

TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

GARY ROONEY PROPERTY



Report prepared for Timaru District Council by Mike Harding
August 2011

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Gary Rooney
Valuation References: 24820/106.00
Address: PO Box 10, Waimate.
Location: On the northeast side of Limestone Valley, west of Taiko Flat.
Ecological District:..... Waimate Ecological District.
TDC Land Type:..... 'Soft Rock Hills and Downs'
Land Environment: N3 (eastern South Island undulating plains and hills).

ECOLOGICAL CONTEXT:

The property covers moderately steep slopes and limestone bluffs between 200 and 330m on the northeast flanks of Limestone Valley. The property lies in Waimate Ecological District.

It is likely that the original vegetation of this area was predominantly podocarp-hardwood forest, dominated by matai and totara. Shrubland, treeland and tussockland may have occupied steeper slopes and disturbed sites. Limestone bluffs supported specialised flora, and valley floors supported wetland vegetation.

Today the original forest cover of Waimate Ecological District, within Timaru District, is largely confined to remnants in gullies on Cave Hill and Mt Horrible (including Claremont Scenic Reserve), and on basalt and limestone slopes in the Taiko and Limestone valleys. Otherwise, the indigenous vegetation of the ecological district is substantially depleted or modified. The indigenous fauna would have originally been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area.

SIGNIFICANT AREAS ON THE PROPERTY:

Indigenous vegetation on the property comprises hardwood forest, shrubland, sparse rockland vegetation on limestone bluffs, and wetland vegetation on valley floors. The property lies near to areas of forest, shrubland and rockland vegetation on adjoining properties, contributing to the network of fauna habitat in the wider area. A substantial portion of this part of the property is protected by a QEII Open Space covenant.

The property was surveyed as part of the District-wide survey of Significant Natural Areas during August 2011. Most parts of the property were surveyed. Three areas, comprising approximately 35 hectares, are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria. These SNAs are listed in the table below.

Area No.	Area Name	Central grid reference	Aprox. size (ha)	Vegetation/habitat type
13b	Rooney covenant	J38: 516-501	33.56	Hardwood forest, shrubland, rockland vegetation
478b	Rooney wetlands x2	J39: 516-499	1.74	Sedgeland and rushland

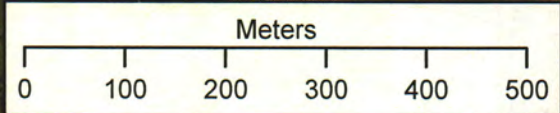
These SNAs are illustrated on the attached aerial photograph and described in greater detail on the SNA Forms in this report. Note that the boundaries of the SNAs are indicative, rather than precise. These areas meet the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19) and are considered to be sustainable in the long term, or sustainable with appropriate management (criterion vii, page B19). SNAs are subject to confirmation by Council after regarding the matters listed in the District Plan (pages B19-B20). It is expected that SNAs will eventually be listed in the District Plan by way of a notified plan change.

At present, consent is required from Council for clearance of areas of indigenous vegetation or habitat which meet the Interim Definitions in the District Plan. Clearance includes burning, spraying with herbicides and over-planting. SNAs encompass most, but not necessarily all, areas of vegetation and habitat which meet the Interim Definitions. The open space covenants that protect this part of the property are likely to provide greater protection than District Plan rules.

To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.



Rooney Property
24820/106.00



1:7,500

Area Name: Rooney Covenant

Location (central map reference): J38: 516-501

Ecological District: Waimate

Surveyors: Mike Harding

Property: Gary Rooney

Nearest Locality: Taiko Flat

Area Size (ha): 33.56

Altitude (m): 200-330

Survey Time: 3 hours

Survey Date: 05-08-11

General Description:

This SNA covers a steep limestone scarp and adjacent rubble slopes on the northeast side of Limestone Valley Road. It is part of a limestone bluff system that extends onto the adjacent property. Areas of indigenous vegetation and limestone scarp on both properties are protected by QEII Open Space covenants. Rockland plant communities were not thoroughly surveyed, because this time of the year (winter) is unsuitable for such a survey. Limestone vegetation at the site was surveyed in 2003.

Plant Communities:

Three main plant communities are present: hardwood forest, shrubland and rockland (limestone scarp) communities. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest adjacent to the bluff (fenced):

This area of forest occupies a limestone bench mid-way along the bluff system. It is fenced from grazing animals. The forest canopy is dominated by broadleaf and mahoe. Other canopy species are kowhai, *Clematis forsteri*, native convolvulus, native jasmine, leafless lawyer, pohuehue and occasionally mapou and lowland ribbonwood.

The forest understorey is relatively open. Species present are *Coprosma propinqua*, mahoe, broadleaf and poroporo. Plant species present at rocky sites are mountain akeake, koromiko, *Asplenium lyallii*, *Adiantum cunninghamii*, *Blechnum chambersii*, hound's tongue fern and hairy pennywort.



Hardwood forest, rockland, shrubland of SNA 13b (distance) and sedgeland of SNA 478b (foreground).

Ground-cover species present are hemlock*, burdock*, *Parietaria debilis*, pennywort, cleavers*, nipplewort*, black nightshade*, toatoa, leafless lawyer, *Einadia allanii* and seedlings of *Coprosma propinqua*, mahoe, broadleaf, cabbage tree and koromiko.

Plant species commonly present in forest openings are *Coprosma propinqua*, native broom, mahoe, poroporo, *Parietaria debilis*, elderberry*, Californian thistle*, Chewings fescue*, cocksfoot* and occasionally lemonwood.

Rockland (limestone bluff) vegetation:

Woody species present on or adjacent to the limestone scarp are mahoe, broadleaf, mountain akeake, matipo, elderberry*, *Coprosma propinqua*, koromiko, native broom, leafless lawyer and pohuehue.

Other species present on or adjacent to the scarp are tree nettle, *Parietaria debilis*, poroporo, burdock*, nodding thistle*, Scotch thistle*, Californian thistle*, black nightshade*, *Oxalis exilis*, *Asplenium lyallii*, common shield fern, male fern*, *Hydrocotyle heteromeria* and blue tussock.

Additional species recorded on the bluff crest and on adjacent limestone pavement are *Coprosma virescens*, *Colobanthus* sp., *Geranium brevicaule*, *Geranium microphyllum*, *Epilobium nummulariifolium*, *Leptinella squalida*, *Cardamine* sp., mouse-ear hawkweed*, suckling clover*, sheep's sorrel*, dandelion*, purging flax*, horehound* and wire moss.

A threatened species recorded during the 2003 limestone survey was *Gentianella calcis* ssp. *taiko* (nationally critical).



Lush ground-cover in the fenced (ungrazed) part of SNA 13b

Shrubland:

Shrubland on the moderately-steep slopes below the limestone scarp is dominated by *Coprosma propinqua*. It occupies rank pasture with abundant Californian thistle*, silver tussock and scattered emergent cabbage trees. Other canopy or emergent species present are mahoe, broadleaf, native broom, matagouri, pohuehue, native jasmine, native convolvulus, mistletoe (on *Coprosma propinqua*) and occasionally gorse*. The at-risk (declining) speargrass, *Aciphylla subflabellata*, was observed at one location.



Shrubland on the slopes below the limestone scarp

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, fantail, silvereye, welcome swallow and hawk.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of relatively intact indigenous forest on limestone, a diverse range of plants typical of limestone habitats, populations of a nationally critical species (*Gentianella calcis* ssp. *taiko*), at-risk species (*Aciphylla subflabellata*), locally-uncommon species (*Coprosma virescens* and tree nettle) and the extent of the limestone habitat.

Notable Plant and Animal Pests:

The site is relatively free of invasive woody plant pests. Elderberry and gorse are present, though not widespread. Herbaceous plants, especially naturalized grasses and mouse-ear hawkweed, pose a greater threat to vulnerable limestone plants, especially *Gentianella calcis* ssp. *taiko*. Californian thistle is abundant in the grassland/shrubland. Animal pests were not surveyed, though possum sign was observed.

Boundaries (buffering, fencing, adjoining plant communities and habitats):

Most limestone plant communities are buffered by the steepness of the limestone scarp. The main forest patch beneath the scarp is fenced from stock. The limestone bluff extends onto the adjacent property. The site is protected by a QEII Open Space covenant.

Condition and Management Issues:

Vegetation on the limestone scarp and within the fenced area is in relatively good condition. Unfenced sites that are accessible to stock are more depleted, though shrubland appears to be successfully regenerating on slopes below the scarp. The main threats to the area are invasive naturalized plants (especially grasses and herbs) and animal browse (especially possums). The site is managed for protection under the covenant agreement.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	H	A good example of indigenous vegetation on and adjacent to limestone bluffs and one of the best remaining in the ecological district.
Rarity	H	Supports populations of nationally critical, at risk and locally uncommon species. Limestone cliffs are originally rare ecosystems that are a national priority for protection.
Diversity and pattern	M/H	A relatively diverse range of species is present, though species diversity is probably reduced from that originally present.
Distinctiveness/special features	M/H	The extent of the limestone habitat and the forest remnant are notable features.
Other Criteria		
Size/shape	H	A large area that is well buffered.
Connectivity	M	The limestone scarp extends onto the adjacent property. It lies relatively close to other indigenous forest remnants in the area.
Long-term Sustainability	M/H	Most parts of the site are well buffered and protected. However, plant and animal pest control is probably required to maintain ecological values in the long term.

Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):

This area has been set aside and protected voluntarily by the landowner. It is an ecologically valuable and nationally important site for protection of limestone flora. The steepness of the site limits its potential for farm development.

Summary:

This area very easily meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of relatively intact indigenous forest on limestone, a diverse range of plants typical of limestone habitats, populations of a nationally critical species (*Gentianella calcis* ssp. *taiko*), at-risk species (*Aciphylla subflabellata*), locally-uncommon species (*Coprosma virescens* and tree nettle) and the extent of the limestone habitat.

TIMARU DISTRICT SNA SURVEY

SNA 478b

Area Name: Rooney wetlands

Location (central map reference): J39: 516-499

Ecological District: Waimate

Surveyors: Mike Harding

Property: Gary Rooney

Nearest Locality: Taiko Flat

Area Size (ha): 1.74

Altitude (m): 200

Survey Time: ½ hour

Survey Date: 05-08-11

General Description:

These two wetlands lie on the valley floor alongside Limestone Valley Road. They occupy low-lying alluvial flats at the base of a limestone slope and bluff (SNA 13b).

Plant Communities:

The main plant community present is sedgeland, described below. Naturalized (exotic) species are indicated with an asterisk*.

Most parts of the site are dominated by *Carex secta*, *Juncus gregiflorus* or Californian thistle*. Pasture grasses, especially cocksfoot* and Yorkshire fog*, are present throughout. Other species present are *Carex coriacea*, jointed rush*, creeping buttercup*, watercress* and broad-leaved dock*.



Carex secta sedgeland in SNA 478b

Birds/Fauna Observed:

Native birds observed during this brief survey were pukeko, paradise shelduck, South Island pied oystercatcher and spur-winged plover.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of wetland vegetation at low altitude (a nationally-rare ecosystem), the extent (size) of the wetlands and their location adjacent to an important limestone system.

Notable Plant and Animal Pests:

Pasture grasses are the most important plant pests present. Animal pests were not surveyed.

Boundaries (buffering, fencing, adjoining plant communities and habitats):

These wetlands are buffered to some extent by their size. They adjoin shrubland and pasture communities on limestone substrates (SNA 13b).

Condition and Management Issues:

The wetlands are in relatively good condition. The most important management issues are monitoring to prevent invasion by gorse or crack willow (present upstream) and the protection of the wetlands from stock damage. The wetlands are within a covenanted area (QEII).

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	Good examples of lowland wetland vegetation; typical of that remaining in the ecological district.
Rarity	M/H	Lowland wetlands are nationally rare ecosystems.
Diversity and pattern	L/M	Species diversity is relatively low.
Distinctiveness/special features	M	The location of the wetlands adjacent to a nationally important limestone system is a special feature.
Other Criteria		
Size/shape	M/H	Relatively large for a lowland wetlands.
Connectivity	M	Are linked by a small stream to other areas of wetland. Lies close to indigenous vegetation on limestone (SNA 13b).
Long-term Sustainability	M	Plant and animal pest control will probably be required to maintain ecological values in the long term.

Final Consideration (of other matters: Section D, page B-19 of Timaru District Plan):

These wetlands have been voluntarily protected by the landowner.

Summary:

These wetlands meet the District Plan criteria for a Significant Natural Area. Important features are the presence of wetland vegetation at low altitude (a nationally-rare ecosystem), the extent (size) of the wetlands and their location adjacent to an important limestone system.

TIMARU DISTRICT SNA SURVEY

Wetland Record Form

Wetland 478b

Wetland name: Rooney Wetlands	Date: 5 th August 2011
Property: Gary Rooney	GPS/Grid Ref: J39: 516-499
Altitude: 200 m	No. of plots sampled:
Location: Limestone Valley Road	Approximate size (ha): 1.74

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Riverine		Marsh	Riparian

Surveyors: Mike Harding

Indicator	Indicator components	Specify and Comment	Score 0-5 ¹	Mean score
Change in hydrological integrity	Impact of manmade structures	None apparent	5	4.33
	Water table depth	No change apparent	5	
	Dryland plant invasion	Moderate	3	
Change in physico-chemical parameters	Fire damage	None evident	5	4.33
	Degree of sedimentation/erosion	Some sediment and erosion	4	
	Nutrient levels	No evidence/localized	4	
	von Post index			
Change in ecosystem intactness	Loss in area of original wetland	Loss at margins	3	4
	Connectivity barriers	Connections intact	5	
Change in browsing, predation and harvesting regimes	Damage by domestic or feral animals	Damage to parts of wetland	3	4
	Introduced predator impacts on wildlife	?		
	Harvesting levels	None apparent	5	
Change in dominance of native plants	Introduced plant canopy cover	Low	4	3.5
	Introduced plant understorey cover	Moderate	3	
Total wetland condition index /25				20.16

Main vegetation types: *Carex coriacea*/*Carex secta* sedgeland and *Juncus gregiflorus* rushland

Native fauna: SI pied oystercatcher, pukeko, spur-winged plover, paradise shelduck

Other comments: Within a QEII Open Space covenant

Pressure	Rating ²	Specify and Comment
Modifications to catchment hydrology	1	Low; man-made dam upstream
Water quality within the catchment	2	Stock pollution
Animal access	1	Within covenanted area
Key undesirable species	1	Low: gorse and pasture grasses
% catchment in introduced vegetation	3	High proportion
Other pressures		
Total wetland pressure index /30	8	

Source: Clarkson *et al*, Handbook for monitoring wetland condition, Ministry for the Environment, August 2002.

¹ Assign degree of modification thus: 5=v. low/ none, 4=low, 3=medium, 2=high, 1=v. high, 0=extreme

² Assign pressure scores as follows: 5=very high, 4=high, 3=medium, 2=low, 1=very low, 0=none

Scientific names of species cited by common name in this report

(Note: this is not a complete species list; it is a list only of species cited by common name in this report)

Common Name	Scientific name
(* = naturalised species)	
black nightshade*	<i>Solanum nigrum</i>
blue tussock	<i>Poa colensoi</i>
broadleaf	<i>Griselinia littoralis</i>
broad-leaved dock*	<i>Rumex obtusifolius</i>
burdock*	<i>Arctium minus</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Californian thistle*	<i>Cirsium arvense</i>
Chewings fescue*	<i>Festuca rubra</i> ssp. <i>commutata</i>
cleavers*	<i>Galium aparine</i>
cocksfoot*	<i>Dactylis glomerata</i>
common shield fern	<i>Polystichum richardii</i>
crack willow*	<i>Salix fragilis</i>
creeping buttercup*	<i>Ranunculus repens</i>
dandelion*	<i>Taraxacum officinale</i>
elderberry*	<i>Sambucus nigra</i>
gorse*	<i>Ulex europaeus</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hemlock*	<i>Conium maculatum</i>
horehound*	<i>Marrubium vulgare</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
jointed rush*	<i>Juncus articulatus</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
leafless lawyer	<i>Rubus squarrosus</i>
lemonwood	<i>Pittosporum eugenioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
mahoe/whiteywood	<i>Meliccytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</i>
mapou	<i>Myrsine australis</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
mistletoe	<i>Ileostylis micranthus</i>
mountain akeake	<i>Olearia avicenniifolia</i>
mouse-ear hawkweed*	<i>Pilosella officinarum</i>
native broom	<i>Carmichaelia</i> aff. <i>australis</i>
native convolvulus	<i>Calystegia tuguriorum</i>
native jasmine	<i>Parsonsia</i> sp.
nipplewort*	<i>Lapsana communis</i>
nodding thistle*	<i>Carduus nutans</i>
pennywort	<i>Hydrocotyle</i> sp.
pohuehue	<i>Muehlenbeckia australis</i>
poroporo	<i>Solanum laciniatum</i>
purging flax*	<i>Linum catharticum</i>
Scotch thistle*	<i>Cirsium vulgare</i>
sheep's sorrel*	<i>Rumex acetosella</i>
silver tussock	<i>Poa cita</i>
suckling clover*	<i>Trifolium dubium</i>
toatoa	<i>Haloragis erecta</i>
totara	<i>Podocarpus totara</i>
tree nettle	<i>Urtica ferox</i>
water cress*	<i>Rorippa microphylla</i>
wire moss	<i>Polytrichum juniperinum</i>
Yorkshire fog*	<i>Holcus lanatus</i>