



Hardcastle Lagoon

Site Number:	SNA563
Ecological District:	Atiamuri
Source of Information:	Shaw and Beadel (1998); Spring-Rice (Unpublished); Howard-Williams (1989)
Digital Scale:	1:5,000
Data Source:	WRAPS 2007
Regional Council:	Waikato
1998 Site Number:	NHS No. 563
Current Tenure:	Unprotected
Site Area:	60.1 ha
Altitude Range:	300 m
Bioclimatic Zone:	Lowland
Grid Reference:	NZTM E1889844, N5732329

VEGETATION		LANDFORM	EXTENT
CODE	TYPE		
1	<ul style="list-style-type: none"> Aquatic vegetation and open water. Mixed shrubland on levee banks and faces. 	Open water, wetland Levee banks, faces	60.1 ha

Indigenous Flora: *Rorippa palustris* is present. No threatened or at risk species as listed in de Lange *et al.* (2009) have been recorded from this site.

Large areas of open water with patches of vegetation, primarily comprising *Schoenoplectus tabernaemontani*. Small areas of *Carex* sedgeland and raupo reedland. Levees have a mixed cover of exotic trees and shrubs with introduced weeds and grasses underneath.

During a survey by the Rotorua Botanical Society, 35 indigenous and 57 introduced plants were recorded (Howard-Williams 1989). Along the levees, a mosaic of crack willow and cotoneaster is interspersed with patches of tall fescue (*Schedonorus phoenix*), lotus, and an exotic grass *Leersia oryzoides*. Sedgelands of *Carex sinclairii*, *Carex ovalis*, and other species grade into wetter herbfields of water purslane, willow-weed, with patches of spike sedge. The channel edges are dominated by *Schoenoplectus tabernaemontani*, with an understorey of herbaceous plants such as water purslane, spearwort (*Ranunculus flammula*), and *Callitriche stagnalis*. The adventive species *Lagarosiphon major* dominates the permanent channels, in association with *Ceratophyllum demersum* and *Elodea canadensis*. The most common native species in channels are *Myriophyllum triphyllum* and *M. propinquum*, with *Potamogeton ochreatus*, *P. cheesemanii*, and *Nitella pseudoflabellata*. Water lilies (*Nymphaea mexicana* and *N. alba*) are conspicuous at the site (Spring-Rice Unpublished).

Fauna: A large population of water birds uses the area, as well as the common birds of the surrounding farmlands. Brown and rainbow trout, rudd, and koura are present in the river (Spring-Rice Unpublished).

The site could provide habitat for several at risk and threatened bird species, including New Zealand dabchick ('Threatened - Nationally Vulnerable') and black shag ('At Risk - Naturally Uncommon') (as listed in Miskelly

et al. 2008). However, no threatened or at risk species as listed in Miskelly *et al.* (2008) have been recorded from this site.

Notes on Overall Condition:

A moderate-sized wetland with some pest plants present.

“An extensive lagoon has been formed by a bypassed horseshoe bend on the eastern bank of the Waikato River opposite the Ohaaki Geothermal Power Station. The lagoon is still open to the river. Consequently flood debris is sometimes deposited in it, and water net (*Hydrodictyon reticulatum*) periodically covers the aquatic vegetation. In addition, the water levels fluctuate daily, when Electricorp activate the Aratiatia Rapids. The lagoon is bordered by farmland behind the levee banks and associated shrublands. The presence of maimais indicates the lagoon is used for duck shooting. Large numbers of water birds use the lagoon. There is a good range of aquatic vegetation, including some indigenous vegetation types” (Spring-Rice Unpublished).

Change Relative to Shaw and Beadel (1998):

Unknown, probably little change.

Threats/Modification/Vulnerability:

The daily fluctuation in water levels (approx. 1.2 m) as a result of hydro-electric generation has a significant effect on the range of species that can survive here. Also, the seasonal flushes of the introduced water net have been observed to smother vegetation when water levels fall naturally in summer (Spring-Rice Unpublished).

Risk Assessment:

Unknown.

Significance Level:

Regional (Appendix 5 - Table 1 - Criteria 3, 6, 8, 11; Table 2 - Factors L, N, O, R).

Significance Justification:

This site is of regional significance as it comprises a relatively large-sized wetland, a nationally reduced habitat type. It is also likely to provide habitat for threatened and at risk bird species, and forms an important buffer and linkage with the Waikato River - a nationally significant site. This lagoon has been rated as a Wetland of National Importance in the WERI Database of the Biological Resources Centre, and is considered an important ecological feature of the Waikato River system. Although no rare or endangered species were found, the area is of high botanical value.

Fieldwork Required:

No fieldwork required to assess significance, but fieldwork required to update biodiversity and management information.

Notes:

None

References:

Spring-Rice (Unpublished); Howard-William (1989); Shaw and Beadel (1998).