Part A: Wetland classification, wetland condition, pressure indicators

Wetland name: Little River wetland
Region: Heron ER, Mt Hutt ED
Altitude: 320 m
Date: 10 January 2013
GPS Ref. (NZTM): E1486940 N5187900
No. of plots sampled: Overview only

A.1.1 Wetland classification

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Palustrine	Seasonal	Marsh	Floodplain, hillside toe-slope and channel
Palustrine	Permanent	Shallow water and swamp	Hillside toe-slope, pond and depression
Palustrine	Near-permanent	Fen and marsh	Riparian, creek and pool

Wetland at the base of a terrace adjoining the Rakaia River has native vegetation cover of raupo, flax, bog rush and *Carex coriacea* sedgeland. It has formed against the distal edge of a tributary river fan (Little River). The water supply is a creek and springs sourced from Little River catchment. Wetland hydrology may have been modified by the construction of a hydro-electric power station that diverts from Little River and then re-supplies the water further down the channel.

Field team: Mark Parker and Philip Grove.

A.1.2 Recording wetland condition

Indicator	Indicator components	Specify and Comment	Score 0– 5[1]	Mean score
Change in hydrological integrity	Impact of manmade structures	Hydro-power generator diverts water from top of catchment and releases water further down catchment.	4	3.7
	Water table depth	Appears to have lowered recently in some parts of the wetland. This may be due to HEP diversion or some other change in hydrology.	3	
	Dryland plant invasion	<25% of wetland has dryland species present.	4	
Change in physico-chemical parameters	Fire damage	No evidence of fire damage.	5	4.3
	Degree of sedimentation/erosion	Localised erosion and sedimentation.	4	
	Nutrient levels	Fertiliser and stock from surrounding paddock have probably increased nutrient levels in wetland.	4	
	Von Post index	Not assessed.		
Change in ecosystem intactness	Loss in area of original wetland	Estimated that 25-49% of previous wetland extent lost.	3	3.5
	Connectivity barriers	Minimal	4	
Change in browsing, predation & harvesting regimes	Damage by domestic or feral animals	No impediment to animal access but not heavily browsed/trampled.	3	3.7
	Introduced predator impacts on wildlife	Usual suite of mammalian predators likely to be present.	3	
	Harvesting levels	None.	5	
Change in dominance of native plants	Introduced plant canopy cover	Low numbers of crack and grey willow.	4	3.5
	Introduced plant understorey cover	Moderate/high cover of exotic herbs and grasses in the understorey.	3	
Total wetland condition index /25				18.7

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

Main vegetation types: Area (ha)

- Raupō reedland with flax, *Carex secta*, native and exotic rushes and sedges, willows and exotic herbs 7.0
- *Phormium tenax* flaxland with cabbage trees, *Olearia bullata*, *Carex secta*, exotic herbs and grasses 4.7
- Bog rush tussockland with *Carex coriacea*, flax, toetoe, exotic herbs and grasses 3.2
- *Carex coriacea* sedgeland with exotic herbs and grasses, bog rush, flax and toetoe 2.8
- Toetoe tussockland with bog rush, flax, *Carex geminata*, *C. coriacea*, *C. gaudichaudiana*, exotic herbs and grasses 0.8

Total vegetated area (ha)	19.3
Total Area (ha)	19.4

Native fauna:
No records; none observed during survey.

Other comments:

A. 1.3 Wetland pressure indicators (catchment)

Pressure	**Score**[2]	**Specify and Comment**
Modifications to catchment hydrology	2	Vegetation clearance, pasture development, road, HEP development.
Water quality within the catchment	1	Catchment land use may have some impact on water quality.
Animal access	3	No impediment to animal access. No known predator control occurring in wider catchment.
Key undesirable species	2	17 of 43 listed species thought to be present in catchment.
% catchment in introduced vegetation	3	Approximately 60% of catchment is exotic pasture, crops and exotic conifer woodlots, with adjacent unfarmed gullies in weed trees and shrubs. Some areas of native matagouri shrubland persist, while native snow tussock grassland occupies higher altitude part of catchment.
Other pressures	1	Intensification of land use in catchment may affect water quality.
Total wetland pressure index /30	12	

[2]Assign pressure scores as follows: 5=extreme, 4=very high, 3=high, 2=moderate, 1=low, 0=none/very low

Part B: Ecological significance assessment

The site is assessed against criteria developed for the Proposed Canterbury Regional Policy Statement (Wildland Consultants Limited, 2011)

Assessment of Ecological significance

Criteria	Rank	Notes
Representativeness	Moderate	A moderate sized wetland with representative native canopy vegetation.
Rarity / Distinctiveness	Moderate	Not a rare or distinctive wetland type but occurs within 'At Risk' (20-30% indigenous cover remaining) upland recent soils land environment.
Diversity and pattern	Moderate	Diversity of indigenous wetland vegetation types and habitats including; reedland, tussockland, flaxland, sedgeland.
Naturalness	Moderate	Some hydrological modification; introduced plant species in groundcover; localised stock browse.
Ecological Context	Moderate	Ecological links to the Rakaia River, Little River and associated riparian habitats.

Little River Wetland is assigned an overall ecological significance ranking of **Moderate**.

References:

Clarkson BR, Sorrell BK, Reeves PN, Champion PD, Partridge TR, Clarkson BD (2004) *Handbook for monitoring wetland condition. Coordinated Monitoring of New Zealand Wetlands*. A Ministry for the Environment Sustainable Management Fund Project (5105)
(Describes the assessment method generally. In particular, Table 5 was used to determine the indicator scores and Table 6 for the pressure scores)

Wildland Consultants (2011) *Guidelines for the application of ecological significance criteria for indigenous vegetation and habitats of indigenous fauna and wetlands in Canterbury*. Wildland Consultants Contract Report No. 2289c. Prepared for Environment Canterbury.