

EA NORTH EAST BOX 5

Rivers Nidd & Wharfe

FACT FILE



ENVIRONMENT
AGENCY

KEY FACTS

ALTITUDE AT SOURCE

River Nidd (at Nidd Head)
595 metres above sea level
(Above Ordnance Datum);

River Wharfe 560 metres above sea
level (Above Ordnance Datum)

TOTAL CATCHMENT DRAINAGE AREA

1,555 square kilometres

MAIN TRIBUTARIES OF THE RIVERS NIDD AND WHARFE

River Nidd: Oak Beck; Darley Beck;
River Crimple

River Wharfe: River Dibb; River
Skirfare; River Washburn; Collingham
Beck; Firgreen Beck; Cock Beck;
River Fleet

WATER QUALITY OF THE NIDD AND WHARFE CATCHMENT

Nidd and tributaries: Good 119.3km,
Fair 3.1km, Poor/Bad 0.8km

Wharfe and tributaries:
Good 258.4km, Fair 26.7km
Poor/Bad 25.3km

LENGTH FROM SOURCE TO SEA

River Nidd 90km, River Wharfe 130km

AVERAGE ANNUAL RAINFALL

Cawood 600mm,
Tops of the Pennines 2,000mm



Rivers Nidd & Wharfe

FACT FILE

The River Nidd rises at Nidd Head near Great Whernside at the edge of the Yorkshire Dales National Park and meanders eastwards to join the River Ouse at Nun Monkton.

The River Wharfe rises high in the Northern Pennines close to Ribblesdale. It is formed at the confluence of Oughtershaw and Langstrothdale becks at Beckermonds and then flows east through Ilkley, Otley, Wetherby and Tadcaster before entering the Ouse east of Ryther.

The two rivers and their main tributaries, Darley Beck, Oak Beck, the River Crimple on the Nidd and Cock Beck and the rivers Skirfare, Dibb and Washburn on the River Wharfe, drain an area of 1,555 square kilometres. The Wharfe is tidal for the last 16 kms before reaching the River Ouse.

WATER QUALITY

Most stretches of the Nidd and Wharfe are of good or excellent quality. Nevertheless, pollution remains an ever present threat.



Farm effluent can cause pollution

Agricultural effluents pose a particular problem due to the rural nature of the area. Silage liquor (the liquid produced when farmers compress cut grass for winter feed) is around 300 times more polluting than untreated sewage. Cattle slurry is highly polluting and sheep dip chemicals cause pollution even at low concentrations. A single pollution incident can cause the deaths of many thousands of fish.

Prevention is better than a cure and Environmental Protection Officers work closely with farmers and industry in the area to identify practical solutions to environmental problems. Prosecution of farmers following a pollution incident is, then, always a last resort.

The Agency has a system for classifying the water quality of rivers.

Class A and B rivers are of a high quality. They are clean enough for salmon and trout to live in and can be used for drinking water. They will also support a variety of invertebrates, including mayflies, stoneflies and other pollution sensitive insects.

Class C and D rivers are of fair quality. Coarse fish such as roach, chub and bream can live in them and possibly trout in some C waters. These rivers can be used for drinking if it is treated. A good variety of invertebrate species can be found apart from most pollution sensitive animals.

Class E rivers are of poor quality. They can still support coarse fish but cannot be used for drinking water.



On the River Nidd looking towards Scar House Reservoir

produced by Limestone rocks which date back to the Carboniferous period 220-280 million years ago. The younger rocks are found as the river moves down from the Dales. The Nidd rises mainly on Carboniferous Millstone Grit, with Carboniferous Limestone appearing in a few isolated places. The Carboniferous Millstone Grit, sandstones and shales form an area of grit moorland in the catchments of the rivers Washburn, Dibb, Barden Beck and other tributaries of the Wharfe.

AN IMPORTANT SOURCE OF WATER SUPPLY

Both the Nidd and the Wharfe provide vital sources of water supplies, mainly for

which acts as a barrier to upstream fish movement. From downstream of Knaresborough, bream, barbel, pike and ruffe are also common, in addition to the other coarse fish found upstream.

On the Wharfe, the upper reaches contain only trout. Grayling appear in the Buckden area and the river remains predominantly a trout and grayling fishery down to Ilkley. In recent years though, it seems that grayling stocks are declining. The reasons for this are currently being investigated.

Chub, dace, perch, gudgeon and some roach also appear in this stretch of river, with numbers increasing through Burley-in-Wharfedale. Downstream of Harewood Weir, the fishery largely consists of dace, chub, grayling, gudgeon, roach, trout, pike and barbel, with some bream between Wetherby and Boston Spa.

Roach increase in numbers below Boston Spa. At Tadcaster, the Wharfe is a good coarse fishery with chub, dace, barbel, bream, pike, perch and eel.

GEOLOGY

The craggy scenery of the Dales in Upper Wharfedale and Littondale is



Linton Falls on the River Wharfe

The Rivers Nidd and Wharfe



Meadow Buttercup



Bolton Abbey on the River Wharfe



Grey Wagtail

**THE NIDD AND WHARFE
CATCHMENT WATER QUALITY
CLASSIFICATION TABLE 1995**

Quality Class	Length of Nidd (km)*	Length of Wharfe (km)*
A – GOOD	41.5	192.9
B – GOOD	77.8	65.5
C – FAIR	3.1	26.7
D – POOR	0.0	18.5
E – BAD	0.8	6.8

*Length includes tributaries

Class F rivers are badly polluted. Some small invertebrates like worms or midges can live in them, but no fish.

Permission to discharge effluent into a particular watercourse is given by a 'consent' issued by the Agency which allows the effluent to be discharged within certain limits. Such limits are imposed on industrial discharges and sewage treatment works. These consents are monitored and can be reviewed periodically. If the limits are exceeded, then the offender could face prosecution.

INTEGRATED POLLUTION CONTROL

Pollution may harm people and all other parts of the living world. Industrial materials or the by-products of industrial processes constitute many of the worst pollutants – those that can do the most harm if mishandled and which are the hardest to dispose of safely. The role of the Environment Agency is to regulate these processes so that, where possible, pollution is prevented, or minimised and made harmless.

The Agency's authority to regulate industrial discharges stems principally from the Environmental Protection Act of 1990, a key feature of which is the concept of Integrated Pollution Control (IPC). This is being established internationally as the way forward for controlling pollution from industrial sources. As a system, it considers pollution to land, air and water and the way in which it interacts and impacts on the environment as a whole. It also takes a long term view on whether processes are sustainable or make demands on the environment that will rapidly exhaust available resources.

Businesses which want to operate certain industrial processes, those with

the greatest pollution potential or those that are particularly complex, must apply to the Environment Agency for permission to operate. Their application must contain all the information required to assess the impact on the environment, including the effects that polluting releases will have in both the short term and long term. Agency inspectors use this and other independent information to assess whether the activity should be permitted. If the decision is to allow the process, an authorisation is then issued which includes limited on the amount of emissions to land, air or water.

In North Yorkshire, IPC authorisations cover a furniture factory making foam mattresses, a company manufacturing fire-fighting foam and lime workings associated with quarrying. The Agency monitors all authorised processes to ensure that conditions are respected and, if necessary, will use vigorous legal enforcement to protect the environment. The Agency can also order processes to be shut down if there is a serious risk of pollution.

The Environment Agency also has the task of regulating the storing and use of radioactive materials and the accumulation and disposal of radioactive waste. Hospitals, universities and industry are all users of radioactive material and are regulated by the Agency.

FISHERIES

Both the Nidd and the Wharfe are home



The peaceful River Nidd near Lofthouse

to high quality trout and coarse fish but some stretches have more prolific fisheries than others due to variations in water quality and habitat.

The Nidd has trout as far downstream as Knaresborough and grayling down to Tockwith. Coarse fish dominate the lower reaches of the river. However, the headwaters upstream of Angram reservoir and several of the tributary becks are virtually fishless due, it is thought, to acidity of the water running off the peat moorland. Numerous weirs along both rivers also limit the movement of fish, but there are plans to improve fish passage over these weirs.

Dace, chub, gudgeon, perch and the occasional roach, occur in the River Nidd downstream of Birstwith Weir



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the major towns and cities of West Yorkshire. A number of large reservoirs collect water for public supply. During summer months, water released from reservoirs provides a significant contribution to river flows. Water is abstracted directly from the rivers for public supply, for agriculture and for individual homes.

Groundwater from rock layers deep underground, called aquifers, is abstracted from wells and boreholes for public water supply. The Carboniferous rocks contain many small aquifers from which the groundwater is discharged as springs. These springs are sometimes used for public water supply in Nidderdale and Wharfedale but are liable to water quality problems after



A flood bank in full bloom

heavy rain or low flows after dry periods.

The Sherwood Sandstone is a major aquifer in the lower reaches of the Nidd and Wharfe which supplies water to Leeds, Bradford and Harrogate.

Nearly all abstractions need to be licensed. The licence says how much water can be taken and how often. It may not be granted at all if the taking of water would harm the environment or adversely affect other water users. In total, there are 264 licenced abstractions of surface water in the area covered by the two rivers and their tributaries, and 331 licenced abstractions of groundwater.

BEATING THE FLOODS

The harder and older Carboniferous rocks in the upland areas of Nidderdale

and Wharfedale have a low capacity to store water and the steep slopes in the area contribute to rain water flowing quickly into the rivers, causing them to rise rapidly. The rivers and streams are called 'flashy' because they rise and fall so quickly.

This tendency of the rivers to rise quickly after heavy rainfall can cause flooding. The worst flooding recorded on the Wharfe occurred in 1686 when bridges and buildings were washed away down the valley.

There are extensive washlands or flood storage basins, alongside the Wharfe from Ilkley downstream, with the major ones being at Pool and Newton Kyme. The flood plain near Tadcaster has been adapted to create further room for flood waters. Major flood defence schemes have been completed at Ulleskelf, Ryther, Nun Appleton and Collingham. Other flood defence schemes have been completed at Kirkby Wharfe, Bowlam Bank, Button Hill, Cock Beck and Bolton Percy.

The River Nidd is embanked on both sides from the A1 eastwards to its confluence with the Ouse and this results in the whole of the river valley acting as a washland.



at Ramsgill



Dragonfly



The Agency uses the latest technology to predict possible flooding

FLOOD WARNING

The Environment Agency operates a sophisticated flood warning service which uses the latest technology to monitor rainfall, river levels, tides and sea conditions 24 hours a day, throughout the year. When there is a flood risk, warnings are issued to the general public, the police, local authorities and the media, so that those most at risk can take action to protect themselves and their property.

There are a number of ways people who live in affected areas can find out about flood warnings.

Those who have agreed to receive flood alerts, will be telephoned by the Environment Agency's Automatic Voice Messaging (AVM) system. This will give



New homes on the Wharfe at Wetherby

details of the flood warning and a contact for further information.

The Environment Agency also provides a 'dial and listen' national telephone service for information on flooding. Floodcall – 0645 88 11 88 – is a 24 hour recorded information service providing up to date details on warnings in force across England and Wales. It gives details of those places most at risk and information about what to do in a flood.

Local flood alert procedures may also be in place in certain areas. These could include a local warden scheme where a nominated resident passes flood warning information to local households. Warning sirens may also be in place.

The Environment Agency provides local radio stations with up to date information so they can broadcast regular updates. Flood warning information will also be broadcast by AA Roadwatch on many local commercial and BBC stations during their travel bulletins. Weather pages on Teletext (ITV) and weather forecasts on local television and radio may also include flood warning information.

CONSERVATION

A great deal of the area covered by the Nidd and Wharfe and their tributaries is of high conservation value. The Wharfe above Bolton Abbey is within the Yorkshire Dales National Park, and the Rivers Nidd and Washburn flow through the Upper Nidderdale Area of Outstanding Natural Beauty. There are 41 sites of Special Scientific Interest (SSSI) in the Wharfe catchment and

eight in the Nidd catchment, with one proposed Special Protection Area. Both rivers support populations of native white-clawed crayfish, a protected species.

At Nidd Gorge near Harrogate, the River Nidd is home to sandpiper, dipper and kingfisher as well as being of botanical interest.

Wharfedale, with its glaciated valleys and spectacular gritstone and limestone scenery, is considered by many people to be the most beautiful of the Pennine Dales. The river itself is a SSSI from Buckden to Kettlewell with a large diversity of flora and fauna.

Parts of the Pennine Dales Environmentally Sensitive Areas are in upper Wharfedale. This means traditional agricultural practices are maintained and the remaining species-rich hay meadows are protected.

Because Wharfedale and Nidderdale are popular with the people of Yorkshire and tourists from further afield, careful management is needed to protect the environment and yet allow the thousands of visitors to enjoy it.

WASTE MANAGEMENT

Waste needs to be carefully managed. Hazardous waste may pose a serious threat to the environment and in the worst cases can be dangerous to life. Other wastes may cause a problem by their sheer volume or nuisance value such as litter, flies and smell. This means the disposal and recovery of waste must be carefully controlled to ensure that there is no damage to the environment or harm to human health.



Recycling saves precious resources

It is estimated that the average household produces approximately one tonne of refuse each year. With over 250,000 people living in the catchment area, this adds up to a vast amount of waste which has to be safely disposed of each year.

Landfill remains the prime method for the disposal of household and other forms of solid waste from industry and commerce. Sites suitable for landfill are becoming more difficult to find and, as a consequence, are being located remotely from the urban centres of population.

All facilities where waste is handled, treated or disposed of must be licensed by the Environment Agency. The licence specifies the types and quantities of waste which can be accepted at the site and the precautions which must be taken by the site operator to protect the environment. Processes which must be licensed, include transfer stations, waste storage facilities, chemical treatment plants, incinerators, scrapyards, household waste sites, gas flaring facilities and landfill sites.

When waste is deposited in a landfill site it breaks down to produce a polluting liquid (leachate) and landfill gas (mainly methane). The site operator must line the landfill site with an impermeable barrier to stop leachate polluting groundwater and landfill gas from migrating into property where it might explode. In some cases, landfill gas is extracted from sites and burned to produce heat or generate electricity. Other waste disposal methods include incineration facilities and chemical treatment plants.

However, not all waste is disposed of. Thousands of tonnes of metal and other valuable materials are recycled through a network of scrapyards. Household Waste Sites and other recycling centres take a range of recyclable wastes such as oil, paper, cans, plastic, textiles and even paint. These too are licensed and regulated



Compacting waste at a landfill site



Rowing boats on the River Nidd at Knaresborough

by the Agency to ensure that they do not harm the environment.

Industry and commerce have a Duty of Care to make sure their wastes are only collected by an authorised person and taken to an authorised waste disposal site. Waste carriers also have to be registered with the Agency before they can collect any waste. Illegal dumping (flytipping) of waste at unauthorised sites is always a problem, particularly in urban areas. Those who are caught flytipping are prosecuted.

Wastes which are the most dangerous to people or to the environment are called Special Waste. They include hazardous or toxic waste such as acids, pesticides and asbestos. Movement of Special Waste from its place of production to the disposal site must be authorised by the Agency. This provides an opportunity to check that the disposal site is suitable for the waste and that it is deposited safely.

There is a growing acknowledgement, however, that we cannot continue using up natural resources and producing waste the way we do. The government has recently produced a National Waste Strategy in order to try and address these problems. The first priority is to reduce the amount of waste we produce and if we must produce waste then we should try to reuse or recycle it. Only as a last resort should it be disposed of. Everyone has a part to play in this strategy whether at home, at school or in the work place. The Agency issues advice on the safe, efficient disposal of waste and will play a key role in delivering the new national strategy.

● The Agency has a 24 hour emergency hotline – **0800 807060** – for reporting environmental incidents. Pollution, poaching, fish in distress, risks to wildlife, flytipping, flooding – don't ignore it, report it!

ENJOYING THE NIDD AND WHARFE

The upland areas of the Nidd and Wharfe are loved by walkers and birdwatchers alike. Angling, Britain's biggest participation sport, is extremely popular throughout the area.

The Pennine Way touches the very top of the Wharfe near its source on Cam Fell and close to where The Dales Way strikes over towards Dentsdale, heading towards its ultimate destination, Windermere. This long distance route goes right down the Wharfe Valley to Ilkley and all this length of the river is in the Yorkshire Dales National Park.

In addition to riverside walks, there are a number of paths onto the spectacular limestone tops and the area is riddled with caves. In quiet times, there are plenty of grey wagtails and dippers to be seen along the river.

The River Skiffare joins the Wharfe just upstream of Kilnsey. Here, an imposing limestone crag towers above the road, attracting rock climbers. At Kilnsey Park, there is a Trout Farm, aquarium and Education Facility as well as a pony trekking centre which has rides following centuries old Dales routes.

There are also many short walks which wind in and around the two rivers

and their tributaries. There are specially designed walks around the old lead workings on Grassington Moor near the Wharfe with evidence of Celtic land terraces, called lynchets.

Riverside sites such as Bolton Abbey, Pateley Bridge, Ripley Estate and Knaresborough act as honey pot sites, drawing tourists away from other potentially more sensitive sites.

The River Dibb joins the Wharfe at Appletreewick where national status canoe slalom events are held and casual canoeing takes place on the Nidd down to Knaresborough. Further along the River Wharfe, the ruins of Barden Tower can be seen and then the famous 'Strid', where the river forces itself through a narrow gorge. There is an excellent nature trail around the Strid, with woodland and geological routes and wildlife notes available on site.

At Bolton Abbey, a ruined 12th century Augustinian priory, there are stepping stones, river walks and grouse shooting on the moors above. Beamsley Beacon, near Ilkley, is a popular local climb and around Ilkley itself there are river walks and the well-known Cow and Calf rocks on the moor above. At Otley, the birthplace of furniture maker Chippendale, there are rowing boats for hire and stillwater fishing at Knotford Lagoon.



River Nidd at Wath

At Arthington, the river passes Harewood where there is a bird garden and ruined castle (the castle is not open to the public). Below Tadcaster Weir, where the Wharfe becomes tidal, anglers catch flounders, eels and trout as well as good coarse fish catches!

Within the Nidd catchment, there is the Nidderdale Walk, from Hampsthwaite to Scar House Reservoir. Pioneer Walk crosses both catchments from its start at Dacre Banks through Kettlewell to Malham at the head of Airedale.

NORTH EAST REGION ADDRESSES

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Environment Agency
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For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

**ENVIRONMENT AGENCY
 GENERAL ENQUIRY LINE
 0645 333 111**

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

**ENVIRONMENT AGENCY
 EMERGENCY HOTLINE
 0800 80 70 60**

