



Mokomoko Newsletter

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Hello everyone

Construction of the new 1.6-km long, 14-ha predator-proof fence has begun! This fence will allow us to restore a diverse community of native lizards that once thrived in our region. The build will probably continue into January. Once built, we will allow the fence to settle in for 5-6 months, followed by eradication of all the mammal pests in winter. If all goes well, we might be able to introduce lizards by this time next year.



One of the culverts for the new fence.

We have removed the captive-bred eastern Otago skinks from the small 0.3-ha fence next door, and returned them to the captive breeders. The experimental release they served has now finished (see summary over the page), so the fence is now free for other experimental introductions.

Last summer, DOC conducted a salvage operation of wild grand and

Otago skinks from the west. The future of these animals, if left unattended, was deemed too risky and uncertain in the presence of predators, so most of them are now in captivity for safe keeping until such time as the technology and resources are available to undertake landscape-scale control of predators in this difficult terrain. The hope is that one day the lizards can be returned.

Forty-five of these skinks have been introduced into our small 0.3-ha fence to alleviate the pressure on the captive facilities at Auckland Zoo. We currently hold 30 grand skinks and 15 Otago skinks from the west. These lizards will be transferred to the big fence in November next year, at the earliest.



COET trustee, Tom Lamb, Auckland Zoo keeper, Mike Chillingworth, and DOC biodiversity manager, John Keene, releasing an Otago skink from the west.

Thanks to our primary funders (Central Lakes Trust, DOC, Lotteries Grants Board, Landcare Research, Otago Community Trust, Jean Malpas Estate, Transpower), Auckland Zoo, and our numerous volunteers for their ongoing support.

We will let you know when our next field day will be. Until then.

Trustees of the Central Otago Ecological Trust



This is a summary of the re-introduction experiment, published recently in the science journal, the New Zealand Journal of Ecology. The focus is on the effects of the mouse incursion on skink survival.

Summary: Invasive house mice (*Mus musculus*) have detrimental effects on biodiversity, but their impacts can be difficult to detect and are often unquantified. We measured their effects on survival of a translocated population of an endangered lizard in New Zealand. Twelve captive-reared Otago skinks (*Oligosoma otagense*) were translocated to a 0.3-ha area of grassland/shrubland cleared of invasive mammals and surrounded by a mammal-resistant fence. Sixteen more skinks were released 2 years later but this was followed by an incursion of mice for c. 160 days. Peak mouse density was at least 63 per hectare, and they were seen attacking adult skinks (> 25 cm in length), which is previously undocumented for this lizard species. Using photo/re-sight methods and Program MARK, we estimated skink survival (ϕ) and detectability (p) in the presence of mice (second cohort: $\phi = 0.15$ per annum, 95% Confidence Interval (CI) 0.01 – 0.48; $p = 0.28$, 0.20 – 0.38) and in their absence (first cohort: $\phi = 0.44$ p.a., 95% CI 0.03 – 0.82; $p = 0.29$, 0.22 – 0.39). Survival of skinks from the first cohort during the mouse incursion was unaffected, presumably because they were already established and had access to familiar or more optimal refugia. Their survival over the entire 3 years of monitoring (0.83, 95% CI 0.60 – 0.93) compared favourably with published estimates for viable populations in the wild, protected from all invasive mammals. This suggests it may be feasible to re-establish captive-reared lizards in the wild, but mice should be considered a limiting factor, at least during the initial translocation phase.