



# Mokomoko Newsletter

**Number 3**  
**18<sup>th</sup> September 2007**

Hi everyone

It's been a while since we were last in touch. We'll start with some exciting news we are really pleased about.

## **Successful over-wintering of captive Otago skinks**

Despite two weeks of sub-zero temperatures this winter, we were able to keep our two outdoor Otago skinks alive and well. We went to quite a bit of effort installing winter refugia by building concrete block retainers under the cages, filling them with shingle, and burying heeble blocks (aerated concrete) inside the shingle. The heeble blocks were hollowed out with small 'skink bunkers' which the skinks could access through tubing that connected the cage floor to the bunkers. We took extra precautions by placing a heavy canvas tarp over the cages during the freezing nights, and covered the concrete blocks with insulation matting to retain any heat they had absorbed if the day was sunny. We installed temperature probes inside and outside the thermal bunkers. The bunkers were initially about 5°C warmer than under the rock slabs on the cage floor. Temperatures on the cage floor fell as low as -5°C, which the skinks would not have been able to tolerate.

However, the bunkers eventually lost their warmth and temperatures inside slowly declined and bottomed out at -1°C. We took action at this point and extracted the skinks to find them alive and healthy. We moved them indoors for a few days as a precaution but we are pretty sure they would have been okay had we left them outside. They are now thriving outdoors.

We are pretty excited at being able to keep skinks alive outdoors using natural thermal refugia, especially given the unsatisfactory results in the 2006 winter. This is the first time Otago skinks have been kept alive in captivity outdoors in their natural geographic range. We would like to thank the Alexandra DOC staff for their help constructing the refugia (Alan Vette, Alan Temple, Jonathan Rout) and especially Tim Whittaker and Rob Wardle for their heeble block designs and help all round. We are also very grateful to Alexandra firms, ViBlock and Road Metals, who kindly donated the materials for the refugia.

Tim and Rob have come up with an improved thermal bunker design for next winter which will be easier to build and potentially more effective. The idea is to angle sealed PVC pipes from the cages to deep underground where temperatures will remain above zero. Skinks will be able to enter the pipes from the cages and move belowground as far as they need to avoid freezing. We will test this system next winter.

The three Otago skinks in the Alexandra Museum continue to thrive and are wondering what all the winter fuss was about.

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### **Feasibility study**

One of the major projects that COET was planning was a combined lizard breeding and information centre that we proposed to build at the start of the Otago Central Rail Trail. The idea was to take advantage of the high traffic at the site to raise the profile of the Trust and to generate revenue to contribute towards building a predator-free sanctuary for re-introducing Otago skinks and other threatened fauna to the Alexandra basin. We engaged the services of Murray Walker, a consultant from Dunedin, to conduct a feasibility study of the proposed centre. Murray consulted with a number of people, in particular with Michelle Kinney-Wilson (tourism development at Central Otago District Council). Based on projected tourist visits to Central Otago, Murray's analysis indicated that, far from a net earner, the centre was likely to struggle financially. This is disappointing but a valuable lesson in undertaking the necessary research before embarking on major projects that can be potential liabilities. The Trust has therefore decided to abandon the facility concept and instead concentrate on the other objectives of our revised 5-year plan.

### **COET's revised 5-year plan**

1. Expand the captive breeding programme for Otago skinks for re-establishment of wild populations in their former range.
2. Undertake a pilot trial on translocation of skinks to the wild by constructing a small pest-proof fence (about 1 ha), eradicating the pests, and introducing captive-reared skinks.

3. Restore the native vegetation in the re-introduction area by way of:
  - a. Intensive weed control and native plantings at the fenced site, and
  - b. Broad-scale weed control and native plantings over a wider area
  - c. Development of a plant nursery for supply of native seedlings, in collaboration with the Department of Conservation.
4. Raise the public profile of lizard conservation initiatives and Central Otago's dryland flora and fauna in partnership with the Alexandra Museum by creating public displays and education programmes based at the Museum.

If we can achieve proof-of-concept for re-establishment of a wild Otago skink population, we will ultimately expand the fence into a larger pest-free sanctuary – the Mokomoko Dryland Sanctuary.

### **Funding received**

We would like to thank the following organisations for grants received to date:

\$9,200 from the NZ Lotteries Grants Board for the feasibility study.

\$10,000 from Transpower Grants (via the National Parks and Conservation Foundation).

We applied to Work & Income's Enterprising Communities Programme and the Worldwide Fund for Nature for a 3-year position for a project manager.



The focus of this position was to establish the lizard breeding and information centre. We were successful in gaining this funding but have since declined Enterprising Communities' offer for the lion's share of the funding given the results of the feasibility study. We are currently in negotiations with WWF about whether we can retain their funding for our revised plan, and we may re-apply to Enterprising Communities and perhaps the Central Lakes Trust for a project manager, in collaboration with the Alexandra Museum.

#### **COET website**

COET now has a website ([www.coet.org.nz](http://www.coet.org.nz)). Karina Holmes and her partner, Phil Sidaway, kindly toiled away and produced the entire site. Thank you both very much. The site is kindly sponsored by Roger and Jean Gibson's internet consultancy, NZSouth Ltd. ([nzsouth.co.nz/info/webservices](http://nzsouth.co.nz/info/webservices)).

#### **Re-vegetation field day**

We are having another weeding day at

Alexandra on Sunday October 14. Please come along and help out. Garry Nixon is organising the day and will provide more details later, but feel free to contact him [tigerhill@clear.net.nz](mailto:tigerhill@clear.net.nz) or 03 449 2464 or 021 178 2662.

#### **Good news from DOC's trial of skink responses to predator control**

James Reardon, DOC's manager of the Grand and Otago Skink Recovery Programme, sent us a report on their latest results. Here is the summary of that report. It provides important directions for COET.

#### **GRAND AND OTAGO SKINK RECOVERY PROGRAMME: PRELIMINARY RESPONSES IN GRAND AND OTAGO SKINKS TO EXPERIMENTAL MANAGEMENT TRIALS 2005/6 – 2006/7**

A three year experimental management programme to identify a viable management option for the recovery of the Nationally Critically Endangered Grand and Otago skinks recently completed preliminary analyses of the first two years of data. These provisional results show that both Grand and Otago skink populations have increased significantly in abundance at a study site at the core of a 1500ha intensive mammal control area and that only Grand skinks have so far shown a significant increase in abundance within the mammal proof fenced site. All other sites have shown no significant change between the past two seasons except for one of the non-treatment pseudo-control sites where Grand skink abundance has declined dramatically. Estimates of survival for these skink populations are less precise but broadly corroborate the pattern of change in abundance described. An additional monitoring programme which estimates proportional habitat occupancy, extinction and colonisation coefficients has also been conducted. The first two years of data suggest the only significant change has been a reduction in abundance at the non-treatment pseudo-control sites where Grand skink abundance has also declined dramatically.

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Such corroboration gives us confidence that our preliminary results are representative of actual changes to the skink populations and are not artefacts of our data analyses.

Despite the pattern of significance described, and the fact that these results broadly support the hypothesis that mammal exclusion and/or intensive mammal suppression will enable recovery they are by no means equivocal results. The basic experimental design is limited by being non-replicated and containing no nesting of treatments. Therefore results may be entirely attributable to site effects and only coincidentally corroborating our hypothesis. Also stochastic patterns of variability within these populations may be driving the changes observed and as such the potential ‘effects’ of treatment and non-treatment areas may be ephemeral. However, when considered in context, these results are extremely encouraging that both mammal eradication/control treatments are having a positive influence on skink populations.

James Reardon, [jreardon@doc.govt.nz](mailto:jreardon@doc.govt.nz)

Thank you for your ongoing support,  
We may see some of you at our next field day in October.

*Trustees of the Central Otago Ecological Trust.*

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