The Welland Valley at sunrise: Callum Crawford

Review of 2019

WHAT’S HAPPENING IN THE RIVER WELLAND CATCHMENT?
The Welland Valley Partnership (WVP) was formed in 2011 through the collaboration of statutory organisations, local authorities, private businesses and charities to identify the pressures on the River Welland catchment and take steps to address the together. The WVP is one of more than 100 active catchment partnerships working towards improving the water environment in England.

The WVP is hosted and chaired by The Welland Rivers Trust and meets every two months to share expertise and resources, develop new project ideas and discuss funding opportunities.

The following organisations steer the work of the WVP:
Foreword

I hope that you enjoy reading this review of the work that a whole range of people are doing to improve the River Welland and its catchment. I have the honour to chair the Welland Rivers Trust and the Welland Valley Partnership which bring a lot of people and groups together to do some amazing work.

The real magic of what we are all doing is that it is not just done by organisations like the Environment Agency and Anglian Water, who are incredibly valuable partners, but also by volunteers working in groups or as individuals such as the Harringworth Mayfly Fishers or the residents of Stamford who are working to restore wildflower meadows.

The Welland is a beautiful river, but as Chris French, our amazing Project Manager, explains, it needs all of us to help.

So if you’re interested and wish to get involved please look at the website www.wellandriverstrust.org.uk or contact us directly - info@wellandriverstrust.org.uk.

Peter Barham
Welland Valley Partnership Chairman

Introduction

We are beginning to witness the impacts of the climate crisis in the Welland catchment as rainfall patterns change and long periods of drought contrast with intense storms and flooding events. Changes to our predictable, stable conditions not only impact human life and activities, but can be disastrous for wildlife. We need to act together now to acknowledge the challenges we face and create a more resilient river system for the future. This involves storing and slowing water down as it moves through the catchment and creating new habitat for our riparian wildlife.

The legacy of historical dredging and straightening of the Welland and its tributaries continue to constrain the river’s biological and physical function and we are working to raise the profile of this issue with local communities. For example, re-instating old river channel meanders and raising the bed level with gravels can work to create diverse habitat and help mitigate flooding in our towns and villages.

The health of our water environment is critical to our quality of life and the most recent ecological condition of our catchment as assessed under the Water Framework Directive (WFD) provides a sobering view on how much work is ahead of us. Although it may seem daunting, increasing public support for nature recovery and a better understanding of how the environment is linked to the health and wellbeing of our communities encourages us all to focus and redouble our efforts towards turning the map green!

The work of the partnership includes many actions, among them chemical and biological monitoring exercises. The Welland Rivers Trust has been busy training volunteers from across the catchment to act as champions for their local river by recording water quality and populations of aquatic invertebrates. We are currently trying to get to the bottom of the issue of very low populations of freshwater shrimp in the main Welland, when smaller tributaries seemingly contain healthier populations. Soon, we will be launching a citizen science initiative to try and find out more as well as engaging with local people in new and exciting ways.

It has been a delight to represent The Welland Rivers Trust as Project Manager over the past 12 months and particularly to witness the dedication and interest of our volunteers and local communities. You want to live in a healthier, more biodiverse environment and we want to help make it happen.

Thank you to everyone who was involved in the work of the partnership over the past 12 months, let’s make 2020 a fantastic year for the Welland, its people and its wildlife!

Chris French
Welland Valley Partnership Coordinator

OUR AIMS AND OBJECTIVES
FOR THE RIVER WELLAND CATCHMENT

TO BE CLEANER AND HEALTHIER

TO SUPPORT MORE FISH, BIRDS AND OTHER WILDLIFE

TO MEET THE INCREASING DEMAND FOR DRINKING WATER

TO PROVIDE A MORE ATTRACTIVE AMENITY FOR PEOPLE TO ENJOY

TO BE SENSITIVELY MANAGED BY ALL THOSE WHOSE ACTIVITIES AFFECT IT

TO CONTINUE TO PROVIDE EFFECTIVE DRAINAGE AND FLOOD MANAGEMENT
Local People Investigate River Issues

It’s been an exciting year for The Welland Rivers Trust (WRT) as we’ve worked to extend our popular River Wardens scheme into new areas of the catchment, encouraging communities to take an interest in the issues affecting their local rivers and spend more meaningful time outside.

Through participation in EarthWatch’s FreshWater Watch scheme, we now have access to low cost monitoring kits which can accurately record pollutants such as phosphate, nitrate and suspended sediment. Data collected by our River Wardens from Market Harborough to Deeping St. James are also now being fed into a global citizen science effort to monitor pollution in freshwater ecosystems. For the first time, volunteers can upload their results straight from the field using a smartphone app, although paper copies are still available for technophobes!

In addition to monitoring water quality, River Wardens have been recording a suite of invertebrates by following the Angler’s Riverfly Monitoring Initiative. In the coming year, we will be working with The Riverfly Partnership to accredit our volunteers and ensure their results are included in national records and decision making exercises.

There are now upwards of 40 people involved in the scheme, covering 15 different areas of the catchment. With more groups waiting to be trained in Spring, we look forward to learning even more about our precious rivers. Look out for our River Wardens in their orange jackets!

The money to support the River Wardens project has kindly been provided by Tesco’s Bags of Help scheme, The Leicestershire and Rutland Community Foundation, WF Southall Trust, The P&C Hickinbotham Trust and the Greater Lincs Nature Partnership. If you would like to get involved in the monitoring please get in touch with us.

European Funding Boosts Restoration Projects

Following a competitive round of bidding, in early 2019 we were delighted to be awarded funding as part of the Water Environment Grant (WEG). Originating from the European Agricultural Fund for Rural Development (EAFRD), more than £73,000 will be spent delivering two different projects at opposite ends of the Welland catchment.

The first will take place at Lubenham, just upstream of Market Harborough. The Welland Headwaters Improvement Project will see a suite of river restoration techniques used to revitalise...
a dark and sluggish stretch of the River Welland that runs through a newly planted community woodland. Bank regrading will provide safe access for people to interact with the river and provide new niches for the establishment of wetland vegetation. The channel itself will be encouraged to meander through a series of new berms and gravel riffles that will reduce sedimentation, provide new habitat and improve oxygenation during times of low flow. A little further upstream, a complex of flow deflectors will promote the deposition of course material and trap woody debris, helping to slow the flow of water during high flows. Work had been due to start on delivering the project in November 2019, but high river levels and saturated ground have forced us to postpone until Spring 2020.

Further down the catchment, the second WEG funded project will see WRT partner with Royal HaskoningDHV to conduct a feasibility study into the restoration of the Welland Washes. Inspired by the success of the Nene and Ouse Washes in combining flood storage with wildlife habitat, we see a great opportunity for landowners and communities to benefit from alternative land use on this ~1000 hectare riparian strip between Peakirk and Spalding. Understanding how increased access to nature could improve the health and wellbeing of people local to the washes will be of key interest, as well as the wider economic benefits of creating new destinations for people to visit whilst diversifying the portfolio of farm businesses.

Community spirit and involvement in the Welland catchment has been fantastic over the past year and in March and April 2019, we joined in the Great British Spring Clean with 44 volunteers of all ages across three separate river clean-up events. More than 40 sacks of rubbish were pulled from the River Welland, as well as five shopping trollies, a cash register and a guide to playing chess in Russian...!

In Stamford, residents approached WRT with the hopes of restoring wildflowers to the much loved Freeman’s Meadows, after being motivated by efforts up and down the country to plant up roadside verges with pollinator friendly species. Working together, we enlisted the expertise of Lincolnshire’s “Floodplain Meadows Champion” and have since taken soil samples and begun monitoring the fluctuation of the water table to understand baseline conditions and the methods required to get the meadows blooming once more. In 2020 we will begin the next phase which will involve establishing trial plots and monitoring how the diversity of wildflowers responds.

Finally, we have been getting muddy and wet bringing the river to life for schools and scouts groups through a series of river dipping and invertebrate identification sessions. These have been well received by children and parents alike, with particular interest given to the issue of invasive signal crayfish and their impact on native wildlife. We’ll be running more of these events throughout 2020, so please get in touch with us if you’d like to make a booking. Get out and enjoy the river and its wildlife, there really is so much to see around the Welland!
Town Rallies Around Historic Millstream

The Stamford Millstream is a site of local and historical importance for the town of Stamford. The current channel was cut around 1640 to supply water to King’s Mill, a Grade II Listed corn mill that dates to the 17th century.

Now, a new project aims to improve the Stamford Millstream for the local community and increase biodiversity by improving habitat quality. The project is led by enthusiastic and committed community volunteers affiliated to Stamford Civic Society.

The millstream is unusual that its water has, since the 1970’s, been supplied by a pump at Tinwell Weir. The first phase of the project was to ensure that the pump was working efficiently and reliably, as for many years this had not been the case. The repair works were completed by Anglian Water in September 2019.

Other work completed includes installation of planted coir rolls along the concrete walled bank next to the Town Meadows to provide habitat and to soften the appearance, creating a new natural edge to the millstream. Some desilting of the upper reaches has also improved the flow of water from the newly refurbished pump system.

The millstream project has inspired the local community and local companies to get involved in the improvements, with several work parties clearing overgrown banks and in-channel vegetation, making a huge difference to this popular location’s appearance and enjoyment for those walking along it.

The next phase will involve narrowing the channel at two key locations to improve and maintain flows in the millstream. This should help to keep the channel clear and reduce the pressures of sedimentation. Designs have been produced and the Project Team are hopeful of funding in early 2020 to deliver the next phase.

This project is being led by Stamford Civic Society with partners of Environment Agency, Anglian Water, Welland Rivers Trust, Stamford Town Council and St Peter’s Community Group.

Work party days where local residents can get stuck in with the improvement work take place throughout the year and are coordinated by Amelia Billington. Check out the ‘Stamford Millstream’ Facebook page for more information!
Straightened Channel Brought Back to Life

The Ashley Habitat Improvement Project aimed to stabilise eroding banks and increase the ecological value of a 700m stretch of the River Welland on the Northamptonshire / Leicestershire border.

Stabilisation of the eroding bank was achieved by regrading 130m of straightened, steep sided channel and re-establishing the toe of the bank with a revetment made using bundles of brushwood. In time, this will provide suitable conditions for establishing a greater variety and quality of native bankside vegetation. It also prevented further loss of valuable land to the river.

As part of the regrading work, a 2-stage channel was created using berms to narrow the river width at low flows whilst increasing channel capacity during higher flows. This technique is commonly used in river restoration schemes as it is easy to install and works well within the confined space of an over-deep, straightened channel. The narrowed channel will help to maintain faster flow in times of low water, reducing sediment deposition and thus reducing requirement for future channel maintenance.

Habitat features such as gravel riffles were also built to support brown trout spawning and increase and improve the habitat for invertebrates. Bundles of brushwood were also installed to act as “flow deflectors”, directing the main energy of the flow in different directions. These add variation to flow patterns, create localised areas of bed scouring and provide shelter for fish in higher flows. Restoring physical variations to our river beds and banks provides important niches for wildlife and can increase biodiversity where it has been lost before.

Finally, the project constructed a formal concrete lined cattle drinker at a former site of extensive poaching and bank damage that will reduce the amount of sediment entering the river and provide safe access to drinking water for livestock.

A work party day was later held with volunteers from the Environment Agency and The Welland Rivers Trust which saw the newly created berms and banks planted up with a variety of native wetland wildflower species including yellow flag iris, purple loosestrife, water mint and marsh marigold.

The project was led by Environment Agency with partners that included the Wild Trout Trust, landowners and tenant farmers with Breheny Civil Engineering as Principle Contractor.
Putting Research into Practice at Loddington

The Water Friendly Farming project led by the Game & Wildlife Conservation Trust (GWCT) adopts a rigorous experimental design in a practical farming setting covering 3,000 hectares. It aims to test the potential of adapting land management to improve water quality, aquatic biodiversity, and flood risk management, while maintaining productive and profitable farming systems.

The Freshwater Habitats Trust (FHT) and the University of York are our key research partners. The FHT’s analysis of aquatic plant survey data demonstrates for the first time that the introduction of clean water ponds can increase landscape scale aquatic biodiversity, especially rarer species. Water quality monitoring continues to highlight the major contribution made to base of catchment phosphorus concentrations by small sewage treatment works, and of soil loss from agricultural land.

High rainfall in autumn 2019 provided the first real test of the permeable dams installed over the past three years, with encouraging results for base of catchment flood risk. There have also been considerable lessons learned about the practical installation and maintenance of permeable dams.

Several soil management experiments are also underway at and around Loddington and have important implications for catchment management objectives. These projects also involve members of the farming community across the upper Welland, both through visits to the experiments at Loddington, and through sample and data collection from other local farms. Examples include the EU funded SoilCare project, AHDB levy board funded Soil Biology and Soil Health project and RePhoKUs project. We recently published a reflective assessment of our participatory research on soils with farmers in the Soil Use and Management journal.

The Welland Valley Partnership’s ‘Resource Protection Group’ is chaired by GWCT and continues to meet quarterly, bringing together a wide range of people and organisations concerned with catchment management objectives across the Welland. The group works to help guide applied research, disseminate research results through advice and farmer workshops, and learn from each other to our mutual benefit.
The Welland Mayfly Fishers get a lesson on installing flow deflectors on the River Welland near Harringworth. © Chris French

Welland Anglers Improve Their Patch!

The Wild Trout Trust (WTT) has spent several days with the Welland Mayfly Fishers at Harringworth this year, creating brushwood ledges, installing flow deflectors, and showing the club the methods of maintaining previously installed structures. On one particular occasion in March, we were treated to a spawning display by brook lamprey!

Along this section of the river, trees have been trimmed back to let light onto brushwood structures, with cut willow used to bulk them up. Log jams were manipulated to prevent them from impounding upstream reaches, which was causing sedimentation and diffused flow, and to ensure that the flow was focussed in the centre of channel to maximise the scour effect.

Flood season returned to the Welland Valley quickly this autumn, resulting in the cancellation of 2 tree management workshops at Harringworth with the Environment Agency, and a day with the Guash Fly Fishers at Tolthorpe to install flow deflectors and a habitat ledge made from brushwood bundles. The tree work has been postponed until later on in 2020 and the Guash work will be picked up in the New Year.

Elsewhere in the catchment, following on from a WTT advisory visit on the River Welland at Duddington, a concept scheme to improve in-channel and riparian habitat for a variety of fish and invertebrate species has been produced for consideration and review by a local fishing syndicate. It is hoped that this work can take place over the course of the next 12 months.
Support for new Welland Valley Woodlands

Forestry Commission have been continuing to support woodland creation and woodland management in the Welland catchment this year. Planting trees is a key component of the government’s 25 year environment plan, with a target of 11 million new trees in the ground by 2022. One example of a new woodland creation scheme saw more than 3 hectares planted near Corby using Countryside Stewardship grant money which can fund up to £6800/ha for the initial planting costs and a further £200/ha per year for 10 years during the early establishment and maintenance of the woodland.

This landowner saw the benefits of planting a field with native broadleaves which otherwise regularly floods and hopes that with riparian buffers in place, this site will be contributing to the water quality and flood prevention measures that woodland planting schemes can help with.

A variety of different woodland creation options are available to landowners in the Welland catchment. If you wish to discuss further management of existing woodland or establishment of new woodland, please get in touch with your local Forestry Commission Woodland Officer.

More details can be found at www.gov.uk/government/organisations/forestry-commission

Natural England continues to engage with landowners in the Welland catchment through a number of environmental mechanisms. The organisation actively promotes the Countryside Stewardship Scheme which pays landowners for sympathetic conservation management. There are a wide range of land management options and capital works available, including measures specifically designed to deliver water related objectives.

For more information please visit the website at Countryside Stewardship on gov.uk
The Science Behind Flow Regimes on the Gwash

Between June and October 2019, the Guash Fishing Club (GFC) continued their efforts to trap freshwater shrimp (Gammarus) to monitor the escape of invasive species from Rutland Water. Killer shrimp are considered to be one of the most damaging invasive species in Europe and have the potential to significantly alter aquatic ecology by preying on a wide range of native invertebrates and fish eggs.

Evidence of killer shrimp were found on the River Gwash near the reservoir outfall at Empingham, but none were found downstream at Tickencote or Belmesthorpe. Monitoring was suspended in late 2019 due to high flows, but will resume in when conditions improve in Spring 2020.

As part of a trial project, GFC have been assisting Anglian Water in monitoring the environmental impact of reduced compensatory flow from Rutland Water into the Gwash.

This is an attempt to recreate seasonal flow variation that became constant when Rutland Water was built in the 1970s. During times of low flow in the River Glen, extra compensation releases are made from Rutland Water and are pumped across from the Gwash at Ryhall.

Results show that the two routine ecological sampling sites at Tickencote and Belmesthorpe aren’t currently being impacted by water quality, flow or sedimentation pressures.

The Gwash-Glen transfer was operational between 5th September 2018 and 9th January 2019. The autumn samples were collected when the transfer was operational and show that the new flow regime did not have a substantial negative impact on the ecology at these sites.

Analysis of the macroinvertebrate species range and abundances indicate there has been a benefit to the habitat and freshwater invertebrate community since 2015 when the new flow regime was put in place as more natural flow variation is present.

The monitoring continued through 2019 as the period in which the transfer from Gwash to Glen has lengthened due to lower rainfall and Glen water levels. Data will be reviewed again in May 2020.

Recreating Lost Landscapes at Burghley House

Burghley Estates are in the early stages of a fascinating project with the Welland Rivers Trust. This is planned to take place on a rough area of grazing land on the edge of Stamford, just downstream of Hudds Mill at the confluence of the River Gwash and the River Welland. The area is part of the Estate’s higher level stewardship scheme, but at present, is not being grazed and is essentially lying dormant.

This site features a network of old river channel meanders which have been cut off to improve the land for productive grazing. During the latter half of the 20th century, dredging work lowered the main River Welland channel, leaving the old meanders high and dry with little benefit to wildlife.

Inspired by an historic map of Burghley Estate from the 1890s showing the former course of the rivers and a bold vision to recreate features of a lost landscape, the Burghley Estate Trustees are now excited to begin investigating a number of different restoration scenarios.

The old channel meanders are clearly visible as depressions in the field and also by using computer software. In some places, there is evidence of vegetation typical of wetter environments. However, today these channels sit approximately 2m above the level of the river during low flow conditions, so digging through the banks of the existing channel to allow water to flow back in may not be the best course of action, as fish could become trapped if the river rises and falls too quickly.

Over the course of the next few months we will be modelling the impact of a variety of different restoration scenarios that could see the old channels deepened and reconnected or scrapes and hollows being dug to create “offline” wetland areas. This will be an important step in ensuring the project delivers a result that is good for wildlife, but also sustainable under an increasingly unpredictable climate. A diverse selection of native riparian tree species will also be planted around the site to provide additional habitat and shade.

Whatever the final design of the project turns out to be, the site will be open to walkers by means of a public footpath, so everyone can experience and enjoy the restoration of this lost Welland Valley feature.
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Opening Hours
Monday to Saturday
8am - 6pm
Sunday & Bank Holidays
10am - 4pm

www.farndonfields.co.uk