

# Reviewing Project Strip

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## Summary

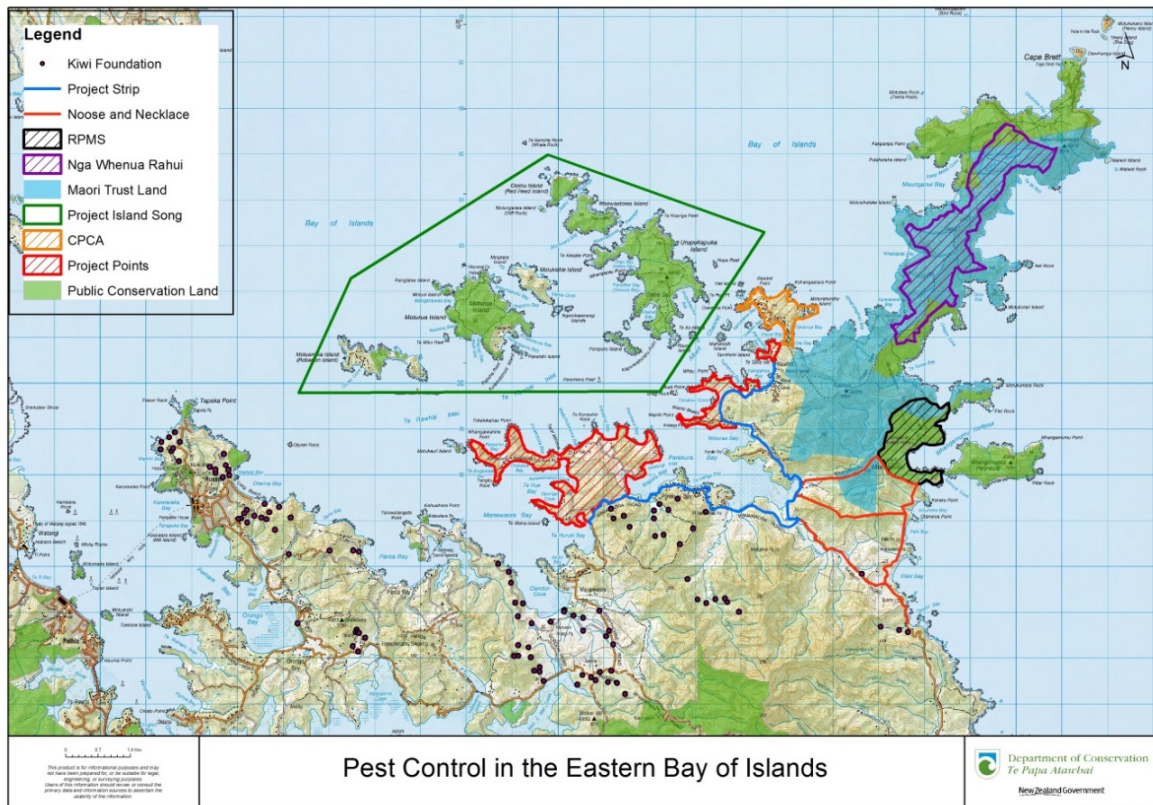
The full complement of 204 traps along Project Strip can't be maintained at present levels given current resources—and arguably shouldn't be because trap catch-rates of predators are so low that at least some of the money is perhaps better spent elsewhere. The results of trapping along Project Strip are reviewed. Options for the way forward for Project Strip are presented.

**Please advise which option you support.**

## 1. Background

Project Strip and Project Points were established late in the 2000s as part of Project Island Song. Both were aimed at reducing the chances of re-invasion of the islands of Ipipiri by mustelids and rodents, Project Strip generally being the first line of defence against pests migrating seaward from the hinterland. More recently, the projects have become something more than simply pest-control: both bring local employment, and also help satisfy a growing interest and concern among at least some of our community around restoration and protection of native biodiversity on the mainland.

Figure 1 shows how Project Strip contributes to the broader control of predatory pests in the eastern Bay of Islands.

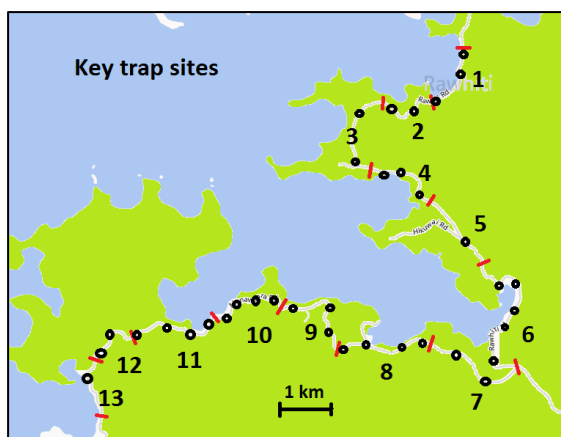


**Figure 1. Predatory pest control in the eastern Bay of Islands (November 2013), the blue line showing Project Strip.**

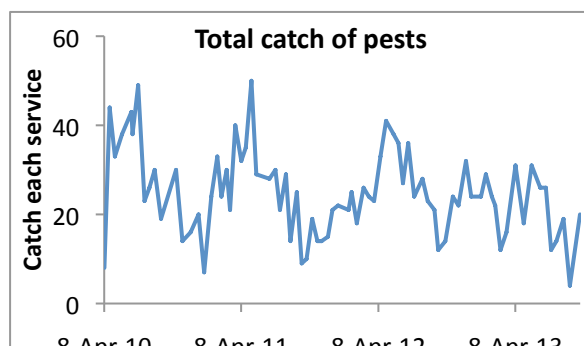
I began setting up Project Strip in 2009, initially supervised by Terry Johnson working under the auspices of NZ Kiwi Foundation. There was also generous input from Northland Regional Council (NRC), Department of Conservation (DOC), and the Guardians. Because it's public land, Project Strip involves only traps, most having been supplied by NRC. Thirty-eight key trap sites (each usually with one DOC 200, one Timms, and one Victor) were established along 13 kilometres of roadside from Te Tawa just north of Te Rawhiti Marae and Te Huhuri (Dick's Bay). Subsequently, and with support of the DOC BioCondition Fund (CON-599), additional traps (mostly Victors for rats) were installed between the key trap sites, bringing the trap-spacings better in line with DOC Best Practice. By April 2010, a line of 176 traps had been established, serviced every two to three weeks by local trappers employed by Te Rawhiti Enterprises Ltd (TREL), and funded by members of the Eastern Bay of Islands Preservation Society (EBoIPS).

An application to the DOC BioCondition Fund to extend both the length and width of Project Strip was declined in preference to placing more traps in hot-spots, closing the gaps between some of the traps, and addressing the issue of feral cats (CON-861). Accordingly, 28 additional traps (including 6 for cats—all set well away from built-up areas) were installed between May and November 2012, to give a total of 204. All traps were GPS-ed.

Figure 2 shows the distribution of key trap sites, and Figure 3 the total catch of all traps at each servicing. (Later, Figure 4 shows those trapping results broken down into taxa.)



**Figure 2. Distribution of key trap sites along Project Strip (each usually having a DOC 200, a Timms, and a Victor trap). (The numbers are the compartments, explained later.)**



**Figure 3. Total catch of predatory pests from 2-3 week servicings of Project Strip, April 2010 to September 2013. Trap numbers were increased from 176 to 204 during mid- to late-2012.**

It's time to review the results from Project Strip for the following reasons:

1) Catch rates now seem to be awfully low. Whereas they were higher in the early years of trapping, 204 traps now yield little more than 30 pests each service during the late-winter peak, and down to a trivial five in the low periods; that's one animal in every seven traps and every 40 traps respectively.

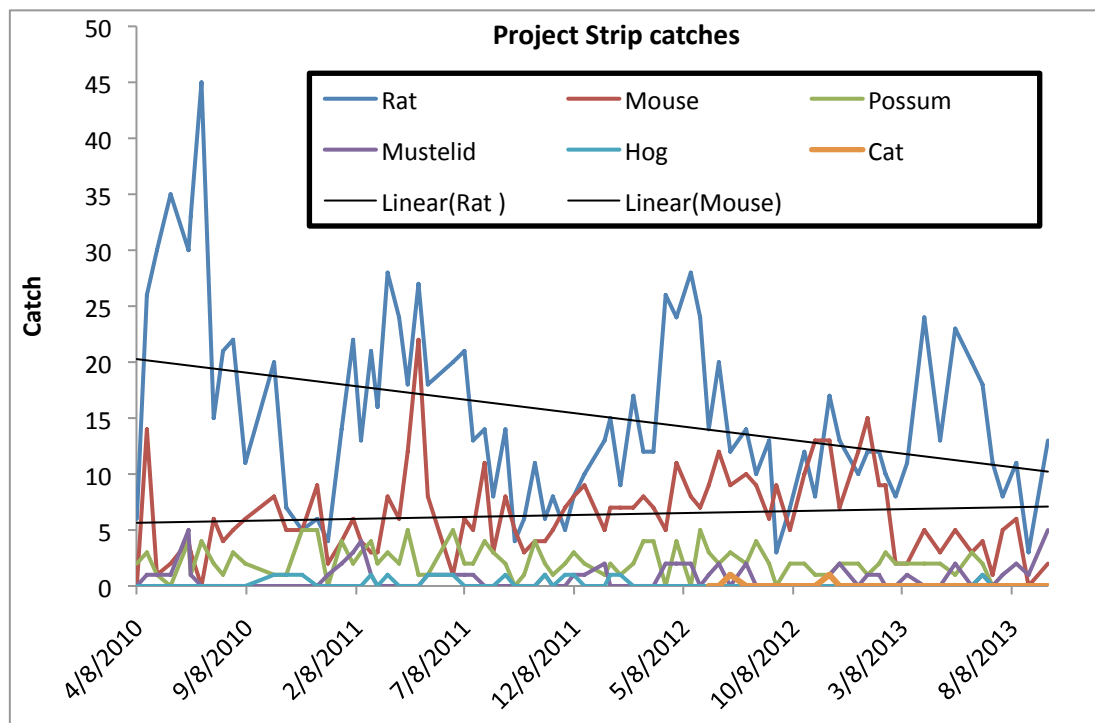
2) The DOC BioCondition Fund (CON-861) grant runs out shortly, and if we are to continue servicing the additional traps then further funding from the community is required. Presently, EBoIPS pays TREL around \$10K each year for servicing 176 traps along Project Strip every 2-3 weeks; the additional traps cost \$2K each year to service. Servicing the full 204 traps is a 20 person-hour job.

3) TREL’s hourly rate is shortly to increase by about 20% (the first increase in several years, and perfectly reasonable in my view as they hold the public-liability insurance, organise the tax, etc.).

4) And there doesn’t really seem to be the appetite by the local community to pay more than the approximately \$10K already paid each year.

This review covers the almost 12-month period (November 2012 to September 2013, referred to from now as the *Review period*) when the full complement of traps (204) was in place. It’s assumed throughout that pest catch-rate is proportional to the pest’s density (though a gross simplification that does not take into account, for example, trap saturation).

Because previous trapping will have had a bearing on the results for the Review period, catches by taxon since April 2010 are shown, in Figure 4. The seasonal peaks in rodents are clear, and it also appears that there has been a steady decline in rats and increase in mice. On the one hand, this is to be expected; on the other, it’s perhaps surprising that this single line of traps actually appears to be reducing rat densities. Surprising, because on most parts of Project Strip there is virtually unlimited scope for new recruitment from both margins of the road, and especially from the landward side. The catch rates of the other pests have been low and without obvious trend.



**Figure 4. Project Strip trap-catches by taxon in 2-3 weekly servicings, April 2010 to September 2013 (no cats were caught). Total trap numbers were increased from 176 to 204 during mid- to late-2012. (Figure 3 gave the sum of all catches at each service.)**

The trapping results for the Review period are also contingent on the characteristics of adjacent lands—including land-use, the nature of the vegetation, and the levels of pest-control in place (Figure 5).

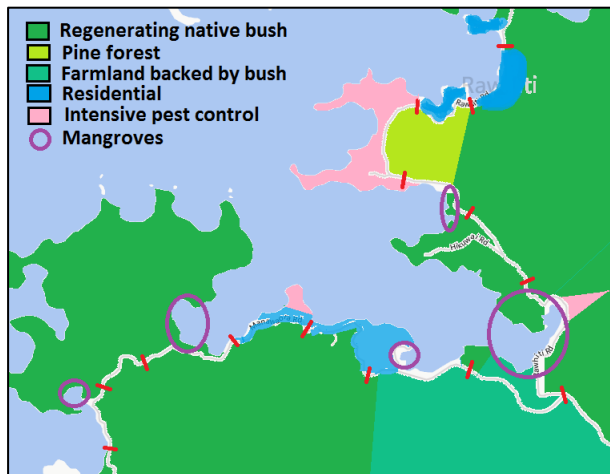


Figure 5. Predominant land-use and vegetative cover, and areas of intensive predatory pest control, eastern Bay of Islands.

I'll now talk to the results for November 2012 to September 2013, the Review period, in order to help inform a decision on the way forward for Project Strip.

## 2. Review period: distribution of traps

Along the 13 kilometres of Project Strip, mice are caught primarily in Victors (and recently also in Snappees); rats in Victors, DOC 200s (and Snappees); mustelids in DOC 200s; hedgehogs in DOC 200s, standard Timms, and Timms opened-out for cats; possums in standard Timms; and cats in Timms opened-out for cats. Fortnightly servicing of the traps was the aim; 2-3 weekly servicing was what was achieved.

Project Strip was divided into 13 individual groups of traps—or compartments, the boundaries aligning with what were subjectively perceived as practical cut-off points. Trapping intensity—in terms of the numbers of traps for each taxon in each compartment, and along each compartment-kilometre, are shown in Figure 6.

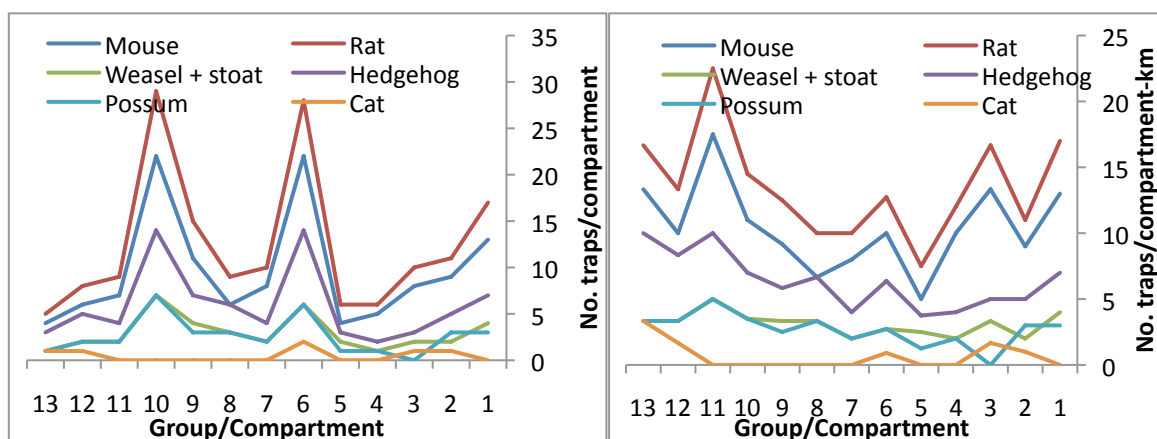


Figure 6. Numbers of traps available to each taxon in each compartment along Project Strip (left), and the numbers of traps per compartment-kilometre (right), November 2012 to September 2013.

### 3. Review period: results

#### 3.1 Predator diversity

The proportions of each predator trapped in each compartment are shown in Figure 7. Figure 8 shows how the diversity of predators varied along Project Strip. Rats and mice predominated throughout, and pest diversity was highest in Compartment 6, followed by Compartments 8, 10, 12 and 13. There was a tendency for pest diversity to be highest in the 'wild places'.

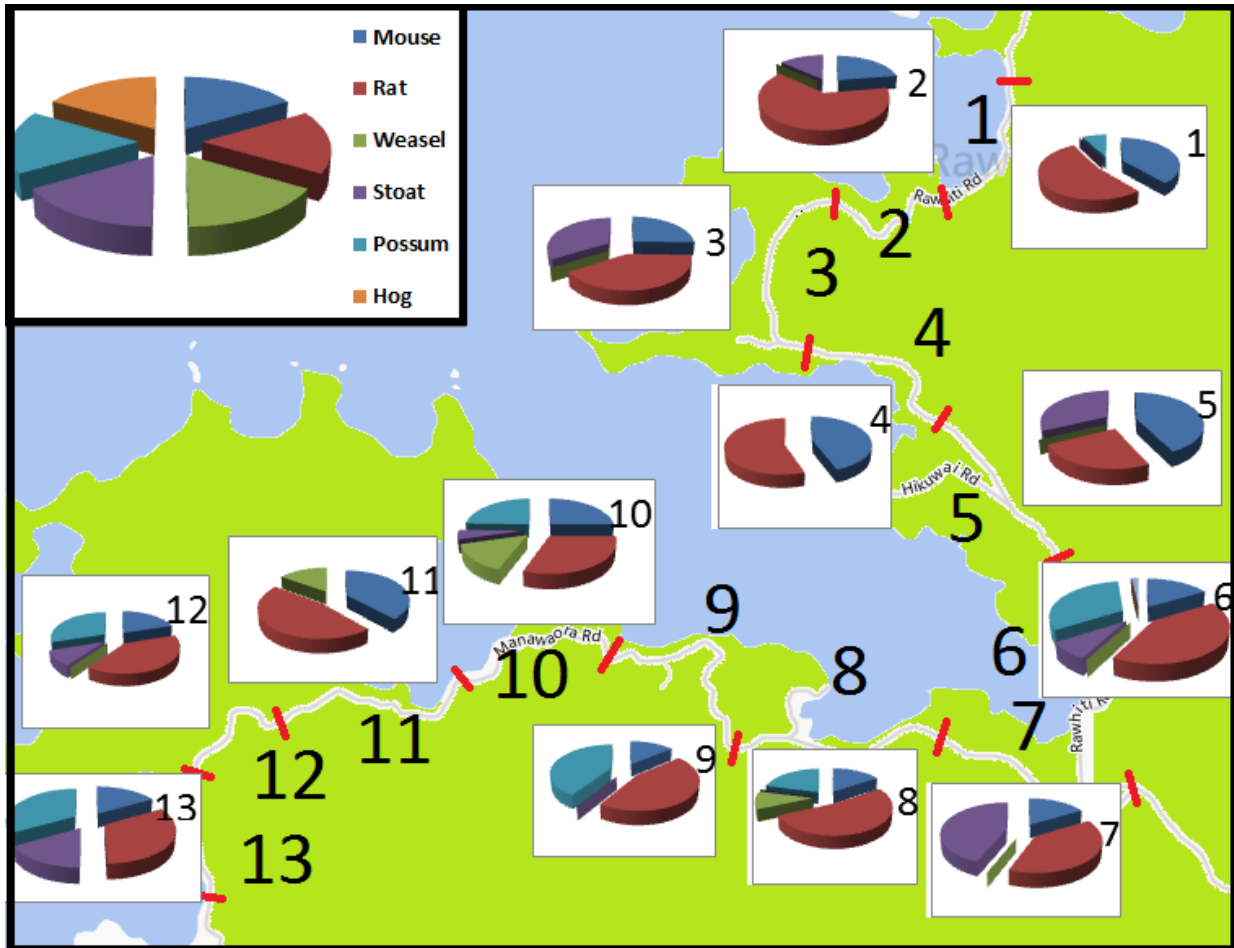


Figure 7. Pie-charts show the proportional catches per trap over all servicings by taxon for each compartment, November 2012 to September 2013.

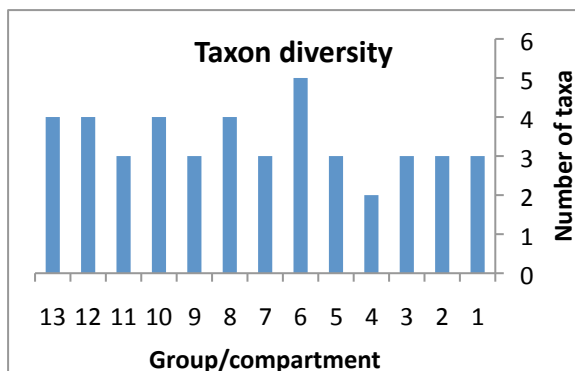


Figure 8. Number of different taxa of pest according to compartment, November 2012 to September 2013.

### 3.2 Catch rates

#### 3.2.1 Catch per trap

The average catch per trap across all servicings in each compartment for each taxon is shown in Figure 9. The catch rate was trivial for hedgehogs, and about the same (and very low at 0.02-0.10 per trap service) for all other pests. Although there was a great deal of variability in the data, evidenced by the wide error bars, it appears that mice and rats were caught at similar rates in each compartment, and that mustelids and possums were caught least often in Catchments 1-4 (where Catchments 2 and 3 are adjacent to areas with heavy trapping/baiting effort).

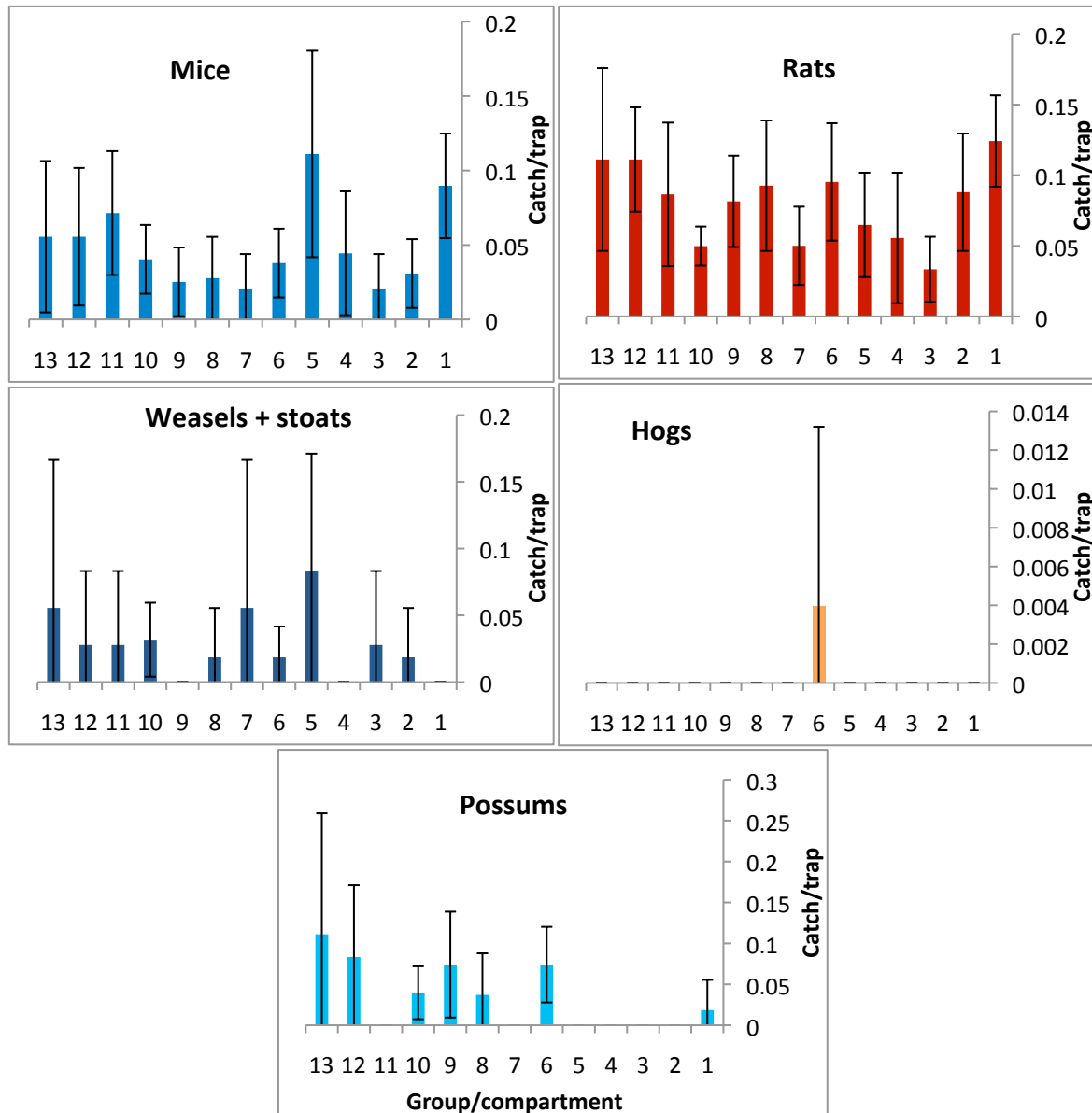


Figure 9. Average catch per trap (with 95% confidence intervals) by taxon across all servicings for trap-groups in each compartment of Project Strip, November 2012 to September 2013.

### 3.2.2 Catch per trap per kilometre

The average catch per trap per kilometre across all servicings is shown in Figure 10. These graphs are, of course, similar to Figure 9, but they take into account the density of traps (traps per kilometre). (I couldn't be bothered calculating the confidence intervals—but they'll be of similar scale to those shown in Figure 9.)

The results strongly point to the baddies being focussed in the west (Compartments 11-13)—which is where there is a lot of bush and relatively little trapping effort immediately alongside the road.

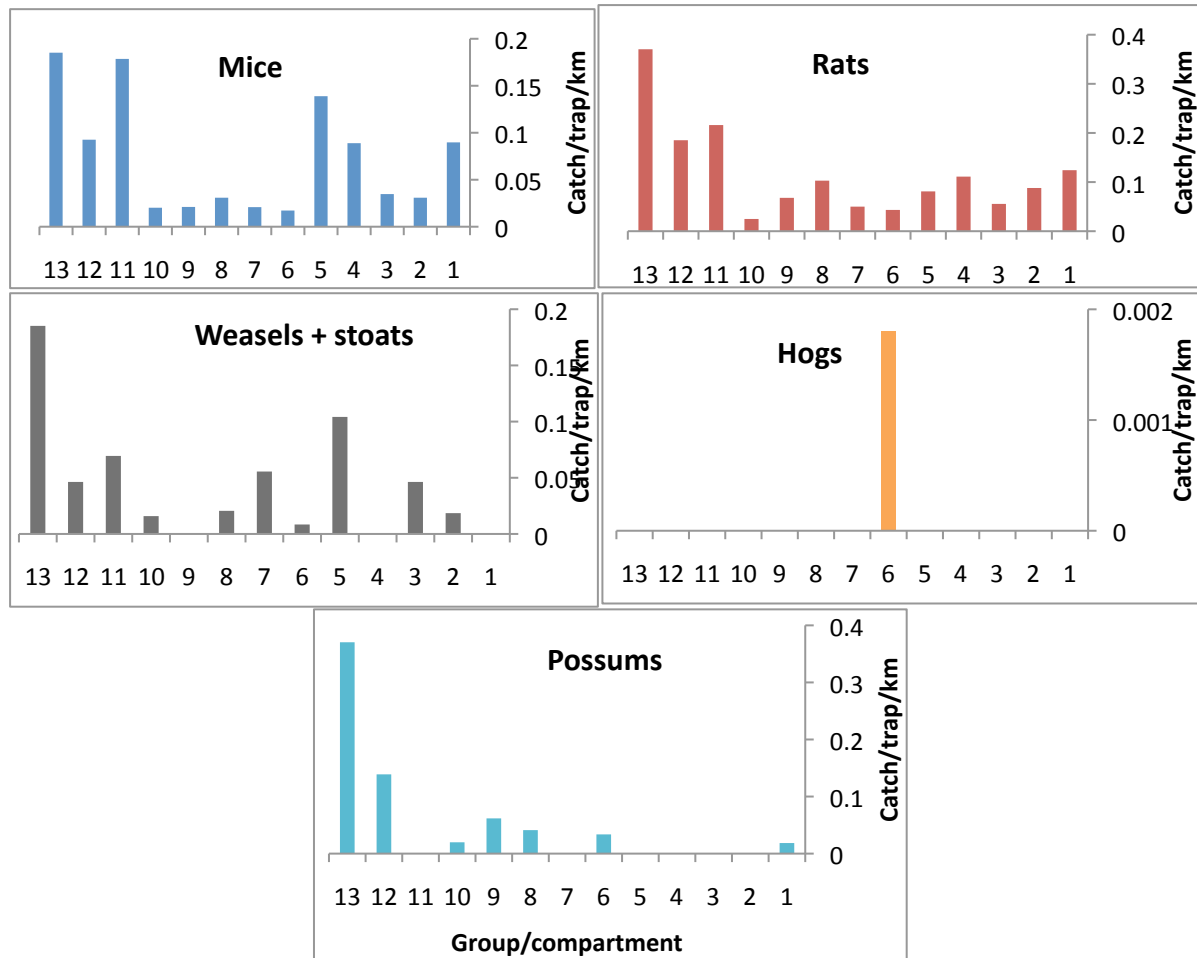


Figure 10. Catch per trap per kilometre over all servicings, November 2012 to September 2013.

### 3.3 Catch per kilometre

The catch per kilometre across all servicings is shown in Figure 11; these graphs are an amalgam of Figures 9 and 10. Rats were the most dense predator along Project Strip (catches per kilometre of 10-40), followed by mice (5-25 per kilometre). Possum catches reached seven per kilometre and mustelids four. The data point to greatest densities in the wild places—particularly in the west—and least alongside highly-controlled areas.

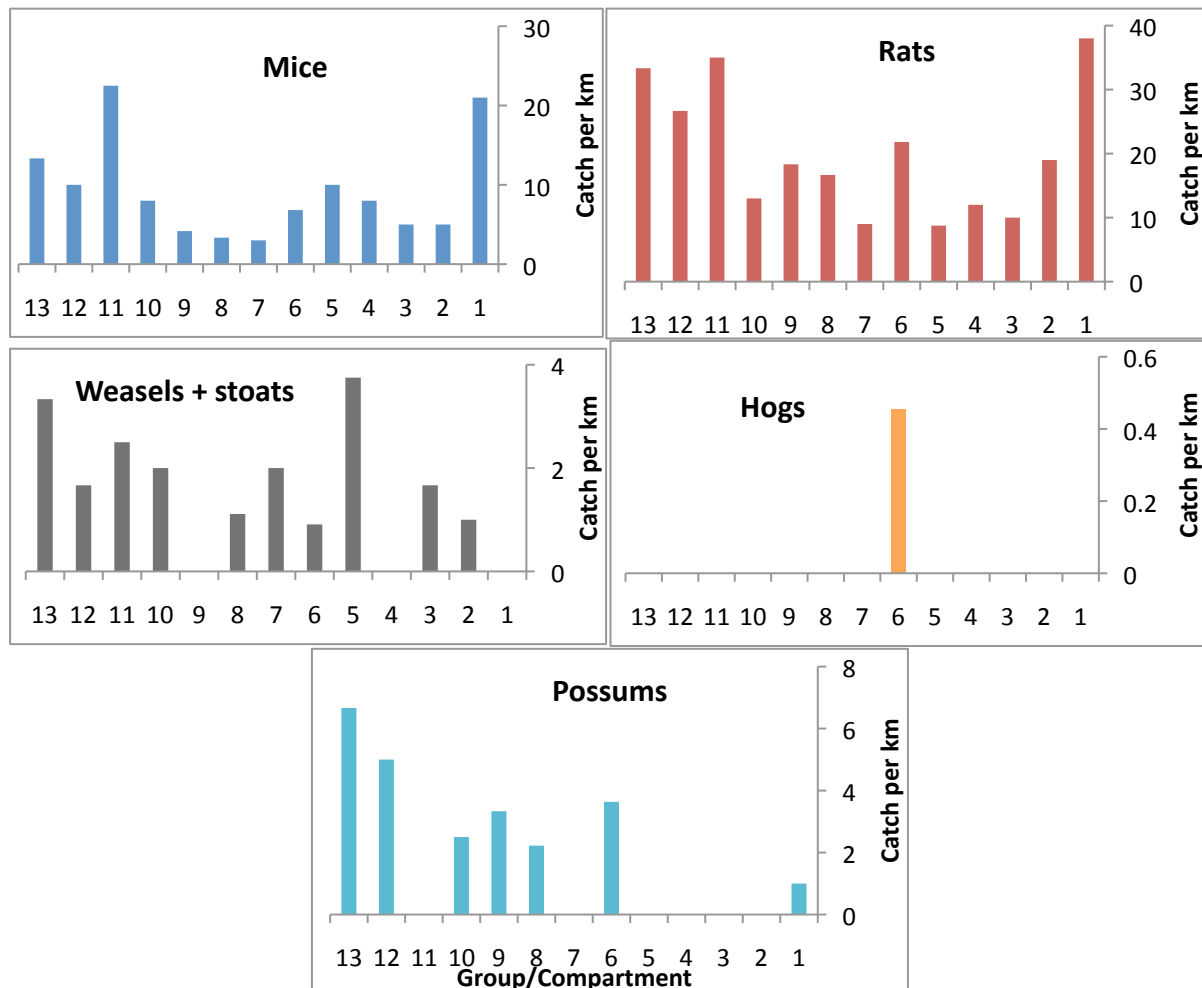


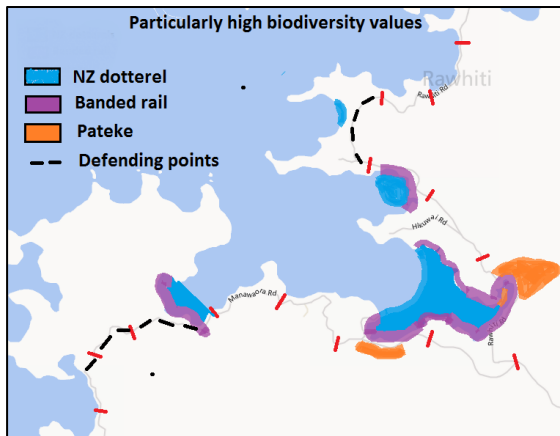
Figure 11. Catch by taxon per kilometre, November 2012 to September 2013.

### 4. The way forward

Project Strip can't be sustained at its present level (204 traps, which includes the additional traps installed as part of the DOC BioCondition Fund commitment) because there aren't the resources. Even if there were the funds, is this their best use, given such low trap-catch rates?

Whereas when Project Strip was established reducing pest abundance in support of the pest-free islands was the main *raison d'être*, things have since moved on. Native biodiversity values of the area are now being considered by many in the community in their own right. For example, restoration of the swamp forest at Tangatapu is also a *pateke* habitat restoration project; there is another on Bentzen Farm at the head of Parekura Bay, which is where the highest *pateke* population in the area used to be. Accordingly, in talking about reducing effort on Project Strip, it's important to consider local native biodiversity values and the community's aspirations around them (Figure 12).





**Figure 12. Places close to Project Strip with high biodiversity values through they being where at-risk birds forage and/or might breed. Roadsides that in particular help defend Project Points are also shown.**

Below is a set of options regarding the way forward for Project Strip, together with an estimated annual cost (excluding GST) associated with each based on TREL’s new charge-out rates.

The set of options that involves servicing June to December only is predicated on this being when the breeders that have survived the winter are in action, and when the new cohort of pests leaves home—but they don’t lead to year-round opportunities for the trappers.

A particular point to note is that if we decide to proceed with just the 38 key trap sites, then we are essentially saying that mustelids and possums (and cats, in places) are our primary focus—not rats (and mice), which require 100-metre spacings between traps.

For all options, traps would remain in place, even if they are not to be serviced for now. Also, if there was any significant increase in trap-catches under any new servicing regime, the service schedule would have to be revisited, urgently.

**With the present service interval (2-3 weekly) all year round:**

- Option 1.1 (up to \$17,875)** Continue with all the present 204 traps, but install more to fully meet DOC Best Practice (200-m spacings between all DOC 200s and all Timms traps; 200-m spacings between cat traps in the wild areas; and 100-m spacings between all rat traps).
- Option 1.2 (up to \$14,300)** Continue with all the present 204 traps.
- Option 1.3 (up to \$10,010)** Continue with the 38 key trap sites (see Figure 2), but also maintain the additional rat traps alongside areas with particularly high biodiversity values (Compartments 4, 6-8 and 11).
- Option 1.4 (up to \$8,580)** Continue with the 38 key trap sites only.

**With the present service interval (2-3 weekly), June to December only:**

- Option 2.1 (up to \$8,937)**  **Option 2.2 (up to \$7,150)**
- Option 2.3 (up to \$5,005)**  **Option 2.4 (up to \$4,290)**

Do you contribute to Project Strip? Please join Eastern Bay of Islands Preservation Society (<http://www.eboipreservationsociety.org.nz/>) to help us restore and maintain native biodiversity—and at the same time protect the islands from re-invasion by pest animals and plants.