

# Channel Widening at Croxall Lakes

**Techniques:** Bank re-grading & removal; creation of shallows in adjacent lakes

**Project location:** Croxall Lakes Nature Reserve

**Rivers:** Tame, Trent and Mease

**County:** Staffordshire

**Project start date:** September 2009

**Project end date:** March 2010

**Length:** 540 m (1.85 ha widened channel) + 1.2 ha shallows

**Cost:** £161k (£144k capital works)

**Upstream grid reference:** SK191149



Typical condition of banks pre-restoration.  
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## Site background

A sand and gravel quarry until the 1980s, what is now Croxall Lakes Nature Reserve (owned and managed by Staffs Wildlife Trust) borders the heavily modified Rivers Tame, Trent and Mease. The site is dominated by two large right bank lakes upstream and downstream of a railway embankment which splits the area. The Tame has been deepened and constrained to a single channel between high, steep and reinforced banks in the past. Natural processes have been controlled and natural features such as river islands, braided and split channels, gravel shoals, backwaters and swamp margins have been deleted. There has been previous work to grade back and lower the right bank, thus increasing connectivity with the upstream lake, as well as creating a shallow margin in the main channel.

## Objectives

- To trial techniques to recreate extensive shallow marginal habitat features
- To restore natural processes of deposition and scour of gravels, and active braiding in particular
- To promote similar works elsewhere in the Central Rivers Initiative area
- To use soil removed to create shallows in the adjacent lakes



View of some of the complex micro-topography created in the widest part of the works. © 2011 The River Restoration Centre

## Design

Soil was removed from the right bank area over which the river was to be widened, to expose the extensive coarse gravels. The soil was deposited in the margins of the nearby lake to create shallows and areas of bare mud. Exposed gravels were moved around locally using excavators, bulldozers and dump-trucks to create bars, lagoons, spits and islands. One large island was created around some existing willows, and a live willow tree was also deposited and secured into the channel upstream. Extensive baseline geomorphology and wildlife surveys have been undertaken in order to evaluate the changes due to the works.

## Subsequent performance - RRC's views (2011)

This is an exciting technique new to Britain and lessons learnt here will be important - it is good to hear of the comprehensive monitoring. Little time has yet passed, and it will take detailed assessment following significant peak flows to determine the success in terms of restoring an active channel. Careful management of the slowly establishing vegetation may be required on the newly exposed substrate, to attain an appropriate plant community.



### *the River Restoration Centre Case Study Series*

This site was last visited by RRC staff on 15<sup>th</sup> April 2011 as part of the 12<sup>th</sup> RRC Annual Network Conference

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