

Rewanui

building land-use resilience with trees



Rewanui is a typical hill-country sheep and beef farm in eastern Wairarapa. The 344-hectare farm belongs to the Montfort Trimble Foundation, a trust dedicated to growing trees for the benefit of local people.

At Rewanui we have embarked on an ambitious programme to develop the farm as a trial and demonstration property. Our focus is on new approaches to adding trees into the farming mix. We want to share our experiences with farmers and others as we go. The farm is open to the public all year, and the knowledge and experience we gain from our project will be available to all.

Adapting to survive

Farms like Rewanui have, on average, seen declining returns for a number of years, often due to climate and market factors outside farmers' control. In addition, the climate is warming and becoming less predictable. Hill-country farmers may need to adapt to survive. Adding trees to the farming mix may be one way to increase the resilience of traditional east-country sheep and beef farms.



Developing Rewanui to demonstrate new ideas with trees

Rewanui is being developed to demonstrate ways of profitably integrating trees into hill-country farming systems. We are taking a whole-farm approach:

- enriching and expanding our unique native bush
- trialling alternative trees to radiata pine on marginal grazing land
- continuing to farm livestock on the better land.

We also plan to take advantage of new opportunities from carbon farming.

The start of a long-term project

The vision for Rewanui is long-term, but we have laid some important foundations in the past few years:

- fencing livestock out of native bush and areas suitable for regeneration into native bush
- protecting native wildlife by monitoring and controlling pest species
- monitoring birds, insects, lizards, and native vegetation to find out what species exist at Rewanui, and how their populations respond to pest control
- establishing and monitoring trials of native and exotic trees, with 24 species included so far
- preparing for carbon trading by registering for the Emissions Trading Scheme and the Permanent Forest Sink Initiative.



Trialling different tree species

Growing trees for timber is a long-term investment, but the Emissions Trading Scheme could bring immediate and on-going financial benefits to farmers who grow trees. And while radiata pine is generally a reliable crop with an established market, it does not suit all sites or all landowners. Farmers looking for alternatives to pine need examples of plantings on different land types, and good advice on what to plant where.

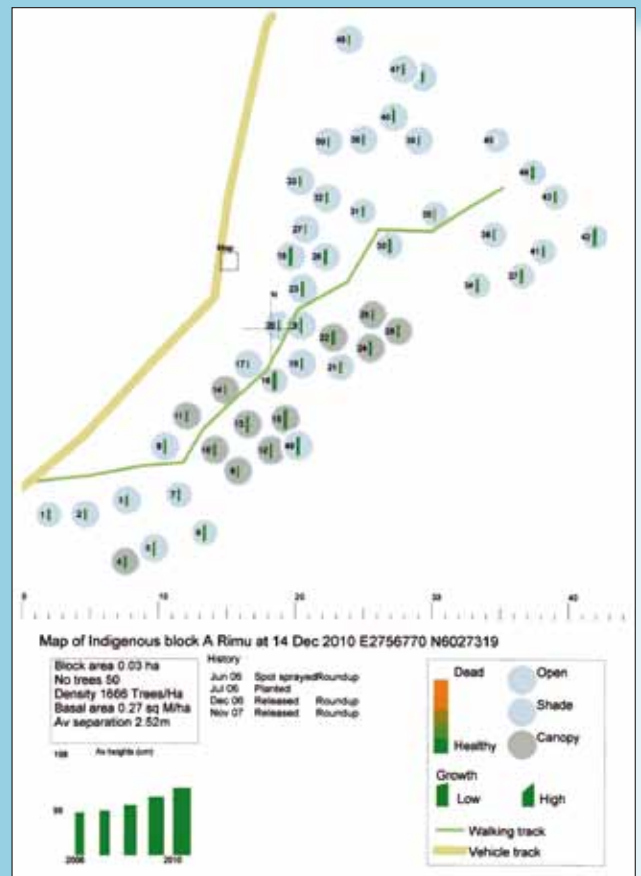
Rewanui now hosts a comprehensive array of tree species trials. The trials aim to demonstrate what species will grow, and how well, in various micro-sites on the property. Both native and exotic species are being trialled, and our intention is that the trials will be monitored for many decades. All trial species have the potential to produce timber.

Exotics

Coastal redwood
 Cryptomeria japonica
 Cupressus lusitanica
 Cupressocyparis ovensii
 Douglas fir
 Eucalyptus obliqua
 Japanese larch
 Radiata pine
 Western red cedar

Natives

Black beech	Puriri
Kahikatea	Red beech
Kaikawaka	Rewarewa
Kauri	Rimu
Kowhai	Silver beech
Maire	Tawa
Matai	Totara
Miro	



Monitoring the trials

Each species is planted in discrete plots, and there are two or three plots of each species in contrasting locations. The native species plots are scattered amongst open areas, regenerating scrub and under established canopies. Each plot contains around 50 trees, and each tree position has been individually numbered and labelled.

Monitoring of individual trees for survival, growth, and health is carried out annually. Ian Campbell, Chair of the Montfort Trimble Foundation, has developed software for pictorially recording information about individual trees.



Early lessons from the trials

Tree survival generally has been better than expected, and we have learnt that conscientious weed control around trees ('releasing') for the first several years is important to encourage native species. The strongest native species so far, in certain sites, are totara, matai, kahikatea, maire, and miro.

Restoring native habitat

In 2006, we set about enhancing the native forest and regenerating scrub areas, first by fencing out grazing livestock, and then by starting comprehensive pest control. The worst pests on farms with native habitat are possums, feral cats, mustelids (ferrets, stoats and weasels), hedgehogs, rats and mice. These species either prey directly on desirable native species, or compete with them for food and habitat.

Greater Wellington Regional Council (GWRC) biosecurity staff carried out surveys to identify what pests were present, and began pest control. Regular pest control by contractors will continue for the foreseeable future, using a range of traps and poison bait to target different pest species.

Possum numbers at Rewanui are already very low, thanks to control by the Animal Health Board to contain the spread of bovine tuberculosis.

Initial pest kill, September 2006 to July 2010

Pest	Feral cats	Rats	Hedgehogs	Stoats	Weasels	Ferrets
No. trapped	61	384	319	8	13	26

Surveying native plants and wildlife

Surveys of vegetation, birds, weta, and lizards repeated over time will give us an idea of what species are present, whether Rewanui is home to any rare species, and some measure of native species' response to pest control. It is early days, and we need to keep monitoring for several more years before we can draw firm conclusions about how well populations are responding.



The contractor who ran the monitoring programme at Rewanui will evaluate the outcome of the initial surveys. We will then be able to pass on advice on what has worked best to farmers keen to do their own pest monitoring and control, and their own surveys of native animals and plants.

Bird counts

We regularly monitor birds throughout the farm by five-minute counts of sightings and calls. Eleven native and eighteen non-native species have been detected during counts in Rewanui so far. Silvereyes (waxeyes) are the most common native species; others present are bellbird, fantail, shining cuckoo, tui, grey warbler, woodpigeon, kingfisher, pipit, morepork and harrier. The numbers of these species vary in the different habitats.



Tree wetas

We count tree weta in weta houses which we have placed around the property. Tree weta are a favourite food of rats, and it is good to see weta numbers increasing, especially in the native bush, as rat control continues.



Ian Campbell, and Peter Berg (Tanes Tree Trust) discuss trial sites.

Making the most of carbon farming

The inclusion of forestry within the Emissions Trading Scheme (ETS) has opened up new opportunities to generate early income from trees. In addition, if farmers eventually have to offset methane emissions by their livestock, growing trees may be one way to do this.

Rewanui is a participant in the ETS and the Permanent Forest Sink Initiative (an ETS-associated

scheme), and will accrue carbon units annually on eligible areas: our radiata pine plantations, tree species trial areas, willows and poplars planted since 1990 for erosion control, and regenerating scrub areas.

We now have the option to generate cash flow from the sale of carbon units if we need it. Our plan is to always retain sufficient units to cover liabilities.

More information

1. About the work at Rewanui

The Montfort Trimble Foundation has a website: www.trimblefoundation.org.nz

More detailed information about the pest control, native species monitoring, tree species trials, and carbon farming at Rewanui, will be available on this website from mid 2011 onwards.

2. Wildlife monitoring and pest control

Greater Wellington Regional Council
www.gw.govt.nz

Trevor Thomson, QE2 Trust
www.openspace.org.nz

Nyree Fea, Bushwork Contracting
nyree.fea@gmail.com

3. Establishing and managing trees on farms

The New Zealand Farm Forestry Association
www.nzffa.org.nz

Wairarapa Branch secretary: Shane Atkinson
shane.anne@clear.net.nz

Tanes Tree Trust (for information on native species)
www.tanestrees.org.nz

Scion (Forest Research)
www.scionresearch.com

4. Trees, native forest management, and the Emissions Trading Scheme

Ministry of Agriculture and Forestry (MAF)
www.maf.govt.nz/forestry

Contributors to our work at Rewanui

MAF's Sustainable Farming Fund supported trials and monitoring from 2008-2011.

Local organisations and people who have contributed: BakerAg and Associates, Federated Farmers (Wairarapa Branch), Friends of Rewanui, Greater Wellington Regional Council, NZ Farm Forestry Association (Wairarapa Branch), Scion, Tanes Tree Trust, local schools.

Nyree Fea is responsible for monitoring wildlife, Stuart Orme (Woodnet) manages the forestry areas, Ian Campbell (Chair, Montfort Trimble Foundation) oversees operations and monitors the tree trials.

All photos: Nyree Fea, Ian Campbell

