Environment Agency

River factfiles

The Calder catchment

get to know your rivers

We are the Environment Agency. It's our job to look after your environment and make it a better place – for you, and for future generati

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The Environmen your environment a better place.

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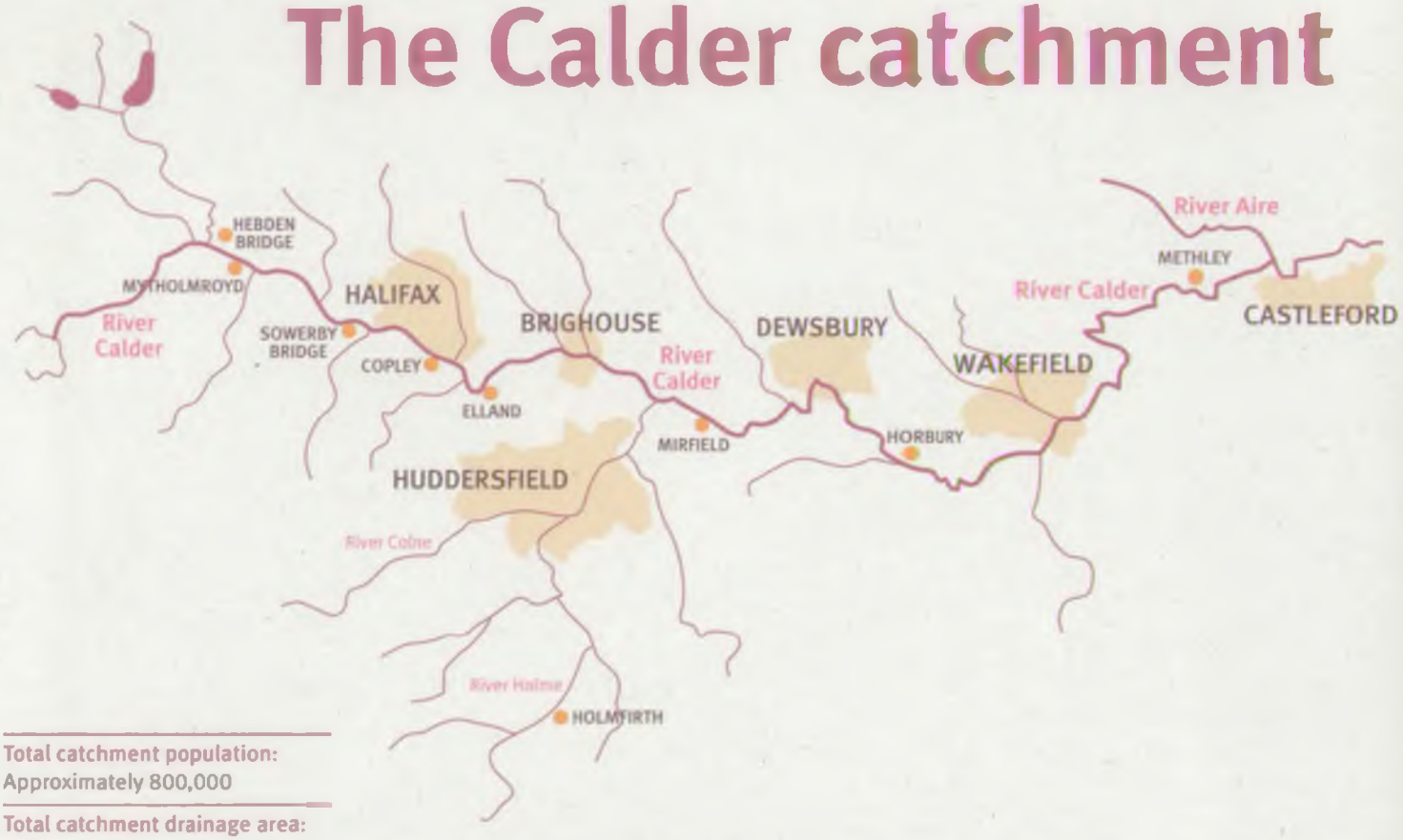
The River Calder rises on the Pennine Moors west of Todmorden. It is predominantly an urban river, flowing through the West Yorkshire towns of Halifax, Brighouse, Huddersfield, Dewsbury and Wakefield, before it joins the River Aire at Castleford.

The Calder catchment



Total catchment population:
Approximately 800,000

Total catchment drainage area:
957 square kilometres

Main tributaries of the Calder:
River Colne (tributaries include River Holme, Fenay Beck), River Ryburn, River Spen, River Ribble, Hebden Water

Length:
86.6 kilometres

Highest point in catchment (above sea level or Ordnance Datum):
Approximately 450 metres

Until the early nineteenth century its clean waters were home to plentiful stocks of salmon. But the rapid growth in industry and the population boom that accompanied the Industrial Revolution changed all that.

The Calder and its tributaries, particularly the Colne, were useful for the woollen industry. The fast flowing upland streams provided a convenient source of power and were ideal for the washing of fleeces. But the rivers of the Calder catchment were also useful for the general disposal of industrial waste and sewage and became increasingly polluted. As a result, the last salmon on record was caught in Wakefield in 1850.

Tighter pollution controls in the 1950s allowed the rivers to begin their slow recovery but for some stretches it was to be a long haul. Life had been wiped out from their waters by heavy pollution. We are still watching this recovery taking place, with fish and other river life gradually moving into waters left barren for many, many years.

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How clean are your rivers?

While the slow clean up of the Calder and its tributaries began decades ago, the biggest leaps forward have been seen in the last 10 years. This is thanks to a combination of tougher regulation on what can be released into rivers and major investment by water companies and industry to clean up and reduce discharges.

There are still problem areas for the catchment. Just upstream of Todmorden, the upper sections of the Calder are polluted by discharges from long abandoned coal mines. These mines can continue to seep iron oxide, which turns watercourses orange and yellow and can render them almost lifeless. The Coal Authority has established several minewater treatment schemes but there is still work to be done.

An investment programme for improvements to sewage systems and sewage treatment facilities has been agreed until 2010. This will further benefit the Calder's water quality and the appearance of some sections of river, which can sometimes be polluted by unsightly sewage litter.

However, not all the Calder's problems are man-made as there are natural water quality problems in the catchment too. Many of the moorland streams at the head of the Calder Valley maybe uncontaminated by effluents but they are frequently - and quite naturally – stained a tea colour by deposits of peat.

Overall the news is good for the River Calder and its tributaries. The work that has brought the improvements about will continue, with our officers, industry and water companies co-operating to resolve problems and maintain a strict control of what can be released into the rivers.

Water quality classification 2004

The River Calder and its tributaries, 397.1 km

- Class A – very good 19.5%
- Class B – good 44.8%
- Class C – fairly good 27.3%
- Class D – fair 5.9%
- Class E – poor 0.9%
- Class F – bad 1.6%

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.

"Improvements in water quality have brought about vast changes in the fishery status of this river and this is reflected in anglers' catches along the whole of its length. The pollution-sensitive trout has moved steadily downstream to areas that were once only home to coarse fish and other areas are seeing fish stocks for the first time in decades."

Peter Mischenko, Environment Agency fisheries officer

Fisheries

The upland streams of the Calder catchment are quite acidic. Despite this, many of them are able to support trout, including Hebden Water and Cragg Brook, which between them maintain the river's trout populations.

Over the years, as the water quality of the Calder has improved, this resident trout population has been able to venture further downstream. As far down as Brighouse good numbers of both trout and grayling can now be found and even below Mirfield they are being caught. This is a major step forward for the river as only recently it was devoid of fish at Mirfield due to the polluting input from Huddersfield.

Chub, roach, dace, gudgeon and perch are now to be found along all the lower lengths of the river, even as far down as its confluence with the Aire at Castleford. Barbel can be found as far down the river as Wakefield and Normanton – welcome news to fisheries officers who carried out a survey at Normanton in 1994, when no fish were caught.

Wildlife and conservation

Rare and protected species, including otters, water voles and our native white-clawed crayfish, 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 Calder catchment is home to sites of national and international importance for wildlife. The diverse countryside offers a range of habitats from grassland and heathland to bog and wet woodland. Some of the upper catchment lies in the Peak District National Park and much of the upland moor area has been designated as a Special Protection Area.

We continue to work with many other organisations to protect and improve habitats and the wildlife they attract. This includes a partnership project with Calderdale Council and Leeds University to investigate the populations and presence of water voles in the uplands. Enhancements also continue to be incorporated into flood risk management projects such as the inclusion of a tern island and an otter holt in a scheme near Wakefield.

Otter populations in the lower Calder are improving.

Water voles have been reported from Cromwell Bottom, the Rochdale Canal, Hebden Water, Warland Reservoir and Walsden Water in recent years. They have also been recorded in the upland parts of Calderdale.

Native white-clawed crayfish are found in Rochdale Canal and some ponds.

Pink wax cap fungus are found at three sites in Calderdale.

Twite are found on the fringe of the South Pennine Moors and adjacent grasslands.

There are good populations of **luronium natans plant** in the Rochdale Canal.

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 Calder 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.

Campaign work pays off case study

A pollution prevention campaign on an industrial estate has seen businesses make a concerted effort to protect a beck which feeds into West Yorkshire's River Spen.

Businesses on the Euroway Industrial Estate in Bradford spent more that £250,000 on pollution prevention measures. These included, improving the storage of pollutants, diverting drains and preventing the escape of waste materials and litter.

The campaign aimed to show companies that their activities could have an impact on the environment. In particular Hollowfield Beck, which has been badly affected by pollution in the past. This has knock-on benefits for the River Spen, a tributary of the Calder.

The work focussed on preventing spillages and contaminated run-off from entering the stream by accident. Many of the measures taken by businesses were not complex but simple, common sense steps which could help prevent pollution incidents.

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'.

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.

Few rivers have been more heavily exploited over the last 200 years than the Calder, for both industry and drinking water supply. Today, there are 39 reservoirs in the Calder system licensed to provide water for public supply to the area. These supplies are supplemented by imports from the Winscar reservoir at the head of the Don catchment in South Yorkshire and from the rivers of North Yorkshire.

The river also remains an important source of water for the chemical and textile industries in the upper Calder Valley.

The reservoirs at the head of the valley also play a vital role in maintaining a healthy river flow. These reservoirs release water into the catchment as a compensation for what is taken for drinking water. Otherwise there could be problems when river levels fall too low. Fish and other wildlife would suffer and there would be insufficient dilution of effluents, or wastes, discharged into the river.

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.

Landfill project reduces the risk of pollution case study

A Huddersfield landfill site has invested in a new way of transferring leachate to a sewage treatment works – a move that will not only cut costs but also help protect the Calder from pollution.

Pipelines have been installed at Bradley Park Landfill Site, which will now take the liquid direct to the treatment works. The leachate used to be transported to the works by road, which was costly for the landfill operator and also presented risks of accidental spillage while loading and unloading.

The landfill site and sewage treatment works are on opposite sides of the Calder but rather than span the watercourse, the site operator decided to install a pipeline under the river. This removed the need for an unsightly pipe and also took away the risk of accidental damage or vandalism.

The new pipeline is fitted with leak detection equipment and the flow of leachate can be stopped immediately if any leak is detected.

What's under your feet?

The Calder catchment lies entirely on Carboniferous rocks of millstone grit and coal measures.

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.

Millstone grit formed approximately 320 million years ago are made up of a sequence of shales and grits, with the grits forming the high moorland areas west of Huddersfield and Halifax.

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.

We have invested heavily in both flood defence and flood warning systems throughout the Calder catchment.

The rivers and its tributaries flow through steep and relatively narrow valleys, which means they react quickly to rainfall. Heavy rainfall causes very rapid rises in water level, which can put many communities at risk.

Steps to improve the level of protection for homes and businesses have included floodbanks, to hold back floodwater, flood storage areas and on-going maintenance to clear silt and gravel, debris and vegetation from the river channel and banks.

Near Wakefield the storage capacity of a lake at Pugney's Country Park, which is used as a safety valve to protect the town during floods, has been increased. Flood defences at Mytholmroyd, Callis Bridge, Batley, Dewsbury and Wakefield have all been improved in recent years.

The construction of new storage reservoirs in the moors over Todmorden, coupled with building improved river walls through the town, will help reduce peak water levels in the upper reaches of the River Calder.

This has also maximised opportunities for environmental enhancement.

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.

13,300 properties are at risk of flooding in the Calder, Colne, Holme, Spen and Ings Beck catchment.

68 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 Pennine Way footpath crosses both the Colne Valley Circular walk and the Calderdale Way, which skirts the catchment, passing moorland bogs, reservoirs and waterfalls before crossing the river itself. There are self-guided walks around the Colden and Hebden water tributaries.

Angling – There are growing opportunities for angling across the catchment as the rivers' fortunes improve. For more information get a copy of our North of England Angling Guide by contacting us on 08708 506 506.

Birdwatching – The countryside around Colden and Hebden Water attracts birdwatchers.

Watersports – At Sowerby Bridge, canoeists use a slalom course constructed along the Calder. Where the river passes Pugneys Country Park near Wakefield, windsurfers and canoeists take advantage of the enclosed waters created by former open cast mine workings next to the river. Next to the river at Cromwell Bottom, by the Calderdale Way, former gravel pits are now used for water skiing.

Useful contacts

Halifax Tourist Information Centre 01422 368 725
Hebden Bridge Tourist Information Centre 01422 843 831
Holmfirth Tourist Information Centre 01484 222 444
Huddersfield Tourist Information Centre 01484 223 200
Todmorden Tourist Information Centre 01706 818 181
Wakefield Tourist Information Centre 01924 305 000 tic@wakefield.gov.uk

Would you like to find out more about us, or about your environment?

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