

# River Rother at Shopham Loop, West Sussex

**Techniques: Meander reconnection, Improve floodplain connectivity, Reprofilng**

**Project location: Shopham Loop**

**River: Rother (tributary of the Arun)**

**County: West Sussex**

**Project start date: March 2000**

**Project end date: September 2004 (monitoring ongoing)**

**Length: 1,000 metres**

**Cost: £580,000**

**Upstream grid reference: SU 982 191**



Downstream end of Shopham Loop with the cut blocked.

## Site background

Shopham Loop is a section of the river Rother, West Sussex between Coultershaw Bridge and Shopham Bridge. A cut was created in the 18<sup>th</sup> century to bypass the meander and enable passage of boats upstream. However after navigation ceased, the locks were removed and the cut became the main river course with the meander (Shopham Loop) remaining as a backwater. Land use change to an intensive agricultural regime in turn led to shallower soils and increased siltation and the loop entrance became blocked with deposits preventing any flow from the Rother.

## Objectives

- Restore 1 km of degraded watercourse and associated floodplains.
- Restore natural river processes to provide additional habitat diversity to benefit the ecology of the river Rother.
- Enhance and diversify the fishery of the lower Rother catchment.
- Protect the old lock structure from further erosion from the river.

## Design

The old meander loop was reinstated and designed to a bed level that enabled reconnection of the flow to the floodplain during flood events. Initially the banks were cut fairly steeply with the view that these would react to natural processes and form more natural bank profiles overtime. A large backwater, shallow ponds and wader scrapes were also created. A bund was built upstream of the loop to prevent flow entering here during construction and when later deconstructed, the material was moved to protect the old lock, a site of archaeological interest. Discussions occurred over whether to lay gravel to improve fisheries but in the end a conscious decision was made to let the stream settle. Downstream of the loop, a stone riffle was formed to prevent acute gravel scour.



Stone riffle downstream of the loop to prevent acute gravel scour.

## Subsequent performance - RRC's views (2009)

Shopham Loop signifies a multidisciplinary approach to river restoration with novel aspects of design, construction and funding. The design has been tested as the floodplain inundated with flood flows and natural processes appear to have been kick started as erosion and deposition has occurred as predicted. Post-project appraisal five years in, remains an essential aspect of this work. Visual observation suggests that flood events in the coming years will start to establish a more natural watercourse. Bed riffles have been checked and the old lock remains intact so structural aspects have been successful and the design appears to be self-sustaining. Understanding the role of the backwater through better stakeholder communication is a future challenge as it has since been drained in part. Assessment outputs, available soon, will help establish the success of the project's habitat and geomorphological aspects. Such research is fundamental in quantifying the benefits of river restoration projects as well as the interrelation between physical changes and biological responses - and it provides a case study to inform similar projects in future.



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

This site was last visited by RRC staff on 30<sup>th</sup> September 2009

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