

# River Wensum

Restoration Strategy

Issue 10 November 2012

## Welcome to our tenth newsletter

### Completion of Swanton Morley river restoration scheme

At the end of September we successfully completed works on the Swanton Morley scheme. The river channel downstream of Swanton Morley weirs is similar to much of the Wensum, being over-wide and over-deep with little flow variation. The restoration works, designed by Atkins Global, have involved creating channel diversity through the installation of gravel glides, pools, lateral shelves (berms) and woody debris, together with selective tree planting to create shade over the river and the partial removal of spoil banks to improve floodplain connectivity.

The changes to the river channel have been designed to ensure that under all flows the finest sediment is kept on the move, but under 'bank full' conditions the coarser gravels, which provide the best habitat, will not.

A small meander loop has been reinstated, with a plug placed in the existing channel to divert flows along the loop. The meander loop, cut off by a straight channel excavated as part of a land drainage scheme in the 1950s, had become silted up due to the lack of flow and required de-silting to expose the natural hard bed consisting of pockets of gravel and chalk. The channel sinuosity within the meander has been further increased with the use of woody debris.



Image above: River channel pre-works. Wide, straight and deep

Image below: River channel post-works. Narrowing and increased sinuosity through construction of lateral berms, woody debris and reduced depth from glide installation.



One of the missing features along this reach is tree cover. The only exception is around the meander loop, which has been untouched for many years, and mature willow and alder line the old course of the river. The majority of these have been retained, but in order to enable access for machinery selective coppicing has taken place. All this material has been re-used as woody debris, and to create a brush wood berm in an area where our machinery was unable to safely access. The lack of tree cover is likely to impact severely on the fish within the reach, and may contribute to high predation rates as well as affecting spawning habitat. Later this year selective planting of native species will take place on the open stretches of channel to complement the restoration features.



**Silted meander loop cut off by bypass channel in the 1950s. Before (above) and immediately after (below) completion of restoration.**



Another aspect of the scheme has been to create fish refuge areas by re-connecting floodplain drainage ditches to the river. These will provide valuable shelter for fish and other wildlife during high flow events.

As a result of past drainage activities large spoil embankments exist either side of the river. These prevent the majority of high flows from inundating the floodplain, as would naturally occur, and force flow downstream carrying large amounts of sediment with it. As part of the scheme we have removed sections of embankment to encourage floodplain wetting during periods of high flow. This should have the combined benefits of increasing floodplain biodiversity and providing a sink for suspended sediment, as well as reducing flood risk to people and property in the downstream catchment. The level at which water will spill on to the floodplain has been set so that there is a low probability of summer flooding and therefore minimal impact on the agricultural use of grazing marshes.

Having a flow gauging station immediately upstream of the scheme has provided valuable data for the restoration design process, but has also imposed a constraint in that any physical changes to the river have had to be designed so that they do not impact on the accuracy of the gauging station.

Situated within the floodplain is an Internal Drainage Board watercourse and we have needed to ensure that the floodplain connection works do not cause this drain to become surcharged with flood water, which could have adverse impacts on downstream landowners. This has been achieved by working with the existing topography and using spoil to locally raise sections of the floodplain to create an isolated area which will wet up during high flows. The other important element of floodplain connection has been to provide a route for water to drain back to the river once river levels have receded.



**New glide, berm (opposite bank) and plug (far left) diverting flow along meander loop.**



**Brush wood berm created using locally won material felled to enable access for machinery.**

## **New restoration scheme at Sculthorpe Moor**

We have started implementing our second major restoration scheme of the year, this time near Sculthorpe Moor, upstream of Fakenham. In developing the project we have been working closely with the Hawk and Owl Trust, Norfolk Ornithologists' Association, Fakenham Angling Club and the Raynham Estate. The scheme covers 1.8km of channel, extending from approximately 900 metres downstream of Sculthorpe Mill down to Night Common, where the river passes beneath the A1065 Fakenham bypass. Given favourable weather conditions work should be completed by the end of December.

The scheme will incorporate a range of restoration features including lateral berms, gravel glides, pools and woody debris.

We ask anybody wishing to access Night Common and Hempton Common during the work to observe warning signs. To ensure your safety please keep clear of our working area and access routes for machinery. Walkers can continue using the path along the redundant railway line. However, we ask people not to access along the river bank for the duration of the project.

### **Looking ahead**

If you are interested in partnership working or would like further information, please contact us at the following email address: [river.restoration@environment-agency.gov.uk](mailto:river.restoration@environment-agency.gov.uk) or contact us by post: River Wensum Restoration Project Team, Environment Agency, Dragonfly House, 2 Gilders Way, Norwich, NR3 1UB.

To save resources we would very much like to keep as many people informed by email as possible. Please email us at the address above to be updated this way. Please add your name and postal address in the body of the email so we can identify you.

Thank you.

