



Rewanui Bush Park

Initial predator control report for 2006/07



FOR FURTHER INFORMATION

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Contents

1.	Executive summary	5
2.	Recommendations	5
2.1	Greater Wellington	5
2.2	Montford Trimble Trust Foundation	5
3.	Objective	6
4.	Operational area	6
5.	History	6
6.	Operational history	7
7.	Operational procedures	7
8.	Operational results	8
9.	Discussion	8
9.1	Condition of Rewanui Park Bush	8
9.2	Working relationships	9
9.3	Operation extension	9
9.4	Monitoring	9
10.	Costs	10

Appendices

1. Executive summary

Rewanui is a 334 hectare property owned by the Montford Trimble Trust Foundation and is located on the Masterton-Castlepoint Road, 23 kilometres east of Masterton. It has areas of native bush, open grasslands and sites suitable for growing both native and exotic species.

The Foundation intends to develop the property as a forest park and a trial site for native and exotic timber trees.

The Mount Clyde Trig is the highest point at Rewanui and is situated 500 metres above sea level. The lowest point at the carpark is 200 metres above sea level, giving an altitude range of 300 metres.

The original bush remnant consists of such species as rewarewa, totara, hinau, matai, titoki, lacebark, rimu, pukatea and at least one northern rata.

Since the property was purchased from the O'Connor family by the Masterton District Council around 2004, it has subsequently been on-sold to the Montford Trimble Trust Foundation.

Rewanui is one of 49 'Category One Recommended Areas' for protection identified by the Department of Conservation in eastern Wairarapa. Rewanui is described as one of the best remaining examples of lowland forest in the ecological district, with high species diversity (flora and fauna), and occupying a wide altitudinal range.

During 2004, the native bush remnants were fenced off to exclude grazing stock. There are three walking tracks in the Rewanui Forest Park. The loop tracks through the Richardson bush are designed to visit as many of the big trees as possible, while the Mount Clyde track gives good views of the surrounding countryside.

2. Recommendations

2.1 Greater Wellington

1. Continue to carry out monthly servicing of all control sites at Rewanui and record all details of predators killed and bait usage through the services of Biosecurity Pest Animals staff or an external service provider employed under a prescriptive contract.
2. Implement bird count monitoring and rat monitoring as a means of measuring biodiversity changes over time through predator control.
3. Over time promote community involvement with self help, volunteer and care groups.

2.2 Montford Trimble Trust Foundation

1. Over time promote community involvement with self help, volunteer and care groups.

2. Encourage Rewanui staff/consultants/volunteers to become suitably qualified in all areas relating to Health and Safety, having an ATV certification, Public Liability Insurance and relevant Controlled Substances Licenses (where required) to potentially carry out predator control under the aegis of Greater Wellington at Rewanui.

3. Objective

To maintain possum populations at less than 5% Residual Trap Catch (RTC), therefore allowing the forest ecosystem to thrive.

To reduce predator populations to low levels that enhances biodiversity.

4. Operational area

The operational management area covers the whole 334 hectares of Rewanui farm and is situated on the Masterton-Castlepoint Road near the Blairlogie junction (refer **Appendix 1 and Appendix 2 attached**).

Topography is mainly flat to moderately steep hill country with native bush remnants sited on the hills and gullies. There is an area of established mature pinus radiata on the property.



Part of the property retired from grazing, has been planted with 11 species of natives that are being monitored and recorded. It is envisaged that these trees will be grown to provide sustainable logs for milling in the future.

Part of the property is leased for pastoral sheep and beef production and there is a moderate to high annual rainfall.

An indigenous vascular plants inventory was prepared for the property by Pat Enright when he visited Rewanui in October 2001 (refer **Appendix 3 ‘Vascular plants survey’**).

5. History

The Rewanui Forest Park predator control operation came into effect following a meeting held at Greater Wellington’s Biosecurity office on 11 September 2005. Montford Trimble Trust Foundation representatives (Ian Campbell and Stuart Orme), met with Biosecurity staff to discuss the possibility of establishing a formal predator control operation over the whole of the property. At this meeting it was also proposed that a comprehensive weed mapping survey should be carried out.

Funding for this was secured from various avenues such as the Montford Trimble Trust Foundation, the Biodiversity Condition Fund, the LTCCP and through Greater Wellington's Key Native Ecosystem (KNE) budget.

Rewanui Park Bush is a 'Category One' area and is described as one of the best remaining examples of lowland forest in the ecological district, with high species diversity, substantial numbers of kereru, and occupying a wide altitudinal range. The forested hill slopes present an impressive scenic aspect to a portion of the Masterton-Castlepoint Road.

Rewanui is also contiguous with the adjoining O'Connor property 'Rorokoko' and forms part of a corridor through which native birds and other native fauna can travel and disperse.

Biosecurity staff first visited Rewanui in early November 2005 to assess the requirements necessary to set up a long term predator control programme that would target feral cats, mustelids and possums. A draft operational budget was also prepared and submitted in the same month.

6. Operational history

There has been a past history of large scale possum control, with a Bovine Tb emphasis at Rewanui. The whole property is part of the Bideford possum control operation which commenced in 1993/94. Prior to that time annual cropping of possums, mainly for the skin trade, was carried out by private hunters.

Maintenance possum control is still carried out subject to monitoring data, indicating that the RTC has exceeded the acceptable levels as set by the Animal Health Board.

7. Operational procedures

During July/August 2006, Greater Wellington's Biosecurity Pest Plants section contracted the services of "Weedworks" to undertake a comprehensive survey at Rewanui to map and record any infestations of undesirable weeds. A copy of their findings was subsequently prepared and submitted to the Montford Trimble Trust Foundation (**refer Appendix 4 'Weed survey report'**).

The Rewanui Forest Park predator control operation commenced 11 September 2006, with 84 control sites established over the property during several days. At each site a Sentry bait station was erected above the height of any grazing animal and Pestoff 20p waxed Brodifacoum pellets was administered for both possums and rats. On the ground a Fenn Mark 4 trap was set beneath a Philproof tunnel to target such species as rats, hedgehogs, ferrets, stoats and weasels. Also a Timms possum trap was established and baited to target feral cats and ferrets.



All traps are baited and checked on a monthly basis using various meat baits. However, there is a preference for beef offal due to it being readily obtainable, it tends to last longer at the site than some other bait, and it has proven to be quite acceptable to all predator species.

DoC 200 predator traps are used within the walking tracks in the bush block. These traps are specifically designed for small animals and will exclude larger animals such as cats and fully grown hedgehogs.

All sites were plotted onto a GPS unit with the coordinates downloaded onto the computer for reference.

8. Operational results

The monthly predator catch results at Rewanui for the 2006/07 year are listed below:

Month	Cats	Rats	Hedgehogs	Magpies	Ferrets	Hawks	Stoats	Weasels
September	2	0	0	0	1	0	0	0
October	2	37	9	0	5	0	0	0
November	1	20	16	0	0	0	0	2
December	0	0	0	0	0	0	0	0
January	0	24	25	0	0	0	1	1
February	0	18	16	0	0	0	0	2
March	1	13	18	2	1	0	0	0
April	3	24	20	1	0	1	0	0
May	5	10	19	2	0	2	0	0
June	0	0	0	0	0	0	0	0
Total:	14	146	123	5	7	3	1	5

9. Discussion

9.1 Condition of Rewanui Park Bush

Prior to the purchase of Rewanui farm by the Masterton District Council, the whole property was grazed which meant that stock was able to browse the understory beneath the native bush remnants. Since that time, exclusion fencing has been completed and the stock access issue has largely been rectified. However, I have witnessed (on several occasions), sheep within the fenced areas that have made it through from the neighbouring property 'Rorokoko'.

Already there is evidence of good seedling recruitment that should now take off and thrive.

During the year it was disappointing to see some severe cattle damage on numerous lacebark trees outside of the fenced off areas. This damage was visible in tracts of native bush where permitted grazing was happening. Ideally this damage should be prevented from reoccurring. It is doubtful that some of these trees will survive as the level of bark stripping was so severe.

9.2 Working relationships

The working relationship between the representatives from the Montford Trimble Trust Foundation and Greater Wellington is operating well. The lessee of Rewanui has also been good to work with. Lambing was the only period of the year that access to service equipment was denied.

9.3 Operation extension

The Montford Trimble Trust Foundation is eager to make approaches to the owners of neighbouring Rorokoko with the aim of securing approval to extend the predator control programme into this adjoining piece of property. The native remnant on Rorokoko is contiguous to Rewanui and it makes logical sense to extend/combine control to this block with the consent of the landowners.

Prior to preparing this report, representatives from the Foundation have met with the O'Connor's and agreement has been reached verbally for this extension to go ahead.

Greater Wellington has purchased the hardware required to cover the 32 hectares within the extension.

9.4 Monitoring

As Rewanui is part of the Animal Health Board's Bideford possum control operation, possum density monitoring or RTC monitoring is carried out at set intervals to ensure possums remain within pre determined limits. The last possum monitor completed in February 2007 returned an average RTC of 2.5%. Although there were no actual lines that fell within Rewanui itself, the overall result reflects the possum population in general for the Bideford operational area (**refer Appendix 5 'possum monitoring report'**). From this report it can be seen that generally possum numbers remain at low densities and are well within the 5% RTC threshold required to let native bush thrive.

The Montford Trimble Trust Foundation has carried out some rat population monitoring but it is unclear whether or not this was completed to the Department of Conservation protocol for rat monitoring.

10. Costs

Set out below is a breakdown of costs from Greater Wellington's SAP system, up until the end of the financial year 30 June 2007.

	Cost (\$)
Labour	1,536.77
Vehicle/plant	4,546.00
Materials/supplies	10,853.58
Total:	16,936.35

Report prepared by:

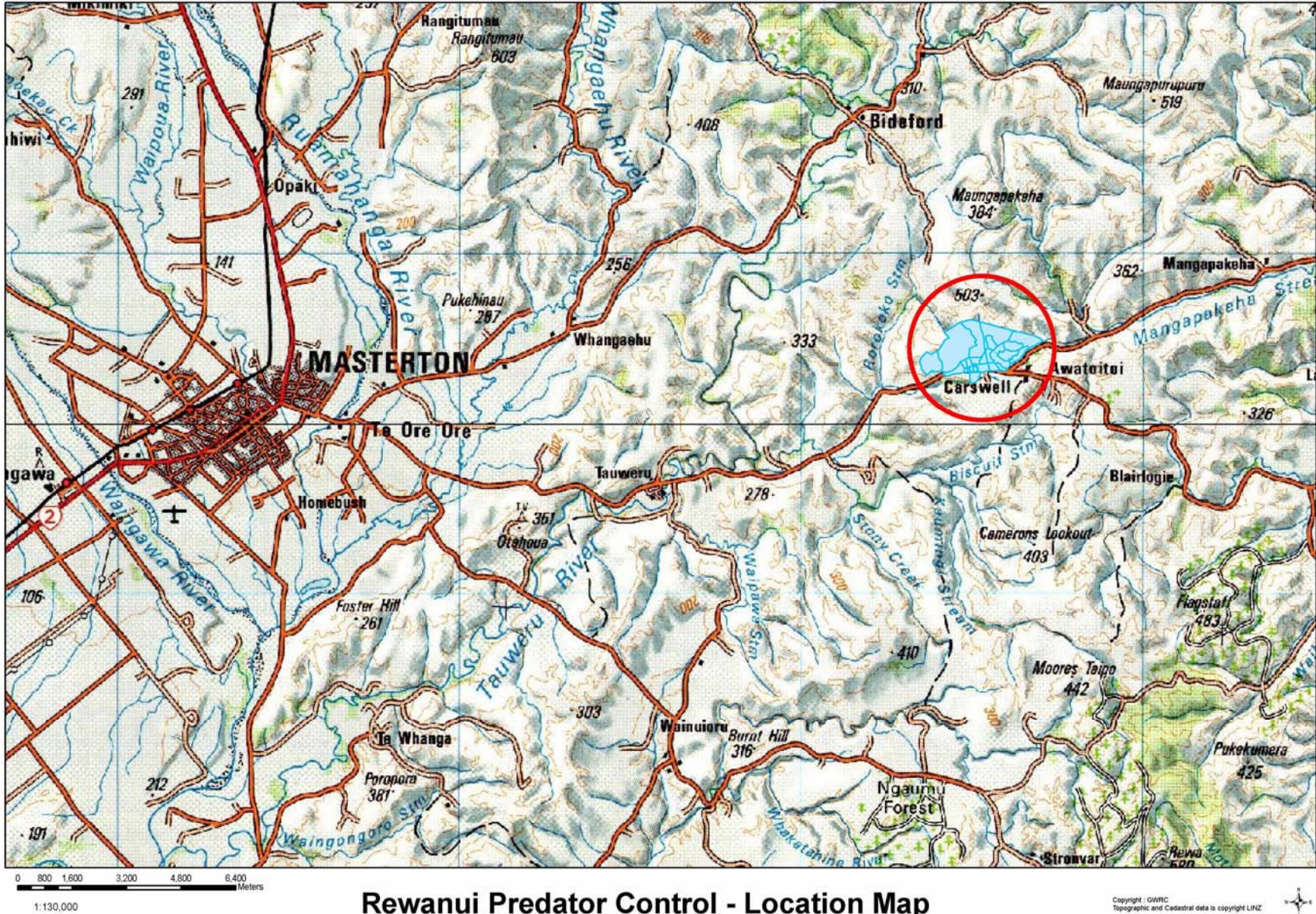


Steve Playle
Biosecurity Officer (Animals)

Report approved by:

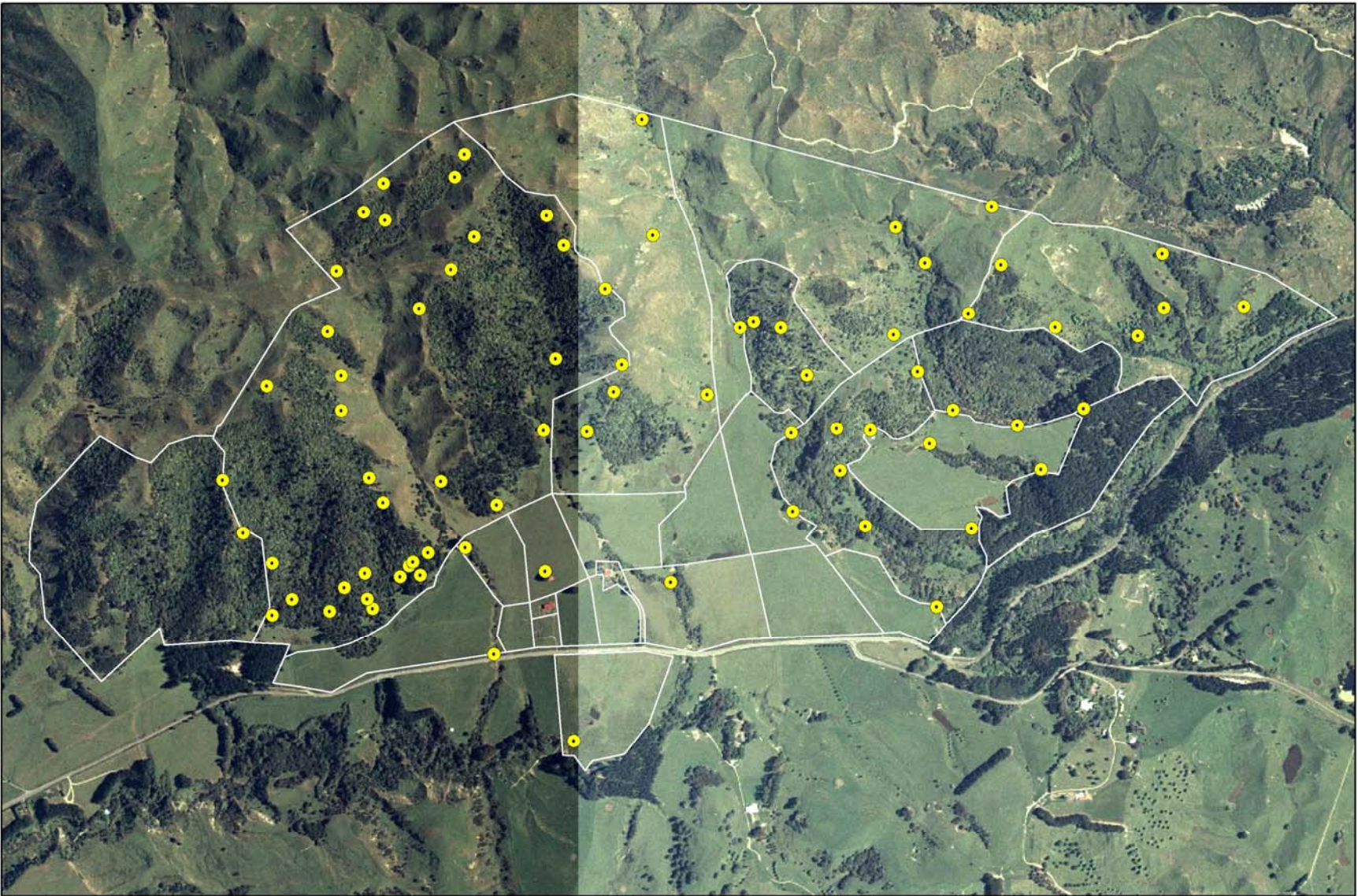


Ray Clarey
Senior Biosecurity Officer (Animals)



Rewanui Predator Control - Location Map

Copyright : GWRC
Topographic and Cadastral data is copyright LINZ



Rewanui Predator Control - Bait Stations

Copyright : GWRC
Topographic and Cadastral data is copyright LINZ

[WGN_DOCS-#531504-Rewanui vascular plants list](#)

LIST OF VASCULAR PLANTS IN BUSH AREA ON REWANUI FARM AND ADJACENT AREAS

Grid ref Topomap T26 540267. Alt.220-420m. asl

Pat Enright(1hr) 13/10/01

Pat Enright, Olaf John, Tony Silbery (6hrs) Up western boundary fence and around the bush perimeter

* Herbarium specimen lodged (AK or WEL)

unc = uncommon (only one or two plants seen)

Gymnosperm trees and shrubs

Dacrycarpus dacrydioides	kahikitea
Podocarpus totara	totara
Prumnopitys taxifolia	matai

Monocotyledonous trees and shrubs

Cordyline australis	ti, cabbage tree
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Dicotyledonous trees and shrubs

Alectryon excelsus subsp. excelsus	titoki
Beilschmiedia tawa	tawa
Brachyglottis repanda	rangiora
Carmichaelia australis	
Carpodetus serratus	putaputaweta, marbleleaf
Coprosma areolata	
Coprosma crassifolia	
Coprosma propinqua subsp. propinqua	mingimingi
Coprosma rhamnoides	
Coprosma rigida	
Coprosma rotundifolia	
Coprosma propinqua x C. robusta (unc)	
Coriaria arborea	tree tutu
Elaeocarpus dentatus	hinau
Griselinia lucida	puka, broadleaf
Hebe stricta var. atkinsonii	koromiko
Geniostoma rupestre var. rupestre	hangehange
Hedycarya arborea	porokaiwhiri, pigeonwood
Helichrysum aggregatum	
Hoheria angustifolia (unc)	
Hoheria sexstylosa	narrow leaved lacebark
Knightia excelsa	rewarewa
Kunzea ericoides	kanuka
Leptospermum scoparium	manuka
Lophomyrtus obcordata	rohutu
Macropiper excelsum subsp. excelsum	kawakawa
Melicope simplex	
Melicytus ramiflorus subsp. ramiflorus	mahoe
Myoporum laetum	ngaio
Myrsine australis	red matipo
Myrsine divaricata	weeping matipo
Myrsine divaricata x M. australis (unc)	
Nestegis cunninghamii	black maire
Nestegis lanceolata	white maire
Nestegis montana (over the fence)	narrow leaved maire
Olearia rani var colorata (unc)	heketara
Pennantia corymbosa	kaikomako

Pittosporum eugenioides
Pseudopanax arboreus
Pseudopanax crassifolius
Raukaua anomalus
Schefflera digitata (unc)
Solanum aviculare (unc)
Sophora microphylla
Sophora tetraptera
Streblus heterophyllus
Urtica ferox

tarata, lemonwood
five finger
horoeaka, lancewood

pate

kowhai
kowhai
turepo, milk tree
ongaonga, tree nettle

Monocotyledonous lianes

Ripogonum scandens

kareao, supplejack

Dicotyledonous lianes and related trailing plants

Calystegia tuguriorum
Clematis foetida
Clematis forsteri
Clematis paniculata
Fuchsia perscandens
Metrosideros colensoi
Metrosideros diffusa
Muehlenbeckia australis
Muehlenbeckia complexa
Parsonsia capsularis
Parsonsia heterophylla
Passiflora tetrandra
Rubus schmidelioides

puawhananga

pohuehue
pohuehue
kaihua, N.Z. jasmine
kaihua, N.Z. jasmine
passion vine
tataramoa, bush lawyer

Psilopsids, Lycopods and Quillworts

Ferns

Adiantum cunninghamii (unc)
Asplenium flabellifolium
Asplenium flaccidum
Asplenium gracillimum
Asplenium hookerianum
Blechnum chambersii
Blechnum fluviatile
Blechnum membranaceum
Botrychium bifforme (unc)
Cyathea dealbata
Cyathea medullaris (unc)
Hypolepis ambigua
Lastreopsis glabella
Lastreopsis microsora
Lastreopsis velutina
Leptopteris hymenophylloides
Microsorium pustulatum
Paesia scaberula
Pellaea rotundifolia
Polystichum richardii
Pteris tremula
Pyrrosia eleagnifolia

maidenhair fern
necklace fern
hanging spleenwort

nini
kiwakiwa

ponga, silver fern
mamaku

heruheru, single crepe fern
kowaowao, hounds tongue
matata, scented fern
tarawera, button fern

turawera, shaking brake
ota, leather-leaf fern

Orchids

Earina mucronata
Microtis unifolia

peka-a-waka
onion leaved orchid

Nematocerasas macranthum
Nematoceras trilobum agg. "Trotters"
Pterostylis banksii

Grasses

Echinopogon ovatus (unc)
Poa anceps subsp. anceps
Poa imbicilla

Sedges

Carex flagellifera
Carex geminata
Carex inversa
Carex solandri
Carex virgata
Eleocharis gracilis
Schoenus maschalinus
Uncinia leptostachya
Uncinia uncinata

watu, hook grass

Rushes and allied plants

Juncus distegus
Juncus gregiflorus
Juncus pallidus
Juncus planifolius
Juncus sarophorus
Luzula picta var picta

Remaining Monocotyledonous plants

Arthropodium candidum
Astelia solandri
Collospermum hastatum

kowharawhara
kahakaha

Daisy-like herbs (Composites)

Cotula australis
Craspedia grandis
Euchiton audax
Euchiton gymnocephalus
Lagenifera pumila
Lagenifera strangulata

Dicotyledonous herbs other than Composites

Acaena anserinifolia
Callitriche petrei
Cardamine sp. (C. debilis agg.) ("Narrow Petal" of Pritchard 1957)
Centella uniflora
Dichondra brevifolia (Deep narrow sinus upper leaf surface glabrous. lower with appressed hairs. Leaves spaced along rhizome)
Dichondra repens (Shallow sinus with both leaf surfaces covered is bristly hairs. Leaves grouped along rhizome)
Epilobium insulare
Epilobium nummulariifolium
Epilobium nerteroides
Galium propinquum
Hydrocotyle elongata
Hydrocotyle heteromeria
Hydrocotyle moschata
Hydrocotyle novae zelandiae
Geranium microphyllum

bidibidi

Oxalis exilis
Parietaria debilis
Plantago raoulii
Pratia angulata
Ranunculus reflexus
Ranunculus glabrifolius
Schizeilema trifoliolatum
Stellaria decipiens
Urtica incisa
Wahlenbergia rupestris (over the fence)
Wahlenbergia violacea

yellow oxalis

panakenake
maruru, hairy buttercup

nettle

Birds:

goldfinch
grey warbler
kingfisher
magpie
native pigeon
paradise duck
shining cuckoo
tui
waxeye

Appendix 4

[WGN_DOCS-#406284-Rewanui Weed Survey Report](#)

WeedWorks

Environmental Weed Specialists
Native Plant Nursery

Rewanui Weed Survey

July / August 2006

Overall

- Limited weed species and distribution.
- No high priority weeds / no immediate action required.
- Most bush blocks have good buffer areas to limit weed invasion.
- Excellent regeneration of native vegetation and high seedling numbers.
- Most mature native tree species in reasonable health.
- Little possum or rodent damage seen but plenty of evidence of past control programmes.
- Cattle damage to unfenced native vegetation very evident.
- All fences including newly finished fence require repairs to be effective.
- Stinging nettle starting to be out competed within bush blocks.

Rewanui Survey – Weeds.

Ground cover species

Area A: None

Area B: None

Area C: None

Area D: Unknown spp

Area E: None

Area D: An unidentified plant is spreading down a small slip under some pines and should be targeted for removal before spreading further.

Woody/herbaceous shrub and tree species

Block A: Elderberry, Pine

Block B: Broom

Block C: Briar

Block D: Pine, Sweet Briar, Tree Lucerne, Cotoneaster, Broom, Barberry

Block E: Wattle spp, Pine, Poplar and Willow.

Block A. Despite there being two large pine trees and a neighbouring pine plantation no seedlings were located in bush areas.

x5 small 6 year old Elderberry plants located high up in Area A and subsequently cut and stump treated. A further 6 large trees are located outside of Area A but within the farm (see map) but seedlings occur in a localised area spreading into fenced off area.

Block B. Two small broom bushes were located just inside the new fenceline and we assume they were probably brought in by stock from the large infestation in Area D. (Plants cut and treated)

Area C. Apart from a few scattered single plants of Sweet Briar that were located the area is basically weed free with the biggest current threat being the cattle stripping the bark off all the Lacebark (photos attached)

Area D. Pine, Tree Lucerne, Willow, and Poplar are all located as scattered trees mostly along the lower stream edge and show no signs of out of their current area.

The area of scattered broom is relatively contained at the moment and should be taken out now before spreading further down slope

The single Barberry plant should be chainsawed and stump treated

A group of scattered Sweet Briar was located and stump treated.

Area E. Pine, Willow, Poplar, Wattle and Tasmanian Blackwood were located in large numbers in the lower eastern area. In other conservation blocks they would be targeted for immediate removal but due to their current importance to slope stability only a few trees of pine on the upper northern slopes where the bush is regenerating well should be targeted immediately.

Vines

Area A: None

Area B: None

Area C: None

Area D: Convolvulus

Area E: None

Area D. A few Convolvulus vines were located which should be controlled.



Sweet Briar growing out of Coprosma

Additional Search Areas

The Homestead & Stream

In addition to the designated blocks I searched around the house and main stream leading out of area B.

While there were numerous species around the homestead and stream none of the species listed below were located in the bush blocks and so due to the large amount of work required to control the weeds around these areas it would be of low priority and the moment.

Balm of Gilead, Flowering Cherry, Cherry Laurel, Cotoneaster, Holly
Honeysuckle, Periwinkle, Sydney Golden Wattle

Road Reserve

The road frontage and road reserve land adjacent to the survey areas were inspected to locate any serious future potential threats.

While tree lupin, pampas and cotoneaster were all located along the road frontage no plants were located in bush areas but these plants plus pine, tree lucerne, climbing pea and sweet briar are all widespread along the road reserve block outside areas D and E and would require substantial work to control to any degree other than some sort of buffer zone which would have to be constantly checked.

Other Threats

The main threat will always be stock with cattle being especially destructive to native vegetation and once the remaining blocks are fenced off and the existing fences upgraded only minor repairs will hopefully prevent too much damage occurring.

Unfortunately over large areas such as these blocks fencing is always going to be a problem but if not maintained to a high standard stock especially cattle and really do a lot of damage in a small amount of time.

The western boundary fence of area A is getting loose with several places where stock from the neighbouring farm have been accessing the grass areas by going under and over the existing fence. Fortunately at this stage it has been only sheep which have concentrated on the grass and left the native regeneration untouched.

Even the new eastern boundary fence of block B has several gaps under it that were filled with rocks to stop sheep getting through but have moved allowing animals through.

Block B also has a recent slip right next to the new fence where a couple of drains to divert the water causing the slip may be required.

While land slippage and windfall are all evident around block E the lower eastern edge is a mess due to slumping land and gaps in the old fencing allowing cattle into the unstable and regenerating slopes

Little browsing by possums, rabbits, rodents or hares was noted although evidence of previous control work was evident and a combination of previous work by Greater Wellington and past farm managers is now evident in the number of seedlings on the ground and the fresh growth on previously browsed plants.



Recent cattle damage to Lacebark



Slip seen from halfway down



Rewanui Survey – Native Vegetation.

Both blocks of A and B have many fine examples of large Matai, Totara, Kahikatea, Rimu and Pukatea. Along with the rest of the bush these larger species and all showing the benefits of long term possum control and judging by the seedlings on the ground possibly associated rodent control. While there were young saplings of most of the main canopy and emergent species I did not see any young rimu and the mature ones that were seen are isolated and getting knocked around with age.

Another sign of the benefits of stock removal were the several species that were had been grazed back constantly were putting out substantial amounts of new growth and should have an excellent flowering/seeding season this year adding to the seedbank. Kowhai, Ngaio and the native Broom are all coming away nicely now.

Although I have included some photos to try to give an idea you have to see it yourself to appreciate the number of seedlings appearing in the fenced off land in areas A and B. Where there is any sort of bare ground the seedlings are appearing in great numbers and will quickly grow and fill all available areas.

After cutting my way through large areas of nettle I can see how the amount of the plant would be of concern but there is already plenty of evidence that shows the nettle being out competed by mahoe and kawakawa. In areas where it has been rampant because stock have been cleaning out all the new native growth it is now being affected by shading and competition with other faster growing species like the kawakawa and poroporo.

Areas C and D are still grazed with some of the existing trees being damaged by the grazing as shown in attached photos. However once the stock are fenced out then regeneration should proceed at a good rate due to good seed sources from the steep sided stream banks where stock have not been able to get to and there are still good healthy plants.

Area E has some of the best solid blocks of bush and seedling stocks but stock are still accessing the bush through several points and are grazing down the regenerated saplings. Admittedly this area has severe slippage issues and fencing in some places would be a challenge but the block is still worth putting the effort in for.



Large Pukatea – note buttressed base of trees and surface roots



Names Of Located Weed Species

Barberry.....	Berberis glaucocarpa
Bindweed.....	Convolvulus arvensis
Broom.....	Cytisus scoparius
Cherry.....	Prunus spp
Cherry Laurel.....	Prunus laurocerasus
Cotoneaster.....	Cotoneaster spp
Elderberry.....	Sambucas nigra
Climbing Pea.....	Lathyrus latifolius
Honeysuckle.....	Lonicera spp
Tree Lupin.....	Lupinus arboreus
Tree Lucerne.....	Chamaecytisus palmensis
Pampas.....	Cortaderia spp
Periwinkle.....	Vinca major
Pine.....	Pinus spp
Poplar.....	Populus spp
Sweet Briar.....	Rosa rubiginosa
Sydney Golden Wattle.....	Acacia longifolia
Tasmanian Blackwood	Acacia melanoxylon
Willow.....	Salix spp

East	North		
E2754414	N6026711	Large totara on track	#96
E2754398	N6027036	X5 elderberry – cut and treated	#97
E2754382	N6027050	Large matai above elderberry	#98
E2754153	N6027020	Large totara off track 1.4m dia	#100
E2754233	N6026921	Matai with broadleaf	#101
E2755877	N6027222	Briar in coprosma	#102
E2756037	N6026647	X9 briar near boundary – cut & treated	#103
E2755031	N6027339	X2 broom – cut and treated	#104

