

Southern Fiordland Lizard Survey 15 December to 21 December 2018

Trip participants

Chris Pascoe (skipper)
Pete Kirkman (crew)
Bex Jackson (DOC Te Anau)
Jamie McAulay (DOC Te Anau)
James Reardon (DOC, Biodiversity Group)
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Objectives

- Investigate if there are *Oligosoma tekakahu* outside their current known range
- Survey predator free islands with old *Oligosoma acrinasum* sightings to ensure species persistence
- Search for any sign of gecko presence in southern Fiordland
- Investigate the presence of any other skink species in southern Fiordland

Oligosoma tekakahu – Te kakahu/Chalky Island skink

The Te Kakahu skink is a critically endangered point endemic originally known only from an area approximately 100m² on Te Kakahu-o-Tamatea/Chalky Island in Chalky Inlet, Fiordland. In February 2018 a translocation of 99 individuals was undertaken to Anchor Island, with monitoring in September 2018 showing the population still surviving. These two locations were the only known locations of the species though it was thought the species would likely have occurred more widely before the arrival of humans and introduced mammals.

Oligosoma tekakahu were found on a Green Islet (“Green 2”) off the South Coast of Fiordland, 30km away from their location on Chalky Island. Two individuals were found on the 15/12/18 and another on the 17/12/18 hidden under plants and/or rock. The weather was overcast on both occasions and no basking individuals were seen. The island was very small with a patch of habitat approximately 10m by 20m that was searched. A small amount of additional habitat was on the summit, however this was not searched as it was inaccessible from below. Vegetation was sparse and consisted mainly of *Anisotome lyallii*, *Olearia porina*, *Asplenium obtusatum*, and *Rytidospema setifolia* with a small



amount of loose rock. The island was ringed by a bare rock zone about 5m above high tide. No sign of predators or nesting seabirds were seen, and the closest point of mainland was approximately 60m away across a deep channel. Six other islands in the group were searched with no sign of lizards found on any of the others. One, “Green 1”, had a promising area of habitat on its summit but this was unable to be reached from the coast and a search of the top via helicopter is planned.



Figure 1. Previous only known site of *Oligosoma tekakahu* on Chalky Island and the new location on Green Islet



Figure 2. From “Green Islet 2” where the Te Kakahu sink was found. Photo James Reardon

Surveys were undertaken to extend the skinks known range on Chalky Island on the 19/12/18 and 20/12/18. This showed they extended into the forest to either side of their known location where patches of light penetrated to the forest floor and inhabited low vegetation/scrubby areas on and at the base of the cliff face below their known location. The area covered by the skinks is approximately 11 ha with about 1/3 of that being vegetated and suitable habitat.

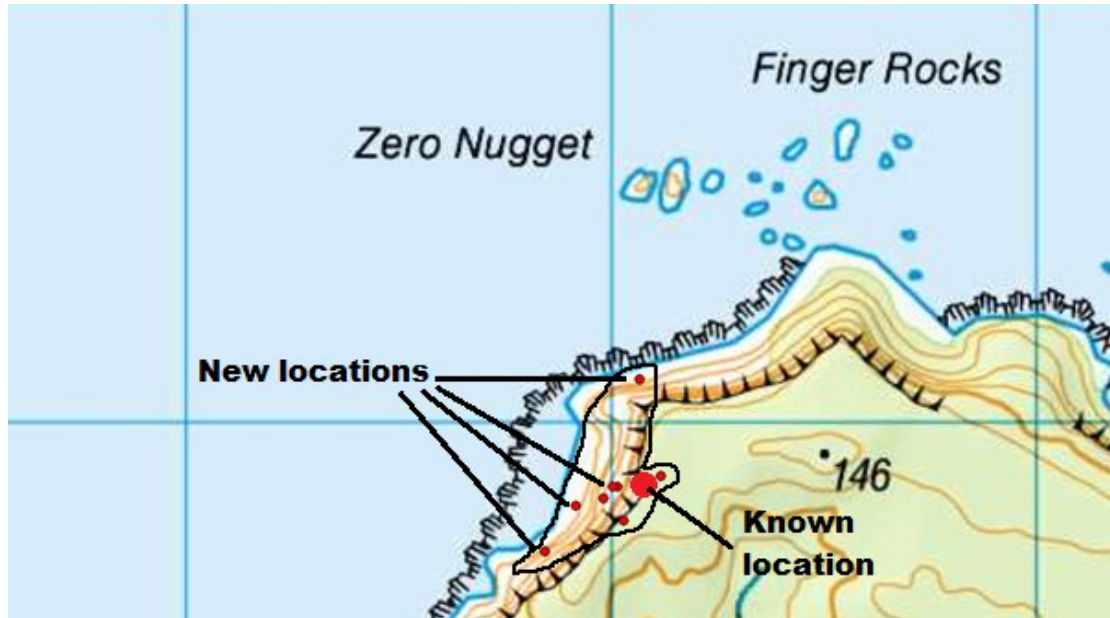


Figure 3. New found range of *Oligosoma tekakahu* on Chalky Island, covering approximately 11ha



Figure 4. New range found of *Oligosoma tekakahu* on Chalky Island, aerial view

Oligosoma acrinasum – Fiordland skink

The Fiordland Skink *Oligosoma acrinasum* is a Fiordland endemic classified as “relict” due to the substantial reduction in their former range. They are susceptible to introduced predators and are at risk of becoming extinct on the mainland, if this has not already occurred. Luckily, they inhabit rocky shorelines and boulder fields on small islands as well as being known from larger islands such as Resolution and Secretary which have reduced predators, as well as having a secure population on predator free Breaksea Island. Notably Fiordland skink must cope with their habitat being inundated with sea water as large waves engulf the entire rock area, indeed entire islands, at times.

Several predator free islets, mainly with previous records of *Oligosoma acrinasum* from the 1980’s, were searched to ensure that the species is still persisting in a variety of locations. 3 Nee Islets, 3 Shelter Islets, 2 Hares Ears, Seal Island, Hawea Island and Wairaki Island were searched with all except Seal Island and 1 Hares Ear seen to have plentiful skinks. Only a tiny area on Seal Island was searched due to problem seals and it is likely that *Oligosoma acrinasum* are present in good numbers on the island. Skinks were seen in the bare areas of rock above high tide where it was well creviced or bouldery.



Figure 5. Islets in Doubtful and Breaksea Sounds searched for *Oligosoma acrinasum*

General lizard search

There are no records of geckos in south west Fiordland, which is seen as an oddity with no reason to naturally occur. Predator free islands are the most likely place lowland geckos would be surviving and therefore small islets that are unlikely to have predators and Chalky Island were targeted for searching.

Over the course of the trip 50 small islands were searched for skinks and geckos during the day. No sign of geckos was seen on any island and the only skinks seen were the Te Kakahu and Fiordland Skinks mentioned above. Notably there were no Fiordland skinks seen south of Dusky Sound, which is consistent with other records, and no Te Kakahu were found on the small islets around Chalky Island.

Spotlighting was undertaken on Coal and Chalky Islands but this also didn't turn up any geckos.

An area on the coast of the mainland north of Cape Providence where there had been a skink sighting report in 2012 was also searched but nothing was seen. It was a bright sunny day, too hot even and the whole team spent several hours searching along the coast and in the adjacent grassland. A follow up trip to the area would be worth it when the opportunity arises.



Figure 6. A typical islet searched, one of the Zero nuggets off Chalky Island. Photo James Reardon



Figure 7. Southern islets searched for skinks and geckos

Sea birds

While sea birds were not the focus of this trip, incidental sightings of birds and burrows were noted. Approximately 17 islands had seabird burrows, of which some were identified as belonging to either sooty shearwater or diving petrel. Additionally, skua were nesting on “Green Islet 4” and had a large chick. See Appendix 2 for more detail.

Recommendations

- Search the tops of the green islets for Te Kakahu skink
- Make the green islets an ecological management unit or species management unit and consider what biosecurity measures could be put in place
- As opportunity arises undertake more spotlighting on Chalky Island
- Undertake a similar survey in 5-10 years so that results can be compared
- Re survey the area on the mainland coast north of Cape Providence as opportunity arises

Appendix 1 – Trip diary

15 December

- Travel from Te Anau to Southern Winds and down coast
- Searched Green Islets

16 December

- Searched Gulches Rocks, Zero Nuggets and beaches around Cape Providence and Gulches area
- Spotlighting on Coal Island

17 December

- Researched Green Islets, searched beech near Green Islets, Step to Island, Prices Point Island and Cavern Head Islands

18 December - Raining

- Explored area of pakahi on Cromarty trainline, scrubby habitat on Coal Island

19 December

- Searched Small Craft Islands
- Chalky skink range extension
- Spotlighting on Chalky Island

20 December

- Searched Passage Islands
- Chalky skink range extension
- Fiordland skink survey Breaksea Sound

21 December

- Fiordland skink survey Hares Ears, Nee Islets and Shelter Islands
- Travelled back to Te Anau

Appendix 2 – Islets

Area	Island	Dates	Easting	Northing	Sea birds	Lizards	Vegetation	Comments
Green Islets	Green 1	15/12/2018	1120193	4861503	Not seen	Not seen	Area looked at grassy/anistotome	Lots of dead stag beetles, could not get to the top of island due to safety though looks like nice skink habitat.
Green Islets	Green 2	15/12/2018	1120350	4861419	Not seen	Te Kakahu	Grassy/anistotome/tre e daisy	2 Te Kakahu found under rock/veg. Could not get to top of island. Small area of habitat. Revisited on 17/12/18
Green Islets	Green 3	15/12/2018	1121283	4862061	Diving petrels nesting plus bigger burrows	Not seen	Quite scrubby, muelenbecka, flax	
Green Islets	Green 4	15/12/2018	1121789	4862031	Small sea bird burrows, skua nest/fledgling	Not seen	Grassy/anistotome	
Green Islets	Green 5	15/12/2018	1120978	4861859	Burrows	Not seen	Mixed, scrub, trees, open veg	Attached to mainland at low tide, lots of deer traffic. Fernbird. Mice present. Re visited 17/12/18
Green Islets	Green 6	15/12/2018	1122215	4861794	Burrows, chick seen, diving petrel?	Not seen	grassy/hebe	
Green Islets	Green 7	15/12/2018	1121813	4862097	Burrows, skulls retrieved	Not seen	Flax, hebe, anistotome	Revisited 17/12/18

Gulches	Gulches 1	16/12/2018	1102766	4876604	1 sooty seen in burrow, lots of burrows	Not seen	Thick scrub	Not much skink habitat
Gulches	Gulches 2	16/12/2018	1102730	4876801	Not seen	Not seen	Only accessed tiny area	
Gulches	Gulches 3	16/12/2018	1102837	4875741	Not seen	Not seen	Flax, draco, open	Only just separated from mainland
Gulches	Gulches 4	16/12/2018	1102994	4878593	Lots of burrows	Not seen	sparse grass	Only just separated from mainland
Gulches	Gulches 5	16/12/2018	1103153	4878571	Not seen	Not seen	Very scrubby	Attached to mainland
Gulches	Gulches 6	16/12/2018	1102860	4876405	Lots of burrows, broad billed prion habitat	Not seen		Good habitat
Zero Nuggets	Zero 1	16/12/2018	1098498	4881536	Large burrows, likely sooty	Not seen	Large scrub, muelenbeckia, flax, hebe	Pair of robins
Zero Nuggets	Zero 2	16/12/2018	1098073	4881558	Not seen	Not seen	Low grassy	Small area of habitat
Zero Nuggets	Zero 3	16/12/2018	1098541	4881652	Yes, something small, diving petrels	Not seen	Grassy, open hebe	ground weta, nice lizard habitat, stag beetles
Zero Nuggets	Zero 4	16/12/2018	1098688	4881658	Not seen	Not seen	Grassy	Stag beetle, tiny tiny patch searched
Zero Nuggets	Zero 5	16/12/2018	1098166	4881599	Not seen	Not seen	Open grass, fern	Excellent skink habitat

Zero Nuggets	Zero 6	16/12/2018	1098645	4881605	Not seen	Not seen	Grassy	Small, only bottom searched as too steep
Prices Point	Prices 1	17/12/2018	1131967	4862857	Maybe a skua hangout	Not seen	Grassy, fern, hebe	
Cavern Head	Cavern 1	17/12/2018	1108140	4877788	Not seen	Not seen	Scrubby, open	
Cavern Head	Cavern 2	17/12/2018	1108262	4877515	Lots of sooty burrows	Not seen	Scrubby, flax, hebe, fern	
Small Craft Islands	Small Craft 1	19/12/2018	1107220	4889468	Burrows probably sootys	Not seen	scruby	Not much skink habitat
Small Craft Islands	Small Craft 2	19/12/2018	1108558	4890105	Not seen	Not seen	open olearia and dracophyllum, flax rata rimu	
Small Craft Islands	Small Craft 3	19/12/2018	1108588	4890267	black backed gulls plus chicks, oyster catches plus chicks	Not seen	diverse veg, flax	
Small Craft Islands	Small Craft 4	19/12/2018	1108698	4889548	oyster catches plus a whole lot of oyster catcher nests	Not seen	drocophyllum, rata, olearia	
Small Craft Islands	Small Craft 5	19/12/2018	1107599	4889579	Not seen	Not seen	open forest with totara and kidney fern	steep with loose rock but good habitat with open areas, midden on top
Small Craft Islands	Small Craft 6	19/12/2018	1107890	4889331	Sooty burrow with egg	Not seen	Mixed podocarp	stag beetles, pari nest?

Small Craft Islands	Small Craft 7	19/12/2018	1107965	4889346	Not seen	Not seen	Mixed podocarp	very steep, only partially searched
Passage Islands	Passage 1	20/12/2018	1100576	4882073	Not seen	Not seen		steep, only searched bottom
Passage Islands	Passage 2	20/12/2018	1100145	4882046	Not seen	Not seen	flax, open leaf litter	quite steep
Passage Islands	Passage 3	20/12/2018	1099284	4882531	Not seen	Not seen	open areas of olearia with grass and anistotome	steep, only searched bottom
Passage Islands	Passage 4	20/12/2018	1100540	4882049	Not seen	Not seen	small grassy fringe, scrubby on top	very steep, only partially searched
Passage Islands	Passage 5	20/12/2018	1100412	4881936	Not seen	Not seen	grassy fringe, low scrub	not a lot of cover
Passage Islands	Passage 6	20/12/2018	1100205	4881994	Not seen	Not seen	grassy fringe, flax, anistotome	
Passage Islands	Passage 7	20/12/2018	1099833	4882211	Not seen	Not seen	grassy clumps with stunted shrubs	small
Passage Islands	Passage 8	20/12/2018	1099707	4882162	a couple of sooty burrows	Not seen	anistotome and daisy	Heaps of ants, dead weta, very dry
Passage Islands	Passage 9	20/12/2018	1099846	4882177	Sooty burrows	Not seen	scubby, flax, anistotome, fern	Border line attached to mainland
Passage Islands	Passage 10	20/12/2018	1100482	4882002	sooty burrows, plus maybe a smaller sea bird		open scrub	
Breaksea Sound	"Seal" Island	20/12/2018	1104985	4931831	Not seen	Not seen	rock with a tiny amount of small grass	Covered in seals and unable to be searched
Breaksea Sound	Hawea Island	20/12/2018	1104152	4931731	Not seen	Fiordland	Forested in middle	Searched all of the coastline, lots of skins

Breakse a Sound	Wairak i Island	20/12/2018	1103690	4931598	Not seen	Fiordland	Small grasses at the top	Only one patch searched due to seals but skinks in that patch
Nee Islets	Nee 1	21/12/2018	1119310	4970832	Not seen	Fiordland		Lots of skinks
Nee Islets	Nee 2	21/12/2018	1119235	4971017	Not seen	Fiordland		Lots of skinks
Nee Islets	Nee 3	21/12/2018	1119095	4971332	Not seen	Fiordland	Forested in middle	Skinks round coast
Hares Ears	Hares 1	21/12/2018	1116951	4968512	None	Fiordland	None	Washed over rock with cracks, what do the lizards eat?!
Hares Ears	Hares 2	21/12/2018	1116944	4968562	None	Not seen	None	Washed over rock
Shelter Islands	Shelter 01	21/12/2018	1120466	4968737	Not seen	Fiordland	Forested in middle	Lots of skinks
Shelter Islands	Shelter 02	21/12/2018	1120535	4968458	Not seen	Fiordland	Small amount of scrub and grasses in cracks	Rock with lots of cracks. No seals. Some Fiordland skinks but not huge numbers
Shelter Islands	Shelter 03	21/12/2018	1120650	4968236	Not seen	Fiordland		Lots of skinks