

TIMARU DISTRICT COUNCIL
SIGNIFICANT NATURAL AREAS
SURVEY
WASHDYKE FLAT WETLAND



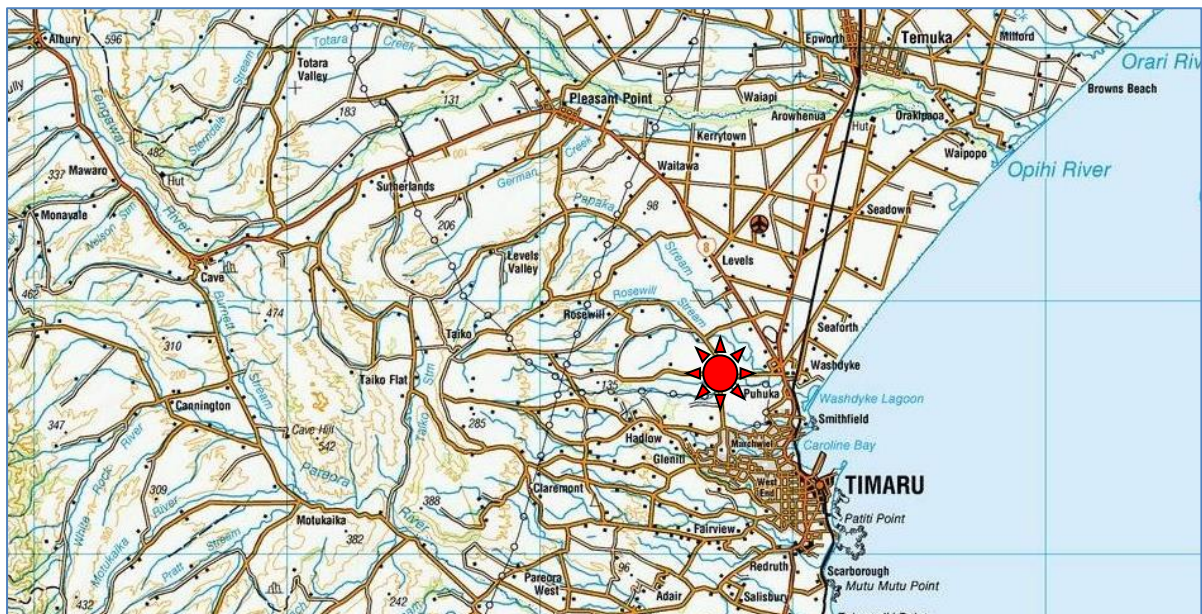
Report prepared for Timaru District Council
Mike Harding
April 2022

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY PROPERTY REPORT

PROPERTY DETAILS:

Owners: O'Neill/Williams/Crossan
Valuation References: . 24840-09802/24840-09800/24840-09900
Location:..... Rosewill Valley Road, Timaru
Ecological District:..... Makikihi
Land Environment: N3.1b

LOCATION AND DESCRIPTION:



Location of Washdyke Flat Wetland (red star).

Washdyke Flat Wetland is located on low-lying country inland from (west of) Washdyke, at the northern edge of Timaru. Underlying geology is unconsolidated mud, sand, gravel and peat of alluvial origin (GNS Science, NZ Geology Web Map.). It is drained by a small tributary of Oakwood Stream, which flows via Washdyke Creek to the coast at Washdyke Lagoon.

ECOLOGICAL CONTEXT:

The Washdyke Flat Wetland lies in Makikihi Ecological District (McEwen, 1987), and within the N3.1b Level IV Land Environment as defined by Leathwick *et al* (2003).

It is likely that the original vegetation of this low-lying part of the ecological district was podocarp-broadleaved forest, dominated by kahikatea, totara, lowland ribbonwood, kowhai, broadleaf and other broadleaved trees, with sedgeland-rushland-reedland at poorly-drained sites.

Today the original vegetation cover in this part of Makikihi Ecological District is largely confined to small remnants in gullies or on steep slopes, with occasional much-depleted valley-floor wetlands. 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.

SURVEY METHOD AND COVERAGE:

The field survey upon which this report is based was undertaken over two hours on 6th April 2022. The purpose of the field survey was to determine the presence and extent of significant indigenous vegetation and significant habitats of indigenous fauna.

Names of indigenous plant species cited in this report are as listed on the Ngā Tipu o Aotearoa-New Zealand Plants database (Manaaki Whenua-Landcare Research). Plant community names follow the method proposed by Atkinson (1985). The threat status of indigenous species is as listed in publications of the Department of Conservation, as referenced in this report.

SIGNIFICANT NATURAL AREAS ON THE PROPERTY:

One area is assessed as a significant natural area (SNA) under the Timaru District Plan and Canterbury Regional Policy Statement (RPS) criteria. This area is a wetland which extends across four properties. It is separated into two parts by Rosewill Valley Road. This report describes the upstream part, on the west side of Rosewill Valley Road (SNA 968b).

SNA No.	Central Map Reference (NZTM)	Aprox. size(ha)	Vegetation/habitat type
968a	1457062E-5087014N	0.88	<i>Typha</i> reedland; <i>Carex</i> sedgeland; willow forest
968b		1.89	

The extent of this SNA is illustrated on the aerial photograph below. The SNA is described in greater detail on the SNA Survey Form in this report.



Washdyke Flat Wetland SNA 968b (left-hand white-hatched area).

TIMARU DISTRICT SNA SURVEY

SNA 968b

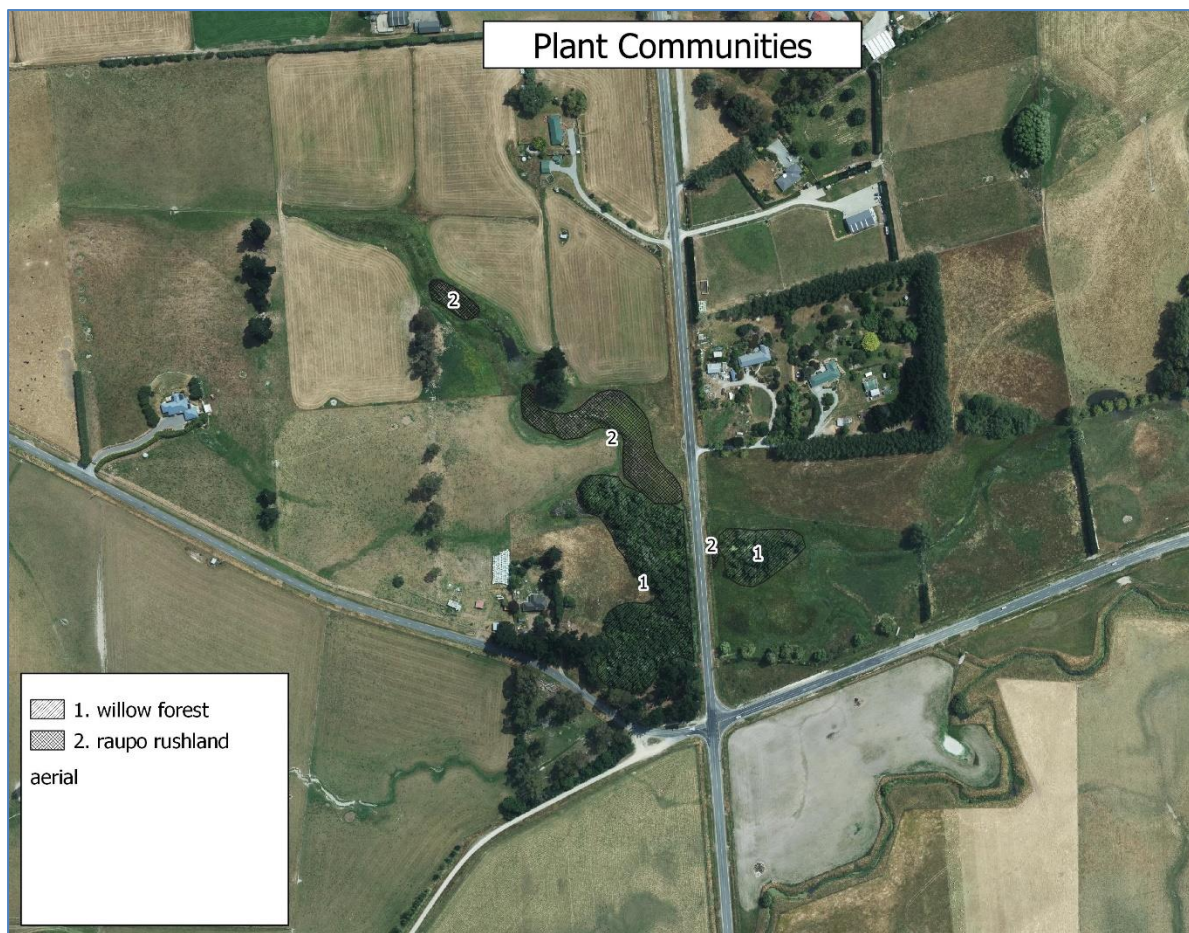
Ecological District: Makikihi	Nearest Locality: Washdyke	
Map ref. (NZTM): 1457062-5087014N	Size (ha): 1.89	Altitude (m): 10
Surveyor/Assessor: Mike Harding	Survey Time: 2 hours	Survey Date: 06-04-22

GENERAL DESCRIPTION:

This SNA comprises a poorly-drained area (wetland) on the valley floor of a small un-named stream in the Oakwood Stream/Washdyke Creek catchment. It is part of a larger area of wetland vegetation that extends downstream on the east side of Rosewill Valley Road (SNA 968a). The wetland is confined to the gently-sloping valley floor.

VEGETATION/HABITAT TYPES:**Vegetation**

Three main vegetation types are present at the wetland: raupo reedland; *Carex* sedgeland; and willow forest. This vegetation is described below. Naturalised (exotic) species are indicated with an asterisk*. A list of species recorded at the site is appended to this report. The approximate extents of the raupo reedland and willow forest are illustrated below.



Approximate extents of raupo reedland and willow forest at SNA 968.

Raupo reedland:

The central part of the wetland supports reedland dominated by raupo (*Typha orientalis*). Other prominent species present are *Carex sinclairii* and pukio (*Carex secta*). Other species at the margins, or at open sites, are as described for the sedgeland community.



Raupo reedland at the central part of the wetland.

Carex sedgeland:

Low-growing vegetation at the wetland comprises sedgeland, dominated by *Carex sinclairii*. Other plant species present are rautahi (*Carex coriacea*), pukio, jointed rush* (*Juncus articulatus*), soft rush* (*Juncus effusus*), sharp spike-sedge (*Eleocharis acuta*), vetch* (*Vicia sativa*), *Epilobium billardioreanum*, creeping buttercup* (*Ranunculus repens*), celery buttercup* (*Ranunculus sceleratus*), tarweed* (*Parentucellia viscosa*), water cress* (*Rorippa* sp.), Yorkshire fog* (*Holcus lanatus*) and stitchwort* (*Stellaria graminea*). Also present in areas of open water are duckweed (*Lemna minor*) and retoreto (*Azolla filiculoides*).

The sedgeland vegetation grades to grassland at better drained sites at the wetland edge. Additional species present at the sedgeland margin are gorse* (*Ulex europaeus*), broom* (*Cytisus scoparius*), blackberry* (*Rubus fruticosus* agg.), white clover* (*Trifolium repens*), red clover* (*Trifolium pratense*), yarrow* (*Achillea millefolium*), narrow-leaved plantain* (*Plantago lanceolata*), broad-leaved dock* (*Rumex obtusifolius*), Chewings fescue (*Festuca rubra*), cocksfoot* (*Dactylis glomerata*), Scotch thistle* (*Cirsium vulgare*) and Californian thistle* (*Cirsium arvense*). Other species present at the paddock edge are plum* (*Prunus cerasifera*), elder* (*Sambucus nigra*), Lombardy poplar* (*Populus nigra*) and radiata pine* (*Pinus radiata*).

A small patch of three-square (*Schoenoplectus pungens*) is present at one location on the south-west edge of the wetland.



Carex sinclairii sedgeland (foreground); grading to raupo reedland (rear).

Willow forest:

A substantial part of the wetland, adjacent to Rosewill Valley Road, supports forest dominated by grey willow* (*Salix cinerea*). Other canopy or sub-canopy species are crack willow* (*Salix fragilis*), ti/cabbage tree (*Cordyline australis*) and kohuhu (*Pittosporum tenuifolium*). Understorey species are *Coprosma propinqua*, *Coprosma robusta*, *C. robusta* X *propinqua*, kohuhu, ti/cabbage tree, hawthorn* (*Crataegus monogyna*), ivy* (*Hedera helix*) and spindle tree* (*Euonymus europaeus*).

Forest-floor species are pukio, swamp kiokio (*Blechnum minus*) and male fern* (*Dryopteris filix-mas*). Additional species present at the forest margin are bittersweet* (*Solanum dulcamara*), blackberry* and black nightshade* (*Solanum nigrum*).

Habitats of Indigenous Fauna

Native bird species observed at or adjacent to the SNA during this survey were fantail (*Rhipidura fuliginosa*), grey warbler (*Gerygone igata*), harrier (*Circus approximans*), paradise shelduck (*Tadorna variegata*) and pukeko (*Porphyrio porphyrio*).



Willow forest, with ti/cabbage tree and kobuhu.



Willow forest, with kobuhu, Coprosma robusta and swamp kiokio.

RARE/NOTABLE SPECIES, HABITATS OR COMMUNITIES:

The site supports wetland vegetation; an ecosystem which is depleted nationally and listed as a priority for protection (MfE & DOC, 2007). The Level IV Land Environment (N3.1b) in which the SNA lies is an ‘acutely threatened’ land environment, with less than 10% of indigenous cover remaining nationally (Cieraad *et al*, 2015). No ‘threatened’ or ‘at risk’ plant or bird species were recorded at the site during this survey.

ASSESSMENT OF ECOLOGICAL SIGNIFICANCE:

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 (RPS), with reference to the guidelines for application of these criteria (Wildlands, 2013); and by criteria in the Timaru District Plan, with reference to assessment guidelines (Harding, 2012).

Selecting boundaries for SNAs can be problematic, as vegetation boundaries are not precise (plant communities frequently grade from one type to another) and habitats of indigenous fauna are not easily determined through brief site surveys. In this assessment the SNA boundary is drawn to encompass the main areas of wetland vegetation. This includes areas dominated by grey willow but excludes areas dominated by pasture grasses.

Assessment against Canterbury Regional Policy Statement Appendix 3 criteria:

Criteria	Yes/No Rank	Assessment
Representativeness	Yes M	1. A degraded example of indigenous vegetation, representing one of the best that remains in this part of the ecological district.
Rarity/Distinctiveness	Yes H	3. Indigenous vegetation/habitat that has been reduced to less than 20% of its former extent in the ecological district.
Diversity and Pattern	No L	7. A low diversity of indigenous ecosystems, habitat types, or taxa.
Ecological Context	Yes	9. A riparian wetland on a stream that flows into a coastal lagoon.

Assessment against Timaru District Plan Part B criteria:

Primary Criteria	Rank	Assessment
Representativeness	M	A depleted example of indigenous vegetation which is typical of that remaining in the ecological district.
Rarity	H	The area supports indigenous vegetation that has been reduced to <10% of its former extent; The area supports a nationally-depleted ecosystem (wetland).
Diversity and Pattern	L/M	A substantially depleted indigenous plant community.
Distinctiveness/Special Features	L	The area does not support species at distributional limits, intact sequences, or other special features. Fauna habitat

		was not thoroughly surveyed.
Other Criteria		
Size/Shape	M	The area is moderate-sized, and partly buffered.
Connectivity	M	The area is isolated from other areas of indigenous vegetation/habitat but is part of a lowland stream system.
Sustainability	M	The area is modified, but the indigenous vegetation appears resilient.

The area is significant when assessed against the Canterbury Regional Policy Statement criteria, principally because it supports indigenous vegetation that has been reduced to less than 20% of its former extent in the ecological district, and supports a riparian wetland in the catchment of a coastal lagoon. It supports the largest known area of raupo reedland in this part of the ecological district.

CONDITION AND MANAGEMENT:

This part of the wetland is in relatively good condition. Most parts are not grazed, and elsewhere grazing pressure is low. There are no obvious signs of artificial drains, though the upper (north-west) part of the wetland is modified by a vehicle crossing (culvert) which appears to have created a small pond.

Exotic plant species are common, as is typical for lowland wetlands, though the reedland and sedgeland communities are dominated by indigenous species. Important invasive exotic species present are grey willow, gorse, broom, hawthorn, blackberry and ivy.

Ecological and hydrological values of the wetland would be improved by protection of the upper (north-west) part from grazing, and removal or control of invasive weeds. Priority species for weed control are grey willow, ivy and gorse.

REFERENCES CITED:

Atkinson, I.E.A. 1985. Derivation of mapping units for an ecological survey of Tongariro National Park, North Island, New Zealand. *NZ Journal of Botany* 23: 361-378.

Cieraad, E.; Walker, S.; Price, R.; Barringer, J. 2015. An updated assessment of indigenous cover remaining and legal protection in New Zealand's land environments. *NZ Journal of Ecology* 39: 309-315.

Harding, M.A. 2012. Survey and assessment of significant natural areas (SNAs) Timaru District: Guidelines for application of the District Plan criteria. *Unpublished Report*, Timaru District Council. 10p.

Leathwick, J.; Wilson, G.; Rutledge, D.; Wardle, P.; Morgan, F.; Johnston, K.; McLeod, M.; Kirkpatrick, R. 2003. *Land Environments of New Zealand*. David Bateman, Auckland. 184p.

McEwen, W.M. (editor) 1987. Ecological regions and districts of New Zealand, third revised edition (Sheet 4). *New Zealand Biological Resources Centre Publication No.5*. Department of Conservation, Wellington, 1987.

MfE and DOC, 2007. Protecting Our Places. Ministry for the Environment and Department of Conservation, Wellington.

Wildlands. 2013. Guidelines for the application of ecological significance criteria for indigenous vegetation and habitats of indigenous fauna in Canterbury Region. *Contract Report 2289i*. Environment Canterbury, Christchurch.



The upstream (north-west) part of Washdyke Flat Wetland (SNA 968b).

Species List

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

Abundance classes:

: r=rare; o=occasional; m=moderate numbers; lm= locally moderate; c=common; lc=locally common; f=frequent; lf=locally frequent; e=present only at edge/margin; x=present but abundance not noted; p=planted; a=adjacent/nearby (birds)

Indigenous Plant Species

Scientific name	Common name	Abundance
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Trees, shrubs, sub-shrubs, lianes (woody plants)

Coprosma propinqua	mingimingi.....	o
Coprosma robusta.....	karamu.....	o
Coprosma robusta X propinqua.....	hybrid karamu	o
Cordyline australis	cabbage tree/ti rakau	o
Pittosporum tenuifolium	matipo/kohuhu.....	o

Ferns and Fern Allies

Azolla filiculoides	retoreto.....	lm
Blechnum minus	swamp kiokio	o

Herbaceous (non-woody) plants

Carex coriacea	rautahi.....	lc
Carex secta	pukio.....	o
Carex sinclairii.....	sedge	lc
Eleocharis acuta	spike sedge.....	m
Epilobium billardiereanum.....	willowherb	o
Lemna minor	duckweed	o
Schoenoplectus pungens	three-square	e
Typha orientalis	raupo.....	lc

Naturalised (exotic) Plant Species

Achillea millefolium	yarrow.....	o
Cerastium fontanum	mouse-ear chickweed.....	o
Cirsium arvense	Californian thistle	lm
Cirsium vulgare	Scotch thistle	o
Crataegus monogyna	hawthorn.....	o
Cytisus scoparius	broom.....	o
Dactylis glomerata	cocksfoot.....	lc
Dryopteris filix-mas	male fern	o
Euonymus europaeus	spindle tree.....	o
Festuca rubra ssp. commutata	Chewings fescue	e
Hedera helix	ivy.....	o
Juncus articulatus	jointed rush.....	lc
Juncus effusus	soft rush	o
Parentucellia viscosa.....	tarweed	o
Pinus radiata	radiata pine	e
Plantago lanceolata	narrow-leaved plantain	m
Populus nigra	Lombardy poplar.....	e
Prunus cerasifera	cherry plum.....	e

Ranunculus repens	creeping buttercup.....	lm
Ranunculus sceleratus	celery-leaved buttercup.....	o
Rorippa sp.	watercress.....	o
Rubus fruticosus agg.	blackberry.....	o
Rumex obtusifolius	broad-leaved dock	o
Salix cinerea	grey willow.....	lc
Salix fragilis	crack willow.....	o
Sambucus nigra	elderberry	e
Solanum dulcamara	bittersweet.....	e
Stellaria graminea	stitchwort	o
Trifolium pratense	red clover	o
Trifolium repens	white clover	lc
Ulex europaeus	gorse.....	e
Vicia sativa	vetch	o



Swamp kiokio (Blechnum minus) at SNA 968b.