

TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

LANE PROPERTY
(RANGATIRA CREEK)



Report prepared for the Timaru District Council by Mike Harding
July 2010

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Keith and Margaret Lane
Valuation Reference: 24680/116.00
Address: Earl Road, Temuka
Location: On the floodplain of Rangatira Creek, at the western corner of the property near Seven Sisters Road
Ecological District: Low Plains
TDC Land Type: Plains
Land Environment: L1 (southern lowlands)

ECOLOGICAL CONTEXT:

The property lies within the Low Plains Ecological District on a recent alluvial surface (floodplain) of Rangatira Creek. The original vegetation of this area would probably have been podocarp-hardwood forest, dominated by kahikatea, pokaka and lowland ribbonwood. Permanently wet areas may have supported flax swamp or raupo wetland. However, as so few undisturbed sites remain in this part of Timaru District it is difficult to determine the exact nature of the original vegetation. The indigenous fauna would probably have been more numerous and diverse, with a greater range of birds, lizards, fish and invertebrates than is presently found in the area.

Indigenous vegetation on this property comprises a relatively extensive, though narrow, flaxland and associated areas of sedgeland (wetland) vegetation alongside the meandering channel of Rangatira Creek and a small wetland nearby. The flaxland is one of very few sizeable examples of indigenous streamside vegetation in this part of Timaru District. It is isolated from other areas of indigenous vegetation, though the intermittently flowing creek links freshwater habitat at the site to other areas of habitat. Rangatira Creek provides important habitat for Canterbury mudfish; a nationally-endangered species.

SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas in June 2010. Two areas, one alongside Rangatira Creek at the western margin of the property and one beside Seven Sisters Road, are regarded as significant when assessed against the District Plan criteria. These Significant Natural Areas (SNAs) are illustrated on the attached aerial photograph and described in greater detail 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 (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 or other areas of indigenous vegetation should be directed to the District Planner.

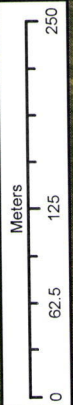
Scientific names of species cited by common name in this report

(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)	
bittersweet*	<i>Solanum dulcamara</i>
blackberry*	<i>Rubus fruticosus</i>
black nightshade*	<i>Solanum nigrum</i>
bracken	<i>Pteridium esculentum</i>
broad-leaved dock*	<i>Rumex obtusifolius</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
chickweed*	<i>Stellaria media</i>
cleavers*	<i>Galium aparine</i>
crack willow*	<i>Salix fragilis</i>
creeping buttercup*	<i>Ranunculus repens</i>
curled dock*	<i>Rumex crispus</i>
elderberry*	<i>Sambucus nigra</i>
flax	<i>Phormium tenax</i>
gorse*	<i>Ulex europaeus</i>
hawthorn*	<i>Crataegus monogyna</i>
hemlock*	<i>Conium maculatum</i>
kahikatea/white pine	<i>Dacrycarpus dacrydioides</i>
lowland ribbonwood	<i>Plagianthus regius</i>
male fern*	<i>Dryopteris filix-mas</i>
necklace fern	<i>Asplenium flabellifolium</i>
nettle*	<i>Urtica sp.</i>
pennywort	<i>Hydrocotyle sp.</i>
pokaka	<i>Elaeocarpus hookerianus</i>
prickly shield fern	<i>Polystichum vestitum</i>
raupo	<i>Typha orientalis</i>
Scotch thistle*	<i>Cirsium vulgare</i>
soft rush*	<i>Juncus effusus</i>
swamp kiokio	<i>Blechnum minus</i>
walnut*	<i>Juglans regia</i>
white clover*	<i>Trifolium repens</i>
willow weed*	<i>Polygonum sp.</i>
Yorkshire fog*	<i>Holcus lanatus</i>

Lane Farming
24680/116.00

1:5,000



TIMARU DISTRICT SNA SURVEY

SNA 248a

Area Name: Rangatira Creek

Location (central map reference): J38: 667-661

Ecological District: Low Plains

Surveyors: Mike Harding and Julie Brown

Property: Margaret and Keith Lane

Nearest Locality: Rangatira Valley

Area Size (ha): 4.13

Altitude (m): 50

Survey Time: 3 hours

Survey Date: 01-06-10

General Description:

This SNA lies alongside Rangatira Creek at the western corner of the property, adjacent to Seven Sisters Road. It includes a meandering section of Rangatira Creek and the indigenous vegetation alongside the creek.

Plant Communities:

Two main plant communities are present: riparian flaxland and sedgeland (wetland). These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Flaxland:

This plant community is dominated by tall, and in places quite dense, flax. Large flax bushes form a narrow strip of vegetation along most parts of the creek. Emergent from the flax are cabbage tree and crack willow*. Other trees present include elderberry* and walnut*. Plant species present within the flax are black nightshade*, hemlock*, nettle*, pennywort, broad-leaved dock*, bittersweet*, chickweed*, blackberry*, creeping buttercup* and cleavers*. Dense bracken is present at one location.

Steeper banks within the flaxland, presumably where stock pressure has been lower, support the following ferns: male fern*, swamp kiokio, *Blechnum penna-marina*, prickly shield fern and occasionally necklace fern.

Open areas long the stream margin support pasture grasses*, *Juncus procerus**, *Juncus gregiflorus* and occasionally *Carex secta*.

Sedgeland:

This plant community occupies an abandoned stream meander (ox-bow) near the centre of the SNA (at map reference: NZMS260 E2366793-5666198). It is a relatively small and narrow wetland community. Dominant species are *Carex secta*, flax and pasture grasses*. Other species present are *Juncus distegus*, *Juncus gregiflorus*, *Azolla filiculoides*, creeping buttercup* and willow weed*.

Birds/Fauna Observed:

Native birds observed during this survey were white-faced heron, paradise shelduck, harrier, welcome swallow, fantail and silvereye. Pukeko were observed on pasture just downstream of the SNA. Rangatira Creek provides important habitat for Canterbury mudfish, a nationally-endangered species.

Notable Flora, Fauna and Habitats:

Important features of this area are the extent of the flax community, the presence of wetland and riparian vegetation (including several ferns), the habitat the stream provides for a nationally-endangered species (Canterbury mudfish), the habitat the area provides for birds and the presence of spectacular stream meanders.

Notable Plant and Animal Pests:

Crack willow is the most important plant pest present. Other invasive species present are elderberry, walnut, blackberry and the rush, *Juncus procerus*. Animal pests were not surveyed.

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

The section of stream on the property is part of a more extensive area of Canterbury mudfish habitat in the Rangatira Creek catchment. Otherwise, the SNA is isolated from other indigenous vegetation and habitat. Within the SNA, the stream is buffered by the flaxland plant community. Most parts of the area have been recently protected from cattle grazing by a post and wire fence. However, parts of the fence were in disrepair at the time of survey, following recent flooding.

Condition and Management Issues:

The most important management issues are protection of the flaxland from cattle grazing, control of crack willow, maintenance of water quality in the stream and further enhancement or restoration of the riparian (stream-side) vegetation.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M/H	A good example of indigenous vegetation and habitat typical of the Low Plains Ecological District.
Rarity	H	Provides habitat for a nationally-endangered species (Canterbury mudfish). A rare example of flaxland in the ecological district. Lowland wetlands are a nationally-rare ecosystem.
Diversity and pattern	L/M	Species diversity is probably substantially reduced (and different) from that originally present.
Distinctiveness/special features	M/H	The convoluted stream meanders and ox-bows are a spectacular landform feature.
Other Criteria		
Size/shape	H	A large area for the Low Plains Ecological District.
Connectivity	M	The stream habitat is part of a larger stream catchment, though this stream is periodically dry. The streamside vegetation is isolated from other areas of indigenous vegetation.
Long-term Sustainability	M	Protection of ecological values in the long term will require continued protection from stock, weed control, possibly restoration planting and probably protection of water quality in the stream catchment.

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

Most parts of this area have been informally protected by the landowner, by fencing from stock. The meandering nature of the stream and vulnerability of the site to flooding limit its potential for further farm development.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the extent of the flax community, the presence of wetland and riparian vegetation (including several ferns), the habitat the stream provides for a nationally-endangered species (Canterbury mudfish), the habitat the area provides for birds and the spectacular stream meanders.

TIMARU DISTRICT SNA SURVEY

Wetland 248a

Wetland Record Form

Wetland name: Rangatira Creek	Date: 01 June 2010
Property: Margaret and Keith Lane	GPS/Grid Ref: NZMS260: E2366793-N5666198
Altitude: 50m	No. of plots sampled:
Location: Rangatira Valley	Approximate size (ha):

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Palustrine	Permanent	Swamp	Basin

Surveyors: Mike Harding

Indicator	Indicator components	Specify and Comment	Score 0-5 ¹	Mean score
Change in hydrological integrity	Impact of manmade structures	None evident	5	4
	Water table depth	Appears consistent	4	
	Dryland plant invasion	Moderate; pasture grasses	3	
Change in physico-chemical parameters	Fire damage	No evidence of recent fire	5	4
	Degree of sedimentation/erosion	Minor	4	
	Nutrient levels	Animal dung?	3	
	von Post index			
Change in ecosystem intactness	Loss in area of original wetland	Some loss at edges?	4	4
	Connectivity barriers	Some loss downstream end	4	
Change in browsing, predation and harvesting regimes	Damage by domestic or feral animals	Accessible to stock; grazed	2	3.33
	Introduced predator impacts on wildlife	No control evident	3	
	Harvesting levels	No harvesting evident	5	
Change in dominance of native plants	Introduced plant canopy cover	Pasture grasses	3	2.5
	Introduced plant understorey cover	Pasture grasses, herbs	2	
Total wetland condition index /25				18

Main vegetation types: Sedgeland/rushland/flaxland

Native fauna: Canterbury mudfish in adjacent stream; silvereye, welcome swallow, fantail.

Other comments:

Pressure	Rating ²	Specify and Comment
Modifications to catchment hydrology	3	Unclear
Water quality within the catchment	3	Probable moderate pollution
Animal access	4	Low impediment
Key undesirable species	2	Crack willow nearby
% catchment in introduced vegetation	4	Over 75%
Other pressures		
Total wetland pressure index /30	16	

Source: Clarkson *et al*, Handbook for monitoring wetland condition, Ministry for the Environment, August 2002.

¹ Assign degree of modification thus: 5=v. low/ none, 4=low, 3=medium, 2=high, 1=v. high, 0=extreme

² Assign pressure scores as follows: 5=very high, 4=high, 3=medium, 2=low, 1=very low, 0=none

TIMARU DISTRICT SNA SURVEY

SNA 249

Area Name: Seven Sisters Wetland
Location (central map reference): J38: 668-659
Ecological District: Low Plains
Surveyors: Mike Harding

Property: Margaret and Keith Lane
Nearest Locality: Rangatira Valley
Area Size (ha): 0.44 **Altitude (m):** 50
Survey Time: ½ hour **Survey Date:** 20-07-10

General Description:

This SNA comprises a wetland in a shallow depression beside Seven Sisters Road at the western boundary of the property.

Plant Communities:

The main plant community present is sedgeland-rushland, described below. Naturalized (exotic) species are indicated with an asterisk*.

The wetland plant community is dominated by an unidentified species of sedge and a native rush, *Juncus gregiflorus*. Otherwise the wetland is dominated by pasture grasses, including Yorkshire fog*. Other wetland species present are soft rush*, creeping buttercup*, curled dock*, white clover* and Scotch thistle*.

Additional species present on the forest margin are several small cabbage trees, several gorse* bushes (mostly sprayed) and a single hawthorn* tree.

Notable Flora, Fauna and Habitats:

Lowland wetlands are a nationally rare ecosystem.

Notable Plant and Animal Pests:

Pasture grasses, gorse, hawthorn and soft rush are present. Animal pests were not surveyed.



TIMARU DISTRICT SNA SURVEY

Wetland Record Form

Wetland 249

Wetland name: Seven Sisters Wetland	Date: 20 July 2010
Property: Keith and Margaret Lane	GPS/Grid Ref: J38: 668-659
Altitude: 50 m	No. of plots sampled:
Location: Seven Sisters Road, Rangatira Valley	Approximate size (ha):

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Palustrine	Permanent	Swamp	Basin

Surveyors: Mike Harding

Indicator	Indicator components	Specify and Comment	Score 0-5 ¹	Mean score
Change in hydrological integrity	Impact of manmade structures	None evident	5	4.33
	Water table depth	No obvious change	5	
	Dryland plant invasion	Moderate; pasture grasses	3	
Change in physico-chemical parameters	Fire damage	None evident	5	4
	Degree of sedimentation/erosion	Minor	4	
	Nutrient levels	Animal dung?	3	
	von Post index			
Change in ecosystem intactness	Loss in area of original wetland	Moderate loss at edges	4	4
	Connectivity barriers	n/a		
Change in browsing, predation and harvesting regimes	Damage by domestic or feral animals	Accessible to stock?	2	3.33
	Introduced predator impacts on wildlife	No control evident	3	
	Harvesting levels	None evident	5	
Change in dominance of native plants	Introduced plant canopy cover	Pasture grasses	3	2.5
	Introduced plant understorey cover	Pasture grasses, herbs	2	
Total wetland condition index /25				18

Main vegetation types: Sedgeland-rushland-pasture

Native fauna:

Other comments:

Pressure	Rating ²	Specify and Comment
Modifications to catchment hydrology	3	High; conversion to pasture.
Water quality within the catchment	3	Probable moderate pollution.
Animal access	2	Moderate; now fenced (from stock?)
Key undesirable species	1	Low: gorse.
% catchment in introduced vegetation	4	Over 75%.
Other pressures		
Total wetland pressure index /30	13	

Source: Clarkson *et al*, Handbook for monitoring wetland condition, Ministry for the Environment, August 2002.

¹ Assign degree of modification thus: 5=v. low/ none, 4=low, 3=medium, 2=high, 1=v. high, 0=extreme

² Assign pressure scores as follows: 5=very high, 4=high, 3=medium, 2=low, 1=very low, 0=none