

TIMARU DISTRICT

SIGNIFICANT NATURAL AREAS
SURVEY

BLACKLER PROPERTY



Report prepared for Timaru District Council by Mike Harding
November 2020

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Blackler
Valuation Reference: ... 24810-01400
Address: Newton Road
Location:..... South Canterbury downlands, west of Totara Valley
Ecological District:..... Geraldine
TDC Land Type:..... ‘Soft Rock Hills and Downs’
Land Environments:..... N3.1a

ECOLOGICAL CONTEXT:

The property lies on the limestone downlands of South Canterbury, northeast of the Brothers Range, near Totara Valley. It is in Geraldine Ecological District (McEwen, 1987). Limestone scarps on the property lie within the N3.1a Level IV Land Environment as defined by Leathwick *et al* (2003).

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

Today the original forest cover in this part of Geraldine Ecological District is largely confined to remnants in gullies or on steep slopes associated with limestone scarps. 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:

This property was initially assessed as part of the District-wide survey of Significant Natural Areas by desk-top analysis, because permission for access was declined by the landowner. One SNA (422) was described, covering the semi-continuous system of limestone bluffs and outcrops that dominate this part of the property.

Following a change of ownership, the new property owners (Graeme and Rachael Blackler) invited Timaru District Council to survey the property to confirm and clarify the presence and extent of the significant indigenous vegetation and habitat. This survey was undertaken in October 2020. The significance of vegetation within SNA 422 was confirmed and the boundary of that SNA re-drawn to more accurately encompass those values. An additional smaller area of limestone was surveyed and is described in this report as SNA 856. These two areas are described and assessed below.

TIMARU DISTRICT SNA SURVEY

SNA 422

Ecological District: Geraldine	Nearest Locality: Totara Valley	
Map ref. (NZTM): 1437500E-5101650N	Size (ha): 15.39	Altitude (m): 140-220
Surveyor/Assessor: Mike Harding	Survey Time: 5 hours	Survey Date: 21-10-20

General Description:

This SNA comprises a large limestone scarp and associated limestone outcrops and boulders running south-west to north-east across the property. It lies on the west side of a small valley and represents the east edge of a larger limestone landform. It comprises one main scarp and a separate block of limestone that stands apart from the main outcrop.



SNA 422 (larger white-hatched area).

Plant Communities:

Five main plant communities are present within the SNA: forest; shrubland; rockland, grassland; and sedgeland. These plant communities are described below. Naturalized (exotic) species are indicated with an asterisk*. Species are listed at the end of this Survey Form.

Forest:

Forest is present on the steeper slopes associated with the outcropping limestone, and as occasional small patches on the bluffs. It is dominated by broadleaf. Other common canopy species are mahoe and five-finger. Less commonly present are cabbage tree/ti rakau, mapou, mountain akeake, koromiko, pohuehue, native jasmine, elderberry* and spindle tree*. Also present at the west part of the site are wineberry, flax and kowhai.

Shrubland:

Shrubland is present on the slopes below the main bluffs and at the forest edge at other locations. It is dominated by mingimingi. Other common species are matagouri, native broom, porcupine shrub and pohuehue. Less commonly present are koromiko, gooseberry*, sweet brier*, bracken, scrub pohuehue, lawyer, leafless lawyer and *Clematis marata*. Patches of gorse* scrub are present at two main locations.



Forest at SNA 422 is dominated by broadleaf.



Shrubland at SNA 422 is dominated by mingimingi.

Rockland:

Exposed limestone on the outcropping bluffs and boulders supports a plant community which is dominated by bare rock. Ledges and crevices support plants, though survey of these sites is difficult. Plant species commonly present on the outcropping limestone are broadleaf, mahoe, mingimingi, porcupine shrub and blue tussock.

Low-growing indigenous herbaceous species on or associated with the outcropping limestone are blue tussock, *Carex breviculmis*, *Chenopodium allanii*, *Anisotome* sp., *Cardamine* sp., *Epilobium nummularifolium*, *Geranium socolateum*, *Gingidia enysii*, *Craspedia* aff. *uniflora*, *Colobanthus* aff. *brevisepalus*, *Colobanthus acicularis*, *Lagenophora* sp., *Azorella* aff. *bookeri*, *Dichondra repens*, *Plantago triandra*, *Libertia ixioides*, pennywort, oxalis, *Asplenium lyallii*, hound's tongue fern, *Blechnum chambersii*, maidenhair fern and the moss *Hypnum cupressiforme*.

Common or locally-common naturalised (exotic) species on or adjacent to the exposed limestone are nodding thistle*, horehound*, narrow-leaved plantain*, purging flax*, mouse-ear hawkweed*, dandelion*, sandwort*, storksbill*, daisy*, yarrow*, mouse-ear chickweed*, white clover*, hawksbeard*, Chewings fescue, Californian thistle*, Scotch thistle*, woolly mullein*, burdock*, dwarf mallow*, nettle*, hedge mustard*, suckling clover* and hemlock*. Less commonly present are slender bedstraw*, stoncrop* and creeping buttercup*.



Steeper bluffs support rockland, dominated by bare rock and are only sparsely vegetated (sedgeland on valley floor in foreground).

Grassland:

Grassland is present throughout the site, on gentler slopes below the bluffs and on shallow soils associated with the outcropping limestone. On gentler slopes it is dominated by exotic pasture grasses and occasionally silver tussock. Most of this plant community has been excluded from the SNA, except where small areas lie within the limestone bluffs or boulders. Species present at grassy sites associated with the limestone are those described for the rockland community.

Sedgeland:

This plant community is present on the valley floor at the south-west corner of the SNA. It comprises patches of pukio surrounded by larger patches of rautahi. Other plant species present are mingimingi, broadleaf, elderberry*, pohuehue and monkey musk*.



Sedgeland is present on the valley floor adjacent to the limestone landform.

Birds/Fauna Observed:

Native birds observed at or adjacent to the SNA were bellbird, fantail, grey warbler, welcome swallow, spur-winged plover, paradise shelduck and harrier.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of indigenous vegetation on limestone. Limestone is a naturally uncommon ecosystem (Williams *et al*, 2007) that is listed as ‘nationally vulnerable’ (Holdaway *et al*, 2012). The SNA lies within an acutely-threatened Land Environment (Cieraad *et al*, 2015), and includes small areas of wetland, which is an ecosystem that is a national priority for protection (MfE/DOC, 2007).

The site supports four plant species listed as ‘at risk’ or ‘threatened’ by de Lange *et al* (2018), or by Heenan and Molloy (2019):

- Chenopodium allanii* at risk (naturally uncommon)
- Discaria toumatou* (matagouri) at risk (declining)
- Geranium socolatum* threatened (nationally critical)
- Gingidia enysii* threatened (nationally endangered)

Fauna habitats were not closely surveyed. It is likely that the site provides important habitat for lizards.

Notable Plant and Animal Pests:

Naturalised (exotic) plant species present at the site that pose the greatest threat to the limestone vegetation are elderberry, gorse, spindle tree, stoncrop, Chewings fescue, mouse-ear hawkweed, daisy, horehound, hemlock, nettle and a number of other herbaceous weeds. Elderberry and spindle tree could be controlled at this site. The patches of gorse could be contained to prevent further spread, and will likely be eventually over-topped by indigenous woody species. Stoncrop is relatively uncommon at the site and could be controlled, though control is difficult and labour-intensive. Control of other herbaceous weeds would be difficult. Animal pests were not surveyed.

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

The boundary of this area is drawn to include the indigenous vegetation on and associated with the largest limestone outcrops and boulders. This boundary includes some areas of grassland (pasture) between the outcrops, where it is impractical to exclude those areas. Changes to the original SNA boundary are exclusion of the doline (depression) at the north part of the site, as that area does not support indigenous vegetation, and extension of the south-west boundary to include areas of valley-floor wetland.

The size of the limestone outcrops and boulders, and steepness of the adjacent slopes, help buffer vegetation at substantial parts of the site. The SNA is part of a larger limestone landform and lies close to other areas of indigenous vegetation. Forest and shrubland at the site are part of a network of scattered patches of forest bird habitat in the wider area.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Significant Natural Areas (SNAs) are determined by assessing indigenous vegetation and habitats of indigenous fauna against the criteria in Appendix 3 of the Canterbury Regional Policy Statement. Guidelines have been prepared to assist with application of the RPS criteria (Wildlands, 2013).

Criteria	Yes/No	Comments
Representativeness	Yes	1. Indigenous vegetation that is representative and is typical/characteristic of the natural diversity of the ecological district.
Rarity/ Distinctiveness	Yes	3. Indigenous vegetation that has been reduced to less than 20% of its former extent in the ecological district and land environment. 4. Indigenous vegetation that supports four plant species that are 'at risk' or 'threatened'. 6. Indigenous vegetation that occurs within originally rare ecosystems (limestone scarp and wetland).
Diversity and Pattern	No	7. Species and habitat diversity is moderate.
Ecological Context	Maybe	10. Indigenous vegetation/habitat that is likely to provide important habitat for lizards.

Discussion:

This site very easily meets the District Plan criteria for an SNA. Important values are: the presence of indigenous vegetation on limestone; presence of areas of wetland; populations of four 'at risk' or 'threatened' limestone plant species; and that it is a relatively extensive area of vegetation/habitat in an ecological district and land environment within which indigenous vegetation is substantially depleted.



The threatened limestone geranium (Geranium socolatenum) at SNA 422.



The threatened Gingidia enysii is present, but not common, at SNA 422.

Species List: SNA 422

Species' scientific names are as listed in the Manaaki Whenua/Landcare Research Nga Tipu o Aotearoa New Zealand Plants database.

Species' names of limestone flora are as proposed by Heenan and Rogers (Conserving the plants of eastern South Island limestone. Canterbury Botanical Society 2019.)

Indigenous Plant Species

Trees, shrubs, sub-shrubs, lianes (woody plants)

Aristolotelia serrata	wineberry
Carmichaelia australis	native broom
Clematis marata	
Coprosma propinqua	mingimingi
Cordyline australis	cabbage tree/ti rakau
Discaria toumatou	matagouri
Griselinia littoralis	broadleaf
Melicytus alpinus agg.	porcupine shrub
Melicytus ramiflorus	mahoe/whiteywood
Muehlenbeckia australis	pohuehue
Muehlenbeckia complexa	scrub pohuehue
Myrsine australis	mapou
Olearia avicenniifolia	mountain akeake
Parsonsia capsularis	native jasmine
Pseudopanax arboreus	five-finger
Rubus schmidelioides	lawyer
Rubus squarrosus	leafless lawyer
Sophora microphylla	kowhai
Veronica salicifolia	koromiko

Ferns and Fern Allies

Adiantum cunninghamii	maidenhair fern
Asplenium lyallii	
Blechnum chamdersii	
Microsorium pustulatum	hound's tongue fern
Pteridium esculentum	bracken

Herbaceous (non-woody) plants

Azorella aff. hookeri "calicicole"	
Cardamine sp.	
Carex breviculmis	
Carex coriacea	rautahi
Carex secta	pukio
Chenopodium allanii	
Colobantus acicularis	
Colobanthus aff. brevisepalus "limestone"	
Craspedia aff. uniflora	
Dichondra repens	
Epilobium nummularifolium	
Geranium socolateum	
Gingidia ensyii	
Hydrocotyle moschata	hairy pennywort
Hydrocotyle novae-zelandiae	pennywort
Hydrocotyle sp.	pennywort
Lagenophora sp.	
Libertia ixioides	
Oxalis exilis	oxalis

Phormium tenax	flax
Plantago triandra	glossy plantain
Poa cita	silver tussock
Poa colensoi	blue tussock
Ranunculus sp.	buttercup

Mosses and lichens

Hypnum cupressiforme

Naturalised (exotic) Plant Species

Achillea millefolium	yarrow
Arctium minus	burdock
Arenaria serpyllifolia	sandwort
Bellis perennis	daisy
Carduus nutans	nodding thistle
Cerastium fontanum	mouse-ear chickweed
Cirsium arvense	Californian thistle
Cirsium vulgare	Scotch thistle
Conium maculatum	hemlock
Crepis capillaris	hawksbeard
Erodium cicutarium	storksbill
Euonymus europaeus	spindle tree
Festuca rubra ssp. commutata	Chewings fescue
Galium divaricatum	slender bedstraw
Leycesteria formosa	Himalayan honeysuckle
Linum catharticum	purging flax
Malva neglecta	dwarf mallow
Marrubium vulgare	horehound
Mimulus guttatus	monkey musk
Pilosella officinarum	mouse-ear hawkweed
Plantago lanceolata	narrow-leaved plantain
Ranunculus repens	creeping buttercup
Ribes uva-crispa	gooseberry
Rosa rubiginosa	sweet brier
Sambucus nigra	elderberry
Sedum acre	stonecrop
Sisymbrium officinale	hedge mustard
Taraxacum officinale	dandelion
Trifolium dubium	suckling clover
Trifolium repens	white clover
Ulex europaeus	gorse
Urtica urens	nettle
Verbascum thapsus	woolly mullein

Bird Species

Circus approximans	harrier
Gerygone igata	grey warbler
Hirundo tahitica	welcome swallow
Rhipidura fuliginosa	fantail
Tadorna variegata	paradise shelduck
Vanellus miles	spur-winged plover

Ecological District: Geraldine	Nearest Locality: Totara Valley	
Map ref. (NZTM): 1437780E-5101620N	Size (ha): 0.65	Altitude (m): 140-160
Surveyor/Assessor: Mike Harding	Survey Time: 1 hour	Survey Date: 21-10-20

General Description:

This SNA comprises a low limestone scarp on the east side of a small valley. It lies close to and across the valley from a larger limestone landform that is described separately as SNA 422.



SNA 856 (smaller white-hatched area).

Plant Communities:

The SNA supports areas of exposed limestone (rockland) and associated grassland-herbfield, as described below. Naturalized (exotic) species are indicated with an asterisk*. Scientific names of species cited by common name are presented at the end of this report.

Indigenous woody plant species present on or associated with this limestone scarp are kowhai, broadleaf (one tree), mingimingi and matagouri (rare). Other indigenous plant species present are maidenhair fern, *Asplenium hyalii*, oxalis, *Chenopodium allanii*, *Epilobium nummularifolium*, *Dichondra repens*, pohuehue, blue tussock, *Carex breviculmis* and *Hypnum cupressiforme*.

Naturalised (exotic) plant species dominate the grassland adjacent to the limestone, as is typical for such sites. The most common of these are pasture grasses, mouse-ear hawkweed*, suckling clover*, narrow-leaved plantain*, Chewings fescue*, yarrow*, cocksfoot*, dandelion* and storksbill*. Other notable exotic species present are gorse*, elderberry*, male fern*, woolly mullein*, dwarf mallow*, nettle*, black nightshade*, horehound* and Californian thistle*.



SNA 856, viewed from SNA 422.

Birds/Fauna Observed:

Native birds observed at or adjacent to the SNA during this brief survey were grey warbler, paradise shelduck and harrier.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of indigenous vegetation on limestone. Limestone is a naturally uncommon ecosystem (Williams *et al*, 2007) that is listed as ‘nationally vulnerable’ (Holdaway *et al*, 2012). The SNA lies within an acutely-threatened Land Environment (Cieraad *et al*, 2015).

The site supports two plant species listed as ‘at risk’ by de Lange *et al* (2018):

- Chenopodium allanii* at risk (naturally uncommon)
- Discaria toumatou* (matagouri) at risk (declining)

Fauna habitats were not closely surveyed. It is possible that the site provides habitat for lizards.

Notable Plant and Animal Pests:

Naturalised (exotic) plant species present at the site that pose the greatest threat to the limestone vegetation are elderberry, gorse, Chewings fescue, mouse-ear hawkweed, horehound, nettle and a number of other herbaceous weeds. Elderberry and gorse could be easily controlled at this site. Control of other herbaceous weeds would be difficult. Animal pests were not surveyed.

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

The boundary of this area is drawn to include the indigenous vegetation on and associated with the area of outcropping limestone. This boundary includes some areas of grassland between and adjacent to the outcrops, where it is impractical to exclude those areas. The site is not well buffered, though lies close to other areas of indigenous vegetation.



There is a good population of the 'at risk' *Chenopodium allanii* at SNA 856.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Significant Natural Areas (SNAs) are determined by assessing indigenous vegetation and habitats of indigenous fauna against the criteria in Appendix 3 of the Canterbury Regional Policy Statement. Guidelines have been prepared to assist with application of the RPS criteria (Wildlands, 2013).

Criteria	Yes/No	Comments
Representativeness	Yes	1. Indigenous vegetation that is representative and is typical/characteristic of the natural diversity of the ecological district.
Rarity/ Distinctiveness	Yes	3. Indigenous vegetation that has been reduced to less than 20% of its former extent in the ecological district and land environment. 4. Indigenous vegetation that supports two plant species that are 'at risk'. 6. Indigenous vegetation that occurs within originally rare ecosystems (limestone scarp).
Diversity and Pattern	No	7. Species and habitat diversity is moderate.
Ecological Context	No	10. Indigenous vegetation/habitat that may provide habitat for lizards.

Discussion:

This site meets the District Plan criteria for an SNA. Important values are: the presence of indigenous vegetation on limestone; populations of two 'at risk' limestone plant species; and that it is in an ecological district and land environment within which indigenous vegetation is substantially depleted.



Kowhai trees at SNA 856.

Species List: SNA 856

Species' scientific names are as listed in the Manaaki Whenua/Landcare Research Nga Tipu o Aotearoa New Zealand Plants database.

Species' names of limestone flora are as proposed by Heenan and Rogers (Conserving the plants of eastern South Island limestone. Canterbury Botanical Society 2019.)

Indigenous Plant Species

Trees, shrubs, sub-shrubs, lianes (woody plants)

Coprosma propinqua	mingimingi
Discaria toumatou	matagouri
Griselinia littoralis	broadleaf
Muehlenbeckia australis	pohuehue
Sophora microphylla	kowhai

Ferns and Fern Allies

Adiantum cunninghamii	maidenhair fern
Asplenium lyallii	

Herbaceous (non-woody) plants

Carex breviculmis	
Chenopodium allanii	
Dichondra repens	
Epilobium nummularifolium	
Oxalis exilis	oxalis
Poa colensoi	blue tussock

Mosses and lichens

Hypnum cupressiforme	
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Naturalised (exotic) Plant Species

Achillea millefolium	yarrow
Cirsium vulgare	Scotch thistle
Dactylis glomerata	cocksfoot
Dryopteris filix-mas	male fern
Erodium cicutarium	storksbill
Festuca rubra ssp. commutata	Chewings fescue
Malva neglecta	dwarf mallow
Marrubium vulgare	horehound
Pilosella officinarum	mouse-ear hawkweed
Plantago lanceolata	narrow-leaved plantain
Sambucus nigra	elderberry
Solanum nigrum	black nightshade
Taraxacum officinale	dandelion
Trifolium dubium	suckling clover
Ulex europaeus	gorse
Urtica urens	nettle
Verbascum thapsus	woolly mullein

Bird Species

Gerygone igata	grey warbler
Tadorna variegata	paradise shelduck

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