

# Summary of the Future of Pest Control Presentation

At the Don Rowlands Centre on Monday, 7 November, a presentation was given to MEIT volunteers about changes to the pest policy. Not everyone was able to attend that meeting, so this summary has been prepared to publish the change more widely.

The full presentation can be found on the MEIT website ([www.maungatrust.org](http://www.maungatrust.org), see Biodiversity Management).

The presentation covered the following :

- Why Change?
- Future Pest Control
- Changes
- Ecological Impact
- Restoration of the Maunga

## Why Change?

There are two drivers for change – financial and pests.

Since the start of pest work in 2004, MEIT has spent millions of dollars. For the 2010/11 financial year alone, the pest budget was \$430,000. MEIT is unable to sustain this level of funding.

At the start of the project, MEIT identified 14 pest species.

Deer	Goats	Pigs	Possums	Cats
Hedgehogs	Ferrets	Stoats	Weasels	Hares
Rabbits	Norway rats	Ship rats	Mice	

Of this list only three pests remain – hares, rabbits and mice. Recent success with hares and rabbits mean we may have achieved eradication, but it is too early to tell. This leaves mice.

Despite considerable effort and expense over an extended period, MEIT has been unsuccessful in eradicating mice. From our own, and other sanctuaries experience, we have drawn a number of conclusions from our battle with mice.

1. If your sanctuary is surrounded by water, your chances of achieving and maintaining mouse eradication are good. Our fence is currently the best we've ever had it. However, for mice, it still leaks, which makes eradication impossible.
2. Other sanctuaries have moved to mouse control policies. To do this they have a 50\*50m tracking tunnel grid system. On the maunga our grid is 100\*200m, or one tracking tunnel every hectare. This grid system is too porous. Mice are able to live in the gaps undetected and unmolested.
3. A 50\*50m grid system on the maunga would require the tracking tunnels to increase by a factor of 8 (from 2,880 to 23,000) and the track network to quadruple (from 300kms to 1,200kms). Not only is the establishment of this system beyond MEIT, so is our ability to operate it into the future.

So the question becomes how do you address the mouse pest problem with decreasing resources?

## Future of Pest Control

This question has troubled MEIT for over a year. The Biodiversity Management Group has been working with the MEIT Board since April. The MEIT Board in August approved the following policy for one year.

- Apart from mice, the entire maunga remain free of the other 13 pests,
- Rabbits and hares be eradicated as soon as possible,
- The Southern and Northern Enclosures and Wetland remain mouse free,
- All pest control must not pose a risk to vulnerable native species, to allow for the restoration of the maunga to proceed,
- The current monitoring regime is modified as required,
- Mice control only occurs in the following situations, otherwise they are uncontrolled:
  - on the fence line where fence leaks may be exploited by other pests,
  - or, at specific locations as required. For example around native species nesting sites.

In the interests of clarity, for mice, this means the end of eradication efforts on the maunga, and the move to control on the fence only. Fence line control is important as we believe mice may tunnel under the fence. This tunnel could then be exploited and enlarged by other more dangerous pests, like rats, stoats etc.

It is important to note MEIT is not relinquishing its aim of eradicating mice. It will continue to monitor toxin or trapping developments should new cost effective methods be developed.

## Changes

The following changes come into effect:

- This monitoring round, starting in November, all mouse traps in tracking tunnels to be brought in,
- Monitoring frequency will change after the November round,
- Future mountain monitoring rounds will be in February, April, August and October only.
- Outside these rounds, the fence line will be monitored monthly, but by staff.
- Card reading will be for rats, stoats etc., not mice,
- The Northern Enclosure will move to a 50\*50m grid,
- There are new volunteer opportunities in the enclosures, wetland and on the fence ,

## Ecological Impact

An immediate gut reaction to the pest policy change is the possibility of mice taking over, competing for food with native species and causing the ecosystem to tip over.

Scientist John Innes (and others) from Landcare Research have been undertaking research on the impact of mice on the maunga. The QEII block on Bill Garland's property has had no mouse control for over 18 months. All or most tracking tunnels there now track with mice. The density measured in May 2011 was around 50 mice per ha, although this declined substantially in the August measurement. Neighbouring the QEII on the main mountain, we have a similar area which has had no mouse tracking until very recently.

.Sampling of invertebrates on the ground in the 'high mice' block showed that both numbers and size of invertebrates were halved in the presence of mice.

This research is ongoing. Landcare Research is also studying the impact on seeds, fungi and whether bird nests are predated by mice.

The summary of John's presentation was that, as expected, mice are having an impact. However, in terms of ecosystem game changers, the ongoing elimination of ship rats, stoats and cats is more important. An environment with only mice as the pest species needs study. In the long term, further attempts at eradicating mice over the whole block are not impossible, but there would need to be significant improvement in success chances before risking the money and other resources required.

John is also working with MEIT to find a MSc student who might be interested to study mouse burrowing.

## **Restoration of the Maunga**

The MEIT ecologist, Chris Smut-Kennedy, analysed what the pest policy change might mean for the restoration of the maunga. Chris's conclusion was the MEIT 'reintroduction shopping list' might not be too significantly affected, but not much is known about what the effects might be of a mouse population that is limited only by food and climate/weather. Such a situation has never occurred before in a 'Maungatautari scenario', and the outcomes cannot be predicted. Some quite profound ecosystem effects can be expected however.

The enclosures might be suitable for some species that might be 'mouse sensitive'. MEIT has the luxury of over 100 hectares totally pest free. Localised mouse control might be possible on the maunga for some mouse-vulnerable species which might not be suited to the enclosures.

Some native species might be less abundant with uncontrolled mice, because of food competition – or perhaps they or their eggs or young might be vulnerable to mouse predation. The growth rates of the juveniles of some species might also be affected by food competition with mice.

There are many other exotic species that are uncontrolled and common, over much or all of the mountain – including eastern rosellas and several other bird species, the orange pore fungus, several species of introduced predatory wasps, European honeybees, and many other invertebrate species. The impacts of most of these species can only be guessed at, but research has shown that introduced European wasps for instance can have very significant impacts on forest ecosystems in the Waikato. We will have to live with these species, just as we might have to with mice for a bit longer.

## **Further Information**

MEIT understand that this change is a significant milestone in the project and wants to ensure all stakeholders (volunteers, landowners, funders etc.) are informed as fully as possible.

To see the presentation in full, log on to our website, [www.maungatrust.org](http://www.maungatrust.org), head for Biodiversity Management.

If you want even more detail, feel free to email Paul Quinn ([paul@maungatrust.org](mailto:paul@maungatrust.org)) or call him at the office (07 823 7455).

Ally Tairi (07 823 7477) is available to talk through changes that may affect volunteers and new volunteer opportunities. These changes will take a number of months to implement. Once in place, you can expect calls for volunteer assistance.