Environment Agency

River factfiles

The Tees 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 generation

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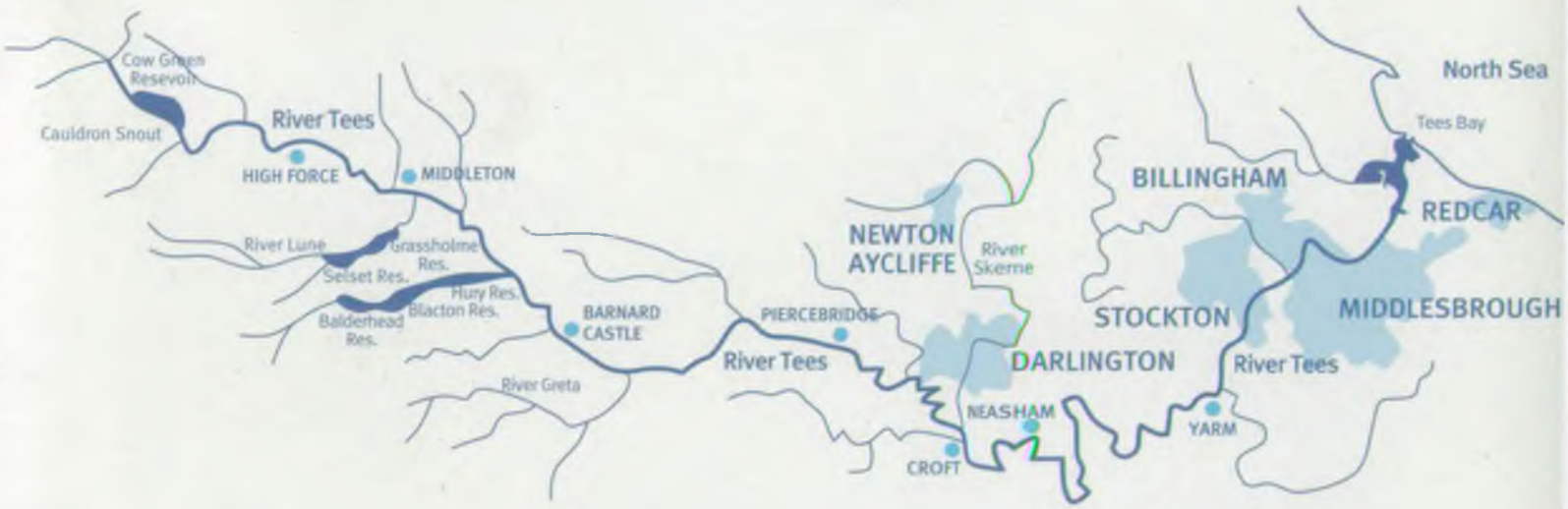
The River Tees rises high in the Pennine Hills. It then flows in an easterly direction through some of England's wildest countryside then on to Darlington, Yarm, Stockton, Billingham and finally, Middlesbrough, where it meets the North Sea.

The Tees catchment



Total catchment population:
Approximately 566,000

Total catchment drainage area:
1,930 square kilometres

Main tributaries of the Tees:
River Lune, River Balder, River Leven, River Skerne, Billingham Beck, River Greta

Length:
131.9 kilometres

Altitude at source (above sea level or Ordnance Datum):
Approximately 760 metres

The Tees is a river of contrasts. It journeys through isolated moorlands in upland areas, used only for sheep grazing, and then through Teesside, the home of the largest concentration of chemical and petrochemical works in Europe and a major UK port.

The Tees has played a vital role in the history and development of Teesside, which has been a focal point for trade since the twelfth century.

Until the twentieth century it was a clean, healthy river famous for its salmon stocks but during the early 1900s it began to pay the price for attracting industry and a growing population to its banks.

The development of the chemical industry in the late 1920s had a devastating effect with water quality deteriorating to the point where some stretches were 'dead'.

By the 1940s salmon had disappeared altogether and there was no oxygen in the central and lower reaches during the summer months.

But new legislation, tougher regulation and major investment by water companies and industry have helped reverse the river's fortunes. This has not only had a positive impact on river life, it has also helped boost the regeneration of urban areas.

How clean are your rivers?

The upland areas of this catchment have little industry other than farming and sparse population and so the water quality is good.

However, there are still some problems, including discharges from abandoned mines, a legacy of Teesdale's lead mining industry.

Agriculture can also pose a major threat to water quality and we work with the farming community to prevent pollution incidents, which can have devastating effects on fish stocks and other river life.

Generally, the Tees in the urban and industrial areas is very much a river on the mend. This is thanks to major investment by industry, and tougher regulation on what can be discharged, or released, into the river.

A turning point for the river was the construction of the Tees Barrage at Blue House Point, Stockton. It holds back 22 kilometres of the River Tees upstream to protect the river from polluted estuary water.

Efforts were then concentrated on the estuary itself, which has seen significant improvements in water quality in recent years.

All these efforts will continue into the future for the Tees catchment, with our officers, industry and water companies working together to resolve problems and maintain a strict control on what can be released into the river and its tributaries.

River classification

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.

Estuary classification

Estuaries are classified as follows:

Class A – good
Class B – fair
Class C – poor
Class D – bad

The clasifications are based on:

Biological quality – presence of certain species of fish.

Aesthetic quality – evidence of aesthetic pollution e.g. sewage-derived litter.

Chemical quality – in terms of dissolved oxygen concentrations.

A score is allocated for each of these categories which are added to determine the overall class.

Water quality classification 2004

The inland River Tees and its tributaries, 629.9km

- Class A – very good 38%
- Class B – good 23.4%
- Class C – fairly good 18.7%
- Class D – fair 10.5%
- Class E – poor 6.7%
- Class F – bad 2.7%

The River Tees Estuary, 24.2km

- Class A – good 8.3%
- Class B – fair 83.4%
- Class C – poor 8.3%

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.**

Water company investment pays off case study

Major investment in the environment by Northumbrian Water since 1990 has had a dramatic effect on the quality of the North East's rivers and coastal waters.

The benefits of these improvements are far-reaching. Our watercourses have seen an increase in fish stocks and other wildlife and some of our rivers have undergone a dramatic transformation.

This is good news for conservation and anglers – and it is also good news for tourism, leisure and the general quality of life for people living in the region. The clean-up of coastal waters has been fundamental to the vital tourism revenue drawn into the North East and for the fisheries which keep some coastal communities alive.

Many of the region's cities and towns have been able to turn to their waterfronts as an important source of economic development. This is thanks to the clean up of the rivers running through them, which has reduced unsightly and smelly sewage litter and improved water quality.

Water company investment is a vital part of ensuring we can protect and enhance the environment for present and future generations.

We continue our work to safeguard rivers, estuaries, underground waters and coastal waters, and work with other industries to reduce pollution and discharges to the environment.

"Improvements in water quality and the benefits brought about by the construction of the barrage have been clearly reflected in the health and diversity of fish stocks found in the lower Tees today."

Richard Jenkins,
Environment Agency ecological appraisal team leader

Fisheries

Since the construction of the Tees Barrage, the impounded section of the river has become an excellent and still improving mixed coarse fishery. Good numbers of dace and chub are also found here and there has been a massive increase in the numbers of roach, bream, perch and pike to be found in the section of river up to Worsall.

The upper Tees above High Force supports an excellent population of wild brown trout and below High Force good stocks of grayling join these. Salmon and sea trout are also to be found in increasing numbers each year and this is expected to continue into the future.

At Winston there are increasing numbers of coarse fish, along with trout and grayling. The river from Low Coniscliffe downstream to the top of the impounded section supports an abundance of fish with chub, dace and roach among the main species. Barbel numbers are also on the increase along the whole of this section and other species found include pike, perch, eels, gudgeon, minnows, stoneloach and lampreys.

Wildlife and conservation

Rare and protected species, including water voles, white-clawed crayfish and Harbour seals, are to be found in this river catchment and estuary. 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 Tees catchment is home to sites of national and international importance for wildlife. Extensive areas of the upper catchment are designated as a Special Protection Area and a Special Area of Conservation. Around the Tees estuary lie numerous wetland and coastal sites, including a Special Protection Area and a Ramsar wetland site.

Throughout the catchment there are varied and valuable wildlife habitats including ancient woodlands and botanically rich grasslands. Within the urban areas of Teesside, wildlife finds a home along the becks and even on industrial sites.

We are continuing to work with many other organisations to protect and improve these habitats and the wildlife they attract.

Otters are present in most of the catchment with increasing sightings on the lower sections of the River Tees close to urban and industrial areas.

Water voles are found at a few sites in the upper Tees catchment as well as along many becks in urban areas in the lower catchment.

Harbour seals are breeding in the Tees Estuary for the first time since the nineteenth century.

Dippers are found along the middle and upper Tees, where they catch aquatic insects and larvae in fast flowing waters.

Kingfishers are a frequent sight along urban becks.

Little terns are one of Britain's rarest breeding seabirds. They breed in nationally important numbers at Teesmouth.

Native white-clawed crayfish are found in some parts of the upper catchment, however the presence of the American signal crayfish threatens the native populations.

Teesdale sandwort is present in Upper Teesdale, the only place in the British Isles where this tiny plant grows.

Great crested newt populations are present at many wetland sites in the lower catchment, including in urban areas.

Each year increasing numbers of **salmon** and **sea trout** migrate between the North Sea and the River Tees catchment via the Tees Estuary.

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 Tees catchment and 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 as very simple steps can prevent problems. We are working with farming organisations in a bid to wipe out bad practice and reduce damaging incidents.

Tackling the threat of minewater pollution case study

A Teesside petrochemical company has invested £3 million in a project to install a lining around storage tanks and protect the River Tees from pollution.

Huntsman Petrochemicals (UK) Ltd has plants at sites in Wilton and North Tees. Both plants are licensed by us to operate within strictly controlled limits and Huntsman has been working hard to reduce the impacts of the plants by reducing emissions.

In 2001, benzene escaped from a storage tank on the North Tees site and 10 tonnes went into the River Tees. As a result the company was fined for breaches of the Environmental Protection Act 1990.

But since then the company has invested heavily in the plant, including the new lining, in a bid to prevent further pollution incidents.

The site at North Tees has also achieved significant reductions in benzene emissions, with a reduction of 100 tonnes in 2002 alone.

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.

Wildlife set to benefit from landfill project case study

An innovative project to clean-up the liquid waste from a landfill site will hopefully provide valuable wildlife habitat as well.

A reed bed system is being developed at Cowpen Bewley landfill site, north of Middlesbrough, to clean-up leachate before it finds its way into Greatham Creek, which then joins the Tees. If the water is clean enough it will go to Cowpen Marsh, Site of Special Scientific Interest, which should benefit from the input of clean water and attract wildlife habitat.

The reeds will clean the water to such an extent that it could almost be used for drinking and by the time it reaches Greatham Creek it will be cleaner than the water already in there.

Site owners ICI are working with the landfill operators, Impetus Waste, on the project and are also investing in a new impermeable 'cell', which will be used to deposit waste until the landfill closes. The cell has been designed to make sure that no leachate escapes into the ground or into nearby watercourses.

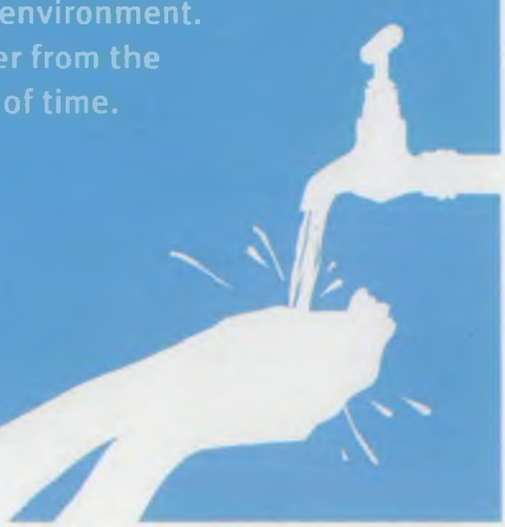
Water source

Water is essential to life 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 Tees is an important water supply river with the upper reaches used extensively for drinking water and the stretches around Darlington and Teesside for industry.

There are nine reservoirs in the catchment, which are used for drinking water and to help top up river levels in times of low flow.

Flows in the Tees are continuously monitored and if necessary can be maintained by releases from Kielder reservoir on the Tyne via the River Wear.



What's under your feet?

The geology of the Tees catchment consists of strata from the Triassic period between 213 and 248 million years old and the Carboniferous period between 286 and 360 million years old.

In the high grounds to the west of the catchment the oldest rocks are the Middle Limestone group of the Carboniferous series.

The Millstone Grit and Upper Limestone Group form the highlands to the north east and south west of Barnard Castle and these in turn are overlain by Magnesian Limestone from the Permian age, between 248 and 286 million years old.

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 Tees catchment.

Currently a Tees Tidal Flood Risk Management Strategy is being developed to look at flood risk management in the area.

The Tees is a very fast flowing river, which rises quickly after heavy rain. As a result it has a long history of flooding with records dating back to the sixteenth century. The main trouble spots are at Yarm, Croft and Neasham. We have built defences in these communities in a bid to improve the level of protection to homes and businesses.

Other defences in the Tees catchment include works on the River Leven, which help protect the town of Stokesley, and coastal defences at Greatham Creek.

We also provide flood warning schemes for Hurworth Place, Newbus Grange, Neasham, Low Dinsdale, Croft, Yarm, Thornaby and the tidal estuary areas in Teesside to give people valuable time to protect themselves and their property from flooding.

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.

Alongside this work is the on-going maintenance of existing defences and general maintenance of watercourses, which all helps in the battle to reduce flood risk.

11,000 properties are at risk of flooding in the Tees, Skerne and Leven catchments.

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

Get the most from your rivers

Angling – The Tees is a popular haunt for fishermen from all parts of the country. For more information get a copy of our North of England Angling Guide by contacting us on 08708 506 506.

Watersports – The barrage has provided some opportunities for watersports, including a 280 metre artificial whitewater canoe slalom and an area of the main river set aside for water skiers. A lock on the barrage allows small boats to navigate the river.

Walking – Among many walks in the catchment is the Teesdale Way, which explores the course of the Tees for 160 kilometres from its source to Middlesbrough. Teesdale Way also links with the Pennine Way. The Tees Laink is a 17 kilometre trial which connects with the Cleveland Way.

Useful contacts

Middlesbrough Tourist Information Centre 01642 358 086
Hartlepool Tourist Information Centre 01429 869706
Stockton Tourist Information Centre 01642 528130
Redcar Tourist Information Centre 01642 471 921 redcartic@redcar-cleveland.gov.uk
Information Darlington 01325 388 666 tic@darlington.gov.uk
Barnard Castle Tourist Information 01833 630 272 tourism@teesdale.gov.uk
Middleton Tourist Information 01833 641 001 middletonplus@compuserve.com

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