East Yorkshire Rivers Trust

EAST YORKSHIRE RIVERS TRUST Newsletter 10 - July 2016

LOWTHORPE MILL DIVERSION

There are records of a water mill on this site as early as the 14th century. The mill was refurbished on several occasions and passed through various owners until, in 1720, it was purchased from the Pearson family by Sir William St Quintin of Harpham. The bulk of the Lowthorpe estate still belongs to the Legards of Scampston, descendants of the St Quintins.

Following the final modification in about 1770 the mill sluice provided a 'head' of 1.8 metres to drive the breast-fed waterwheel. The mill was demolished in 1959.

Following an EU Water Framework Directive, issues on constraints to fish passage and sediment transport meant that the mill could not meet the requirements of the Directive due to the following:

1. The sluice and the head of water was an effective barrier to the migration of fish.
2. The mill pool acted as a sediment sink and required regular dredging operations to maintain open water.
3. Initial plans to install a fish pass within the structure resulted in many and varied issues relating to soundness of the structure and long term plans for the watercourse.
4. Financial constraints for river management led to withdrawal of funding for the required maintenance needed to maintain the mill pool.

The Rivers Trust proposed a longer meandering course that could potentially result in many more pool and riffle sequences and would result in greater flow diversity and habitat creation. The new river would be over 250 metres longer and the fall in the newly created channel would comply with a typical chalk river.

The overall aim was to create a diverse self-cleaning channel with very low flood risk to adjacent property that would be aesthetically pleasing and provide good chalk stream habitat, whilst at the same time providing high class angling opportunities.

Continued over...

Lowthorpe Mill and Farm sometime prior to 1959

Forming the channel with the chalk substrate visible

supported by Environment Agency

Continued...

The marginal areas and banks were sown with a special grass mix. Marginal plants were imported from the main river derived from weed cutting operations. Ranunculus *(Water Crowfoot)* was also introduced to the new channel and locally indigenous trees and shrubs were planted at strategic sites around the river.

The Ranunculus imported during autumn 2015 finally began to form established beds creating a diverse flow pattern through the new stream course. Some seeding of margins was also undertaken during autumn 2015.

Below: Tree planting operations

Above: Introduced Ranunculus beds now thriving

Lowthorpe Wet Woodland Project

This woodland, near the source of Foston Beck, covers an area of around 45 acres, part of which is designated a Site of Special Scientific Interest (SSSI).

Many small springs and streams rise within the site. The habitat is being degraded due to the large tree canopy that is shading out many of the rarer plant species from the woodland floor. The lack of sunlight is also limiting the biodiversity of the streams.

The aims of this project are to remove many of the non-native trees in an effort to increase the diversity of plant species on the woodland floor. Some of this material will be used within the stream. The placement of Large Woody Debris (LWD) within a watercourse has shown to benefit both fish and increase the aquatic plant community.

Both fish, invertebrate and plant surveys will follow the completion of this project.

The CaBA Seph Project 2015/16

The Wild Trout Trust (WTT) report was commissioned and paid for by the EYRT to highlight and identify issues that have been and are still in places that contribute to the River Derwent's poor ecological status under WFD. This report was submitted as evidence to support an application for funding under the CaBA initiative which was successful.

Predominately the issues are silt pathways, and erosion issues often caused by stock encroachment to the watercourse. Within the report 28 locations had been identified as being in need of addressing in regards to stock control. LWD was seen as a significant problem for some land owners and farmers.

To address the issue of LWD we hosted a River Seph LWD demonstration day at Shaken Bridge Farm hosted by Mr Lang. There was good attendance and two sites on this reach were addressed using the WTT and the EYRT staff. They demonstrated techniques that have been used to good effect across the country. The day was to show that not all LWD is a problem and can be a benefit if viewed and managed in the correct manner. The photograph shows some of the attendees. Using the WTT report we highlighted the point source issues and started our plan of engagement with the land owners. Most were sympathetic to the aims and objectives of the plan and some contributed time, advice and support with the aims of the plan.

Working with eight different land owners/farmers along the catchment, from the top of the catchment i.e. Raisdale Bilsdale Beck down to below the confluence of the Rye/Seph, we have excluded beef cattle, sheep and horses and provided more environmentally friendly stock watering from the open watercourse than previously. In total we have fenced off approximately 2.2 miles of the water body in five different locations along the catchment, almost a fifth of the lengths of the river identified within the report.

River Derwent Catchment Partnership – *Update, June 2016*

We have now appointed a Board for the Catchment Partnership to steer and support the work that the Interim Steering Group has been doing. The Board will meet for the first time in July and includes landowners and organisations living and working in the Derwent catchment. Alongside this, we are developing ideas for individual projects aimed at restoring and improving water quality, habitats and biodiversity in the catchment, as well as using natural flood risk management techniques to help manage water levels.

Too much sediment in a watercourse can cover spawning grounds for fish and affect plants and wildlife. This is one of the issues the Partnership is helping to address. Simple, low-cost measures such as a silt trap to 'catch' the sediment can have a significant impact and help reduce the amount of sediment in the Derwent. Working with local landowners, and with funding from Cemex, the East Yorkshire Rivers Trust have installed several silt traps in the catchment and, less than six months on, these are proving to be a success, trapping sediment and helping to stabilise river banks. These measures complement other actions taking place to reduce the amount of sediment in the river, such as silt ponds and cattle drinking points, both of which has been installed as part of the River Derwent Restoration Plan. These are even more effective in the longer term, as they stop sediment entering the river in the first place and, in the case of silt ponds, allow farmers to reclaim the valuable top soil from the pond, rather than losing it to the river.

Some 22km of the River Derwent, from its confluence with the River Rye downstream to where it joins the Ouse, is designated as a Site of Special Scientific Interest (SSSI). With funding from Natural England and the Environment Agency, the East Yorkshire Rivers Trust has been implementing actions identified in the Restoration Plan for the River Derwent. Work will continue this year, but over the last 12 months, projects have continued to focus primarily on action to reduce the amount of sediment entering the SSSI/SAC from the many tributaries and field drains, along with control of INNS. Walkover surveys have been completed on nine tributaries in order to identify any sediment hotspots and other potential issues. Recommendations will inform future potential projects. In addition, a feasibility study is being undertaken near Kexby to investigate potential modifications to the floodbanks in order to reconnect the floodplain to the river.

The Environment Agency is also continuing with its 'Doing more for the Derwent' project looking at the importance of and requirement for all of their structures within the river. As part of this an options appraisal is currently being undertaken on Kirkham weir and sluices.

The North York Moors National Park Authority, as lead organisation, has just submitted a bid to the Heritage Lottery Fund (HLF) for around £1.5 million for a project within the Rye catchment over a four-year period. The project would include work to strengthen habitat connectivity in the area, conserve priority species, improve water quality, understand and safeguard historic features and promote public access and engagement. The bid directly contributes to the goals of the Derwent Partnership and the project team includes several members of the Interim Steering Group – a huge amount of work has gone into the bid, so watch this space to find out if it's successful.

Poaching by farm stock in this instance was causing serious suspended sediment and bank erosion

In this case cattle regularly entered and passed under the bridge to gain access to the opposite bank

The Grass Snake *(Natrixnatrix)*

could as easily be called the water snake as these are its two preferred habitats, although it can also be found in damp woodlands and heath. It is Britain's largest snake with females measuring up to 120cm (4ft) in length. The coloration is olive or grey green with two yellow or white patches almost fully encircling its neck. The flanks are marked with black bars along with black dots. They feed mainly on frogs and other amphibians, often hunting in the morning. If a large prey item is caught then this could sustain it for up to 10 days before it needs to hunt again. Although they do have fangs to catch prey, they are not poisonous. Much of their time is spent basking in sunny sheltered spots when not hunting.

Predators such as badgers, hedgehogs and birds will all hunt grass snakes but adults can live up to 9 years. If threatened they have a defence mechanism, where they can play dead, rolling onto their back and laying lifeless. Sometimes they also emit a smelly, jelly-like substance to deter predators. During their life grass snakes can shed their skin many times as they grow, with up to 3 to 10 'moults' a year, called sloughing. Whilst sloughing the skin becomes dark and the eye mists over.

The wetlands adjacent to rivers and streams offer ideal potential for grass snakes and habitat can be enhanced by providing habitats for amphibians, along with suitable egg laying and hibernation areas.

Whinhill Project

Over the last year work has been carried out to improve a degraded section of the West Beck chalk stream, known locally as Whinhill. The area of stream in question had been identified through the River Hull headwaters SSSI restoration plan which sets out actions that should be taken, along different reaches of the stream, to improve features or attributes linked to that particular stretch of water.

The section along Whinhill lies behind a fish farm and during low spring flows suffers from a lack of water. A plan was formulated by the Environment Agency, using technical input from their geomorphology team and in partnership with the landowners, riparian owners, Natural England, Yorkshire Wildlife Trust and East Yorkshire Rivers Trust. This plan focused on in-stream and bank habitat improvements to create better conditions for invertebrates and fish to ameliorate the impacts of the low flows.

The following photos show works being undertaken. Monitoring works will continue over future years to look at any changes that may occur, taking into account natural variations and fluctuations in flows and river levels that occur year on year.

Invasive Non-Native Species (INNS)

The Trust has been undertaking surveys along our watercourses to identify, map and ultimately deal with INNS on our rivers. Japanese Knotweed is one of these species that has a minor foothold on the Gypsey Race from the Wolds to Bridlington town centre and it can damage structures as it can grow through brickwork and tarmac. It is very difficult to eradicate and can require several treatments.

Please advise us by completing the contact page on our website *www.eastyorkshireriverstrust.org.uk*

The Cascade Project with Ampleforth College

September 2016 will see a group of senior students from Ampleforth College take part in an innovative study involving river science. The Cascade Education Project, a national Rivers Trust initiative, is designed to educate young people about the importance of rivers and their place in the landscape. To help achieve this, the project is intended to develop in secondary education students, an understanding of basic river science through hands-on practical work on a river close to their place of education.

The title Cascade is given to the way information, through involvement, can be 'cascaded' from Rivers Trusts' members to senior students at secondary education establishments who, in turn, will pass their learned expertise on to childeren from local primary schools. This way it is believed that the youngsters will develop an understanding of the natural world, and the students develop teaching and learning skills which are transferable.

A start has already been made on planning the project with science staff of Ampleforth College, through David Croft and John Shannon of the East Yorkshire Rivers Trust. It is also hoped that joining the Trust team will be Dr Michelle Smith from Hull University, who has considerable experience of river invertebrate sampling and working with school children. Dr Smith is seen to be a role model for the students involved and having a pivotal role in working with the children.

Pickering Beck Rehabilitation Project

The Pickering Beck project has received funding from the Cemex Environmental Trust. The project aims to create self-sustaining populations of brown trout, grayling and river lamprey within the Pickering Beck and to improve habitat for the nationally rare Duke of Burgundy Butterfly.

This work is part of an ongoing project being run by the East Yorkshire Rivers Trust (EYRT) in partnership with the Pickering Fishery Association and the Duchy of Lancaster Estate, land owners.

Siltation, over-shading trees and lack of woody debris in the river have all had a negative impact on fish habitat and spawning areas. Action taken includes the reduction of the tree canopy to allow sunlight to reach the stream and the forest floor. This will promote the growth of plant species that will increase the biodiversity of the forest. The glades that have been created will provide natural flight paths for the rare Duke of Burgundy Butterfly and suitable habitat for the growth of cowslips and primroses, their primary food source.

The project will also fell some trees to reduce over-shading of the Beck and create woodland glades. The larger felled timber will be used to stabilise banks and block silt pathways. Large woody debris will be introduced into the Beck to provide habitat for invertebrates and fish. To minimise damage to the forest floor a 'horse logger' was used to move the large felled timber within the project site.