



Catchment Restoration Fund (CRF) Project Briefing Note

Wensum River Restoration and Floodplain Enhancement

The unfavourable ecological condition of the River Wensum SSSI/SAC has arisen over the years through a series of adverse modifications in hydromorphology of the River Wensum, leading to failure of Waterbody GB105034055881 to achieve 'Good Ecological Potential' under the WFD. Diffuse water pollution to River Wensum from both agriculture and urban sources and disconnection of the River Wensum from its floodplain have also led to consequent ecological impoverishment of the floodplain.

The River Wensum and Floodplain Restoration Project is therefore designed to implement restoration measures to restore the form and function typical of a Norfolk Chalk River (e.g. channel narrowing, restoring gravel beds, increasing sinuosity, increasing woody debris). This will improve fisheries, invertebrates and plant communities within the SSSI and SAC and restore the connectivity of the floodplain and floodplain wetland habitats; including the restoration and creation of reedbed and fen habitats. Water quality of urban run-off from Fakenham and adjacent agricultural land will also be improved before reaching the river. Significant and measurable improvements in habitat for designated features of the River Wensum SSSI/SAC (as identified in the River Wensum Restoration Strategy) are key objectives of the project.

Key facts	
River Basin District	Anglian
Catchments	Broadland Rivers
Outcomes	Restoration of the River Wensum and its Floodplain between TF93240 29285 and TF95235 28672
Start Date	August 2012
End Date	March 2015
Budget	£685,000
Project Partners	Pensthorpe Conservation Trust, the Environment Agency, Norfolk Rivers Trust, Natural England, Norfolk Rivers Internal Drainage Board.

The project will make a significant and measurable contribution to the restoration of favourable ecological condition of the River Wensum Natura 2000 site, notably the following European features: bullhead, brook lamprey, white-clawed crayfish, Desmoulin's whorl snail and water crowfoot vegetation communities. The aims of the Norfolk Biodiversity Action Plan for chalk rivers, reedbeds, wet woodland, otter, water vole, and white-clawed crayfish will also be met. The project will build on existing monitoring protocols developed as part of implementation of the River Wensum Restoration Strategy, as well as incorporating recommendations from the newly published RRC PRAGMO guidance.

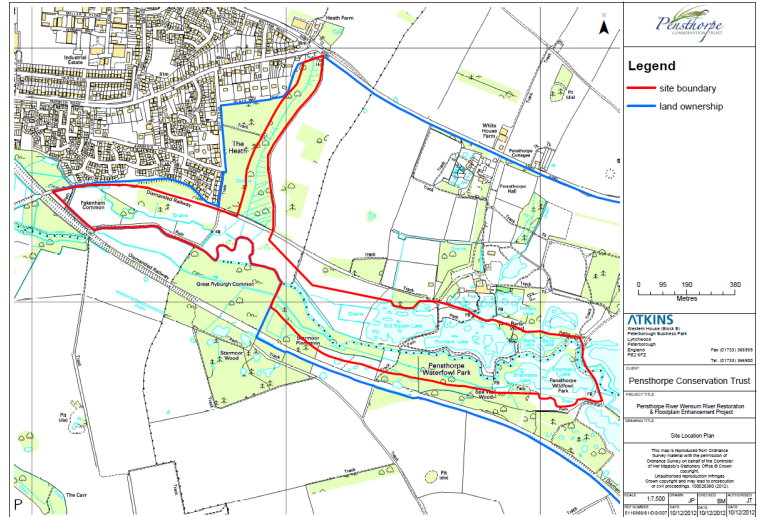
Description of Works

There are three main themes to the project:

River restoration - Implementation of river restoration measures to improve the physical habitats and biodiversity will be implemented on 2.5 km of the River Wensum SSSI/SAC, in accordance with the vision set out in the River Wensum Restoration Strategy. This involves the reconfiguration of River Wensum reaches 23 and 25, linking these to the already restored reach 24 'Meander Loop'; reintroducing sinuosity and varying bed topography in what has hitherto been managed as a straightened planform channel, increasing severely reduced ecological values and reversing poor long-term management sustainability.

This component would create favourable ecological conditions for key species such as water vole, brown trout, stone loach, bullhead, brook lamprey, common eel, white-clawed crayfish and Desmoulin's whorl snail, as well as water-crowfoot *Ranunculus* and other aquatic plant communities. All of which are identified in the river's SSSI and SAC notifications and the River Wensum Restoration Strategy as being in need of intervention.

Floodplain reconnection and enhancement - this project component will improve the functionality and connectivity of the floodplain and restore and develop wetland habitats, notably in excess of 10 ha of reedbeds and other wetlands, in order to support key biodiversity indicators such as bittern and bearded reedling, in accordance with the objectives of the Norfolk BAP and Natural England's objectives for the River Wensum SAC. Restoration of floodplain functionality would be achieved through the enhancement and development of floodplain habitats (notably reedbeds), in order to support key biodiversity indicators such as bittern and bearded reedling, in accordance with the objectives of the Norfolk BAP; as well as improving conditions for such species as otter and improving spawning opportunities for roach and other fish species, and potentially providing an opportunity to restore the swallowtail butterfly to the Wensum Valley. There are also opportunities to improve backwater habitat for coarse fish species within the existing floodplain drainage network, and so contribute to the objectives of the Wensum Fisheries Action Plan.



Diffuse pollution attenuation – Diffuse pollution water quality issues arising from un-attenuated surface water run-off from the town of Fakenham and from the agricultural catchment to the north of the site, will be addressed through the creation of balancing wetlands and enhancement of existing reedbeds. The wetlands at the western end of the project area will directly intercept un-attenuated flows from adjacent urban and agricultural sources. The water levels of the most northerly reedbed, designed to attenuate both road and agriculturally-related runoff, will be controlled through installing a valve system in place of the existing piped culvert under the disused railway line.

The integration of these three themes would provide an exemplary solution to the issues that the current complex impacts pose to the sustainability of this part of the River Wensum SSSI/SAC. Each plays a key role in itself, but together they provide long-term and lasting benefits to the ecology, water quality, flood management, public access and community engagement in the Wensum Valley.

What will success look like?

Once the project is complete, approximately 2.5km of the River Wensum flowing through Pensthorpe will have restored ecological and hydrological functionality and provide habitats for a range of key chalk river species such as brown trout, white-clawed crayfish, Desmoulin's whorl snail and water crowfoot. In addition to this, the adjoining floodplain will have significantly enhanced connectivity to the river and diffuse pollution from both Fakenham and adjoining agricultural land will have been mitigated. The area of reedbed and other associated species-rich fen habitats in the vicinity will also have been extended by over 70%. Once complete, the project will have reversed the decline of ecological values in this part of the River Wensum SAC/SSSI and put in place a sustainable management regime under the auspices of the Pensthorpe Conservation Trust, funded by nature-based tourism.

About the team
Project Manager: Robin Chase (Atkins)
Admin/Finance/PR: Alison Woodward (Admin), Lorraine Findlay (Finance), Ed Bramham-Jones (Site Management)
Director: Tim Nevard
Other contacts
Environment Agency: Rob Dryden & Adam Thurtle



Contact: Pensthorpe Conservation Trust, Fakenham Road, Pensthorpe, Fakenham Norfolk NR21 0LN. alison.woodward@pensthorpe.com