



## **Tiromoana Bush Advisory Group**

### **Tiromoana Bush Year 1 (2005-2006) Summary Report**

#### **Introduction**

This report summarises the activities undertaken as part of the Tiromoana Bush restoration project during the year 1 July 2005 – 30 June 2006. 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.

#### **Project management**

##### **Action 1.1: Annual work plan preparation**

*Prepare 2006-2007 annual work plan after 2005/06 work finished and prior to April/May 2006 meeting of Advisory Group.*

The 2006-07 annual work plan has been produced and is appended to this report. It was approved by the Tiromoana Bush Advisory Group at its 30 June 2006 meeting.

##### **Action 1.2: Tiromoana Advisory Group meetings**

*Meetings will be August/September 2005 and April/May 2006 (review of 2005/06 work and approval of 2006/07 work plan)*

The Tiromoana Bush Advisory Group met twice during this year, on 29 August 2005 and 30 June 2006. Copies of the agendas and meeting notes from these meetings are appended to this report.

#### **Monitoring**

##### **Action 2.1: Photopoints**

*The existing photopoints were established in May 2004 and remeasured in December 2005. They need to be re-photographed again in December 2005 to provide a comparable annual record. December was chosen as the optimum time for photographs as it is before summer droughts set in but after the spring growth flush.*

The photopoints were re-photographed on 24 January 2006, slightly later than planned. A report has been prepared on this which is appended. In summary, the photopoints are already starting to show the effects of stock removal at Tiromoana Bush, with rank grass growth now clearly evident and forming a striking contrast with adjacent farmed areas. There is also some evidence of gorse expansion, but other changes are minimal except for those associated with human interventions (e.g., the creation of the wildlife pond).

### **Action 2.2: Permanent plots**

*a) It is an urgent priority to identify the location of all 25 regenerating forest permanent plots (see Management Plan Section 9.2) and 5 gorse permanent plots (agreed to by Advisory Committee) and at a minimum establish photopoints at each of these by the end of the 2005 winter. We then need to establish permanent plots at 10 of these as early in spring/summer 2005 as possible (but if these can be established quickly, the number can be increased as the more that are in place at the outset of the project the better).*

*b) No restoration permanent plots will be established this year as no restoration plantings will have been undertaken.*

Twenty-six permanent 10x10 m vegetation plots have now been established. It was decided to base the location of these on the location of the bird monitoring lines. The bird monitoring lines (see next Action) are based on 13 transects with each comprising three listening sites. Two of the three sites on each transect were randomly chosen for the permanent vegetation plots. So far the plots have been permanently marked with metal standards in each corner and photopoints established from 1-4 of the corners where ground vegetation permits a reasonably clear photograph. The following will now be measured in each plot:

- Cover abundance of all vascular plants in three layers (ground, shrub and canopy).
- Diameter of all trees >5 cm dbh (with these permanently marked).
- Height and species of all seedlings within 2-4 permanently marked seedling plots.

This work will be completed over the 2006 winter and a report prepared once completed.

### **Action 2.3: Bird monitoring**

*Establish bird monitoring lines for assessing the abundance of the focal species bellbird and kereru and also for monitoring the abundance and composition of the overall avifauna. This will involve initially letting a contract for the bird monitoring work and then undertaking the surveys. The best time for surveys is likely to be August through October 2005.*

Bird monitoring lines were established and measurements of bird abundance completed for 13 lines of three listening stations in October 2005 (Figure 1). Counts were based on a distance-sampling modification of the standard New Zealand 5-minute count technique. Each count station was visited three times to obtain a more complete census of birds present. The results of this initial survey are presented in a report by Rhys Buckingham (February 2006).

In summary, Rhys found that the forest and shrubland remnants within Tiromoana Bush contained relatively few native bird species and proportionally higher numbers of introduced birds. The overall average number of species counted per station was 2.6 for native and 4.7 for introduced birds. The average number of individuals counted per station was 6.2 for native and 8.4 for introduced birds. The most commonly recorded native birds were bellbird, grey warbler, silvereye and fantail, although kingfisher, shining cuckoo and harrier were also recorded occasionally. The most conspicuous introduced birds were chaffinch, greenfinch, blackbird, redpoll and gold finch. Other introduced birds recorded included magpie, starling, Californian quail and yellowhammer. A number of birds are also associated with the ponds including the native paradise shelduck, New Zealand scaup and pied stilt, and the introduced Canadian goose and mallard duck.

This survey will be repeated again in October 2006.



**Figure 1.** Location of bird monitoring stations in Tiromoana Bush.

## **Plant and animal pest control**

### **Action 3.1: Weed control**

*Control of priority weeds was identified as important in the Management Plan. It is proposed that during this year the key sites for these species will be identified and a sustainable control programme developed and implemented. Not all priority weeds will necessarily be controlled this year, with a cost/benefit analysis determining control priorities. Ongoing control in subsequent years will continue this work.*

The main priority problem weed identified in Tiromoana Bush is European broom and Tiromoana Station staff have been mapping its distribution and will be commencing ground-based control in spring 2006. Tiromoana Station staff have also been exploring options for removal of wilding conifers on the property, however, no trees have yet been removed. It is proposed to work closely with Tiromoana Station staff in 2006-07 to advance weed control for these and other species (e.g., willows and hawthorn). One seedling of the vine old-man's beard was found during the establishment of the vegetation monitoring plots and removed. Ongoing vigilance will be required to keep this highly undesirable species out of Tiromoana Bush. Nassella tussock is present in grassland within Tiromoana Bush, and more widely in this coastal hill country. Nassella tussock is subject to an ongoing control programme that focuses on grubbing out plants.

### **Action 3.2: Animal pest control**

- a) Mustelids and rodents threaten the fauna of Tiromoana Bush, especially the focal species bellbird and kereru, and it is proposed, in coordination with the animal pest control being undertaken as part of the landfill management to implement a systematic mustelid and rodent control operation in Tiromoana Bush. This will involve (1) initial coordination with landfill management pest control, (2) letting a contract for any additional control required to cover Tiromoana Bush and (3) implementation of this control.*
- b) Continue with the existing farm management possum control.*
- c) Undertake any wasp control that might be required at Remnant "B".*

Mustelid and possum control continued through Tiromoana Bush as part of the larger-scale bovine Tb control operations undertaken by the Animal Health Board in this area. Rodent and other animal pest control was also undertaken around the landfill, but did not extend into Tiromoana Bush. No wasp control was undertaken this year as wasp numbers did not appear to become excessive. It is proposed to look further at animal pest control needs for Tiromoana Bush in 2006-07. Deer have

been shot from Tiromoana Bush and a few animals may still be present. This is likely to be an ongoing problem as deer are thought to be moving freely between the Ashley and Hurunui Rivers and control is likely to be ongoing. Rabbit number also appear to be increasing and active control (poising or shooting) together with treatment of restoration plantings will be required as plantings are established, although the rank grass growth may reduce their abundance. Hares will also require monitoring and possibly control in the future.

### **Action 3.3: Fencing**

*Fence Ella Reserve and undertake boundary fence maintenance.*

All Tiromoana Bush boundary fencing has been completed but the fencing around Ella Reserve has still to be completed. The Tiromoana Bush boundary fence appears to be secure and there is little evidence of domestic stock within Tiromoana Bush. Some internal fences have been removed.

## **Plant propagation and planting**

### **Action 4.1: Restoration propagation**

*a) A range of approaches for collecting beech seed were tried in 2004-05 including (1) direct collecting from branches, (2) spreading out of sheets to catch falling seed (3) spraying of grass under some trees to facilitate seed germination & collect seedlings, and (4) collecting seedlings from remnant "A", although success to date has been limited. These approaches will continue in 2005-06.*

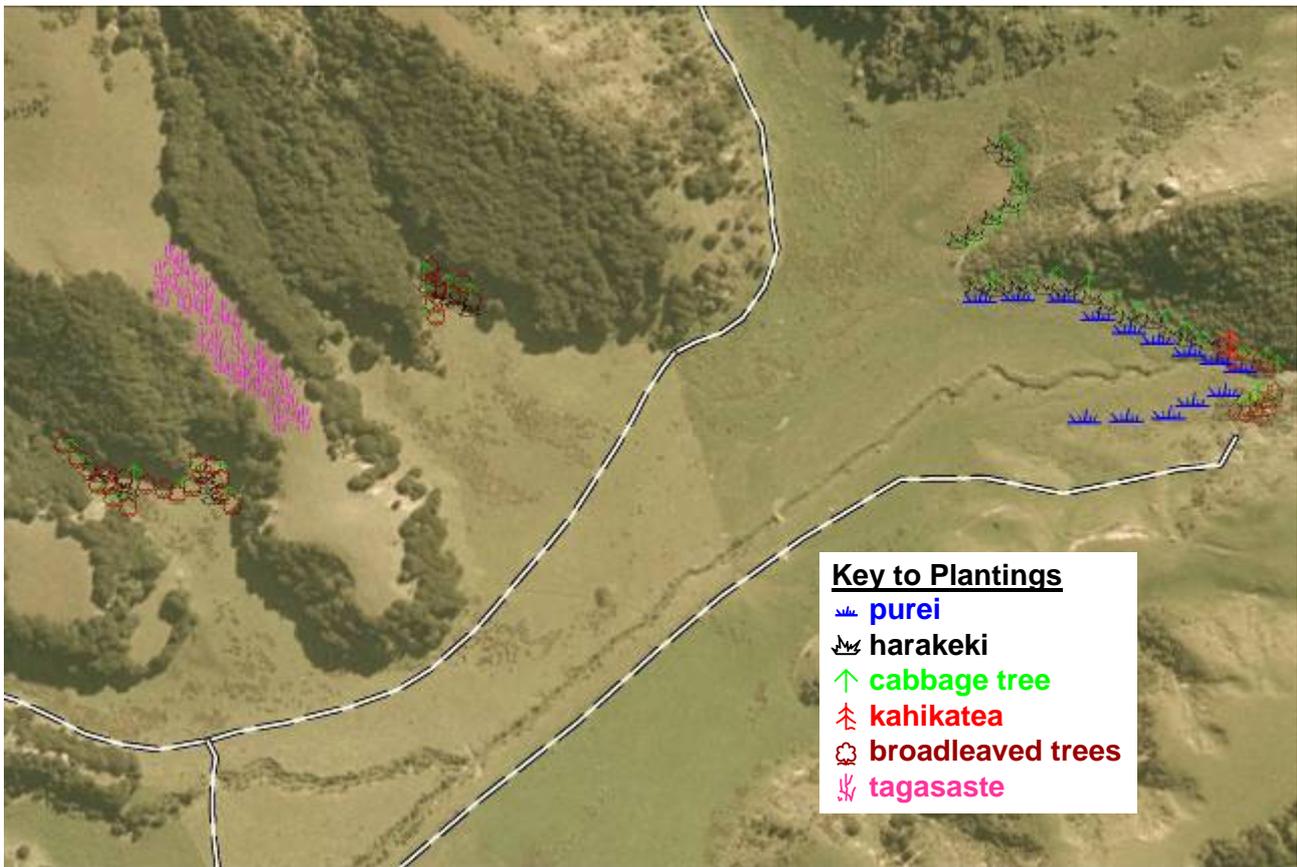
*b) Collected seeds will be propagated over the next two years before planting.*

*c) Because of the lead-in time there will be no restoration planting during the 2005/06 year, with the first active planting in 2006/07 year. In order to get this restoration work underway, a number of tasks need to be completed early in the 2005-06 year including (1) letting of a contract for plant propagation, (2) determining the optimal sites for collection, (3) seed collection during spring 2005, and (4) seedling collection from remnant "A".*

*d) Once the plant propagation contract has been let, the propagator can commence work on this, but most of this will occur in subsequent years.*

Only limited success has been achieved so far with locating beech seed or seedlings from Remnants "A" and "B" (only two seedlings in cultivation) and work will continue in 2006-07 (this will be expanded to include other beech remnants in the area).

A two-year contract for plant propagation and planting was let to Waiora Landscaping to initiate the Tiromoana Bush restoration plantings. Seeds were collected from a range of species in autumn 2006 for planting in 2007. However, it was decided that it would be desirable to establish some plantings in 2006, so plants sourced from North Canterbury sites already in propagation at Waiora Landscapes were planted in June 2006. These plantings were based around three groups of species, wetland plants (purei, harakeke and cabbage tree), broadleaved trees (five-finger, lowland ribbonwood, broadleaf, kowhai, kohuhu, kaikomoko and lemonwood) and tagasaste (tree lucerne). The wetland species (and some broadleaved trees) were planted around parts of the lower Ella Pond and with wildlife pond, and the broadleaved trees were planted in two enclaves against the kanuka forest margin on the north side of Kate Valley (Figure 2). Tagasaste is being trialled as a nurse plant (and a food source for kereru) and was planted on the spur separating two of the kanuka remnants on the north side of Kate Valley.



**Figure 2.** Location of restoration plantings undertaken in June 2006.

In addition, a small research trial being undertaken by Nick Ledgard (ENSIS) at Tiromoana Bush is exploring the potential of direct seeding to establish native forest species. This research is being supported by Canterbury Waste Services. Direct seeding (probably with disturbance of the grass sward) is a potentially much cheaper method for establishing forest species, especially over larger areas, than we can afford to do with planting.

**Action 4.2: Restoration plantings**

*Nothing this year (the first restoration plantings will be undertaken in 2006/07).*

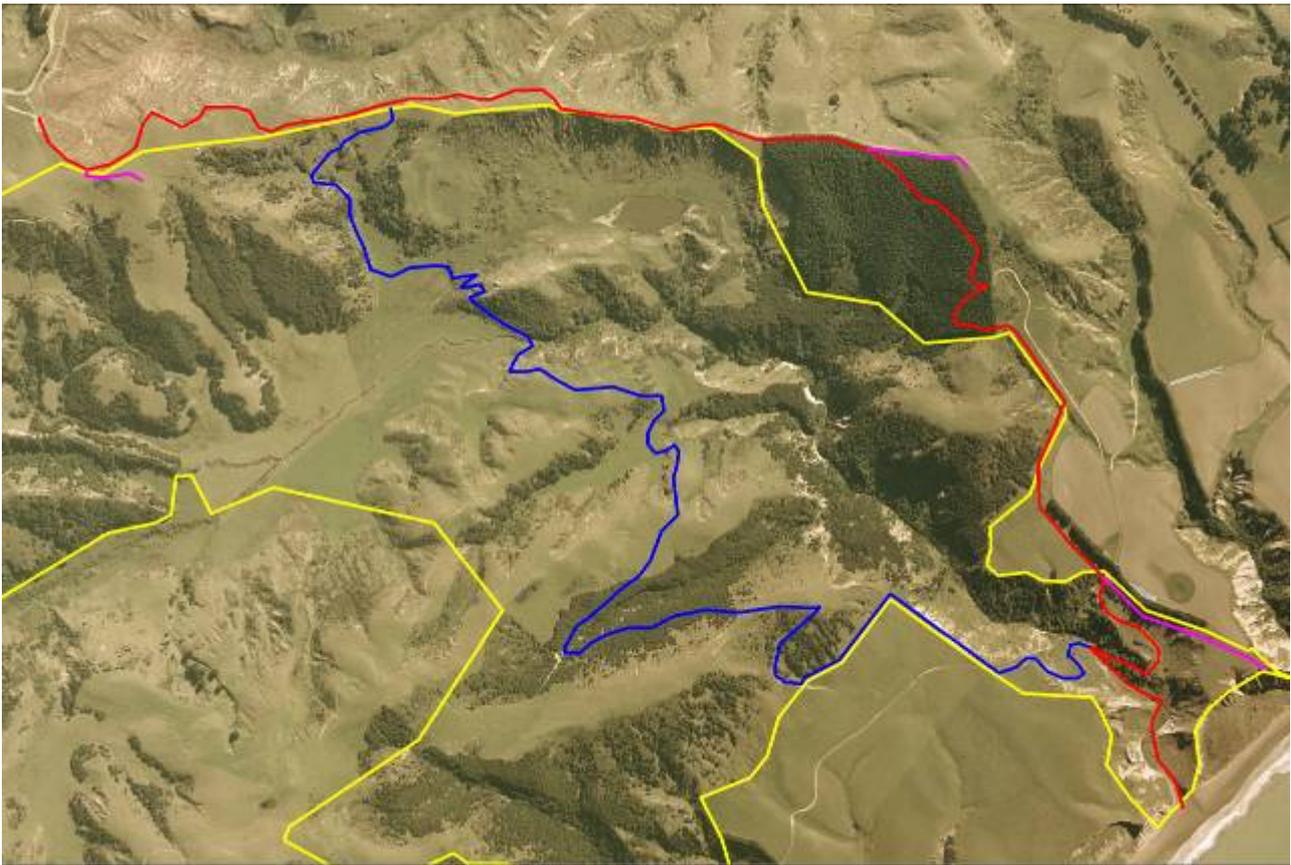
See discussion under the last Action point.

**Recreation and community relations**

**Action 5.1: Public walking track**

*A possible route for the public walking track has been identified and work will start on “opening” this route up in late winter/spring 2005 (although the work will be spread over two years). It is proposed to hold the official opening of the Tiromoana Bush Restoration Project and the walking track in December 2005.*

Stage 1 of the Tiromoana Bush walking track was opened to the public in early April 2006. This provides access via the main farm track to several lookouts (above Kate Valley and looking out to sea), with the route finally reaching the coast at the bottom of Kate Valley. It is proposed to complete Stage 2, the loop back through the “heart” of Tiromoana Bush during 2006/07 (Figure 3).



**Figure 3.** Stage 1 (red) and stage 2 (blue) of the public walking track. Pink lines indicate viewpoint tracks.

### **Action 5.2: Newsletter, brochures and web page**

*a) This would build on the original (May 2004) newsletter/information sheet, but would focus more on what is actually happening rather than the general concept (possibly only needs to be two sides long). This will be prepared and circulated in August/September 2005.*

*b) A brochure outlining the goals and approach of the project will be produced and circulated to local residents, schools and to other people who have expressed an interest in the restoration.*

*c) A web page will be established that provides regularly updated information on the project including copies of all plans and reports relating to the project.*

Reporting on Tiromoana Bush have been included in different issues of the Canterbury Waste Services newsletter, and a 4-sided brochure on Tiromoana Bush was produced in March 2006 and was distributed at the public open days and is available at the start of the Tiromoana Bush walkway. No progress has been made with a web page, but this is likely to be actioned in 2006/07.

### **Other actions undertaken**

A presentation was given to the Canterbury Botanical Society on the Tiromoana Bush Restoration project followed by a field trip to Tiromoana Bush (November 4<sup>th</sup> and 5<sup>th</sup> 2005). This was a very successful outing and added considerably to our information on the flora of Tiromoana Bush.

A good relationship has been developed with the Untouched World Foundation waste management programme aimed at senior secondary school children. An initial programme was run in 2005, with half a day spent focusing on Tiromoana Bush during which the children helped open part of the Stage 2 walkway route between the lower Ella Pond and the wildlife pond. Development of the 2006 programme is now well advanced and will almost certainly involve the children further

assisting with Tiromoana Bush work. Possible activities have been identified for their involvement and are appended to this report.

### **Acknowledgements**

Thanks to the staff and Directors of Canterbury Waste Services and Transwaste Canterbury, especially Gareth James, Martin Pinkham and Denis O'Rourke, for their ongoing support for the Tiromoana Bush Restoration Project, and the members of the Advisory Group for their invaluable input into the project. Special thanks to Murray Davis and Diana Rodgers for assistance with the public open days, and Lachlan Kirk, Diana Rodgers and Diane Sage for assistance with field work.