



# Our plan for the River Don



# Welcome to the Don Network

## This is the first ever joint plan for the care and improvement of the River Don catchment

The following organisations have participated in the production of this plan:

- Barnsley Metropolitan Borough Council
- Campaign to Protect Rural England
- Phoenix and Parkgate Angling Club
- South Yorkshire Forest Partnership
- Danvm Drainage Commissioners
- Canoe England
- River Stewardship Company
- University of Sheffield
- Dearne Valley Green Heart Partnership
- EcoFutures Ltd
- Rotherham Metropolitan Borough Council
- Wildlife Trust for Sheffield and Rotherham
- Don Consultative Association
- Environment Agency
- RSPB
- Wild Trout Trust
- Don catchment Rivers Trust
- Five Weirs Walk Trust
- Sheffield Area Geology Trust
- Woodland Trust
- Doncaster Metropolitan Borough Council
- Forestry Commission
- Sheffield City Council
- Yorkshire Water
- Canal and Rivers Trust
- Kilnhurst and District Angling Alliance
- Sheffield Partnership for Rivers in Town Environments (SPRITE)
- Yorkshire Wildlife Trust
- Moors for the Future
- National Farmers Union
- National Trust
- Natural England

## This is their plan...

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# Our commitment to the Don

*The document you are holding is the tangible product of the Don Network. It represents a unique endeavour by a special group of enthusiastic and passionate people (photographs of this group working can be found throughout the plan). It is the first time ever that such a diverse body of interested organisations has come together to plot the pathway to a better Don catchment.*

- Through the Don Network new working relationships have been formed.
- Organisations have discovered counterparts with a common interest.
- Numerous advocates, each with their own ambitions for the Don, have found that in fact there is far more which unites than divides them.
- The Don Network, supported by the Environment Agency and Yorkshire Water, has put its energy and knowledge into producing this plan.

**This document now asks the question of others (perhaps you?) – what you will do to help make a better Don? Better for people. Better for wildlife. A better place to be.**



Introduction —

# On the subject of rivers

**“Moon River”. “Old Man River”. “River deep, mountain high”. Why is it that people display such an emotional affinity for rivers?**

Is it that the water which rivers bring is indispensable to all facets of human life?

Or, is it that rivers seem alive and, like us, have a personality and mood? Their lives go through stages which mimic our own: from energetic youth to lethargic old age. They experience times of plenty and times of scarcity. They can be calm and nurturing or violent and cruel. In times of drought they can bring famine and social upheaval.

Today, human ingenuity cocoons us from most of the forces of nature. Our homes keep out the weather and our machines keep us comfortably warm or cool.

But when it comes to rivers we remain vulnerable to flooding or drought just like our ancestors. Technically advanced countries manage their rivers to smooth out their wilder fluctuations and moods. But in even the mightiest of nations, rivers rise up from time to time as if to remind us of the omnipotent power of nature.

Rivers can divide or unite. They can be a boundary for factions on opposing banks. They can connect communities and provide a transport corridor for vessels and ideas.



The Don catchment covers an area of **700sq miles**



**1.3m**  
People live inside the Don catchment



As rivers can convey things we want, they can also carry poisons and waste: from producer to receiver; from have to have not. Is it a coincidence that the first laws of public health related to the dire state of our rivers? **All the above is true of the River Don.**

The River Don has done something we mortals cannot. It has come back from the dead; a death brought on by centuries of filth and neglect. Because of organisations and people who care, its waters are cleaner today than they have been in living memory – though there is much more to be done. In response, fish and birds are starting to follow rivers back into the very heart of our cities but often their way is blocked by obstacles. And, most importantly, people are now seeking out the banks of their river as a good place to live and play.

The following pages describe an opportunity. An opportunity to recognise the contribution a river can make to our communities and our future; to realise the asset that our rivers can become.

**It is a chance to finish the job.**



# A river fit for all

*Some people might not realise it – but rivers are important to us all.*

They are a source of water for homes, industry and farming. They provide water for manufacturing and cooling. They are channels for drainage running off our streets and fields. They are places to safely dispose of our treated waste. Increasingly, rivers are seen as a potential source of energy through hydropower. They are places of recreation and relaxation – rare havens of calm in busy city centres. They are home to wild plants and creatures which enrich our lives.

The people of the Don catchment have experienced times of flood and water shortage. With a growing population and extremes of weather, the quantity of water in the river system has become a topical issue.

*The aim of the Water Framework Directive is to protect, improve and promote the sustainable use of water.*

That the water that flows through our rivers should be clean and of good quality is something most people would relate to and value. However, we now appreciate that our rivers shouldn't just be chemically 'clean'. They should support life. They should flow through a channel where the physical processes of flowing water can take place. There should be places for floodwater to go without causing harm. Even in our cities and towns they should be as natural as possible.

We now appreciate that we need to manage our catchment differently so that we have enough water for our needs, reduce pollution and make sure there is space for floodwater to go without causing harm.

The aim of the Water Framework Directive is to protect, improve and promote the sustainable use of water. If the River Don and its tributaries meet the needs of the Directive they will be ready to play their part in the community and be an asset to society and the economy.

In England and Wales, the Environment Agency is the body responsible for assessing how well the UK is meeting the standards of the Directive. The Environment Agency has divided the waters of the Don catchment (the rivers, lakes, canals and groundwater) into a number of geographical stretches or units called 'waterbodies'.

Only 7% of the waterbodies in the Don catchment currently meet the standards set by the Water Framework Directive, so there is lots to be done.

Monitoring of the river has identified three main issues that need to be addressed in the Don:

- Pollution from a single point source – "from the end of a pipe"
- Diffuse pollution – pollution seeping through the land into the water environment or many small individual pipe discharges such as drainage from roads
- Physical engineering modification of the river channel such as culverts, weirs, or flood defences

There's more about the Water Framework Directive and the Don catchment in the supplement towards the end of this plan.

## My River



**Helen Batt, River Stewardship Company**

*"We maintain this part of the Don in Sheffield city centre, working with riverside businesses and the local community. We keep it clear of litter and invasive weeds and manage the trees. It's a great spot for office workers to have their lunch and watch the kingfishers"*

# Don catchment



**A catchment is an area of land in which water drains towards a certain river or stream.**

The catchment of the River Don is a big place. It covers almost 700 miles<sup>2</sup> (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.



In this Plan the:

## 'Don catchment'

means the land which drains to the River Don, its main tributaries, the Rother, Dearne and Ea beck, and the lakes, reservoirs canals and groundwater.

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.



## Today the rivers of the Don catchment ask us two questions —

### Will we see them as an opportunity; a focus for economic renaissance, for cultural revival, or will we neglect them except when they rise up in flood?

Poets and geographers alike talk about rivers having three ages or sections: youth or upper, middle age or middle, and old age or lower. This model applies well to the Don catchment. The crossing points of the Don by the M1 and A1(M) motorways make convenient boundaries for these stages in the life of the Don.

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.

On most of the main rivers in the country, the largest cities are found on the lower part of the river: Newcastle on the Tyne, Liverpool on the Mersey and London on the Thames. On the Don, however, 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 2007. 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. They are also a defence in depth 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.

.....  
**Sheffield is the meeting point for several small fast flowing rivers which converge in the city centre**  
 .....

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 of 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 'middle aged' 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.

In Rotherham, the Don is joined by the Rother, the biggest tributary of the Don. The Rother flows from the southern part of the Don catchment, an area outside the South Yorkshire heartland of the

## Case study



### Doe Lea Catchment Project

#### Where

River Doe Lea catchment, North East Derbyshire.

#### Who

Community volunteers, Environment Agency, farmers, landowners, National Trust, Natural England, Derbyshire County Council, Bolsover & North East Derbyshire District Councils, Catchment Science Centre: University of Sheffield, National Farmers Union, Derbyshire Wildlife Trust.

#### When

From October 2009 to February 2013.

#### What's the problem

Poor water quality and flow, local flooding, soil erosion.

#### Consequence

Local people don't understand what the river does for them. Loss of underwater aquatic plants in ponds, unhealthy fish populations, high turbidity (suspended solids).

#### Source

Historic industry, highway drainage, urban and rural run-off.

#### Action taken

Project officer appointed, local partnership formed, monitoring by volunteers, buffer wetlands created, bankside fencing, farm advice, farmers group formed.

#### Funding

Environment Agency, farmers, National Trust.

#### Outcome

Additional flood storage, more habitats, better understanding, improved working relationships, community engagement, reduced soil erosion.

#### Lessons learned

Catchment wide projects can succeed but a funded project officer is essential to coordinate activity; 'red tape' has potential to stop projects; engagement with community is essential; funding needed for a minimum of five years to make a difference i.e. few quick wins, long-term effort required.

Don, with administrative and cultural ties to the Midlands. Here too the rivers Hipper, Doe Lea, Drone and Whitting nurtured the industrial revolution and paid the price of a century of pollution notably from the chemical industry; a legacy which has only begun to be reversed in recent years.

Past Rotherham, the Don meets another major tributary – the River Dearne. As steel is to the upper Don, so was coal 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.

Today, ironically 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.

My River



**Pete Wall, Dearne Valley Green Heart project manager, RSPB**

*"I'm really pleased with the wild landscape we've created with partners here at Adwick. The river, local communities and wildlife are at the heart of the Dearne Valley Nature Improvement Area".*

With the Ouse, the Aire and the Trent, the Don is one of the main rivers which end in the Humber estuary. The 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.

My River



**Tom Hayek, Yorkshire Wildlife Trust**

*"This point on the river sums up why we work so hard to make it better. In addition to running the Revival partnership project to improve the lower Don River for people and wildlife, I've succeeded in getting the farmer here into a wildlife-friendly farming scheme, and when I finish work I still can't get away as I am a passionate member of the Doncaster Rowing Club. Seems I just can't get enough of the Don!"*

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.



# A river made by people

*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 anglers! And often, over-engineered river banks just appear ugly.

.....  
Many of the rivers and streams in the Don catchment have been significantly changed by engineering works of one kind or another.  
.....

The Environment Agency has reviewed all the engineering works along the River Don and considered if the works are still needed: or does the construction no longer have a purpose (such as mill goits serving long-gone factories). On the other hand, some structures are definitely still necessary including drinking water reservoirs and defences to reduce the risk of flooding to homes.

Where a modification to the river is still required the Environment Agency has looked at the options to make the engineering more acceptable for people and wildlife. For example, could a pass be built to allow fish to get over a weir; could artificial islands be created in a concrete river channel to provide a refuge for riverside plants and interest to canoeists?



So, 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 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.

My River



**Andrew Virtue, Environment Agency**

*"Ea Beck has been heavily engineered over the years. There are few natural features left. I see this river as a blank canvas for us to work on and improve for fish and other wildlife. As partners in the Revival Project, we are creating a number of habitat schemes along the whole of the beck."*

# Our vision for the Don



*The content of this Don catchment Plan was developed by members of the Don Network, with the help of specialist theme groups.*

The findings of the individual theme groups were presented to the whole of the Don Network at a meeting in November 2012. At that meeting, Network members were able to support or reject the outputs of the theme groups. There was also opportunity to make additional suggestions which were voted on by delegates at the meeting.

Where there was no objection to a suggestion made at the meeting, it is included in this Plan. Where an objection was raised to a suggestion it has not been included in this version of the Plan, but it has been recorded for review by the Don Network in a later version of this plan.

It was frequently pointed out that there were often overlaps between the areas of interest of one or more theme groups. However, by working in smaller, more focussed groups it was possible to have in-depth discussions and debate priorities which would not have been possible in a larger forum. Further detail on the process followed by the Don Network is available in the supplement towards the end of this document.

## A new vision for the Don catchment

Each of the theme groups developed a vision of how the Don catchment could be:

### Flow Management theme group

There is a collaborative approach to flow management in the watercourses of the Don and Rother, balancing ecology with the needs of catchment users.

### Why the waters of the Don catchment matter:

Water supply for homes and business Public amenity Navigation	Support economic growth and regeneration Heritage Opportunities for hydropower	Water based recreation Support biodiversity Land drainage
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## Case study



**Where**  
River Don, Sheffield.

**Who**  
Environment Agency, River Stewardship Company (RSC), Sheffield Forgemasters International Ltd

**When**  
2011 on going

**What's the problem**  
Unmaintained river banks and trees, debris on banks, Japanese knotweed. 2007 flood showed risk to business.

**Consequence**  
Debris and dislodged trees reduced capacity of the river and increased flood risk by blocking bridges. Poor habitat.

**Action taken**  
RSC and the Environment Agency worked with Forgemasters on river maintenance plan. Trees and debris removed. RSC commissioned by Forgemasters to deliver this work for three years.

**Funding**  
Sheffield Forgemasters International Ltd

**Outcome**  
Flood risk reduced to major employer. Key local business engaged in river maintenance. Increased biodiversity – more native species. Income generated for river maintenance. Involvement of local volunteers.

**Lessons learned** Riparian landowners may be willing to invest in river maintenance if it has a direct benefit to them. A combined approach by Environment Agency and a local organisation can provide good value channel maintenance and other benefits.

### Land Management theme group

In the Don catchment there should be more trees and forests. Water should be less coloured and cleaner. There needs to be better regulation of high and low flows in rivers. By 2027, the waterbodies of the Don catchment should comply with the Water Framework Directive (WFD).

By 2027, best agricultural practice will be followed to manage land to prevent water pollution. There will be a varied arable landscape which includes wide field margins and rich hedgerows.

Land managers will take responsibility for water from rain to river.

### Natural Environment theme group

The Don catchment will have a more natural morphology which mimics natural conditions. There will be self-sustaining fish populations including migratory salmonids (salmonids are a group of fish which includes salmon and trout). Functioning ecological networks will be encouraged through sensitive management. Rivers will be a more natural habitat by the removal of invasive species.

### Water Quality theme group

The quality of water in the Don catchment will support a natural ecosystem and provide for public use and enjoyment. WFD principles will be incorporated into new and ongoing projects.

Although developed by different groups these statements are complementary.

# Opportunities and actions

*The Don Network is passionate that the opportunities described here are developed into actions on the ground. The Don Network believes that these opportunities have particular credibility as they have been developed through the collaborative working of a range of stakeholders with an interest in the Don.*

Although the rivers of the Don catchment have improved greatly over recent years there are many opportunities for action for improvement. This could be to bring about compliance with the WFD or for other economic, social or wildlife benefits.

This section of the Plan describes the findings of the Don Network theme groups in more detail. The findings are also shown in tables in the supplement to this document.

## Resources

Resources will be required to implement the actions identified in this Plan. However, the Don Network has concentrated on developing a vision, opportunities and actions rather than be potentially constrained by current resources and what is immediately achievable. Where resources are limited, collaborative working can be particularly important to pool expertise and share costs. Funding for projects to improve the river is available but resources are required upfront to draft successful funding bids.

## Key issues for a better Don

In order to improve the waters of the Don catchment and bring about WFD improvements, two key areas of work were identified by all the Don Network theme groups. These were: a) data and information and b) communication and engagement.

### Data and information

The Network places great importance on better sharing of information. Currently data on the catchment is collected and held by a number of organisations. Data is fragmented and there is

no clarity about who holds what data and how to access it. Collecting data in the field is expensive and there could be efficiencies through joint planning and implementation of monitoring. Records need to be updated and maintained. Also, existing plans should be reviewed as new data is produced.

Sometimes there is an absence of data, leading to gaps in understanding the catchment e.g. the movement of sediment. Collaborative work though the Don Network could identify these gaps and initiate additional monitoring

Once data has been collected, it should be presented in a way which can be understood by a range of users. Data by itself can often be uninformative, as was found with the WFD database held by the Environment Agency. The Don Network believes it is important that the best data is used when developing policy and making decisions about managing the catchment. Frequently there is a gap between raw data and useful information, however, there is often no resource allocated to carry out this task.

### Communications and engagement

Some of the important issues facing the Don catchment can't be solved by legislation and regulation. Often these issues can only be addressed by influencing others: influencing them to stop doing something, start doing something new or do something in a different way. In the absence of an enforcement option, these changes are only going to come about by effective communication and engagement.



Communications within large organisations with a role in managing the catchment was identified as an important issue.

### 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 re-balancing 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 Network will be valuable.

### Reservoir management – 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. The Environment Agency would need to consider the benefits and knock on effects in exploring this option compared to other flood defence techniques.

### Reservoirs – washlands

Washlands are low lying areas of land found next to rivers which fill 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. The Environment Agency has already worked with the RSPB on such projects in the Dearne Valley.

Washlands have an important role to play as part of the green infrastructure of the catchment.

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

**Maintenance of the river channel**

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 Network supports a “little and often” approach.

The Don Network believes that some 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 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 is 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.

**My River**



**Derek Bell, Barnsley Council**

**“We are committed to working with a wide range of partners from within the Don Network to reduce flooding, whilst keeping the river as a key feature within the community. Here at Darton, river and drainage work has been carried out in a sensitive way whilst still reducing flood risk for local residents and businesses”.**

Removal is not a sustainable activity as, over a relatively short period, the river will naturally replace the sediment which was removed.

The Don Network would like to see a forum created where statutory bodies, landowners and other interested parties can develop joint policies for the management of a particular stretch of river. 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. There may be historic or traditional reasons why a river has been managed in a certain way. The Don Network believes that it is important the agreed management procedures and the reasons for them are clearly explained to the local community. It is suggested that a pilot project is established to learn how this could be successfully done. Parish Councils could be one way of doing this. Dredging is often cited as a solution to stopping flooding but the long-term ineffectiveness of this should be explained.

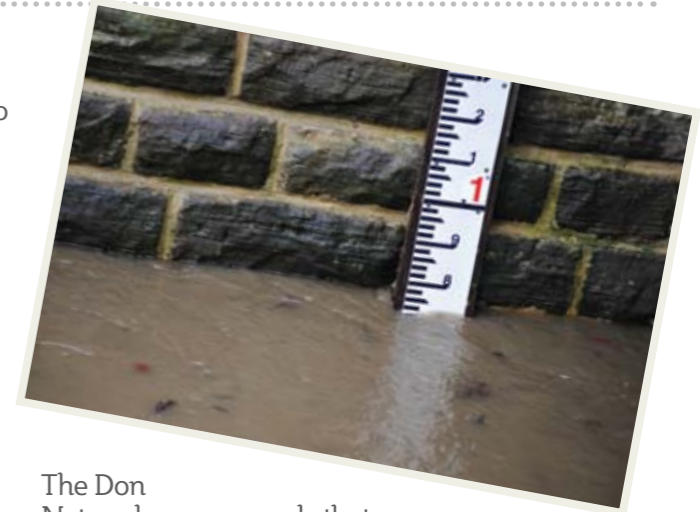
**Sustainable Urban Drainage Systems**

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.

Following recent legislative changes, local authorities are planning for the incorporation of SUDS in new development. This includes the creation of SUDS approval boards (SABs). The Environment Agency needs to liaise with local authorities to explain the WFD requirements, including the ability to present information at a local level.

There are many different designs of SUDS. The science behind them and the effectiveness of different designs is, in general, currently poorly understood by both local authorities and developers.

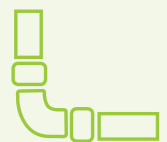


The Don Network recommends that new working relationships are established to implement SUDS consistently amongst adjacent local authorities in the Don catchment. This includes the development of joint local guidance and standards. National guidance on SUDS has yet to be produced. This should include input from the Environment Agency to ensure that the WFD requirements are incorporated. Recognition needs to be given to local variation and specific circumstances such as soils and topography. Guidance should also be produced for developers.

It will take a long time before the impact of SUDS is apparent on a catchment scale. However, the impact of SUDS will be more noticeable on smaller watercourses and could have an important effect locally.

The Don Network believes that communications work needs to be carried out to raise awareness of SUDS and explain their benefits to a range of groups including planners, developers and householders. Householders need to be aware that inappropriate disposal of oil and chemicals could cause damage to SUDS.

The Network wishes to promote drainage systems which deal with both high and low flows.



**SUDS**  
Sustainable Urban  
Drainage Systems



**WFD**  
Water Framework  
Directive

## Case study



### Ingbirchworth project

#### Where

Ingbirchworth, Barnsley

#### Who

Environment Agency, farmers, Farming and Wildlife Advisory Group, University of Leeds, vets, Yorkshire Water

#### When

April 2010 to March 2012

#### What's the problem

Too much nitrogen and phosphate in the waters feeding into reservoirs along Scout Dike

#### Consequence

Excessive nutrients contributing towards algal blooms in Scout Dike reservoir causing high treatment costs to Yorkshire Water

#### Source

River bank collapse due to cattle, field run-off

#### Action taken

Education visits to farms, advice given on nutrients

#### Funding

Catchment Sensitive Farming scheme, Environment Agency, Natural England

#### Outcome

Nitrogen reduced by 50% and phosphate by 30%

#### Lessons learned

Education can change behaviour – but it takes time

## 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) has 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 Don Network.

An early task for the land management theme group was to decide on priorities. The group based its work on the WFD reasons for failure database developed by the Environment Agency. This data has since been further enhanced by site visits to some of the failing waterbodies –

an activity called 'catchment walkovers'. These walkovers were carried out in agricultural waterbodies in the upper parts the Don catchment but could also be of benefit in other settings.

Initially the Don Network believes that land management practices which are having an adverse impact on watercourses need to be identified and the source confirmed. The next step is to develop action plans to change behaviours which include a hierarchy of engagement, from influencing to enforcement. However, the emphasis should be on working with land managers and identifying approaches which deliver mutual benefits. Great importance should be placed on explaining the consequences of land management practices in terms of their impact on the whole catchment.

This work should learn from previous successful work such as the Ingbirchworth project, catchment sensitive farming and proven engagement techniques with an emphasis on a targeted approach whilst working at a local level.

Different approaches might be needed in response to different land management regimes, for example, on the peat uplands of the western edge of the catchment.

The land management group identified a number of key principles for successful engagement including:

- Be prepared to invest time to achieve lasting results
- Have clear evidence-based messages
- Present solutions as well as problems
- Work with other bodies to deliver water management objectives
- Importance of real-life demonstration sites.

The Environment Agency has developed a program of work for Cawthorne Dyke which is failing under the WFD for sediment and nutrients. This waterbody is a great opportunity for members of the Don Network to work collaboratively on areas of mutual benefit. The learning and experiences from the Cawthorne Dyke project should be incorporated into work in other parts of the catchment to bring about the WFD and other complimentary objectives.

There is a major opportunity for DEFRA funded organisations (Environment Agency, Forestry Commission and Natural England) to work together more closely on addressing land management issues. The Don Network believes that Network member organisations should lead by example and review their own activities for possible adverse impacts on the water environment.

## Morphology

One of the biggest challenges faced by wildlife in the Don is the extensive engineering modifications made to the river channel which can effectively 'close the door' on many species of plants and animals (see section titled 'A river made by people' in this Plan). One of the main objectives of the WFD is to create a more natural river system. To do so would inevitably create new opportunities for wildlife to flourish and re-colonise once polluted waters.

Possible changes to re-naturalise the river which would benefit wildlife include: removal of weirs or construction of fish/eel passes, opening up of culverts or creating new washlands. This might not be possible in all instances where objectives other than wildlife have precedence, such as water supply reservoirs or flood defences, and the status quo has to be maintained.

However, under the WFD, where modifications to the river channel have to remain, action has to be taken to mitigate against these changes which offers many opportunities for enhancing biodiversity. Mitigation projects could be led by charities and voluntary groups working in collaboration with landowners or statutory bodies, and there is scope for community involvement in such work. Contact details for some of organisations working to improve the Don catchment are included in this Plan.

It is important, however, for third sector groups to understand what mitigation measures are needed to bring about WFD compliance.

A particular issue in the Don catchment is the large number of weirs. These were often built to support now vanished industries, but they remain as an effective barrier to the movement of fish and other wildlife. The WFD asks whether these structures could be removed, but this can be costly and complicated, both legally and in terms of water management. In addition, some weirs are listed structures in terms of heritage which is likely to prevent their removal. The practical solution in many cases may be the construction of some kind of fish pass. Several successful fish pass projects have been completed recently in the catchment, such as Hadfield's weir on the Don at Meadowhall in Sheffield by the Don River Catchment Trust.

## My River



### Chris Firth and David Rowley, Don catchment Rivers Trust

**"Building this new fish pass on the Don at Meadowhall hasn't been easy but we've finally done it. Hopefully it will be the first of many. There are dozens of weirs on the Don which are limiting fish populations".**

**Habitats and species**

In many parts of the Don catchment, water quality is no longer the limiting factor for the presence of a diverse and vibrant wildlife. Apart from the morphology of the river discussed above, the Don Network believes the other key issue for improving the ecology of the river is maintenance of the river channel.

Perhaps because until relatively recently there was very little wildlife in the river, management regimes have not had to consider the needs of wildlife. Now that water quality has improved, this is an issue which needs to be addressed. Discussions need to take place between those bodies which manage watercourses for flood management or land drainage to see if more sensitive management practices can be adopted. Topics to be discussed would include tree maintenance and removal of sediment. The benefits of managing the river with the needs of wildlife in mind needs to be identified and presented as a convincing argument.

Although the Don Network wants to see the overall ecology of the catchment improved, it can be useful to concentrate on certain key

species of plants and animals. These might be species whose presence is indicative of a healthy ecology or those 'iconic' species which have a broad community appeal such as salmon or otters. The latter can play an important role in inspiring others to action or attracting funding.

Even where certain species are present in the waters of the catchment, consideration should be given to the health of their population, their range throughout the catchment and their ability to complete their natural lifecycle.

The Don 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.

The Don Network supports measures to control or eliminate these species and believes it can play a useful role in coordinating action. The importance of controlling invasive species may not be widely understood and communications work is needed around this activity.



**Case study**



**Cudworth Dyke**

**Where**  
Cudworth Dyke, Barnsley

**Who**  
Barnsley Council, businesses, Environment Agency, Groundwork, RSPB, Yorkshire Water, Yorkshire Wildlife Trust.

**When**  
2011 on going.

**What's the problem**  
Poor water quality, watercourse not valued by the community, washland disconnected from Dyke, wildlife potential not fulfilled, one of few waterbodies in the Don classed as bad.

**Consequence**  
Dyke not an asset to the local community, formal enforcement action needed, reduced wildlife interest, WFD non-compliance, adverse impact on Nature Improvement Area.

**Source**  
Pollution legacy from former industry, unauthorised discharges from local businesses, highway drainage, CSO discharges, modification of river channel.

**Action taken**  
Stakeholder group formed, funding obtained for highways improvements and works completed, additional monitoring and investigations in progress, improved business infrastructure and permit compliance.

**Funding**  
Environment Agency, Barnsley Council, Yorkshire Water.

**Outcome**  
Stakeholder group formed to tackle problems, highways drainage improvements in industrial area, raised awareness of local businesses, further investigations carried out.

**Lessons learned**  
Number of organisations interested in improving the environment, need for investigation before developing actions.

**Water Quality**

Many of the WFD water quality failures in the Don catchment will be addressed through regulation, in a process principally involving Yorkshire Water, the Environment Agency and other regulators. However, there will remain a range of water quality issues which are only likely to be solved through a collaborative approach. The Don Network supports a new collaborative way of working as well as the adoption of new techniques to improve water quality.

**Awareness raising and sharing information**

The Don Network believes that awareness and understanding of the Water Framework Directive is low within many organisations with a role in managing the river. This is thought to be an important constraint in bringing about WFD improvements. The Network believes that the aims and objectives of the Directive (which can bring about broader benefits) need to be 'mainstreamed' within those organisations

including, significantly, local authorities. Without deliberate action, this will not happen by itself in the timescale required. Hence, the Don Network recommends that a programme of raising awareness of WFD is undertaken including targeting key decision makers. This should be accompanied by a separate piece of work to translate complex and perhaps incomplete WFD data held by the Environment Agency into a readily understandable and useable form. It is recognised that this is a significant piece of work and the Don Network would wish to see the necessary resources made available.

Through raising awareness of WFD there will be opportunities to influence major projects such as the renewal of infrastructure networks. It is important that decision makers are aware that new development should not result in any deterioration in the WFD status of a waterbody.

# Yorkshire Water's commitment to the River Don



*Yorkshire Water is committed to improving the quality of the River Don to encourage fish and wildlife populations back to the river. In this five year Business Plan period we have:*

- Provided dedicated staff time and a significant budget to help facilitate the Don Network, and made a continued commitment to working collaboratively with these stakeholders in the future management of the Don.
- Made a total investment of around £150 million at our waste water treatment works in the Don Valley, including improvements at Blackburn Meadows, Aldwarke, Woodhouse Mill, Old Whittington, Cudworth, Mexborough/Swinton. Together, these improvements will substantially reduce the levels of ammonia entering the Don, thus improving water quality downstream of each works. The new Don Valley pumping station and overflow channel will also reduce the debris being discharged into the river during heavy storms.
- Made a total investment of over £20 million at our clean water treatment works in the Don valley, including improvements at Rivelin, Loxley and Ingbirchworth. These improvements will help to reduce deposits of manganese across the area's water system, and prevent customers receiving discoloured water through their taps.
- Carried out projects to work with local farmers and landowners in the upper Don to significantly reduce the amount of peat, pesticides and other nutrients that are polluting our raw water sources.
- Continued two long term flow trials at Rivelin and Damflask reservoirs and designed a new trial at Dale Dike to improve flows and the ecology of the River Don.
- Undertaken investigations into the impact of operations on Water Framework Directive compliance or the Real Time River Integration Project, which aims to balance flows from the Blackburn Meadows treatment works and ensure that the final effluent is of a more consistent quality.
- Undertaken research into the requirements of securing salmon in the Don system.
- Sponsored research to look at the ecological impact of our operations linked to Water Framework Directive compliance e.g. opportunities to use reservoir releases to mitigate downstream pollution events.

## Case study



### Yorkshire Water Capital Improvements at Aldwarke Waste Water Treatment Works

#### Where

Aldwarke Waste Water Treatment Works, Rotherham

#### Who

Yorkshire Water and Earth Tech Morrison (ETM)

#### When

December 2012 to December 2013

#### What's the problem

Ammonia discharge from the site is 10mg/l

#### Consequence

The quality of the water being discharged from the waste water treatment works affects the water quality in the River Don downstream of the works, impacting fish populations and aquatic life.

#### Source/cause

Equipment on the site needs to be modernised.

#### Action taken

Project approved by Yorkshire Water Board, Contractors ETM appointed, design works carried out, planning application submitted, local community informed, construction works and modernisation of equipment taking place throughout 2013.

#### Funding

Investment of £7.7 million from Yorkshire Water capital improvement programme.

#### Outcome

Ammonia discharge from the site will be reduced to 3mg/l by the end of 2013, helping to encourage fish and wildlife populations to thrive in the River Don. This work will help to ensure compliance with the EU Freshwater Fish Directive and is one of many improvements that Yorkshire Water is making in the Don valley.

#### Further information

[yorkshirewater.com/aldwarke](http://yorkshirewater.com/aldwarke)



# The role of the Environment Agency

*Improving and protecting the waters of the Don to meet the Water Framework Directive (WFD) is one of the main priorities for the Environment Agency. Historically the Environment Agency and its predecessors have always monitored river water quality.*

The Environment Agency has now used this archive of information, its technical expertise and local knowledge to classify the Don waterbodies in terms of the WFD. This has been a major undertaking and has led to an extensive programme of investigations to help fill in the gaps identified in understanding of the catchment. The Environment Agency has supported the Don Network by sharing this information, as well as by providing a full-time catchment co-ordinator for the Don.

Nationally the Environment Agency has a key role in reporting progress to meet these new standards. But the Environment Agency is also keen that creating a better Don contributes to wider social and economic goals. The organisation has set an example in complying with the Directive through projects such as building a fish pass on its weir at Adwick on the River Dearne. However, the UK can't comply with the WFD through the work of the Environment Agency alone. Many of the issues which need addressing can't be solved through regulation administered by the Environment Agency. For the Don to improve in line with the Directive, other organisations and individuals need to play their part too.

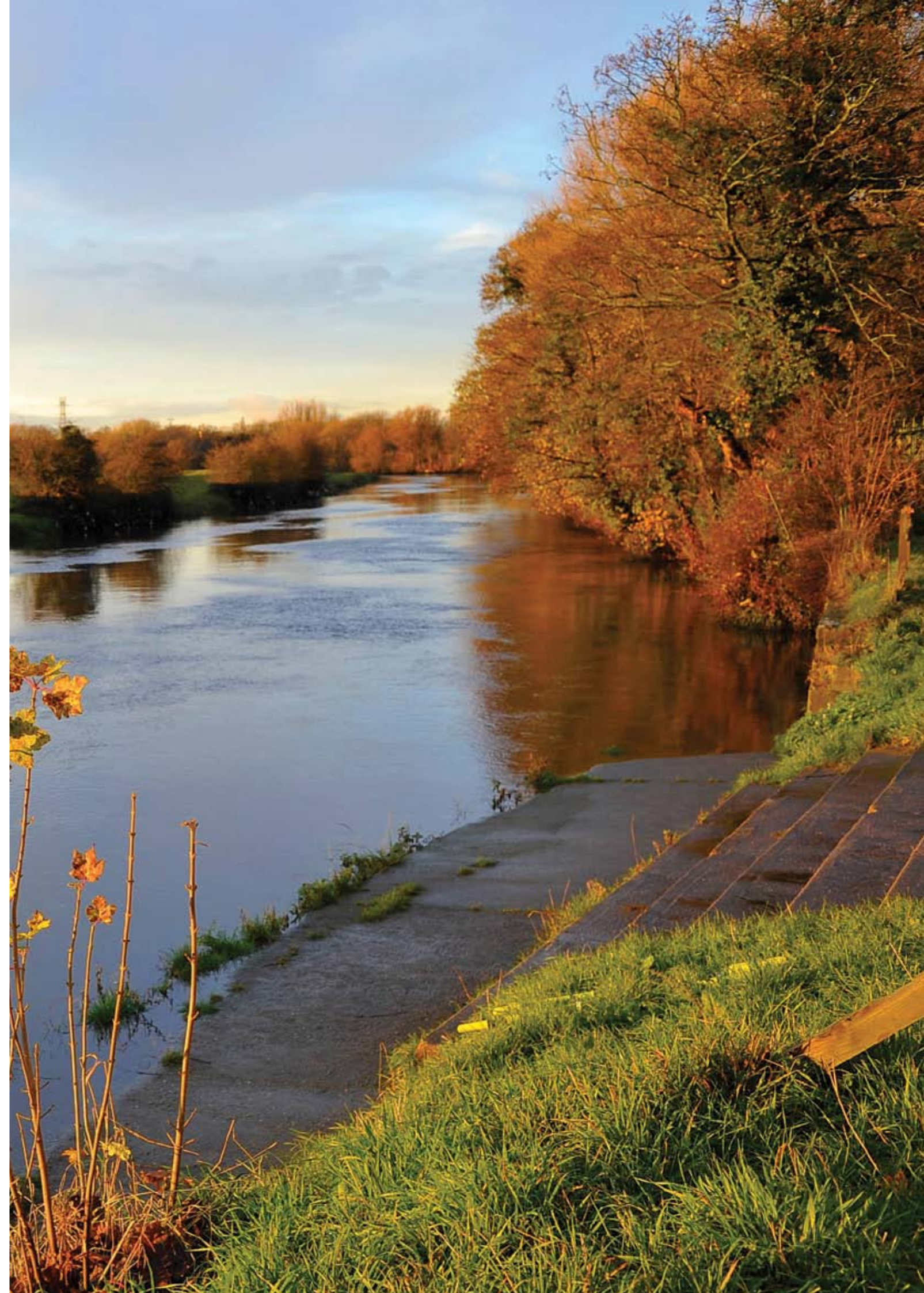
Although not the only consideration, finding funding for projects is a key step in making a better Don. One possible source of funding for projects to improve the Don catchment is a scheme called the Environment Programme. Support is available for projects which aim to address the Water Framework Directive problems and so far over £700,000 has been allocated to projects in the Don.

#### **Recent projects supported in the catchment include:**

- River Rother Restoration project, Catcliffe
- Drainage improvements, Cudworth Dyke
- Culvert removal Porter Brook, Sheffield
- Fish pass design work, River Loxley

The Environment Agency would welcome applications for future partnership projects. However, funding is limited and projects must be able to clearly demonstrate how they will benefit the river.

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A photograph of four people carrying a yellow canoe on a concrete ramp by a lake at sunset. The sun is low on the horizon, creating a bright glow and long shadows. The water is calm, reflecting the sky and the surrounding trees. The people are dressed in athletic or outdoor gear. One person's jacket has 'LONCASTER' written on the back. The word 'Supplement' is overlaid in large white text across the center of the image.

# Supplement

# The Pilot Process

## Background to the Don Network



*In summer 2011, the Department for Environment, Food and Rural Affairs (DEFRA) launched the Water Framework Directive (WFD) pilot project initiative. Although the WFD addresses very technical improvements to watercourses, it places great emphasis on the involvement of local communities and on public participation.*

The aims of the pilot projects were to test approaches to improved engagement, information sharing and co-ordinating action around implementing the WFD. DEFRA commissioned the Environment Agency to implement the pilot projects.

Apart from trialling a new collaborative way of working, one of the main aims of the pilots was to bring together local stakeholders to produce a joint catchment plan by December 2012.

Initially ten Environment Agency led pilot projects were established throughout England. This was later followed by 15 non Environment Agency pilots. Centrally, the Environment Agency provided support to all these pilots through guidance, training, evaluation and sharing good practice between the various pilots through teleconferences and national workshops.



The Don catchment was by far the largest pilot being over 50 miles long (80km) and covering 680 miles<sup>2</sup> (1,700 km<sup>2</sup>).

It was unique in that it was in fact co-hosted by the Environment Agency and Yorkshire Water. Together these two organisations as the Don Network Planning Group enabled the formation and running of the Don Network to produce this Plan.

By creating the DNPG, the whole pilot process was kept on track. The group included people skilled in project management and communications as well as having WFD expertise. The DNPG met for the first time on 20 June 2011 and on 17 subsequent occasions, up to in December 2012.

### Creating the Don Network

The purpose of the DNPG was to facilitate the pilot process in line with the desires of the members of the Don Network. From the outset, the DNPG took the view that to nurture lasting collaborative working, the stakeholder group had to have ownership of the process. This had two important implications: The pilot would progress according to the wishes of local stakeholders and, it would move forward in accordance with its own timescales. Hence, although the pilot projects had been commissioned by central government, the Don Pilot was very much developed in accordance with local wishes and aspirations.

The Environment Agency and Yorkshire Water contributed significant resources to supporting the Don Pilot in planning and organising events and providing skilled and experienced staff. An account on a file-sharing website was created to help circulate documentation between organisations.

The Environment Agency appointed a full time pilot co-ordinator for the Don Pilot. He came from an outward-facing customer relations team rather than a technical water quality background. The person chosen had several years experience of working with partners on environmental improvement projects in the Dearne Valley in South Yorkshire.

One of the first tasks carried out by the DNPG was to identify other organisations with an interest in the Don. It soon became obvious that because of the size of the catchment, there was an impractically large number of bodies who could potentially be involved – including, for example, 15 local authorities and county councils. So the DNPG decided to invite a limited but representative number of stakeholders to be involved in the Pilot, but with the desire that this could be expanded later.

The DNPG realised that implementing the WFD would be of interest to very few organisations working in the Don. However, it was apparent that there was lots of enthusiasm for general environmental improvements in and along the river – particularly for projects linked to better access, recreation and wildlife. Hence the DNPG promoted the pilot on this basis rather than being overtly about the WFD. Supporting broader aspirations would nonetheless inevitably lead to opportunities to achieve WFD improvements.

### Initial meetings

The first stakeholder events were held on the 18 and 21 October 2011. Because of the size of the catchment, two different locations were chosen to make it easier for local groups to attend. External facilitators Castle Consulting were used to manage these events. 45 delegates from 27 different organisations attended the two workshops.

The events centred on group discussions on the state of the Don catchment now, what it could be like in future and what needed to happen to bring about this change. Dialogue was open to all aspects of the catchment and the WFD was deliberately barely mentioned. At the end of the workshops there was agreement on:

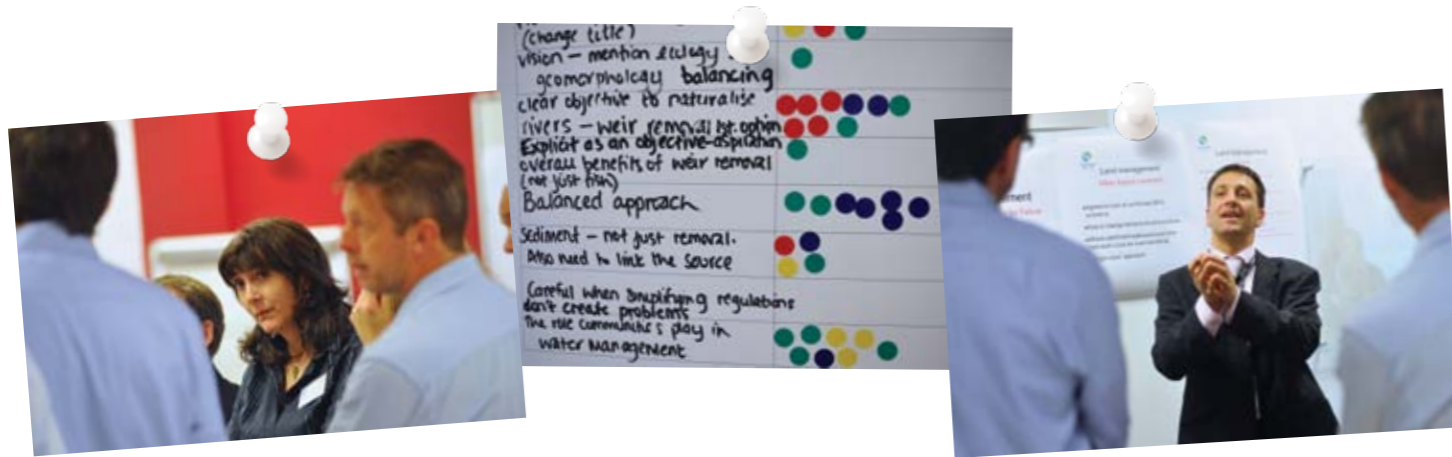
- A commitment to working together for mutual benefit
- Creating a joined up vision and plan for the Don
- Improved sharing and understanding of data



**530**  
flood defences structures  
in the Don catchment



**244**  
Number of  
delegate hours



**December 2011 workshop**

The second workshop was led by an experienced Environment Agency facilitator who supported all subsequent Don Network events. The event was attended by 19 people from 17 organisations. Again, working in groups, delegates considered what were the potential benefits of collaborative working and what support would a fledgling Network require?

Needs identified included a means of exchanging information about current projects and funding opportunities. The meeting decided against a formal structure and forming a wider steering group. The preference was instead for a loose confederation of interested groups. The meeting was happy for the DNPG to continue to support the process. Most significantly there was support for continuing a collaborative approach to create a joint catchment plan – but that the plan should be a document which led to action.

As at every Don Network event feedback sheets were circulated to delegates. The responses were later summarised and analysed and used to shape future events.

**Data Workshop**

A recurrent theme at the preliminary events was a need for better access to Environment Agency monitoring data, which had been used to classify the waterbodies of the Don catchment for WFD. The Environment Agency was happy to provide this and made its spreadsheet of information available on request. However, the spreadsheet of raw data was found to be too complicated for many members of the Don Network to use. It was also apparent that the language of the Directive and some of the technical concepts behind it were a barrier to many. Importantly the inability to engage effectively with WFD could be an obstacle to securing support for joint projects involving the Environment Agency.

To meet this need, the DNPG organised two workshops designed to improve understanding of WFD and build confidence in using the data spreadsheet. These events, held on the 27 and 31 of January, were attended by 20 delegates from 19 organisations. After a presentation, delegates were guided through a series of exercises to improve their spreadsheet skills.

The feedback from the sessions was good but indicated that further explanation and assistance was needed.

**Getting to grips with the plan**

On 7 March 2012, another Don Network event was held. Its main aim was help the group progress in producing a joint catchment plan and that the Plan would be their Plan. There were 31 delegates from 17 stakeholder bodies. There was much debate about what the plan should consider. The meeting decided that WFD should be the driver for the plan but it should consider other issues too. It was agreed that work to improve the Don catchment must also support:

- Economic development and regeneration
- Amenity, recreation and health
- Culture and heritage

The Don Network was asked to describe how their catchment plan should be? In reply they used words like: exciting, engaging, enthusing, intelligible and inspirational.

To develop the technical content of the plan in more detail the Don Network asked the DNPG to arrange the formation of four ‘theme groups’ composed of relevant members of the Network.

**These theme groups were:**

Flow Management	Land Management
Natural Environment	Water Quality



**Theme group working**

Volunteers from the Don Network were recruited to form the four theme groups. To ensure the success of the groups, the DNPG developed a methodology and set of principles which was presented to the theme group members at their initial meetings. The groups were given the freedom and responsibility to develop as they wished, although representatives of the DNPG were always present to manage the process and resolve any disputes.

.....  
 Sitting throughout late summer and autumn of 2012, 13 theme group meetings were held involving 17 organisations at seven different venues.  
 .....

Arranging, attending and recording the output of these meetings was a significant commitment for the DNPG. In particular, all groups asked for an Environment Agency facilitator to be present at every session. The Environment Agency also supported the theme groups by reviewing and editing its data on the river and interpreting it for group members. A copy of this information is available on request from the Environment Agency, see the contact details section of this Plan.

Difficulties were encountered by would-be theme group members due to the workload demands of their day jobs. In addition, episodes of flooding created immediate work pressures which had to be prioritised ahead of participation in theme group activity. Nonetheless, over 240 hours of delegate time was given to the theme groups by members of the Don Network. Each group produced a vision, identified key opportunities for improvement and suggested a range of actions. The last of the theme group meetings was on 18 October 2011.

**Flying the flag**

To raise the profile of the Don Network an open event was held on the afternoon and evening of 15 June, with invitations sent out to a wide range of individuals, groups and politicians. Senior managers from the Environment Agency and Yorkshire Water spoke about the pilot and the potential benefits that could come from working better together.

**Bring the Don Network back together**

After eight months, a meeting of the whole Don Network was held on 14 November 2012. The main purpose of the day was to present the outputs of the theme groups back to the Don Network and gain support for their conclusions. This was done through representatives of each theme group describing the findings. Support, challenges and additional suggestions from the broader Don Network were recorded and there was chance for delegates to vote on the content of the proposed catchment plan.

**Finalising the plan**

With the creation and reinforcement of the stakeholder group – the Don Network and the production of this plan, the immediate aims of the pilot project as envisaged by DEFRA have been fulfilled.

The DNPG has listened to what the Don Network said in March 2011 and produced a plan that it hopes is “exciting, engaging, enthusing, intelligible and inspirational” – and that it will be a document leading to collaborative environmental projects which will progress WFD and other objectives.

# WFD and the Don

## The Water Framework Directive and the Don catchment

This section of the catchment plan explains the Water Framework Directive (WFD) and what it means for the Don.

The aim of the WFD is to protect, improve and promote the sustainable use of water. The Don Network chose to use evidence collected for the WFD to develop their catchment plan.

### About the WFD

The Water Framework Directive (WFD) came into force in 2000, and became part of UK law in 2003. The main objectives of the WFD are:

- Co-ordinated action to achieve good status for all waters by 2015, or 2021 or 2027 if a later WFD objective can be justified.
- Setting up a system of integrated water management (bringing different issues into one framework) and based on natural water boundaries, rather than political ones.
- Active involvement of interested parties and consultation of the public.

Formally the WFD is implemented through River Basin Management Plans (RBMPs) which operate on six year cycles. A river basin is made up of several smaller river catchments – such as the Don. So a river basin plan looks at a far larger area than a catchment plan. The first RBMPs cover the period 2009 – 2015. Each RBMP identifies the main issues for the water environment and the actions needed to deal with them.

The Don catchment is part of the Humber RBMP. Creation of this Don catchment Action Plan in 2013 is in advance of the production of the second Humber RBMP. Hence this plan for the Don catchment will be able to inform the RBMP plan for the Humber.

For the purpose of the WFD, rivers, lakes, canals and groundwater have been split into smaller hydrological units called ‘waterbodies’. In general, the Directive aims to ensure that all waterbodies are in a favourable condition, which the WFD refers to as ‘good status’. A unique

feature of the Directive is that it considers both the chemical quality of a river and aspects of its ecology. Waterbodies are placed into one of five descending categories: high, good, moderate, poor and bad.

Human activities and economic development have often significantly physically altered rivers and other waterbodies, for water supply, flood management, navigation and other purposes. These waterbodies are described as heavily modified under the WFD. Also, some waterbodies, such as canals, have been created where no waterbody previously existed. Under the Directive these new waterbodies are called artificial. 81% of the waterbodies in the Don catchment are either heavily modified or artificial.

The main types of physical modifications that affect the Don catchment are:

- Water storage and supply reservoirs
- Flood management structures
- Urbanisation including culverts and weirs
- Land drainage
- Recreation including navigation

Often, although an engineering modification of a river is having an adverse effect on the ecology of the river, the structure is carrying out an important role such as a drinking water reservoir or flood bank and can't be removed. In these cases, the Water Framework Directive target is to make a waterbody as good as possible in the circumstances – a target called ‘good ecological potential’. But this isn't just for the sake of wildlife. Achieving good potential will mean the river is better for anglers and more of an asset to the community.

The Environment Agency is looking at all the heavily modified waterbodies in the Don and assessing realistically what ‘good ecological potential’ means – namely, how much they can be re-naturalised. It will identify what steps

can be taken to ‘mitigate’ against the essential engineering works and further, which of these mitigation measures is technically feasible and financially worthwhile.

### About the Don catchment

In this plan ‘the Don catchment’ includes all the land which drains towards the River Don and all of its tributaries including the Rother. Under the Water Framework Directive the Don catchment has been divided into 108 waterbodies. Of these, 78 are river waterbodies and 60 are described as heavily modified. By using Environment Agency monitoring data the surface waterbodies of the Don are classified as follows.

Only 16 (15%) of surface waterbodies in Don catchment meet the standards required by the WFD. Also, four of the waterbodies in the Don are a formally described as bad. These are: Ea beck from source to Frickley Beck, Cudworth Dyke, Spital/Callow/Muster Brook and Hawke Brook from source to the Doe Lea.

### In the Don catchment the main issues that need to be addressed are:

- Point source pollution – inputs of ammonia and phosphate cause ecological damage. The main source of this pollution in the Don catchment is from sewage treatment and combined sewer outfalls.
- Morphological changes – these are man-made changes to waterbodies due to a variety of reasons: the impact of industry, urbanisation, flood management, building of reservoirs, embankments, culverts and weirs. These structures can have an impact on the natural ecosystem. For example, they may stop fish from moving upstream to their spawning sites, or they may alter the natural flow of the river.
- Diffuse pollution – polluted run-off from urban areas, including highways drainage and agricultural land, also increase the amount of phosphate and sediment in rivers.

### Ecological classification data for the surface waters in the Don catchment – 2009

Waterbodies	Good	Moderate	Poor	Bad	Total
Rivers	7	54	13	4	78
Canals	8	4	0	0	12
Lakes and reservoirs	1	17	0	0	18
Total	16	75	13	4	108
%	15%	69%	12%	4%	100%



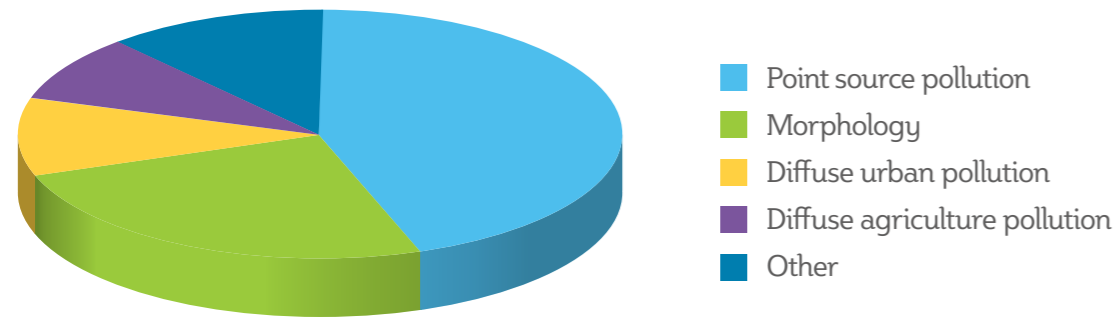
### My River



### Mike Smith, Yorkshire Water

“We are investing £78 million at Blackburn Meadows waste water treatment works – that’s £1 million for every acre of the site. It’s one of our largest works in Yorkshire serving over 800,000 people in Sheffield. The investment will reduce the ammonia discharged from the site and help to bring more fish and wildlife back to the River Don. It will reduce our carbon footprint too”.

Diagram to show main issues that cause failures in the Don catchment:



The Don Network also decided to look at issues not covered by the Water Framework Directive. One issue raised by the Network is the spread of invasive non-native species. These plants and animals can upset the natural balance of the river ecosystem as they out-compete our native species and cause access and water management problems. Examples of these species in the Don catchment are: North American signal crayfish, Japanese knotweed, Himalayan balsam and floating pennywort.

The WFD has introduced new standards and perspectives for our rivers and because of this, the data held by the Environment Agency is sometimes incomplete. To understand the Don better, the Environment Agency carried out 337 investigations in the catchment.

There are three groundwater waterbodies within the Don catchment.

- Don and Rother Millstone Grit and Coal Measures
- Aire and Don Magnesian Limestone
- Aire and Don Sherwood Sandstone

These are assessed differently from surface waterbodies by the Directive. They are classified in terms of chemical condition and quantity. Quantity is important as groundwater is often abstracted for use in homes, industry or agriculture. The groundwater bodies of the Don are all classified as holding a good quantity of water but are of poor chemical status.



# Tables

## – opportunities, outcomes and actions

### Data and information

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

**Communications and engagement**

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

**Reservoirs – water supply**

Opportunity to be addressed	Outcome	Action
Low flow or lack of flow in downstream watercourses.	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
Maintenance of water supply.	Maintain a drinking water supply that is affordable. Cost benefit analysis.	Address catchment challenges.
Consider flow management regime including high flows.	Catchment users maintain benefit/ minimum impact.	Consult stakeholders. Raise awareness and visibility with Don Network and others. Investigation should consider fish passage, sediment and river restoration.

**Reservoirs – flood risk**

Opportunity to be addressed	Outcome	Action
Manage reservoirs to reduce flood risk management.	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.
Regulatory restrictions Ofwat, Environment Agency, DEFRA.	Change of use.	Regulatory influencing. Optioneering solutions to alternative or replacement storage

**Reservoirs – washlands**

Opportunity to be addressed	Outcome	Action
Improved management of washlands for multiple benefits.	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.
Compensation areas for flood risk management.	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.

**Channel maintenance**

Opportunity to be addressed	Outcome	Action
Better access for maintenance plant.	Access enabled by considering in planning process.	Influence developers and planning authorities.
Riparian management, in-channel works consenting process.	Create a more streamlined process supported by better guidance.	Environment Agency work with riparian owners. Adopt a risk based approach.
Debris build up and structures in the channel.	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.
Resolve conflict with ecology e.g. tree felling.	Channel maintenance supports ecology, flood risk/drainage. An effective management plan which is agreed by all.	Create channel maintenance strategy. Develop understanding of feasibility.
Sediment and debris build up in wrong areas, increased flood risk, blockage of –outfalls, effect on ecology.	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.
Need a mechanism to coordinate multiple stakeholders/riparian owners to do effective channel management.	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.

**Sustainable Urban Drainage Systems**

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

**Land management**

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

**Morphology**

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

**Ecology**

Opportunity to be addressed	Outcome	Action
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.	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.
Non-native invasive animal species (mink, signal crayfish, killer shrimp).	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.
Increase populations of key species in the Don catchment (currently absent or present at a low level).	Achieve populations of flagship and indicator species including: birds, otters, water voles, salmon/wild trout, 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?
Riverside management regimes to support the ecological network e.g. avoid short grass on flood defences, development next to rivers.	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.

# Contact details for a selection of organisations working to improve the Don catchment

## Canal and River Trust (CRT)

The aims and objectives of the Canal and Rivers Trust are to keep people, nature and history connected. The CRT is a Charitable Trust with statutory powers as the Navigation Authority for canals and rivers across England and Wales.

The Trust operates actively across the whole of England and Wales. The River Don falls into the North East Waterways region which covers most of the canals in West, East and South Yorkshire and includes the Tees Barrage.

**Jonathan Hart-Woods**  
Environment Manager North East Region

**Phillippa Baron**  
Ecologist North East Region

**Ian Linley**  
Environmental Assistant, North East Region

**Address:** Fearn's Wharf, Neptune Street, Leeds, LS9 8PB

**Phone number:** 0113 281 4853

**email:**  
jonathan.hart-woods@canalrivertrust.org.uk

**canalrivertrust.org.uk**

## Dearne Valley Green Heart – Nature Improvement Area

The Dearne Valley Green Heart Partnership was established six years ago. The environment of the Dearne was scarred by mining and industry, but through the enthusiasm of people has been transformed to create a vibrant new landscape, generating new jobs and creating a great place to live and work. It demonstrates how, in a healthy environment, people and nature can live together.

In 2012, the Dearne Valley was selected by DEFRA as one of only 12 new Nature Improvement Areas. The project aims to restore a connected network of natural habitats improving the area for people and wildlife. Key activities include: habitat creation, work with landowners and farmers, influencing planning policy, appointing community rangers, building links to local schools and guided walks.

**Pete Wall**  
Dearne Valley Green Heart Project Manager

**Address:** RSPB Dearne Valley, Old Moor Lane, Broomhill, Barnsley, S73 0YF

**Mobile:** 07899 676597

## Doncaster Council

The Local Authority for Doncaster Borough. The Borough Strategy highlights the need to create a cleaner and better environment: protecting and enhancing Doncaster's environment and improving quality of life today and for future generations. The Council's Environment Strategy builds on this to state that it will contribute to the development and delivery of the 'Don Network' strategy, to address river catchment-wide issues and opportunities for land and water management, using available funding to achieve the UK's Water Framework Directive targets, whilst maximising additional benefits for people and wildlife. This will support the strategy's objective to take action to create, improve and maintain a coherent and resilient ecological network.

**Contact the Natural Environment Team, Doncaster Council**

**Phone number:** 01302 734560

**email:** natural.environment@doncaster.gov.uk

## Environment Agency

A public body sponsored by central government to carry out a wide range of environmental activities including reducing flood risk, regulating business, and promoting wildlife and sustainable development.

**Phone number:** 03708 506 506  
(Mon-Fri, 8am – 6pm)

**email:** enquiries@environment-agency.gov.uk

**Address:** National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY

## National Trust

Looks after special places throughout England, Wales and Northern Ireland including rivers and their catchments. In the Don catchment, the Trust owns the Hardwick Estate in the River Doe Lea catchment and is a member of the Sheffield Moors partnership.

**Carl Hawke**

**Phone number:** 01909 511018

**email:** carl.hawke@nationaltrust.org.uk

**www.nationaltrust.org.uk**

## Don catchment Rivers Trust

A charity working towards protecting and rehabilitating the rivers in the Don catchment.

**Address:** Sedum House, Potteric Carr, 1 Mallard Way, Doncaster, DN4 8DB

**Phone number:** 07585 448710

**email:** info@dcrt.org.uk

## Natural England

A public sector body sponsored by central government to protect and improve England's natural environment and encourage people to enjoy and get involved in their surroundings. Natural England promotes the protection, enhancement and creation of wildlife habitats within the river corridor. It also regulates and advises on activities affecting Sites of Special Scientific Interest, implements and administers the agri-environment scheme (Environmental Stewardship) for land-owners, and provide advice on wildlife management.

**Phone number:** 0845 600 3078 (local rate)  
first point of contact for all general enquiries.

**email:** enquiries@naturalengland.org.uk

## RSPB

The RSPB speaks out for birds and wildlife, tackling the problems that threaten our environment. It is the largest wildlife conservation organisation in Europe and its work is focused on the species and habitats that are in the greatest danger.

The RSPB believes passionately that birds and wildlife enrich people's lives and that the health of bird populations is indicative of the health of the planet.

It has more than one million members, over 18,000 volunteers, 1,300 staff, and more than 200 nature reserves. This includes a successful visitor centre and numerous wetland reserves next to in the Dearne – one of the main tributaries of the Don.

**Pete Wall** Dearne Valley Green Heart Project Manager

**Address:** RSPB Old Moor, Old Moor Lane, Broomhill, Barnsley, S73 0YF

**Mobile** 07899 676597

### River Stewardship Company

A social enterprise which undertakes riverside management work for riparian owners, and community projects involving local communities and volunteers. With a particular focus on improving the River Don corridor. It was created by a group of partners including Sheffield City Council, Groundwork Sheffield, Sheffield Wildlife Trust, Environment Agency, South Yorkshire Forest, University of Sheffield, Five Weirs Walk Trust and Upper Don Walk Trust.

**Address:** River Stewardship Company, Innovation Centre, 217 Portobello, Sheffield, S1 4DP

**Phone number:** 0114 2636420

**email:** info@the-rsc.co.uk

**www.the-rsc.co.uk**

**@HelenBattRSC on Twitter**

### South Yorkshire Forest Partnership (SYFP)

South Yorkshire Forest Partnership was formed in 1991 to help regenerate rural and urban landscapes throughout South Yorkshire, including river corridors. Working with partners, SYFP has helped transform the county and manages several partnership projects worth £15m. SYFP aims to create 3500ha of woodland by 2035, mainly on brownfield and former industrial sites.

**Address:** South Yorkshire Forest Partnership, 5th floor, Howden House, 1 Union St, Sheffield, S1 2SH

**Phone number:** 0114 2571199

**email:** team@syforest.co.uk

### Wildlife Trust for Sheffield and Rotherham

The largest environmental charity in the Sheffield. Objectives include: wildlife conservation, environmental education and improving the access and enjoyment of natural spaces. Their Living Landscape work has identified the river corridors in Sheffield and Rotherham as a key part of the ecological networks for the city which it is keen to develop with partners.

**Address:** 37 Stafford Rd, Sheffield, S2 2SF

**Phone number:** 0114 2634335

**email:** mail@wildsheffield.com

### SPRITE (Sheffield Partnership for Rivers In the Town Environment)

SPRITE is a local not for profit group which works with the rivers of Sheffield and their wildlife – primarily around the S6 postcode area. SPRITE formed in 2009 as a branch of the Wild Trout Trust's "Trout in the Town" project (www.wildtrout.org). It runs regular clean up events, carries out habitat works to improve wildlife in the river corridor. The group also undertakes surveys of the aquatic invertebrate life.

With the help of the Wild Trout Trust and the Angling Development board, SPRITE has developed educational and coaching programmes for schools and community groups. SPRITE offers a free membership angling club and mentoring and coaching. Any surplus funds obtained by the group are re-invested into community or environmental projects.

**Paul Hughes**

**Address:** 164 Caterknowle Road, Sheffield, S7 2EA

**Mobile:** 07793 838996

### Yorkshire Water

Yorkshire Water manages the collection, treatment and distribution of water in Yorkshire, supplying around 1.24 billion litres of drinking water each day.

At the same time we also collect, treat and dispose of about one billion litres of waste water safely back into the environment. To do this we operate more than 700 water and sewage treatment works and 120 reservoirs. We look after 62,000 miles of water and sewerage mains – enough pipework to circulate the earth!

Our vision is "Taking responsibility for the water environment for good". Over the last 12 months, we have worked closely with the Environment Agency to support the Don Network. Yorkshire Water is committed to improving the quality of the water in the River Don to encourage fish and wildlife populations back to the river. In this Business Plan period we have spent millions of pounds on capital projects to help achieve this goal.

**Alex Scott** Lead Environmental Advisor – Biodiversity

**Phone number:** 01274 804012

**email:** Alexandra.Scott@yorkshirewater.co.uk



The Don Pilot was uniquely co-hosted by the Environment Agency and Yorkshire Water, in a joint forum called the Don Network Planning Group. From July 2011, the group met monthly to create and support the Don Network. The role of the group was to assist the Don Network – but not to direct it. This involved time and financial support for the Network meetings and the production of this plan. Operating together on the Don Pilot has led to a better working relationship between the host organisations. The Don Network Planning Group would like to thank all the individuals and organisations who have contributed to this plan; without their ideas, expertise and enthusiasm, this plan would not have been possible.

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

