

# **Restoration at Karori Wildlife Sanctuary Wellington**

Raewyn Empson  
2007



# Sanctuary context



Surrounded mainly by regenerating shrublands but northern end is bounded by the urban environment & there are several patches of rural land at the south end

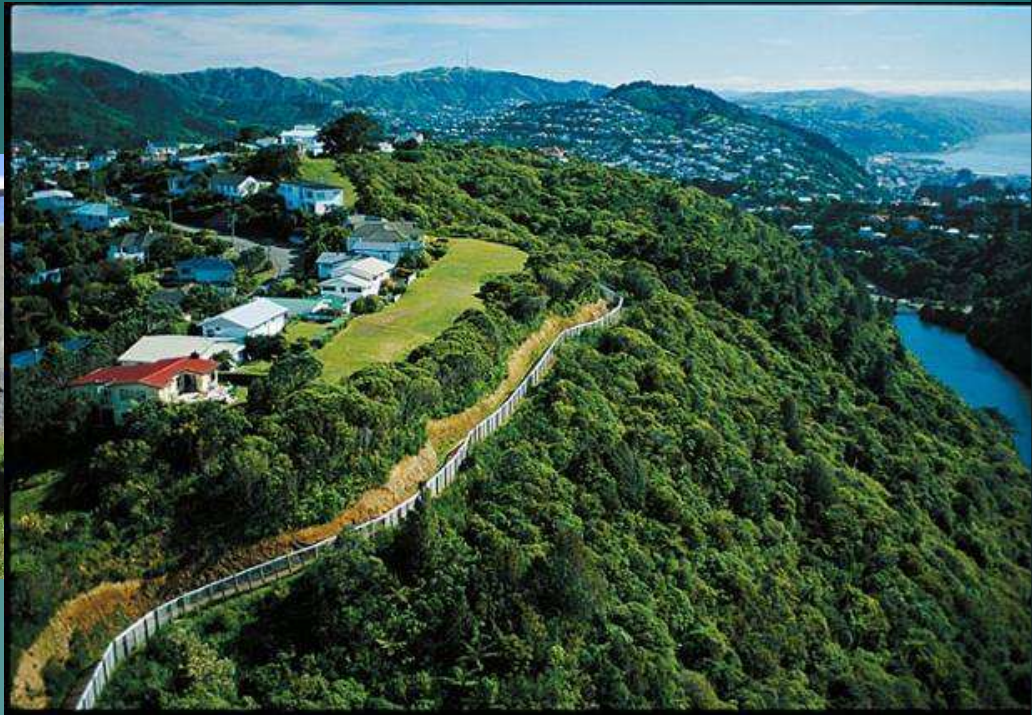
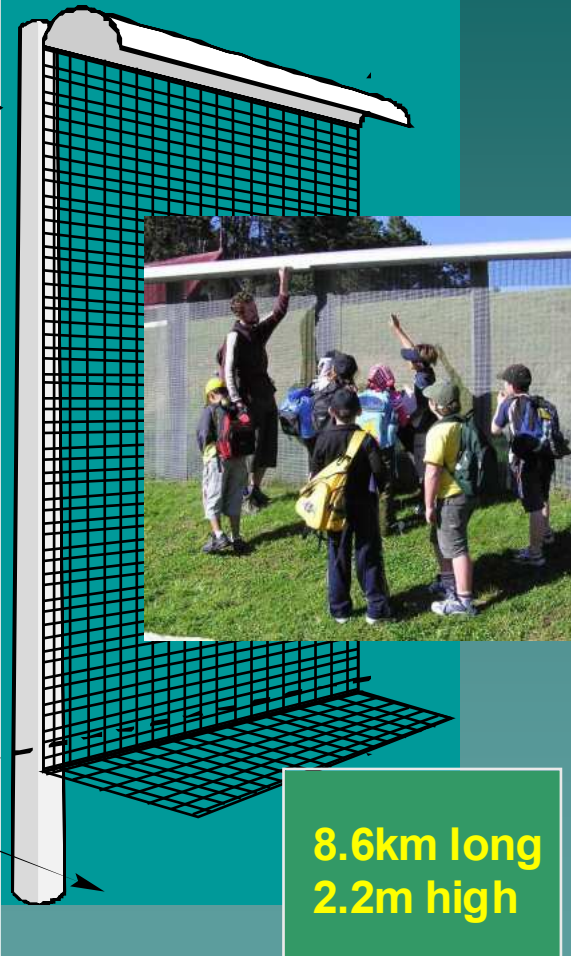


# The Fence



The first step in restoration was to build an 8.6 km fence encompassing 225 ha of regenerating lowland forest. Extensive trials were undertaken in designing this fence to keep out domestic and feral stock (cattle, pigs, deer and goats), agile climbing pests such as possums, cats, mustelids and rodents and domestic cats and dogs. The fence not only excludes pests from the Sanctuary, but it protects domestic animals for exposure to traps and poisons sometimes used inside. Fence is a min of 2.2m high..

# The Fence

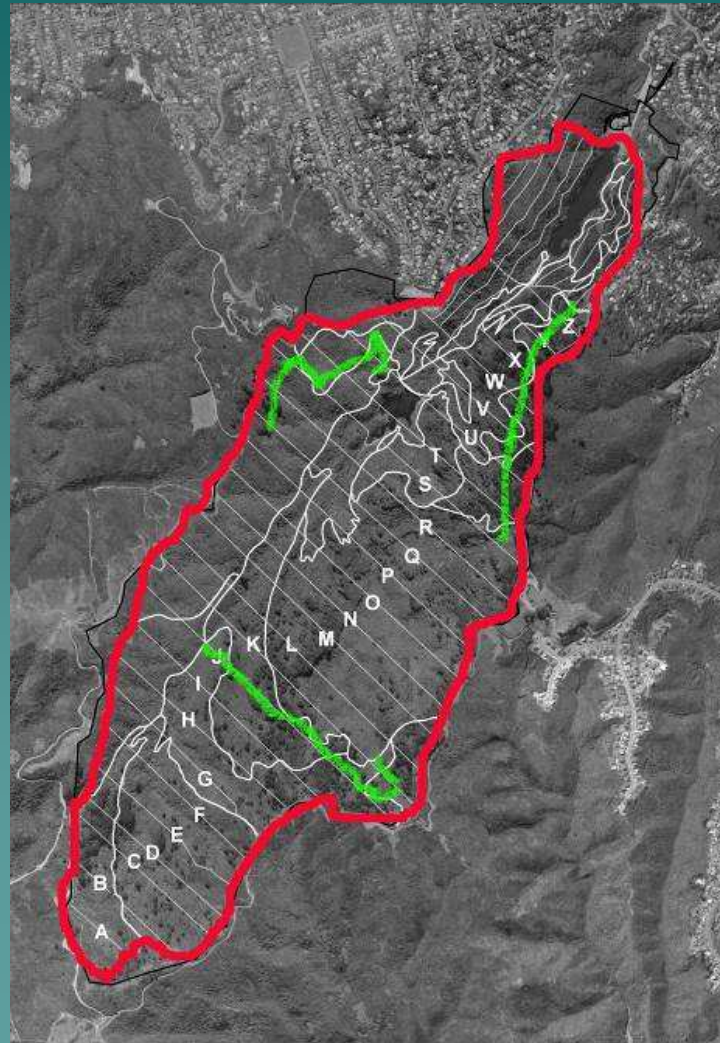


Frans Lanting

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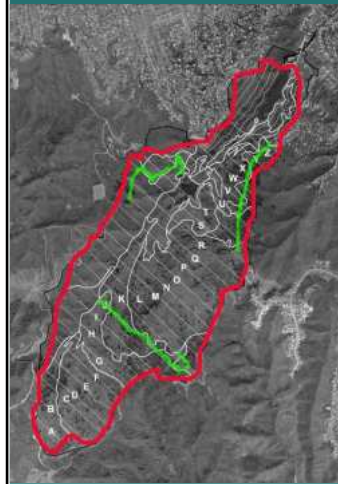


# Status of mice

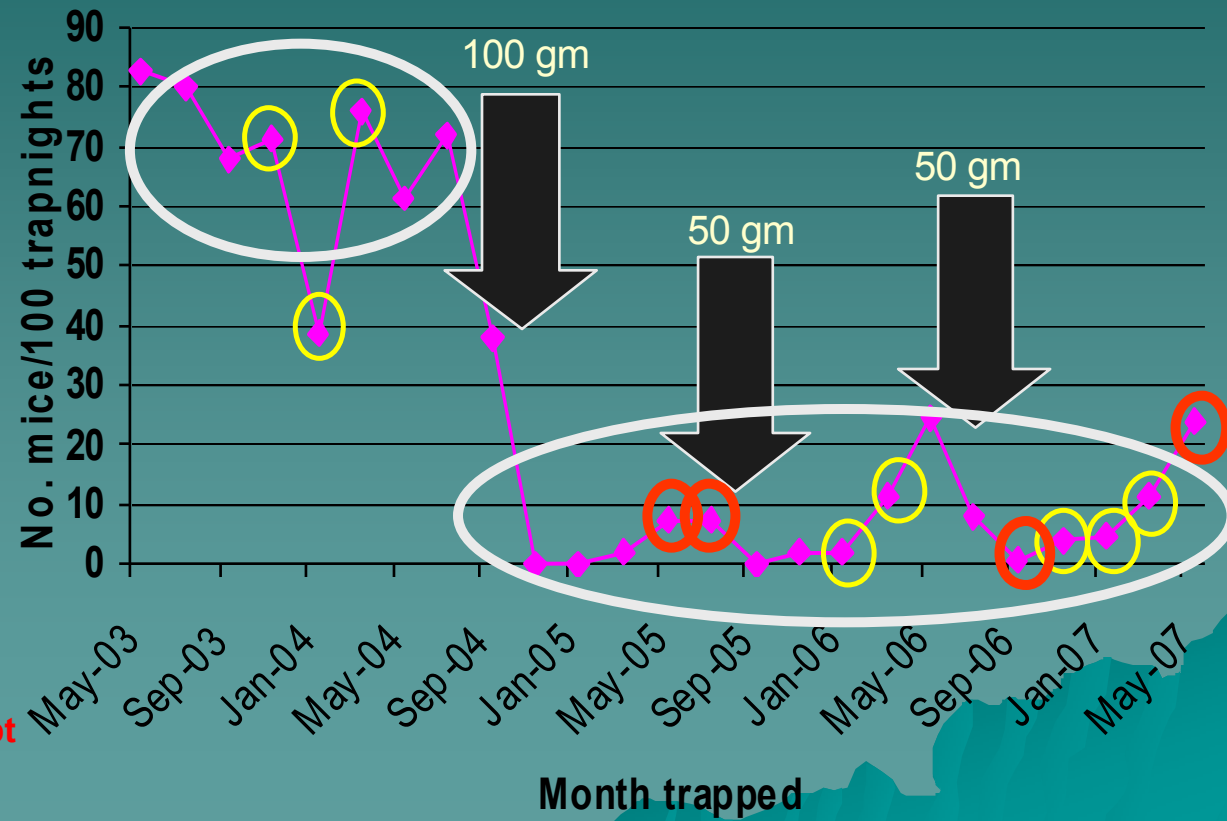


# Status of mice

Bait stations on 50m x 25m grid



 Pregnant Nov-Mar  
 Pregnant May-Sept

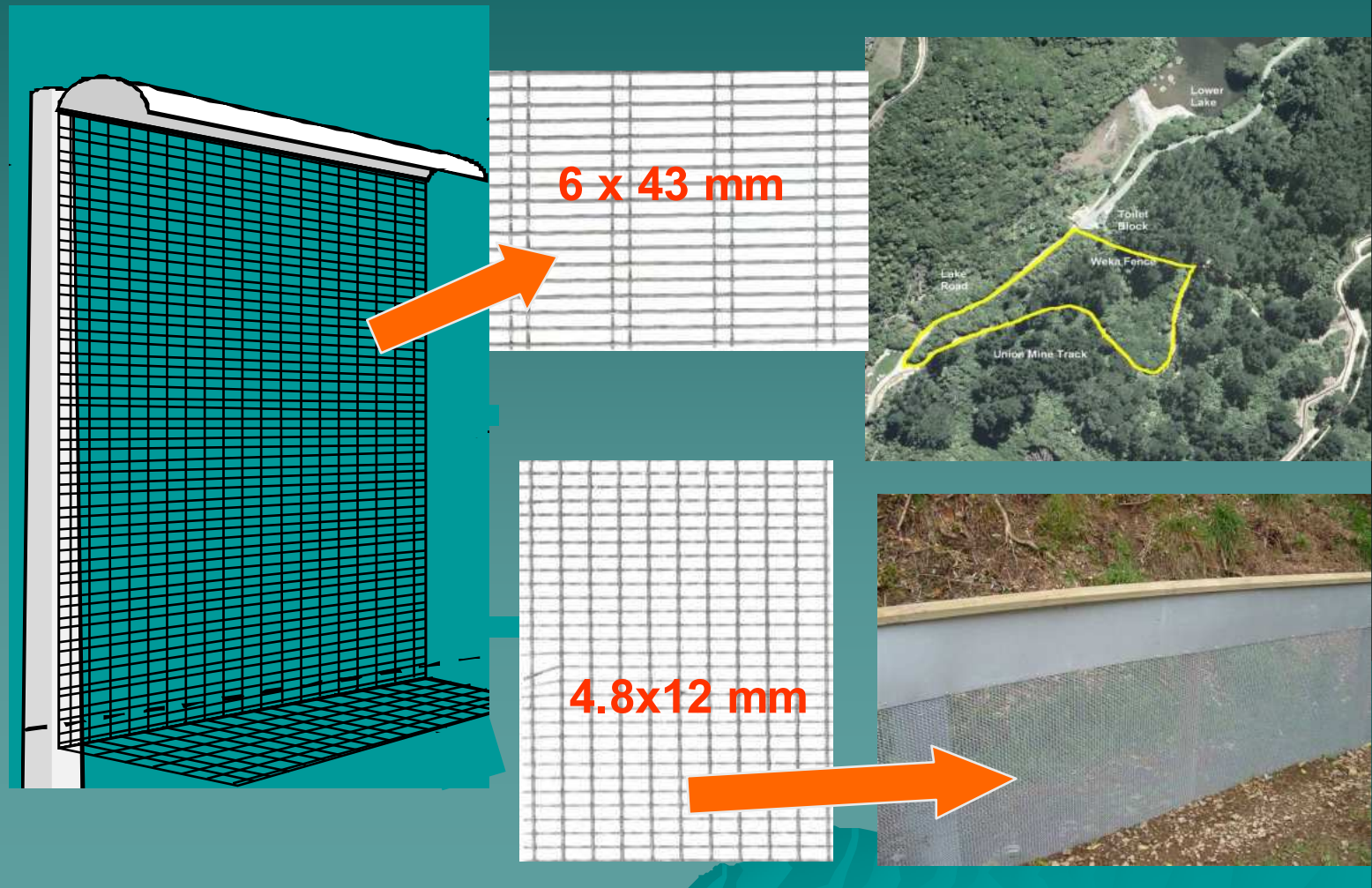






No sign from completion Sept 05-April -mice April-June 06 1 Mouse in Sept 06 – last detected Nov so 7 months mouse-free

# A fence within the fence



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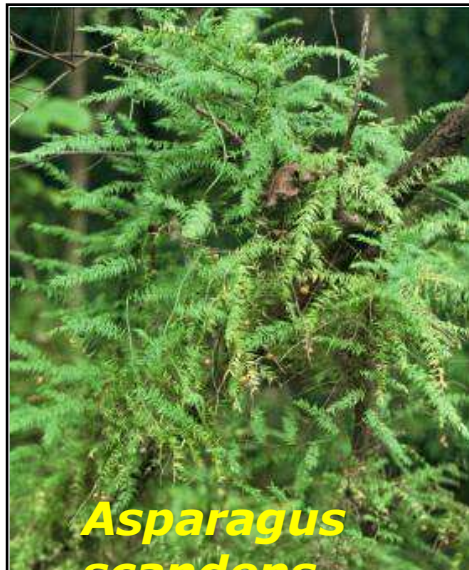
# Urban hazards



Birds leaving the Sanctuary are often attracted in an urban environment by an array of temptations that expose them to the risk of predation by domestic pets as well as rodents and mustelids. The proximity of the Sanctuary to the urban environment makes it more difficult to create a pest-free buffer outside the fence thus increasing potential risk of breaches as well as actual risk to birds leaving the Sanctuary; Also people climb in – ladders etc but countering this is increased surveillance of fence by walkers & bikers most days.



# Weeds



***Asparagus  
scandens***



***Cobaea scandens***



***Buddleja davidii***



***Jasminum polyanthus***



# Revegetation





# Revegetation



***Syzygium maire***



***Pittosporum cornifolium***



***Aciphylla squarrosa***



***Earina mucronata***

# Revegetation



***Metrosideros robusta***

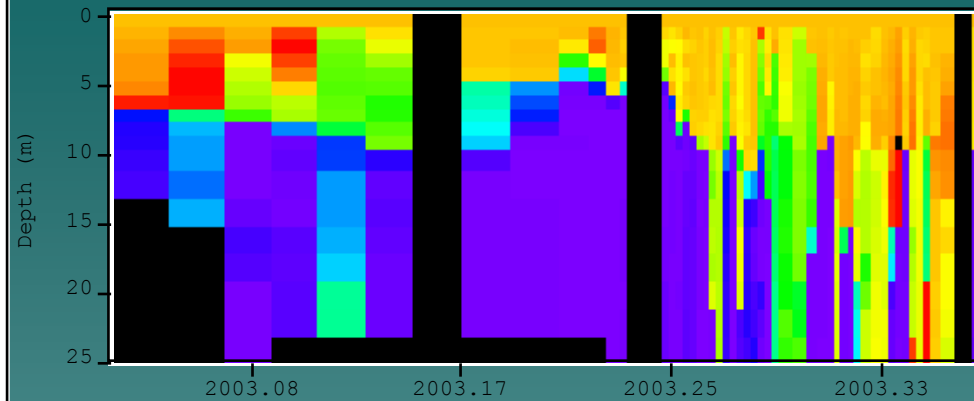


# Freshwater Restoration

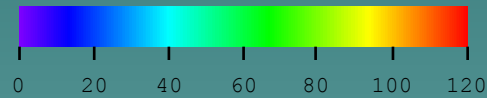
- ◆ Only streams, no lakes would have been present in the pre-human ecosystem
- ◆ Dams of historic value
- ◆ Lakes are a threatened habitat in lower North Island
- ◆ Fence will affect some natural ecosystem processes (eg fish migration patterns)
- ◆ **Assume:**
  - lakes established by natural stochastic events
  - Freshwater flora and fauna will reflect likely flora and fauna of lower North Island lakes & wetlands
  - Fish migration might need some ongoing assistance

Photo: Simon Woolf

# Freshwater issues



Data analysis by David Hamilton



Dissolved oxygen (% saturation)



***Salmo trutta* & *Perca fluviatilis***



# Transferred species

- ◆ Little spotted kiwi
- ◆ NI weka
- ◆ Brown teal
- ◆ NZ scaup
- ◆ NI robin
- ◆ Whitehead
- ◆ Bellbird
- ◆ NI tomtit
- ◆ NI saddleback
- ◆ Kereru
- ◆ NI kaka
- ◆ Hihi/stitchbird
- ◆ Tuatara
- ◆ Maud Island frog
- ◆ Cook Strait giant weta

12 birds have been transferred since 2000, with the first species being the ground birds that couldn't escape the fence, then two species of waterfowl provided from captive bred stocks; In 2001 the first forest passerines were released, and since then there have been releases every year, either reinforcing the birds already transferred or adding new species, with the most recent being the hihi. Highlighted purple asterisk for species transferred to the mainland for the first time,

# Transferred species



12 bird species released here - 2 flightless species, 2 waterfowl and 8 flighted forest species able to leave the security of the Sanctuary



# Transferred species

Back on mainland for 1<sup>st</sup> time in > 100 years



*Apteryx owenii*



*Philesturnus carunculatus*



*Leiopelma pakeka*



*Notiomystis cincta*



*Deinacrida rugosa*



*Sphegnodon punctatus*

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# Waterfowl you might see



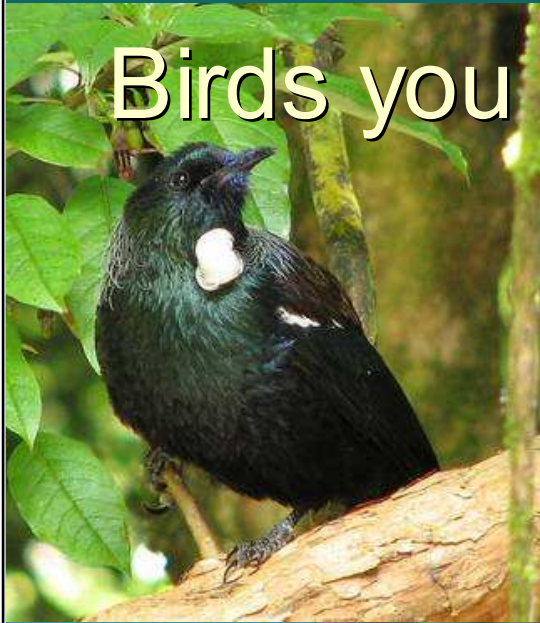
**Brown teal**



**NZ scaup**



# Birds you might see in the forest



**Tui**



**NI saddleback**



**NI robin**

# Birds you might see at feeders



**Hihi**



**Bellbird**



**Kaka**



A photograph showing the lower legs and feet of a person walking on a paved surface. The person is wearing dark trousers and brown socks. The feet are wearing brown shoes. A green rectangular box with a white border is overlaid on the center of the image, containing the text "Enjoy your walk" in a bold, blue, italicized font. The background is a light-colored, textured pavement. The entire image is framed by a teal border with a decorative, torn-paper-like edge at the bottom right.

***Enjoy your walk***