

Remove structures that are no longer needed

Project Summary

Title: River Uck, Buxted Park: Middle Ouse Restoration of Physical Habitats (MORPH)

Location: Buxted, East Sussex, England

Cost of technique: ££

Overall cost of scheme: ££££

Dates: 2012-2013

Mitigation Measure(s)

Remove structures that are no longer needed

Improve channel geomorphology to create habitat

Preserve and improve water's edge and bank side habitats

Development of a strategy to manage sediment in an appropriate way

How it was delivered

Delivered through: DEFRA / Environment Agency

Partners: Ouse and Adur Rivers Trust (OART); Royal HaskoningDHV

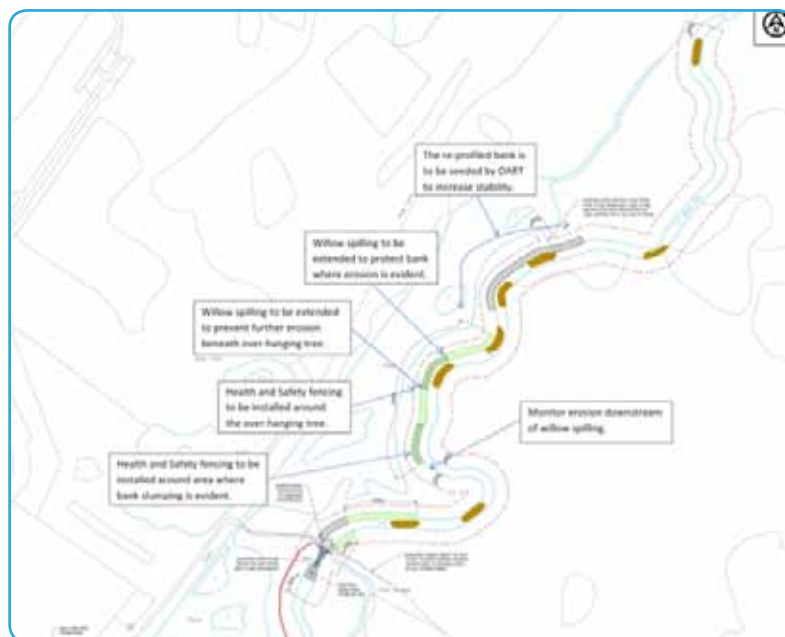


River Uck downstream of the weir after removal

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Background and issues

Historic modification to the watercourse for industrial and land drainage purposes included the construction of a concrete and wooden weir on the River Uck in Buxted Park. The structure had a major influence on the river, and impoundment behind it extended for approximately 2km upstream. Prior to the MORPH project, OART in 2011 removed the wooden boards reducing the upstream impoundment and allowing the channel to begin to adapt naturally to the reduction in water levels. The MORPH project was responsible for removing the remaining parts of the structure, installing bank protection to prevent erosion capturing nearby fishing lakes, and enhancing fish habitats upstream of the structure.



Overview of the Buxted Park restoration scheme, including the weir at the southern end of the reach.

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Step-by-step

Summer 2012 – Spring 2013:

- The concrete weir was removed, including the wing walls and metal components, leaving the concrete apron. The banks were reprofiled and the weir pool was infilled using rock and gravel material;
- Kentish Ragstone gravel (sized between 20-40mm), selected to encourage barbel, chub and dace, was used for gravel seeding of key locations on the inside of meander bends throughout the reach;
- Willow spilling was installed to protect footpaths and ornamental fishing lakes where essential;
- Bank reprofiling was undertaken in high-risk areas at the downstream end of the reach.



Clockwise: (1) Weir prior to works; (2) weir after wingwall / metal removal; (3) construction of gravel beds; (4) willow spilling protecting reprofiled right hand bank.

Benefits

- The reduction in water levels has allowed the banks to collapse naturally, markedly increasing morphological diversity in this formerly uniform reach;
- Seeded gravels have successfully supplemented the naturally occurring gravels in the reach to create areas of increased flow diversity and depositional features. The features have been reworked during large floods but remain in place;
- The new natural bank profiles, in-channel features and gravel deposits provide valuable habitat for coarse fish species, aquatic invertebrates and plants.
- Targeted bank reprofiling and installation of willow spilling is effectively preventing erosion of the bank

toe, and has stabilised vulnerable banks adjacent to the footpath and fishing lakes. This has been used sparingly to maximise the operation of natural processes.



Lessons Learnt

- The phased approach to structure removal allowed the river to begin responding to a reduction in water levels before bank protection measures were installed at vulnerable locations. This minimises the impact on natural processes and demonstrates that extensive bank reprofiling is not necessary at a relatively unconstrained rural site.

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