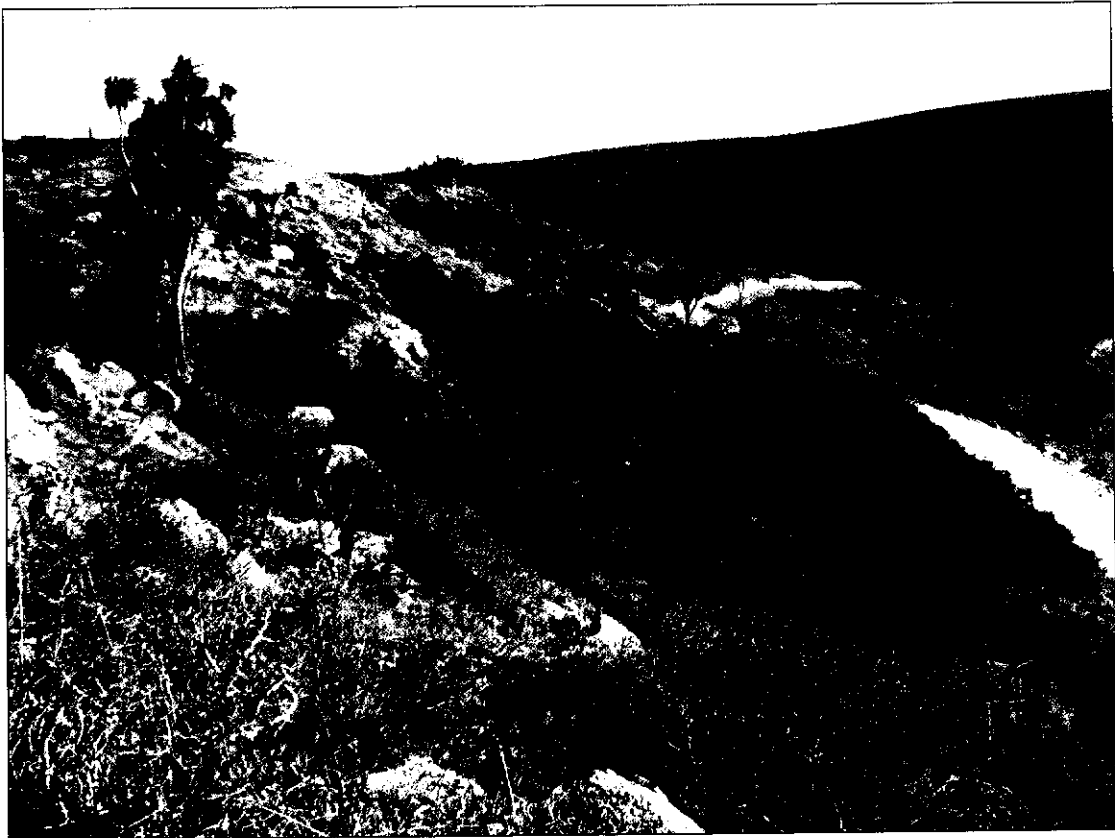


**TIMARU DISTRICT**  
**SIGNIFICANT NATURAL AREAS**  
**SURVEY**

**ROONEY PROPERTY**  
**ROSEWILL**



**Report prepared for Timaru District Council by Mike Harding**  
**November 2011**

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owner:** ..... Gary Rooney (formerly Neal Porter)  
**Valuation References:** .... 24840/058.00  
**Address:** ..... PO Box 10, Waimate.  
**Location:** ..... Upper reaches of Rosewill Stream, Timaru Downs.  
**Ecological District:** ..... Makikihi 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:

This part of the property covers moderately steep slopes between 80 and 160m in headwater tributaries of Rosewill Stream, on the Timaru Downs. The property lies in Makikihi 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. Rock bluffs supported specialised flora and mixed hardwood forest including kowhai.

Today the original forest cover of Makikihi 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, areas of shrubland, and sparse rockland vegetation on steeper slopes and basalt scarps. Most indigenous vegetation remnants on the property are substantially depleted. However, the rarity of indigenous vegetation in this part of Timaru District contributes to their significance.

The property was surveyed as part of the District-wide survey of Significant Natural Areas during September 2011. Three areas, comprising approximately ten 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
529a		J38: 602-501	4.48	Hardwood forest; shrubland; rockland
530a		J38: 600-500	0.67	Treeland; shrubland; rockland
530b		J39: 607-499	4.58	Shrubland; rockland



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.

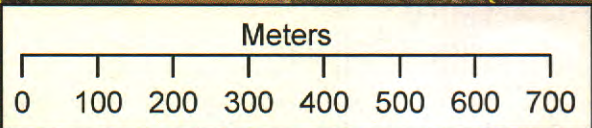
To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.



*Button fern (Pellaea rotundifolia) in SNA 530b*



Rooney (Rosewill) Property  
24840/058.00



1:10,000



# TIMARU DISTRICT SNA SURVEY

SNA 529a

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**Area Name:**

**Location (central map reference):** J38: 602-501

**Ecological District:** Makikihi

**Surveyors:** Mike Harding

**Property:** Rooney

**Nearest Locality:** Rosewill

**Area Size (ha):** 4.48

**Survey Time:** 3 hours

**Altitude (m):** 120-160

**Survey Date:** 07-09-11

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**General Description:**

This SNA lies on moderately-steep north-facing slopes of a small valley at the head of Rosewill Stream, on the Timaru Downs. It occupies a basalt scarp and the steep boulder slopes below that scarp. It adjoins SNA 530a along the stream at its up-valley (western) end.

**Plant Communities:**

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

Shrubland:

This community occupies the mid and lower south-facing slopes of the valley. It grades to forest and rockland at its upper margin. The shrubland canopy is dominated by either *Coprosma propinqua* or gorse\*, with emergent trees of mahoe and cabbage tree in places. Other canopy species are matagouri, scrambling fuchsia, native broom, elderberry\*, pohuehue, native convolvulus and lawyer. Additional canopy species present at the down-valley part of the SNA are *Coprosma crassifolia* and *Olearia bullata*.

Ground cover beneath and between the shrubland is mostly dominated by pasture grasses, notably cocksfoot\*. Other species present are *Hypolepis ambigua*, bracken, hemlock\*, creeping buttercup\*, yarrow\*, mouse-ear chickweed\*, Californian thistle\*, scrambling fumitory\*, field speedwell\*, hairy pennywort, common shield fern, *Asplenium appendiculatum*, *Blechnum fluviatile* and button fern.

Forest:

The forest canopy is dominated by mahoe, broadleaf and cabbage tree. Other canopy species are pohuehue and native convolvulus. A small patch of kowhai trees is present in the small side-valley near the middle of the SNA. The understorey vegetation is in good condition. Species commonly present are *Coprosma propinqua*, mahoe and koromiko. Occasionally present are scrambling fuchsia, elderberry\*, lawyer, gorse\*, matipo, cabbage tree, *Coprosma propinqua* x *robusta* and single bush of spindle tree\*.



Forest at the western part of SNA 529a.



Important groundcover species are common shield fern, necklace fern, *Asplenium hookerianum*, button fern, hairy pennywort and seedlings of *Coprosma propinqua*, broadleaf, mahoe, cabbage tree and koromiko. Other species present are *Cardamine debilis*, *Geranium microphyllum*, pennywort, bidibid, buttercup (*Ranunculus* sp.), *Libertia ixioides*, toatoa, *Dichondra repens*, hemlock\*, cleavers\*, daisy\*, chickweed\*, black nightshade\*, *Asplenium appendiculatum*, bracken, male fern\* and one small patch of hedge woundwort\*.

#### Rockland:

Species present on or associated with the exposed basalt scarp and boulders are blue tussock, *Libertia ixioides*, *Wahlenbergia gracilis*, *Senecio quadridentatus*, scrub pohuehue, hound's tongue fern, button fern, necklace fern, *Asplenium appendiculatum*, common shield fern and peppergrass\*. A single cotoneaster bush (*C. glaucophylla*) was observed on the bluff near the western end of the area.

#### **Birds/Fauna Observed:**

Native birds observed during this brief survey were grey warbler, fantail, spur-winged plover and harrier.

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

Important features of this area are the presence of indigenous vegetation on a basalt substrate (a naturally uncommon ecosystem type), the extent of the forest and shrubland communities, populations of locally uncommon plant species and the size (extent) of the area. The SNA is within a threatened Land Environment.



*Healthy forest floor vegetation within SNA 529a*

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

Gorse is the most dominant woody plant pest present. However, gorse poses little threat to the forest and rockland communities and may assist the regeneration of indigenous woody species in the shrubland. Other woody plant pests observed were elderberry and single plants of cotoneaster and spindle tree. One patch of the invasive groundcover, hedge woundwort (*Stachys sylvatica*) was observed. Animal pests were not surveyed, though possum sign was observed.



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

The crest of the basalt scarp forms the northern boundary of the area, and the stream forms the southern boundary. It adjoins SNA 530a along the stream at its western up-valley end and a relatively extensive area of gorse scrub at its down-valley end.

**Condition and Management Issues:**

The forest community is in good condition. The understorey vegetation is very healthy, with abundant regeneration of canopy species. A good range of species is present on the basalt bluff. The area appears to have been grazed only lightly in recent years (periodically by cattle, according to Neal Porter), which has presumably enabled a diverse range of plants to persist and regenerate. This SNA does not appear to be threatened by the quarrying, which is confined to the southern side of the valley. Important management issues are wild animal control, especially possums, protection from intensive grazing, and removal of the isolated plant pests (cotoneaster, spindle tree and hedge woundwort).

**Property Owner Comment:**

The new landowner, Gary Rooney, values this area and intends to look after it.

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	M/H	A healthy example of regenerating forest and relatively intact rockland vegetation, supporting species representative of the original vegetation.
Rarity	M/H	Indigenous vegetation on basalt is a naturally uncommon ecosystem type and the area is within a threatened Land Environment.
Diversity and pattern	M/H	Three main plant communities are present and species diversity is relatively high.
Distinctiveness/special features	M	The presence and extent of the basalt scarp is a special feature.
<b>Other Criteria</b>		
Size/shape	H	A large area for this ecological district, and well buffered by its location on steep boulder slopes.
Connectivity	M	Adjoins SNA 530a at its western end.
Long-term Sustainability	M/H	Some plant and animal pest control will probably be required to protect ecological values in the long term.

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

This area has been protected by the light grazing regime adopted by the previous landowner. The steep slopes and basalt scarp limit its potential for further farm development. The basalt provides a potential resource for quarrying, though that activity appears to be confined to the southern (opposite) side of the valley at present.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of indigenous vegetation on a basalt substrate (a naturally uncommon ecosystem type), the extent of the forest and shrubland communities, the presence of locally uncommon plant species and the size (extent) of the area. The SNA is within a threatened Land Environment.



# TIMARU DISTRICT SNA SURVEY

SNA 530a

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<b>Area Name:</b>	<b>Property:</b> Rooney	
<b>Location (central map reference):</b> J38: 600-500	<b>Nearest Locality:</b> Rosewill	
<b>Ecological District:</b> Makikihi	<b>Area Size (ha):</b> 0.67	<b>Altitude (m):</b> 120-160
<b>Surveyors:</b> Mike Harding	<b>Survey Time:</b> 1 hour	<b>Survey Date:</b> 07-09-11

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## General Description:

This SNA lies on moderately steep north-facing slopes in the upper reaches of Rosewill Stream on the Timaru Downs. It occupies a dry slope with areas of exposed basalt bedrock and boulders. It is adjacent to SNA 529a on the opposite side of the valley.

## Plant Communities:

Three main plant communities are present: shrubland with emergent trees; grassland/herbfield; and sparse rockland vegetation. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

### Shrubland:

This plant community is dominated by patches and scattered bushes of *Coprosma propinqua*, matagouri and gorse\*, with emergent broadleaf and cabbage trees. A small patch of kowhai trees is present near the centre of the area. Other canopy species are lawyer, native jasmine, native convolvulus, pohuehue and occasionally native broom and scrambling fuchsia. Understorey and groundcover species present (as well as the grassland/herbfield described below) are *Coprosma propinqua*, mahoe, bracken and black nightshade\*.

### Grassland/herbfield:

This plant community is present within areas of open shrubland and between the shrubland and rocks. Over most of its extent it is dominated by browntop\*, cocksfoot\*, Chewings fescue\* and yarrow\*. Other species commonly present are broad-leaved plantain\*, white clover\*, catsear\*, foxglove\* and cranesbill\*.

Areas of grassland on very dry soils adjacent to the scarp are dominated by browntop\*, Chewings fescue\* and danthonia (*Rytidosperma clavatum*). Additional species present at these sites are harebell and patotara.



SNA 530a, viewed from the opposite side of the valley.



#### Rockland:

Areas of exposed basalt on low scarps and boulder piles support common shield fern, necklace fern, *Asplenium appendiculatum*, button fern, a newly-named species of button fern (*Pellaea calidirupium*), rock fern (*Cheilanthes sieberi*), the at-risk (naturally uncommon) blanket fern (*Pleurosorus rutifolius*), *Dichondra repens*, vetch\*, woolly mullein\*, sand spurrey\* and an unidentified herb.

#### **Birds/Fauna Observed:**

The only native bird species observed during this brief survey was grey warbler. The area appears as ideal habitat for lizards, though none were observed during this inspection.

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

Important features of this area are that it supports indigenous vegetation on basalt (a naturally uncommon ecosystem type), the presence of a representative suite of dry-rock plants including the at-risk (naturally uncommon) blanket fern (*Pleurosorus rutifolius*), the habitat the area provides for birds and probably lizards, and the location of the area adjacent to a more extensive area of indigenous vegetation on damper south-facing slopes. The area lies within a threatened Land Environment.



*The newly-named button fern (Pellaea calidirupium) on basalt within SNA 530a.*

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

Gorse is the most dominant woody plant pest present. It is present as scattered bushes and clumps within the SNA, but is more widespread on down-valley slopes. Grassland communities are dominated by naturalized grasses, though the native danthonia is dominant at drier sites. Animal pests were not surveyed, though possum sign was observed.

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

The boundaries of this SNA have been drawn to include the main areas of shrubland and rockland on this north-facing slope. It adjoins indigenous shrubland and forest across the stream on south-facing slopes. This



small valley is surrounded by developed farmland on the adjacent downlands. Areas of basalt bluff down-valley are being quarried, though the eventual extent of this quarrying is unclear.

**Condition and Management Issues:**

Shrubland, trees and rockland vegetation within this area are in moderate condition. Areas of grassland are modified. The vegetation appears to have benefited from relatively light grazing over recent years, as indicated by good regeneration of indigenous woody species (including kowhai). Control or containment of gorse, animal pest control, and protection from disturbance such as quarrying are the main management issues.

**Property Owner Comment:**

The new landowner, Gary Rooney, is happy to see this area protected from clearance.

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**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	<b>M</b>	Modified indigenous vegetation, though supporting species that are probably representative of the original vegetation, notably kowhai and rockland species.
Rarity	<b>M/H</b>	Indigenous vegetation on basalt is a naturally uncommon ecosystem type. Rockland supports an at-risk (naturally uncommon) species (blanket fern) and the locally uncommon fern, <i>Pellaea calidrupium</i> . The area is within a threatened Land Environment.
Diversity and pattern	<b>M</b>	Plant species diversity is relatively high for remnants in this ecological district, though presumably reduced from that originally present.
Distinctiveness/special features	<b>M</b>	The exposed basalt (scarp and boulders) are a special feature.
<b>Other Criteria</b>		
Size/shape	<b>M</b>	A moderate to large area that is relatively well buffered.
Connectivity	<b>M/H</b>	Adjoins indigenous vegetation (SNA 529a) along its northern boundary.
Long-term Sustainability	<b>M</b>	Plant and animal pest control (and protection from quarrying) will be necessary to maintain ecological values in the long term.

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

This SNA occupies steep rocky slopes that have very limited potential for further farm development. The area does have potential commercial value for quarrying, though it may be possible to extract rock from this formation without disturbing the scarp edge.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are that it supports indigenous vegetation on basalt (a naturally uncommon ecosystem type), including a dry-rock plants such as the at-risk (naturally uncommon) blanket fern (*Pleurosorus rutifolius*), the habitat the area provides for birds and probably lizards, and the location of the area adjacent to a more extensive area of indigenous vegetation on damper south-facing slopes. The area lies within a threatened Land Environment.



**Area Name:**

Location (central map reference): J39: 607-499

Ecological District: Makikihi

Surveyors: Mike Harding

Property: Rooney

Nearest Locality: Rosewill

Area Size (ha): 4.58

Altitude (m): 100-130

Survey Time: 2½ hours

Survey Date: 13-09-11

**General Description:**

This SNA lies on moderately steep north-facing slopes in the upper reaches of Rosewill Stream on the Timaru Downs. It occupies a dry slope with areas of exposed basalt bedrock and boulders. It lies near to SNA 529a across the valley and SNA 530a further west on the basalt outcrop. The basalt scarp between SNAs 530a and 530b is being excavated as part of an existing quarry.

**Plant Communities:**

Two main plant communities are present: shrubland/grassland with emergent trees; and sparse rockland vegetation. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

**Shrubland/grassland:**

Scattered to dense shrubland occupies the slopes below the basalt scarp. It is dominated in places by gorse\*. Elsewhere it supports scattered shrubs of *Coprosma propinqua* and matagouri with emergent cabbage trees. Other canopy species are poroporo, native convolvulus, pohuehue, lawyer, and occasionally kowhai, broadleaf, matipo, *Coprosma crassifolia*, *Coprosma virescens*, native broom, porcupine shrub, cotoneaster\* and elderberry\*.

Other plant species present within this community are danthonia, cocksfoot\*, Chewings fescue\*, browntop\*, cranesbill\*, yarrow\*, selfheal\*, nodding thistle\*, cleavers\*, woolly mullein\*, vetch\*, broad-leaved plantain\*, hedge mustard\*, toatoa and bracken.

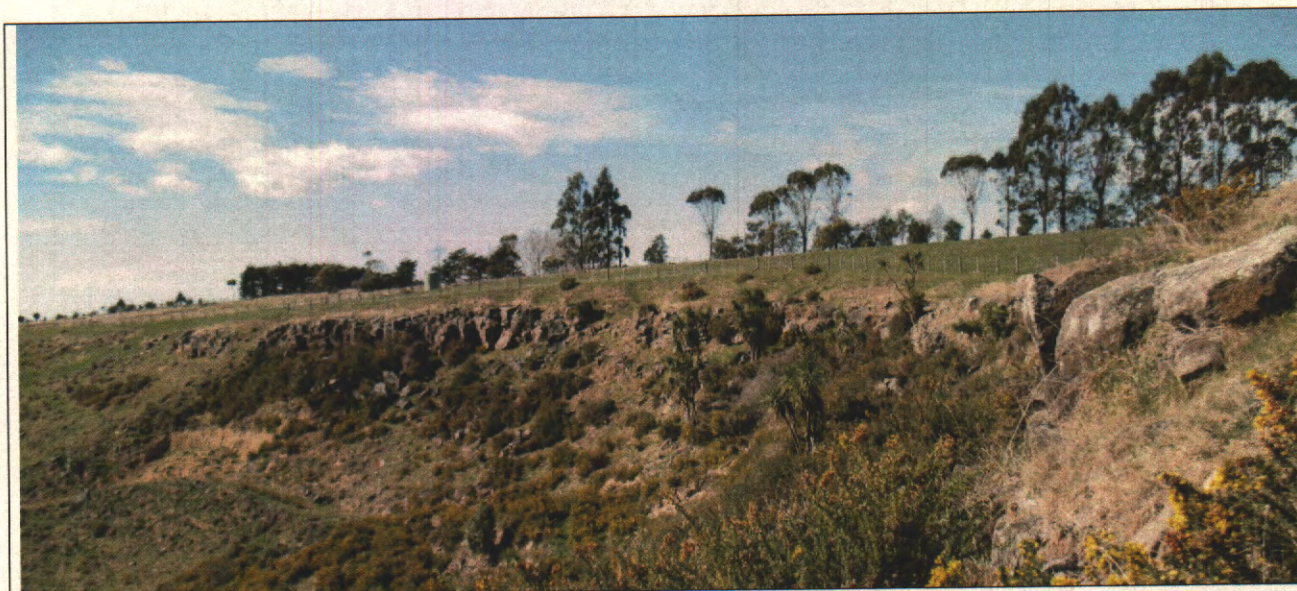


*Shrubland at SNA 530b*



### Rockland:

The exposed basalt scarp and boulders support a sparse plant community, dominated by species tolerant of very dry conditions. Species present are *Coprosma propinqua*, mahoe, matagouri, native convolvulus, lawyer, leafless lawyer, pohuehue, danthonia, harebell, *Dichondra repens*, *Crassula sieberiana*, *Oxalis exilis*, *Einadia allanii*, toatoa, *Senecio quadridentatus*, rock fern, button fern, broad-leaved plantain\*, mallow\*, storksbill\*, peppergrass\*, sow thistle\*, prickly sow thistle\*, shepherd's purse\*, hawksbeard\*, black nightshade\*, selfheal\*, woolly mullein\*, cleavers\*, catsear\* and occasionally boxthorn\* (one plant), *Pellaea calidrupium*, necklace fern, common shield fern, orachne\* and a grassland orchid (*Thelymitra* sp.) on a boulder.



*The low basalt scarp at the eastern end of SNA 530b.*

### **Birds/Fauna Observed:**

The only native bird species observed during this brief survey were grey warbler, harrier and black-backed gull. The area appears as ideal habitat for lizards, though none were observed during this inspection.

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

Important features of this area are that it supports indigenous vegetation on basalt (a naturally uncommon ecosystem type), the presence of a representative suite of dry-rock plants including an at-risk species (*Einadia allanii*) and locally uncommon species (porcupine shrub and *Coprosma virescens*), the habitat the area is likely to provide for lizards, and the location of the area adjacent to other remnants of indigenous vegetation. The area lies within a threatened Land Environment.

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

Gorse is the most dominant woody plant pest present. It is present as scattered bushes and patches within the SNA, but is more widespread on down-valley slopes. Other woody plant pests are boxthorn, cotoneaster and elderberry, though none are common. Grassland communities are dominated by naturalized grasses, though the native danthonia is common in places. Animal pests were not surveyed.

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

The boundaries of this SNA have been drawn to include the main areas of shrubland and rockland on this north-facing slope. It lies close to shrubland and forest across the stream on south-facing slopes. This small valley is surrounded by developed farmland on the adjacent downlands. Areas of basalt bluff up-valley are being quarried.

### **Condition and Management Issues:**

Shrubland, trees and rockland vegetation within this area are in moderate condition. Indigenous vegetation appears to be regenerating in places. Containment of gorse and removal of other woody weeds, animal pest control, and protection from disturbance such as quarrying are the main management issues.



**Property Owner Comment:**

The new landowner, Gary Rooney, objects to the identification of this area as an SNA because it is more modified.

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

Primary Criteria	Rank	Notes
Representativeness	M	Modified indigenous vegetation, though supporting species that are probably representative of the original vegetation, notably rockland species.
Rarity	M/H	Indigenous vegetation on basalt is a naturally uncommon ecosystem type. The site supports one at-risk plant species two locally-uncommon plant species. The area is within a threatened Land Environment.
Diversity and pattern	M	Plant species diversity is relatively high for remnants in this ecological district, though presumably reduced from that originally present.
Distinctiveness/special features	M	The exposed basalt (scarp and boulders) are a special feature.
Other Criteria		
Size/shape	M	A moderate to large though narrow area that is relatively well buffered.
Connectivity	M	Lies close to indigenous vegetation in SNAs 529a and 530a.
Long-term Sustainability	M	Plant and animal pest control (and protection from quarrying) will be necessary to maintain ecological values in the long term.

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

This SNA occupies steep rocky slopes that have very limited potential for further farm development. The area does have potential commercial value for quarrying, though it may be possible to extract rock from this formation without disturbing the scarp edge.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are that it supports indigenous vegetation on basalt (a naturally uncommon ecosystem type), the presence of a representative suite of dry-rock plants including an at-risk species and two locally uncommon species, the habitat the area is likely to provide for lizards, and the location of the area adjacent to other remnants of indigenous vegetation. The area lies within a threatened Land Environment.



*Einadia allanii* at SNA 530b



## 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)	
bidibid .....	<i>Acaena</i> sp.
black nightshade* .....	<i>Solanum nigrum</i>
blanket fern .....	<i>Pleurosorus rutifolius</i>
blue tussock.....	<i>Poa colensoi</i>
boxthorn* .....	<i>Lycium ferocissimum</i>
bracken.....	<i>Pteridium esculentum</i>
broadleaf .....	<i>Griselinia littoralis</i>
broad-leaved plantain* .....	<i>Plantago major</i>
browntop* .....	<i>Agrostis capillaris</i>
button fern.....	<i>Pellaea rotundifolia</i>
cabbage tree/ti rakau .....	<i>Cordyline australis</i>
Californian thistle* .....	<i>Cirsium arvense</i>
catsear* .....	<i>Hypochoeris radicata</i>
Chewings fescue* .....	<i>Festuca rubra</i> ssp. <i>commutata</i>
chickweed* .....	<i>Stellaria media</i>
cleavers* .....	<i>Galium aparine</i>
cocksfoot* .....	<i>Dactylis glomerata</i>
common shield fern.....	<i>Polystichum richardii</i>
cotoneaster* .....	<i>Cotoneaster</i> sp.
cranesbill* .....	<i>Geranium molle</i>
creeping buttercup* .....	<i>Ranunculus repens</i>
daisy* .....	<i>Bellis perennis</i>
danthonia.....	<i>Rytidosperma</i> sp.
elderberry* .....	<i>Sambucus nigra</i>
field speedwell* .....	<i>Veronica arvensis</i>
foxglove* .....	<i>Digitalis purpurea</i>
gorse* .....	<i>Ulex europaeus</i>
hairy pennywort .....	<i>Hydrocotyle moschata</i>
harebell.....	<i>Wahlenbergia albomarginata</i>
hawksbeard* .....	<i>Crepis capillaris</i>
hedge mustard* .....	<i>Sisymbrium officinale</i>
hedge woundwort* .....	<i>Stachys sylvatica</i>
hemlock* .....	<i>Conium maculatum</i>
hound's tongue fern .....	<i>Microsorium pustulatum</i>
koromiko .....	<i>Hebe salicifolia</i>
kowhai .....	<i>Sophora microphylla</i>
lawyer .....	<i>Rubus schmidelioides</i>
leafless lawyer.....	<i>Rubus squarrosus</i>
mahoe/whiteywood.....	<i>Melicytus ramiflorus</i>
male fern* .....	<i>Dryopteris filix-mas</i>
mallow* .....	<i>Malva neglecta</i>
mouse-ear chickweed* .....	<i>Cerastium fontanum</i>
native broom .....	<i>Carmichaelia</i> aff. <i>australis</i>
native convolvulus .....	<i>Calystegia tuguriorum</i>
native jasmine .....	<i>Parsonsia</i> sp.
necklace fern .....	<i>Asplenium flabellifolium</i>
nodding thistle* .....	<i>Carduus nutans</i>
orachne* .....	<i>Atriplex patula</i>
patotara.....	<i>Leucopogon fraseri</i>
pennywort .....	<i>Hydrocotyle</i> sp.
peppercress* .....	<i>Lepidium africanum</i>
pohuehue.....	<i>Muehlenbeckia australis</i>
porcupine shrub.....	<i>Melicytus alpinus</i>



poroporo.....	<i>Solanum laciniatum</i>
prickly sow thistle* .....	<i>Sonchus asper</i>
rock fern.....	<i>Cheilanthes humilis</i>
sand spurrey* .....	<i>Spergularia rubra</i>
scrambling fuchsia.....	<i>Fuchsia perscandens</i>
scrambling fumitory* .....	<i>Fumaria muralis</i>
selfheal* .....	<i>Prunella vulgaris</i>
shepherd's purse* .....	<i>Capsella bursa-pastoris</i>
sow thistle* .....	<i>Sonchus oleraceus</i>
spindle tree* .....	<i>Euonymus europaeus</i>
storksbill* .....	<i>Erodium cicutarium</i>
toatoa.....	<i>Haloragis erecta</i>
vetch* .....	<i>Vicia sativa</i>
white clover* .....	<i>Trifolium repens</i>
woolly cloak fern .....	<i>Cheilanthes distans</i>
woolly mullein* .....	<i>Verbascum thapsus</i>
yarrow* .....	<i>Achillea millefolium</i>