. [Link](#)

Report: Conservation status of New Zealand reptiles, 2012. By Rod Hitchmough, Peter Anderson, Ben Barr, Jo Monks, Marieke Lettink, James Reardon, Mandy Tocher and Tony Whitaker. New Zealand threat classification series 2. Department of Conservation, Wellington, 2013. [PDF](#)



## Photos



Checking funnel trap, Ashburton Basin  
Marieke Lettink



View from survey team tent camp, Ashburton  
Basin. Marieke Lettink



Pregnant female Rangitata skink on scree stones,  
Ashburton Basin. Marieke Lettink

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