Part A: Wetland classification, wetland condition, pressure indicators

Wetland name: Conway River Mouth
Region: Lowry ER, Hundalee ED
Altitude: <3 m
Date: Februrary 2010
GPS Ref. (NZTM): E1638622 N5282575
No. of plots sampled: Overview only

A.1.1 Wetland classification

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Estuarine	Non-tidal	Saltmarsh	Coastal Lagoon
Lacustrine	Near-permanent	Shallow water	Hapua
Palustrine	Seasonal	Marsh	Floodplain

Coastal lagoon and hapua at mouth of Conway River. Contains estuarine (brackish) saltmarsh, freshwater lacustrine and palustrine wetland habitats.

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	River abstraction has altered natural lagoon opening regime	3	4
	Water table depth	Minimal change in water table	4	
	Dryland plant invasion		5	
Change in physico-chemical parameters	Fire damage	No evidence of fire damage	5	4
	Degree of sedimentation/erosion	Suspended sediment levels in the water body are low.	3	
	Nutrient levels	Naturally moderate/high nutrient wetland.	4	
	Von Post index	Not assessed.		
Change in ecosystem intactness	Loss in area of original wetland	Estimated that 30% of previous wetland extent lost due pasture development and riverbank plantings	3	3.5
	Connectivity barriers	Connectivity largely intact	4	
Change in browsing, predation & harvesting regimes	Damage by domestic or feral animals	No current stock damage, previously stock allowed access to lagoon area	4	3.3
	Introduced predator impacts on wildlife	Usual suite of mammalian predators likely to be present	2	
	Harvesting levels	Low levels of harvesting	4	
Change in dominance of native plants	Introduced plant canopy cover	Estimate of 40% of the vegetated canopy area is introduced grassland	3	2.5
	Introduced plant understorey cover	Estimate of 50% of the vegetated understorey is introduced grass	2	
Total wetland condition index /25				17.3

[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)
• *Typha orientalis* reedland	0.1
• *Bolboschoenus caldwellii* reedland	0.9
• *Samolus repens – Sarcocornia quinqueflora – Mimulus repens* herbfield	0.3
• *Plagianthus divaricatus* shrubland	1.6
• *Schedonorus arundinaceus* grassland	1.7
• Wet pasture	1.5
Total vegetated area	6.6
Total wetland area	18.6

Native fauna:
Gulls, terns, pied stilt (*Himantopus himantopus*) and various waterfowl present at time of survey. The lagoon is known to host various threatened bird species; such as the nationally endangered black-fronted tern (*Chlidonias albostriatus*), nationally vulnerable white-fronted tern (*Sterna striata*), Caspian tern (*Hydroprogne caspia*) and banded dotterel (*Chardrius bicinctus*). Also present at times are Pied oystercatcher (*Haematopus ostralegus*), spur-winged plover (*Vanellus miles novaehollandiae*), black shag (*Phalacrocorax carbo novaehollandiae*), little shag (*Phalacrocorax melanoleucos brevirostris*), white-faced heron (*Ardea novaehollandiae*), black flounder (*Rhombosolea retiaria*) and common bully (*Gobiomorphus cotidianus*) (Moore 1999).

A. 1.3 Wetland pressure indicators (catchment)

Pressure	**Score**[2]	**Specify and Comment**
Modifications to catchment hydrology	4	Native vegetation clearance over most of catchment; river abstraction.
Water quality within the catchment	2	Possible mild pollution in lower reaches.
Animal access	3	Stock fenced out of wetland; control of some pest species.
Key undesirable species	2	18 of 43 listed species thought to be present in catchment.
% catchment in introduced vegetation	4	Mostly pastoral farmland, native forest/scrub in gullies.
Other pressures	2	Further water abstraction and farm intensification.
Total wetland pressure index /30	17	

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

Part B: Ecological significance assessment

B. 1.1 Assessment of Ecological significance

Criteria	Rank	Notes
Representativeness	High	Wetland hydrology largely intact; supports mix of native and exotic vegetation types.
Rarity / Distinctiveness	High	Saltmarsh wetland habitats naturally uncommon in this ecological district as are harakeke flaxlands. Black-fronted tern observed at time of survey, other threatened fauna known to frequent the lagoon.
Diversity and pattern	Moderate	Diversity of habitats reflects variable levels of inundation and salinity.
Naturalness	Moderate	Mix of native and exotic plant species. Lagoon surrounded by pasture.
Ecological Context	High	Part of chain of coastal lagoons in region; important wintering site for black-fronted tern. A variety of birdlife uses the lagoon, and adjacent riverbed and spit as habitat.

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

Conway Lagoon is assigned an overall ecological significance ranking of **High**.

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)

Moore SH (1999). *Hundalee Ecological District; Survey Report for the Protected Natural Areas Programme*. Department of Conservation. Occasional Publication No. 43

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.