



River factfiles

The Don, Rother and Dearne catchment

get to know your rivers



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The River Don rises on Dunford Moor in the Pennines and flows to Penistone before turning south-east to Sheffield. From Sheffield it flows north-east to join the tidal Ouse at Goole. It has two tributaries, the Rother and Dearne. The Rother rises near Clay Cross in Derbyshire and joins the Don in Rotherham. The Dearne starts its life west of Denby Dale and flows through Barnsley and Mexborough, where it too meets the Don.

The Don, Rother and Dearne catchment

All three rivers pass through dramatically different scenes, from beautiful, unspoilt countryside to heavily populated and industrialised towns and cities.

The rapid growth in industry and the associated growth in population was the downfall of many northern rivers and these three were no exception. The success of the Industrial Revolution came at a price and

thriving, healthy rivers often became dumping grounds for sewage and industry's waste.

With the exception of a few trout and bullhead in the headwaters above Penistone, the Don – once a great salmon river – became completely lifeless as did the

Rother and the Dearne. But thankfully the story does not end there and the past 20 years have seen a slow turnaround in the rivers' fortunes.

Total catchment population:
Approximately 1.4 million

Total catchment drainage area:
1,849 square kilometres

Main tributaries of the Don:
River Rother, River Dearne

Length:
Don 114.1 kilometres
Rother 50.8 kilometres
Dearne 51.9 kilometres

Altitude at source (above sea level or Ordnance Datum):
Don 485 metres
Dearne 330 metres
Rother 90 metres



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How clean are your rivers?

The fightback against a legacy of pollution began around 20 years ago. A combination of tougher regulation on what industry and water companies could release into rivers and major investment has breathed new life into many stretches of the Don, Rother and Dearne.

The upland streams in the catchment were not the problem, as they had mostly escaped the impact of industrial development and population growth. But life was wiped out in stretches of the rivers close to and downstream of the towns – in the Don downstream of Penistone, all of the Rother and the Dearne downstream of Barnsley.

Another problem for the catchment was the impact of abandoned coal mines. These can continue to seep iron oxide, which turns watercourses orange and yellow and can turn them almost lifeless. The Coal Authority has established several minewater treatment schemes but there is still work to be done.

An extensive programme of improvements for sewage systems and sewage treatment facilities has been agreed until 2010. Minewater discharges and run-off from sites are being evaluated and tackled. Remaining areas of contaminated land and river sediments are being monitored and ways of managing the problems investigated.

The Don, Rother and Dearne have all shown great water quality improvements in the last two decades and the work will continue. Our officers, industry and water companies will be working together to resolve problems and maintain a strict control of what can be released into the rivers.

Water quality classification 2004

The River Don, 108.3km



- Class A – very good 0%
- Class B – good 40.6%
- Class C – fairly good 59.4%
- Class D – fair 0%
- Class E – poor 0%
- Class F – bad 0%

The River Dearne, 50.7km



- Class A – very good 0%
- Class B – good 20.1%
- Class C – fairly good 52%
- Class D – fair 25.7%
- Class E – poor 2.2%
- Class F – bad 0%

The River Rother, 50.8km



- Class A – very good 0%
- Class B – good 11.4%
- Class C – fairly good 31.5%
- Class D – fair 43.9%
- Class E – poor 10.8%
- Class F – bad 2.4%

Class A and B rivers are of a high quality – clean enough for salmon and trout to live in and to be used for drinking water. They also support a variety of invertebrates (worms, insects etc) including mayflies and stoneflies.

Class C and D rivers are often home to coarse fish such as roach and chub and sometimes trout in C waters. These rivers can be used for drinking water if it is treated and a good variety of invertebrate life can be found.

Class E rivers can still support coarse fish but cannot be used for drinking water.

Class F rivers are badly polluted. Worms and midges can live in them but fish cannot.

Did you know you can check out the state of your local river by using our website? By accessing the 'What's in your backyard' section you can choose any one of the 7,000 sites where our officers sample and test the water quality. All you need is a postcode or a place name. Check out your river at www.environment-agency.gov.uk.

"There was a time when all you could hope to catch in the Don was an old boot. But thanks to improvements in the water quality, and work done to ensure the environment is protected and enhanced for fish to thrive, we can welcome back over 20 species of fish to these waters."

Neil Trudgill, Environment Agency fisheries technical specialist



Fisheries

A great indicator of the health of a river is what lives in it. The Don, Rother and Dearne supported thriving coarse and game fisheries until the early part of the nineteenth century, with the Don also known for its salmon – and the porpoises that pursued them!

The dramatic fall in water quality wiped out many of these fisheries. But 2003 gave great cause for celebration when salmon were spotted trying to scale Sprotbrough Falls on the River Don near Doncaster for the first time in nearly 200 years.

The recovery of coarse fish in the Don and its tributaries is due to a restocking programme started by our predecessors, the National Rivers Authority, in 1990.

Other improvement works have included a fish passage installed to bypass Crimpsall Sluice and habitat restoration.

The Don

Today, the upper rural sections of the Don are good trout and grayling fisheries. With water quality improving, these populations have extended downstream and both trout and grayling can now be caught in the centre of Sheffield.

Further downstream around Meadowhall, dace, chub and barbel become dominant, with roach, gudgeon and minnow also present. River habitat improvements, carried out by us, have provided good spawning areas for fish and this is reflected in the excellent fishing which can now be enjoyed.

Survey work has revealed ever-increasing populations of coarse fish in the river as it flows through Doncaster.

The Dearne

The upper sections have a well-established trout population. From the M1, through Barnsley to Darfield, fishing has improved thanks to the upgrade of Darton Sewage Treatment Works. Below Darfield there are good populations of roach, chub, dace, bream, gudgeon, perch and barbel.

The Rother

The tributaries of the upper Rother support the main trout populations. Downstream of Chesterfield the Rother is making a great recovery as a coarse fishery. At Catcliffe, downstream of the heavily industrialised Orgreave area, anglers are enjoying excellent catches of coarse fish from a length of river that was once considered the most polluted in Europe.

Wildlife and conservation



Rare and protected species, including otters and great crested newts, are to be found in this river catchment and work is taking place to protect them and their habitats. In the last century, around 17 species of plants and animals became extinct in the UK, emphasising the need to care for our native species and the areas in which they live.

The Don, Rother and Dearne catchment is home to many sites of national and international importance for wildlife. The diverse countryside offers a range of habitats from grazing marsh to heather moorland, and even derelict industrial sites can provide for nature conservation. The headwaters flow through the South Pennine Moors Special Protection Area, recognised for its European importance.

We continue to work with many other organisations to protect and improve habitats and the wildlife they attract. This includes a large partnership project in the Dearne Valley with the Royal Society for the Protection of Birds (RSPB) to improve existing wetlands as well as create new wetlands and reedbeds.

Water voles are present throughout the catchment, with strong populations around the Rother, Dearne, lower Don and in the uplands.

Otters are found on the lower sections of the Don, with this population expanding to the Dearne.

Native white-clawed crayfish live in rivers and ponds near Barnsley and Sheffield.

Bats, including **brown eared long bat**, **noctule bat** and **pipistrelle bat** rely on insect-rich habitats across the catchment.

Great crested newt live in and around a number of ponds.

Kingfishers and **grey wagtails** can be found on many rivers and **dippers** are found in the headwaters.

Farmland birds such as **twite** are present on the upland moors at the headwaters and **lapwing** are found throughout the catchment.

Golden plover breed in the headwaters and spend winter in the lower wetland reaches, particularly Dearne Valley.

Brook lamprey are found in the Rivelin.

The Don is a stronghold for **bullhead**, an endangered species across Europe.

Pollution watchdog

Pollution prevention and control is a vital part of our work. We are responsible for regulating many industrial processes to make sure they are not damaging the environment.

Major investment by industry over the past couple of decades, as well as much tougher limits on discharges to air, land and water, have all had benefits for the environment.

This work and investment is continuing throughout the Don, Rother and Dearne catchment. It will hopefully bring about further improvements in water quality and a reduction in pollution incidents.

But the work doesn't stop at big industrial processes – other businesses and the farming

community also need to be pollution aware. We work with all these sectors to highlight the simple ways they can help protect the environment and even save money at the same time.

Slurry and fertilisers can have a devastating effect on water quality, wildlife and fish stocks. Every year we have to deal with damaging incidents caused by inadequate storage facilities or poor working practices.

Some of these are caused by the collapse of lagoon walls, leading to

the release of slurry, which runs across land into watercourses and can wipe out fish stocks for miles downstream. Overfull slurry stores can also cause problems if heavy rainfall gets into them and they overflow.

Thankfully the picture is not all doom and gloom. Very simple steps can prevent problems and we are working with farming organisations in a bid to wipe out bad practice and reduce damaging incidents.

Working in partnership with industry case study

Concerns that the River Little Don kept failing European standards for copper in its waters led to a major investment programme in the late 1990s.

Before 1995, the river downstream of the British Steel (now Corus Steel) Stocksbridge works consistently failed what is known as the Environmental Quality Standards for copper for the protection of freshwater fish. The metal can be toxic to fish.

The Environment Agency and the company teamed up to tackle the problem and investigations revealed that contaminated drainage from the electric melting shop and scrap storage areas was the cause.

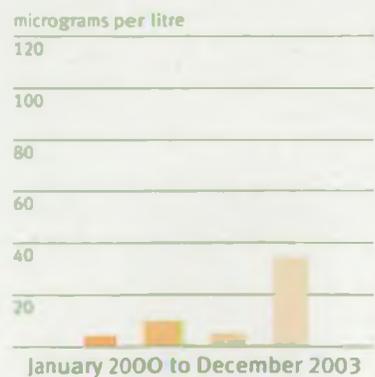
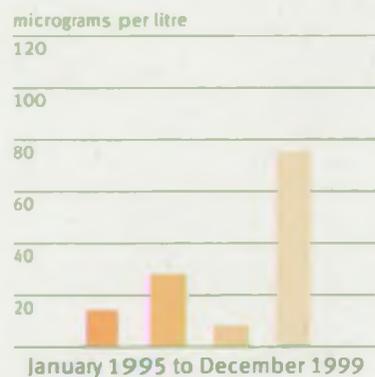
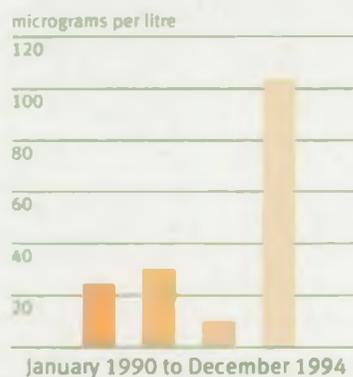
During the late 1990s British Steel installed an effluent treatment plant at a cost of £600,000 to divert all

flows from the area to the new plant, which removed the majority of solids from the discharge.

The result was a dramatic fall in the amounts of copper, zinc and lead in the river, summarised below:

Environmental Quality Standards in the River Little Don

Lead Copper
Dissolved Copper Zinc



You can find out more about our regulatory role and powers, as well as details of industry discharges, on our website at www.environment-agency.gov.uk. Find out what's being emitted from industrial sites in your area, including into controlled waters. Go to 'What's in Your Backyard' click 'search for other topics' and click on 'pollution inventory'.

Watching the waste

Every year more than 400 million tonnes of waste is produced in England and Wales, with about 25 million tonnes of this from households. All this waste has to be safely handled and disposed of.

The great bulk of waste at the moment is disposed of in landfills. When it breaks down it produces a liquid called leachate, as well as methane gas. Landfill site operators have to make sure this liquid doesn't escape into groundwater or rivers by lining their sites with impermeable barriers.

We regulate the movement and disposal of waste through a system of licences. We also work with landfill site operators and other businesses to make sure that deposited waste does not pose a risk to the environment.

Improved drainage gives added bonus case study

The closure of mines across South Yorkshire was not only a blow to the economy of the region but also a potential threat to the environment.

The piles of mining waste – slag heaps and tips – were a pollution risk to groundwater and surface water. Steps had to be taken to make sure they did not pose a long-term threat to the environment.

At the former Bentley Colliery, north of Doncaster, work on the site to tackle this problem included the re-routing of the old drainage system to prevent contaminated water finding its way into the Ea Beck.

The site drainage now goes to a large wetland area with reed beds to improve the water quality. The reed beds remove some of the impurities from the water, such as metals. The added bonus is that the wetland has now become a habitat for birds.

Water source

Water is essential to life and we have a duty to make sure our water resources are used properly. To do this, our officers closely monitor water in the environment. Abstraction licences are issued to regulate who can take water from the environment and the amount that can be taken over a period of time.

The unpolluted upland streams of the Don catchment provide a vital source of water for the homes, farms and factories of South Yorkshire, including cooling water for industry.

Water is impounded in 23 reservoirs and most of these are used for public water supply. Five are used solely as compensation reservoirs,

to maintain river flows and provide for water abstraction by industry. A great deal of water used for public supply is imported from outside the catchment.

Downstream of Rotherham the industrial use of water decreases, although agriculture still needs this important source. The Don below

Doncaster and one of its tributaries, the River Went, are used for the spray irrigation of crops.

The Rother and Dearne used to supply the coal mining industry but now provide for more general industrial use and agriculture.

What's under your feet?



Sherwood sandstones from around 200 million years ago form the low-lying floodplain between Doncaster and Goole.

Magnesian limestones dating back 250 million years overlay the coal measures and form a ridge running from north to south.

Coal measures formed around 300 million years ago are seams of coal and the layers of rocks and sediment between them. Coal mining has been extensive in the past and many coal seams have been mined, the most notable being the thick Barnsley seam.

Millstone grit formed approximately 320 million years ago is a hard, coarse-grained type of sandstone found at the headwaters of the catchment, these are the oldest rocks.

Dealing with flood risk

Recent years have shown how communities across the UK are at risk of flooding. Climate change will probably increase this risk and so it is as important as ever that people are aware of the steps they need to take to help protect themselves and their property if they live in a flood risk area.

The Environment Agency has invested heavily in both flood defence and flood warning systems throughout the Don, Rother and Dearne catchment.

Heavy rainfall combined with steep-sided valleys in the upper catchment generates high flood flows in the Don and its tributaries.

In the lower sections, river levels are increased by high tides, which can put large urban and rural areas at risk. Major flood risk areas

include the north bank of Doncaster and the east bank between Doncaster and Goole.

Steps to help improve the level of protection include washlands and floodbanks to hold back flood water on all three rivers. Recent improvement schemes have taken place at Crimpsall Sluice in Doncaster and at Sykehouse, Ea Beck and Dronfield.

On-going maintenance clears silt, debris and vegetation from the

river channel and banks and wherever possible we include environmental enhancements in its schemes.

In a bid to tackle flood risk we are starting to look at the catchment as a whole, rather than communities in isolation.

The way land is managed in the uplands of a catchment has impacts much further downstream, and every development in the floodplain can have an effect on flood risk.

35,000 properties are at risk of flooding in the Don, Rother and Dearne catchment.

70 per cent of these receive flood warnings from the Environment Agency, with this number growing all the time.

Get the most from your rivers



Walking – The Five Weirs Walk, Sheffield, and parts of the Trans Pennine Trail are among many routes in the Don catchment.

Angling – There are more and more angling opportunities across the catchment, thanks to water quality improvements. These include free angling on the Don in areas of Sheffield and below Doncaster, and also on the Rother and Dearne. For more information get a copy of our North of England Angling Guide by contacting us on 08708 506 506.

Navigation – Canal pleasure boats share navigation of the catchment's waterways with commercial craft, for information contact British Waterways on 0113 281 6800 or visit www.britishwaterways.co.uk

Useful contacts

Barnsley Tourist Information Centre 01226 206 757 barnsley@ybtic.co.uk

Sheffield Tourism 0114 221 1900 visitor@sheffield.gov.uk

Chesterfield Tourist Information Centre 01246 345 778

Doncaster Tourist Information Centre 01302 734 309 tourist.information@doncaster.gov.uk

Rotherham Visitor Centre 01709 835 904 tic@rotherham.gov.uk

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