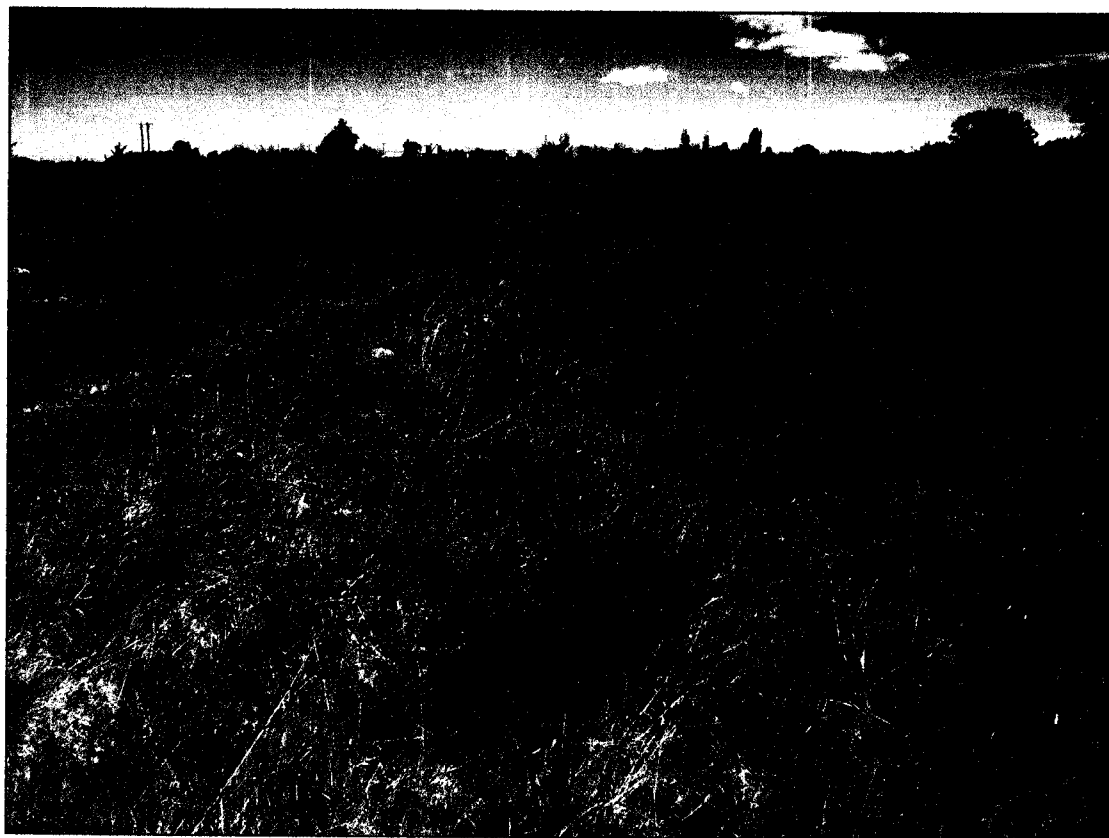


TIMARU DISTRICT
SIGNIFICANT NATURAL AREAS
SURVEY
DRAFT
RANGITATA ISLAND
(LINZ)



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

TIMARU DISTRICT SIGNIFICANT NATURAL AREAS SURVEY

PROPERTY REPORT

PROPERTY DETAILS:

Owner: Land Information NZ
Valuation Reference: n/a
Address: Private Bag 4721, Christchurch 8140.
Location: Between State Highway 1 and Main Trunk Railway Line, between the main and south channels of the Rangitata River.
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 (low terrace) of the Rangitata River. The original vegetation of this area would probably have been kanuka-kowhai forest/treeland or matagouri shrubland on stable alluvial surfaces and grassland-herbfield-mossfield on very recent surfaces. Podocarp (matai-kahikatea-totara) hardwood forest and wetland vegetation may have been present along stream channels and in damper low-lying areas at more stable sites. 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 and mossfield with smaller areas of exposed gravelfield and stonefield. Grassland plant communities at the site have a high component of naturalized (exotic) plant species; mossfield-stonefield communities have a higher indigenous component. It appears that the site has suffered considerable disturbance in the past, including complete alteration of the ground surface in places through bulldozing and excavation. However, the site does not appear to have been cultivated and is not subject to intensive grazing. The site therefore represents a rare example of a lowland alluvial surface at which indigenous grasses, herbs and mosses have been able to survive or recolonize.

SIGNIFICANT AREAS ON THE PROPERTY:

The property was surveyed as part of the District-wide survey of Significant Natural Areas in March and April 2010. The survey was prompted by a request from Timaru District Council (Gary Foster) to provide information that may assist with the protection and management of indigenous plant communities at the site. Two areas, that include all the relatively unmodified parts of the site, are regarded as significant when assessed against the District Plan criteria. One of these areas (SNA 116a) has been fenced and managed by the District Council for several years (Gary Foster, *pers. comm.*). The other (SNA 116b) is unfenced and has not been managed for conservation. The two areas are separated by a roadside rest area and a small grove of planted indigenous species.

These SNAs are illustrated on the attached 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.

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)	
blackberry*	<i>Rubus fruticosus</i>
broom*	<i>Cytisus scoparius</i>
browntop*	<i>Agrostis capillaris</i>
Californian thistle*	<i>Cirsium arvense</i>
catsear*	<i>Hypochoeris radicata</i>
Chewings fescue*	<i>Festuca rubra ssp. commutata</i>
cocksfoot*	<i>Dactylis glomerata</i>
creeping pohuehue	<i>Muehlenbeckia axillaris</i>
curled dock*	<i>Rumex crispus</i>
gorse*	<i>Ulex europaeus</i>
haresfoot trefoil*	<i>Trifolium arvense</i>
kahikatea/white pine	<i>Dacrycarpus dacrydioides</i>
kanuka	<i>Kunzea ericoides</i>
Khasia berry*	<i>Cotoneaster simonsii</i>
kowhai	<i>Sophora microphylla</i>
matagouri	<i>Discaria toumatou</i>
matai/black pine	<i>Prumnopitys taxifolia</i>
mouse-ear hawkweed*	<i>Hieracium pilosella</i>
narrow-leaved plantain*	<i>Plantago lanceolata</i>
patotara	<i>Leucopogon fraseri</i>
periwinkle*	<i>Vinca major</i>
plume grass	<i>Dichelachne sp.</i>
sheep's sorrel*	<i>Rumex acetosella</i>
stonecrop*	<i>Sedum acre</i>
storksbill*	<i>Erodium cicutarium</i>
sweet vernal*	<i>Anthoxanthum odoratum</i>
tall oat grass*	<i>Arrhenatherum elatius</i>
totara	<i>Podocarpus totara</i>
twitch*	<i>Elytrigia repens</i>
viper's bugloss*	<i>Echium vulgare</i>
wire moss	<i>Polytrichum juniperinum</i>
woolly moss	<i>Racomitrium sp.</i>
woolly mullein*	<i>Verbascum thapsus</i>
yarrow*	<i>Achillea millefolium</i>

1:7,500



Domain Road

J.

Rollie St.



Z

TIMARU DISTRICT SNA SURVEY

SNA 116a and 116b

Area Name: Rangitata Island (SH1)

Ecological District: Low Plains

AREA 116a: Location (central map ref.): K37: 806-819

AREA 116b: Location (central map ref.): K37: 809-821

Surveyors: Mike Harding and Nick Head (part)

Property: LINZ

Nearest Locality: Rangitata

Area Size (ha): ?

Altitude (m): 105

Area Size (ha): ?

Altitude (m): 105

Survey Time: 4 hours

Survey Date: 25-03-10
31-03-10 and 23-04-10

General Description:

This SNA lies on a alluvial terrace of the Rangitata River, alongside State Highway 1 at Rangitata Island. It comprises two parts, separated by a gravel and grassed picnic area. It appears as undeveloped grassland, differentiated from other grassed areas by the absence of grazing. Most of the southern area (SNA 116a) is fenced. Parts of the site appear to have been previously disturbed by excavation and road construction. Both areas are clearly visible from the state highway. An area of planted native trees and shrubs is present at the adjacent picnic area.

Plant Communities:

Two main plant communities are present: grassland and mossfield-herbfield-stonefield. These form a mosaic of intergrading plant communities ranging from open stonefield-gravelfield at recently disturbed sites to dense pasture at less disturbed sites and sites with deeper soils. These plant communities are described separately below. Naturalized (exotic) species are indicated with an asterisk*.

Grassland:

Dense grassland, comprising close swards of tall grass occupy one-third to half the extents of both SNAs. These grasslands are dominated by cocksfoot*, Chewings fescue* and browntop*. Other species present are *Bromus* sp.*, plume grass, sweet vernal*, twitch*, *Rytidosperma clavatum*, tall oat grass*, yarrow*, Californian thistle* and viper's bugloss*. Occasionally present are blackberry*, broom*, gorse*, curled dock* and *Elymus* sp.



Dense sward of exotic grasses adjacent to SNA 116b

Open grassland communities comprise lower-stature bunched grasses among mosses and herbs. Dominant grasses are *Rytidosperma clavatum* and Chewings fescue*. Other grasses, present at varying densities, are browntop*, sweet vernal*, cocksfoot*, plume grass and *Elymus* sp. The ground-layer is variously dominated by woolly moss, narrow-leaved plantain*, wire moss and lichen. Other species commonly present are catsear*, patotara, creeping pohuehue, sheep's sorrel*, yarrow*, viper's bugloss*, haresfoot trefoil* and storksbill*.

Patches of taller weeds are present, presumably where garden waste has been dumped, including periwinkle*, *Chrysanthemum* sp.*, Khasia berry* and *Sedum* sp. (*crassula* or *album*?).



Open grassland in SNA 116b

Mossfield-herbfield:

This plant community is variously dominated by woolly moss (*Racomitrium pruinosum*), wire moss, other moss species, lichen, *Rytidosperma clavatum* and Chewings fescue*. Other species commonly present are catsear*, patotara, creeping pohuehue, sheep's sorrel*, narrow-leaved plantain* and haresfoot trefoil*. Present but less common are yarrow*, viper's bugloss*, sweet vernal*, browntop*, cocksfoot*, storksbill*, a native fern *Cheilanthes humilis*, a lichen *Chondropsis semiviridis*, woolly mullein*, broom*, stonecrop*, mouse-ear hawkweed* and *Elymus* sp. A prostrate native broom, *Carmichaelia corrugata*, was observed at one location.

There are a number of intermediate plant communities, with varying densities of either moss or grasses, grading to the grassland community described above.



Mossfield community with the native fern Cheilanthes humilis (centre), SNA 116a

Birds/Fauna Observed:

The only native bird species observed during this survey was Australasian harrier. Several skinks, presumably common skink (none were caught), were observed. Common skinks have been recorded at the site (Hermann Frank, *pers.comm.*)

Notable Flora, Fauna and Habitats:

Important features of this area are the presence of uncultivated and ungrazed grassland-mossfield at a low-altitude alluvial site. Relatively unmodified sites such as this are very uncommon in the Low Plains Ecological District and in Timaru District. The presence, and in places dominance, of indigenous species, notably *Rytidosperma clavatum* and woolly moss, is notable. Other indigenous species at the site are locally uncommon, especially *Carmichaelia corrugata* and *Cheilanthes humilis*. The habitat the area provides for lizards is also notable.

Notable Plant and Animal Pests:

The most important plant pests present are grasses, especially cocksfoot. Other important herbaceous weeds are narrow-leaved plantain, catsear, haresfoot trefoil, yarrow and stonecrop. Introduced broom is scattered throughout and gorse is present at the southern end. Other invasive weeds, such as periwinkle, blackberry and Khasia berry, are present though presently confined in distribution. Animal pests were not surveyed.

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

Both parts of this SNA adjoin the railway embankment on one side and State Highway 1 on the other side. An open gravel rest area separates the two parts. The southern part (SNA 116a) adjoins the stop bank of the dry south channel of the Rangitata River at its southern boundary. The river channel itself has not yet been surveyed, but appears dominated by gorse scrub. The northern part (SNA 116b) is separated from a block of cultivated pasture by a gravel road. A secure fence encompasses most of SNA 116a.

Condition and Management Issues:

The condition of the SNA varies. The most intact area is a mossfield community within SNA 116a. However, there are other parts of the SNA that also have a high proportion of indigenous species, notably recently disturbed areas such as the bulldozed track. SNA 116a was fenced to assist in protection of the area (Gary Foster, Timaru District Council, *pers.comm.*). Management of the area for conservation is problematic. It is unclear whether disturbance, grazing (i.e. by rabbits and hares), substrate (i.e. soil depth), drainage, colonisation/invasion history or even fire are the most important determinants of the presence of different plant communities.

It is likely that, if left un-managed, a succession to woody vegetation would occur. The absence of indigenous woody species in the area, and a prevalence of exotic species, indicates that this would result in exotic scrub dominated by gorse and/or broom. Weed control and/or grazing would be required to prevent this succession occurring. Knowledge and experience of management of grassland sites at similar lowland locations is very limited. However, this site does provide an opportunity to experiment with different management techniques and to monitor outcomes.

Property Owner Comment:

ASSESSMENT AGAINST DISTRICT PLAN CRITERIA:

Primary Criteria	Rank	Notes
Representativeness	M	A modified example of grassland-mossfield communities typical of the ecological district.
Rarity	H	Uncultivated and ungrazed sites with indigenous plant species are now very uncommon in the Low Plains Ecological District.
Diversity and pattern	M	Two main plant communities (grassland and mossfield) and variations of the two communities are present. Indigenous species diversity is probably reduced from that formerly present.
Distinctiveness/special features	M	The presence of the uncultivated substrate is a special feature.
Other Criteria		
Size/shape	H	A large site for the Low Plains Ecological District. Both parts of the site have a good shape for buffering and management.
Connectivity	M	The two parts of the site are isolated from other areas of grassland-mossfield, though lie relatively close to extensive areas of uncultivated ground (mostly gravelfield) on the bed of the Rangitata River.
Long-term Sustainability	L/M	Active management will be required to maintain or enhance the ecological values of the site in the long term. Ground disturbance (such as roading activities) may continue to favour some of the indigenous species present.

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

This area has been managed (and altered) in association with construction and maintenance of the railway embankment, the highway and the rest area. Survival (or colonization) of the indigenous mossfield and grassland species has been incidental to management of the site. Its present ecological values are primarily due to the absence of cultivation and intensive grazing, largely because the land is administered by Land Information NZ and has not been alienated for farming. Survival of the ecological values of the site in the long term will require active management and protection from activities such as cultivation and irrigation.

Discussion:

This area meets the District Plan criteria for a Significant Natural Area. Important features of the area are the presence of uncultivated and ungrazed grassland-mossfield at a low-altitude alluvial site, the presence, and in places dominance, of indigenous species, notably *Rytidosperma clavatum* and woolly moss, the presence of other locally uncommon indigenous species (*Carmichaelia corrugata* and *Cheilanthes humilis*) and the habitat the area provides for lizards.

SNA SURVEY SCHEDULE

Part B: surveys/reports in progress

Last Edit:

03 May 2010

Owner (property)	Date	Reason/prompt for survey				No. of SNAs	Initial contact	access agreed	survey complete	draft report	comment rec'd	final agreemt	GIS maps
		Me	RMA	Owner	Public								
Ecan (Ophi R block)	2008	1											
Rangitata Island (LINZ)	2010	1				2							
Totals		2	0	0	0	2							

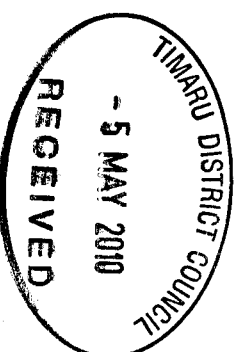
PROPERTY SUMMARY:

Property Reports completed: **80** (see Schedule Part A)
Property Reports held at draft stage: **2** (see Schedule Part D)
Property Reports in progress: **2** (see Schedule Part B, above)
Total Properties in Programme: **84**

Access Declined: **3** (see Schedule Part C)

SNA SUMMARY:

SNAs finalized/agreed: **316** (see Schedule Part A)
SNAs surveyed but not finalized: **25** (see Schedule Part D)
SNAs surveyed and under discussion: **2** (see Schedule Part B, above)
Total SNAs surveyed: **343**



73	J&A Morrison (Kakahu)	2009	1		289	9d	1	36.00		GK		
					290	9e	1	2.00		GK		
					291	9f	1	1.15		GK		
					292	8e	1	1.00		GK		
					293	8g	1	2.30		GK		
					294	8h	1	2.00		GK		
					295	335b	1	5.50		GK		
					296	334a	1	9.86		GK		
					297	334b	1	3.61		GK		
					298	8f1	1	6.79		GK		
74	Hole-Morrison (Kakahu)	2009	1		299	8f2	1	7.52		GK		
75	Hydes (Kakahu)	2009	1		300	159a	1	6.12		O1		
76	Patrick (Waitohi Hill)	2009	1		301	160a	1	2.55		O1		
77	Roberts (Woodside)	2009	1		302	61a	1	2.39		O1		
78	Roberts (Glenfield)	2009	1		303	62a	1	13.77		O1		
79	Logan (Geraldine Downs)	2010		1	304	72d	1	1.66		O1		
80	Hudson (Claremont)	2010		1	305	159b	1	5.8		O1		
					306	130a			1	0.28		
					307	130b			1	0.24		
					308	130c			1	0.05		
					309	130d			1	0.31		
					310	130e			1	0.12		
					311	130f			1	0.26		
					312	136a			1	3.22		
					313	136b			1	2.13		
					314	136c			1	0.78		
					315	136d			1	0.16		
316	136e			1	0.17							
Property		Date	Reason/prompt for survey			SNA		Size (ha)(per Ecological District)				
No.	Owner		Me	RMA	Owner Public		No.	Geraldine	Orari	Fairlie	Waimate	Plains