

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

**HARREX PROPERTY**  
**PAREORA DOWNS LTD**



**Report prepared for Timaru District Council by Mike Harding**  
**August 2012**

# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### PROPERTY DETAILS:

**Owner:** ..... Graham and Sue Harrex (Pareora Downs Ltd)  
**Valuation References:** .... 24850/021.02  
**Address:** ..... Taiko Road.  
**Location:** ..... On the east side of Taiko Valley, southeast 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).

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### ECOLOGICAL CONTEXT:

This part of the property covers moderately steep slopes between 220 and 280m on the basalt scarp at the western edge of the Timaru Downs. 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. Rock bluffs supported specialised flora, and riparian areas supported wetland vegetation and mixed hardwood forest dominated by kowhai.

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 this part 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.

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### SIGNIFICANT AREAS ON THE PROPERTY:

Indigenous vegetation on the property comprises small patches of hardwood forest, more extensive areas of shrubland, and sparse rockland vegetation on steeper slopes. The property lies near to areas of forest and shrubland on adjoining properties, contributing to the network of fauna habitat in the wider area.

The property was surveyed as part of the District-wide survey of Significant Natural Areas during August 2011. Three areas, comprising approximately six 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
147a		J39: 563-467	3.31	Hardwood forest/shrubland; rockland
147b		J39: 561-472	0.55	Hardwood forest/shrubland; rockland
147c		J39: 560-477	2.35	Hardwood 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.



*North end of SNA 147c*

HarrexProperty  
24850/021.02



147c

147b

147a

Meters

0 100 200 300 400 500

1:7,500

**Area Name:**

Location (central map reference): J39: 563-467

Ecological District: Waimate

Surveyors: Mike Harding

**Property:** Harrex

Nearest Locality: Taiko Flat

Area Size (ha): 3.31

Altitude (m): 220-280

Survey Time: 1½ hours

Survey Date: 23-08-11

**General Description:**

This SNA occupies a low basalt bluff and the steep slopes below the bluff on the east side of Taiko valley. The bluffs represent the western extent of the Timaru Basalt and are part of an exposure that extends northwards to Taiko.

**Plant Communities:**

Three main plant communities are present in this SNA: shrubland on the steep slopes, hardwood forest adjacent to the bluff, and rockland vegetation on the exposed basalt. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

The canopy of the small area of forest is dominated by mahoe. Other canopy species are cabbage tree, matipo, pohuehue, one large kowhai and one elderberry\* tree. The forest understorey is very open. The ground-cover within this small patch of forest is dominated by basalt boulders. Species present are pennywort, *Cardamine debilis*, *Asplenium hookerianum*, necklace fern, foxglove\*, burdock\* (uncommon), black nightshade\* and seedlings of mahoe and *Coprosma crassifolia*.

Shrubland at the forest margin is dominated by gorse\* with emergent cabbage trees. Other canopy species present are *Coprosma crassifolia*, *Coprosma propinqua*, porcupine shrub, matagouri (uncommon), gooseberry\* (uncommon), leafless lawyer and mistletoe (on *Coprosma crassifolia*). Naturalized grasses and other pasture species form the dominant ground cover within the shrubland. Important species present are necklace fern, *Blechnum penna-marina*, hairy pennywort, mouse-ear chickweed\*, yarrow\*, nodding thistle\*, cleavers\*, white clover\*, woolly mullein\* and *Geranium microphyllum*.



SNA 147a

Plant species on or associated with the basalt scarp and boulders are mahoe, *Coprosma crassifolia*, *Coprosma propinqua*, *Libertia ixioides*, *Dichondra repens*, *Poa breviglumis*, blue tussock (uncommon), cocksfoot\*, horehound\*, hawksbeard\*, *Crassula sieberiana*, *Geranium microphyllum*, hairy pennywort, harebell, *Asplenium appendiculatum*, *Asplenium hookerianum*, necklace fern and common shield fern.

**Birds/Fauna Observed:**

Native birds observed during this brief survey were grey warbler and spur-winged plover. The basalt scarp and boulderfield are likely to provide good habitat for lizards.

**Notable Flora, Fauna and Habitats:**

Important features of this area are the presence of indigenous vegetation on a basalt scarp and boulderfield, and the habitat this vegetation provides for native birds and probably lizards. Indigenous vegetation on basalt bluffs is a nationally uncommon ecosystem type. The SNA lies within a threatened Land Environment.

**Notable Plant and Animal Pests:**

Gorse is the most dominant plant pest present. The vegetation of the SNA grades to dense gorse scrub at its lower margin. Elderberry is the only other significant woody plant pest present. Animal pests were not surveyed though possum and goat sign was observed.



*Shrubland and forest at the northern end of SNA 147*

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

The lower boundary of this SNA has been selected to include the scattered cabbage trees (treeland) that emerge from the gorse-dominated shrubland. The upper boundary is the crest of the basalt bluff. The area is grazed as part of a larger paddock. The SNA grades to scattered gorse then pasture on lower slopes, a pine shelterbelt at the scarp crest and pasture at other boundaries.

**Condition and Management Issues:**

The forest canopy and vegetation on the steeper parts of the bluff are in relatively good condition. Vegetation at other parts of the SNA is depleted by grazing and goat browsing. Gorse that is present on the slopes below the bluff does not pose a significant threat and may aid the regeneration of indigenous woody species. The most important management issues are protection of the vegetation from intensive grazing, especially by goats, and control of elderberry and any other woody weeds that may appear.

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	<b>M</b>	Forest and rockland vegetation is representative of the vegetation originally present; other vegetation is more modified, though typical of that remaining in the ecological district.
Rarity	<b>M/H</b>	Basalt bluff and boulderfield vegetation is a nationally uncommon ecosystem type. The area lies within a threatened Land Environment.
Diversity and pattern	<b>M</b>	Three plant communities are present, though species diversity is substantially reduced.
Distinctiveness/special features	<b>M</b>	The basalt bluff and boulderfield are distinctive and notable.
<b>Other Criteria</b>		
Size/shape	<b>M</b>	A small to moderate-sized area with a poor shape but well buffered.
Connectivity	<b>M</b>	Adjoins and lies close to other areas of indigenous vegetation on basalt scarps.
Long-term Sustainability	<b>M/H</b>	Existing plant communities are likely to persist, though animal control may be necessary to sustain ecological values in the long term.

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

This SNA occupies a rock bluff and steep boulder slopes which have very limited potential for farm development. The steepness of the slopes provides natural protection for the remaining indigenous plant communities.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of indigenous vegetation and habitat on a basalt scarp and boulderfield, and that this ecosystem type is nationally uncommon and lies within a threatened Land Environment.

# TIMARU DISTRICT SNA SURVEY

SNA 147b

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<b>Area Name:</b>	<b>Property:</b> Harrex
<b>Location (central map reference):</b> J39: 561-472	<b>Nearest Locality:</b> Taiko Flat
<b>Ecological District:</b> Waimate	<b>Area Size (ha):</b> 0.55 <b>Altitude (m):</b> 250-280
<b>Surveyors:</b> Mike Harding	<b>Survey Time:</b> ½ hours <b>Survey Date:</b> 23-08-11

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## General Description:

This SNA occupies a low basalt bluff and the steep slopes below the bluff on the east side of Taiko valley. The bluffs represent the western extent of the Timaru Basalt and are part of an exposure that extends north to Taiko and south to Taiko Zig Zag.

## Plant Communities:

Plant communities present in this SNA are similar to those present in SNA 147a: shrubland on the steep slopes, hardwood trees adjacent to the bluff, and rockland vegetation on the exposed basalt. These plant communities are described below. Naturalized (exotic) species are indicated with an asterisk\*.

The canopy of the small area of forest is dominated by mahoe, with cabbage trees and one large deciduous (ash\*?) tree at the margin. Shrubland at the forest margin is dominated by gorse\* with emergent cabbage trees. Other canopy species present are *Coprosma crassifolia*, *Coprosma propinqua* and porcupine shrub. Naturalized grasses and other pasture species form the dominant ground cover within the shrubland. Vegetation on the exposed basalt scarp is similar to that described for SNA 147a.



SNA 147b

## Birds/Fauna Observed:

The only native bird species observed during this brief survey was grey warbler. The basalt scarp and boulderfield are likely to provide good habitat for lizards.



**Notable Flora, Fauna and Habitats:**

Important features of this area are the presence of indigenous vegetation on a basalt scarp and boulderfield, and the habitat this vegetation provides for native birds and probably lizards. Indigenous vegetation on basalt bluffs is a nationally uncommon ecosystem type. The SNA lies within a threatened Land Environment.

**Notable Plant and Animal Pests:**

Gorse is the most dominant plant pest present. The vegetation of the SNA grades to dense gorse scrub at its lower margin. Animal pests were not surveyed though possum and goat sign was observed.

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

The lower boundary of this SNA has been selected to include the extent of indigenous canopy species. The upper boundary is the crest of the basalt bluff. The area is grazed as part of a larger paddock. The SNA grades to scattered gorse then pasture on lower slopes and pasture at other boundaries.

**Condition and Management Issues:**

The vegetation on the steeper areas is in relatively good condition. Vegetation at other parts of the SNA is depleted by grazing and goat browsing. Gorse that is present on the slopes below the bluff does not pose a significant threat and may aid the regeneration of indigenous woody species. The most important management issues are protection of the vegetation from intensive grazing, especially by goats, and control of any other woody weeds that may appear (such as barberry, which is present in SNA 147c).

**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

Primary Criteria	Rank	Notes
Representativeness	M	Forest and rockland vegetation is partly representative of the vegetation originally present; other vegetation is more modified, though typical of that remaining in the ecological district.
Rarity	M/H	Basalt bluff and boulderfield vegetation is a nationally uncommon ecosystem type. The area lies within a threatened Land Environment.
Diversity and pattern	M	Three plant communities are present, though species diversity is substantially reduced.
Distinctiveness/special features	L/M	The basalt bluff and boulderfield are distinctive, though smaller than exposures to the north and south.
<b>Other Criteria</b>		
Size/shape	L/M	A small area with a poor shape but well buffered.
Connectivity	M	Lies close to other areas of indigenous vegetation on basalt scarps.
Long-term Sustainability	M	Plant and animal pest control will probably be necessary to sustain ecological values in the long term.

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

This SNA occupies a rock bluff and steep boulder slopes which have very limited potential for farm development. The steepness of the slope provides natural protection for the remaining indigenous plant communities.

**Discussion:**

This area only just meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of indigenous vegetation and habitat on a basalt scarp and boulderfield, and that this ecosystem type is nationally uncommon and lies within a threatened Land Environment.

**Area Name:**

Location (central map reference): J39: 560-477

Ecological District: Waimate

Surveyors: Mike Harding

**Property:** Harrex

Nearest Locality: Taiko Flat

Area Size (ha): 2.35

Altitude (m): 240-280

Survey Time: 1½ hours

Survey Date: 23-08-11

**General Description:**

This SNA occupies a low basalt bluff and the steep slopes below the bluff on the east side of Taiko valley. The bluffs represent the western extent of the Timaru Basalt and are part of an exposure that extends north to Taiko and south to Taiko Zig Zag.

**Plant Communities:**

Two main plant communities are present in this SNA: shrubland with emergent trees on the steep slopes below the bluff, and rockland vegetation on the exposed basalt. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

The shrubland/treeland community is dominated by gorse\* with emergent cabbage trees and mahoe. Other canopy species present are *Coprosma crassifolia*, barberry\*, porcupine shrub, matagouri (uncommon), native convulvulus, leafless lawyer, mistletoe (on *Coprosma crassifolia*), a single native broom bush, a single large bush of *Coprosma virescens* and three shrubs of the at-risk (declining) shrub, *Teucrium parvifolium*. Naturalized grasses and other pasture species form the dominant ground cover within the shrubland. Important species present are nodding thistle\*, horehound\* and black nightshade\*.

Plant species on or associated with the basalt scarp and boulders are *Coprosma propinqua*, mahoe, *Geranium microphyllum*, *Einadia allanii*, toatoa, native chickweed, hairy pennywort, harebell, *Senecio quadridentatus*, cleavers\*, pohuehue, hawksbeard\*, black nightshade\*, horehound\*, woolly mullein\*, broad-leaved plantain\*, mouse-ear chickweed\*, catsear\*, common shield fern, necklace fern, *Asplenium appendiculatum*, button fern, bracken, *Echinopogon ovatus*, danthonia (*Rytidosperma* sp.) and cocksfoot\*.



North end of SNA 147a

**Birds/Fauna Observed:**

Native birds observed during this brief survey were grey warbler, silvereve and spur-winged plover. The basalt scarp and boulderfield are likely to provide good habitat for lizards.

**Notable Flora, Fauna and Habitats:**

Important features of this area are the presence of indigenous vegetation on a basalt scarp and boulderfield, the presence of two at-risk species (*Teucrium parvifolium*, declining; and *Einadia allani*, naturally uncommon), a locally uncommon species (*Coprosma virescens*), and the habitat this vegetation provides for native birds and probably lizards. Indigenous vegetation on basalt bluffs is a nationally uncommon ecosystem type. The SNA lies within a threatened Land Environment.

**Notable Plant and Animal Pests:**

Gorse is the most dominant plant pest present. The vegetation of the SNA grades to dense gorse scrub at its lower margin. Barberry is the only other significant woody plant pest present. Animal pests were not surveyed though possum and goat sign was observed.



*A shrub of Teucrium parvifolium amongst boulders near the northern end of SNA 147c*

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

The lower boundary of this SNA has been selected to include the scattered indigenous species present within the gorse shrubland. The upper boundary is the crest of the basalt bluff. The area is grazed as part of a larger paddock. The SNA grades to scattered gorse then pasture on lower slopes and pasture at other boundaries.

**Condition and Management Issues:**

The vegetation on the steeper slopes and bluff is in relatively good condition. Vegetation at other parts of the SNA is depleted by grazing and goat browsing. Gorse that is present on the slopes below the bluff does not pose a significant threat and may aid the regeneration of indigenous woody species. The most important

management issues are protection of the vegetation from intensive grazing, especially by goats, and control of barberry and any other woody weeds that may appear.

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**ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:**

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<b>Primary Criteria</b>	<b>Rank</b>	<b>Notes</b>
Representativeness	<b>M/H</b>	A good example of basalt-bluff vegetation that is representative of the vegetation originally present.
Rarity	<b>M/H</b>	Basalt bluff and boulderfield vegetation is a nationally uncommon ecosystem type. The area lies within a threatened Land Environment. Two at-risk species ( <i>Teucrium parvifolium</i> and <i>Einadia allani</i> ) and one locally-uncommon species ( <i>Coprosma virescens</i> ) are present.
Diversity and pattern	<b>M</b>	Two main plant communities are present and species diversity is relatively high for a disturbed site.
Distinctiveness/special features	<b>M</b>	The basalt bluff and boulderfield are distinctive and notable.
<b>Other Criteria</b>		
Size/shape	<b>M</b>	A small to moderate-sized area with a poor shape but well buffered.
Connectivity	<b>M</b>	Lies close to other areas of indigenous vegetation on basalt scarps.
Long-term Sustainability	<b>M/H</b>	Existing plant communities are likely to persist, though plant and animal pest control may be necessary to sustain ecological values in the long term.

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

This SNA occupies a rock bluff and steep boulder slopes which have very limited potential for farm development. The steepness of the slope provides natural protection for the remaining indigenous plant communities.

**Discussion:**

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of indigenous vegetation and habitat on a basalt scarp and boulderfield, the presence of at-risk and locally-uncommon species, and that this ecosystem type is nationally uncommon and lies within a threatened Land Environment.

## 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)	
barberry*	<i>Berberis glaucocarpa</i>
black nightshade*	<i>Solanum nigrum</i>
blue tussock	<i>Poa colensoi</i>
bracken	<i>Pteridium esculentum</i>
broad-leaved plantain*	<i>Plantago major</i>
burdock*	<i>Arctium minus</i>
button fern	<i>Pellaea rotundifolia</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
catsear*	<i>Hypochoeris radicata</i>
cleavers*	<i>Galium aparine</i>
cocksfoot*	<i>Dactylis glomerata</i>
common shield fern	<i>Polystichum richardii</i>
elderberry*	<i>Sambucus nigra</i>
foxglove*	<i>Digitalis purpurea</i>
gooseberry*	<i>Ribes uva-crispa</i>
gorse*	<i>Ulex europaeus</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
harebell	<i>Wahlenbergia gracilentia</i>
hawksbeard*	<i>Crepis capillaris</i>
horehound*	<i>Marrubium vulgare</i>
kowhai	<i>Sophora microphylla</i>
leafless lawyer	<i>Rubus squarrosus</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
matipo/kohuhu	<i>Pittosporum tenuifolium</i>
mistletoe	<i>Ileostylis micranthus</i>
mouse-ear chickweed*	<i>Cerastium fontanum</i>
native broom	<i>Carmichaelia aff. australis</i>
native convolvulus	<i>Calystegia tuguriorum</i>
native chickweed	<i>Stellaria sp.</i>
necklace fern	<i>Asplenium flabellifolium</i>
nodding thistle*	<i>Carduus nutans</i>
pennywort	<i>Hydrocotyle sp.</i>
pohuehue	<i>Muehlenbeckia australis</i>
porcupine shrub	<i>Melicytus alpinus</i>
toatoa	<i>Haloragis erecta</i>
totara	<i>Podocarpus totara</i>
white clover*	<i>Trifolium repens</i>
woolly mullein*	<i>Verbascum thapsus</i>
yarrow*	<i>Achillea millefolium</i>