

Monitoring of the Vegetation and Bird populations within the Pohutukawa Project on Tiritiri Matangi Island



Report of Activity 2016 – 2017

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This monitoring was previously done under Authority no. 34862-RES granted to Mel Galbraith of the Supporters of Tiritiri Matangi (Inc.) (SoTM) and is now being carried out under the general Authority no. 39910-RES granted to SoTM.

Introduction

Pōhutukawa was planted on Tiritiri Matangi in large numbers as a “nursery crop” to give shelter to other, slower growing trees. A large number of Pōhutukawa were planted – approximately 90,000. The “strike rate” for the small trees was much higher than anticipated (between 60% and 90%). This led to significant areas of the Island being covered in Pōhutukawa monoculture forest.

A project was begun in 2010 to “thin” parts of the forest and to monitor the effect of that thinning on invertebrate, plant and bird populations. There are seven sites on the Island (see Figure 1 below) where areas have been

- left as they are (control areas)
- thinned (taking out every second or third tree)
- had two to three trees removed to produce small “light wells”

Methodology

In each site there are 18 vegetation plots (each 2m x 1m) which have been monitored annually since the project was begun. The number, species and height of all seedlings within a plot are recorded so that regeneration success can be measured in different areas of the Island.

Additionally, 5-minute bird counts were begun in each area in 2013 to monitor changes in bird activity as the biodiversity (and food sources) within these areas increased. Both the vegetation surveys and the bird counts are conducted outside the breeding season, from April through July, to minimise disturbance.

This report is an update of general trends in the ongoing study. More detailed analysis will be available as it becomes clearer how this approach to “thinning” monoculture forest can be used to encourage greater diversity.

Results and Discussion

Vegetation Surveys 2017

The surveys of the vegetation plots for 2017 have shown similar trends to those in previous years. Key findings have been:

- a. Control areas generally show low diversity and very slow colonization by other tree species.

- b. Exposed areas on the east side of the island which have high levels of sunshine show little colonization. These sites are not good candidates for this type of “thinning”. This is exemplified by the site at Emergency Landing. In other, slightly less exposed areas it appears that “thinning” rather than the cutting of “light wells” in the forest is a more successful approach giving the seedlings some shelter from wind and sun.
- c. In more sheltered areas, particularly those at the centre and to the west of the island, the areas where “light wells” were cut show the greatest diversity.
- d. The plots show a low level of diversity; *Coprosma robusta* is the dominant species colonizing the spaces. In future, we would recommend limited planting in the spaces to increase diversity within the monoculture forest.
- e. There has been a noticeable shift in the number of seedlings in plots this year as saplings have reached a height of 2 metres or more. These saplings are clearly shading out germinating seedlings and possibly preventing seeds to actually reach the ground.

Bird Counts

The bird counts were begun in 2013 and have been carried out annually since that date. No noticeable changes in bird calls or bird activity have been seen but we do not expect to see much change until the colonizing trees reach a stage where they are fruiting and seeding.



Figure 1. Map of Tiritiri Matangi, showing 7 sites in which Pōhutukawa have been cut to encourage greater diversity within the forest.