

**TIMARU DISTRICT**

**SIGNIFICANT NATURAL AREAS**  
**SURVEY**

**ELLERY PROPERTY**  
**(COOPERS CREEK FLOODPLAIN)**



Report prepared for the Timaru District Council by Mike Harding  
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# TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

## PROPERTY REPORT

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### **PROPERTY DETAILS:**

**Owner:** ..... JS Ellery

**Valuation Reference:** ..... 24640/298.00 and 24640/303.00

**Location:**..... Between Palmer Road and Arundel Bellfield Road, south of Coopers Creek.

**Ecological District:** ..... Low Plains

**TDC Land Type:**..... Plains

**Land Environment:**..... L1.2a

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### **ECOLOGICAL CONTEXT:**

The property lies at the inland edge of the Low Plains Ecological District on a recent alluvial surface (floodplain) of Coopers Creek. The original vegetation of this area would probably have been kanuka-kowhai forest/treeland or matagouri-*Coprosma* shrubland on stable alluvial surfaces and grassland-herbfield-mossfield on more recent surfaces. The indigenous fauna would have been significantly more numerous and diverse, with a greater range of birds, lizards and invertebrates than is presently found in the area.

Indigenous vegetation at this site comprises areas of grassland/mossfield/stonefield with scattered patches of shrubland. Plant communities at the site have a high component of naturalized (exotic) plant species. However, the site does not appear to have been cultivated or subjected to intensive land uses. The site therefore represents a rare example of a lowland alluvial surface at which indigenous mosses, herbs, grasses and shrubs have been able to survive or recolonize. The site supports one of the largest known populations of *Muehlenbeckia ephedroides* in this part of the ecological district.

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### **SIGNIFICANT AREAS ON THE PROPERTY:**

The property was surveyed as part of the District-wide survey of Significant Natural Areas in February 2011. One area (SNA 111a), which includes the less-modified parts of the site, is regarded as significant when assessed against the District Plan criteria. An adjacent site, SNA 111b, is land administered by Timaru District Council and leased to the property.

These SNAs are illustrated on the aerial photograph and described in greater detail in this report. These SNAs meet the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19), though will require conservation management to maintain their ecological values in the long term (criterion vii, page B19). SNAs are subject to confirmation by Council after regarding the matters listed under Final Considerations (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.



### **General Description:**

These two SNAs lie on the floodplain of Coopers Creek between Palmer Road and Arundel Bellfield Road, southeast of the bridge over the Orari River on State Highway 79. Coopers Creek is east of and parallel to the Orari River. It is normally dry, though a central channel occasionally carries flood flows. These SNAs cover an area of uncultivated soils, which is now a very rare feature on the Canterbury Plains. A small area that is contiguous with SNA 111a, and farmed as part of the property, is Council-owned land. This area is described in a separate report as SNA 111b. SNA 111a comprises an area of approximately 18.26ha; SNA 111b comprises approximately 1.91ha.

### **Plant Communities:**

Plant communities of these SNAs are similar and therefore described together. These plant communities are modified by the presence, and in most areas dominance, of naturalized (exotic) grasses and herbs. Despite this, indigenous grasses, herbs and shrubs are present throughout the SNAs, providing an example, albeit modified, of the vegetation that was once widespread on the Canterbury Plains. Three main plant communities are present, depending on substrate and drainage, though they are variable and merge with one another. These three plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk\*.

#### **Stony free-draining sites:**

These areas are variously dominated by moss, sheep's sorrel\*, catsear\*, browntop\*, creeping pohuehue, narrow-leaved plantain\*, sand spurrey\* and bare ground. Other species present are a viper's bugloss\*, haresfoot trefoil\*, white clover\*, mouse-ear hawkweed\*, *Rytidosperma clavatum*, Chewings fescue\*, sweet vernal\*, vulpia hair grass\*, yarrow\*, storksbill\*, Australian sheep's bur\*, patotara, woolly moss, wire moss and a lichen (*Chondropsis semiviridis*).





*Typical cover at a free-draining site: grasses, moss, patotara and Muehlenbeckia ephedroides.*

Occasionally present are the 'at risk' prostrate shrub, *Muehlenbeckia ephedroides*, *Dichondra repens*, stonecrop\*, suckling clover\*, Yorkshire fog\*, nodding thistle\* and Deptford pink\*.

#### Low swales:

These swales support denser grassland dominated by browntop\* and Chewings fescue\*. Other species typically present are sweet vernal\* and the indigenous grasses *Rytidosperma clavatum* and *Elymus solandri*. Occasionally present are woolly mullein\*, hairy nightshade\*, red clover\*, tall oat grass\*, cocksfoot\* and, at one location at the paddock edge, toadflax\* (*Linaria vulgaris*).



*Porcupine shrub and grass sward in a shallow channel (swale)*

Scattered throughout these communities are low shrubs of porcupine shrub (*Melicactus alpinus*), matagouri and occasionally gorse\*, broom\* and hawthorn\*. Occasionally present within the shrubs is the indigenous plume grass (*Dichelachne crinita*).

#### Stream channels:

Other species present on areas of stony ground in the active stream channel are dandelion\*, hemlock\*, black nightshade\*, field speedwell\*, Californian thistle\*, *Oxalis exilis*, creeping yellow cress\*, broad-leaved plantain\* and broad-leaved dock\*. Crack willow\* trees and barley grass\* are present at several separate locations on the stream-channel bank.

#### **Birds/Fauna Observed:**

Native birds observed during this brief survey were grey warbler (nearby), Australasian harrier and southern black-backed gull (overhead). No lizards were observed, though it is likely that shrubs and areas of stony ground provide suitable habitat for lizards.

#### **Notable Flora, Fauna and Habitats:**

The most important feature of this area is that it is a rare and relatively large example of an uncultivated lowland alluvial surface. Such areas are nationally rare and almost completely lost from this part of the Canterbury Plains except at some roadside locations. Despite the dominance of naturalized species, a suite of typical indigenous species persist, notably creeping pohuehue, patotara, wire moss, woolly moss, grasses (*Rytidosperma clavatum*, *Elymus solandri* and *Dichelachne crinita*) and the 'at risk' shrub *Muehlenbeckia ephedroides*. This area, including nearby roadside grasslands, supports one of the largest known populations of *Muehlenbeckia ephedroides* in this part of Canterbury.

#### **Notable Plant and Animal Pests:**

The only woody weeds present are scattered plants of gorse, broom, hawthorn and crack willow. These species are nowhere dominant and are presently contained by grazing. A large number of naturalized grasses and herbs are present. Of these, browntop, Chewings fescue, narrow-leaved plantain, catsear, stonecrop and possibly mouse-ear hawkweed appear the most invasive. Hares were observed and rabbits are likely to be present. The site is grazed, presently by young dairy cattle.

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

The boundaries of these two areas have been drawn to encompass the extent of the uncultivated surface. Natural values vary within this area, but all parts of the SNAs have representative ecological values and are part of a rare ecosystem. The SNAs are fenced from adjacent paddocks. SNA 111a is contiguous with the Council-owned SNA 111b.

#### **Condition and Management Issues:**

The area is in a modified condition, though still retains important indigenous values. The main management issue is control or containment of invasive introduced grasses and herbs. Past management of the area has enabled indigenous species to persist. The challenge now is to determine what management regime would be most beneficial to the survival and recovery of indigenous plant species. Periodic grazing by sheep is probably the best form of management, at least till further information on management of such sites is available. Cultivation, over-sowing, irrigation and probably fertilizing should be avoided. Woody weeds should be removed.



## ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	<b>M</b>	A modified remnant of the plains grassland/shrubland community.
Rarity	<b>H</b>	Uncultivated lowland alluvial surfaces in Canterbury are now very rare; this is the only known site of substantial size in this part of the Low Plains Ecological District. Supports an extensive population of an 'at risk' plant, <i>Muehlenbeckia ephedroides</i> .
Diversity and pattern	<b>L/M</b>	Low indigenous species diversity, though the site has a diversity of landform features.
Distinctiveness/special features	<b>M</b>	The unmodified stream channels are an interesting feature. The site probably provides habitat for lizards.
Other Criteria		
Size/shape	<b>H</b>	A very large site for the Low Plains Ecological District and probably one of the largest remaining on this part of the Canterbury Plains.
Connectivity	<b>L/M</b>	This area is isolated from other areas of indigenous vegetation although native species also persist on adjacent roadsides.
Long-term Sustainability	<b>L/M</b>	The site is vulnerable and will probably require careful management to maintain its ecological values in the long term.

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

This large area has survived modification through the awareness and efforts of the landowner, Mr Ellery. Almost all other sites in this part of Timaru District have been converted to intensive land uses such as dairying. The presence of the ephemeral channel of Coopers Creek has probably discouraged development, though most of the site could easily be developed for more intensive land uses. Mr Ellery is sympathetic to its values and protection.

### Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are that it is a rare and relatively large example of an uncultivated lowland alluvial surface. It supports a suite of representative indigenous grasses, herbs and shrubs, including a good population of an 'at risk (declining) shrub, *Muehlenbeckia ephedroides*.



*An upright plant of Muehlenbeckia ephedroides sprawling through porcupine shrub.*

## 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)

Australian sheep's bur*	<i>Acaena agnipila</i>
barley grass*	<i>Critesion</i> sp.
black nightshade*	<i>Solanum nigrum</i>
broad-leaved dock*	<i>Rumex obtusifolius</i>
broad-leaved plantain*	<i>Plantago major</i>
broom*	<i>Cytisus scoparius</i>
browntop*	<i>Agrostis capillaris</i>
Californian thistle*	<i>Cirsium arvense</i>
catsear*	<i>Hypochaeris radicata</i>
Chewings fescue*	<i>Festuca rubra</i> ssp. <i>commutata</i>
cocksfoot*	<i>Dactylis glomerata</i>
crack willow*	<i>Salix fragilis</i>
creeping pohuehue	<i>Muehlenbeckia axillaris</i>
creeping yellow cress*	<i>Rorippa sylvestris</i>
dandelion*	<i>Taraxacum officinale</i>
Deptford pink*	<i>Dianthus armeria</i>
field speedwell*	<i>Veronica arvensis</i>
gorse*	<i>Ulex europaeus</i>
hairy nightshade*	<i>Solanum physalifolium</i>
haresfoot trefoil*	<i>Trifolium arvense</i>
hawthorn*	<i>Crataegus monogyna</i>
hemlock*	<i>Conium maculatum</i>
kanuka	<i>Kunzea ericoides</i>
kowhai	<i>Sophora microphylla</i>
matagouri	<i>Discaria toumatou</i>
mouse-ear hawkweed*	<i>Hieracium pilosella</i>
narrow-leaved plantain*	<i>Plantago lanceolata</i>
nodding thistle*	<i>Carduus nutans</i>
patotara	<i>Leucopogon fraseri</i>
plume grass	<i>Dichelachne crinita</i>
porcupine shrub	<i>Melicytus alpinus</i>
sand spurrey*	<i>Spergularia rubra</i>
sheep's sorrel*	<i>Rumex acetosella</i>
stonecrop*	<i>Sedum acre</i>
storksbill*	<i>Erodium cicutarium</i>
suckling clover*	<i>Trifolium dubium</i>
sweet vernal*	<i>Anthoxanthum odoratum</i>
tall oat grass*	<i>Arrhenatherum elatius</i>
viper's bugloss*	<i>Echium vulgare</i>
vulpia hair grass*	<i>Vulpia bromoides</i>
white clover*	<i>Trifolium repens</i>
wire moss	<i>Polytrichum juniperinum</i>
woolly moss	<i>Racomitrium</i> sp.
woolly mullein*	<i>Verbascum thapsus</i>
yarrow*	<i>Achillea millefolium</i>
Yorkshire fog*	<i>Holcus lanatus</i>