



# Operational summary report for the Eglinton Valley 2015-16



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Department of  
Conservation  
*Te Papa Atawhai*

## Overview

The Department of Conservation undertakes continuous stoat and cat control; and periodic rat and possum control when required within the Eglinton Valley to protect a range of threatened species.

This report summarises the animal pest control and result monitoring carried out in the Eglinton Valley between September 2015 and September 2016<sup>1</sup>. Pest species that were targeted for control during the 2015/16 season included stoats, rats, possums and cats. Outcome monitoring and translocations are not covered herein. Note that this is the first summary report produced since the 2012/13 annual report [DOCDM-1222347](#), so there is a gap in the timeline.

In brief, two mohua translocations took place in the Eglinton during 2015/16. A transfer of 79 mohua from Anchor Island to Kiosk Creek on 14-15 October 2015, and a further 101 from Anchor on the 17-18 October 2016. Long-term species monitoring, including short-tailed and long-tailed bats, was ongoing during 2015-16. For details pertaining to species monitoring and management, please refer to the [End of season report \(Tier 1\) DOC-2752046](#) and [Short tailed bat report 2016 - DOC-2774024](#).

Stoat control has been carried out in the Eglinton Valley in its current form continuously since 1998, and traps have been checked and rebaited four-six weekly (up to 9 times per annum). The stoat trap network was expanded and intensified from 365 traps in 2014/15 to 420 in August 2016 with 55 additional tunnels deployed between Marian Corner and Monkey Creek<sup>2</sup> by Shinji Kameyama (DOC) (see map - Appendix 1).

Rodent and mustelid abundance is monitored using standard tracking tunnel methods, and is typically carried out quarterly each year. Seedfall monitoring is reported nationally, with sampling points set up in February and results collected in May. These results are reported herein.

Following the 2016 beech masting event, an aerial 1080 operation was undertaken in the Eglinton Valley on 14 October 2016 targeting rats, stoats and possums. The ground control bait station grid was not activated.

## Stoat Control

The network in the Eglinton Valley is comprised of mostly double-set stainless DOC 150/200 traps, and a few lines of old style single-set DOC 200 traps (True right line, Mistake Creek and part of the Valley floor). The servicing of the stoat traps was tendered out to different trapping contractors over the period covered by September 2015-16. Mainly Fauna Ltd (Iris Broeksma) completed nine trap checks between June 2015 and June 2016, servicing 365 traps. Huntsman Ltd (Ben Crouchley) recently secured the contract for July 2016 to July 2017. Ben has completed two trap checks to date, servicing a total of 420 traps (incl the additional 55 traps on the MM line). He has replaced the roadside traps from Deer flat to the entrance of the National Park, and plans to replace the DOC 200 single sets on the True right by December 2016. Further funding is needed to replace single sets along Mistake Creek and the remaining Valley floor.

Excluding the 55 new traps on the MM line, a total of 73 stoats and 624 rats were caught in the existing 365 traps between September 2015-16 (Figure 1). One stoat and 45 rats were caught on the

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<sup>1</sup> Some data is from the months of August 2015 or August 2016 rather than September.

<sup>2</sup> Refer to this as the MM line.

MM line during Ben Crouchley’s August and September 2016 checks. Refer to Appendix 2 for the monthly capture breakdown.

The total stoat capture of 73 for 15/16 was less than expected for a typical mast year, which usually totals >150 stoats (Appendix 3, Figure 1+2 from Hill 2011% 2013). This is probably due to the effect of secondary poisoning on stoats from the aerial 1080 operation in November 2014, as past managed mast years have used 1<sup>st</sup> generation anticoagulants in bait stations over a limited area, which would have limited effect on stoat abundance. There appears to be an increase in total weasel numbers in comparison to previous years, with 60 captured this year [In comparison to 2011/12 and 2012/13, where 4 and 19 weasels were caught respectively (Hill, 2012 & 2013)]. The increase in weasel abundance has been reported at multiple sites in the South Island which were treated with aerial 1080 as a response to rodent irruptions in 2014. Weight sensitivity adjustment to stoat traps (calibrating to 80g) also occurred in the 2014/15 year which also may have causes increased weasel capture rates due to traps previously not being sensitive enough to catch weasels encountering traps. The monthly capture breakdown is presented in Figure 1.

The total yearly rat capture of 624 was higher than a typical year and as expected in a mast year, where annual rat captures are generally >500 (Appendix 3, Figure 1+3). It is clear that rodent levels in the Eglinton rose rapidly in response to the increased amount of beech seedfall in 2016. The monthly capture breakdown is presented in Figure 1.

It is expected that rat and stoat catch rates will decline in response to the recent 1080 application, with subsequent catches markedly reduced for remaining trap checks in 2016 and early 2017. By applying 1080 prior

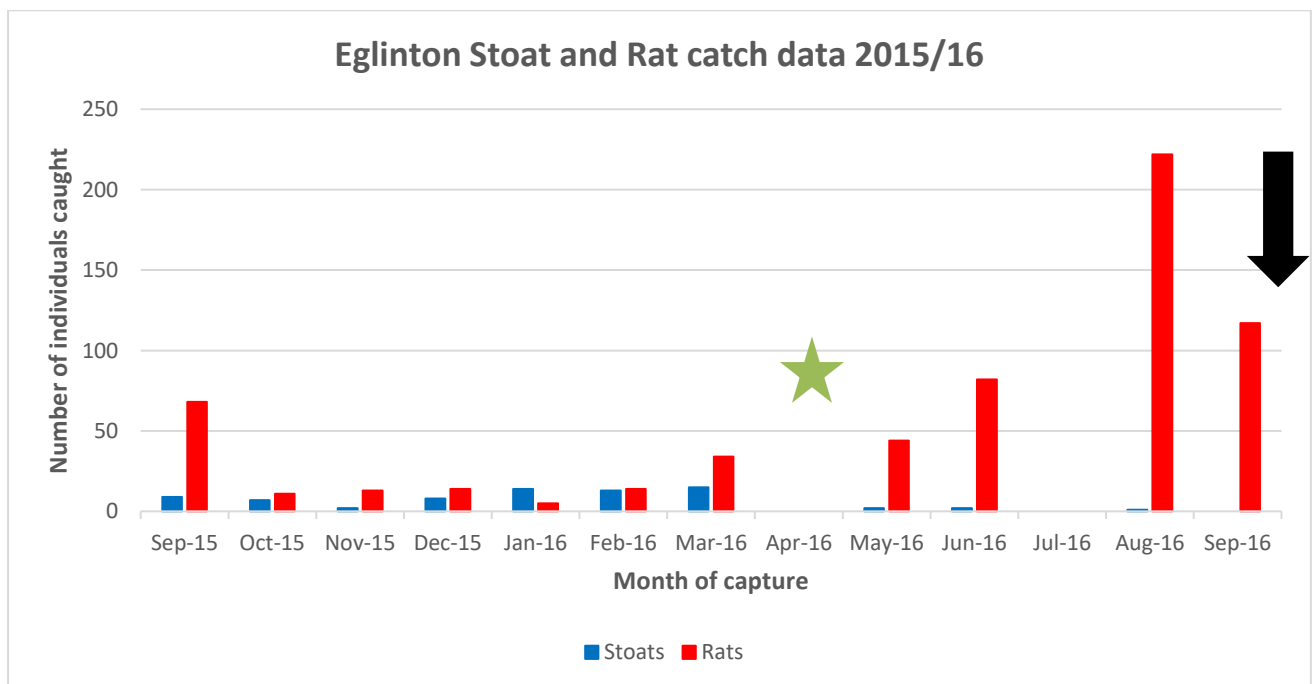


Figure 1: Eglinton stoat and rat catch data for 2015-16 (excluding new MM line). Black arrow shows timing of the aerial 1080 operation. Green star indicates beech masting. Note: Trapping was not conducted in April 16.

## Cat Control

The density of feral cats and the effect they are having on local native wildlife is largely unknown. Feral cats have been present in the Eglinton Valley for several years, and infrequent localised attempts to live capture them in cage traps have been made, with little success. Cats have also been captured in stoat trap tunnels as non-target by-catch since the trapping programme began.

This season was the fifth year cats have been targeted with cat specific traps, with traps spread between the National Park boundary and Cascade Creek, in areas where cat sign had previously been reported (refer to map - Appendix 1). DOC Te Anau receives frequent reports of cat sightings in the Eglinton, both from staff and the public, with some sighting multiple cats at one location (i.e. Knobs Flat).

There are currently 33 cat traps in the Eglinton Valley. Three styles of kill-traps are currently used: 9 x double conibear traps, 12 x Timms traps and 12 x SA2 traps. These designs are considered current Best Practise options and have passed NAWAC tests for cats. All traps were baited with fresh rabbit meat. However, SA2s use an additional lure of peanut butter and cat biscuits at the entrance of the trap. Traps were checked 10 times during the 2015/16 season and the results are presented in Table 1.

**Table 1 – Cat trap results, captures from September 2015-2016**

	Target	Non-targets			
Cat traps	Cat	Stoat	Rat	Possum	Hedgehog
SA2 (n=12)	0	0	0	2	0
Timms Cat Trap (n=12)	0	0	0	1	0
Conibear doubles (n=9)	2	1	1	0	1
DOC traps	Cat	Stoat	Rat	Possum	Hedgehog
DOC 150/200 (n=365)	11	73	624	2	9
<b>TOTAL</b>	<b>13</b>	<b>74</b>	<b>625</b>	<b>5</b>	<b>10</b>

Although two cats were caught in cat traps, DOC150/200 traps are clearly more effective at catching cats. This suggests that they are perhaps less attractive than simple run through tunnels. Despite cat traps being reported to work well in other parts of the country (i.e. Coromandel), it is evident that these traps are not achieving significant results in Fiordland.

DOC Te Anau staff have commenced a draft review of cat management at a local level (led by James Reardon), but are awaiting national guidance and further funding to progress management and trial other methods in the area. This has been highlighted by previous site leads (Hill 2011 & 2013) but to date there has been no further action in exploring alternatives such as leg hold trapping, using cat detection dogs and the use of PAPP in the future.

Considering the latest application of aerial 1080, we expect to see a decline in the number of cats in the Eglinton in the following year, as a result of secondary poisoning. However, without being able to establish the size of the problem, specifically, population density and dynamics, we can only rely on sightings and trap catches as indicators at present.

Evidently, this is an area of pest control that needs further attention and should be considered a priority.

## Seedfall monitoring

Monitoring the amount of beech seed that falls in autumn is a useful way to predict probable trends in rodent and stoat populations for the following season. A high level of beech seeding was recorded in autumn 2016, in comparison with 2015, a non-mast year (Table 2). The seed fall density was variable between the monitored sites, with more seed produced in the southern parts of the valley compared with the northern end. At a level above 2000 seeds per m<sup>2</sup>, the level of seeding in the Eglinton was considered sufficient to drive a rodent irruption.

**Table 2 – Total seeds per m<sup>2</sup> for each line, February to May, for 2015 and 2016**

	Walker Creek		Knobs Flat		Plato Creek		Eglinton	
	May 15	May 16	May 15	May 16	May 15	May 16	May 15	May 16
<b>Red beech</b>	2	2262	0	669	0	581	50	390
<b>Mountain beech</b>	0	88	0	111	0	127	8	811
<b>Silver beech</b>	0	0	2	334	0	62	3	8
<b>Total</b>	<b>2</b>	<b>2350</b>	<b>2</b>	<b>1114</b>	<b>0</b>	<b>770</b>	<b>61</b>	<b>1209</b>

## Rodent and stoat monitoring data

Monitoring of rodents and mustelids is carried out using a network of tracking tunnel lines following the standard protocol of lines of ten tunnels 50 metres apart described by Gillies & Williams (2005). The tracking tunnel network sample design was changed in 2016 to move to a consistent sample design being used nationally for the collection and interpretation of rodent and stoat data. Four sets of 'ridge to river' runs (each set containing 5 lines of 10 tracking tunnels) were established – which provides data that can be analysed to assess rodent growth along altitudinal sequences. The new network also eliminates potential bias from treatment voids in the managed area that could potentially skew analyses. The rat tracking tunnel lines were monitored four times as planned during the 2015/16 season. 14 night stoat surveys on these tracking tunnels were also instigated (three checks – pre-operation, pre-cohort, and post-cohort).

Rat tracking remained at zero through the whole year, until after the mast when the tracking rate reached the threshold target of XXXX%. Stoat tracking remained at zero throughout the year.

**Table 3 - Average tracking rates (%) for monitoring lines run during 2015-2016**

Date	Rodent monitoring			Stoat monitoring	
	# rodent lines run	Rat	Mice	% of stoat lines tracked (n=10)	Stoat
August 2015	28	0	15	-	-
November 2015	31	0	2	-	-
February 2016	28	0	1	-	-
May 2016	18	0	2	0	0
August 2016	josh	josh	josh	0	0

*\*no mustelids detected during rodent monitoring surveys for any of the dates listed*

**Rat and Possum Control: aerial 1080**

The level of beech seeding recorded during autumn 2016 was sufficient to drive an increase in rodent numbers and an aerial 1080 operation took place in the Eglinton on 14-15 October 2016. The outcome and result monitoring data are pending and the relative success of the operation will be determined once the data has been analysed.

## Plans for 2016/17

### Continue

- **stoat and cat trapping (including maintenance)**  
Trap checks will be carried out by Ben Crouchley from Huntsman Ltd and at least 9 trap rounds will be made by 1 July 2017.
- **beech seed monitoring**, between February and May annually .  
This will be carried out by Iris Broeksma from Mainly Fauna Ltd and managed by George Ledgard, Senior Ranger, Te Anau.
- **rodent and stoat monitoring**, using tracking tunnels quarterly.  
This will be carried out by Iris Broeksma from Mainly Fauna Ltd and managed by George Ledgard, Senior Ranger, Te Anau.

### Action

- **Single set trap replacements**  
Trap replacements for True Right single sets planned for completion by Dec 2016. If funding/trap boxes are available for replacing remaining single sets at Mistake and/or Valley floor, these will be replaced early in 2017. Site lead to liaise with Ben Crouchley from Huntsman Ltd.
- **Real Journeys \$10K Sponsorship for Kaka Protection – adding additional trapping to the network**
  - Site lead to liaise with Lindsay Wilson in regard to how this \$10K is to be spent before July 2017.
  - Determine if there are expectations around “Interpretive panels” as outlined in the original bid.
  - Initial thoughts are to extend current true right line to Smithy Creek.

Options to spend \$10K include but are not limited to:

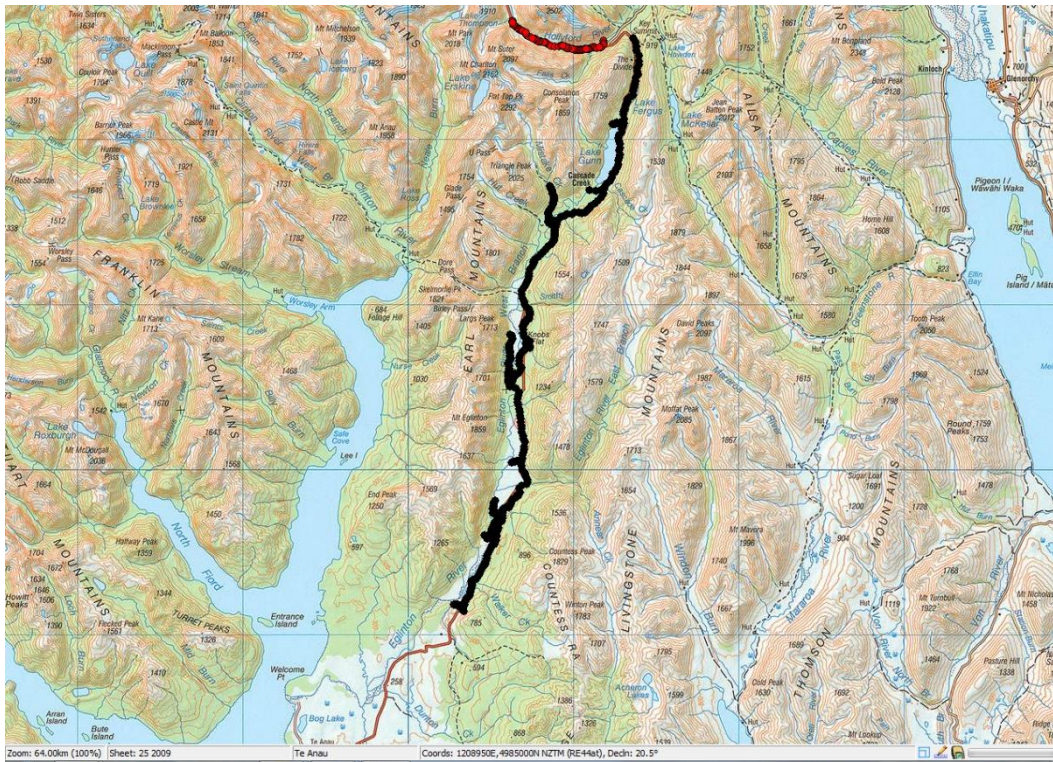
*Note: \$10K will purchase 65 DOC200 double sets at \$155 ex GST per unit.*

- \$10K for DOC 200 double sets **excluding trap layout**. Traps laid out in the next financial year and Real Journeys to cover layout costs and trap checking for 2017/18 PLUS further extension of the network.
- \$10K for DOC 200 double sets **including trap layout**. No trap checking in Year 1. Real Journeys to cover trap checking for 2017/18 PLUS further extension of the network.
- \$10K for DOC 200 double sets **including trap layout and first trap check**. Traps laid out and checked in year 1, but fewer traps on the ground. Real Journeys to cover trap checking for 2017/18 PLUS further extension of the network.

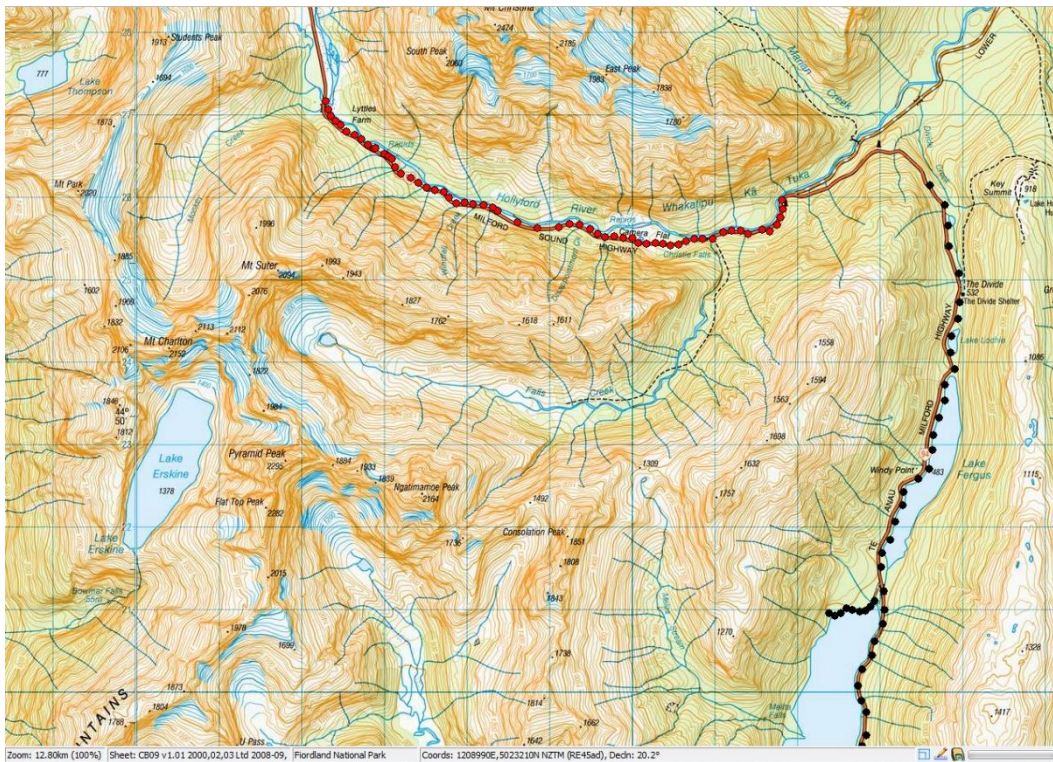
### Investigate

- **cat control**  
including targeted, periodic leghold trapping, cat detection dog use, and other techniques such as PAPP operations (i.e. review status). Liaise with James Reardon, Science Advisor, Threats and herpetology, Te Anau, at [jreardon@doc.govt.nz](mailto:jreardon@doc.govt.nz), DDI +64 3 249 0255, Mobile 022 6155 327
- **increased weasel numbers**  
explore implications of increased weasel numbers on local native wildlife

### APPENDIX 1 - MAPS

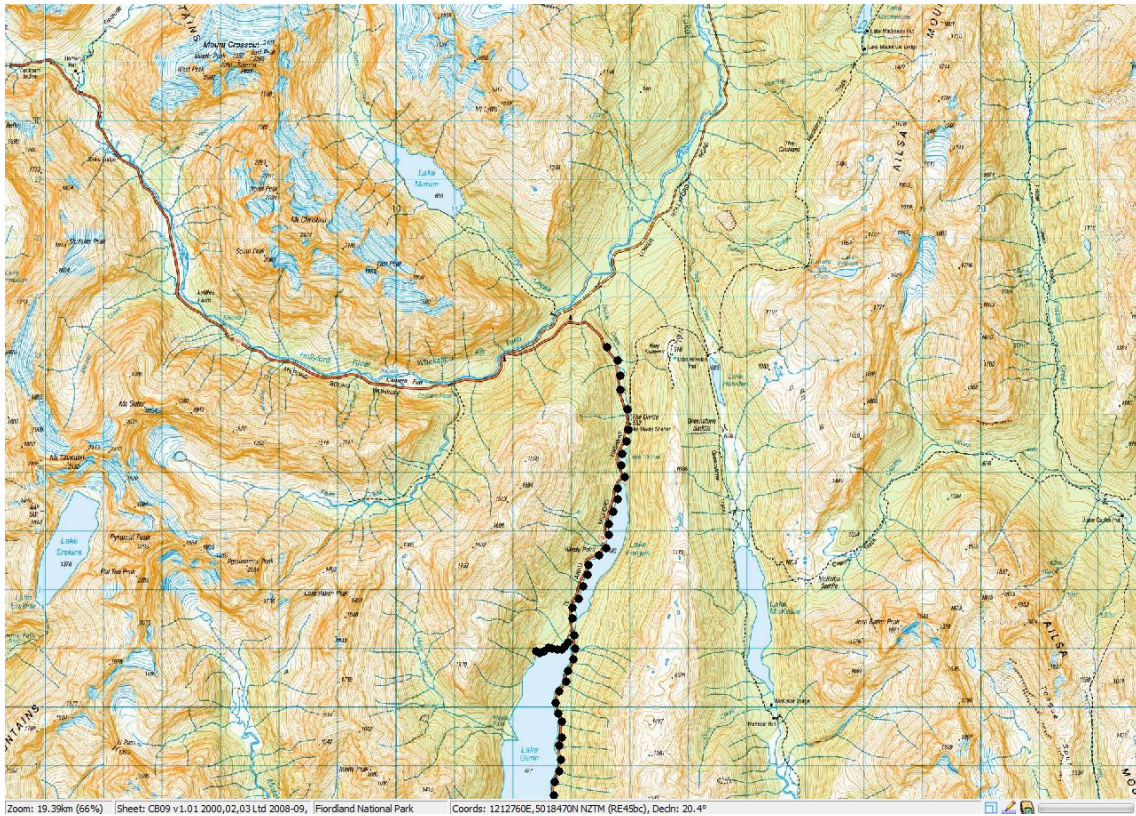


Overview map: Existing Eglinton Valley Stoat Traps (n=365, black dots) and new MM line – Marian Cnr to Monkey Creek (n=55, red dots)

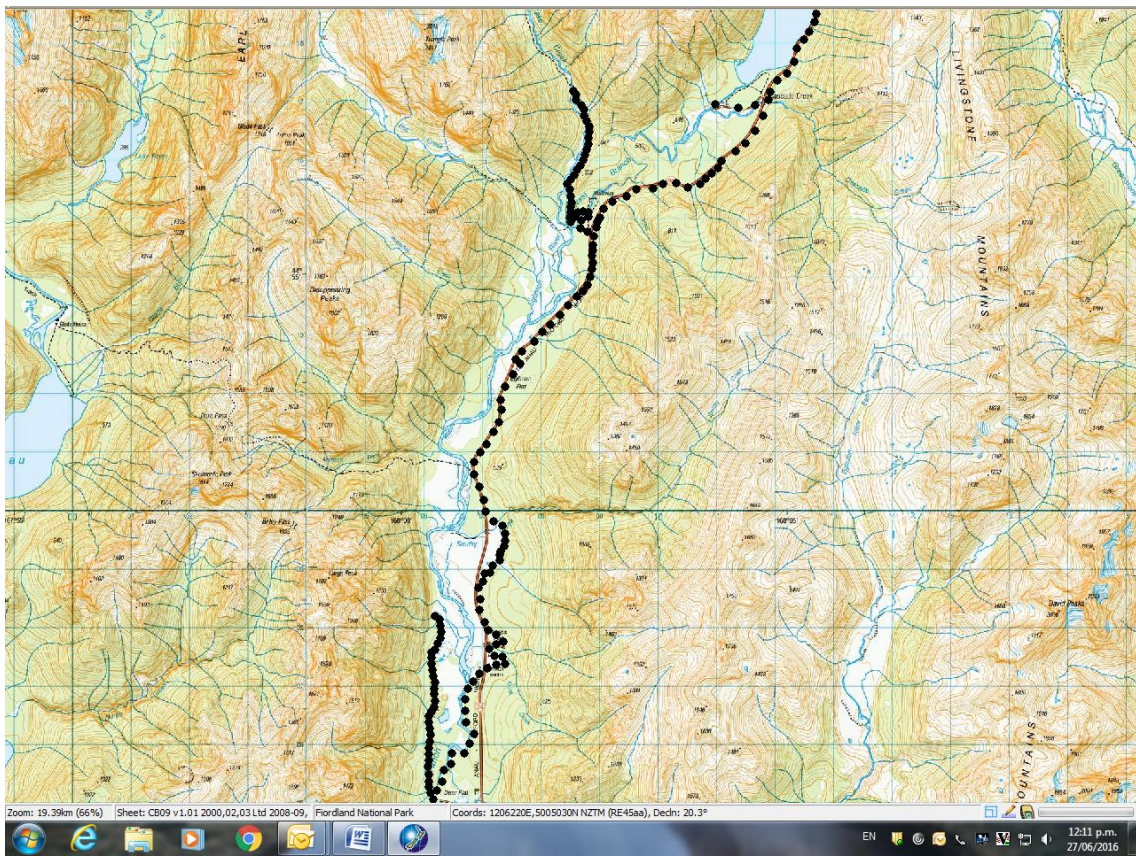


Zoomed - MM line, Marian Cnr to Monkey Creek (n=55, red dots)

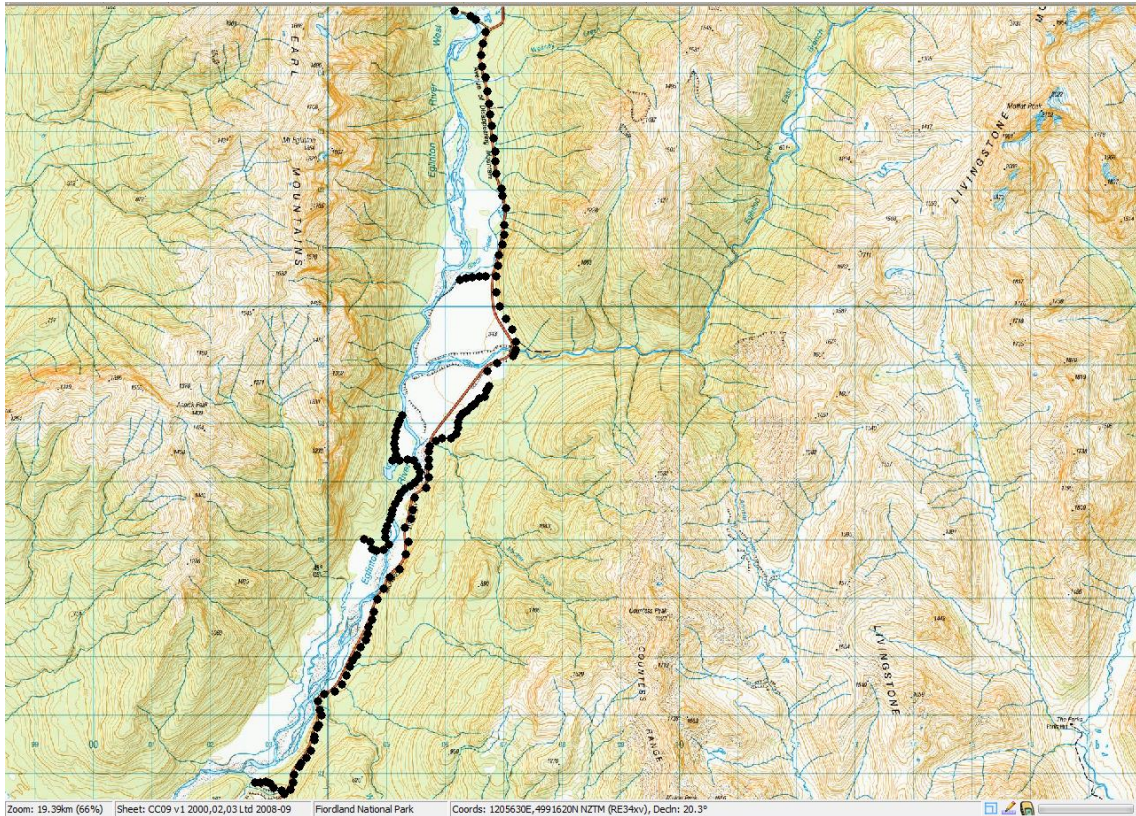




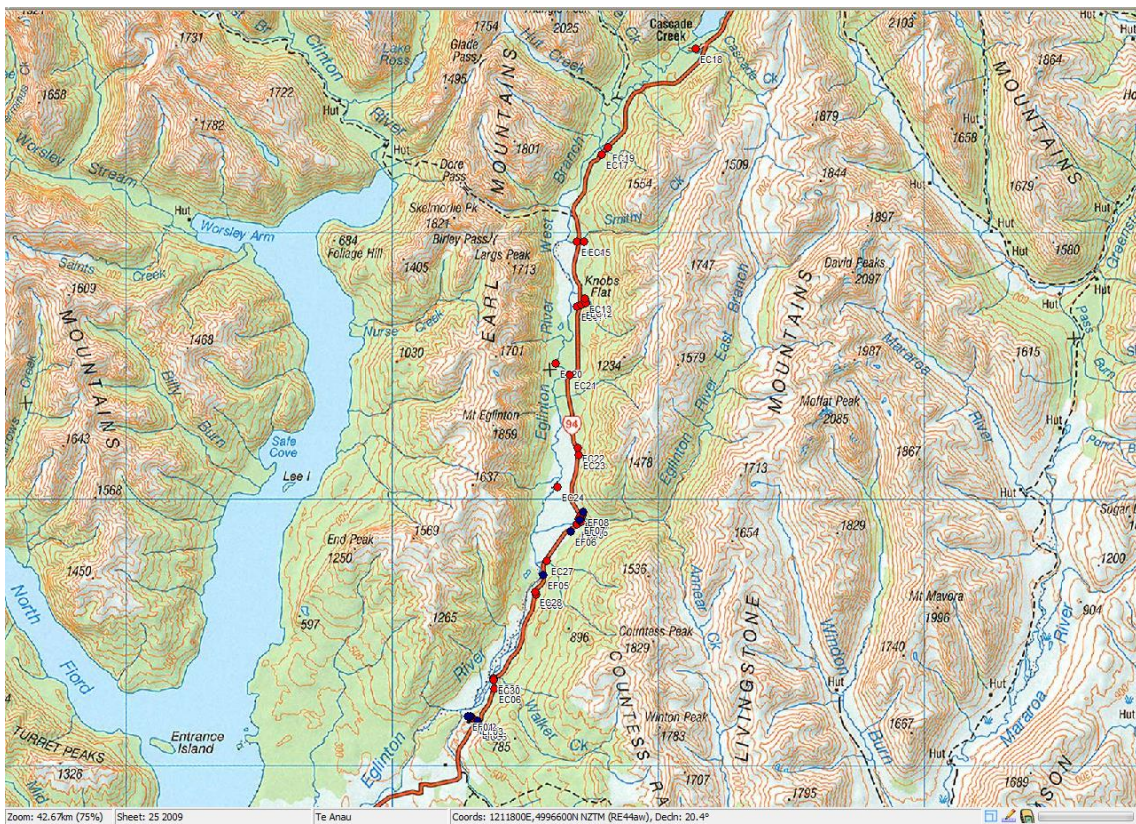
**Zoomed - Map A of Northern Eglington Valley Stoa Traps (black dots)**



**Zoomed - Map B of Middle Eglington Valley Stoa Traps (black dots)**



Zoomed - Map C of Lower Eglington Valley Stoat Traps (black dots)



Map D of Eglington Valley Cat Traps (n = 33) (red dots) and DOC 250 Ferret traps (n = 8) (navy dots)

**APPENDIX 2 – KILL TRAPPING RESULTS**

<b>Trap capture results 2015/16 (n=365, excl new MM line)</b>	<b>STOAT</b>	<b>RAT</b>	<b>WEASEL</b>	<b>CAT</b>		
Sep-15	9	68	14			
Oct-15	7	11	9			
Nov-15	2	13	3			
Dec-15	8	14	5			
Jan-16	14	5	2			
Feb-16	13	14	4			
Mar-16	15	34	9			
May-16	2	44	4			
Jun-16	2	82	0			
Aug-16	1	222	7			
Sep-16	0	117	3			
<b>Total</b>	<b>73</b>	<b>624</b>	<b>60</b>			
<b>Trap capture results MM line 2016 (n=55 new traps deployed Aug-16)</b>	<b>STOAT</b>	<b>RAT</b>	<b>MOUSE</b>			
Aug-16	1	36	2			
Sept-16	0	9	0			
<b>TOTAL</b>	<b>1</b>	<b>45</b>	<b>2</b>			

**APPENDIX 3 – From Hill 2011 & 2013**

**Stoats and rats trapped per check, Eglinton Valley 1999-2013**

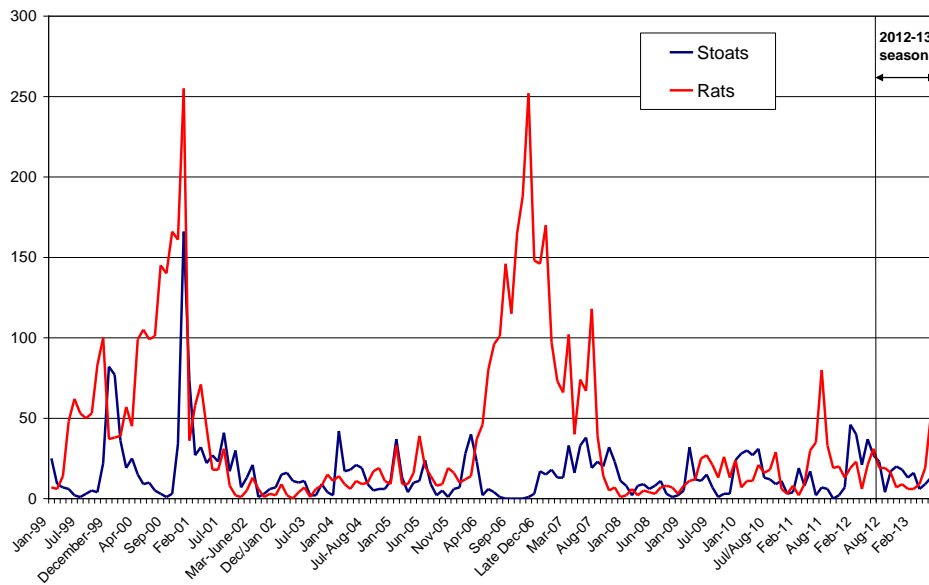


Figure 1- Total stoat and rat captures per check, 1999-2013.

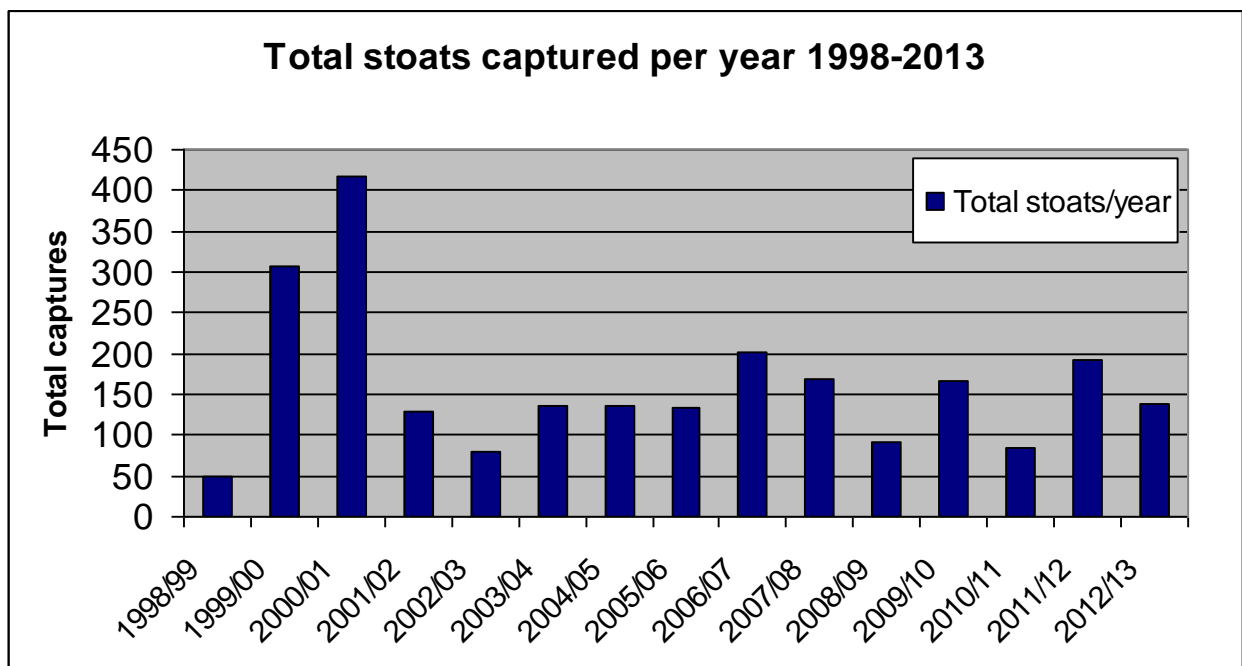


Figure 2- Total annual stoat captures (July-June), 1998-2013.

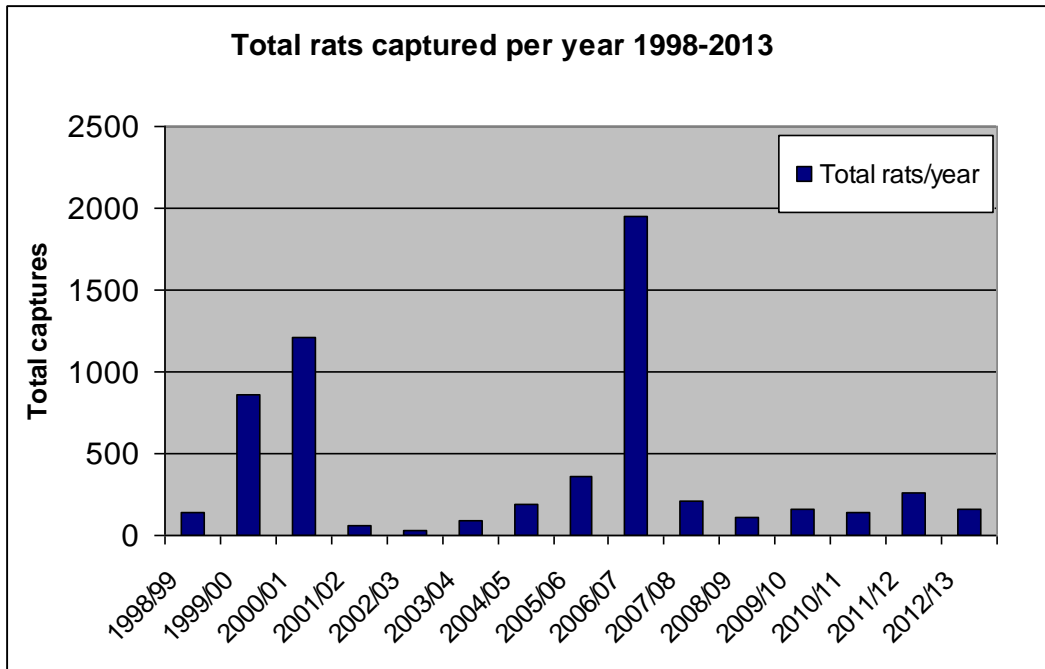


Figure 3- Total annual rat captures (July-June), 1998-2013.