

Part A: Wetland classification, wetland condition, pressure indicators

Wetland name: Leithfield Lagoon

Date: September 2010

Region: Canterbury Plains ER, Low Plains ED

GPS Ref. (NZTM): E1580240 N5216090

Altitude: <5 m

No. of plots sampled: Overview only

A.1.1 Wetland classification

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Lacustrine	Permanent	Swamp	Coastal Lagoon

Freshwater coastal lagoon near Leithfield Beach, north Pegasus Bay. Approximately 65% of the wetland area is open-water, 20% forest and 20% reedland.

Field team: Mark Parker

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	Drains in neighbouring pasture impacting water levels	3	3
	Water table depth	Small decline in water level	3	
	Dryland plant invasion	Gorse establishing on the grazed edges of the inland farmed area	3	
Change in physico-chemical parameters	Fire damage	No evidence of fire damage	5	3.7
	Degree of sedimentation/erosion	Grazing to wetland edges causing pockets of erosion and sedimentation	3	
	Nutrient levels	Elevated nutrient levels as at end of developed catchment (urban and farmland)	3	
	Von Post index	Not assessed		
Change in ecosystem intactness	Loss in area of original wetland	Estimated that 50-75% of previous wetland extent lost due to drainage and pasture development	2	2.5
	Connectivity barriers	Drains and culverts	3	
Change in browsing, predation & harvesting regimes	Damage by domestic or feral animals	Stock grazing to waters edge in northern portion of wetland	2	3
	Introduced predator impacts on wildlife	No predators observed, but no known predator control	2	
	Harvesting levels	No harvesting known	5	
Change in dominance of native plants	Introduced plant canopy cover	High	2	2
	Introduced plant understorey cover	High	2	
Total wetland condition index /25				14.2

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)
• Willow treeland	1.0
• Raupō reedland	0.5
• Exotic grassland	0.3
Vegetated Area	1.9
Total Area	5.0

Native fauna:

Low bird habitat rank; pūkeko and NZ shoveler previously recorded (O'Donnell, 2000). Grey warbler and cormorants seen at time of survey.

A. 1.3 Wetland pressure indicators (catchment)

Pressure	Score ²	Specify and Comment
Modifications to catchment hydrology	4	Water abstraction, vegetation clearance and drainage affecting wetland.
Water quality within the catchment	3	Probable moderate pollution.
Animal access	3	Stock grazing to waters edge. No known predator control occurring.
Key undesirable species	2	17 of 43 listed species thought to be present in catchment.
% catchment in introduced vegetation	4	Estimate >90% of catchment introduced vegetation. Grey willow present and many domestic weeds present.
Other pressures	1	Further urban or pastoral development may increase pressure on wetland.
Total wetland pressure index /30	17	

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

Part B: Ecological significance assessment

B. 1.1 Assessment of Ecological significance

Criteria	Rank	Notes
Representativeness	Moderate	Wetland habitat that retains key hydrological functions. Mostly exotic vegetation.
Rarity / Distinctiveness	Moderate	Coastal wetland remnant, habitats of this type reduced to less than 20% of former extent in this land environment.
Diversity and pattern	Low	Wetland area has a variety of, mostly exotic, vegetation types and species. Top part of wetland grazed to edge and devoid of most wildlife habitat.
Naturalness	Low	Mostly exotic vegetation. Limited planting occurring, although not in local species.
Ecological Context	Moderate	One of a series of wetland and riverbed habitats along this section of Pegasus Bay. Isolated from most by farmland and urban development. Connected to the Kowai River mouth by a series of modified wetlands and drains.

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

Leithfield Beach Lagoon 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)
- O'Donnell CFJ. 2000. The significance of river and open water habitats for indigenous birds in Canterbury, New Zealand. Environment Canterbury Unpublished Report U00/37.
- 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.