

TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY

LINZ PROPERTY
(RANGITATA RIVER ISLAND)



Report prepared for the Timaru District Council by Mike Harding
November 2011

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Land Information NZ
Valuation Reference: n/a
Address: c/- APL Property, PO Box 1586, Queenstown
Location: On an island in the Rangitata River floodplain, between Arundel and Rangitata.
Ecological District: Low Plains
TDC Land Type: Plains
Land Environment: L1 (southern lowlands).

ECOLOGICAL CONTEXT:

The property lies on a recent alluvial surface within the floodplain of the Rangitata River. This newly-created surface would naturally (i.e. in the absence of introduced species) support kanuka-kowhai forest/treeland or matagouri-*Coprosma* shrubland on stable alluvial surfaces and grassland-herbfield-mossfield on very 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.

Vegetation at this site comprises patches of kanuka and grassland separated by areas of gorse-dominated scrub. The site has not been cultivated or subjected to intensive land uses. It therefore represents a rare example of a lowland alluvial surface at which indigenous mosses, herbs, grasses, shrubs and trees have been able to survive or recolonize. The site supports a good population of kanuka, now rare in this part of Low Plains Ecological District.

SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas in August 2011. One large area (SNA 741a) is regarded as significant when assessed against the District Plan criteria.

This SNA is illustrated on the aerial photograph and described in greater detail in this report. This SNA meets the ecological criteria in the Timaru District Plan (criteria i-vi, pages B18-B19), though will require conservation management to maintain its 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.

OTHER NOTABLE AREAS ON THE PROPERTY:

Other parts of the island upon which this SNA is located support scrub dominated by gorse or broom, large patches of crack willow trees along river channels and patches of pine trees. Indigenous species are present in these plant communities, including cabbage trees emergent from scrub, ferns such as bracken and *Hypolepis ambigua* within the scrub and a relatively diverse range of indigenous ferns within the crack willow forest. If exotic species were not so dominant, these areas would be significant as uncultivated floodplain surfaces.



Indigenous species within crack willow forest, including mosses and the ferns Blechnum penna-marina and mountain kiokio.



LINZ Rangitata River Island

Withells Road

741a

Meters

0 100 200 300 400 500

1:10,000

TIMARU DISTRICT SNA SURVEY

SNA 741a

Area Name: Rangitata River Island

Location (central map reference): K37: 785-855

Ecological District: Low Plains

Surveyors: Mike Harding

Property: LINZ Rangitata River

Nearest Locality: Rangitata

Area Size (ha): 32.57 **Altitude (m):** 125-140

Survey Time: 3½ hours **Survey Date:** 09-08-11

General Description:

This SNA lies on an island within the active channels of the Rangitata River, between Arundel and Rangitata. The island is part of the floodplain of the river and has been undisturbed by floods for a sufficiently long period to permit the establishment of woody vegetation. The SNA described here occupies the central part of the island where areas of open grassland and patches of young kanuka forest are present amongst gorse scrub.

Plant Communities:

Three main plant communities are present: low kanuka forest, gorse scrub and grassland. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Kanuka Forest:

This plant community comprises several patches and isolated trees of kanuka. They are separated from one another by extensive areas of gorse* scrub and patches of grassland. The kanuka trees are approximately 8m tall and have trunk diameters (at breast height) of up to 50cm but more commonly between 15 and 30cm. Other woody species present within or adjacent to these kanuka patches are cabbage tree, elderberry*, sweet brier*, matagouri and gorse*. Understorey species present are cocksfoot*, Chewings fescue*, foxglove*, velvety nightshade*, blackberry*, cleavers*, pohuehue, bidibid and moss.



Patch of kanuka within SNA 741a

Gorse scrub:

Dense gorse-dominated scrub is present in large patches throughout the site. Emergent from the scrub are scattered cabbage trees and a few young kanuka trees. Emergent radiata pine* and crack willow* trees are present in places. Other canopy species are broom*, blackberry*, bracken, scrub pohuehue, pohuehue and occasionally matagouri, flax and Himalayan honeysuckle*. Other species present within the scrub are cocksfoot*, Chewings fescue*, cleavers*, velvety nightshade*, Californian thistle*, *Hypolepis ambigua*, *Blechnum penna-marina* and occasionally prickly shield fern.



Gorse scrub with emergent cabbage trees and kanuka, with grassland in foreground.

Grassland:

Areas of open grassland are dominated by Chewings fescue* and browntop*. Other important species are sweet vernal*, danthonia (*Rytidosperma clavatum*), creeping pohuehue, catsear* and moss and lichen species. Emergent from this grassland are scattered matagouri bushes and young browsed broom* and gorse* bushes. Other species present are wire moss, patotara, Yorkshire fog*, mouse-ear hawkweed*, clover*, sheep's sorrel* and occasionally *Geranium brevifolia*, Australian sheep's bur*, nodding thistle*, spring vetch* and haresfoot trefoil*. A single silver tussock was observed.

Adjacent plant communities:

Old or ephemeral river channels on other parts of the island are dominated by crack willow*. Other species present in or associated with this crack willow forest are cabbage tree, radiata pine*, sycamore*, alder*, koromiko, blackberry*, gorse*, broom*, old man's beard*, Himalayan honeysuckle*, pohuehue, prickly shield fern, *Hypolepis ambigua*, male fern*, swamp kiokio, mountain kiokio, *Blechnum penna-marina*, *Blechnum fluviatile*, *Blechnum chambersii*, necklace fern, bracken, lotus* and cocksfoot*.

Recently-deposited gravels associated with active river channels support a sparse community of colonising plants. Species present here are crack willow*, gorse*, tree lupin*, false tamarisk*, blackberry*, Californian thistle*, bracken, tutu, Yorkshire fog*, browntop*, silver tussock (rare), sheep's sorrel*, *Epilobium microphyllum*, *Raoulia tenuicaulis*, *Raoulia hookeri*, scabweed, wire moss, creeping pohuehue, white clover*, stonecrop*, woolly mullein*, viper's bugloss*, spurrey*, daisy*, narrow-leaved plantain*, ivy* (rare) and grasses.



Grassland community.

Birds/Fauna Observed:

Native birds observed during this brief survey were grey warbler, fantail, spur-winged plover and harrier hawk. Also observed in the wider area were southern black-backed gull and black-fronted tern.

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of indigenous vegetation in an acutely-threatened Land Environment, presence of kanuka (now very rare in this part of the ecological district) and the extent (size) of the area.

Notable Plant and Animal Pests:

The plant communities at the site (with the exception of the kanuka patches) are dominated by naturalized plant species, notably gorse, broom, blackberry, browntop, Chewings fescue and cocksfoot*. Other invasive plant pests are present nearby, including crack willow, sycamore and old man's beard. Animal pests were not surveyed, though hares and possums are present.

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

The boundary of this SNA has been drawn to include all patches of kanuka, the main areas of open grassland and the areas of gorse scrub (with emergent cabbage trees) that separate these areas. The area is bordered by active channels of the Rangitata River on either side and by other parts of the island upstream and downstream from the area that are dominated by gorse, broom or crack willow. The area is unfenced and does not appear to be grazed.

Condition and Management Issues:

The dominance of exotic species at this site is typical of SNAs in the Low Plains Ecological District. However the extent of kanuka and its emergence above gorse scrub are notable. Management of these sites is problematic. Maintenance of grassland sites and the regeneration of indigenous woody species are threatened by the presence of invasive exotic woody species, especially gorse and broom. There is very little

information available to guide management of these sites. Two electricity transmission lines and associated vehicle tracks traverse the area.

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	Most parts of the site support young regenerating indigenous vegetation as a minor component of the vegetation (rank = L/M). The kanuka patches are more representative (rank = M/H).
Rarity	H	The area lies within an acutely-threatened Land Environment. Kanuka is now rare in this part of the Low Plains Ecological District.
Diversity and pattern	L/M	Species diversity is substantially reduced from that originally present.
Distinctiveness/special features	M	The presence of kanuka regenerating through gorse and the presence of areas of uncultivated grassland are notable features.
Other Criteria		
Size/shape	H	A very large area for the Low Plains Ecological District.
Connectivity	M/H	Isolated from other areas of woody vegetation but part of a nationally-important corridor of floodplain vegetation and habitat.
Long-term Sustainability	M	Kanuka should persist and probably continue to increase its extent. Grassland communities are likely to be colonized by woody species.

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

This area does not appear to be utilized for any commercial activity except for the presence of overhead transmission lines. It has some potential for agricultural development, though access to the area is constrained by channels of the Rangitata River.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. It is a rare example in the Low Plains Ecological District of a large uncultivated site that supports indigenous vegetation. Important features of the area are the presence of indigenous vegetation in an acutely-threatened Land Environment, presence of kanuka (now very rare in this part of the ecological district) and the extent (size) of the area.

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)

alder*	<i>Alnus glutinosa</i>
Australian sheep's bur*	<i>Acaena agnipila</i>
bidibid	<i>Acaena novae-zelandiae</i>
blackberry*	<i>Rubus fruticosus</i>
bracken	<i>Pteridium esculentum</i>
broom*	<i>Cytisus scoparius</i>
browntop*	<i>Agrostis capillaris</i>
cabbage tree/ti rakau	<i>Cordyline australis</i>
Californian thistle*	<i>Cirsium arvense</i>
catsear*	<i>Hypochoeris radicata</i>
Chewings fescue*	<i>Festuca rubra ssp. commutata</i>
cleavers*	<i>Galium aparine</i>
clover*	<i>Trifolium subterraneum</i>
cocksfoot*	<i>Dactylis glomerata</i>
crack willow*	<i>Salix fragilis</i>
creeping pohuehue	<i>Muehlenbeckia axillaris</i>
daisy*	<i>Bellis perennis</i>
elderberry*	<i>Sambucus nigra</i>
false tamarisk*	<i>Myricaria germanica</i>
flax	<i>Phormium tenax</i>
foxglove*	<i>Digitalis purpurea</i>
gorse*	<i>Ulex europaeus</i>
haresfoot trefoil*	<i>Trifolium arvense</i>
Himalayan honeysuckle*	<i>Leycesteria formosa</i>
ivy*	<i>Hedera helix</i>
kanuka	<i>Kunzea ericoides</i>
koromiko	<i>Hebe salicifolia</i>
kowhai	<i>Sophora microphylla</i>
lotus*	<i>Lotus pedunculatus</i>
male fern*	<i>Dryopteris filix-mas</i>
matagouri	<i>Discaria toumatou</i>
mountain kiokio	<i>Blechnum montanum</i>
mouse-ear hawkweed*	<i>Pilosella officinarum</i>
narrow-leaved plantain*	<i>Plantago lanceolata</i>
necklace fern	<i>Asplenium flabellifolium</i>
nodding thistle*	<i>Carduus nutans</i>
old man's beard*	<i>Clematis vitalba</i>
patotara	<i>Leucopogon fraseri</i>
pohuehue	<i>Muehlenbeckia australis</i>
prickly shield fern	<i>Polystichum vestitum</i>
radiata pine*	<i>Pinus radiata</i>
scrub pohuehue	<i>Muehlenbeckia complexa</i>
sheep's sorrel*	<i>Rumex acetosella</i>
silver tussock	<i>Poa cita</i>
spring vetch*	<i>Vicia lathyroides</i>
spurrey*	<i>Spergula arvensis</i>
stonecrop*	<i>Sedum acre</i>
swamp kiokio	<i>Blechnum minus</i>
sweet brier*	<i>Rosa rubiginosa</i>
sweet vernal*	<i>Anthoxanthum odoratum</i>
sycamore*	<i>Acer pseudoplatanus</i>
tree lupin*	<i>Lupinus arboreus</i>
tutu	<i>Coriaria sarmentosa</i>

velvety nightshade*	<i>Solanum chenopodioides</i>
viper's bugloss*	<i>Echium vulgare</i>
white clover*	<i>Trifolium repens</i>
wire moss	<i>Polytrichum juniperinum</i>
woolly mullein*	<i>Verbascum thapsus</i>
Yorkshire fog*	<i>Holcus lanatus</i>