

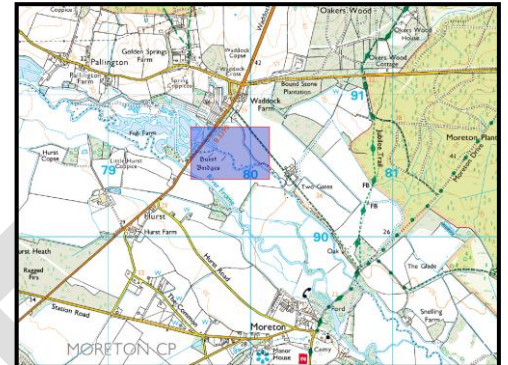
Water Framework Directive Delivery

River Frome Rehabilitation Plan: Unit 3a – Hurst Bridge 2013

Background

The main River Frome Unit 3a flows mostly through the Moreton Estate. This reach in particular is downstream of the Hurst road bridge. It was historically part of an old mill system and the reach retains a fixed crest weir at the location of the former mill. Removal of the weir was discounted early on due to costs and possible impacts on the road bridge. Works were concentrated on the reach between the bridge and the weir looking to improve the channel and bank structure and creating a greater range of habitats in particular for fish.

The River Frome Rehabilitation Plan states the main proposals to improve the SSSI condition and WFD objectives of Unit 3a and to incorporate as part of the Hurst Bridge Project are: a) **increase / diversify channel bed profile** creating deep pools and gullies and b) **to introduce large woody debris** to provide in channel habitat and vary bed profiles through scour and deposition.



Planning



The appraisal and design for this reach involved numerous site visits with the Moreton Fishery Syndicate and Natural England. The works were intended for delivery in 2012; however the high flows throughout the summer and autumn led to a delay until 2013. The summer floods of 2012 also led to some bed profile changes and



subsequent changes to the design, in part reducing the extent to which bed reprofiling was required. In early 2013 it was agreed that a project in the reach was still worthwhile and a slightly scaled back project was progressed.

In this reach there were already good examples of 'natural' berm development which were to be used as a guide when creating berms lower in the reach as part of bank reprofiling. The created berms would also help create a low flow narrower channel making the available water as ecologically beneficial as possible.

Delivery



The works were delivered by the EA's Operations Delivery Team; including the same individuals who have also completed works at Woodsford Channel 2009 and North Channel 2013.

The works mostly consisted of moving existing gravels around; creating deeper pools and longitudinal gullies within the channel allowing greater resilience during low flow conditions and creating shallow berms



and ledges close to the banks. The bed reprofiling in the upper part of the reach is intended to help an existing vegetated berm to extend further downstream while also creating a deeper thalweg which will benefit the reach during low flow conditions.

A section of bank was reprofiled to lower its height. It is hoped that during higher lows this part of the bank will become inundated and the vegetation growth in to the future will change compared to other sections in the reach. It may also create a more diverse fishing experience. The bank reprofiling here provided the soil material and turfs for the constructed berm as described below. A water vole survey was carried out that did limit the extent of the bank reprofiling that could be undertaken.



In the lower section of the reach a solid berm was created. This involved pulling existing gravels towards the bank creating an exposed raised berm. Soils from localised bank reprofiling were placed on top and turfs of bank side plants (sourced from bank reprofiling as



described below) on top of the soils and firmed down. A small back channel was left between the berm and the bank in the short term as a fish fry refuge but over time it is expected to silt up increasing the size of the berm. To give the upstream face of this berm some protection during high flows a large wooden deflector was installed with gravels piled on top to create a strong and durable structure.

Added Value

Reducing Bank Erosion

At the farm across bridge within this reach a large willow has been overhanging into the channel upstream of the bridge for several years. During the high flows of 2012 this was resulting in increased bank erosion which was feared could lead in the medium term to eroding the bridge abutments. Due to its size and location this was more complicated than simple riparian tree management that the fishing syndicate to undertake. It was agreed that while the skilled chainsaw workers of Ops Delivery and the excavator were on site this tree could be managed to minimise the bank erosion risk. The tree has been kept almost whole and is lined up to be used as LWD in future projects downstream.



Lessons Learned

This project did pose some issues during its delivery. The extent of the berm creation and bed reprofiling was limited due to the presence of overhead power lines. A safe working method was implemented by the Ops Delivery team. Initially the excavator to be used had an 8m reach; this was also used on the North Channel job. However this reach was wider and to maximise the benefits of the project a long reach had to be brought to site. This came at additional cost but enabled effective delivery of the project. The long reach machine was also used on a few parts of the North Channel project which were out of reach from the original machine. The tree works described above were also able to be carried out with the larger machine.

EA Cost: £10k Reach Length: 150m LWD: 2 Structures Bank reprofiling: 40m

All enquiries about the Martins River Island project and the River Frome Rehabilitation Plan contact Aly Maxwell on 01258 483390 or follow the link to the Environment Agency's website for further information: <http://www.environment-agency.gov.uk/frome>

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