

Broken River Restoration Project

Phase 1 – Site Selection Report

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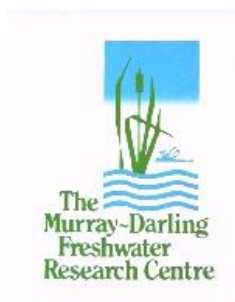
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An MDFRC Consultancy Report
for the
Goulburn-Broken Catchment Management Authority
168 Welsford Street
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Introduction

On Thursday 22nd December 2005, staff from Murray-Darling Freshwater Research Centre (Daryl Nielsen, Lyn Smith) and Goulburn-Broken Catchment Management Authority (Wayne Tennant, Sue Botting) assessed sites along the Broken River between Benalla and Shepparton with the view to selecting treatment and reference sites for the Broken River Restoration Project (Table 1). All sites visited are in a suite of sites that have been previously studied by MDFRC projects.

Table 1. Proposed re-snagging treatments

Treatment	Condition
Reference 1	These sites will have a reasonable density of LWD, in good condition, which will be used to determine the natural density of LWD. This will establish the density of snags to be added to the treatment sites. No snags will be added to these sites. They should also have an intact riparian zone
Reference 2	These sites will have a low density of snags, possibly in poor condition. No snags will be added to these sites. They may have a degraded or rehabilitated riparian zone.
Treatment (snag density 1m ³).	These sites will have a low density of snags, possibly in poor condition. Snags will be added to these sites. Preferably they will also be, or have been, targeted for riparian zone rehabilitation. The actual volume of wood added may vary depending upon the estimated natural loading of LWD.

Observations

The sites were ranked in terms of the amount and quality of instream wood present, diversity of instream habitat, condition of riparian zone (Table 2).

Table 2. Summary of site observations (in downstream order)

Site	GDA datum	Wood	Instream habitat	Riparian zone	Other
<i>Morago</i>	S 36031.413' E 145057.372'	Aggregations in 1 st & 4 th quarters; complexity of debris at different flow levels; new tree fall in last 12 months	Log islands; high diversity	Good canopy cover over the water, shade & light; one willow upstream; private grazing	<i>Phragmites</i> present; previously de-snagged; undercut banks
Scholes Rd	S 36030.606' E 145057.121'		No diversity	Crown land; no diversity of structure	Several joined pools
<i>Mokoan Park</i>	S 36029.875' E 145056.945'	Less wood required to reach goal	Average diversity; lower quality	One side with no structure, house side with more structure	Run

Broken River Restoration Project - Site selection field trip report

Site	GDA datum	Wood	Instream habitat	Riparian zone	Other
Quinn Rd	S 36027.911' E 145054.111'	Poor	Less diverse	Upstream is similar to <i>Mokoan Park</i> ; reasonable	Elements of all levels; straight
Goomalibee Bridge	S 36027.688' E 145051.706'	Old		Good but thin	Snags on site from previous stabilisation works; incised channel
Ballintine Rd	S 36027.330' E 145048.516'	Not much		OK	Sinuuous
Burnells Rd	S 36026.601' E 145046.255'	Very old, decayed; very little; small, no LWD		Bushland reserve; decent; trees with grass	Previous stabilisation works
Dairy Rd	S 36025.582' E 145042.906'	Poor		Thin; inside bend better; not much understorey	Single large bend
Shack	S 36025.891' E 145039.668'	Poor		Poor; poplars	
Cosgrove Rd	S 36025.520' E 145037.896'				Higher flow
Fothergills Rd	S 36025.676' E 145036.668'			Great	Well vegetated islands; faster flow; braided; loads of <i>Phragmites</i> ; <u>different to all other sites</u>
Keats Rd	S 36025.757' E 145035.734'	None		Average/good especially on inside bend	Timber piles into bank for stabilisation
Pine Lodge Rd	S 36025.397' E 145031.653'	Not much,	Lots in higher flow	Good	Everything good except LWD

Selected sites

The selected sites (Table 3, Figure 1) will be subject to a more detailed survey, planned for January 2006, of the following characteristics;

- Location and size of LWD aggregations
- Location and size of *Vallisneria* beds
- Shape of reach
- Length of bends and runs
- Location of erosion and depositional zones

A study reach will be defined as the length of river close to 500 metres that includes three erosion zones.

Table 3. Sites selected for the Broken River Restoration Project

site	GDA datum	treatment	river section
<i>Morago</i>	S 36031.413' E 145057.372'	Reference 1	Upper
Scholes Rd	S 36030.606' E 145057.121'	Treatment	Upper
<i>Mokoan Park</i>	S 36029.875' E 145056.945'	Reference 2	Upper
Quinn Rd	S 36027.911' E 145054.111'	Reference 1	Middle
Goomalibee Bridge	S 36027.688' E 145051.706'	Reference 2	Middle
Burnells Rd	S 36026.601' E 145046.255'	Treatment	Middle
Cosgrove Rd	S 36025.520' E 145037.896'	Reference 1	Lower
Keats Rd	S 36025.757' E 145035.734'	Treatment	Lower
Pine Lodge Rd	S 36025.397' E 145031.653'	Reference 2	Lower

Appendix

Reference 1

Morago



Quinn Road



Cosgrove Road



Reference 2

Mokoan Park



Goomalibee Bridge



Pine Lodge Road



Treatment

Scholes Road



Burnells Road



Keats Road



Figure 1. Selected site images