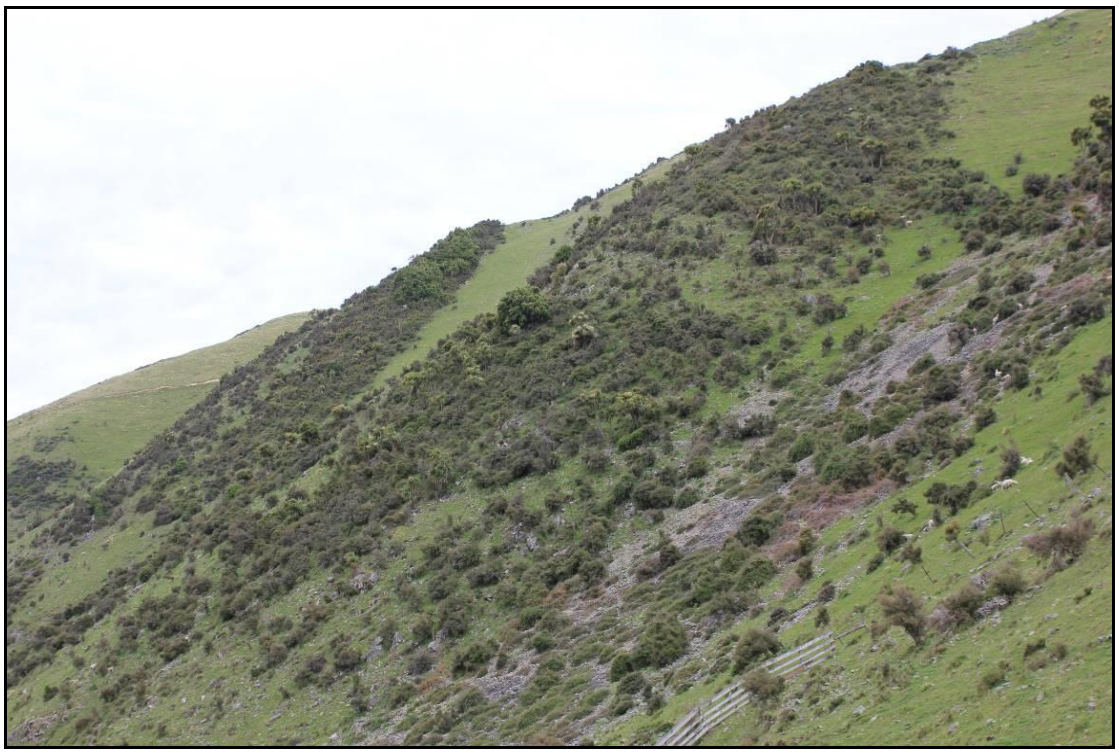
TIMARU DISTRICT

SIGNIFICANT NATURAL AREAS SURVEY

ANDREWS STREAM
ORARI GORGE STATION



Report prepared for Timaru District Council
Mike Harding
November 2018

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Property: ..... Orari Gorge Station
Valuation Reference: ... 24660/02100
Location:..... Andrews Stream
Ecological District:..... Orari Ecological District
TDC Land Type:..... 'Hard Rock Hills and Downs'
Land Environments:..... Q2.1a and K3.1b

ECOLOGICAL CONTEXT:

The Andrews Stream part of Orari Gorge Station property has moderately-steep north-facing slopes and gentler but relatively narrow terraces and flats on the valley floor. Andrews Stream forms the property boundary and also the boundary between Timaru and Mackenzie districts. It lies within Orari Ecological District (McEwen, 1987).

It is likely that the original vegetation of this area was predominantly hardwood (podocarp) forest with matai and totara on lower slopes and mountain totara on upper slopes. Areas of mountain beech forest were likely present. Hardwood species such as kowhai and broadleaf would have been prevalent at steep rocky sites. Shrubland, treeland and tussockland may have occupied steeper slopes and disturbed sites, notably stonefield and screes. A diverse range of hardwood species were present at lower-altitude riverbank (riparian) sites and areas of sedgeland/rushland (wetland vegetation) present on valley floors.

Today indigenous vegetation in this part of Orari Ecological District is largely confined to remnants in gullies or on steep slopes and larger areas of young (regenerating) hardwood forest, especially on damper slopes. 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:

Orari Gorge Station was assessed as part of the District-wide survey of Significant Natural Areas in 2009. Twenty-eight areas, totalling approximately 535 hectares, were described as significant natural areas (SNAs) at that time. This 2018 survey assesses additional areas of indigenous vegetation and fauna habitat on steep slopes in the Andrews Stream catchment. Five new SNAs, totalling approximately 15 hectares, are described and assessed in this report.

SNA No.	Central map reference (NZTM)	Size (ha.)
640a	1453820E-5134250N	3.08
640b	1452800E-5134250N	1.78
640c	1451680E-5133825N	3.58
640d	1451300E-5133830N	4.48
640e	1450320E-5133880N	2.76

SNAs 640a to 640e (right to left), indicated by hatching (larger images are appended to this report).

The boundaries of these SNA are illustrated above and the values described on the SNA form in this report. Note that the boundaries of the SNAs are indicative, rather than precise. These areas meet the ecological significance criteria in Appendix 3 of the Canterbury Regional Policy Statement criteria. SNAs are subject to confirmation by Council. It is expected that SNAs will eventually be listed in the District Plan by way of a notified plan review.

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.

TIMARU DISTRICT SNA SURVEY SNAs 640a to e

Area Name: Andrews Stream **Property:** Orari Gorge Station
Ecological District: Orari **Nearest Locality:** Tripp Settlement
Surveyor: Mike Harding **Survey Time:** 5 hours **Survey Date:** 07-11-2018

General Description:

These five SNAs lie on moderately steep and mostly rocky slopes on the lower hill sides of the valley. They lie within large extensively-grazed paddocks. Areas between the SNAs support pasture with scattered shrubland and small patches of scrub or low forest in gullies and on bluffs. More extensive areas of remnant and regenerating indigenous forest are present at the river sides and on the south-facing slopes across the valley (Blue Mountain Station).

Vegetation:

The main indigenous plant communities present are scrub, shrubland and stonefield-gravelfield. There are smaller patches of low-stature hardwood forest. These plant communities are described below. Naturalised (exotic) species are indicated with an asterisk*.

Shrubland-scrub canopies are dominated by mingimingi (*Coprosma propinqua*). Other important canopy species are matagouri (*Discaria toumatou*), *Coprosma rigida*, lawyer (*Rubus schmidelioides*), scrub pohuehue (*Muehlenbeckia complexa*), native bindweed (*Calystegia tuguriorum*) and native jasmine (*Parsonsia capsularis*).

Scrub alongside Andrews Stream, within SNA 640d.

Other less common canopy species are *Coprosma crassifolia*, mountain akeake (*Olearia avicenniifolia*), mountain wineberry (*Aristotelia fruticosa*), pohuehue (*Muehlenbeckia australis*), Himalayan honeysuckle* (*Leycesteria formosa*), korokio (*Corokia cotoneaster*), porcupine shrub (*Melicytus alpinus* agg.), koromiko (*Veronica salicifolia*), scrambling fuchsia (*Fuchsia perscandens*) and *Clematis marata*. One large shrub of *Coprosma virescens* is present at SNA 640a.

Tree species commonly present in and emergent from shrubland-scrub are broadleaf (*Griselinia littoralis*), kohuhu (*Pittosporum tenuifolium*), cabbage tree (*Cordyline australis*) and, near the valley floor, mountain ribbonwood (*Hoheria lyallii*). Less commonly present are kowhai (*Sophora microphylla*), elderberry* (*Sambucus nigra*) and, at the riverside, grey willow* (*Salix cinerea*). Lower-growing species commonly present are bracken (*Pteridium esculentum*), gooseberry* (*Ribes uva-crispa*), foxglove* (*Digitalis purpurea*) and vetch* (*Vicia sativa*). Other less common low-growing species are male fern* (*Dryopteris filix-mas*) and wall lettuce* (*Mycelis muralis*).

Plant communities within and adjacent to shrubland-scrub are grassland (pasture) and boulderfield-stonefield. Grassland is dominated by exotic pasture grasses, with fescue tussock (*Festuca novae-zelandiae*) and silver tussock (*Poa cita*) present in some areas. Areas of pasture are excluded from the SNAs except for small areas that lie within areas of shrubland or scrub.

Stonefield-gravelfield communities are dominated by bare ground (stones, gravel and occasionally boulders). Plant species commonly present at these sites are porcupine shrub, mingimingi, scrub pohuheue and bracken.

Stonefield within SNA 640b.

Other stonefield-gravelfield plant species are woolly mullein* (*Verbascum thapsus*), horehound* (*Marrubium vulgare*), mouse-ear chickweed* (*Cerastium fontanum*), shepherd's purse (*Capsella bursa-pastoris*), storksbill* (*Erodium cicutarium*), sandwort* (*Arenaria serpyllifolia*), haresfoot trefoil* (*Trifolium arvense*), suckling clover* (*Trifolium dubium*), Californian thistle* (*Cirsium arvense*), Scotch

thistle* (*Cirsium vulgare*), nodding thistle* (*Carduus nutans*), toatoa (*Haloragis erecta*), *Dichondra repens*, blue wheatgrass (*Anthosachne solandri*), prickly shield fern (*Polystichum vestitum*), maidenhair spleenwort (*Asplenium trichomanes*), necklace fern (*Asplenium flabellifolium*), *Asplenium appendiculatum*, *Blechnum penna-marina* and the moss *Triquetrella papillata*.

One small area of low-forest is present on a rocky ridge within SNA 640c. It is dominated by broadleaf. The open understorey is dominated by *Coprosma crassifolia*. Additional low-growing species present in the forest are *Asplenium richardii* and button fern (*Pellaea rotundifolia*).

Broadleaf-dominated forest on rocky ridge within SNA 640c.

Three different forms of porcupine shrub (*Melicytus alpinus* agg.) are present: a low-growing thick-stemmed form; a bushy leafy form growing to 50cm tall; and a densely-divaricating almost leafless form growing to more than 1m tall.

Leafless form of porcupine shrub.

Fauna Habitat:

The most common native bird species observed at or adjacent to the sites during this brief survey was grey warbler (*Gerygone igata*). Other species observed at several locations were fantail (*Rhipidura fuliginosa*) and Australasian harrier (*Circus approximans*). A pair of rifleman (*Acanthisitta chloris*) was observed at SNA 640d. Additional native bird species recorded at nearby SNAs in 2009 and likely to utilise habitats at the sites are kereru/NZ pigeon (*Hemiphaga novaeseelandiae*), bellbird (*Anthornis melanura*) silvereye (*Zosterops lateralis*), welcome swallow (*Hirundo tahitica*) and karearea/eastern falcon (*Falco novaeseelandiae*). Whio/blue duck (*Hymenolaimus malacorhynchos*) were present in Andrews Stream until approximately ten years ago.

Skinks were observed at several locations during this survey. One species positively identified was McCann's skink (*Oligosoma maccanni*). Canterbury grass skink (*Oligosoma* aff. *polychroma* Clade 4) and Southern Alps gecko (*Woodworthia* "Southern Alps") have also been recorded from sites in this area. All the sites provide suitable habitat for lizards.

Notable Flora, Fauna and Habitats:

Two plant species listed as 'at risk, declining' by de Lange *et al* (2018) are present at the sites: matagouri and *Coprosma virescens*. The sites provide suitable habitat for Canterbury grass skink, a species listed as 'at risk, declining' by Hitchmough *et al* (2016). Another notable species recorded is the leafless divaricating form of porcupine shrub (*Melicytus alpinus* agg.).

Large shrub of Coprosma virescens beneath a kowhai tree at SNA 640a.

Condition and Management

Areas of shrubland, scrub and low-forest within these SNAs are in good condition and are regenerating strongly. The only significant woody weed present is gooseberry, though this is only common at the down-valley SNAs (640a to c). Open plant communities (stonefield-gravelfield) include a number of widespread exotic plant species, notably grasses, thistles, foxglove, woolly mullein and horehound. However, indigenous plant species and un-vegetated rocks and stones form the dominant ground-cover and provide good-quality habitat for lizards. Broom* (*Cytisus scoparius*) and grey willow* are present alongside Andrews Stream.

All except the most inaccessible parts of the sites are grazed by sheep and cattle. This does not appear to be hindering regeneration of indigenous species, though open sites are affected by tracking especially from cattle. Possum sign was observed but was not common. A group of feral pigs (a sow, two boars and five well-grown piglets) was observed at SNA 640b. Important management issues are continued control of feral animals (especially possums and feral pigs) and control of woody weeds, notably broom* and grey willow.

ASSESSMENT AGAINST REGIONAL POLICY STATEMENT CRITERIA:

Criteria	Significant?	Comments
Representativeness	**Yes**	Indigenous vegetation that is typical/characteristic of the natural diversity (shrubland-scrub-forest on rocky slopes) of the ecological district.
Rarity/Distinctiveness	**Yes**	Supports populations of 'at risk' plant and lizard species.
Diversity and Pattern	**No**	Does not contain a high diversity of indigenous species or habitat types.
Ecological Context	**Likely**	It is part of a network of fauna habitat.

Discussion:

The parts of the property included within these five SNAs are steep and in places inaccessible. They have been informally protected by the landowner and have little potential for further development. Vegetation within the SNAs is in good condition and provides habitat for 'at risk' plant and animal species. These areas make a useful contribution to the protection of indigenous biodiversity in this part of Timaru District.

References Cited:

de Lange, P.J; Rolfe, J.R; Barkla, J.W; Courtney, S.P; Champion, P.D; Perrie, L.R.; Beadel, S.M.; Ford, K.A.; Breitweiser, I.; Schönberger, I.; Hindmarsh-Walls, R.; Heenan, P.B; Ladley, K. 2018. *Conservation status of New Zealand indigenous vascular plants, 2017*. Department of Conservation, Wellington, New Zealand.

Hitchmough, R.; Barr, B.; Lettink, M.; Monks, J.; Reardon, J.; Tocher, M.; van Winkel, D.; Rolfe, J. 2016. Conservation status of New Zealand reptiles, 2015. *New Zealand Threat Classification Series 17*. Department of Conservation, Wellington.

McEwen, W.M. (editor) 1987. Ecological regions and districts of New Zealand, third revised edition (Sheet 3). *New Zealand Biological Resources Centre Publication No.5*. Department of Conservation, Wellington, 1987.

SNA 640a

SNA 640a

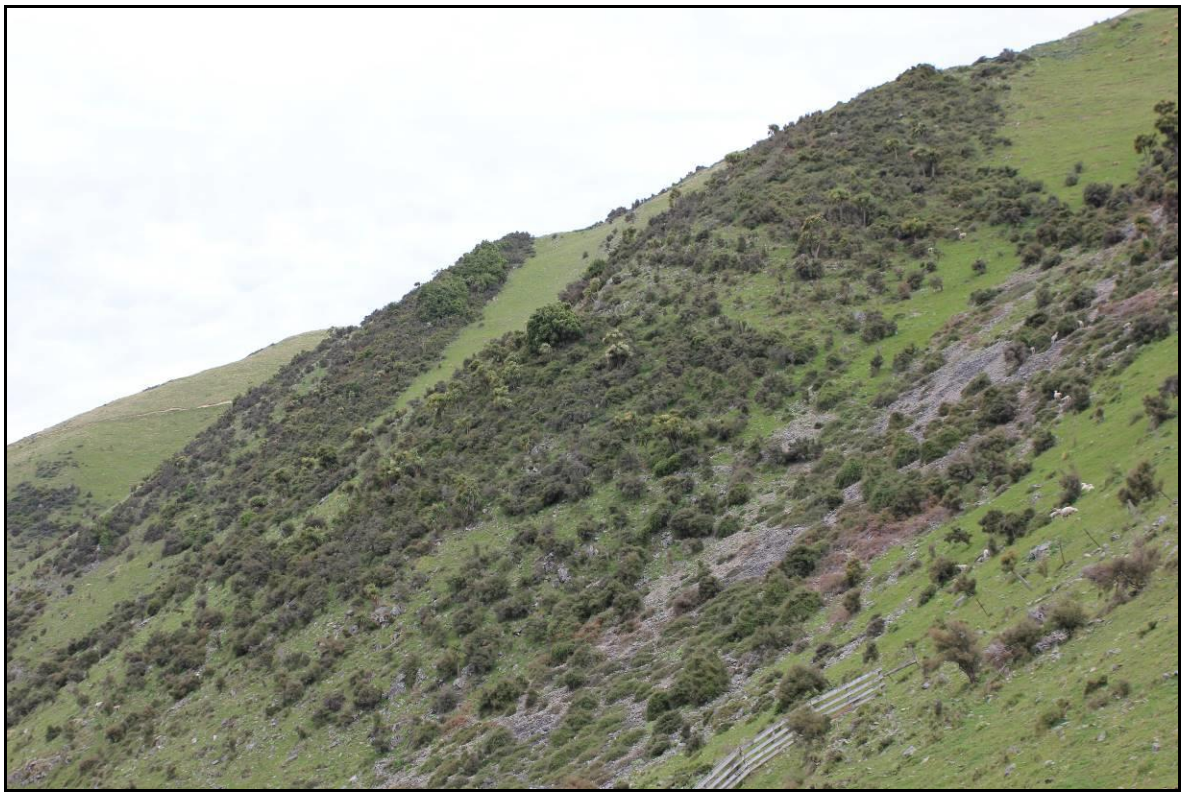
SNA 640b

SNA 640b

SNA 640c

SNA 640c

SNA 640d



SNA 640d (and SNA 640c at left rear).

SNA 640e