

**TIMARU DISTRICT**  
**SIGNIFICANT NATURAL AREAS**  
**SURVEY**

**ROBERTS PROPERTY**  
**CLIFF TREES**



Report prepared for Timaru District Council by Mike Harding  
August 2015

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owner:** ..... Roberts (Cliff Trees Ltd)  
**Valuation References:** ..... 24850/014.05  
**Address:** ..... 411 Cliffs Road, Timaru 7974.  
**Location:**..... West side of Cliffs Road above Taiko Valley, Timaru Downs.  
**Ecological District:** ..... Waimate Ecological District.  
**TDC Land Type:**..... 'Soft Rock Hills and Downs'  
**Land Environment:**..... N3 (eastern South Island undulating plains and hills).

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### ECOLOGICAL CONTEXT:

The property covers steep slopes, including areas of exposed bluff, in Taiko valley, at the west edge of the Timaru Downs. Underlying rocks are Timaru Basalt, overlain by loess (Forsyth, 2001). It lies in Waimate Ecological District (McEwen, 1987). The property is within the Level IV Land Environment N3.1a (Leathwick *et al*, 2003), in which indigenous vegetation is regarded as 'acutely threatened' (Walker *et al*, 2005). Basalt cliffs are a 'naturally uncommon' ecosystem (Williams *et al*, 2007) and regarded as nationally 'vulnerable' (Holdaway *et al*, 2012).

It is likely that the original vegetation of this area was predominantly hardwood forest, with emergent podocarps (matai and totara). Shrubland, treeland and tussockland may have occupied steeper slopes and disturbed sites. Rock bluffs supported specialised flora and mixed hardwood forest including kowhai.

Today the original forest cover of Waimate Ecological District, within Timaru District, is substantially depleted. Few areas of indigenous vegetation remain and most of those are small and 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.

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### SIGNIFICANT AREAS ON THE PROPERTY:

Indigenous vegetation on the property comprises small patches of hardwood forest and associated shrubland and rockland (bluff) vegetation on steep rocky slopes. The property was surveyed as part of the District-wide survey of Significant Natural Areas during July 2015. Three small areas, comprising approximately one hectare, are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria.

These SNAs are illustrated on the aerial photograph and described in greater detail on the SNA Form 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.

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.

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## **REFERENCES:**

de Lange, PJ; Rolfe, JR; Champion, PD; Courtney, SP; Heenan, PB; Barkla, JW; Cameron, EK; Norton, DA; Hitchmough, RA. 2012. *Conservation status of New Zealand indigenous vascular plants, 2012*. Department of Conservation, Wellington, New Zealand. 70p.

Forsyth, PJ (compiler). 2001. Geology of the Waitaki area. *Institute of Geological and Nuclear Sciences 1:250,000 geological map 19*. Institute of Geological and Nuclear Sciences Limited, Lower Hutt.

Holdaway, RJ; Wisser, SK; Williams, PA. 2012. Status assessment of New Zealand's naturally uncommon ecosystems. *Conservation Biology* 26(4): 619-629.

Leathwick, J; Wilson, G; Rutledge, D; Wardle, P; Morgan, F; Johnston, K; McLeod, M; Kirkpatrick, R. 2003. *Land Environments of New Zealand*. David Bateman Ltd.

McEwen, WM (editor). 1987. Ecological regions and districts of New Zealand, third revised edition (Sheet 4). *New Zealand Biological Resources Centre Publication No. 5*. Department of Conservation, Wellington, 1987.

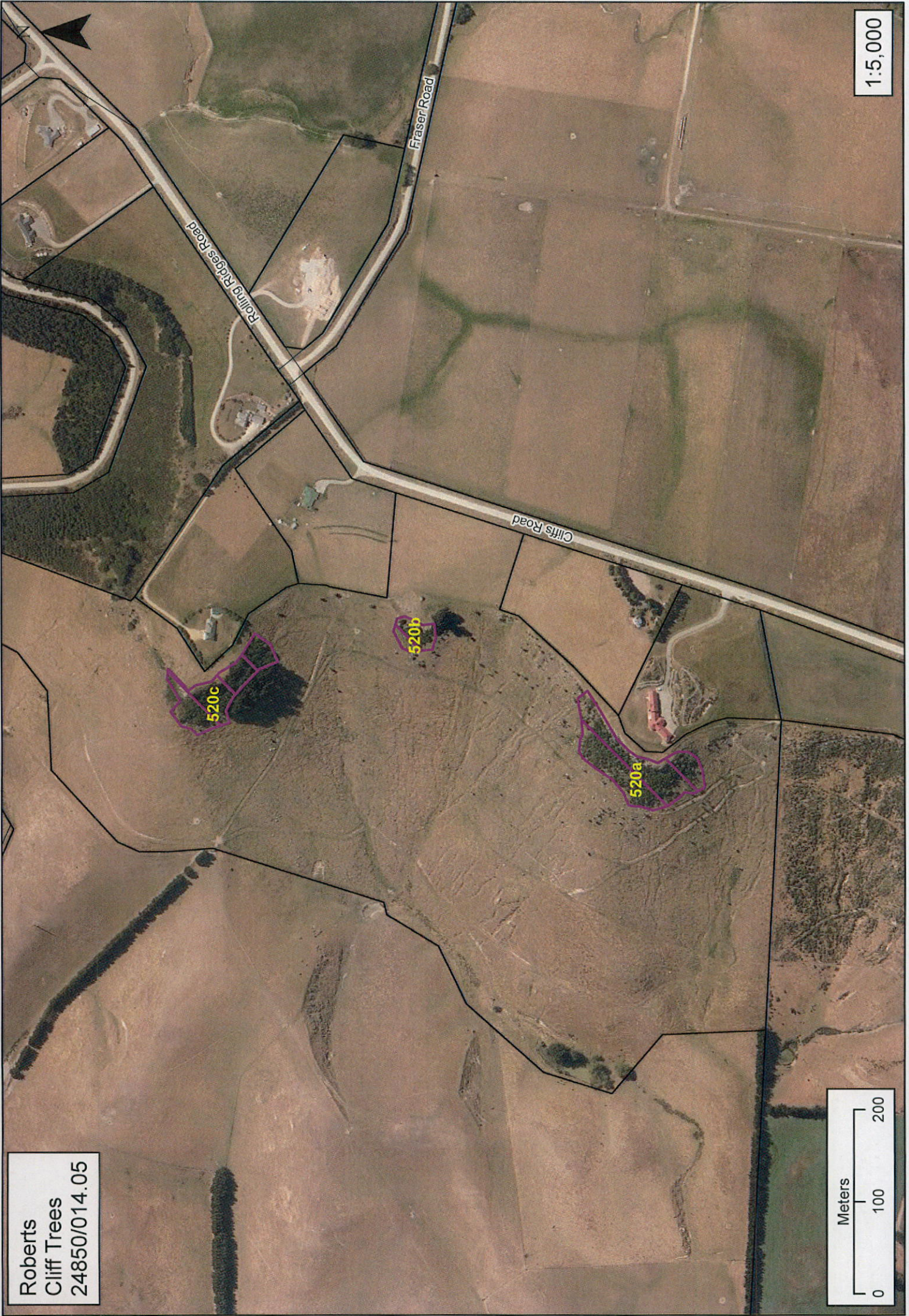
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Williams, P.A.; Wisser, S.; Clarkson, B.; Stanley, M.C. 2007. New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework. *NZ Journal of Ecology* 31: 119-128.

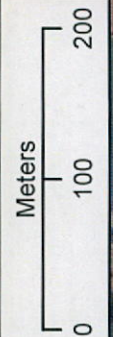


The 'at risk' (declining) shrub, *Teucrium parvifolium*

Roberts  
Cliff Trees  
24850/014.05



1:5,000



**Area Name:** Cliff Trees

**Ecological District:** Waimate

**SNA 520a: Central map ref. (NZTM):** 1446165E-5087440E

**SNA 520b: Central map ref. (NZTM):** 1446295E-5087680E

**SNA 520c: Central map ref. (NZTM):** 1446240E-5087895E

**Surveyors:** Mike Harding and Annette Roberts

**Property:** Roberts (Cliff Trees Ltd)

**Nearest Locality:** Taiko

**Area Size (ha):** 0.72      **Altitude (m):** 220-240

**Area Size (ha):** 0.13      **Altitude (m):** 220-240

**Area Size (ha):** 0.48      **Altitude (m):** 220-240

**Survey Time:** 2 hours      **Survey Date:** 03-07-15

### General Description:

These three small SNAs lie on steep boulder slopes beneath a basalt scarp at the western edge of the Timaru Downs. They are linked by rough pasture and scattered shrubs and lie relatively close to other small areas of indigenous vegetation in the Taiko valley. The three SNAs are described together as they support similar plant communities.

### Plant Communities:

Each of the three sites supports low-canopied hardwood forest. This community is described below. Naturalized (exotic) species are indicated with an asterisk\*. Scientific names of species cited by common name are listed at the end of this report.

The forest canopy at most parts of the sites is dominated by mahoe, broadleaf and cabbage tree. Other canopy species are mapou, *Coprosma crassifolia*, kowhai and matipo. Tall radiata pine\* trees are present at the edges of SNAs 520b and 520c. A single large old tree of *Olearia odorata* is present at SNA 520a. This is the only location at which this species has been recorded during SNA surveys of this part of Waimate Ecological District (i.e. within Timaru District).

The understorey and forest-floor vegetation at these sites is sparse, in part because of the boulder-dominated substrate. The only species commonly present is *Coprosma crassifolia*. Occasionally present are matipo, mapou and elderberry\*. Several species have been planted at SNA 520a, including totara, mountain akeake, kowhai and pohutukawa.



SNA 520a

Forest floor species (mostly on boulders) are necklace fern, *Asplenium appendiculatum*, common shield fern, button fern, *Libertia ixioides* and *Carex forsteri* (?). Less commonly present are stinking iris\* and horehound\*.

Shrubland is present at the margins of these forest patches. Species commonly present here and at forest openings are *Coprosma crassifolia*, *Coprosma propinqua*, native broom, matagouri, gorse\*, elderberry\*, *Einadia triandra* and native bindweed. Less commonly present are scrub pohuehue, pohuehue, lawyer (mostly removed), bracken, poroporo, hawthorn\*(?) and silver tussock. A small patch of the 'at risk' (declining) shrub (de Lange *et al*, 2012), *Teucrium parvifolium*, is present near the bluff at the centre of SNA 520a and a single shrub present at the northern edge of this SNA.

Additional species observed on or associated with the exposed basalt scarp are hound's tongue fern (SNA 520b), patotara, toatoa, star lily, blue tussock, *Dichondra repens*, harebell, woolly mullein\* and pasture grasses, notably Chewings fescue\*. Additional species observed on open boulder slopes between the SNAs are *Asplenium bookerianum*, *Blechnum penna-marina* and *Oxalis exilis*.



SNA 520b

#### **Notable Flora, Fauna and Habitats:**

Notable features of these SNAs are the presence of: indigenous vegetation on basalt bluffs and boulder slopes (a 'naturally uncommon' ecosystem) and within a threatened land environment; a small population of an 'at risk' (declining) shrub (*Teucrium parvifolium*); and a locally uncommon species (*Olearia odorata*).

#### **Notable Plant and Animal Pests:**

Elderberry and gorse are the most important woody plant pests present, though elderberry is sparsely distributed and gorse mostly confined to the site margins. Gorse has been controlled by the landowners, especially at SNA 520a. Exotic grasses, notably Chewings fescue, are the most important plant pests on the basalt scarp. Planted pine trees, though not spreading, have a significant effect on SNA 520c by shading the site and depositing a deep layer of pine needles on the forest floor. Animal pests were not surveyed, though possum sign was observed.

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

The boundaries of these three small sites are drawn to include the main areas of indigenous woody vegetation and exposed basalt scarp. Areas of scattered boulders between the sites and a small patch of scattered indigenous trees and shrubs (including kowhai) north of SNA 520c are not included. Those areas have some ecological value but do not (at present) meet the significance criteria in the Timaru District Plan or Canterbury Regional Policy Statement.

## Condition and Management

The forest canopy at these sites is in relatively good condition. The forest understorey and exposed basalt scarp are very sparsely vegetated, though this may be representative of their natural states. Considerable effort has been expended at SNA 520a removing lawyer and pohuehue. These are indigenous plant species and, although smothering in some situations, are generally beneficial to indigenous forest because they reduce wind exposure in the forest understorey and provide habitat (especially food) for native birds and invertebrates. The landowners advise that the lawyer was previously overwhelming the forest canopy. Gorse control (by the landowners) has benefited the sites greatly. The planting of species that do not occur naturally in the area (e.g. pohutukawa) affects the ecological integrity of the forest.

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## ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	Indigenous vegetation that is moderately representative of the original vegetation in the ecological district and typical of that remaining on basalt slopes.
Rarity	H	The sites lie within an 'acutely threatened' land environment and a 'naturally uncommon' ecosystem'. Site 520a supports a population of an 'at risk' (declining) plant species: <i>Teucrium parvifolium</i> .
Diversity and pattern	L/M	Plant species diversity is relatively low, as can be expected at small sites.
Distinctiveness/special features	M	The presence of <i>Olearia odorata</i> is notable. This species has not been recorded elsewhere in this part of the ecological district.
<b>Other Criteria</b>		
Size/shape	M	Small sites that are well buffered by their locations on basalt bluffs and boulder slopes.
Connectivity	M	The sites lie close to one another and near to other similar sites.
Long-term Sustainability	M	Continued plant and animal pest control is likely to be necessary to maintain ecological values in the long term.

*H=high; M=moderate; L=low*

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

These three sites have been informally protected by the landowners. Considerable effort has been expended managing the sites, notably plant pest control and planting at SNA 520a. The sites occupy slopes that are too steep and rocky to be developed further for farming.

## Discussion:

These three small sites meet the Timaru District Plan (and Canterbury RPS) criteria for significant natural areas (SNAs). Significant features are that they support indigenous vegetation within an 'acutely threatened' land environment and in a 'naturally uncommon' ecosystem (basalt). Also significant are the presence of *Teucrium parvifolium* (an 'at risk' plant species) and *Olearia odorata* (a locally uncommon species).

## 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)

blue tussock .....	<i>Poa cita</i>
bracken.....	<i>Pteridium esculentum</i>
broadleaf.....	<i>Griselinia littoralis</i>
button fern.....	<i>Pellaea rotundifolia</i>
cabbage tree/ti rakau .....	<i>Cordyline australis</i>
Chewings fescue .....	<i>Festuca rubra</i>
common shield fern.....	<i>Polystichum richardii</i>
elderberry* .....	<i>Sambucus nigra</i>
gorse* .....	<i>Ulex europaeus</i>
harebell.....	<i>Wahlenbergia albomarginata</i>
hawthorn* .....	<i>Crataegus monogyna</i>
horehound* .....	<i>Marrubium vulgare</i>
hound's tongue fern .....	<i>Microsorium pustulatum</i>
kowhai.....	<i>Sophora microphylla</i>
lawyer .....	<i>Rubus schmidelioides</i>
mahoe/whiteywood.....	<i>Melicytus ramiflorus</i>
mapou .....	<i>Myrsine australis</i>
matagouri .....	<i>Discaria toumatou</i>
matai .....	<i>Prumnopitys taxifolia</i>
matipo/kohuhu .....	<i>Pittosporum tenuifolium</i>
mountain akeake .....	<i>Olearia avicennifolia</i>
native bindweed .....	<i>Calystegia tuguriorum</i>
native broom .....	<i>Carmichaelia aff. australis</i>
necklace fern .....	<i>Asplenium flabellifolium</i>
patotara.....	<i>Leucopogon fraseri</i>
pohuehue .....	<i>Muehlenbeckia australis</i>
pohutukawa .....	<i>Metrosideros excelsa</i>
poroporo.....	<i>Solanum laciniatum</i>
radiata pine*.....	<i>Pinus radiata</i>
scrub pohuehue .....	<i>Muehlenbeckia complexa</i>
silver tussock.....	<i>Poa cita</i>
star lily .....	<i>Arthropodium candidum</i>
stinking iris* .....	<i>Iris foetidissima</i>
toatoa.....	<i>Haloragis erecta</i>
totara .....	<i>Podocarpus totara</i>
woolly mullein* .....	<i>Verbascum thapsus</i>