

Key Native Ecosystem Programme – Wainuiomata/ Orongorongo Possum monitoring report

November 2016



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For more information, contact the Greater Wellington Regional Council:

Wellington
PO Box 11646

T 04 384 5708
F 04 385 6960
www.gw.govt.nz




Masterton
PO Box 41

T 06 378 2484
F 06 378 2146
www.gw.govt.nz

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www.gw.govt.nz
info@gw.govt.nz

Report prepared by:	R Uys	Senior Terrestrial Ecologist	
	S Moylan	Senior Terrestrial Monitoring Officer	
Report reviewed by:	P Crisp	Team Leader Terrestrial Ecosystems and Quality	 Date: March 2017

Client Approval:

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Summary

This report presents the results of the possum monitoring conducted at the Wainuiomata/Orongorongo Key Native Ecosystem (KNE) site in November 2016.

The KNE programme aims to protect some of the best examples of native ecosystem types in the Wellington region by managing, reducing or removing threats to their values. Monitoring of pest animals is carried out to establish whether the control efforts are being effective.

Key results of the possum monitoring in November 2016 are summarised below:

- Residual Trap Catch (RTC) results were below the five percent target across the the entire KNE site (2.5 percent) and within the Wainuiomata Mainland Island the RTC was even lower (1 percent).
- RTC results have not risen above the five percent target since 2005 when a second aerial 1080 operation was carried out across the whole KNE site and ongoing trapping of possums started in the Wainuiomata Mainland Island and.
- The highest individual line RTC values were in the south of the KNE site.

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Introduction

The Key Native Ecosystem (KNE) programme aims to protect some of the best examples of native ecosystems in the Wellington region. It is working to achieve this by managing, reducing, or removing threats to their values. One of the primary threats to native plants and animals is introduced animals, including possums. Control of these pest animals is therefore undertaken at most KNE sites throughout the region. Regular monitoring is carried out at selected KNE sites to determine the effectiveness of these control efforts.

The purpose of this monitoring is to:

- Provide a trigger for aerial 1080 possum control at the site
- Report on the effectiveness of possum control regimes in forest ecosystems

Monitoring site

Monitoring in the Wainuiomata/Orongorongo KNE site is undertaken to provide possum population data for the whole KNE site (7,364ha) and also the Mainland Island (1,200 ha) as a separate management unit within the KNE site. The KNE site is dominated by a mix of lowland podocarp-rata forest with areas of beech and broadleaf forest. The surrounding landscape is a mix of similar native forest, exotic pine plantation and pasture.

Method

The entire Wainuiomata/Orongorongo KNE site (including the Mainland Island) was monitored using 21 lines of 20 traps each, over two nights laid out on a grid. A more intensive monitor was conducted in the Mainland Island using 14 lines of 10 traps over three nights. All lines were monitored concurrently. Three of the lines monitored for the KNE site were included in the Mainland Island monitor (lines WCA1, WCA2 and WCA3). On these lines the first ten of the 20 traps were used in the Mainland Island monitor. These traps were kept open for a third night for the Mainland Island monitor. The monitoring was designed in this way to give an overall RTC for the entire catchment, which receives aerial control operations. The monitoring also is intended to provide a discrete RTC for the Wainuiomata Mainland Island which receives ongoing ground based possum control.

Pest animal control regime

Current pest animal control regime

Possums are controlled over the entire Wainuiomata/Orongorongo KNE site using aerially sown 1080. Aerial 1080 operations are carried out when possum residual trap catch (RTC) results approach or exceed 5%, which generally occurs every five or six years. Additionally possums are kept to very low levels within a 1,200 ha Mainland Island (located in the Wainuiomata River catchment) using a network of Warrior kill-traps. Traps on the boundary and within a 300 m inner buffer of the Mainland Island are on a 150 m x 100 m grid and the traps in the interior of the Mainland Island are on a 300 m x 300 m grid.

Rodent control is undertaken in the Mainland Island using Pelifeed bait stations on a 150 m x 100 m grid and at 50 m intervals around the Mainland Island boundary. Baits containing diphacinone or brodifacoum are used depending on rodent numbers.

Mustelids are controlled in the Mainland Island using DOC200 kill-traps spaced at 200 m intervals around the boundary and on lines through the interior that are approximately 1,000 m apart. All mustelid traps and all bait stations and possum traps around the boundary are serviced about every 5 weeks. The rest of the bait stations and possum traps are serviced about every ten weeks (five times a year).

Mustelids are controlled less intensively in the rest of the KNE site, outside of the Mainland Island. DOC200 and Good Nature A24 kill-traps are positioned at 100 m intervals on some main ridgelines and spurs. This network of traps is operated by the Rimutaka Forest Park Trust to help protect North Island kiwi that are spreading from a core population in the Turere Valley south of the KNE site.

Pest animal control background

The bait station and possum trap network was installed in the Mainland Island in 2004 and activated in 2005. Mustelid traps were installed in the Mainland Island in 2005. In response to a mast year in 2014 hand laid 1080 cereal pellet bait and cholecalciferol paste was used within the Mainland Island to control the sharp increase in rat numbers that occurred. Aerial 1080 operations were completed across the whole of the KNE site in 1999, 2005 and 2012.

Surrounding pest control regimes

OSPRI's TBfree programme undertakes intermittent possum control in the area. The Rimutaka Forest Park Trust undertakes mustelid control south of the KNE site.

Results

Residual Trap Catch (RTC) results were below the five percent target across the entire KNE site (2.5 percent) and within the Mainland Island the RTC was even lower (1 percent) (Table 1).

Most of the animals were caught in the southern part of the KNE site (15 of the 25 animals recorded - 60 percent, Figure 3). The remaining 10 possums were spread across the KNE site, although eight of these were on lines adjacent to the boundary.

Of the 24 possums caught in traps, 17 (71 percent) were male and 7 (29 percent) were female. In addition to these 24 animals, one possum escaped the trap, but was the only record on that line (MI7).

Table 1: Results of possum monitoring in the Wainuiomata/Orongorongo KNE site and the Wainuiomata Mainland Island within the KNE site undertaken in November 2016

Stratum Name:	Target RTC:	Actual RTC:	Highest Line Result:	Total No. of Possums Caught:
Wainuiomata/Orongorongo KNE site	5.0%	2.5% (95% CI \pm 1.5%)	10.5% (4 possums)	21 Possums
Mainland Island	5.0%	1.0% (95% CI \pm 0.8%)	3.4% (1 possum)	4 Possums

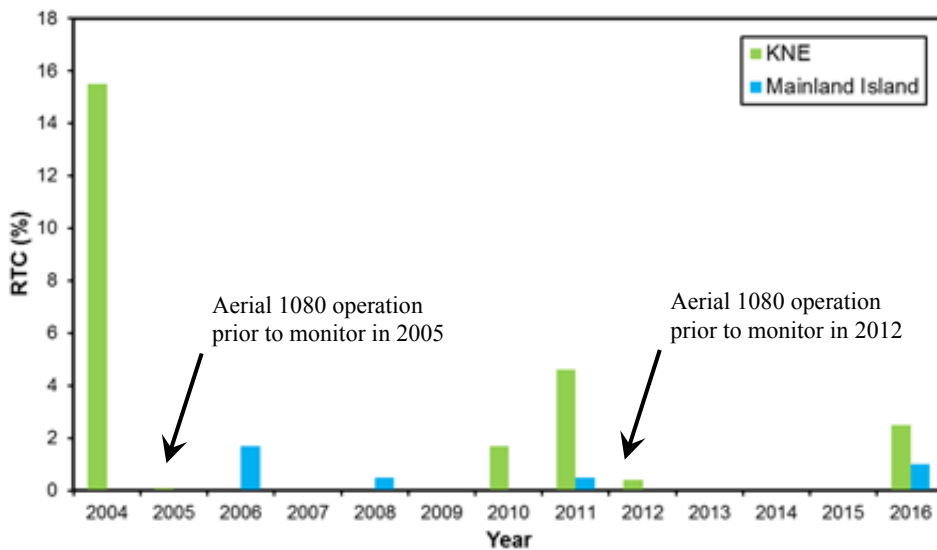


Figure 1: Residual Trap Catch (RTC) results from the Wainuiomata/Orongorongo KNE site and the Wainuiomata Mainland Island for the period 2004-2016. Note that the RTC for the KNE site was 0.1% in 2005 and no possums were recorded in the Wainuiomata Mainland Island in the 2010 and 2012 monitors

Analysis and comments

Residual Trap Catch of possums in the Wainuiomata/Orongorongo KNE site has been below the five percent target since 2005 the second aerial 1080 operation was carried out across the whole KNE site and possum trapping was started in the Wainuiomata Mainland Island (Figure 1).

The distribution of catches suggests that animals were moving into the KNE site from surrounding lands. If this is the case, it is not surprising that most of the possums caught were male, as it is generally the males that actively disperse to new locations.

Of note, a possum was detected on the third night in the Mainland Island, however, as the KNE site monitor was only two nights in duration it was not included in the KNE site results despite the same line being used for both monitors.

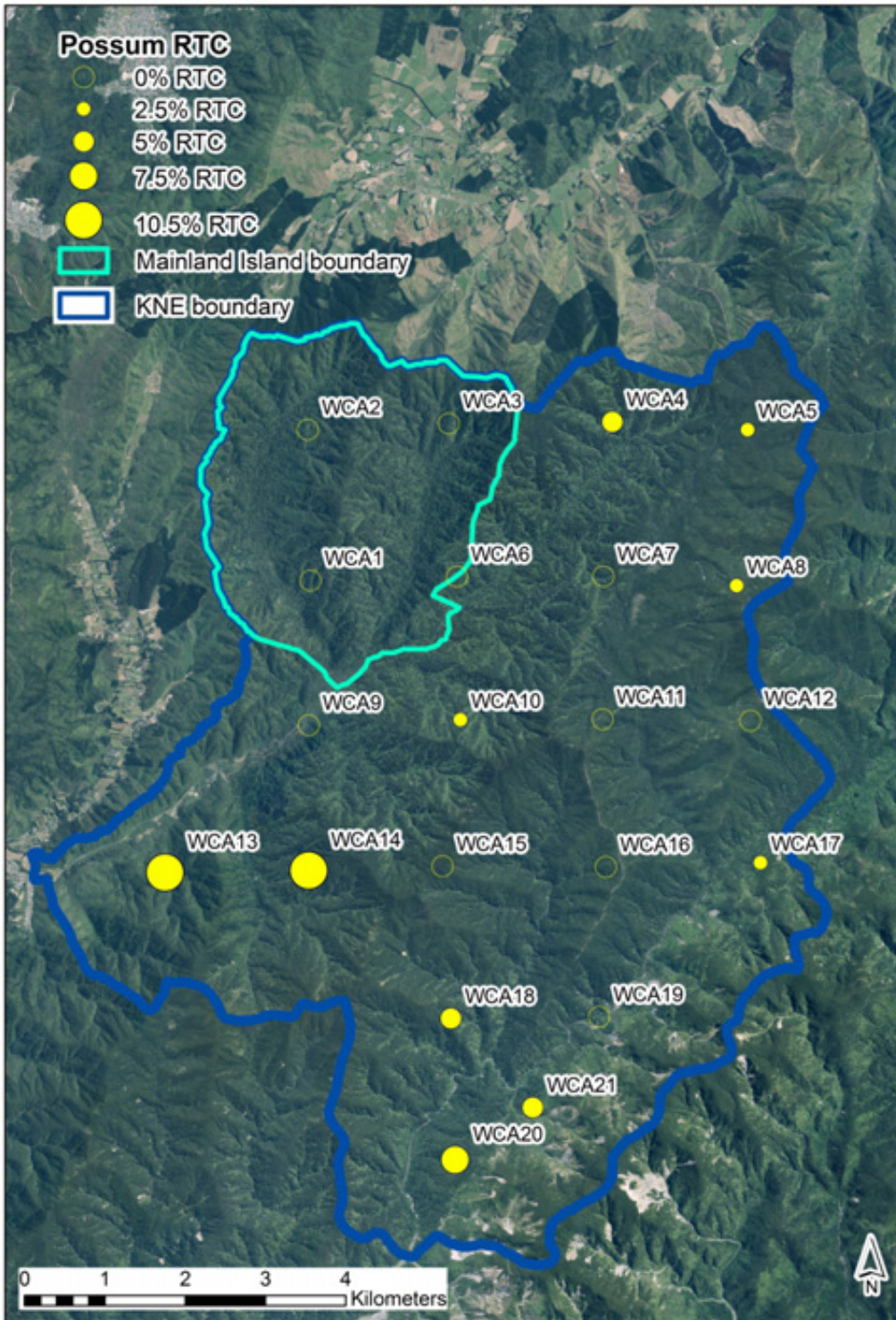


Figure 2: Possum Residual Trap Catch (RTC) over three nights in the Wainuiomata/Orongorongo KNE site in November 2016

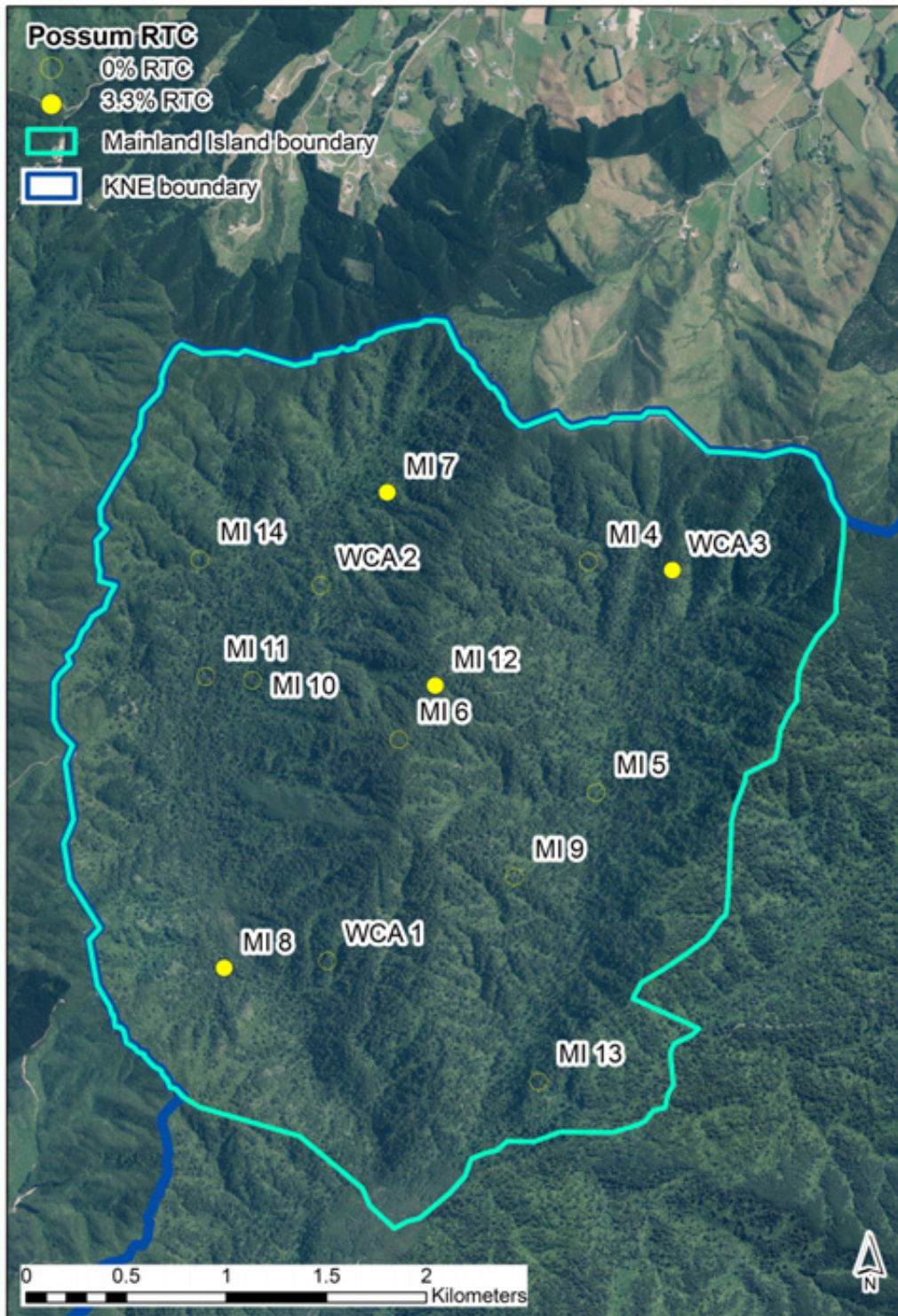


Figure 3: Possum Residual Trap Catch (RTC) over three nights in the Wainuiomata Mainland Island within the Wainuiomata/Orongorongo KNE site in November 2016

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Greater Wellington Regional Council:

Wellington office
PO Box 11648
Manners Street
Wellington 8142

T 04 384 5708
F 04 385 8960

Upper Hutt office
PO Box 40847
Upper Hutt 5018

T 04 526 4133
F 04 526 4171

Masterton office
PO Box 41
Masterton 5840

T 06 378 2484
F 06 378 2146

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Regional Council



info@gw.govt.nz
www.gw.govt.nz

