



Tiromoana Bush Advisory Group

Tiromoana Bush Year 4 (2008-2009) Summary Report

Introduction

This report summarises the activities undertaken as part of the Tiromoana Bush restoration project during the year 1 July 2008 – 30 June 2009. The report is structured in the same manner as the Work Plan prepared for and approved by Hurunui District Council. For each item, the original goal in the Work Plan is presented, then the progress made in achieving this discussed.

1. Management Planning

Action 1.1: Annual Work Plan Preparation

- *Complete review of 2008/09 restoration work.*
- *Prepare 2009/10 work plan in time for the June 2009 Tiromoana Bush Advisory Group meeting.*

The review of the 2008/09 work plan is contained in this report, while the 2009-10 annual work plan has been produced and is appended to this report for approval by the Tiromoana Bush Advisory Group at its 4 August 2009 meeting.

Action 1.2: Tiromoana Advisory Group Meetings

- *Hold Advisory Group meetings in December 2008 (Tiromoana Bush) and June 2009 (Christchurch - review of 2008/09 work and approval of 2009/10 work plan).*

The Tiromoana Bush Advisory Group met twice during this year, on 27 February 2009 at Tiromoana Bush and 4 August 2009 (in Christchurch). Dale McEntee replaced Greg Bennett as the Hurunui District council representative on the Advisory Committee in early 2009.

Action 1.3: GIS database and project management

- *Finish updating GIS files relating to management work (e.g., photo point and monitoring site locations, threatened and uncommon plant locations) and transfer these to the CWS GIS system.*
- *Update notes on monitoring methods to facilitate subsequent remeasurement.*

This work has been partially completed, with all the GIS files almost ready to transfer to the CWS system, but I still need to complete the notes on monitoring methods etc to go with these. I also need to slightly revise the vegetation map as the boundaries used for that are slightly different to the final QEII covenant boundaries. The core data files that we have include:

- Photopoint locations
- Vegetation monitoring plot locations
- Restoration monitoring plot locations
- Lizard monitoring sites
- Vegetation map
- Map of tracks within the conservation management area
- QEII covenant boundary

Examples of the different layers are appended to this report.

2. Monitoring

Action 2.1: Photopoints

- *Re-photograph existing photopoints in December 2008.*
- *Re-photograph all permanent vegetation plot photopoints and restoration plot photopoints.*

The photopoints were re-photographed on the 22nd December 2008. A report has been prepared on this which will be tabled at the meeting. The most obvious change apparent in the December 2008 photos are the slips associated with the heavy rainfall events during the 2008 winter, and resultant delta formed in Kate Pond.

The permanent vegetation plot photopoints established in April 2006 were rephotographed in April 2009. The most obvious change apparent in the April 2009 photos is a marked increase in the condition of the understorey vegetation, most notably through the establishment and rapid height growth of mahoe seedlings, but also through a general thickening of the existing small-leaved shrubs and through some increase in the abundance of ferns. A report has been prepared on this which will be tabled at the meeting.

Action 2.2: Permanent Plots

- *Establish five permanent plots in areas of gorse shrubland.*
- *Establish five permanent plots in grassland (stratified by distance from kanuka remnants and aspect).*
- *Establish two additional permanent plots to monitor restoration plantings once they are established (see Section 9.3 of the Management Plan).*
- *Remeasure existing restoration monitoring plots.*

No new permanent plots were established in either gorse or grassland. However, five more restoration monitoring plots were established on December 18th 2008 to monitor the plantings undertaken during 2008. It is important that all restoration plots are remeasured prior to the start of growth during the 2009/10 summer.

Action 2.3: Other Faunal Monitoring

- *Establish baseline monitoring for wetas and lizards.*

Fifteen lizard monitoring sites were established in both grassland and kanuka forest in March and April 2009 (Appendix 3). Common skinks are commonly seen at Tiromoana Bush – the Canterbury gecko has been recorded from the nearby Mt Cass ridge and this and other skink and gecko species might be present at Tiromoana Bush. Estimating the abundance of lizards poses a number of challenges as the habitat they occur in is structurally complex making them difficult to find and as they are easily scared by observers. Various methods have been used for estimating lizard abundance with recent research indicating that artificial shelters made of “Onduline” roofing tiles are effective for New Zealand lizard population census¹. This method was used here. To date there is no sign of lizards using the shelters, but experience elsewhere suggests that it may take 6-12 months before lizards start to utilise them.

Bird monitoring was again undertaken in October 2008 by Rhys Buckingham as up to 2007 results had shown an inexplicable decline of counts of most species of birds (indigenous and introduced) including a steady decline of bellbirds, fantails and total indigenous individuals. However the 2008 survey found that counts of bellbirds and most other birds had increased (Figure 1), though not quite to the high levels of the 2005 season (when the site was first surveyed). Rhys concluded that the fluctuations in bird counts between years may be associated with differences in weather, food availability, breeding dynamics, predator abundance, etc. However, the numbers of fantails continued to decline, a pattern that has been elsewhere. While wind is thought to be a factor in these results (birds are less conspicuous under windy conditions), statistical analysis showed that after controlling for wind, variations in bird counts were still large and significant and may reflect differences in predation and food resources between years.

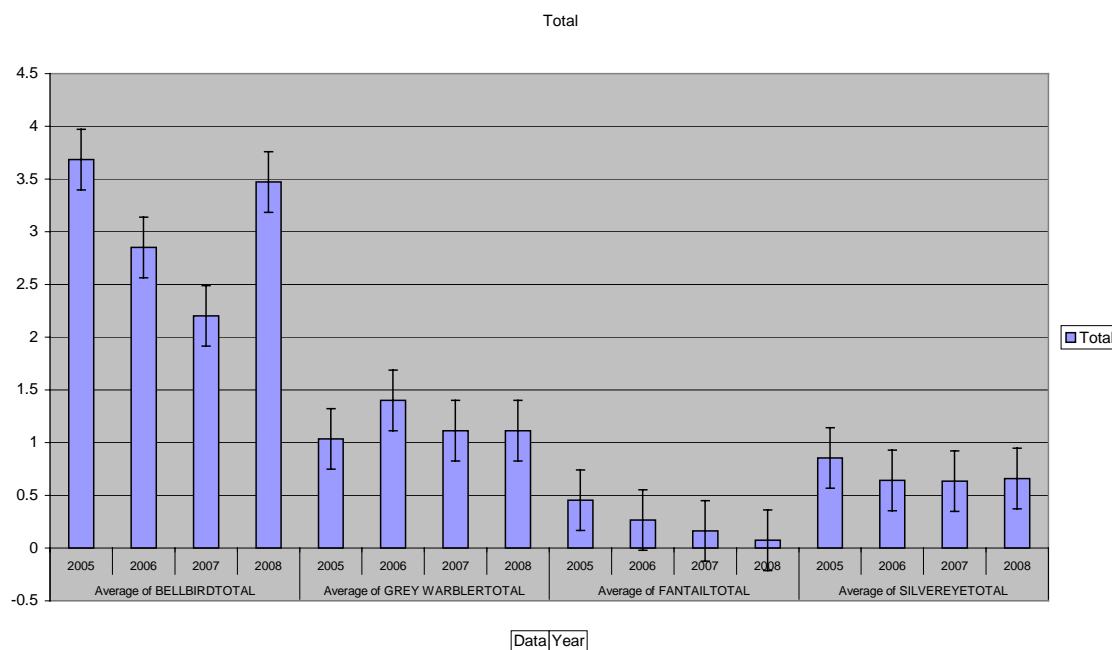


Figure 1. Count trends 2005-2008 for common indigenous species.

As a result of the 2008 bird monitoring, it was recommended that:

¹ Lettink M, Cree A, Norbury G, Seddon PJ (2008) Monitoring and restoration options for lizards on Kaitorete Spit, Canterbury. In: DOC Research and Development Series, vol. 301. Department of Conservation, Wellington.

- For the purposes of modelling cyclic behaviour in bird counts, species interactions, and other factor interactions such as climate effects, monitoring should be continued annually for at least two more years.
- If there is further indication that numbers of fantails or other indigenous species are declining, or if introduced mammalian predators are indicated to be at high levels, consideration should be given to carrying out intensive control of possums, rats and stoats.

Copies of the bird monitoring report will be tabled at the meeting.

3. Plant and Animal Pest Control

Action 3.1: Weed Control

1. *Continue mapping of woody weeds (including an autumn check for deciduous species)*
2. *Complete removal of wilding conifers*
3. *Complete removal of willows (by trunk poisoning)*
4. *Remove any hawthorn or cherry plum as they are encountered*

Mapping and control of woody weeds has continued as they are encountered. Wilding conifer removal has been limited, although CWS staff have removed some additional trees. Wilding conifer seedlings are regularly pulled out as they are encountered – this is likely to be an ongoing job. Waiora Landscapes have continued with willow control focusing in particular on plants around the edge of Kate Pond. This work will need to be continued for some years to ensure that the site is eventually willow free.

Action 3.2: Animal Pest Control

5. *If the outcome of the October 2008 bird monitoring shows an ongoing decline in bird numbers, then undertake a detailed mustelid and rodent monitoring programme across Tiromoana Bush as a basis for implanting a targeted control programme for these predators.*
6. *Maintain an ongoing review of rabbit and hare numbers and instigate control as required.*
7. *Undertake Canada goose control if numbers dictate.*
8. *Undertake deer and goat control if numbers dictate in consultation with adjacent land owners (especially with regard to the possible presence of goats in Teviotdale forest).*

Regular hare control is undertaken under contract for CWS, while a Canadian goose cull was also undertaken in late 2008.

A survey of possums, mustelids and rodents was undertaken by Excell Corp in April 2009 in order to obtain an overview of animal pest numbers present. No possums, mustelids or mice were recorded in the surveys, while rats were present. Based on chewed wax tags, rat activity range from 10-50% across the seven lines surveyed (10 wax tags per line). Two male cats were also caught using ten chicken baited Timms traps. Excell Corp staff reported three red deer, two hinds and one juvenile stag, and estimated that 5-6 deer were probably present in the area based on the amount of tracking seen.

These results suggest that mustelids (stoats, ferrets, weasels) and possums are at very low densities in this area, presumably due to the ongoing bovine TB control work undertaken through AHB funding. However, rats appear to be at reasonable densities and may pose a threat to biodiversity values (lizards and some birds). The absence of any evidence of mice

was unexpected. The observations of deer confirm other observations made within Tiromoana Bush that there is a small deer population probably resident in the greater area and making regular use of Tiromoana Bush.

Action 3.3: Fencing

9. *Continue to maintain boundary fences.*

This work has occurred as required.

4. Plant Restoration

Action 4.1: Restoration Propagation

10. *Continue beech propagation work with the goal of establishing at least 300 black beech plants in propagation, and if seedlings are ready, undertake initial restoration of black beech.*
11. *Continue with collection of seeds/cuttings for general restoration plantings.*
12. *Plant ca. 2000 plants in the field and instigate appropriate maintenance for earlier plantings.*

Restoration work has proceeded well over the last year with the following species planted:

General planting	Spring 08	Autumn/Winter 09	TOTAL
<i>Carex secta</i>	500		500
<i>Carpodetus serratus</i>	10	9	19
<i>Cordyline australis</i>	250	60	310
<i>Kunzea ericoides</i>		162	162
<i>Leptospermum scoparium</i>	100		100
<i>Myoporum laetum</i>	263	40	303
<i>Pennantia corymbosa</i>	67	43	110
<i>Phormium tenax</i>	200		200
<i>Pittosporum eugeniioides</i>		65	65
<i>Pittosporum tenuifolium</i>	220	80	300
<i>Plagianthus regius</i>	100	89	189
<i>Pseudopanax arboreus</i>		148	148
<i>Sophora microphylla</i>	37	63	100

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A number of plants salvaged from remnant A have also been planted in the last year. The species and numbers involved are:

Plants recovered from Beech remnant "A"	Spring 08	Autumn/Winter 09	TOTAL
<i>Aristotelia serrata</i>	5		5
<i>Astelia fragrans</i>	5		5
<i>Carpodetus serratus</i>	19	4	23
<i>Coprosma lucida</i>	23	3	26
<i>Coprosma propinqua</i>	4		4
<i>Coprosma rhamnoides</i>	18	1	19
<i>Coprosma robusta</i>	4		4
<i>Coprosma rotundifolia</i>	8		8
<i>Cordyline australis</i>	5		5
<i>Fuchsia excorticata</i>	1		1
<i>Griselinea littoralis</i>	54	10	64
<i>Leucopagon fasciculatus</i>		1	1
<i>Libertia ixioides</i>	5	2	7
<i>Uncinea uncinata</i>	2		2
<i>Parsonsia heterophylla</i>	11		11
<i>Myrsine australis</i>	1	2	3
<i>Pennantia corymbosa</i>	29	15	44
<i>Pittosporum eugeniioides</i>	29		29
<i>Pittosporum tenuifolium</i>	2		2
<i>Pseudopanax arboreus</i>	29	8	37
<i>Pseudopanax crassifolius</i>	4	1	5
<i>Schefflera digitata</i>	8		8

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In addition, 20 black beech plants recovered from Remnant A in various grades and sizes have been grown on and will be ready to plant in the 2009/10 season.

5. Recreation and Community Relations

Action 5.1: Public Walking Track

13. Complete the two short link tracks (Ella Pond Junction to Forestry Junction, and from Rocky Ridge Junction to Kate Pond Weir).
14. Ongoing maintenance of walkway.

The major focus of work on the walking track this year was tidying up and repairing damage resulting from the heavy rainfall events and associated floods and slips during the 2008 winter. Several sections of track were either covered or lost as a result of landslides, while the bridge across Kate Stream was totally destroyed, ending up on the far side of Kate Pond.

Considerable track work and a new culvert were required to have the track operational for the 2008/09 summer. As a result no work was undertaken on the link tracks.

Action 5.2: Newsletter, Brochures and Web Page

15. *Update Tiromoana Bush web site on a regular basis.*
16. *Contribute material to the Transwaste Canterbury newsletter as required.*

The www.tiromoanabush.co.nz was updated with copies of recent reports. However, a major overhaul is planned for the web site during 2009/10 as Transwaste Canterbury develop their own web site and will host the Tiromoana Bush site. An article on Tiromoana Bush was also published in the QEII National Trust magazine 'Open Space' in November 2008 – thanks to Miles Giller for facilitating this. A copy of the article is appended to this report.

Action 5.3: School Liaison

17. *Work with Untouched World Foundation to further Tiromoana Bush restoration goals and provide education to participating students.*
18. *Make presentation on Tiromoana Bush project to interested staff and students at Rangiora High School, Hurunui College and Kaiapoi High School.*

One Untouched World Foundation visit was made to Tiromoana Bush in August 2008 and a second scheduled for May 2009 was cancelled due to bad weather, but a presentation was made to the students in Christchurch. The school children on these trips have assisted with a variety of activities including weed mapping, track maintenance and permanent plot re-measurement.

Action 5.4: Voluntary Workers

19. *Facilitate voluntary input from individuals and groups to assist with the Tiromoana Bush project as arises.*

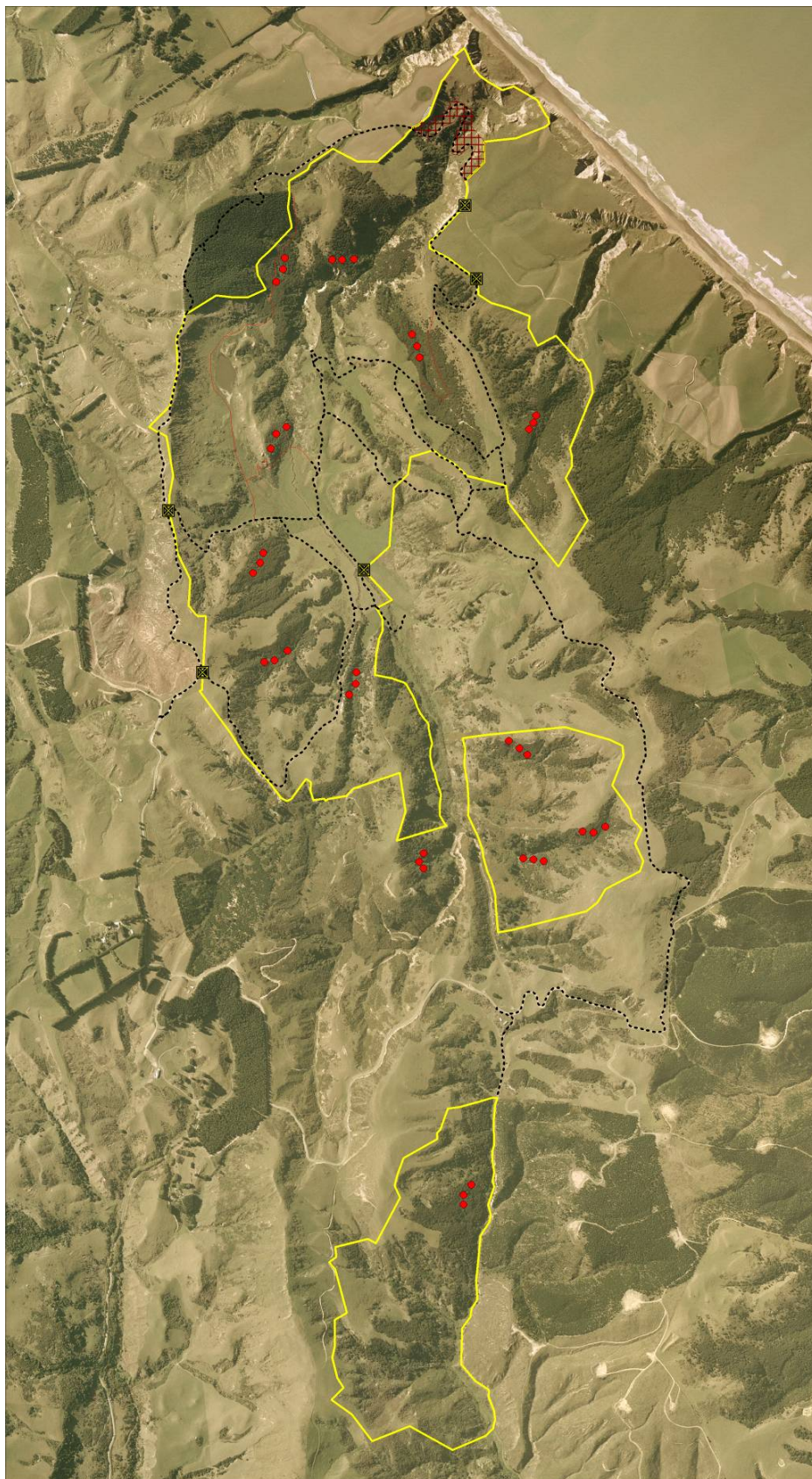
There has been no progress on this yet.

Action 5.5: Research

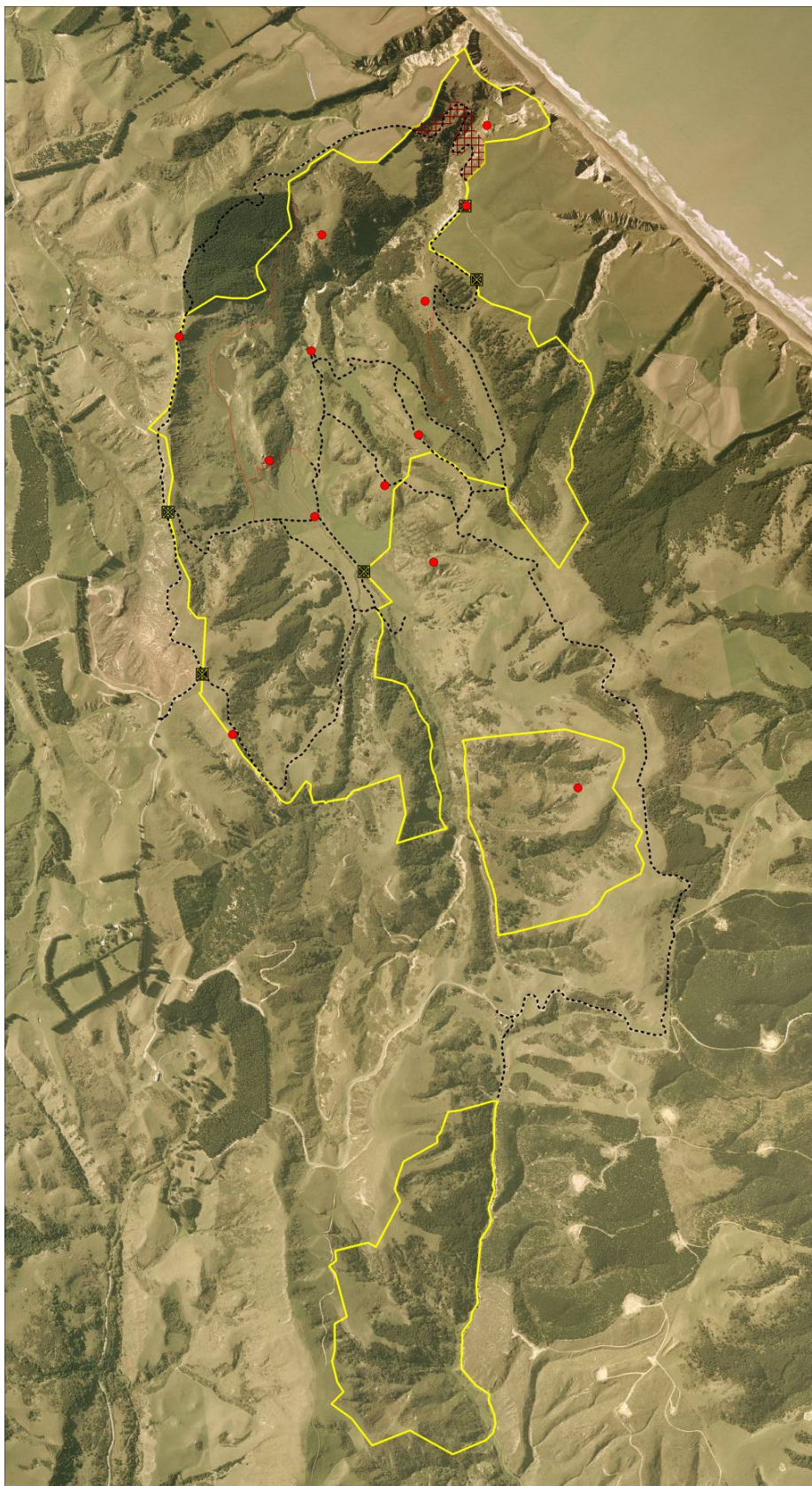
20. *Support SCION research on direct seeding (Nick Ledgard).*
21. *Continue with field trials assess the effect of opening out kanuka canopy on understorey regeneration (David Norton).*
22. *Support other research relevant to the objectives of the Tiromoana Bush project on a case-by-case basis.*

Nick Ledgard's has received ongoing financial and logistical support with his research on direct seeding which is yielding some interesting results, with an operational trial currently being implemented. The kanuka canopy opening trial will be undertaken later in 2009 as totara seedlings will then be available to establish as part of this research. University of Canterbury B.For.Sc. Honours dissertation student Erin Poulson is undertaking research assessing the success of one of Nick Ledgard's direct seeding trials.

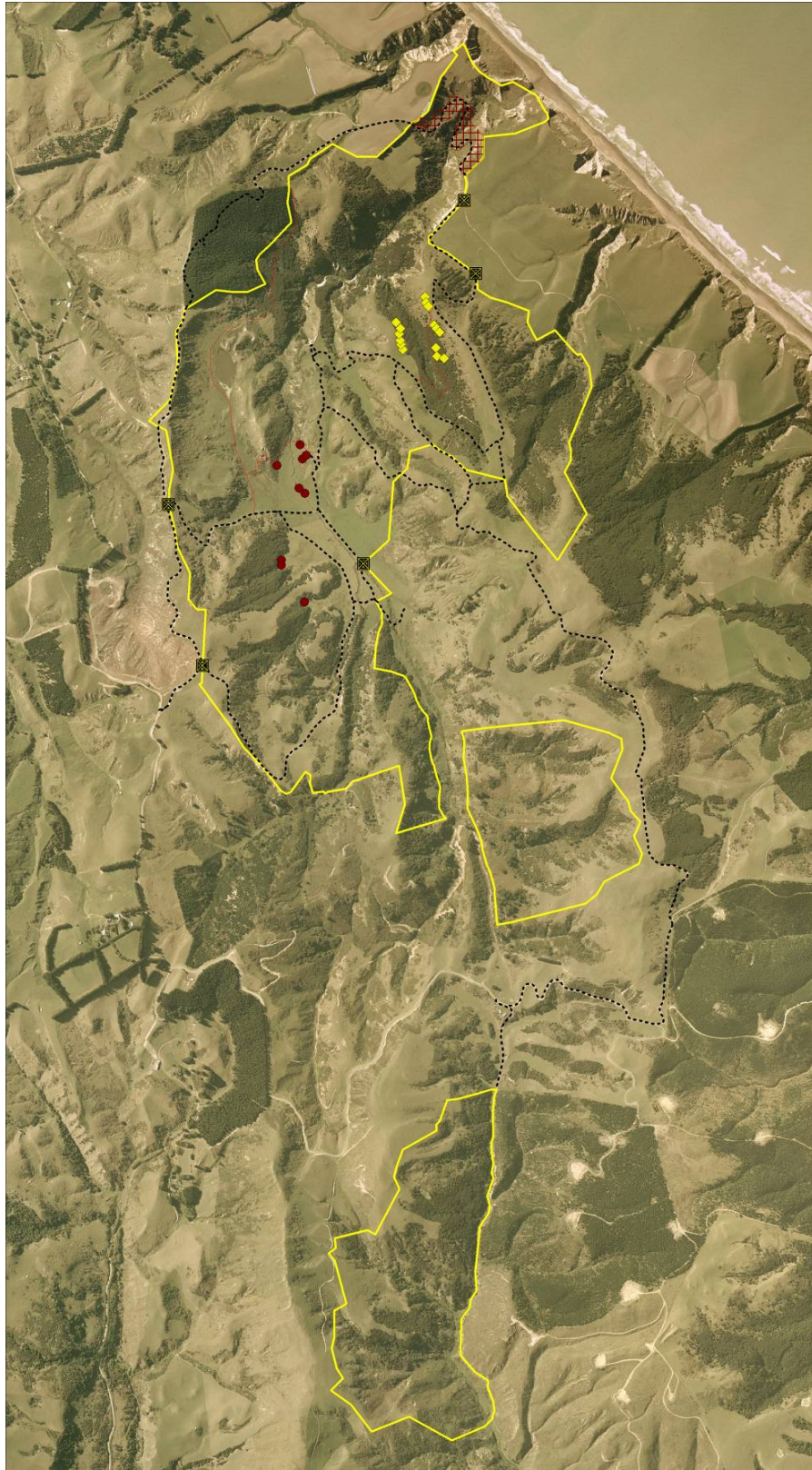
Permanent vegetation and bird monitoring plot locations (red dots).



Permanent photo point locations (red dots).



Permanent restoration monitoring plot locations (red dots) and lizard monitoring sites (yellow triangles).



Tiromoana Bush vegetation map.

