

Restore aquatic habitats in modified watercourses

Project Summary

Title: Radwell Backwater Restoration Project

Location: Radwall, Bedfordshire, England

Technique: Vegetation clearance and bank re-profiling of backwater channel

Cost of technique: ££

Overall cost of scheme: ££

Benefits: ££

Dates: 2012

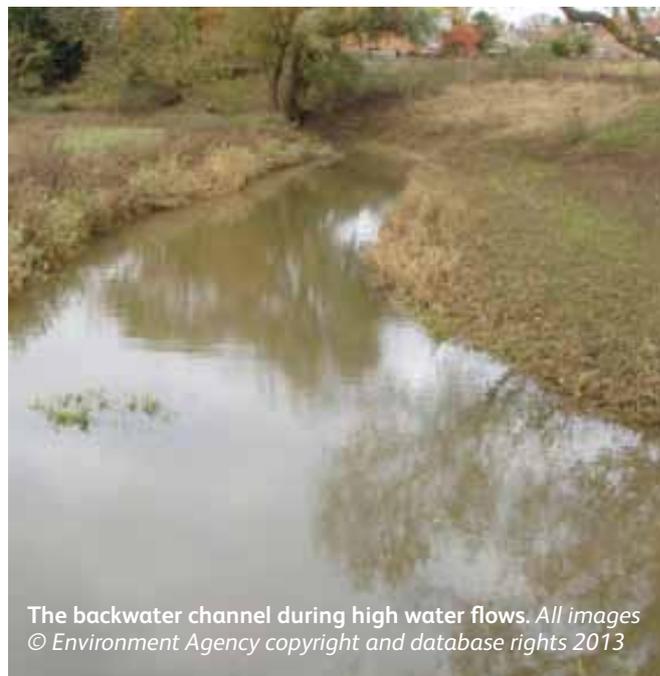
Mitigation Measure(s)

Restore aquatic habitats in modified watercourses

How it was delivered

Delivered by: Environment Agency

Partners: Water Framework Directive funding via the Great Ouse Wetland Vision

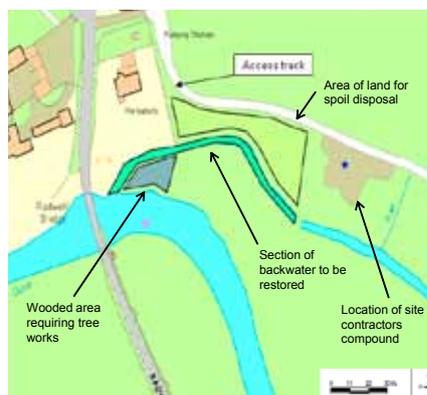


The backwater channel during high water flows. All images © Environment Agency copyright and database rights 2013

Background / Issues

Environment Agency fish population surveys and angling catches show that there has been a decline in fish populations in some sections of the upper Great Ouse since 2009. Barbel, chub and roach populations appear to be most affected. A combination of predation of spawning areas by signal crayfish and otters, poor spawning habitat and in particular a lack of suitable refuge areas for juvenile fish that enable fish to shelter from predators and unsuitable weather conditions.

Upstream of Radwell Bridge on the River Great Ouse there is a 500 m section of unmaintained backwater channel that has been allowed to overgrow and over time became cut off from the main channel. Although the Radwell backchannel is classed as “Main River” in terms of flood defence it has received no maintenance for over twenty years. This has resulted in the watercourse becoming heavily silted and densely vegetated with reed sweet grass. The channel is virtually dry in low flow spring / summer conditions but contains water during the autumn / winter months due to runoff and overland flow.



(1) Upstream section of unrestored backwater near to an old farm bridge; (2) Design layouts for restoration works. Mapping © Environment Agency copyright and database rights 2013. © Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380

Step-by-step

During February and March 2012 the Environment Agency restored 130 m of the backwater feature through vegetation clearance as part of the Great Ouse Wetland Vision project.

Approximately 650 m³ of silt and dense vegetation were removed, opening up the back channel as an off-river refuge. Vegetation was removed to expose the soft sediments that had filled in the channel, and this was then removed to restore the previous bed and bank profile. Sediment arising from the excavation was used to create a slight levee (embankment) leading from the backwater channel on to the floodplain.

This created a suitable refuge area for fish to use during high flow conditions in the main river. The project also created a ford, a sheep drinking area and included reseeded a small woodland area with native woodland plant species.



(1) Backwater channel prior to restoration works
(2) Backwater channel post restoration works

Benefits

- A fish population survey on 13th November 2012 in the restored backwater found 12 coarse fish species where previously there was no opportunity for fish populations to survive. The survey provided evidence the restoration project was a success and future opportunities to create similar off-river refuge areas that are able to support fish spawning and areas of shelter will be investigated.
- The restored river channel created additional off-stream flood storage potential.



(1) Restored channel during high flows

Lessons Learnt

- A small restoration project such as this can yield significant returns in terms of juvenile fish species supported. Only 130 m of channel (of a possible 500) were restored, but an increase in juvenile fish (from zero) was found within the channel in the first year.

Project contact: Fisheries and Biodiversity Team, Central Area Office, Anglian Region, Environment Agency