



The Don, Dearne  
& Rother Network

Catchment Plan  
for the  
Don and Rother Catchment  
2021 – 2026

*“Healthy, Resilient Rivers for Nature and People”*



Catchment  
Based Approach



*Citizen Scientists on the Rother*



*The Dearne at Wilthorpe*



*The Don at Wardsend, Sheffield © Jeff Allsebrook*

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## Using this Catchment

The views and aspirations expressed in this plan do not necessarily represent the formal policy of the organisations who have contributed to this Plan.

If you wish to use this plan as support for a project or funding application etc. please let the Network know your intention, which opportunities you are addressing, and the outcome, so that the impacts of this plan and the Don, Dearne & Rother Network can be measured.

Please send any requests for logo usage to [hello@DonDearneRother.org](mailto:hello@DonDearneRother.org)

## The Don, Dearne & Rother Network

The Don, Dearne and Rother Network is the name of our Catchment Partnership for the Don & Rother Catchment. It is jointly hosted by The Environment Agency and Don Catchment Rivers Trust, and promotes the Catchment Based Approach, often known as 'CaBA'.

The network was previously known as 'The Don Network', and we adopted our new name in 2020 as part of this updated plan. Members of the Network felt that including the Dearne and Rother in our name would make it easier for people to understand our catchment, be more inclusive of organisations working in areas other than the main Don, and we also wanted to emphasise our approach to working at a whole catchment scale.



In our Network, there are over 50 organisations, ranging from local authorities, Yorkshire Water as our water authority, the Environment Agency, large charities, to community and volunteer groups. We are a diverse range of organisations but we have the common interest of wanting to improve and care for our rivers as a catchment.

Catchment partnerships bring together local knowledge and expertise, and are active in each of the 100+ Water Framework Directive catchments across England, including those cross-border with Wales. Numerous organisations and sectoral interests are involved with CaBA nationwide, including Environmental NGOs, Water Companies, Local Authorities, Government Agencies, Landowners, Angling Clubs, Farmer Representative Bodies, Academia and Local Businesses. We have a wide range of views and skills in the catchment, but we aim to bring organisations together to drive sustainable improvements.



The CaBA partnerships each undertake integrated management of land and water, addressing each river catchment as a whole and delivering crosscutting practical interventions on the ground. These result in multiple benefits including improvements to water quality, enhanced biodiversity, reduced flood risk, resilience to climate change, more resource efficient and sustainable businesses and, health and wellbeing benefits for local communities as they engage with and take ownership of their local river environment.

Due to its crosscutting and integrated nature, CaBA provides an ideal framework to support delivery of the Government's 25-year Environment Plan, directly supporting key focus areas identified for action, including:

- 'Using and managing land sustainably';
- 'Recovering nature and enhancing the beauty of landscapes';
- 'Connecting people with the environment to improve health and wellbeing';
- 'Increasing resource efficiency, and reducing pollution and waste'.



Figure 1 Illustration of the Don Catchment

## The Don Catchment: from 'Peak to Port'

A catchment is an area of land in which water drains towards a certain river or stream. The catchment of the River Don covers almost 700 square miles (1,700 square km<sup>2</sup>) and is more than 50 miles (80km) long. It is home to over 1.3 million people and is an area vital to the national economy.

Administratively it is covered by 13 local authorities; the main urban centres being Barnsley, Chesterfield, Doncaster, Rotherham and Sheffield. Although South Yorkshire is a key part of the nation's industrial heartland, just 18% of the catchment is urban. The catchment is one of contrast, from districts of heavy industry, to extensive arable lowlands and high heather moors. Almost 40% of the Sheffield district is designated as a National Park. The catchment is criss-crossed by strategically important road and rail routes and the Don Navigation links Sheffield with the sea. Engineering of the river channel is perhaps the predominant feature of the Don – for urbanisation, water resources, canals and flood defence.

The story of the River Don is indivisible from the story of its people. Look at a map and you will see that every major town in the area has grown up around a river. In the past, the rivers of the Don supported heavy industry and suffered greatly in return. The improvement in the quality of the water over recent decades is an under-told success story.

### From Peak to Port

The rivers of the Don catchment are born in the ruggedly beautiful steep-side valleys to the east of the Pennines. Much of this area lies within the Peak District National Park and many parts of it enjoy additional legal protection because of its rich wildlife and unique geology. The Peak District was the first national park in the UK. Its origin can be traced back to the Kinder Trespass of 1932, when city dwellers either side of the Pennines demanded the right of access to the wild spaces – tantalisingly visible from their factories and back-to-back houses. This passion lives on today, and many people living in urban areas are enthusiastic activists for the environment, which includes creating a better river Don.



*An adventure to find the source of the Don!*



*The Carr Brook culvert at Brightside Weir, Sheffield*

On the Don the biggest city, Sheffield, lies in the upper part of the catchment. Sheffield is the meeting point for several small fast flowing rivers which converge in the city centre: the Loxley, the Rivelin, the Porter and the Sheaf which gave the city its name of Sheffield.

Collectively these rivers have been the making of the city, but this proximity to water has come at the price of episodes of localised flooding of homes and businesses, most latterly in 2019. Sheffield was originally a market around a crossing point of the river, then a strategic

crossroads commanded by a Norman castle – now lost. Lady's Bridge in the centre of the city dates from 1485. As industry grew, the river provided a richness of sites for waterwheels or hydropower. To harness the power of water many weirs were built. Though now largely redundant, these weirs are part of the heritage of the city. Until recently they were also a barrier against the return of migratory fish to the cleaned up waters of the upper catchment. Rivers provided Sheffield with a source of water for industry. The city became synonymous with steel making and has been the forge of the nation in times of war and peace.

A feature of the upper part of the catchment is the abundance of reservoirs built on the tributaries of the Don. These were constructed to ensure a supply of water as a source of power and for water supply. Such was the control these reservoirs imposed on the upper part of the catchment, industrialists were almost able to turn off the rivers at the weekend – to save the power in their flow for the working week. But the rivers of the upper Don have not always passively accepted this captivity. In 1864, Dale Dyke dam on the River Loxley collapsed. The resulting torrent killed hundreds and destroyed homes along the Don Valley. Although we now get our power from other sources, these reservoirs remain of regional importance as a source of drinking water and are a unique part of the Don catchment.

Downstream of the M1 crossing at Tinsley, the Don flows past Blackburn Meadows waste water treatment works which is the second largest in the country. It was also one of the first, dating from 1886, though it has regularly been modernised and improved. Processing up to 438,000m<sup>3</sup> of effluent per day, it is perhaps the single biggest determining factor of water quality in the Don.



*Re-meandered section of the Doe Lea at Norbriggs Flash. A partnership between Derbyshire Wildlife Trust and Chesterfield Borough Council.*

upper Don, so coal was to the Dearne. Within living memory the waters of the Dearne were some of the most polluted in the country because of mining and associated heavy industries. In Barnsley and the surrounding pit villages the river was previously somewhere to avoid.



*The view down to Winscar Reservoir © DCRT*

Today, the Dearne has some of the richest wildlife and most vibrant habitats in the catchment – much of it to be found in the artificially controlled washlands which are a characteristic of the middle part of the catchment. The role of local people who care about their river has been central in achieving this ecological u-turn. In 2012, the lower Dearne Valley was designated as a Nature Improvement Area. Although coal mining is no more in the Dearne Valley, subsidence from settling underground workings has created new wetland areas and an ongoing need for pumping of farmland.



Wetland created near the River Dearne at Lundwood Water Treatment Works.

Beyond the A1 (M) lies Doncaster, and the rich farmland of the floodplain of the lower Don. The ageing Don is slow and lethargic, as if reluctant to finish its journey to the Humber estuary. For our ancestors, the challenge here was how to get rid of water principally for the improvement of agriculture. It is in the lower Don that perhaps the hand of man is most heavily felt. Through the efforts of Dutch engineers, the course of the River Don was physically changed. Mammoth engineering works were undertaken to construct a new channel for the Don to join the River Ouse, instead of the Trent. Enormous efforts were made to drain the land, notably a vast area of wet peatlands known as Thorne and Hatfield Moors. Today we are left with an entirely artificial arrangement of watercourses, straight and efficient drains with little wildlife interest. The main tributaries of the Don, the Went and Ea Beck have both been heavily engineered in the interest of land drainage.



The outfall of the River Don (known as the 'Dutch River' left of the photo) at Goole, as seen from the River Ouse.  
© S Walker

With the Ouse, the Aire and the Trent, the Don is one of the main rivers which end in the Humber estuary, with the Don meeting the Ouse at Goole along the 'Dutch River'. The tidal presence of the Humber, and the sea beyond, can be felt in the Don as far upstream as Crimpsall sluice in Doncaster.

The Humber is one of the largest estuaries in the country and has been given formal recognition and protection because of its importance for wildlife. But the character of the estuary is shaped by the quality of the rivers, including the Don, which flow in to it.

## A River Made by People



An example of a straightened section of river, where the meanders still exist and could be re-joined to the river

'Natural' isn't a word you can use to describe the Don. Over the centuries, many of the rivers and streams in the Don catchment have been significantly changed by engineering works of one kind or another. This might have been by raising a dam wall to create a reservoir, building earth or concrete flood barriers or straightening a river channel for better drainage. Hundreds of weirs have been built in the Don and its tributaries – often to provide waterpower.

These engineering modifications prevent rivers from functioning as they naturally would. For instance, when a river is high, water is unable to spill over into a vacant natural floodplain; plants and animals can't get a foothold on concrete river banks

and weirs restrict the distribution of fish. And often, over-engineered river banks just appear ugly.

Along a heavily engineered river like the Don there is lots that can be done to produce a more attractive and natural river landscape. These projects could be carried out by local groups or volunteers working collaboratively with the Environment Agency and landowners. The Don, Dearne and Rother Network can be a catalyst to give life to such projects by bringing organisations and opportunities together.

A more natural River Don wouldn't just look good, it would be a better place to live alongside and a real asset to the communities on its banks. Boosting recreation activities could stimulate the economic growth of shops and businesses too.

## About our Catchment Plan

This plan is built around opportunities for improving various aspects of the functioning of the catchment. For ease of dividing up the large area of the catchment, we have used the Environment Agency's 'operational catchment' boundaries, which can be seen in the map opposite.

The aims of this plan are to give organisations and groups working in the catchment an overview of activity, to focus priorities, to give a base of evidence for funders and to encourage partnerships and collaborations - a list of organisations working in the catchment can be found in Appendix 3.

In summary, the main identified opportunities to improve the catchment are focused on:

- Habitats & Species
- Water quality
- Re-naturalising river processes (often known as 'morphology')
- Land management
- Maintenance of river channels
- Reservoir management
- People & Places

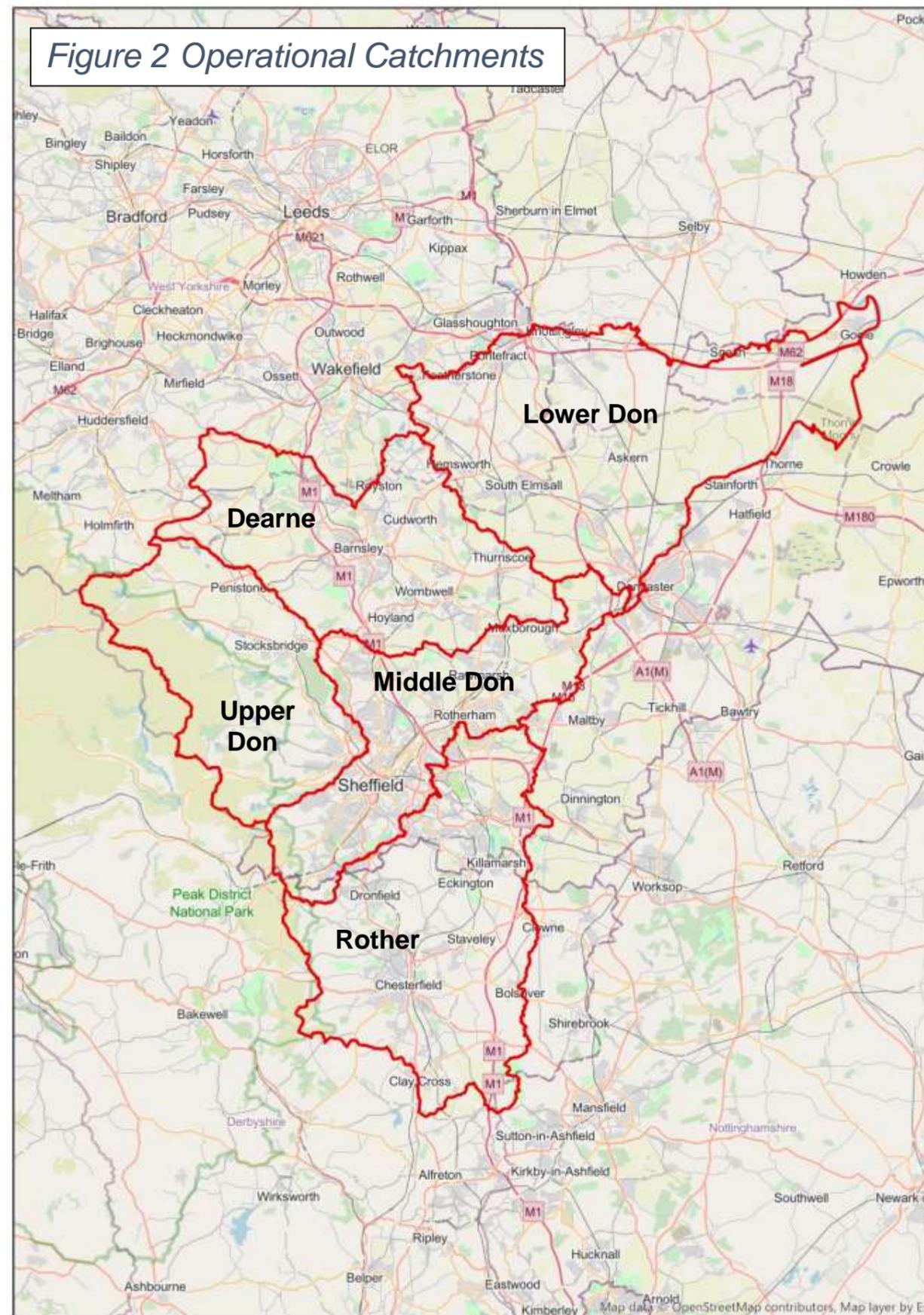
Work on our first issued catchment plan began almost 10 years ago, and this revision aimed to create an overview of progress and achievement, whilst highlighting the work that still needs to be done.

Network members met in November 2019 for a workshop to track their progress against the original aims, set our collective priorities, and log upcoming work. We also looked at how the catchment partnership was functioning, and what improvements could be made to help communication within the network, and also externally. A summary of the workshop outputs are in appendix 4.

Using information from the workshop, this plan went through three drafts and was circulated to network members each time for comment and feedback. It was formally issued on 3<sup>rd</sup> December 2020, at an online meeting of network members.

Perhaps the most important task of the catchment plan revision was to collectively agree on our overall vision for the catchment:

# Healthy, resilient rivers for nature and people



## Opportunities for the catchment – progress and the future

In this section we have highlighted work and projects since 2010 that have made an impact against the opportunities identified by member organisations, and listed upcoming planned and potential projects. More often than not, a project or intervention has multiple benefits, and a summary of such upcoming projects is included at the end of this section.

A full table of collated projects is in appendix 1.

## Healthy Rivers

### *Habitats and species*

In our first catchment plan it was highlighted that in many parts of the Don Catchment water quality was no longer the limiting factor for the presence of a diverse and vibrant wildlife, and that because there had been very little wildlife in the river, management regimes had not had to consider the needs of wildlife.

The Network wanted to see the overall ecology of the catchment improved, and thought it would be useful to concentrate on certain key indicator species – notably the ‘iconic’ salmon and otter. **In recent years both salmon and otter have been found in the catchment.** Whilst there is still work to be done to encourage sustainable populations of salmon, for example, these are encouraging signs that the rivers of the catchment have the potential to thrive as habitats.

The rivers of the Don catchment now have the potential to be wildlife corridors, and a habitat for all riparian species that depend on clean, healthy, natural rivers.

Local authorities, in particular Doncaster Council have used Section 106 monies to improve riparian habitats. Across the Wildlife Trusts much work has been done to improve habitats - a new water vole population has been recorded in Sheffield, and a partnership approach is being taken to manage habitat at Redmires for their existing water vole population. At reserves habitats are being created and managed – 25 ponds have been created at Barnsley Main, 10 ponds at Littlewood Park, and also at Woodhouse Washlands where ponds have been installed to benefit great-crested newts. The Yorkshire Wildlife Trusts ‘Back from the Brink’ Willow Tit project has brought a national focus on species recovery in the Dearne, along with wet woodland management and a community engagement project.

Natural England now have over 75 farms in stewardship schemes within the catchment. A new SSSI designation of sites within the Dearne Valley will now provide protection to habitats and species which have been created through schemes.

The Don, Dearne and Rother Network has identified invasive plant and animal species as an important issue for the catchment. Although these are not a significant reason for failure under the Water Framework Directive, invasive species often can out-compete native species and come to dominate the aquatic environment.

## Case Study ...



*“Our vision is to create ‘better waterways for people, places and wildlife’, delivered through our mission of ‘maintaining and enhancing waterways; inspiring, empowering and connecting communities’. We are a social enterprise blending commercial catchment management services with community engagement; delivered through our ‘Riverlution’ programme.*

*In Sheffield, we recently delivered the pioneering, 5-year Channel Maintenance Project, as part of the Lower Don Valley Flood Defence Project. This included a unique programme of ‘little-and-often’ tree, invasive weed and debris management; alongside a programme of volunteer days to help deliver added social impact and community engagement-related outcomes. Outside of the Lower Don Valley, we deliver river channel maintenance projects for various riparian landowners, and we are watercourse maintenance framework contractors for the Environment Agency and Doncaster Metropolitan District Council, delivering invasive weed, drainage and other asset maintenance activities.*

*Through our community engagement programme in the Don Catchment, we have supported many local action groups and delivered various events, festivals, training and skills projects, designed to connect and inspire communities through their local waterways.”*



Recent investment into surveying and treatment work by the River Stewardship Company on behalf of the Environment Agency has seen a step change in the way invasive plant species are tackled at a main river catchment scale. The Canal & River Trust have also tackled invasive species over their whole estate as part of an asset and management program, investing in the Hydrocotyle Group and Azolla control throughout the network.

The [Yorkshire Invasive Species Forum](#) has provided a centralised place for records of invasive species to be deposited via 'INNS mapper', which also allows records to be viewed. There is still work to be done highlighting the issue of invasive species and biosecurity in communities as this is still not thought to be a widely understood issue by the public. However community groups such as the Don Gorge Community Group and Friends of the Dearne have had success in drastically reducing the amount and spread of Himalayan Balsam.



It was noted in the review of this plan that the emphasis of invasive species had been centred on plants, and that there should be a greater effort to tackle invasive animal species. For example, signal crayfish seem to be prevalent in the catchment now.

**Upcoming planned and potential habitat and species work:**

- Reconnecting the river and floodplain at Sprotbrough Ings.
- Riparian habitat improvements downstream of Doncaster town centre. Reconnecting Oxbows, woodland and other habitat types (DMBC).
- Online catch return for Grayling to monitor population growth / decline (Grayling Society)
- SSSI notification in the Dearne Valley (NE).
- Nature Recovery Network mapping (S&RWT)
- Ea Beck ponds project (YWT) .

**Water Quality**

In our catchment plan review workshop, water quality was low on the list of priorities for organisations present – perhaps there is an overall assumption that water quality has improved given all the returning species. But the question was raised if single source pollution was still a problem in the Don catchment. The Environment Agency confirmed there are still some problem areas. The emphasis should now be identifying unknown sources of pollution, and forcing standards up.

[The Environment Agency data tracker is hosted on the Don, Dearne & Rother Network website](#)

The perception of water quality issues has historically been focused around the industrial nature of the catchment, however it is now important to work with landowners to improve water quality by tackling chemical pollution from runoff, sediment, and diffuse pollution.

Many of the WFD water quality failures in the Don catchment will be addressed through regulation, in a process principally involving Yorkshire Water (who now begin the AMP 7 cycle), the Environment Agency and other regulators. Yorkshire Water have made huge financial investments in sewage treatment works on the Dearne, including Lundwood, Cudworth and Clayton West.

However, there will remain a range of water quality issues which are only likely to be solved through a collaborative approach. The Don, Dearne & Rother Network supports a collaborative way of working as well as the adoption of new techniques to improve water quality.

There is much work that can be done by community groups and volunteers to help improve and monitor water quality in the catchment. For example, Denby Dale Parish Council with Friends of the Dearne have been Riverfly sampling and engaging school children with the Yellow Fish campaign.

At the top of our catchment Moors for the Future have been working closely with water authorities, and have demonstrated the benefit of healthy moors and peatlands for UK drinking water.

At the National Trust it has been important to improve water quality in the Doe Lea, so they have created new wetlands which trap suspended sediment to 'polish' the water and remove nutrients before it enters the river. The National Trust has also installed two sediment traps to capture runoff from road and agricultural land before it enters the Doe Lea at Hardwick.

**Upcoming and potential water quality work:**

- Don Fisheries Consultative: monitoring nitrate discharge levels.
- Working with farmers to reduce sediment Living Went (YWT), Sheffield Lakeland Landscape Partnership (S&RWT).

# Case Study ... Water Quality

The first cycle of the Water Framework Directive classification system in 2009 showed there were a number of significant water quality problems in the catchment which related to the management and control of large point source discharges, particularly in the more urban and industrial areas of the catchment. The majority of these large discharges have now been improved greatly through the regulatory framework and ongoing investment to improve infrastructure and processes, most significantly through Yorkshire Water's investment programme in the sewer network and wastewater treatment plants.

Since 2009 the WFD classification process has gone through a number of changes and adaptations including monitoring a wider range of pollutants and moving to a three year cycle for full classifications. For the 2019 classifications the Environment Agency made major changes to the way chemical status is assessed and included a much wider range of chemicals. For the first time a range of substances which are considered "ubiquitous, persistent, bioaccumulative and toxic" (uPBTs) were assessed using a biota (mainly fish) based environmental quality standard rather than a sample from the water column. This change meant that in the 2019 classifications all of Yorkshire's surface waterbodies failed WFD standards for at least one chemical; however that does not reflect actual deterioration since the 2015 classification. These chemicals are now regulated via national or international restrictions, but due to their persistent nature will continue to be present in the environment for a long time.

So comparing the last full cycle in the 2015 physy chem classifications (ammonia, dissolved oxygen, BOD, phosphate, pH and temperature) with the 2019 classifications represents a more like for like comparison for changes in general water quality. Analysis reveals the earlier major investment to improve point source discharges has had a major impact on water quality but there has been little change in the overall background water quality of the rivers in the Don Catchment in the last three years. The current situation strongly indicates that there are many background diffuse sources of pollution from urban and rural areas which still need to be addressed. Many of these problems relate to land and drainage management across the catchment requiring diverse organisations working together to develop solutions particular to their activities and locations. Continuing the work of the Don, Dearne and Rother Network in bringing together communities and organisations to work together in partnership across the catchment is going to be vital for improving the health of our rivers.

Figure 4  
2015 Physico-chemical  
status

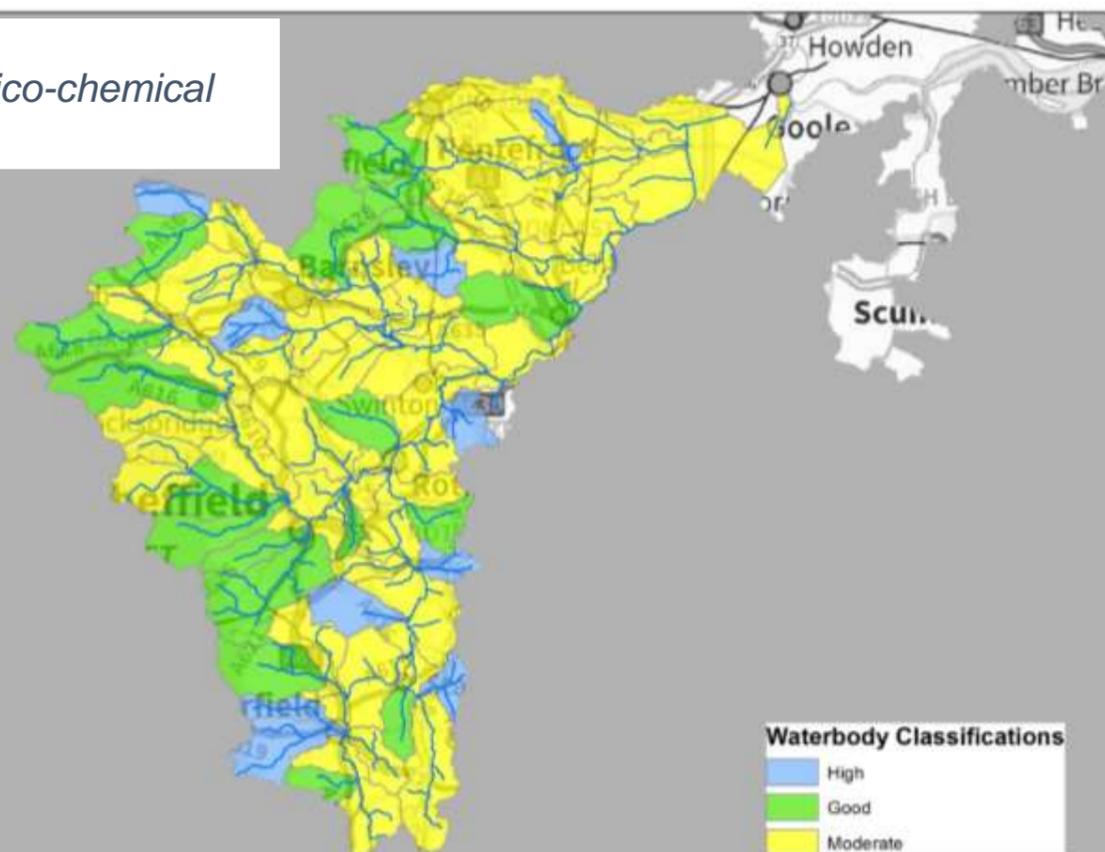
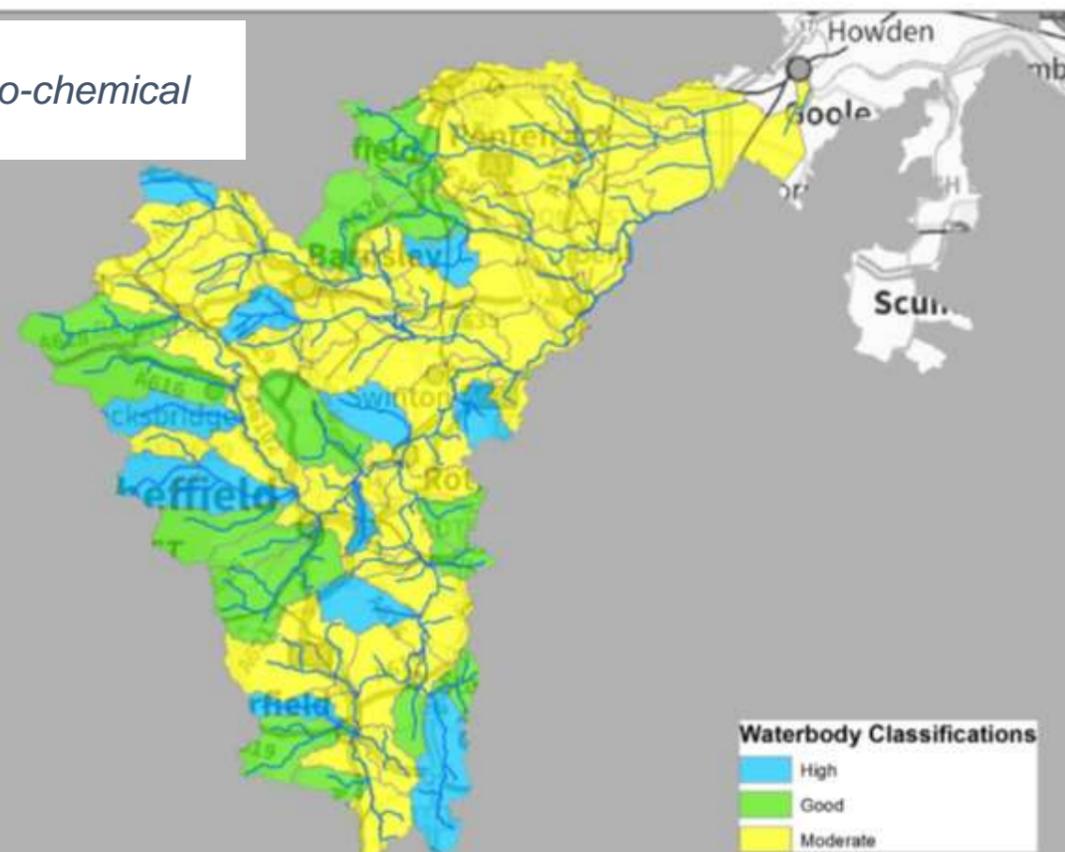


Figure 3  
2019 Physico-chemical  
status



## Morphology: re-naturalising river processes

In our original catchment plan, the network identified that one of the biggest challenges faced by wildlife in the Don is the extensive engineering modifications made to the river channel which effectively 'closed the door' on many species of plants and animals. Possible changes to re-naturalise the river which would benefit wildlife included: removal of weirs or construction of fish/eel passes, opening up of culverts or creating new washlands.

It was thought that in practice removal of weirs would not be possible because of legalities, use of weirs for water management and the status of some as listed structures. The practical solution in many cases was thought to be the construction of some kind of fish pass. Several successful fish pass projects had already been completed in the catchment, such as Hadfield's weir on the Don at Meadowhall in Sheffield by the Don River Catchment Trust, but there were many more obstacles left to tackle on the main Don.

After intensive fish pass building activity by many organisations in the catchment, funded through diverse sources, in 2020 the final fish pass required to attract salmon and other migratory species back to their traditional spawning in Sheffield was constructed on Masbrough Weir in Rotherham. This was a partnership project between the third sector, NGOs, water authorities and the local authority and showed what could be achieved by working together. Now, we have reports of salmon, otter and water vole in Sheffield, and sightings of salmon in the Rother. See case study overleaf.

New washlands have also been created, managed and maintained. Through the Dearne Valley Green Heart Partnership the floodplains have been regenerated at Houghton washland, Adwick washland and Smithies Marsh. The Garganey Trust manages Broomhill Flash. The National Trust have re-meandered a section of the Pools Brook and carried out instream restoration on the Doe Lea. Sheffield & Rotherham Wildlife Trust have restored a section of modified channel in Catcliffe and are working on further sections as part of the River Rother Restoration scheme at Woodhouse Washlands. Enhancements have also been made to floodplains at Kilnhurst Ings. The Yorkshire Wildlife Trust have river restoration as a key theme of the Living Went project. The Environment Agency have developed a scheme to address the ecological impacts of physical modifications of flood defences that the agency manages.

Deculverting has also been possible, with projects on the Porter and Carbrook in Sheffield by Sheffield City Council.

There is now opportunity to follow this work into the tributaries of the Don, and to consider reinstating natural processes, restoring natural channels and daylighting our rivers.

### Upcoming and potential morphology work:

- Removal of Slitting Mill Weir on River Rother: DCRT.
- Habitat improvements in the urban Sheaf and Porter through Sheffield (Sheaf & Porter Rivers Trust, Environment Agency).
- Rother Restoration phase III to address impact of physical modification.

*“Yorkshire Wildlife Trust’s vision is for a Yorkshire that is abundant in wildlife with more people having a genuine and meaningful connection with nature. As such, we look after over 100 nature reserves across Yorkshire and are involved in many more conservation-related projects. Our work falls into two categories- Living Landscapes and Living Seas.*

*One of our key sites in West Yorkshire, under Living Landscapes, is the River Went. The River Went runs from Streethouse, through Wakefield, Selby and Doncaster districts, and into the River Don near Sykehouse. The River Went has been heavily modified by human activity over the years resulting in a river that is over-straightened, widened and deepened, slow moving and heavy with sediment in places, lacking in diversity and suitable fish habitat.*

*Yorkshire Wildlife Trust has been working on the river since 2014- previous work had focussed on helping restore and connect habitat to support water vole populations in the area. The Living Went project in its current form is aiming to tackle the river’s issues on a much larger scale, with a major focus on landowner engagement and partnership working with organisations such as Wild Trout Trust, Yorkshire Farming and Wildlife Partnership and Yorkshire Water.*

*The project aims to introduce morphological diversity back into the river, creating more suitable habitat for fish and important aquatic invertebrates and decrease diffuse pollution and sediment input by influencing farming practices and delivering large and smaller scale interventions. As well as the project aims to empower the local community through the development of a diverse network of community groups, partners, volunteers and commercial enterprises to create a lasting legacy on the Went.”*



*Left: Redundant weir (large stones that people throw in) removal at Brockadale Nature Reserve- weir was impounding a few hundred metres of the river. Pictured: Chloe Rose (project assistant), Alec Boyd (West project team leader) and Paul Gaskell (Wild Trout Trust).*

*Right: Re-profiling and re-structuring on the same stretch of the river at Brockadale-meander introduced by removal of some bank material on the left, then used to build up the naturally occurring depositional zone on the right.*

# Case Study ...

## Restoring fish passage in the Don Catchment

Globally, habitat fragmentation is one of the leading causes of biodiversity loss. River systems are particularly vulnerable as ecological connectivity is easily severed by infrastructure such as dams and culverts. This is one reason why extinction rates of river life are higher than for most other ecosystems.

Habitat fragmentation has such a negative impact on river life because barriers reduce ecological connectivity; the ability of organisms to move through river habitat. This most obviously has serious consequences for migratory fish species. Not just for Atlantic Salmon, which famously attempt to home back from the North Atlantic to the river of their birth, but also many other species of fish such as barbel and dace, which undergo smaller-scale migrations within river systems to complete their life cycles.

Even non-migratory species can be affected. By constraining movement through river networks, barriers can inhibit the ability of river life to forage, shelter and disperse effectively. This can limit population sizes, a problem compounded by the fact that small isolated populations are more vulnerable to environmental disturbances such as pollution and to negative genetic effects.

In the Don Catchment, barriers have severely reduced ecological connectivity. Longitudinal connectivity (i.e. movement through the river network) has been interrupted by weirs, reservoirs, pumping stations, outfalls, sluices, and culverts. The loss of longitudinal connectivity has particularly impacted fish such as Atlantic Salmon, Sea Trout, European Eel, and Sea Lamprey. Lateral connectivity (i.e. connectivity between the river and the adjacent flood plain) has also been greatly reduced by the construction of flood defences and the deepening of channels. The loss of lateral connectivity in tandem with land drainage has destroyed much of the wetland habitat in the Don Catchment and has largely disconnected floodplain waterbodies such as oxbow lakes that historically were much more regularly linked to the river network.

The primary cause of the loss of longitudinal ecological connectivity in the Don Catchment has been the construction of hundreds of weirs, built for a variety of reasons including to divert river water to watermills, to make rivers and canals navigable, and to prevent erosion. As weirs are one of the factors limiting fish populations in the Don Catchment there has been a significant effort over the last few decades by organisations such as the Don Catchment Rivers Trust, Environment Agency, Yorkshire Water, Canal and Rivers Trust, and the councils of Sheffield and Rotherham to mitigate their impact.

To date, endeavours to address weirs in the Don Catchment have mostly been focussed on the on the lower half of the Don, with the river being the main 'artery' in the river network, and offering good salmon spawning habitat in its upper reaches.



*Crimpsall rock ramp during construction, 2000.*



*Masbrough fish pass, 2020*



*Slitting Mill Weir during removal, 2020*

One of the first passes, built 20 years ago, was a rock ramp and bypass channel that enabled fish to circumvent Crimpsall Sluice just upstream of Doncaster. Since then many more passes have been built, but a notable step forward was made in 2016 when the DCRT's Living Heritage of the River Don project (funded by the Heritage Fund, EA and YW amongst others) installed fish.

From an ecological perspective, the removal of weirs is usually the most desirable intervention. Not only does this reinstate natural processes such as sediment transfer and a more natural channel morphology, but it also avoids the need for a fish pass, which are imperfect solutions, as research has shown that not all fish use them successfully. Previously weir removal has often not been possible in the Don Catchment as most of the weirs of the lower Don have the important function of sustaining the navigation, while some weirs higher on the river have a significant heritage value due to their role in the development of the region's industry. However, it is hoped that it will be possible to remove more weirs in future years.

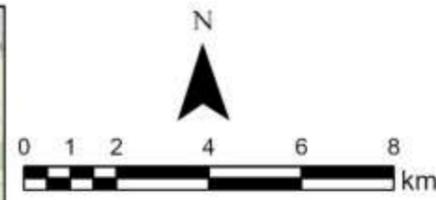
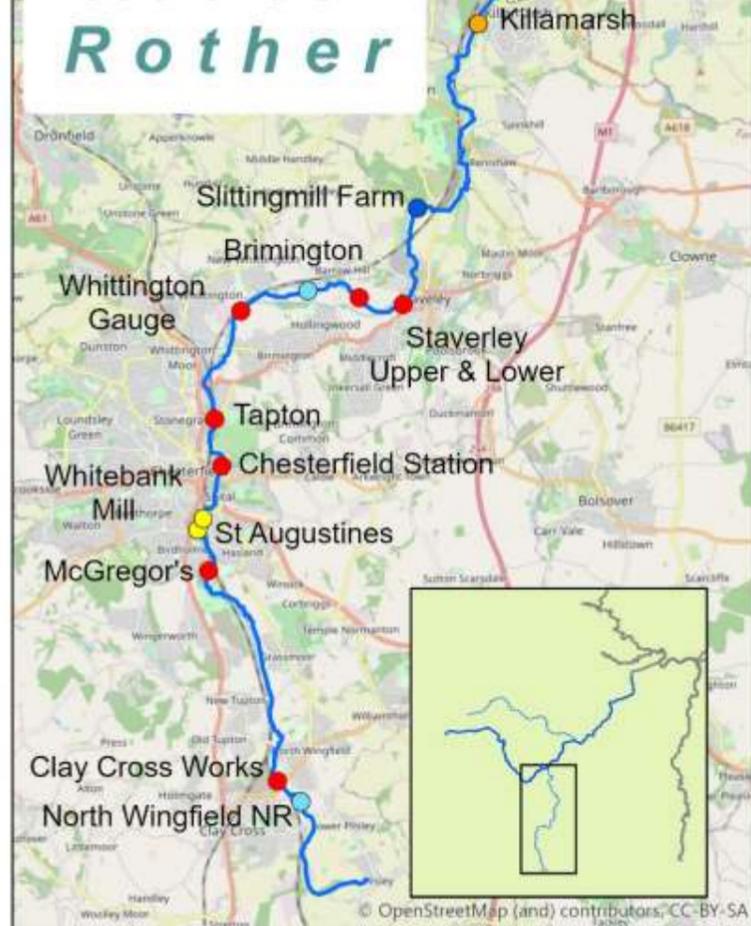
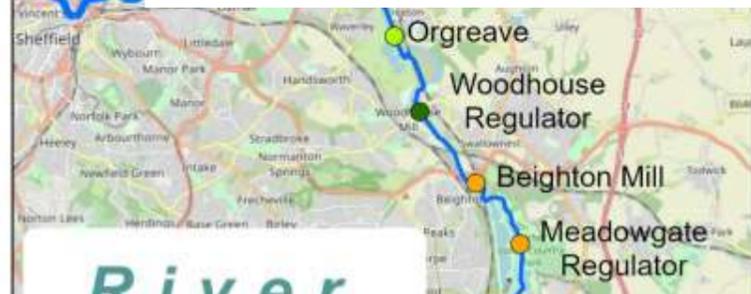
At the time of writing in 2020, a fish pass was recently built on Masbrough Weir in Rotherham, which was the last in a series of fish passes, forming a 'migration superhighway' that runs from the sea up the Don through Sheffield and beyond as far as Oughtibridge (see figure overleaf). Sheffield is significant as it the first location on the Don where salmon migrating upstream would encounter suitable spawning habitat (though larger amounts of better habitat occurs upstream of Sheffield).

Excitingly, early indications suggest that the Don's migration superhighway is already beginning to work, with two salmon being found in Sheffield in January 2019, the first records of salmon in Sheffield for over 200 years. What's more, examination of one of these fish showed that it had spawned. In 2020 two salmon were caught in the lower River Rother, demonstrating that they have the potential to recolonise different parts of the catchment.

Nevertheless, there is much work still to be done to improve riverine ecological connectivity:

- The Rivers Dearne and Rother are two other major arteries in the catchment and the barriers on these rivers need addressing (see map overleaf).
- The numerous weirs on the tributaries of the Don, Dearne and Rother need addressing.
- Lowland tributaries need to be made accessible for eel by addressing outfalls, sluices, pumping stations and tidal gates.
- More needs to be done to enable the seaward migration of fish e.g. by notching weirs to help salmon and trout smolts reach the ocean.
- Lateral connectivity between rivers and their floodplains need to be improved to restore wetland habitats.

Figure 5 Barriers to the upstream migration of salmonids in 2020



# Resilient Rivers

## Land Management:

The Don catchment is a mosaic of rural, urban and industrial areas. This mix of land use gives rise to many types of water pollution; from industrial point source pollution through to diffuse pollution found typically in the rural landscape. Land management practices can have a significant impact on surface watercourses as well as groundwater, for example through the use of pesticides. The Water Framework Directive (WFD) created the opportunity to look at the Don catchment with a new perspective and seek to tackle problems as a collaborative group, using the resources, skills and support of the members of the Don, Dearne & Rother Network.

Different approaches might be needed in response to different land management regimes, but the original principles of the land management sub group are still relevant:

- Organisations must be prepared to invest time to achieve lasting results
- There must be clear evidence-based messages
- We must present solutions to landowners, not just problems
- We need to work with other bodies to deliver water management objectives
- Real-life demonstration sites are important

At the top of the catchment, Moors for the Future have been doing significant work on blanket bog and moorland sites, revegetating bare peat, blocking erosion gullies and grips, diversifying single species swards and planting and encouraging sphagnum. Guidance from the Upland Management Group (produced by Moors for the Future) now provides advice on managing blanket bog for multiple outcomes.

In our sub-catchments, organisations such as the National Trust have been working to improve land management practices. On the Doe Lea the National Trust have worked with their farmers' groups to fence several hundred metres of riverbank to reduce erosion from cattle, provided farm advice, run training and demonstration events, and taken on land management practices at Hardwick to improve vulnerable soils and resolve issues with soil erosion and water pollution occurrence. Natural England continue to offer training, advice and capital grants via the Catchment Sensitive Farming scheme, and over 75 farms are in stewardship schemes.

The Dearne Valley Green Heart project are now on the cusp of a SSSI designation of new habitats created in the Dearne, and the Sheffield Lakeland Partnership will work with farmers and private landowners over 14 sites to work on natural flood management schemes. Elsewhere in the catchment specialist NFM staff have been appointed, including at Don Catchment Rivers Trust to work up schemes in the upper Rother catchment.

Sheffield & Rotherham Wildlife Trust have led on the 'Rother Restoration' scheme, which is looking at floodplain connectivity, and in 2019 have been leading on the 'Working with Water' project. This is a project working with 12 land managers to address water quality and flood risk within the Sheffield Lakeland Landscape Partnership area.



SLLP team member David 'walking' the land with the farmer, Richard © N Abbas

## Case Study ...



### Working with Others, Working with Water

*"From the hills and headwaters of the Don on the fringes of Sheffield and Peak District to the main rivers Don and Rother, the Sheffield and Rotherham Wildlife Trust is working in partnership with others to manage sites for water and wildlife."*

*The Wildlife Trust is working with farmers to the west of the city, together "Working with Water", part of the £3.4m Sheffield Lakeland Partnership. By talking to the farmers and walking the fields with them, the Trust is able to identify opportunities to slow the flow while protecting and enhancing wildlife habitats and the landscape itself. Funding from the Heritage Fund and the Environment Agency is used to undertake multiple small interventions which, together, will make a difference. The farmers are able to explain to our team how their land behaves throughout the year and what has happened in the past, particularly at times of flood or drought. As a result existing features are fenced, enhanced and expanded, allowing them to develop as wildlife havens and water retention areas. Headwater streams are buffered from erosion and allowed to "roughen up" while protected crossing points allow the farmer to continue to work the land while protecting the soils that would otherwise be heading downstream every time it rains.*

*Further downstream the Wildlife Trust is working with the Environment Agency and others to develop and manage sites such as Woodhouse Washlands on the River Rother. Here the Trust is re-naturalising the main river and recreating wetland habitats on the floodplain as part of the, larger, River Rother Restoration Programme. By managing flood alleviation sites such as this, Centenary Riverside and Kilnhurst Ings, the Wildlife Trust increases their intrinsic attractiveness to human visitors and significantly improves them as habitats for water and wetland species.*

*In the face of continued climate change and the expectation that we can expect more extreme and more frequent weather events, such as the flooding of autumn 2019, working with others to "Work with Water" at a landscape scale is essential to protect our wildlife and wild areas, human life, property and infrastructure."*



Woodhouse Washlands main river re-naturalisation project (C) N Abbas



Woodhouse Washlands new river structures (C) N Abbas

Network members are encouraged to use and promote the [‘Farming Rules for Water’](#) guidelines published by DEFRA, and the Environment Agency can help and give assistance on this.

#### **Upcoming planned and potential land management work:**

- Environment Agency: Sheffield NFM on Blackburn Brook and Limb Brook (and other sites). NFM schemes delivered as pilots across the Sheffield area, to become more integrated into flood alleviation schemes
- National Trust and Environment Agency: Riverlands project on the Doe Lea
- Natural England: catchment sensitive farming workshops and one to one advice on reducing agricultural pollution
- Yorkshire Wildlife Trust: Barnsley Council to plant 10,000 trees for climate change mitigation.

#### ***Maintenance of river channels***

The priorities and procedures of organisations which manage rivers have a significant impact on the character of a river, its appearance, its use by the community and the wildlife it supports. Different land managers can have different attitudes to rivers. To some, rivers might be a source of usable water, to others a means of drainage. Channel maintenance can be intrusive and unpopular, especially if it has been neglected for a long time. Access can be difficult in urban areas. As a result, when work is eventually carried out, it can appear brutal and destructive. The Don, Dearne & Rother Network supports a “little and often” approach. Often land managers would like to carry out their own river maintenance but are deterred by the complexity of obtaining the necessary permission to do so from the Environment Agency. The Don, Dearne & Rother Network would like to see the consenting process simplified and better guidance produced.

One of the main reasons for carrying out work in the river channel is sediment. The build-up of sediment (which includes silt, sand, gravel and cobbles) can be a recurrent problem, blocking up outfalls and bridges, smothering aquatic wildlife and reducing the ability of the river channel to convey floodwater. But areas of gravel can also be important as spawning grounds of fish, and sediment provides a foothold for plants and other wildlife. The creation and movement of sediment is a part of the natural process of a river, but it can be greatly influenced by how the catchment is managed. In the Don catchment, hard engineering works such as masonry walls or steel piling prevent the natural process of erosion. Elsewhere, erosion of soft or shaley river banks are leading to the creation and build-up of sediments. The removal of sediment is expensive and disruptive to people and wildlife and may result in the loss of cherished features in the river.

Removal is not a sustainable activity as, over a relatively short period, the river will naturally replace the sediment which was removed. Different policies might be applicable in different parts of the catchment, for example, reducing flood risk might be a priority along one stretch, while recreation takes priority on another. Managing a river channel can be complex with different groups having different objectives, and there may be historic or traditional reasons why a river has been managed in a certain way. The Don, Dearne & Rother Network believes that it is important the agreed management procedures and the reasons for them are clearly explained to the local community. For example, dredging is often cited as a solution to stopping flooding but the long-term ineffectiveness of this should be explained.

Responsibility for maintenance of river channels was outside of the remit of most of the attendees of our plan workshop, however organisations such as the River Stewardship Company have delivered the flagship ‘Lower Don Valley Flood Defence Project’. This was a multi-agency maintenance project in Sheffield, which brought together riparian landowners and the community.

#### **Upcoming planned and potential channel maintenance work:**

- Sheffield & Rotherham Wildlife Trust: Sheffield Lakeland Landscape Partnership will be working with Sheffield City Council to create a better light-shade balance to the river channel on the Loxley below Rowell Bridge (expected winter 2020)
- Blackburn Brook: removal of redundant structures to reduce maintenance requirements and river restoration to improve habitat (Environment Agency, Sheffield & Rotherham Wildlife Trust).

## ***Reservoirs management***

### **Water Supply**

A significant feature of the Don catchment is the sixteen large reservoirs on the tributaries of the Don to the west of Sheffield: the Don, the Little Don, Ewden Beck, River Loxley and River Rivelin. Many of these lie in the Peak District National Park and are operated by Yorkshire Water. These reservoirs were built in the eighteenth century to supply water for homes and industry in Sheffield. The reservoirs are still a vital element of the region's water supply to homes and businesses. Their presence has a significant impact on the rivers downstream through deliberate releases of water from them called compensation releases. These flows can comprise a substantial proportion of the water in the River Don when the river is low. Yorkshire Water has worked with the Environment Agency to improve the downstream ecology by managing and rebalancing the releases within the Don catchment over recent years. Yorkshire Water is also currently investigating further changes to meet Water Framework Directive requirements. As any changes to current reservoir operation have the potential to affect various river users, ongoing discussions with interested parties within the Don, Dearne & Rother Network will be valuable.

### **Flood risk**

Reservoirs could potentially be used to reduce flood risk by providing temporary flood storage. However, providing this additional storage has implications for the supply of water for customers and industry. This, coupled with the changes in regulation required means that this option is not straightforward. Negotiations between the Environment Agency and Yorkshire Water need to balance commercial interests in the loss of valuable drinking water through reduced reservoir capacity.

### **Washlands**

Washlands are low lying areas of land found next to rivers which fill up to hold water in times of flood. They can either be natural or created (or enhanced) by engineering work. Whilst recognising that their primary role should continue to be to reduce flood risk, the washlands of the Don catchment should be managed to produce multiple benefits including management to reduce flood risk, for agriculture, food production (washlands are often very fertile) and biodiversity.

Washlands have an important role to play as part of the green infrastructure of the catchment, and were proved to be effective in storing water in recent high waters and floods.

New washlands have been created, managed and maintained. Through the Dearne Valley Green Heart Partnership the floodplains have been regenerated at Houghton washland, Adwick washland and Smithies Marsh. The Garganey Trust manages Broomhill Flash. The National Trust have re-meandered a section of the Pools Brook and carried out instream restoration on the Doe Lea. Sheffield & Rotherham Wildlife Trust have restored a section of modified channel in Catcliffe and are working on further sections as part of the River Rother Restoration scheme at Woodhouse Washlands. They continue to manage the award winning Centenary Riverside. Enhancements have also been made to floodplains at Kilnhurst Ings.

The Don, Dearne & Rother Network would like to see sites for new washlands identified within the catchment.

# Case Study ...



Since the publication of the first joint plan in 2013, we have continued to work in collaboration with partners to protect and enhance the natural environment of the River Don catchment.

Protecting Yorkshire's environment is at the core of our day-to-day business and we are working to embed our pioneering 'Six Capitals' approach into our long-term business planning; this will ensure the decisions we make now will deliver long-term, sustainable benefits for society and the environment.

In the last five years, through our sixth asset management investment period (AMP6), we have jointly delivered numerous schemes delivering benefits to river water quality, terrestrial/aquatic biodiversity, fish passage and biosecurity in the Don catchment. Notable schemes include:

## Biodiversity

- Delivering the Moss Brook SSSI restoration project with the DCRT and Wild Trout Trust.
- Working with the Yorkshire Wildlife Trust on tree planting and wetland creation along the Dearne at Lundwood, Darton and Worsborough wastewater treatment works.
- Installing fencing to protect water vole populations along the Redmires Conduits.
- Supporting the SRWT and others in their Otterly Amazing project to understand how otters use urban rivers in the catchment.
- Supporting the SRWT in their work to restore floodplain habitat close to Blackburn Meadows, Woodhouse and Mexborough wastewater treatment works.

## Fish Passage

- Delivering fish passage projects on the River Don, with input from DCRT at Jordans Dam/Blackburn Meadows, Wharfecliffe Side and a large weir upstream of Langsett Reservoir.
- Part funding the DCRT led Masbrough weir fish passage on the river Don (the last remaining significant barrier between Sheffield and the North Sea).

## Biosecurity and invasive species

- Working with the Environment Agency and Rivers Stewardship Company to treat floating pennyworth, giant hogweed and Japanese knotweed along all main rivers in the catchment.



*Jordans Weir fish pass.*



*Masbrough Weir fish pass.*

## Research and Innovation

- Working with Sheffield University and the DCRT on improving salmon monitoring methods via trialling the use of eDNA technology to assess their upstream extent.
- Working with the Hull International Fisheries Institute (HIFI) to better understand the effectiveness of fish passes in the headwaters of catchments. This research enables us to make more informed future investment decisions.

We are extremely proud to have played our part in the catchment and we also recognise that there is lots more to do. As we enter the next asset management period (AMP7, 2020-2024), we have many schemes planned, included:

- Removing barriers to fish migration at Cheesebottom Weir and Schole Hill pipe crossing on the River Don.
- Modifying releases from Dale Dike, Winscar, Lower Windleden and Langsett reservoirs to ensure environmental objectives of the Water Framework Directive are achieved whilst maintaining the primary water resource function of each reservoir. In addition, we will investigate the current reservoir releases at Scout Dike, Underbank and Midhope to identify if alternative regimes would deliver similar benefits.
- Investing in wastewater treatment processes, including building a new treatment works at Stocksbridge, to protect and improve river water quality.
- Funding river restoration projects in the Upper Don.
- Continuing the Biodiversity Partnership Programme which helped to deliver numerous projects in AMP6, plus additional local wildlife site management.
- Delivery of a river resilience programme, helping to strengthen the resilience of organisations responsible for looking after the catchment.
- Continuation of catchment-scale invasive species management projects, focused both on management (led by the Environment Agency and River Stewardship Company) and recreational biosecurity (working with the Yorkshire Wildlife Trust).

## Sustainable Urban Drainage Systems & Natural Flood Management

The planning for our plan revision workshop took place while the devastating floods of November 2019 occurred. It was highlighted by many of the organisations present that Natural Flood Management (NFM) on a catchment scale was not present in our original catchment plan, that the importance of NFM has grown over the decade, and should be a key area to focus on, alongside the sister discipline of sustainable urban drainage systems.

**The Environment Agency is currently developing the ‘Source to Sea’ scheme to bring together a catchment scale programme for NFM.**

In a natural setting, the run-off of rain falling on to land would be partly ‘held back’ by the presence of vegetation or seep into crevices in the ground. Sediments and any pollutants would also tend to be retained. In urban conditions, however, rain usually falls on hard, impermeable surfaces. It could rapidly run-off sloping ground, taking pollutants such as oil from cars and litter with it. Rainfall quickly finds its way into watercourses causing them to rise rapidly and increase the chance of flooding. One way of avoiding this problem is by creating Sustainable Urban Drainage Systems or SUDS. With SUDS, the drainage of rainfall from a site is slowed down using a variety of techniques. This evens out extremes of flow and can also reduce the amount of pollution entering a watercourse. Some designs of SUDS can create new mini wildlife habitats. There are many different designs of SUDS.

In our original catchment plan the science behind SUDS and the effectiveness of different designs was thought, in general, to be poorly understood by both local authorities and developers. Now, local authorities in the catchment have been leading the way on SUDS. Sheffield City Council has delivered the largest retrofit SUDS scheme in the UK within the city centre, diverting clean and controlled flows to the river and away from combined sewers. This is good practice and experience for future work in the city. SCC have established arrangements and funding to adopt and maintain SUDS both within open spaces and integrated into developments – for example permeable paving.

At North East Derbyshire District Council, there is an ongoing district wide simplification of the SUDS process. The council are producing guidance for developers to improve SUDS approval processes and to ensure that SUDS are adequately considered in the planning process. However, this is often difficult as infiltration is rarely feasible due to soil types. Doncaster Council are ensuring that through good planning and ecological input, SUDS and water management in developments is prioritised.



Many organisations in the catchment have either been carrying out NFM implementations or have an aspiration to do so. In the upper Rother catchment, DCRT worked with iCASP to map opportunities for NFM measures, and it was shown that lots of small scale interventions could have an impact on ‘slowing the flow’ and preventing localised flash floods. Local levy funding has secured a two year post for DCRT to work up the opportunities, with a view to delivering small scale works with volunteers initially and building up to a larger scheme.

### Upcoming planned and potential SUDS & NFM work:

- Development of catchment wide NFM strategy and integration of NFM into flood alleviation schemes (Environment Agency – Source to Sea).
- Sheffield Council – Long term programme for involvement in all aspects of NFM. Working with partners to deliver co-investment for water / biodiversity benefits on SUDS retrofits.
- NFM officer role to be retained to implement NFM measures identified around Chesterfield (DCRT).
- The Sheffield & Rotherham Wildlife Trust are continuing to build relationships with the farming community and other landowners in the Sheffield Lakeland area. A number of NFM interventions, which will also benefit wildlife have been created, and S&RWT are working with Sheffield Hallam University and the Environment Agency to monitor the results of this work.

*Examples of NFM in the catchment:*

- *Field corner ponds*
- *Spiling to help ‘slow the flow’*
- *Field scrapes to hold water*



# Case Study ...



## Natural Flood Management and the Environment Agency

*“Natural Flood Management (NFM) is the means of working with nature in a catchment to reduce flood risk by actions such as reconnecting rivers to their flood plains, creating wetlands, restoring peatland and blanket bog, meadows, tree planting, encouraging natural regeneration and using leaky dams. By restoring ecosystems in this way, it helps to slow and store water in a landscape for longer and means that the volume of water hitting flood defences and our towns and cities downstream during a flood is reduced. This nature based approach also provides a wealth of wider ecosystem services such as, filtering our water and air, increasing biodiversity, sequestering carbon and providing public health benefits with access to natural green spaces.*

*For some years the Environment Agency have been working with partners to develop and deliver projects across the catchment that provide NFM benefits. This includes the very successful Dearne Valley Green Heart programme where we have worked with multiple partner organisations to create biodiverse ponds for water storage in high rainfall events. We are also working with the Don Catchment Rivers Trust NFM officer to develop storage and land management opportunities on the Rother.*

*The floods of 2019 highlighted the need to maximise the benefits of holding water upstream to reduce the peak flows and downstream flooding. We are currently working closely with the Sheffield Lakeland Landscape Partnership to show how the works in the uplands west of Sheffield can contribute to the development of flood alleviations schemes in the Upper Don.*

*These strong partnership projects throughout the catchment have provided an excellent base of experience, knowledge and expertise. This work is now helping to support a pioneering a nature based solutions programme on the Don called ‘source to sea’ which is being led by the EA in collaboration with multiple agencies and organisations across South Yorkshire. This is a vision to work at catchment scale to restore ecosystems to support flood risk reduction to communities along the Don, provide climate resilience to flood defences, supporting climate emergency response and help build nature recovery networks.”*



## People and Places

Whilst community engagement was included in our original catchment plan, attendees and respondents to the workshops and consultation highlighted that a tremendous amount of positive community work had been done over the lifetime of the plan and that more recognition needs to be given to the fact that rivers impact on people. This is particularly true in times of flood, but also in drought.

Rivers form an important part of people’s culture and heritage, and they are an educational resource. They are a great place for promoting health and wellbeing – something many organisations proved during the Covid-19 restrictions in 2020. Community engagement is now integral to how many organisations work, and the number of volunteers in the catchment has risen significantly.

In 2016 the Heritage Lottery Fund funded the Living Heritage of the River Don project, which enabled DCRT to take on community engagement staff and grow a volunteer team – something which has carried on in the current Hidden Heritage Secret Streams project. National Lottery funding has supported numerous projects in the catchment including landscape partnerships as Dearne Valley and Sheffield Lakeland.

At the River Stewardship Company, the establishment of ‘Riverlution’ is enabling the RSC to undertake quality and focussed social impact and support other groups. The Blue Loop continue to be an active volunteer group in Sheffield.

The Canal & River Trust has adopted the new vision of ‘making life better by water’ and are working with volunteers and communities across England and Wales to transform canals and rivers into spaces where local people want to spend time and feel better. The Sheffield Waterfront Festival brings thousands of people to Victoria Quays, and more volunteer opportunities are becoming available in the catchment.

There are dozens of active and passionate community groups in the catchment. The Don Gorge Community Group work with Doncaster Council, Yorkshire Wildlife Trust and Canal & River Trust to run conservation days and look after the Don Gorge.

At Sheffield & Rotherham Wildlife Trust volunteers support the work of nature reserves staff, and there is an ongoing programme of community work days and public events. The Trusts Nature Counts and Data for Nature projects have engaged many volunteers in identification skills and monitoring, and have been involved in media coverage about the role of Washlands in the autumn 2019 floods.

However, it must be noted that an increase in the numbers of people making use of the river environs can have negative and damaging impacts. For example, at the Don Gorge in Sprotbrough, an already popular destination for the Trans Pennine Trail, Sprotbrough Flash and the SSSI designated ancient woodlands has seen visitor numbers increase exponentially in 2020. The small car park has not coped with numbers causing cars to park on verges and a lack of infrastructure such as toilets and more regular litter bin collections have been causing problems. The Don Gorge Community Group have been trying to create a proper carpark here for many years, however this is stalled and will need wider organisational and infrastructure support in order to manage the needs of wildlife, visitors and the community.

## Case Study ...

### Upcoming planned and potential community engagement work:

- Don Gorge Community Group: continue with volunteer task days in partnership with DMBC, TPT, YWT & CRT.
- River Stewardship Company: Through Riverlution, actively working to increase social impact. Increase engagement in river stewardship, join people with the river through opportunities, education, awareness and empowerment. Help establish 'friends of groups. Connect with new community groups to provide volunteer engagement opportunities, access, health & wellbeing and enjoyment.

## Case Study ...



*"The Upper Don Trail will be a route where we can all walk, run, ride, kayak, fish and relax in safety and peace along Sheffield's once more beautiful River Don. When complete it will be around 12 miles long following the Don from City Centre to Peak District through areas rich in industrial history as well as open country and woodland from Sheffield's historic castle site, through buzzing Kelham Island, the proposed Parkwood Country Park, historic Wardsend, beautiful Beeley Woods, through Oughtibridge, past Wharncliffe Crags to the Steel Valley at Stocksbridge and into the Peak District wilds.*

*Over half the route is complete and redevelopment of large industrial sites like Oughtibridge Paper Mills, Deepcar Brickworks, Hydra Tools and the reclamation of Club Mill Road and Liberty Steel's More Hall tip all offer huge opportunities for several more miles of river access and enhancement.*

*The Trust promotes this vision and campaigns for a consistent and continuous high quality off-road route for sustainable travel as well as amenity and health, the provision of missing links, consistent signage and regular stewardship of the trail and the river itself."*

Video: <https://youtu.be/G8hnsz0didk>



*Deepcar Brickworks, due for redevelopment with Upper Don Trail route to the right.*



*Little Don Link: the new cycle-footway at Stocksbridge.*

*"The Trust, established in 2019, campaigns and intervenes to promote the de-culverting, re-naturalisation and better stewardship of the Rivers Sheaf and Lower Porter.*

*Its drivers include:*

- *Climate change – rivers in culverts are the wrong approach to extreme weather events*
- *Many culverts at the end of their structural life*
- *A rapidly growing inner city population needs access to open space, nature and rivers*
- *Redevelopment is happening all along these rivers creating opportunities for improvement*
- *The Station sited over the Sheaf & Porter is to be reshaped & re-planning has just started*
- *Wild creatures are returning to the rivers- otter, birds, fish & soon - North Atlantic salmon*
- *Sheffield's grimy industrial image is being replaced by the UK's leading Outdoor City*

*The City Council & Environment Agency also recognise these opportunities & broadly support the Trust's vision but have many other competing responsibilities. The Trust will provide an independent, focussed champion, bringing together all users – environmentalists, walkers, cyclists, anglers, historians, kayakers, cavers and wild swimmers. Opportunities to reveal, access and regenerate the rivers that exist at Castlegate, in the station and wherever development is happening on the river banks. There may also be places to create art trails, white water for kayaking, a climbing wall, fish passage and bat refuges."*



*Urban Caving in the Sheaf Culverts with Trained Guides*

## Upcoming and potential multi-benefit projects by sub-catchment:

### [Don](#)

**DCRT:** Hexthorpe / Sprotbrough Ings river wetlands habitat improvement and public engagement project. Currently at feasibility stage.

#### **Moors for the Future:**

- Building Blocks project (funded by WEG) will target re-wetting and sphagnum establishment in the SP SAC till 2022
- MoorCARBON (DEFRA funded) will protect peatland carbon from loss through restoration until 2021
- MoorLIFE 2020 will provide land management, science and communications focused on blanket bog in the SPSAC until 2021

#### **Northern Forest**

**River Stewardship Company:** looking to realise opportunity for holistic long-term channel maintenance and engagement programme on the upper Don, Loxley, Sheaf and Porter.

**Sheffield Lakeland Landscape Partnership** (led by Sheffield & Rotherham Wildlife Trust)

**'Wild Waterways':** Collaborative project between DCRT, YWT, EA and DMBC to map opportunities for river improvements in the lower Don catchment.

**Yorkshire Wildlife Trust:** aspiration for a project to tackle diffuse pollution on the Don, north of Doncaster

### [Dearne](#)

**Dearne Valley Green Heart:** ongoing delivery of multiple benefit measures in the Dearne Action Plan (YWT, RSPB, EA, BMBC, RMBC, DMBC).

#### **Northern Forest**

### [Rother](#)

#### **Chesterfield Canal Trust:**

- Rewatering Renishaw (phase 1AA).
- Restoration of Chesterfield Canal from Staveley to Killamarsh

**National Trust:** Riverlands Doe Lea and Poulter project has three aims (currently in feasibility stage):

- Rivers/catchment healthy, clean, rich in wildlife
- Rivers/catchments easily accessed, valued and loved for their heritage and beauty
- Sustainable long-term care, with a national importance

**North East Derbyshire District Council:** intention for bids for community/towns fund to include water body management and improvement.

**Sheffield & Rotherham Wildlife Trust:** early stages of development for Rotherham Rivers stage III / Rother Valley Project. Looking at further potential opportunities along the Rother for WFD mitigation/improvement, habitats and species.

## Data, information and evidence

An important part of the Catchment Based Approach is that work, projects and interventions are based on data and evidence. In this section we have listed freely available sources of data which can be used to underpin our approach.

[Click here to be taken to the Don, Dearne & Rother Data portal.](#)

Click to be taken to external website:

### **Data available from Caba:**

#### **Catchment Based Approach Data Hub: Evidence sharing platforms**

A webpage for organisations to share their data platforms, including data such as:

- Is my river fit to swim in?
- EA water quality sampling point finder
- Riparian shade data explorer

#### **Caba Data Explorer**

An online tool for exploring catchment data, including:

- River habitat quality assessment
- WFD fish survey sites
- WFD river status
- Category 1 & 2 pollution incidents
- Consented discharges
- Orthophosphate measurements for 2015
- River Habitat Survey Habitat Modification Class

#### **Caba Evidence Review Tool**

The Caba Data Package is a set of GIS layers suitable for supporting integrated catchment management planning. The datasets are displayed, interpreted and grouped to help partnerships identify issues and opportunities for collaborative action.

#### **Catchment Monitoring Cooperative**

A proposal for a step-change in citizen science and community monitoring to support integrated catchment management.

### **Data available from DEFRA**

#### **Environment Agency Data: App Gallery**

- Environment Agency Catchment Data Explorer
- MAGIC map (The MAGIC website provides geographic information about the natural environment from across government).
- Asset Information
- Drinking water safeguarding zones

- Ecology and fish data explorer
- Public registers – discharge permits, water quality exemptions, enforcement actions, water quality data archive etc.

#### **River levels**

#### **EA flood maps for planning**

#### **Partner Data Catalogue**

This is the partner data catalogue, where EA's partner organisations can register for an account to access more detailed datasets, which are not publicly available elsewhere. These include detailed Ordnance Survey mapping (including 1:25k, VectorMap Local and MasterMap), LIDAR, Aerial photography, and Flood Risk datasets.

## **National Evidence and Data Resources**

#### **River Obstacle app**

#### **SciMap**

A free online version of the sediment risk mapping tool.

#### **Farmscope**

Decision support tool for agricultural pollution management planning

#### **Ecosystem Services Visualisation Manual:**

A guidance manual for identifying priority areas in catchments, where interventions to improve the water environment are likely to provide multiple benefits to a range of partner organisations and local communities.

#### **Ecosystems Knowledge Network: Natural Capital Assessment Gateway**

#### **INNS Mapper**

INNS Mapper is an open access webtool which allows users to input and view data on Invasive Non-native Species (INNS) within England

#### **Soilscapes**

#### **UK Soil Observatory**

#### **NFM monitoring and evaluation**

#### **JBA working with natural processes –**

A catalogue of nature-based flood risk management projects in the UK.

#### **Old maps**

E.g. useful for looking at how rivers have changed over time

## **Surveying Resources**

### **Riverfly Partnership**

The Riverfly Partnership is a dynamic network of organisations, representing anglers, conservationists, entomologists, scientists, water course managers and relevant authorities, working together to: - protect the water quality of our rivers; - further the understanding of Riverfly populations; - and actively conserve Riverfly habitats. The Riverfly Partnership is hosted by the Freshwater Biological Association.

### **Freshwater Watch**

FreshWater Watch is a global project run by Earthwatch Europe, in which individuals and communities monitor, protect and restore their local water resources.

## **Local data and evidence**

### ***iCASP***

Upper Rother opportunity mapping. To be turned into a 'toolkit'

### **Nature Counts Partnership**

A partnership led by Sheffield & Rotherham Wildlife Trust, which has produced the following reports:

- Sheffield State of Nature Report (2018)
- Working With Water
- Data For Nature

### ***Data for Nature***

Built on the Sheffield State of Nature Report to introduce new monitoring systems for S&RWT nature reserves.

### ***Hidden Heritage Secret Streams (DCRT)***

A citizen science project monitoring the effect on river invertebrates from the removal of Slitting Mill Weir.

## **Partner Plans and Strategies**

**Dearne Valley Green Heart:** Dearne sub-catchment plan

### **Doncaster Council:**

- Local Plan
- Doncaster Growing Together Strategy
- Environment Strategy

### **Environment Agency:**

- River Basin Management Plan
- Medium Term Plan (Environment Programme)
- FCRM Programme

### **National Trust:**

- Land, Outdoors and Nature strategy (being delivered through Riverlands)

### **Sheffield & Rotherham Wildlife Trust**

- Rotherham Rivers Stage III (in development)
- Nature Recovery Network (in development)
- 5 year strategic plan and Annual Business Plan
- Sheffield Lakeland Landscape Partnership – Landscape Conservation Action Plan (to October 2022)

### **Yorkshire Wildlife Trust:**

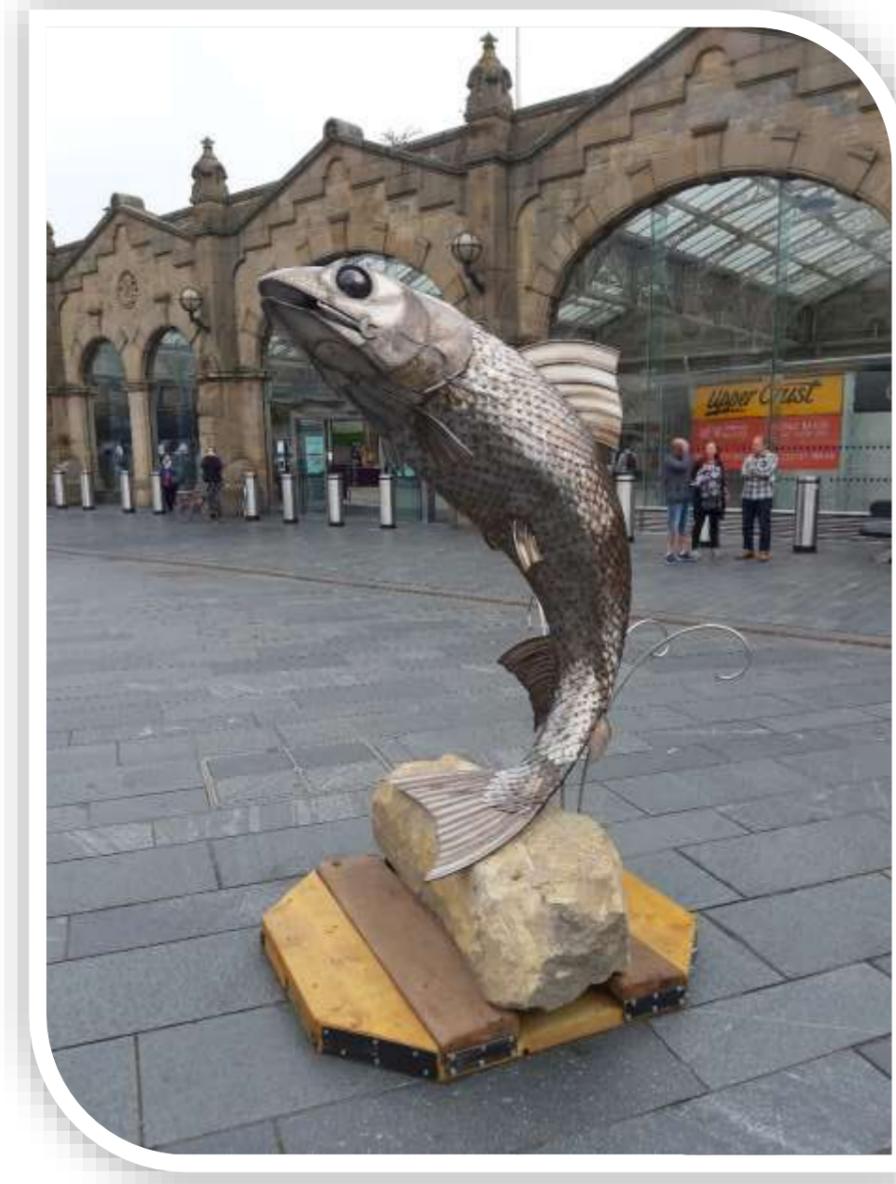
- Living Landscapes

## Reviewing the Plan

This plan is a revision of our original Catchment Plan, and was published on 3<sup>rd</sup> December 2020. There will be a full review in 5 years' time.

In the interim, the table of projects will be reviewed yearly in order to keep track of work completed and new projects coming up.

The opportunities, aims and actions are direct from the original plan. These should be reviewed within 2 years to track progress and identify new ones.



*The Salmon of Steel, created as part of a Festival of the Mind project by scrap metal artist Jason Heppenstall, on temporary display outside of Sheffield Railway Station, awaiting a permanent home.*

*In our original catchment plan the thought of having regular salmon sightings in the city centre was still a long way off. Being able to celebrate returning salmon in such a public way, by means of organisational, cross-discipline collaboration, is a collective achievement of partners working in the catchment.*

## Appendix 1: List of projects: completed, ongoing and future

Listed alphabetically by organisation

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Canal & River Trust	INNS control		✓	✓	✓	✓	✓	✓	✓	✓								
	Sheffield Waterfront Festival		✓					✓	✓		✓							
	Community Roots project – Sheffield and Tinsley		✓					✓			✓							
	Fish pass construction at Sprotbrough, Aldwarke and Thrybergh		✓	✓			✓						✓					
	Water quality improvement project within Chesterfield Canal SSSI					✓		✓							✓			
	Masbrough Weir fish pass (partnership project with DCRT lead, YW, EA & RMBC)		✓				✓							✓				
Chesterfield Canal Trust	Canal restoration					✓	✓	✓	✓	✓								
	Trip Boat					✓	✓	✓		✓								
	Maintenance volunteer activities					✓	✓	✓		✓								
	Chesterfield Canal from Chesterfield to Staveley and Staveley to Killamarsh – research into water resources required for canal navigation and impacts of changing state of water quality along Rother and Doe Lea					✓	✓								✓			
Dearne Valley Green Heart	Landscape Partnership				✓		✓	✓			✓							
	Regenerating flood plain at Houghton washland, Adwick washland and Smithies Marsh				✓		✓						✓					

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
	SSSI designations				✓			✓		✓								
	Dearne Valley Nature Improvement Area designation				✓				✓		✓							
Denby Dale Parish Council	Friends of the Dearne / Countryside project				✓													
	Habitat creation				✓			✓	✓	✓								
	INNS control				✓													
	River Guardian, Riverfly and Eco Schools				✓						✓				✓			
Doncaster Council	INNS training and information (signage on sites)			✓					✓									
	Tree planting at Piggots Field, Conisbrough			✓					✓									
	Data management by the local records centre			✓					✓									
	Through planning obligations the use of S106 monies to improve riparian habitats			✓					✓									
	Ecological input in planning			✓					✓			✓						
	Local plan protecting flood zones			✓					✓									
	Sprotbrough Ings – reconnecting river and floodplain			✓						✓		✓	✓					
	Riparian habitat improvements downstream of Doncaster town centre. Reconnecting old Oxbows, woodland and other habitat types.										✓			✓				
Don Catchment Rivers Trust	Improvement to river morphology on the Dearne at Old Moor. This improves fish spawning opportunities				✓				✓									

Organisation Task / Project / Work	Operational Catchment					Status			Opportunity Addressed								
	Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Living Heritage of the River Don project		✓	✓			✓			✓	✓							
Don Valley Way		✓	✓				✓			✓							
Eels in Schools				✓		✓				✓							
NFM officer employed in upper Rother. NFM measures to implemented around Chesterfield					✓		✓	✓			✓						
Removed barriers to fish passage on the rivers Don (6 obstructions) and Dearne (2 obstructions)	✓	✓		✓		✓							✓				
Habitat enhancement work on Dearne through construction of groynes				✓		✓							✓				
Habitat enhancement work on Moss Brook through installation of woody debris					✓		✓				✓		✓				
Removal of Slitting Mill Weir					✓		✓		✓				✓				
iCASP project mapping opportunities on upper Rother					✓	✓										✓	
Wild Waterways: partnership with YWT, DMBC & EA			✓					✓	✓		✓						
Hidden Heritage Secret Streams										✓	✓						
Don Fisheries Consultative		✓					✓	✓							✓		
Don Gorge Community Group			✓				✓	✓	✓								
Conservation volunteer group			✓				✓	✓	✓	✓							

Organisation Task / Project / Work	Operational Catchment					Status			Opportunity Addressed								
	Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
			✓				✓			✓							
			✓				✓			✓							
			✓				✓			✓							
				✓		✓											
				✓		✓	✓	✓	✓	✓	✓	✓		✓			
				✓		✓			✓		✓						
					✓			✓		✓			✓				
			✓			✓								✓			
					✓												
					✓												
					✓												
		✓	✓	✓	✓	✓	✓		✓								
			✓		✓		✓										
					✓		✓										
						✓							✓				
						✓							✓				
				✓		✓											

Organisation Task / Project / Work	Operational Catchment					Status			Opportunity Addressed								
	Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Invasive Non Native Species (INNS)	✓	✓	✓	✓	✓	✓			✓								
Living Went phase 2			✓			✓				✓			✓				
Living Went Water and Environment Fund Project			✓				✓		✓	✓				✓			
Porter Brook Pocket Parks		✓				✓							✓				
River Dearne connectivity & habitat enhancement				✓		✓			✓								
River Don weir removal	✓					✓			✓				✓				
River Rother Restoration Phase II					✓		✓		✓				✓				
River Rother Tributaries, Hidden Heritage, Secret Streams					✓		✓		✓		✓		✓				
Salmon to South Yorkshire - Living Heritage of the River Don		✓				✓			✓				✓				
Sanderson's weir Fish Pass		✓				✓			✓				✓				
Sheffield Lakeland Landscape Partnership	✓						✓		✓		✓			✓			
Sheffield Urban Watercourses		✓					✓		✓		✓			✓			
Sprotbrough Fish Pass		✓				✓			✓				✓				
Wombwell Ings Doveside Reconnection				✓		✓			✓				✓				
Yorkshire Agriculture Best Practice Project	✓	✓	✓	✓	✓	✓					✓						
Diffuse pollution at Longthwaite and Sheepbridge					✓		✓							✓			

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
	Sheffield NFM on Blackburn Brook and Limebrook (and other sites). NFM measures delivered as pilots for further schemes across Sheffield area											✓						
Friends of the Dearne	Rewilding the Dearne project				✓		✓		✓	✓					✓	✓		
Garganey Trust	Creation of Broomhill Flash				✓		✓		✓				✓					
Grayling Society	Encouraged Environment Agency to reintroduce Grayling to the Rother around Chesterfield					✓	✓											
	Invertebrate surveys on Barlow Brook and identified white clawed crayfish and water vole					✓	✓		✓									
	Grant to SPRITE for habitat work to the Don in Sheffield		✓				✓											
	Online catch return for Grayling, to monitor the extent of Grayling populations and their growth / decline.	✓	✓	✓					✓	✓								
	Invertebrate survey on the Rother around Chesterfield, to monitor invertebrate numbers and variety over a number of years.					✓			✓	✓								
Humberhead Levels Nature Improvement Area	Core sites on the Torne, Idle and Don			✓			✓				✓							
Moors for the Future	Making space for Water Project	✓					✓			✓								
	MoorLIFE and MoorLIFE 2020	✓					✓	✓			✓	✓						
	Talks and walks	✓						✓			✓							
	Blanket bog work	✓						✓			✓							

Organisation Task / Project / Work	Operational Catchment					Status			Opportunity Addressed								
	Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Working closely with Yorkshire Water, United Utilities and Severn Trent Water has demonstrated the benefit of healthy moors and peatlands for UK drinking water supply; plus capacity for increased resilience in the face of climate change.	✓						✓								✓		
Water Environment Grant funding (Building Blocks), will target rewetting and sphagnum establishment in the SP SAC till 2022.	✓						✓	✓									
MoorCARBON (DEFRA Funded) will protect peatland carbon from loss through restoration until 2021.	✓						✓	✓									
MoorLIFE 2020 will provide land management, science and communications focused on blanket bog in the SP SAC until 2021.	✓						✓	✓									
Big Dip water testing (Doe Lea)					✓		✓			✓							
Doe Lea sediment work and farmers group					✓		✓				✓						
Re-meandered section of the Pools Brook on restored coal tip land					✓	✓							✓				
In-stream channel restoration between Stainsby Mill and Doe Lea village					✓	✓							✓				
Doe Lea sediment trap installations (2)					✓	✓									✓		
Restoration of duck decoy pond at Hardwick Park					✓	✓									✓		
Riverlands project					✓			✓			✓						

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Natural England	Higher Level Stewardship Schemes and countryside stewardship schemes	✓						✓	✓	✓	✓							
	Creating and managing habitat									✓								
	SSSI notification of sites within Dearne Valley to provide protection to habitats and species which have been created through schemes				✓				✓	✓								
	Catchment Sensitive Farming: training, advice, capital grants	✓	✓	✓	✓	✓		✓	✓		✓							
North East Derbyshire District Council	Ongoing, district wide SUDS process simplification					✓		✓			✓							
	Produce guidance for developers to improve the SUDS approval process and to ensure SUDS are adequately considered					✓		✓			✓							
	Ongoing district wide watercourse management					✓		✓						✓				
	Improved regime of watercourse inspection and maintenance particularly to ensure flow / channel is maintained and pollutants are removed					✓		✓						✓				
	Clay Cross town deal					✓			✓					✓				

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Northern Forest	Woodland creation						✓	✓	✓			✓						
River Stewardship Company	INNS management across the catchment (including surveying and treatment)	✓	✓	✓	✓	✓			✓									
	Habitat improvements through debris clearance and management of scrub and vegetation	✓	✓	✓	✓	✓			✓									
	Barlow Brook Partnership Project					✓	✓											
	Riverlution		✓	✓				✓	✓		✓							
	Community engagement (friends' groups, volunteer days, schools' engagement, events)		✓	✓					✓									
	Delivered the 'Lower Don Valley Flood Defence Project'		✓				✓								✓			
	Holistic long-term channel maintenance and engagement programme on the upper Don, Loxley, Sheaf and Porter longer term opportunity)	✓							✓		✓				✓			
RSPB	Houghton Washland 35 (ha)				✓		✓			✓								
	Adwick Washland (90ha)				✓		✓			✓								
	Edderthorpe Flash (30ha)				✓		✓			✓								
	Little Houghton (9ha)				✓		✓			✓								

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Sheffield City Council	Delivered retrofit SUDS scheme diverting clean and controlled flows to the river and away from combined sewer	✓	✓				✓	✓				✓						
	Established arrangements and funding to adopt and maintain SUDS both within open spaces and integrated into development e.g. permeable paving	✓	✓					✓				✓						
	Deculverting projects on Porter and Carbrook. Riverside development – access and habitat (in channel) creation		✓				✓						✓					
	Sanderson's weir fish pass as part of Don defence work		✓				✓						✓					
	Ongoing work with Yorkshire Water to look at river modelling to demonstrate benefits	✓						✓										✓
	Long term programme for involvement in all aspects of NFM – flood risk, water quality, bio benefits	✓	✓						✓				✓					
Sheffield & Rotherham Wildlife Trust	Working with Water		✓					✓		✓	✓		✓		✓			
	Sheffield Lakeland Landscape Project	✓	✓					✓		✓	✓							
	Specific works to benefit water voles, great-crested newts, white-clawed crayfish and riparian fish species at various SRWT nature reserves and Rotherham Rivers stage III sites.		✓			✓	✓	✓		✓								
	On-going management of Salmon Pastures nature reserve		✓					✓		✓								
	On-going management of Centenary Riverside reserve					✓		✓		✓							✓	

Organisation Task / Project / Work	Operational Catchment					Status			Opportunity Addressed								
	Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
INNS control by SRWT on a suite of nature reserves and sites along the Rother.					✓		✓		✓								
Kilnhurst Ings habitat enhancements		✓				✓			✓								
Catcliffe in-channel works						✓			✓								
Habitat improvements at other LWS and RMBC/owned sites along the Don and Rother in Rotherham including Bow Bridge, Catcliffe Flash, Old Flatts Farm, Rother Valley Country Park.		✓			✓	✓	✓		✓								
Planning consultee		✓			✓		✓				✓						
River Rother Restoration project					✓		✓			✓		✓					
Rotherham Rivers 3/Rother Valley Project/Partnership – early stages of development as a follow on programme. Looking at further potential opportunities along the Rother for WFD mitigation/improvement, habitats and species.					✓			✓						✓			
Woodhouse Washlands – interpretation panels and improved public access					✓	✓				✓							✓
Nature Counts, Data For Nature, Sheffield State of Nature		✓			✓		✓			✓				✓	✓		
Public events at nature reserves		✓			✓		✓			✓							
SLLP will be working with SCC to create a better light-shade balance to the river channel on the Loxley below Rowell Bridge	✓							✓						✓			

Organisation Task / Project / Work		Operational Catchment					Status			Opportunity Addressed								
		Upper Don	Middle Don	Lower Don	Deerne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
	Catchment Walkover Project in 2012/2013 – joint project between SRWT and RSC for the Environment Agency		✓				✓									✓		
	Nature Recovery Network mapping		✓					✓	✓									
Woodland Trust	The Woodland Trust are looking to support catchment wide woodland creation opportunities.	✓	✓	✓	✓	✓		✓	✓		✓							
	In 2021 the 'Engaging and supporting the SY Woodland Creation' project will commence it will be led by the LNP, with input from WT and Sheffield City Region Mayoral Team. The new Woodland Creation project officer and starts on 7 <sup>th</sup> Dec. He will be based in Sheffield & Rotherham WT and be line managed by the CEO Liz Ballard.	✓	✓	✓	✓	✓		✓		✓		✓						
Yorkshire Water	AMP 6 programme	✓	✓	✓	✓	✓									✓			
	Financial investment in YW sewage treatment works at Lundwood, Cudworth and Clayton West					✓	✓								✓			
	AMP 7 programme	✓	✓	✓	✓	✓		✓										
Yorkshire Wildlife Trust	Management of Dearne Valley Country Park				✓			✓		✓								
	Living Went project					✓		✓					✓					
	25 ponds created on Barnsley Main				✓		✓			✓								
	10 ponds created on Littlewood Park				✓		✓			✓								
	Back from the Brink Willow Tit Project				✓		✓		✓									

Organisation Task / Project / Work	Operational Catchment					Status			Opportunity Addressed								
	Upper Don	Middle Don	Lower Don	Dearne	Rother	Comped	Current/Ongoing	Future	Habitats & Species	Engagement	Land Management	SUDS & NFM	Morphology	Maintenance of River Channels	Water Quality	Data & Information	Reservoirs Management
Habitat creation schemes (Barnsley Main)				✓			✓			✓							
Ea Beck project			✓		✓										✓		
Yorkshire INNS project	✓	✓	✓	✓	✓		✓		✓							✓	
Ea Beck GCN ponds project. Assess 16 + ponds on the EA Beck / Don for habitat suitability for GCN and suggest management works			✓					✓	✓								
North Doncaster diffuse pollution project / lowland NFM (aspiration)					✓			✓			✓			✓			

## Appendix 2: Opportunities, outcomes and actions table

(Transferred from original plan)

### Habitats and Species

Opportunity to be addressed	Outcome	Action
<b>Eliminate/control of invasive plants species (such as Himalayan balsam and Japanese Knotweed) in river corridor to improve biodiversity and worsening water quality and sediment problems.</b>	Establishment of a more natural riverside ecology.  Improved water quality and WFD compliance.	Carry out mapping and develop strategy to bring about long-term improvements.  Improve understanding of impact of invasive plants on WFD through collecting better data, catchment walkovers, habitat mapping including Local Action Group project.  Generate a strategy for targeted delivery of control programme.  Improve understanding of link between invasive species and WFD.
<b>Non-native invasive animal species (mink, signal crayfish, killer shrimp).</b>	Establishment of a more natural river ecology.	Develop (refuge) ark sites for native crayfish.  Develop an agreed mapping programme and develop strategy.  Implement control programme.  Plan and implement communications to raise awareness.  Address concerns over trapping.
<b>Increase populations of key species in the Don catchment (currently absent or present at a low level).</b>	Achieve populations of flagship and indicator species including: birds, otters, water voles, salmon/wild trout, and bats.  Community aware of flagship species.	Establish what species should be where.  Carry out targeted surveys and gather data to inform actions.  Review existing data, where are the gaps, what does the evidence tell us?
<b>Riverside management regimes to support the ecological network e.g. avoid short grass on flood defences, development next to rivers.</b>	Biodiversity gain (as measured by presence of indicator species).	Plan and implement communications to raise awareness and generate community support.  Delivery of projects for appropriate habitat creation, restoration and conservation.  Ensure other projects in the catchment support these outcomes.
	Create a functioning ecological network through sensitive riverside management and green infrastructure, which includes access leading to multiple benefits for people and the environment.	Influence planners and local authorities to ensure green infrastructure and riverside management are a condition of development on the waterfront.  Influence riparian owners (including the Environment Agency) to manage sites for ecology. Work in collaboration and sharing best practice/ideas with owners.  Plan and implement communications to raise awareness and generate support.

## Engagement

Opportunity to be addressed	Outcome	Action
<b>The importance of rivers and the contribution they make to the community are better recognised.</b>	<p>Raise awareness of rivers and contribution they can make – sell the vision.</p> <p>Attract additional resources and community support for actions.</p> <p>Reassure people about changes.</p>	<p>Influence people who manage the river or control resources.</p> <p>Consider communications within an organisation.</p> <p>Love your river – discourage antisocial behaviour. Target all sectors.</p> <p>Use iconic species to build support.</p>

## Land Management

Opportunity to be addressed	Outcome	Action
<b>Create better watercourses in the Don catchment by addressing polluting land management practices.</b>	<p>Less acute and chronic pollution of surface water and groundwater.</p> <p>Improved WFD compliance.</p> <p>Land managers value watercourses more and take ownership of them.</p>	<p>Review WFD data to identify issues and actions.</p> <p>Capture learning/good practice from Cawthorne Dyke project and elsewhere.</p> <p>Develop engagement plans based on evidence and shared benefits.</p> <p>Identify other organisations to work with to deliver better water management more effectively.</p>

## SUDS & NFM

Opportunity to be addressed	Outcome	Action
<p><b>Develop artificial systems to relieve pressure on main river.</b></p> <p><b>A more natural flow regime system including a sustained base flow.</b></p> <p><b>Manage drainage at source.</b></p>	<p>All options and outcomes are considered.</p> <p>Drainage systems consider high and low flows.</p> <p>SUDS are recognised as beneficial to the local community.</p> <p>New development doesn't just focus on existing waterbodies.</p> <p>Ecology is improved.</p>	<p>General work to enable introduction of SUDS.</p> <p>Awareness raising by Environment Agency and local authorities.</p> <p>Influence planners and developers to consider SUDS, especially on drainage to smaller watercourses.</p> <p>Develop communications materials for householders on SUDS developments.</p>

## Morphology

Opportunity to be addressed	Outcome	Action
<b>Develop a joint agreed approach to managing woody debris in watercourses as a habitat.</b>	A more natural river habitat.	<p>Carry out technical feasibility and pilot studies of river capacity to take increased woody debris without increased flooding risk and gather evidence.</p> <p>Influence/educate river managers and public of benefits and risks.</p> <p>Implementation of pilot project.</p>
<b>Remove/modify man-made obstructions to fish passage.</b>	<p>Self-supporting/sustainable fish population of migratory salmonids.</p> <p>Improved angling opportunities.</p>	<p>Identify obstructions and carry out feasibility study for removal/modification.</p> <p>Consider risk to isolated species from removing barriers.</p> <p>Delivery/opportunities to co-deliver with other Network schemes.</p> <p>Create a coordinated fish pass strategy through the Network.</p>
<b>Improve constrained river channel and poor resilience to extreme weather events.</b>	A more natural river corridor and washland habitats to improve biodiversity and increase natural flood storage.	<p>Carry out feasibility of re-engineering flood defences and replace with a more natural regime.</p> <p>Revisit wetland feasibility study.</p> <p>Deliver projects.</p>
<b>Create an agreed strategy for management of sediment in the Don catchment.</b>	A sustainable programme of sediment maintenance.	Working group formed.

## Channel Maintenance

Opportunity to be addressed	Outcome	Action
<b>Better access for maintenance plant.</b>	Access enabled by considering in planning process.	Influence developers and planning authorities.
<b>Riparian management, in-channel works consenting process.</b>	Create a more streamlined process supported by better guidance.	Environment Agency work with riparian owners.  Adopt a risk-based approach.
<b>Debris build up and structures in the channel.</b>	Waterbodies are able to perform their drainage function.	Develop joint approach with biodiversity, land management interests, Yorkshire Water and University.  Develop understanding of issues.  Catchment plan produced for management of sediment.
<b>Resolve conflict with ecology e.g. tree felling.</b>	Channel maintenance supports ecology, flood risk/drainage. An effective management plan which is agreed by all.	Create channel maintenance strategy.  Develop understanding of feasibility.
<b>Sediment and debris build up in wrong areas, increased flood risk, blockage of outfalls, and effect on ecology.</b>	Achieve Canal and River Trust ownership and engagement.	Maintain outcomes of management work.  Inform future works, e.g. sediment boards.  Modelling by the Environment Agency.
<b>Need a mechanism to coordinate multiple stakeholders/riparian owners to do effective channel management.</b>	Establish a coordinated management mechanism. Create joint operational management plans. Run pilot to inform wider strategy. Plan to include listed structures. Expand River Stewardship Company approach.	Pilot project established.  Map where intervention should be targeted at catchment level to maximise overall benefit.  Map who the stakeholders/riparian owners are.  Secure buy-in

## Data & Information

Opportunity to be addressed	Outcome	Action
<b>Informed decision making by better use of data and information. Data is used to enable modelling including climate change projections.</b>	Better decision making. Future proofing catchment. Activity is prioritised and is based on evidence.	More collaboration between data holders.  Share data better.  Update this plan with new data and information as available.  Identify gaps in data plan for integration of new data.  Network takes a lead on data, how is data currently used and analysed, advising what data is available and how to access.
<b>Widespread knowledge of proposed projects in the catchment to allow collaborative working.</b>	Opportunities for collaborative working not missed.	Establish mechanism for recording and sharing planned activity.
<b>Achieve mainstreaming of WFD in a range of organisations with role in managing the river.</b>	Improved WFD compliance and broader benefits.	Environment Agency data converted to useable, local scale information. Resources found for this work.

## Reservoirs Management

Opportunity to be addressed	Outcome	Action
<b>Low flow or lack of flow in downstream watercourses.</b>	A more natural flow regime acceptable to all users that supports a better ecology	Current investigations by the Environment Agency and Yorkshire Water to be completed
<b>Maintenance of water supply.</b>	Maintain a drinking water supply that is affordable. Cost benefit analysis.	Address catchment challenges.
<b>Consider flow management regime including high flows.</b>	Catchment users maintain benefit/ minimum impact.	Consult stakeholders.  Raise awareness and visibility with Network and others.  Investigation should consider fish passage, sediment and river restoration.
<b>Manage reservoirs to reduce flood risk management.</b>	Reservoirs are included in wider flood risk strategy and alleviation. A modelling package is developed to optimise management regimes.	Feasibility to include:  Modelling.  Understand capacity/water resources trade off.  Risk analysis.  Arup base modelling for Sheffield system could be used to start this work.
<b>Regulatory restrictions Ofwat, Environment Agency, DEFRA.</b>	Change of use.	Regulatory influencing.  Optioneering solutions to alternative or replacement storage.
<b>Improved management of washlands for multiple benefits.</b>	Washlands that are effective for flood retention but also support: new habitats, food production/ agriculture and recreation.  Strengthening function of washlands to derive multiple benefits.  Formalised recognition of importance of washlands and their function. Designated water level management plans which supporting biodiversity.	Identify additional areas for washlands.  Designate their function to avoid conflict, e.g. housing/flooding.  Modelling, feasibility and cost benefit analysis.  Tie in with green infrastructure strategy. Regulatory influencing.  Optioneering solutions to alternative or replacement storage.
<b>Compensation areas for flood risk management.</b>	Washlands that are effective for flood retention but also support: new habitats, food production/agriculture and recreation.  Strengthening function of washlands to derive multiple benefits.  Formalised recognition of importance of washlands and their function. Designated water level management plans which supporting biodiversity.	Identify additional areas for washlands.  Designate their function to avoid conflict, e.g. housing/flooding.  Modelling, feasibility and cost benefit analysis.  Tie in with green infrastructure strategy.

## Appendix 3: Organisations in the Don, Dearne & Rother Network

(In alphabetical order)



*Ravenfield Ponds*



## Appendix 4: Overview of workshop findings

In November 2019 organisations from the 'Don Network' met for a workshop to kick start the catchment plan review process. The information was used to update and refresh the main body of the plan, and we also gathered information to understand how to progress and improve the catchment partnership. Here is a summary of those findings.

### Question: What are our barriers as a partnership?

#### *As a partnership what are the barriers to our success?*

- Communicating to each other.
- Hindered by lack of annual report.
- Others cannot see the value of the partnership yet.
- Resources – people and finances. Continuity of staff.
- Name of the catchment partnership not inclusive enough – need to include Rother and Dearne etc.
- Use of jargon ... use plain English in the plan.
- Finding a medium to be able to contact everyone.
- Most projects are not complete catchment scale, only part of it. The more holistic and large scale they are, the more they can overcome silos and hidden risks/costs.
- Lack of incentives for changes to land management and current uncertainty in agri-environment funding and potential changes to agricultural markets as a result of Brexit. Alongside this there is still a lack of understanding / resistance to change among landowners/tenants of agricultural land around catchment management initiatives.
- Disparate public funding streams and public sector bodies not necessarily working at a catchment scale so still focused on administrative/political boundaries which don't necessarily reflect the relevant geography for solutions to catchment problems.
- Bias towards capital funding from public funding streams, which whilst needed does not ensure that schemes are viable in the long term and sustainable.
- Reduced capacity for monitoring and enforcement from Environment Agency. EA resource spread too thinly e.g. One catchment coordinator for entire Don and Rother catchment.
- The pressure of development will only have increased since the last catchment plan – both from housing and industry and the pressure this creates on habitats/species and water quality and flood risk.
- The sheer size of the Don catchment is both an opportunity and a threat.
- On a similar note, different members of the Network will have different parts of the Don catchment that they have an interest in and where there might be more practical ways they can collaborate. The Network needs to facilitate this where possible, so it becomes more relevant for member organisations.

### *Are there any problems that need addressing?*

- Diversity of membership.
- Inclusion of users and action groups.
- Engaging with people who aren't engaged presently.
- Too much jargon in the plans – needs to be plain English.
- Are we diverse as a network?
- How to influence and be one voice.

### *What are the key challenges in the catchment?*

- Influencing others to be part of the partnership via others' strategies and action plans.
- Reaching out to interest groups.
- Engaging with those who are not currently engaged.
- Partner resources.
- Celebrating successes in a way that is easy to digest and understand, that can be linked into other organisations plans. Need an annual report?
- Making the value easy to see.
- Reaching out to explain what the network does. E.g. to anglers. FB?



### Question: What are our strengths in the catchment?

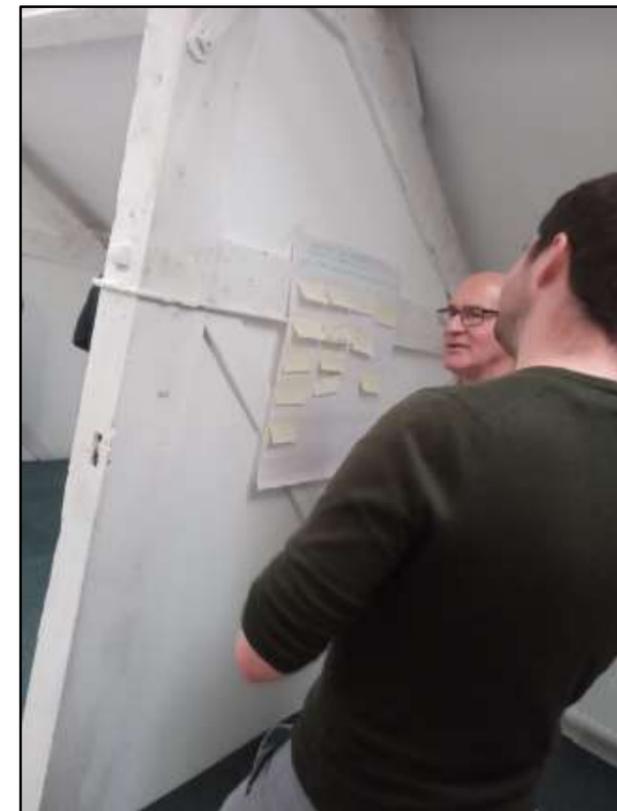
- Passionate people
- Multi-organisational
- Common goals
- Shared resources and knowledge
- Expertise
- Inclusive – want to hear all opinions
- Good track record of delivery
- Credibility
- Feet on the ground / down to earth
- 10 years and still going – stable
- Diverse groups and interests
- Relevant – keeps up with relevant issues
- Different organisations with a common goal
- Shared resources / shared knowledge and expertise
- Inclusive – we listen to everyone
- Good track record of delivering
- Credibility – stable
- Diversity of subjects as a group – representing interests even if group not actively involved.
- An umbrella
- Relevant to current issues
- Passionate about area of work and able to put a lot of energy into it
- Feet firmly on the ground – no-one is above talking to anyone.
- Local green spaces developed on the back of coal mining heritage provide opportunities for people to experience nature close to home and enjoy parts of the river and its tributaries.
- In the Doe Lea at least – some large landowners who have the potential through their large landholdings to make a real difference to the river and the surrounding catchment e.g. National Trust, Chatsworth, Derbyshire County Council.
- Knowledge and experience.
- Passionate people.
- Engagement opportunities from the number of people living near to the rivers.

### Question: how can we improve our communications?

- Opportunities to share expertise with each other – themed forums
- Summer site visits on specific topics
- Promote a strong brand
- Mapping partner and other projects in type (e.g. nfm) at catchment scale (GIS?)
- Quarterly email to partners to supply info that can be disseminated
- Investigate new comms / online ways of working (forums / chat boards?)
- News tab on website
- Sub-groups either around themes and/or geographic areas to help with communication and collaboration in the network

### Outside

- Communicate our successes
- Help others understand 'river catchment'. Use plain English
- Volunteer recruiting / supporting
- Press / media and local neighbourhood newsletters (link to Riverlution and EA press teams)
- Learning from other catchment partnerships
- Influence planning
- DN could add value on a catchment scale with local authorities



**Question: How do you feel about being involved today [in the workshop]?**

“Very worthwhile”

“Great event and very good topics covered, but need to make sure that it all actually happens!”

“Valued!”

“Enjoyed the opportunity to feed in face to face rather than by social media!”

“Instrumental in shaping future work and direction of activity”

“Positive – good to be involved with”

“Encouraged. Participation good – everyone able to take part. Should end up with a good plan that leads to more involvement by more people and groups”

“Really enjoyable and collaborative experience – can definitely see being involved as being useful”

“Good to participate with a number of positive and committed people”

“Positive to be engaged and feel valued”

“Good to help us see who is still involved and what their priorities are”

“Always feels disparate BUT the message of a ‘catchment’ and how it all holds together is very important ... my role still feels relevant!”

“Useful opportunity to have a say in the shaping of the Don Network”

“Very useful day. The Don Network is a forum to bring people together – share perspective and experience”

“Good to reflect on the plan 6-7 years down the line – interesting how much things have changed. E.g. NFM not on radar back then. On the flip side good that most of the same orgs are engaged – continuity”

“Perhaps with a list of questions, online survey for example beforehand we could discuss results of the survey in a shorter session”

“Good event today! Good engagement and I learnt a lot!”

**Question: How do you feel about being a member of the Don Network?**

“As always, interesting to meet others and gather a wider knowledge of groups in the area. Thanks to all for support for ALL”

“Still want to remain involved as the overall picture underpins so much of my work”

“Positive – great to work together”

“Interesting event to reflect on progress over the last 10 years. In some ways nothing changes: poor resources poor application of policy. Great that issues have become widely understood”

“As a relatively small organisation in the catchment, involvement in the network is very helpful in getting the bigger picture.”

“Interested in seeing how the network develops and catalyses change in the Don catchment”

“Would be interested in doing some joined up cross catchment projects.”

“Still very relevant to us!”

“Good to be able to contribute to the development and improvement of the Don catchment”

“As a relative newcomer – welcomed. Valued.”

“Like to be more involved!”

“Focused, informed and enriched”

“Good. Network works well – catchment too big to sensibly ‘manage’ through a steering group”

“Great to be involved and to feed into the programme with more of a “community” hat on”

“Good that it is still going and organisations still want to be involved. New plan should invigorate it and help it to continue.”

“Involved”

“Pleased”