

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Ian, Dianne and Stephen McCall
Valuation Reference: ...24810/029.00
Address: Mowat Road
Location: Lower northeast slopes of Brothers Range, Totara Valley
Ecological District: Geraldine
TDC Land Type:..... 'Soft Rock Hills and Downs'
Land Environments: N3.1a

ECOLOGICAL CONTEXT:

The property lies on lower northeast slopes 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). Indigenous vegetation within this land environment is regarded as acutely-threatened (Walker *et al*, 2005).

It is likely that the original vegetation of this area was predominantly podocarp-hardwood forest, dominated by matai, totara, kowhai, broadleaf and other hardwood 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:

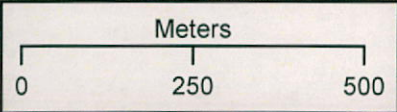
Indigenous vegetation on the property comprises treeland (scattered trees), shrubland, herbfield and sparsely vegetated rockland on or associated with limestone bluffs, and one small area of hardwood forest. These habitats support populations of two 'at risk' (naturally uncommon) plant species, as listed by de Lange *et al* (2012), and several uncommon and yet to be described species restricted to limestone. The property lies near to areas of indigenous vegetation on other properties, contributing to the network of fauna habitat in the wider area. This part of the ecological district is within the range of a remnant South Canterbury population of long-tailed bat; a threatened (nationally critical) species.

The property was surveyed as part of the District-wide survey of Significant Natural Areas during March 2015. Six areas, comprising approximately 16 hectares, are regarded as Significant Natural Areas (SNAs) when assessed against the District Plan criteria. These SNAs are listed in the table below. One 'notable tree' was identified: a small patch of large kowhai trees with abundant mistletoe at map reference (NZTM): 1436200E-5100145N.

Area No.	Area Name	Map reference (NZTM)	Aprox. size (ha)	Vegetation/habitat type
369b		1436264E-5099668N	1.55	forest
370	Castlerock	1435771E-5100550N	6.55	treeland; shrubland; rockland
433a		1435878E-5101289N	0.65	treeland; shrubland; rockland
433b		1436466E-5101152N	1.82	treeland; shrubland; rockland
433c		1436731E-5101483N	1.54	treeland; shrubland; rockland
433d		1436711E-5101113N	2.32	forest; shrubland; rockland

The boundaries of these SNAs are illustrated on the aerial photograph and the values described 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, track construction, spraying with herbicides and over-planting. To assist with the protection and management of any SNA, landowners can apply to Council for financial assistance. Any questions regarding the protection, management and use of SNAs should be directed to the District Planner.



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TIMARU DISTRICT SNA SURVEY

SNA 369b

Area Name:
Ecological District: Geraldine
Central map ref. (NZTM): 1436264E-5099668N
Surveyors: Mike Harding

Property: McCall (Castlerock)
Nearest Locality: Totara Valley
Area Size (ha): 1.55 **Altitude (m):** 180-200
Survey Time: ½ hour **Survey Date:** 24-03-15

General Description:

This small area lies on the lower slopes of a small valley at the southern corner of the property. The indigenous vegetation here is contiguous with a larger area of forest (SNA 10a) on the adjacent property.

Plant Communities:

The plant community at this site is low forest, described below. Naturalized (exotic) species are indicated with an asterisk*

Forest on the small spur at the northern edge of the site is dominated by kanuka. This grades to hardwood forest on the steeper slopes to the stream. Hardwood canopy species are kowhai, cabbage tree, broadleaf, lancewood, five-finger, pohuehue and, nearer the stream, wineberry and fuchsia. Understorey species are mapou, yellowwood, *Coprosma crassifolia*, *Coprosma rhamnoides*, mingimingi, *Raukawa anomalus*, korokio, weeping mapou, bush lawyer and native jasmine. Gorse* scrub is present at the upper forest margin.



SNA 369b

Birds/Fauna Observed:

Native birds observed during this brief inspection were bellbird, rifleman, grey warbler, silvereye and fantail.

Notable Flora, Fauna and Habitats:

The most important feature of this area is the presence of representative indigenous vegetation in an acutely-threatened land environment. The site is part of a larger area of indigenous forest and provides useful habitat for native birds.

Notable Plant and Animal Pests:

Gorse is the most important plant pest present, though it is confined to the forest margin and does not pose a significant threat to the indigenous forest. Animal pests were not surveyed.

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

This area is not fenced, though is buffered from grazing to some extent by the gorse scrub and the steeper streamside slopes. It is part of a larger area of indigenous vegetation that extends onto the adjacent property.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	Young indigenous forest representative of that remaining in the ecological district.
Rarity	M/H	Indigenous vegetation in an acutely-threatened land environment.
Diversity and pattern	M	Species diversity is moderate, though reduced from that originally present.
Distinctiveness/special features	L/M	Helps buffer part of the stream.
<hr/> Other Criteria <hr/>		
Size/shape	M	A small area that is well buffered.
Connectivity	M/H	Adjoins a much larger area of indigenous forest on the adjacent property.
Long-term Sustainability	M/H	Continued animal pest control is likely to be needed 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 informally protected from clearance. It lies mostly on steep stream-side slopes which have limited potential for farm development.

Discussion:

This area meets the District Plan criteria for an SNA. Important features are the presence of indigenous vegetation in an acutely-threatened land environment, the habitat it provides for native birds, and that it is part of a larger area of indigenous vegetation.

Area Name: Castlerock
Ecological District: Geraldine
Central map ref. (NZTM): 1435771E-5100550N
Surveyors: Mike Harding

Property: McCall (Castlerock)
Nearest Locality: Totara Valley
Area Size (ha): 6.55 **Altitude (m):** 300-350
Survey Time: 2 hours **Survey Date:** 24-03-15

General Description:

This area comprises a large limestone scarp and associated limestone outcrops and boulders at the crest of a prominent ridge on the property. The SNA boundary is drawn to include the main areas of outcropping limestone, though there are areas of pasture within this boundary which are not significant.

Plant Communities:

The main indigenous plant community present is vegetation (trees, shrubs and herbs) on or associated with the limestone outcrops. This vegetation is described below. Naturalized (exotic) species are indicated with an asterisk*.

Tree species present are broadleaf, mahoe, cabbage tree, five-finger, kowhai, mountain akeake, elderberry* and Himalayan honeysuckle*. Shrub species and climbers on or associated with the limestone are mingimingi, matagouri, native broom, koromiko, mistletoe (on mingimingi and kowhai), pohuehue, scrub pohuehue and leafless lawyer.

Herbaceous species present are toatoa, *Einadia allanii*, *Cardamine* sp., woollyhead (*Craspedia* sp.), *Colobanthus* aff. *strictus*, *Colobanthus apetalus*, *Geranium microphyllum*, *Geranium* aff. *brevicaule*, *Epilobium nummularifolium*, *Oreomyrrhis* sp., *Dichondra repens*, *Lagenifera pumila*, *Oxalis exilis*, *Carex breviculmis*, *Asplenium hyalii*, maidenhair fern, dwarf mallow*, nodding thistle*, sow thistle*, nettle*, horehound*, hemlock*, narrow-leaved plantain*, white clover*, suckling clover*, burdock*, *Geranium pusillum**, sandwort*, hawksbeard*, mouse-ear hawkweed*, mouse-ear chickweed* and woolly mullein*. Grasses commonly present are silver tussock, *Poa imbecilla*, hard grass*, cocksfoot*, Chewings fescue*, sweet vernal* and browntop*.



Kowhai trees at the main limestone scarp within SNA 370

Birds/Fauna Observed:

Native birds observed at the site during this survey were bellbird, fantail, silvereye, welcome swallow, harrier and paradise shelduck (nearby).

Notable Flora, Fauna and Habitats:

Important features of this area are: the presence of indigenous vegetation on limestone, a naturally uncommon ecosystem listed as 'nationally vulnerable' (Holdaway *et al*, 2012); the presence of two 'at risk' (naturally uncommon) plant species, *Eriodictyon allanii* and *Geranium microphyllum* (de Lange *et al*, 2012); the presence of un-described limestone plant species (*Colobanthus* aff. *strictus*, *Geranium* aff. *brevicaule*, *Oreomyrrhis* sp., *Cardamine* sp. and *Craspedia* sp.) and its location near to other areas of indigenous vegetation on limestone.

Notable Plant and Animal Pests:

Elderberry and naturalized grasses and herbs such as hard grass, cocksfoot, Chewings fescue, mouse-ear hawkweed and narrow-leaved plantain pose a threat to the limestone plant communities, though control of these species is difficult. Animal pests were not surveyed.

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

The boundaries of this area include the largest limestone outcrops and the pasture between the outcrops. However, the significant ecological values are confined to the exposed limestone and associated turfs. The site is not fenced and is grazed as part of large paddocks. It lies close to other areas of indigenous vegetation on limestone.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	Indigenous vegetation that is moderately representative and typical of that remaining on limestone in the ecological district.
Rarity	H	Indigenous vegetation on a nationally vulnerable limestone ecosystem, within a threatened land environment; provides habitat for two 'at risk' plant species and several un-described limestone plant species.
Diversity and pattern	M	Plant species diversity is moderate, though reduced from that originally present.
Distinctiveness/special features	M	The site has relatively extensive areas of limestone plant habitat. It is a visually impressive site.
Other Criteria		
Size/shape	M/H	Relatively large areas of exposed limestone, though separated by pasture and not well buffered.
Connectivity	M	Lies close to other areas of indigenous vegetation on limestone.
Long-term Sustainability	M/H	Some plant pest control may be necessary to maintain ecological values in the long term.

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

The parts of the site that support significant ecological values are on or associated with the exposed limestone. These areas are generally unsuitable for farm development.

Discussion:

This site easily meets the District Plan criteria for an SNA. Important values are the presence of indigenous vegetation on limestone, 'at risk' and un-described limestone plant species and the extent of the limestone habitat.

TIMARU DISTRICT SNA SURVEY

SNA 433a, b, c and d

Area Name:**Ecological District:** Geraldine**SNA 433a:** Central map ref. (NZTM): 1435878E-5101289N**SNA 433b:** Central map ref. (NZTM): 1436466E-5101152N**SNA 433c:** Central map ref. (NZTM): 1436731E-5101483N**SNA 433d:** Central map ref. (NZTM): 1436711E-5101113N**Surveyors:** Mike Harding**Property:** McCall (Castlerock)**Nearest Locality:** Totara Valley**Area Size (ha):** 0.65**Altitude (m):** 280-320**Area Size (ha):** 1.82**Altitude (m):** 260-280**Area Size (ha):** 1.54**Altitude (m):** 260-280**Area Size (ha):** 2.32**Altitude (m):** 160-200**Survey Time:** 2 hours**Survey Date:** 24-03-15

General Description:

These four small SNAs lie on the south- or east-facing slopes of a limestone scarp at the central part of the property. They are described together here as they support similar plant communities. The scarp extends onto, and becomes larger on, the adjacent property.

Plant Communities:

Plant communities present are small patches of trees, shrubland, herbfield/grassland and sparsely-vegetated rockland. The plant species present are listed and the plant communities in each SNA described below. Naturalized (exotic) species are indicated with an asterisk*.

Tree species present are broadleaf, mahoe, kowhai, cabbage tree, five-finger, mountain akeake, elderberry* and Himalayan honeysuckle*. Shrubs and climbers are mingimingi, matagouri, native broom, koromiko, gorse*, mistletoe (on mingimingi) and pohuehue.

Herbaceous species on the limestone or in turf/grassland communities associated with the limestone are pennywort, hairy pennywort, *Hydrocotyle heteromeria*, *Carex beviculmis*, *Epilobium nummularifolium*, *Colobanthus* aff. *strictus*, *Colobanthus apetalus*, *Geranium* aff. *brevicaule*, *Craspedia* sp., *Leptinella* sp., *Dichondra repens*, buttercup, *Lagenifera pumila*, *Asplenium hyalii*, maidenhair fern, *Blechnum chambersii*, Californian thistle*, daisy*, nettle*, horehound*, black nightshade*, mouse-ear chickweed*, foxglove* and nodding thistle*. Indigenous grasses present are silver tussock, blue tussock, *Poa imbecilla* and blue wheat grass. Additional naturalized herbs and grasses are present but not listed here.

SNA 433a:

SNA 433a

This SNA supports a patch of broadleaf-mahoe forest on a small limestone scarp and associated boulderfield.

SNA 433b and c:



SNA 433b

SNA 433b and SNA 433c support small patches of trees, shrubland and areas of limestone turf, including extensive habitat for the undescribed limestone woollyhead (*Craspedia* sp.) and *Leptinella* sp.

SNA 433d:



Shrubland and a stand of kowhai at SNA 433d

This SNA supports a relatively extensive area of shrubland/scrub on a broken slope with limestone boulders. There is a small patch of mature kowhai trees at the south end of the area.

Birds/Fauna Observed:

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

Notable Flora, Fauna and Habitats:

Important features of these areas are: the presence of indigenous vegetation on limestone, a naturally uncommon ecosystem listed as 'nationally vulnerable' (Holdaway *et al*, 2012); the presence of un-described limestone plant species (*Colobanthus* aff. *strictus*, *Geranium* aff. *brevicaule* and *Craspedia* sp.) and their locations near to other areas of indigenous vegetation on limestone.

Notable Plant and Animal Pests:

Elderberry, Himalayan honeysuckle and gorse are the woody plant pests present, though none are dominant. Naturalized herbaceous plants, such as mouse-ear hawkweed and Chewings fescue, probably pose a greater threat though are difficult to control.

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

These four sites are part of one limestone ecosystem, though are separated by areas of exotic pasture and scattered shrubs. They are buffered to some extent by their locations on limestone outcrops or the steep slopes associated with the limestone. The sites are not fenced and are grazed as part of large paddocks. Some parts of the area had been intensively grazed at the time of the survey.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	Indigenous vegetation that is moderately representative of the original vegetation and is typical of that remaining on limestone in the area.
Rarity	M/H	Indigenous vegetation on a nationally vulnerable limestone ecosystem, within a threatened land environment; provides habitat for several un-described limestone plant species.
Diversity and pattern	M	Plant species diversity is moderate and reduced from that originally present.
Distinctiveness/special features	M	The extent of the limestone turf plant communities and the presence of boulderfield (SNA 433a) are notable features.
Other Criteria		
Size/shape	M	Small areas buffered by their location on steep slopes.
Connectivity	M	The areas lie close to other areas of indigenous vegetation on limestone.
Long-term Sustainability	M	Control of plant pests and management of grazing will probably be necessary to maintain ecological values in the long term.

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

These four areas lie on exposed rock or steep slopes that have limited potential for farm development.

Discussion:

These four areas meet the District Plan criteria for SNAs. They support indigenous vegetation on a naturally uncommon ecosystem and within an acutely-threatened land environment. They provide habitat to a number of undescribed limestone plant species and lie close to other areas of indigenous vegetation on limestone.

The Leptinella species at SNA 433b



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)

black nightshade*	<i>Solanum nigrum</i>
blue tussock	<i>Poa colensoi</i>
blue wheat grass	<i>Elymus solandri</i>
broadleaf	<i>Griselinia littoralis</i>
browntop*	<i>Agrostis capillaris</i>
burdock*	<i>Arctium minus</i>
bush lawyer	<i>Rubus cissoides</i>
buttercup	<i>Ranunculus</i> sp.
cabbage tree/ti rakau	<i>Cordyline australis</i>
Californian thistle*	<i>Cirsium arvense</i>
Chewings fescue*	<i>Festuca rubra</i> ssp. <i>commutata</i>
cocksfoot*	<i>Dactylis glomerata</i>
daisy*	<i>Bellis perennis</i>
dwarf mallow*	<i>Malva neglecta</i>
elderberry*	<i>Sambucus nigra</i>
five-finger	<i>Pseudopanax arboreus</i>
foxglove*	<i>Digitalis purpurea</i>
fuchsia	<i>Fuchsia excorticata</i>
gorse*	<i>Ulex europaeus</i>
hairy pennywort	<i>Hydrocotyle moschata</i>
hard grass*	<i>Cynosurus rigidum</i>
hawksbeard*	<i>Crepis capillaris</i>
hemlock*	<i>Conium maculatum</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
Himalayan lily*	<i>Cardiocrinum giganteum</i>
horehound*	<i>Marrubium vulgare</i>
kanuka	<i>Kunzea ericoides</i>
korokio	<i>Corokia cotoneaster</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lancewood	<i>Pseudopanax crassifolius</i>
leafless lawyer	<i>Rubus squarrosus</i>
mahoe/whiteywood	<i>Melicytus ramiflorus</i>
maidenhair fern	<i>Adiantum cunninghamii</i>
mapou	<i>Myrsine australis</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
mingimingi	<i>Coprosma propinqua</i>
mistletoe	<i>Ileostylis micranthus</i>
mountain akeake	<i>Olearia avicenniifolia</i>
mouse-ear chickweed*	<i>Cerastium fontanum</i>
mouse-ear hawkweed*	<i>Pilosella officinarum</i>
narrow-leaved plantain*	<i>Plantago lanceolata</i>
native broom	<i>Carmichaelia</i> aff. <i>australis</i>
native jasmine	<i>Parsonsia heterophylla</i>
nettle*	<i>Urtica urens</i>
nodding thistle*	<i>Carduus nutans</i>
pennywort	<i>Hydrocotyle novae-zelandiae</i>
pohuehue	<i>Muehlenbeckia australis</i>
sandwort*	<i>Arenaria serpyllifolia</i>
scrub pohuehue	<i>Muehlenbeckia complexa</i>
silver tussock	<i>Poa cita</i>
sow thistle*	<i>Sonchus oleraceus</i>
suckling clover*	<i>Trifolium dubium</i>
sweet vernal*	<i>Anthoxanthum odoratum</i>

toatoa.....	<i>Haloragis erecta</i>
totara	<i>Podocarpus totara</i>
weeping mapou	<i>Myrsine divaricata</i>
white clover*.....	<i>Trifolium repens</i>
wineberry	<i>Aristotelia serrata</i>
woolly mullein*	<i>Verbascum thapsus</i>
yellowwood.....	<i>Coprosma linariifolia</i>



The 'notable tree': kowhai with abundant mistletoe

References Cited

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