

TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

CAIRD PROPERTY
CLAREMONT/MT HORRIBLE



Report prepared for Timaru District Council by Mike Harding
November 2010

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Ian Caird
Valuation References: 24850/040.00
Address: Purves Road
Location: On the southern slopes of the Timaru Downs, between Mt Horrible and Claremont Scenic Reserve, and opposite Pareora Huts
Ecological District: Waimate Ecological District.
TDC Land Type: Soft Rock Hills and Downs (small area in Plains).
Land Environment: N3 (eastern South Island undulating plains and hills), with small area in N2 (eastern South Island plains).

ECOLOGICAL CONTEXT:

The property covers moderately-steep slopes at the southern edge of the loess-covered basalt hills of the Timaru downlands, inland from Timaru in South Canterbury. The property lies in Waimate Ecological District. A small part of the property lies on a recent terrace of the Pareora River, at the base of the slopes to Mt Horrible.

It is likely that the original vegetation of this area was predominantly podocarp and podocarp-hardwood forest, dominated by matai and totara. Shrubland, treeland and tussockland may have occupied areas that were prone to infrequent natural fires. Limestone and basalt bluffs supported a specialised flora, and riparian areas probably 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 limestone and basalt 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 and sparse rockland vegetation on and below basalt scarps. The property lies adjacent to an area of indigenous forest at Claremont Scenic Reserve.

The property was surveyed as part of the District-wide survey of Significant Natural Areas during October 2010. Most parts of the property, 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
91a	Caird Kowhai	J39: 567-415	0.24	kowhai treeland
91b	Caird Kowhai	J39: 566-416	0.06	kowhai treeland
91c	Caird Kowhai	J39: 565-417	0.04	kowhai treeland
93a		J39: 571-423	1.97	hardwood forest
93b		J39: 565-423	22.84	hardwood forest
93c		J39: 559-426	3.08	hardwood forest; rockland
93d		J39: 555-431	4.94	hardwood forest; shrubland
93e		J39: 552-432	0.33	hardwood forest; shrubland

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.

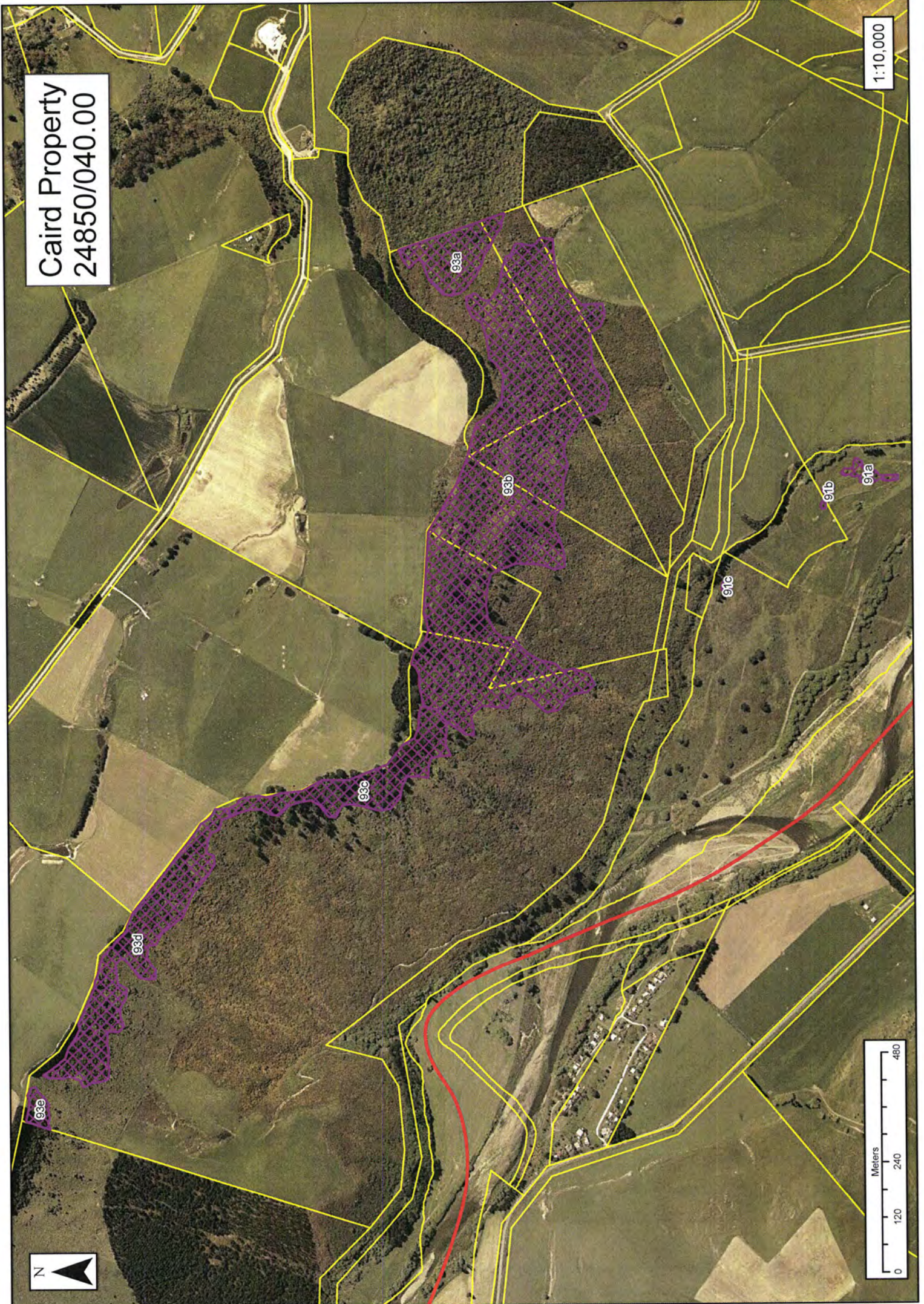
To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.

OTHER AREAS INSPECTED ON THE PROPERTY:

Other areas on the property were inspected but are not significant when assessed against the District Plan criteria. Areas worth noting are the regenerating native species within gorse scrub, on the boundaries of the SNAs. If protected from clearance, these areas of gorse scrub will eventually regenerate to indigenous forest and will become important for nature conservation and biodiversity protection.

Caird Property
24850/040.00

1:10,000



TIMARU DISTRICT SNA SURVEY

SNA 91a, b and c

Area Name: Caird kowhai
Location (central map reference): J39: 565-415
Ecological District: Waimate
Surveyors: Mike Harding

Property: Ian Caird
Nearest Locality: Pareora West
Area Size (ha): 0.34 **Altitude (m):** 80
Survey Time: ½ hour **Survey Date:** 14-10-10

General Description:

This SNA lies on a recent terrace of the Pareora River just downstream and on the opposite side of the river from Pareora Huts. It comprises small patches of scattered kowhai trees (treeland) in pasture. Kowhai trees are scattered across most parts of this terrace, but the three SNAs defined here cover the largest and/or densest patches.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of mature kowhai trees on a river terrace. These trees are representative of the original vegetation of this area and provide a useful seasonal food resource for native birds, notably kereru and bellbird.

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

These trees are isolated within developed pasture and are not fenced from grazing. They lie relatively close to areas of indigenous hardwood forest and shrubland on nearby slopes (within SNA 93).

Condition and Management Issues:

The trees are in relatively good condition, though will eventually senesce and die. The most important management issue is protection of these trees from clearance and the establishment of young trees that can replace the older trees when they eventually die.

Property Owner Comment:

This area is leased from Environment Canterbury. The kowhai trees were left after clearance of scrub.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	The trees are a representative component of the original vegetation, though other components of this riparian forest have disappeared.
Rarity	L/M	Indigenous trees are now uncommon on lowland terraces.
Diversity and pattern	L	
Distinctiveness/special features	M	The number and size of the kowhai trees are special features.
Other Criteria		
Size/shape	M	Good-sized stands of treeland.
Connectivity	M	Relatively close to other areas of indigenous vegetation and contributing to forest bird habitat in the wider area.
Long-term Sustainability	L	There are no young trees to replace trees when they die.

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

These trees lie mostly within cultivated paddocks. They have been spared from clearance and provide useful shade for stock. Their presence does not hinder grazing, though does limit the area that can be cultivated.

Discussion:

These areas only just meet the District Plan criteria for Significant Natural Areas. Important features of the areas are the presence of old trees representative of the original vegetation and providing a useful food resource for forest birds in the wider area.

TIMARU DISTRICT SNA SURVEY

SNA 93a

Area Name: Caird Forest

Location (central map reference): J39: 571-423

Ecological District: Waimate

Surveyors: Mike Harding

Property: Ian Caird

Nearest Locality: Pareora West

Area Size (ha): 1.97

Altitude (m): 200-280

Survey Time: 2 hours

Survey Date: 28-09-10

General Description:

This SNA lies on moderately-steep south-facing slopes on the south side of the Timaru Downs. It is just west of Claremont Scenic Reserve and is contiguous with the forest in the reserve.

Plant Communities:

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

The forest canopy is dominated by broadleaf, mahoe and mapou. Other canopy species are cabbage tree, marbleleaf, lemonwood, five-finger, *Coprosma areolata*, rohotu, fuchsia, wineberry, clematis, bush lawyer and pohuehue.

The forest understorey is dominated by mapou and *Coprosma areolata*. Other understorey species are five-finger, *Coprosma crassifolia*, *Coprosma robusta*, *Coprosma propinqua*, *Coprosma propinqua* X *robusta*, *Coprosma rotundifolia* (rare), mahoe, matipo, poataniwha, lemonwood, wineberry, koromiko, turepo, cabbage tree, pate (rare), spindle tree* (rare), poroporo (rare), supplejack (rare), bush lawyer, native jasmine, *Clematis marata*, clematis and, on tree trunks, hound's tongue fern.

Dominant species on the forest floor are hound's tongue fern and hen and chickens fern. Other ground-cover species are common shield fern, prickly shield fern (rare), *Pellaea rotundifolia*, hanging spleenwort, *Asplenium hookerianum*, *Asplenium richardii*, mountain kiokio, *Blechnum procerum*, *Blechnum fluviatile*, hookgrass, *Carex forsteri*, *Libertia ixioides* (rare), bush lily (rare) and seedlings of wineberry, Darwin's barberry*, cabbage tree, mahoe, broadleaf, *Coprosma areolata*, native jasmine, clematis and tutsan* (rare). Species present on and around the basalt boulders are leather-leaf fern, hanging spleenwort and necklace fern.

Species present on the forest margin or in forest openings are gorse*, five-finger, *Coprosma crassifolia*, *Coprosma areolata*, *Coprosma tayloriae*, mapou, koromiko, pate, Darwin's barberry*, black nightshade*, foxglove*, hound's tongue fern, bracken, *Hypolepis ambigua*, hairy pennywort, *Hydrocotyle heteromeria*, bush lawyer, leafless lawyer, *Clematis foetida* and scrambling fuchsia.

Birds/Fauna Observed:

Native birds observed during this brief survey were bellbird, grey warbler, brown creeper, kereru (NZ pigeon), rifleman, fantail and welcome swallow.

Notable Flora, Fauna and Habitats:

Important features of this area are the diversity of indigenous plant species (53 species), the presence of locally uncommon plant species (notably supplejack), the habitat the area provides for forest birds, including an 'at-risk' species (rifleman) and the location of the area adjacent to Claremont Scenic Reserve.

Notable Plant and Animal Pests:

The most important plant pest present is Darwin's barberry. This species is shade tolerant and has attractive fruits that are readily dispersed by birds. It is also common in the adjacent scenic reserve. However, it probably does not pose a major threat to the taller forest. Other plant pests present do not pose a significant threat and some, notably gorse, provide good habitat for the regeneration of indigenous woody species. Animal pests were not surveyed, though possum sign (droppings and scratching) was observed.

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

This area adjoins protected forest (Claremont Scenic Reserve) on its eastern boundary and gorse scrub on its other boundaries. It is not large, but has a good shape and is very well buffered by surrounding plant

communities. It is fenced on the reserve boundary and is inaccessible to stock. Other areas of regenerating indigenous forest are present on the slopes west of this area.

Condition and Management Issues:

This area is in very good condition for regenerating forest. The plant species diversity and density of the forest understorey indicate relatively low browsing/grazing pressure. The main management issues are continued animal pest control (especially possum control) and encouragement of continued regeneration of indigenous forest through the gorse scrub surrounding the area.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A good example of regenerating forest typical of the ecological district and containing a good range of canopy species.
Rarity	M	Provides good habitat for an 'at-risk' bird species (rifleman) and supports locally uncommon plant species (e.g. supplejack).
Diversity and pattern	M	A relatively diverse range of plant species is present (53 species).
Distinctiveness/special features	L/M	The presence of indigenous vegetation on basalt boulders is an interesting feature.
Other Criteria		
Size/shape	M/H	A moderate-sized area for this ecological district, with a good shape and well buffered.
Connectivity	M/H	Adjoins a protected area on one long boundary and lies close to other areas of regenerating indigenous vegetation.
Long-term Sustainability	M/H	Ongoing animal pest control will probably be required to maintain ecological values of the area in the long term.

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

The property owner has informally protected this area by avoiding burning, grazing or other clearance of these slopes. These steep boulder slopes have very limited potential for farm development.



SNA 93a at centre; Claremont Scenic Reserve (right), SNA 93b (left).

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the diversity of indigenous plant species (53 species), the presence of locally uncommon plant species (notably supplejack), the habitat the area provides for forest birds, including an 'at-risk' species (rifleman) and the location of the area adjacent to Claremont Scenic Reserve.

TIMARU DISTRICT SNA SURVEY

SNA 93b

Area Name:

Location (central map reference): J39: 565-423

Ecological District: Waimate

Surveyors: Mike Harding

Property: Ian Caird

Nearest Locality: Pareora West

Area Size (ha): 22.48 **Altitude (m):** 200-350

Survey Time: 4½ hours **Survey Date:** 14-10-10

General Description:

This SNA lies on the steep upper slopes of the south side of the Timaru Downs. It extends from indigenous forest adjacent to Claremont Scenic Reserve (SNA 93a) along the slopes west towards Mt Horrible. The upper boundary of the SNA is the basalt scarp at the top of the slope and the lower boundary is where the forest grades into scrub dominated by gorse.

Plant Communities:

The main plant community present is hardwood forest. Extensive scrub is present at the forest margins. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

The forest canopy is dominated by broadleaf, mahoe and, in places, cabbage tree or kowhai. Other canopy species are mapou, *Coprosma areolata*, fuchsia, wineberry, marbleleaf, matipo, narrow-leaved lacebark, five-finger, lancewood (rare), bush lawyer, native jasmine, clematis, *Clematis foetida*, native convolvulus and pohuehue. A single small matai tree, with a trunk diameter (at breast height) of 23cm, was observed at the southeast end of the SNA. Small totara trees are also present here. One large narrow-leaved lacebark tree has a trunk diameter of 63cm. Tall radiata pine* trees are emergent from the forest in places, especially at the western end of the area.

The forest understorey is dominated by *Coprosma areolata*, *Coprosma crassifolia*, mapou and mahoe. Other understorey species are *Coprosma rotundifolia*, *Coprosma propinqua*, *Coprosma robusta x propinqua*, mahoe, matipo, lemonwood, *Fuchsia excorticata x perscandens*, wineberry, five-finger, broadleaf, kowhai, narrow-leaved lacebark, poroporo, Darwin's barberry*, leafless lawyer and bush lawyer. Rarely present are turepo, poataniwha, Chilean flame creeper*, spindle tree* and supplejack (at one location).

The dominant species on the forest floor is common shield fern. Other ground-cover species are *Asplenium hookerianum*, *Asplenium richardii*, *Asplenium appendiculatum*, necklace fern, hanging spleenwort, hen and chickens fern, *Hypolepis ambigua*, *Pellaea rotundifolia*, mountain kiokio, *Blechnum procerum*, *Blechnum fluviatile*, hound's tongue fern, *Libertia ixioides*, *Carex solandri*, *Cardamine* sp., pennywort, a *Corybas* orchid (*macranthus*?) and seedlings of mahoe, marbleleaf, cabbage tree, kowhai, totara (rare), clematis (rare), Darwin's barberry* and *Coprosma* species.

Species commonly present on the forest margin and in forest openings are *Coprosma crassifolia*, *Coprosma propinqua*, *Coprosma tayloriae*, matipo, scrambling fuchsia, poroporo, gorse*, elderberry*, Darwin's barberry*, pennywort, hairy pennywort, foxglove*, black nightshade*, velvety nightshade*, bidibid, hookgrass, bracken, mountain kiokio, male fern*, cocksfoot*, native convolvulus, *Clematis marata*, *Clematis foetida*, leafless lawyer, lawyer, pohuehue and native jasmine. Other species occasionally present in clear areas are toatoa, turepo, koromiko, prickly shield fern, water fern, bush lily, horehound*, hemlock*, burdock*, *Linum catharticum**, *Galium aparine** and Himalayan honeysuckle*.

Additional species present at damper sites are pate, *Blechnum chambersii*, *Lastreopsis glabella* and prickly shield fern.

Birds/Fauna Observed:

Native birds observed during this survey were bellbird, grey warbler, brown creeper, harrier hawk, fantail, rifleman, shining cuckoo and silvereye. Kereru (NZ pigeon) is likely to be present.

Notable Flora, Fauna and Habitats:

Important features of this area are the diversity of plant species present (66 species), the presence of young podocarps (totara and matai), the presence of locally-uncommon plant species (supplejack, *Lastreopsis*

glabella and water fern), the habitat the area provides for forest birds including an 'at-risk' species (rifleman), the extent of the area and the position of the area linking forest in Claremont Scenic Reserve with forest at Mt Horrible. Indigenous forest on basalt is a rare plant community and indigenous forest is uncommon in this part of Timaru District.

Notable Plant and Animal Pests:

The most important plant pests present are Darwin's barberry and radiata pine. Darwin's barberry is present in low numbers throughout, though more common in forest openings. Large radiata pine trees are present in one part of the area and smaller self-sown pine trees are also present. Other naturalized plants observed, such as elderberry and Chilean flame creeper, do not pose a significant threat to the forest at present. Animal pests were not surveyed, though sign of possums and wallabies was observed.

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

This area of forest is well buffered at its upper (northern) boundary by the basalt scarp and at its lower boundary by dense gorse scrub. It adjoins other areas of indigenous forest or gorse scrub at its eastern and western boundaries. The northern boundary is fenced from adjacent pasture.

Condition and Management Issues:

The forest is in relatively good condition. It appears to be regenerating vigorously and supports young podocarp trees. The most important management issues are protection from fire and continued animal pest control. Some plant pest control (notably pines) would benefit the area.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A very good example of regenerating indigenous forest typical of the ecological district and containing species representative of the original forest canopy, notably matai, totara, kowhai and narrow-leaved lacebark.
Rarity	M	Provides good habitat for an 'at-risk' bird species (rifleman) and supports several locally uncommon plant species. Indigenous forest on basalt is an uncommon plant community.
Diversity and pattern	M/H	Supports a diverse range of species (at least 66); higher than average for this part of the District.
Distinctiveness/special features	M	The presence of young podocarp trees and hardwood forest on basalt boulderfield are special features.
Other Criteria		
Size/shape	H	A large area for the ecological district. Well buffered by its position on steep slopes, the basalt scarp and dense gorse scrub.
Connectivity	M/H	This area effectively links other areas of indigenous vegetation, one of which is protected as scenic reserve.
Long-term Sustainability	M/H	Animal and plant 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):

This area has in effect been protected by the removal of grazing and the avoidance of clearance. These steep boulder slopes have very limited potential for farm development, though could support plantation forest.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are diversity of plant species present, the presence of young podocarps (totara and matai), the presence of locally-uncommon plant species, the habitat the area provides for forest birds including an 'at-risk' species (rifleman), the extent of the area and the position of the area linking forest in Claremont Scenic Reserve with forest at Mt Horrible. Indigenous forest on basalt is a rare plant community and indigenous forest is uncommon in this part of Timaru District.

TIMARU DISTRICT SNA SURVEY

SNA 93c

Area Name:	Property: Ian Caird
Location (central map reference): J39: 559-426	Nearest Locality: Pareora West
Ecological District: Waimate	Area Size (ha): 3.08 Altitude (m): 300-350
Surveyors: Mike Harding	Survey Time: 1 hour Survey Date: 14-10-10

General Description:

This SNA lies on and just below a steep basalt scarp east of Mt Horrible, on the south side of the Timaru Downs. It adjoins indigenous vegetation in SNA 93b to the east and in SNA 93d to the west.

Plant Communities:

Two main plant communities are present: hardwood forest with emergent pines; and sparsely vegetated basalt rockland. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest:

The canopy of this forest is dominated by mahoe and broadleaf. Other canopy species are cabbage tree and marbleleaf. Parts of the forest are dominated by large radiata pine* trees.

The understorey of this forest is very open. Species present are mapou, *Coprosma rotundifolia*, *Coprosma crassifolia* and *Coprosma propinqua*.

The forest floor is, in most places, a jumble of large basalt boulders. Ground-cover species are largely absent, except for occasional plants of common shield fern and, on boulders, isolated plants of leather-leaf fern.

Species present at the lower forest margin in a shrubland/scrub community are mahoe, broadleaf, cabbage tree, mapou, marbleleaf, *Coprosma propinqua*, *Coprosma crassifolia*, *Coprosma rotundifolia*, Darwin's barberry* (rare), bush lawyer, leafless lawyer, native convolvulus, bracken, mountain kiokio, common shield fern, *Hypolepis ambigua*, necklace fern, bush lily, flax (rare), silver tussock, foxglove* and one large patch of the native tree nettle, *Urtica ferox*.

Basalt rockland:

The basalt scarp is largely clear of vegetation. It rises 10 to 12 metres as a near vertical bluff, interrupted only by open cracks and occasional small ledges. Plants on or at the base of the bluff are *Coprosma propinqua*, *Coprosma crassifolia*, mapou, hawthorn* (rare), toatoa, scrub pohuehue, native convolvulus, leafless lawyer, necklace fern, hound's tongue fern, hairy pennywort, *Oxalis* sp., *Dichondra repens*, tree nettle (rare) and one patch of the 'at-risk' (declining) shrub, *Teucrium parvifolium*.

Species present in scrub at the pasture boundary on top of the scarp are *Coprosma crassifolia*, *Coprosma rigida*, *Coprosma propinqua*, *Coprosma robusta*, broadleaf, mapou, mahoe, kowhai, poroporo, pohuehue, gorse* and foxglove*.

Birds/Fauna Observed:

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

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of indigenous forest on basalt boulderfield, an 'at-risk' (declining) plant species (*Teucrium parvifolium*), locally-uncommon plant species (e.g. tree nettle and scrub pohuehue), habitat for forest birds and the function of the area as a habitat link between other areas of indigenous forest.

Notable Plant and Animal Pests:

The most important naturalized plant species at the site is radiata pine. Tall pine trees dominate large parts of the area. However, these trees are emergent from an indigenous hardwood canopy at most parts of the area.

Other invasive woody plant species present are Darwin's barberry and hawthorn, though neither species poses a significant threat at present. Animal pests were not surveyed, though the open forest understorey may be at least partly due to the presence of introduced browsing animals. Possum sign was common and two wallabies were seen.

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

The area is well buffered by its location against a steep basalt scarp and on a basalt boulderfield. It adjoins fenced pasture at its upper boundary on the scarp crest and adjoins rough pasture and gorse scrub at its lower boundary. The area adjoins other indigenous forest and scrub at its eastern and western boundaries.

Condition and Management Issues:

The forest canopy is in relatively good condition. However, the forest understorey and areas of adjacent shrubland appear to be affected by wild animal browse. The pine trees dominate parts of the site, though removal or control of these trees would be difficult. The most important short-term management issue is control of wild animal populations, notably possums and wallabies.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	The hardwood forest is typical of regenerating indigenous forest in this area; the sparsely-vegetated basalt scarp is highly representative of the original vegetation and habitat.
Rarity	M/H	Supports a good population of an 'at-risk' plant species (<i>Teucrium parvifolium</i>) and populations of locally-uncommon plant species (notably tree nettle). Indigenous vegetation on basalt is a rare plant community.
Diversity and pattern	M	Plant species diversity is probably substantially reduced, though the basalt scarp, basalt boulderfield and slopes provide diverse habitats.
Distinctiveness/special features	M	The steep basalt scarp and extensive basalt boulderfield are special features.
Other Criteria		
Size/shape	M/H	A moderate-sized area that is well buffered by its location.
Connectivity	M/H	Provides an effective ecological link between other areas of indigenous vegetation and habitat.
Long-term Sustainability	M	Ongoing animal and plant pest control will be 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 protected from clearance by the landowners. The steepness and rockiness of the site limit its potential for farm development or forestry. The basalt scarp is a popular destination for rock climbers.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of indigenous forest on basalt boulderfield, an 'at-risk' (declining) plant species (*Teucrium parvifolium*), locally-uncommon plant species (e.g. tree nettle and scrub pohuehue), habitat for forest birds and the function of the area as a habitat link between other areas of indigenous forest.

TIMARU DISTRICT SNA SURVEY

AREA 93d and 93e

Area Name:**Location (central map reference):** J39: 555-431**Ecological District:** Waimate**Surveyors:** Mike Harding**Property:** Ian Caird**Nearest Locality:** Pareora West**Area Size (ha):** 5.27 **Altitude (m):** 300-370**Survey Time:** 1½ hours **Survey Date:** 22-10-10

General Description:

This SNA lies on the steep upper slopes below the basalt scarp between Mt Horrible and Trig B, on the southwest side of the Timaru Downs. It lies close to other areas of indigenous vegetation along the basalt scarp: SNA 93c to the east and SNA 547a to the west. Described as part of this area is a small area of indigenous forest (SNA 93e) at the northwest corner of the property, but managed as part of the adjacent property.

Plant Communities:

Two main plant communities are present: hardwood forest and shrubland/scrub. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Hardwood forest:

The forest canopy is dominated by broadleaf and mahoe. Other canopy species are cabbage tree, mapou, matipo, wineberry, lancewood (rare), kowhai (rare), five-finger and bush lawyer.

The forest understorey is relatively open. Plant species present are *Coprosma crassifolia*, *Coprosma rotundifolia*, mapou, mahoe, poataniwha (rare), matipo, tree nettle, poroporo, native convolvulus and bush lawyer.

The forest floor is, in most places, dominated by large basalt boulders and only sparsely vegetated. Plant species present are hen and chickens fern, hound's tongue fern, necklace fern, *Asplenium hookerianum*, *Pellaea rotundifolia*, common shield fern, *Blechnum procerum*, *Blechnum chambersii*, *Blechnum pennamarina*, bush lily (rare), *Libertia ixioides* and seedlings of tree nettle, toatoa, mapou, mahoe and native jasmine. Plant species on or associated with basalt boulders are *Cardamine debilis* and hanging spleenwort.

Forest margins and areas of shrubland are dominated by *Coprosma propinqua*, *Coprosma crassifolia* and, in places, tree nettle. Other species present are *Coprosma rotundifolia*, *Coprosma robusta* X *propinqua*, *Coprosma robusta*, fuchsia, fuchsia X scrambling fuchsia, matagouri, *Helichrysum lanceolatum*, koromiko (rare), mountain akeake (rare), narrow-leaved snow-tussock, silver tussock, gorse*, foxglove*, flowering currant* (rare), bush lawyer, native convolvulus, scrub pohuehue, native jasmine, *Libertia ixioides*, bracken, prickly shield fern, *Blechnum procerum*, mountain kiokio, Maori onion, flax (rare), *Anisotome aromatica* (rare), bidibid, Californian thistle*, blackberry* (rare), *Aciphylla* sp. (rare), tutu, mistletoe (on *Coprosma crassifolia*). One patch of the 'at-risk' (declining) speargrass *Aciphylla subflabellata* is present at the lower forest margin. Tall pine trees* are present at the scarp crest at the western end of the area.

Birds/Fauna Observed:

Native birds observed during this brief survey were grey warbler, bellbird, silvereve, brown creeper, rifleman and fantail.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of indigenous vegetation on basalt boulderfield, the diversity of plant species (55 species), an 'at-risk' plant species (*Aciphylla subflabellata*), several locally-uncommon plant species (tree nettle, tutu and Maori onion), habitat for forest birds including an 'at-risk' species (rifleman), and the link the area provides between other areas of indigenous vegetation.

Notable Plant and Animal Pests:

Gorse and flowering currant were the only notable plant pests observed. Flowering currant poses a moderate threat, whereas the presence of gorse may be beneficial for forest regeneration. Animal pests were not surveyed, though sign of possums, wallabies and thar was observed, including one bull thar.

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

This area is buffered by its location on steep boulder slopes below the basalt scarp. It adjoins fenced pasture and a pine plantation at its upper boundary, rough pasture and scrub at its lower boundary and lies close to other others of indigenous forest along the scarp to the west and east.

Condition and Management Issues:

The forest canopy is in relatively good condition. The forest understorey and adjacent shrubland are affected by the presence of wild animals, notably thar and wallabies. The most important management issue is removal of thar and wallaby populations and control of possums.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A good example of indigenous forest typical of that present in this part of the ecological district and containing canopy species representative of the original vegetation.
Rarity	M/H	Provides habitat for an at-risk bird species (rifleman), an at-risk plant species (<i>Aciphylla subflabellata</i>) and a number of locally-uncommon plant species.
Diversity and pattern	M	A relatively diverse range of plant species is present.
Distinctiveness/special features	M	The presence of indigenous woody vegetation on basalt boulderfield is a special feature.
Other Criteria		
Size/shape	M/H	A moderate-sized area for the ecological district, with a narrow shape but well buffered.
Connectivity	M/H	Provides an ecologically-viable link between other areas of indigenous vegetation.
Long-term Sustainability	M	Animal pest control 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 area has been protected from clearance in recent years and is now actively regenerating. It has very limited potential for farm development due to the steepness of the slope and presence of basalt boulders.

Discussion:

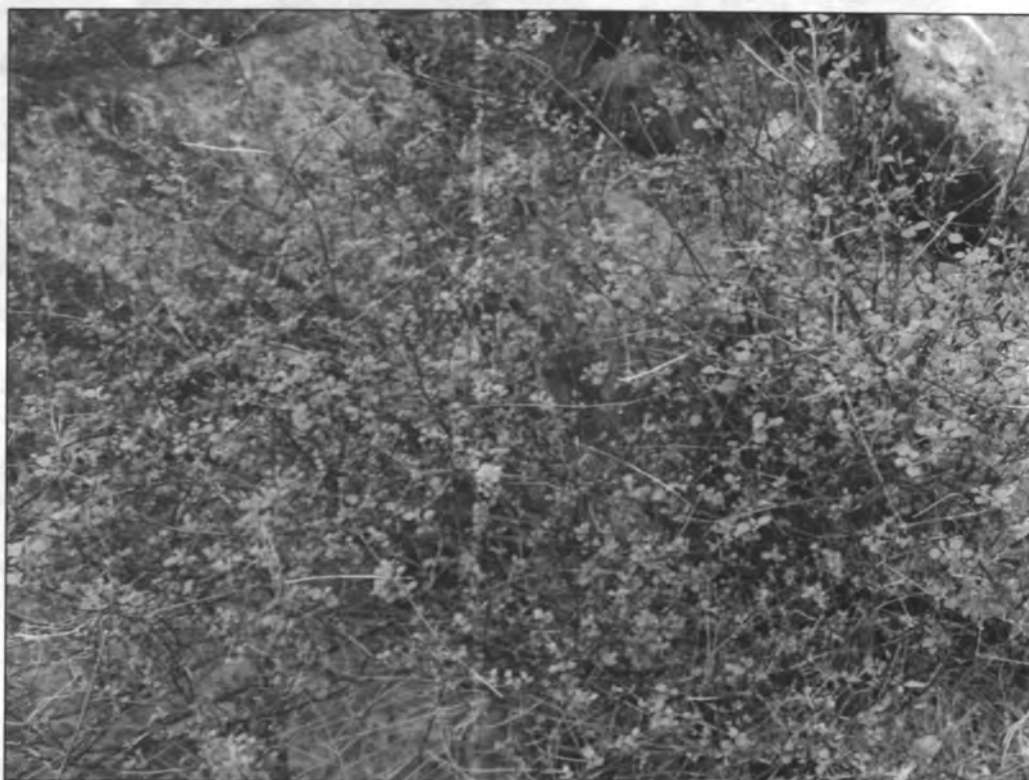
This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of indigenous vegetation on basalt boulderfield, an 'at-risk' plant species (*Aciphylla subflabellata*), several locally-uncommon plant species, habitat for forest birds including an 'at-risk' species (rifleman), and the link the area provides between other areas of indigenous vegetation.

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.
blackberry*	<i>Rubus fruticosus</i>
black nightshade*	<i>Solanum nigrum</i>
bracken	<i>Pteridium esculentum</i>
broadleaf	<i>Griselinia littoralis</i>
burdock*	<i>Arctium minus</i>
bush lawyer	<i>Rubus cissoides</i>
bush lily	<i>Astelia fragrans</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Californian thistle*	<i>Cirsium arvense</i>
Chilean flame creeper*	<i>Tropaeolum speciosum</i>
clematis	<i>Clematis paniculata</i>
cocksfoot*	<i>Dactylis glomerata</i>
common shield fern	<i>Polystichum richardii</i>
Darwin's barberry*	<i>Berberis darwinii</i>
elderberry*	<i>Sambucus nigra</i>
five-finger	<i>Pseudopanax arboreus</i>
flax	<i>Phormium tenax</i>
flowering currant*	<i>Ribes sanguineum</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
gorse*	<i>Ulex europaeus</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hanging spleenwort	<i>Asplenium flaccidum</i>
hawthorn*	<i>Crataegus monogyna</i>
hemlock*	<i>Conium maculatum</i>
hen and chickens fern	<i>Asplenium gracillimum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
hookgrass	<i>Uncinia</i> sp.
horehound*	<i>Marrubium vulgare</i>
hound's tongue fern	<i>Microsorium pustulatum</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
lawyer	<i>Rubus schmidelioides</i>
leafless lawyer	<i>Rubus squarrosus</i>
leather-leaf fern	<i>Pyrrhosia eleagnifolia</i>
lemonwood	<i>Pittosporum eugenioides</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
male fern*	<i>Dryopteris filix-mas</i>
Maori onion	<i>Bulbinella angustifolia</i>
mapou	<i>Myrsine australis</i>
marbleleaf/putaputaweta	<i>Carpodetus serratus</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>
mountain kiokio	<i>Blechnum montanum</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
narrow-leaved snow-tussock	<i>Chionochloa rigida</i>
native convolvulus	<i>Calystegia tuguriorum</i>
native jasmine	<i>Parsonsia heterophylla</i>

necklace fern	<i>Asplenium flabellifolium</i>
pate	<i>Schefflera digitata</i>
pennywort	<i>Hydrocotyle</i> sp.
poataniwha	<i>Melicope simplex</i>
pohuehue	<i>Muehlenbeckia australis</i>
poroporo	<i>Solanum laciniatum</i>
prickly shield fern	<i>Polystichum vestitum</i>
radiata pine*	<i>Pinus radiata</i>
rohutu	<i>Lophomyrtus obcordata</i>
scrambling fuchsia	<i>Fuchsia perscandens</i>
scrub pohuehue	<i>Muehlenbeckia complexa</i>
silver tussock	<i>Poa cita</i>
spindle tree*	<i>Euonymus europaeus</i>
supplejack	<i>Ripogonum scandens</i>
toatoa	<i>Haloragis erecta</i>
totara	<i>Podocarpus totara</i>
tree nettle	<i>Urtica ferox</i>
turepo	<i>Streblus heterophyllus</i>
tutsan*	<i>Hypericum androsaemum</i>
tutu	<i>Coriaria sarmentosa</i>
velvety nightshade*	<i>Solanum chenopodioides</i>
water fern	<i>Histiopteris incisa</i>
wineberry	<i>Aristotelia serrata</i>



An 'at-risk' (declining) plant species, *Teuclidium parvifolium*, at the base of the basalt scarp.