

Part A: WETLAND RECORD SHEET

Wetland name: Waiau River mouth hapua
Region: Lowry ER, Cheviot ED
Altitude: <5 m

Date: November 2010
GPS/Grid Ref.:
No. of plots sampled: Overview only

Classification: I System	IA Subsystem	II Wetland Class	IIA Wetland Form
Riverine	Tidal	Shallow water and unvegetated gravel, sand	Hapua
Lacustrine	Tidal	Shallow water and unvegetated sand and gravel	Hapua

At time of survey, the Waiau hapua consisted of a lacustrine freshwater 'lagoon' hydrosystem at its northern end, combined with a more dynamic riverine hydrosystem to the south. Relative extent of these two main hydrosystems shifts with location of the hapua outlet along the beach barrier. Both lacustrine and riverine sections of the hapua are subject to tidal influence, but due to the volume of inflows, remain largely freshwater habitats. Because of its highly dynamic nature, the Waiau River hapua does not support wetland vegetation.

Field team: Philip Grove, Mark Parker

Indicator	Indicator components	Specify and Comment	Score 0– 5 ¹	Mean score
Change in hydrological integrity	Impact of manmade structures	No impact	5	4.7
	Water table depth	Water levels naturally changeable. Upstream surface and groundwater abstraction can alter hapua processes and water levels at times.	4	
	Dryland plant invasion	Wetland extent naturally changeable.	5	
Change in physico-chemical parameters	Fire damage		5	4
	Degree of sedimentation/erosion	Suspended sediment levels in the water body are naturally variable, but some change due to land development in catchment.	4	
	Nutrient levels	Some increase from catchment land development. Occasional algal blooms at times of low inflows.	3	
	Von Post index	Not assessed.		
Change in ecosystem intactness	Loss in area of original wetland	Original hapua area essentially intact.	5	5
	Connectivity barriers	All natural connections retained	5	
Change in browsing, predation & harvesting regimes	Damage by domestic or feral animals	Stock have access, but little impact.	4	3.3
	Introduced predator impacts on wildlife	Usual suite of mammalian predators likely to be present. No known predator control.	2	
	Harvesting levels	Eel, flounder, whitebait fishing.	4	
Change in dominance of native plants	Introduced plant canopy cover	Wetland not vegetated.	5	5
	Introduced plant understorey cover	Wetland not vegetated	5	
Total wetland condition index /25				22

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

Main wetland vegetation types:

Wetland area is un-vegetated shallow water or bare ground, as hapua extent and water levels are constantly changing.

Native fauna:

The Waiau River mouth hapua is a regionally-significant habitat for native water birds. It supports a diversity of species: coromorants, waders, waterfowl, gulls and terns. It is feeding and roosting habitat for threatened banded dotterel and black-fronted tern and an important wintering site for black-fronted tern as well as other gulls, terns and waterfowl (O'Donnell 2000).

Hapua is habitat for a range of native fish: eels, inanga, bullies, smelt, torrentfish, lamprey, black flounder (Daly 2004).

Other comments:

The Waiau River mouth is the least modified of all Canterbury river mouths. There is no road access so it sees relatively little human use and is therefore also a comparatively undisturbed area for native wildlife. The lower Waiau River riparian zone and surrounding hill country still supports examples of old growth beech and podocarp-hardwood forest, as well as regenerating native scrub, providing regionally-unique connectivity between native terrestrial, river and marine habitats.

Pressure	Score²	Specify and Comment
Modifications to catchment hydrology	2	Clearance of native vegetation; drains; surface and groundwater abstraction.
Water quality within the catchment	2	Possible mild pollution.
Animal access	3	Low impediment to animal access. Control of some undesirable species occurring in catchment.
Key undesirable species	2	17/43 listed species thought to be present.
% catchment in introduced vegetation	2	Most of catchment in native albeit sometimes modified vegetation.
Other pressures	3	Increased abstraction for irrigation and HEP; intensification of farming within catchment threatens water quality.
Total wetland pressure index /30	14	

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

Part B: Ecological significance assessment

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

Criteria	Rank	Notes
Representativeness	High	Good example of moderate-sized braided river hapua; wetland hydrology and hapua processes largely intact. Naturally sparsely vegetated. Representative range of wildlife present.
Rarity / Distinctiveness	Moderate	Habitat for several threatened species such as long-finned eel, banded dotterel, black-fronted tern.
Diversity and pattern	Moderate	Moderate diversity of wetland habitats and wildlife.
Naturalness	High	Least modified of all Canterbury river mouths.
Ecological Context	High	Link in chain of coastal wetlands. Seasonally important habitat for migratory fish and birds, including threatened species. Links to river, marine and native forest ecosystems.

Waiau River mouth hapua 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)
- Daly, A 2004. Inventory of instream values for rivers and lakes of Canterbury New Zealand. A desktop review. Environment Canterbury Report U04/13.
- 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. Contract Report No. 2289c prepared for Environment Canterbury.