

Water Framework Directive Delivery

River Frome Rehabilitation Plan:

Lower Woodsford 2012 - 2014

Background

The upper reach of the Lower Woodsford Channel has been historically straightened but there are now signs of recovery. The option for this reach is for 'Assisted Natural Recovery'. Riffles and berms are developing which are improving the channel condition.

Dredging in the lower reaches has removed in channel features such as riffles and glides resulting in a low variety of flow patterns limiting the range of habitats although in itself an important habitat for mature fish.

A deep drainage ditch had been created in the 1970's running parallel and south to the river for nearly 1km. The material this generated was used to embank the river to reduce flood flows.

There's a lack of riparian trees and shrubs in the upper reaches which would provide habitat on the river banks for insects and birds and also provide shade which helps reduce the river temperature creating better conditions for fish.

The majority of floodplain land to the south of the river has been in arable production since the drainage activities limiting the river corridor habitat value. This also allows sediment runoff to enter the river affecting in channel ecology by covering gravels that Salmon and Trout spawn on, reducing their reproductive success.

Proposed works will consist of:

- riparian and floodplain tree planting (22,000 – Forestry Commission Grant Scheme)
- embankment removal
- removal of hard bank protection
- ditch reprofiling
- channel and scrape creation
- installation of Woody Debris within the newly created channels and scrapes
- bund and revetment to protect the National Grid pylon

Outline Design

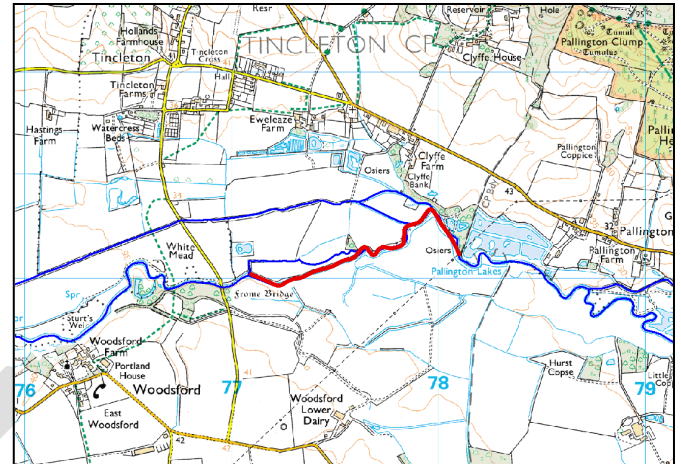
In discussion with the landowner in 2012 the original outline design highlighted areas of bank regrading, bed reprofiling and bed raising, creation of a new set back embankment and ditch to allow continued arable production in a section of floodplain land.

Up to 11 Ha had been allocated by the landowner as part of the habitat creation. This had been primarily allocated for woodland planting through the English Woodland Grant Scheme.

Detailed Design

Ongoing discussions with the landowner through 2013 and into 2014 allowed for an expanded scope increasing the project area to 15 Ha, encompassing all the arable floodplain land south of the river. The additional 4 Ha was predominately floodplain woodland but not within the EWGS application. The costs of the extra trees and their planting was included within the EA project costs while the Woodland Trust paid for guards and posts. The requirement for the new embankment and ditch were dropped. The existing main ditch was to be retained but reprofiled creating a more ecologically suitable habitat.

The existing embankment was removed only where free of mature trees allowing greater river and floodplain connection while minimising impact on existing good habitats. The embankment material was used to reduce the size and depth of the existing ditch while also reducing waste costs.





No Planning permissions were required as both West Dorset District Council and Dorset County Council agreed the works came within the EA's Permitted Development.

As part of reconnecting the river and floodplain a network of floodplain channels and scrapes will be created which will accommodate water during the first stage of high out of bank flows. The 3000Tn of material created due to its high quality was collected and spread on adjacent arable fields outside of the floodplain by the farmer helping to reduce costs of the final project.

Risks and Management

A pylon within the project area required discussions and approvals from National Grid leading to the creation of the bund to deflect high flows and stone revetment alongside the existing ditch to reduce bank erosion.

A geomorphological Assessment and Flood Modelling of the proposals have been undertaken to support the final designs.

Monitoring

A range of pre works monitoring has been undertaken as part of a site specific Monitoring Plan including; electro fish sampling, RHS survey, geomorph biotype mapping, sediment sampling, fixed point and aerial photography. Post works monitoring as per the Plan will be completed when required to show what changes and improvements have occurred

Ecological Mitigation

Pre works strimming has been undertaken to reduce the spread of Himalayan Balsam during the project. The strimming is also helping to mitigate the risk of water vole impacts during the embankment and ditch reprofiling activities. As part of this a specific method statement for managing water voles has been developed. Methods were agreed prior to commencing but also adjusted during the works to minimise the impacts on fish during the ditch reprofiling and water voles during the bank reprofiling and embankment lowering.



Delivery

The project was delivered by the EA's Field Services team in 9 weeks. To reduce the programme and make the most of dry conditions the scrapes, ditch and embankment work were conducted simultaneously with two excavator teams for most of the project.

Casterbridge Fisheries and Dorset Wildlife Trust were brought in at key times to support fish rescues on the ditch and water vole assessments during the embankment lowering.

Tree planting design and guidance has been produced in partnership by the Woodland Trust and Dorset Wildlife Trust to ensure the correct species of trees were planted in the right densities and locations to maximise the ecological benefit throughout the site.



Project Partners

This project from start to finish had many partners to help deliver each phase. Including: Halcrows (Designer), Forestry Commission, EA's Keeping Rivers Cool Project and local Fisheries and Biodiversity team, Dorset Wildlife Trust (including river ecologist and wetwoodlink officer), FWAG SW, Woodland Trust, Natural England, Casterbridge Fisheries, Woodsford Estate and Farm Manager contributing their knowledge and experience in aspects such as tree planting design and species selection, water vole survey, fish rescue, scrape design and more.

customer service line

08708 506 506

www.environment-agency.gov.uk

incident hotline

0800 80 70 60

floodline

0845 988 1188

Partner Contributions

Below is an attempt to assess the contributions some of the partners made to the project:

Forestry Commission (English Woodland Grant Scheme) - £44,000
Woodland Trust (Materials) - £3,000
Woodland Trust – Staff Time –
Landowner / Farm Manager - £3000



Wider Benefits

The farm manager was determined that whatever project was delivered it would provide a long legacy for the farm owner and over time would create both a visually pleasing landscape but a valuable habitat in its own right as well as delivering the key objectives and drivers that the EA and Natural England work towards.

Lessons Learned

It is important to ensure water vole mitigation works are instigated as soon as possible prior to the main project to reduce the risk of project delays or re-colonisation. One section of the embankment wasn't trimmed and became colonised by water voles leading to a works delay and additional work load (please refer to the *L Woodsford Water Vole* fieldnote).

Assessing quantities of spoil being created and what is required in other parts of the site is important to minimise vehicle movements and therefore keep costs down.

An ecosystems services approach could have been taken at the very start of the project to properly assess the whole range of services and those who might benefit from the project. This could have allowed for even more benefits and services than were actually achieved.

Feedback

Mark Edgecombe, Woodsford Estate Farm Manager

"The current project implemented at Woodsford Farms, designed and implemented with all parties' involvement is hopefully a small step in a much bigger issue. We see it as an exciting development, which could offer a blueprint for other potential works within the Frome and Piddle catchment"

The local primary school took 30 children to the site while trees were planted and each has a copper name tag on a tree they helped to plant.

EA Cost: £55,000 Design Cost: £25,000 Reach Length: 1800m LWD: 10 Structures Embankment Lowering: 300m Ditch reprofiling: 685m New Channel: 650m Scrapes: 0.5Ha Trees: 18,000 (EWGS) 3450 (MoreWoods)

All enquiries about this 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>

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