



River factfiles

The Wear 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 generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.

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The Wear starts its life high on the eastern slopes of the Pennine Hills and then descends rapidly eastwards through Stanhope and Wolsingham before turning north at Bishop Auckland and on through the historic city of Durham. It then meanders across the coastal plain past Chester-le-Street and on to meet the sea at Sunderland.

The Wear catchment

Total catchment population:
Approximately 478,000

Total catchment drainage area:
1,321 kilometres

Main tributaries of the Wear:
River Gaunless, River Browney, River Deerness, Cong Burn, Lumley Park Burn, Old Durham Beck, Croxdale Beck, Killhope Burn, Burnhope Burn

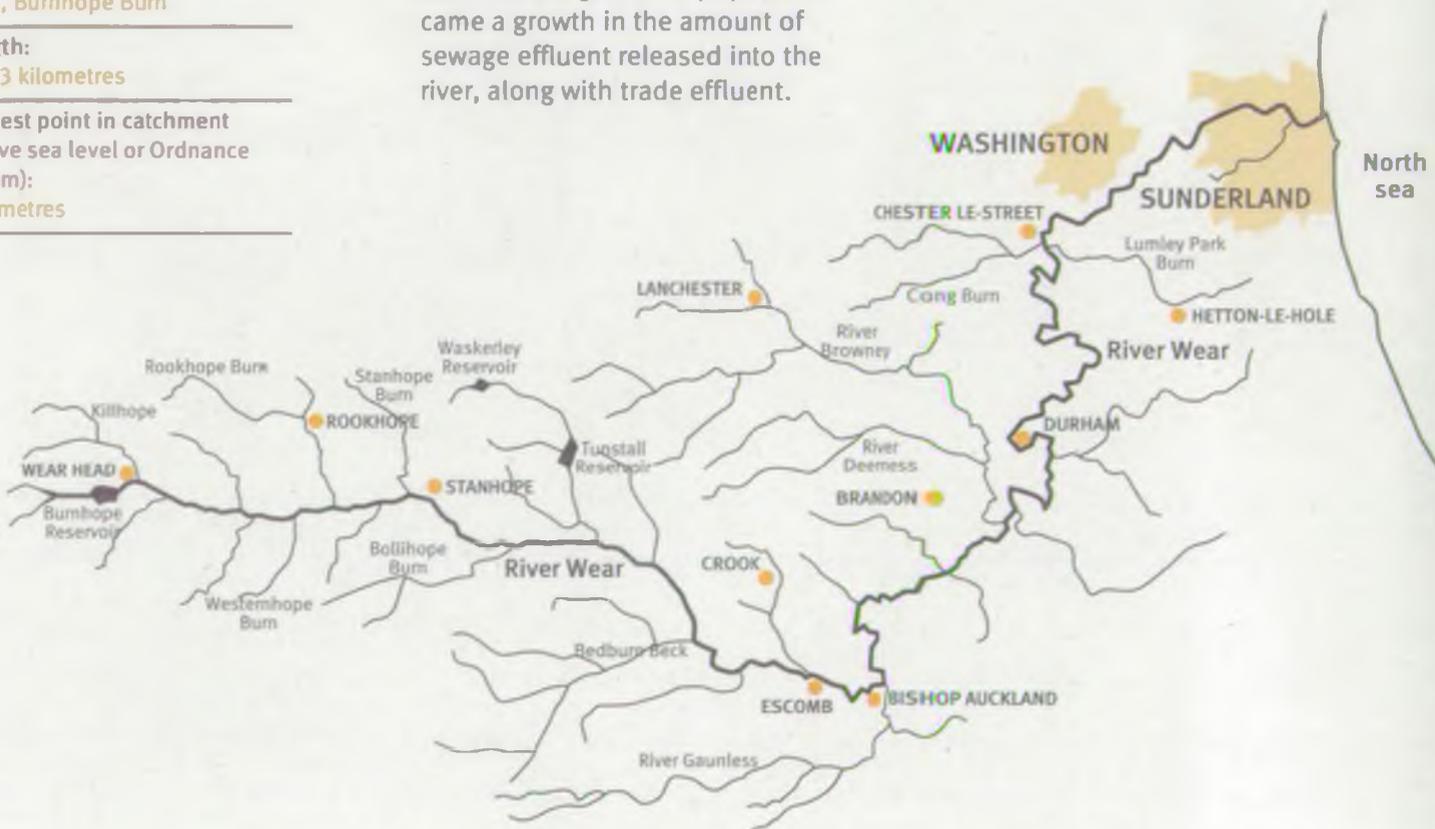
Length:
105.3 kilometres

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

During the Industrial Revolution development of the east Durham coalfield meant immense changes for the river as heavy engineering and shipbuilding industries grew rapidly on its banks.

The population increased as people moved to the area to find work – and with the growth in population came a growth in the amount of sewage effluent released into the river, along with trade effluent.

The efforts of industry, water companies and bodies such as the Environment Agency have helped bring about major improvements in water quality over the past 20 years, with benefits for fisheries and other wildlife.



How clean are your rivers?

The battle to clean up the country's rivers require a range of measures, including tougher regulation of what can be released into them and major investment by both industry and water companies.

Rivers in industrial areas, such as the Wear, had been used as dumping grounds for sewage and industrial effluent for many years. For some stretches of watercourse the impact had been devastating, with nothing living in them.

More recently, abandoned coal mines posed another threat to the Wear. Mines can continue to seep iron oxide, which turns watercourses orange and yellow and can leave them 'dead'.

To help avoid this, the Coal Authority has continued to operate eight minewater pumping stations in the Wear catchment. The Authority and ourselves will work together to look for long-term solutions.

An extensive programme of improvements for sewage systems and sewage treatment facilities has been agreed until 2010. This will build on the success of previous investment, which has included a scheme to intercept untreated sewage entering the lower estuary. This sewage, along with that formerly released to the North Sea, is now given secondary and ultra-violet treatment at Hendon before being discharged into the sea.

So the good news for the Wear and its tributaries is that investment has had great benefits. There are fewer stretches marked out for their bad water quality, and more are moving into the 'fairly good', 'good' and 'very good' categories.

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 classifications 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 Wear and its tributaries, 422.7km



- Class A – very good 12.1%
- Class B – good 64.8%
- Class C – fairly good 16.9%
- Class D – fair 0.4%
- Class E – poor 5.8%
- Class F – bad 0%

The River Wear Estuary, 16km



- Class A – good 100%

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.



In 1965 only two salmon were recorded as being caught in the Wear. In 2004 the figure was 1001.

Fisheries

Historically the Wear has been known for sea trout although there are now significant numbers of salmon. We operate a fish counter at Durham and the salmon and sea trout counts have continued to improve in recent years. This positive trend has been mirrored by rod catches and electric fishing surveys. Salmon and trout are found throughout the catchment and dominate the upper sections.

A diverse population of coarse fish can be found in the lower sections of the river from Durham to the estuary. Stocks are mainly made up of dace, chub, roach and eels. Although smaller populations of perch, pike, barbel, bream, gudgeon and grayling are also present. The stretch at Chester-le-Street is popular with coarse anglers and large catches of dace are not uncommon.

The estuary also supports a healthy flounder population in the upper sections.

Some of the Wear tributaries are also important fisheries. The majority above Bishop Auckland are used as spawning areas for sea trout and a smaller number of tributaries are also important for salmon spawning. We constructed a fish pass in 2003 on the River Gaunless near Bishop Auckland, opening up more spawning grounds for sea trout. The lower tributaries are used as nursery areas for coarse fish.

Wildlife and conservation



Rare and protected species, including red squirrels, otters and great crested newts, are 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 Wear catchment is home to many sites of national and international importance for wildlife. The diverse countryside offers a range of habitats from woodlands to marshy grasslands. Weardale forms part of the North Pennines Area of Outstanding Natural Beauty. And even as the Wear passes through more urban and industrialised areas, there are opportunities for wildlife. The Washington Waterfowl Park on the northern bank of the river provides a rich oasis for wintering wildfowl.

We continue to work with many other organisations to protect and improve habitats and the wildlife they attract. This work includes a project to create a 2.4 kilometre path between West Auckland and Ramshaw along the route of the Haggerlees branch line railway. Along the route, new wetland habitats will be created, including reedbeds, ponds, wet meadow and wet woodlands.

Water voles are seen on Rookhope Burn, Burnhope Burn, Lumley Park Burn and the River Deerness.

Otters are found upstream of Durham on the River Wear and on the River Browney.

Daubenton bats are found in the middle sections of the Wear.

Red squirrels are present in a number of locations throughout the catchment.

The **great crested newt** population is stable or slightly declining and the species is quite abundant in the eastern lowlands.

Dippers are found in the upper sections of the River Wear as well as on the River Deerness and River Browney.

Kingfishers are found in the middle sections of the catchment.

Swallows and **grey wagtails** are found throughout the catchment.

Golden plovers are found in the upper catchment.

Lapwings are found throughout the catchment, mainly from the middle sections upstream.

The rare **pale bristle moss** is found in Weardale.

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 Wear 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.

Campaign work pays off case study

Pollution incidents affecting a stream, which flows through a popular park in Washington near Sunderland, have fallen dramatically thanks to an Environment Agency campaign.

Our officers visited 268 companies at eight industrial estates in the town during 2000. These pollution prevention visits were part of our campaign

to cut the number of incidents affecting Oxclose Burn, which flows through Princess Anne Park.

To build on this success a further series of pollution prevention visits will be undertaken at industrial premises in the Washington, Durham and Peterlee areas later this year.

The visits will be targeting companies where poor practices/housekeeping have led to environmental pollution of watercourses.

This work will not only lead to a reduced number of pollution incidents, but will actively seek to highlight the importance of the environment.

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.

The main reservoirs in the Wear catchment are Burnhope, Tunstall and Waskerley. Water is piped from Burnhope and Waskerley reservoirs into a complex water system, which serves the population of mid-Durham.

Part of Sunderland's water supply is taken from the River Wear at

Lumley near Chester-le-Street and Burnhope Reservoir.

Sunderland is also supplied by the Derwent Reservoir in the Tyne river catchment and public water supply boreholes. These draw water from the Magnesian Limestone aquifer in the east of the catchment.



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.

Recent changes in legislation have given us increased powers in environmental protection.

For example the End of Life Vehicle (ELV) Regulations came into force on 3 November 2003. The regulations require that all vehicles, which are to be scrapped, have all polluting substances such as oils, batteries and antifreeze as well as any contaminated spare parts removed prior to dismantling, recycling or disposal.

Treatment facilities now have to operate to higher environmental standards in order to meet the standards set out in the these regulations as well as the requirement of a permit to deal with non de-polluted vehicles.

Our officers carry out enforcement of the ELV Regulations. Routine inspections are undertaken of the treatment facilities to ensure that all companies are fulfilling their obligations.

The current status of ELV sites in the Wear area case study

The Wear area has in total around 40 licensed ELV sites. Two of the largest ELV licensed sites have invested major capital to install a new system of de-pollution equipment with initial set-up costs per station amounting to £80,000.

This equipment allows for a more efficient system for the removal of pollutants. One company located in Sunderland, is currently able to de-pollute one vehicle every ten minutes with one de-pollution station and are currently looking to install additional stations.

Another company located in Peterlee has three de-pollution stations and is able to cope with one vehicle every 20 minutes.



What's under your feet?



Outcrops of **magnesian limestone** dating back **250 million years** occur in the east of the Wear area.

Coal measures formed around **300 million years ago** are seams of coal and the layers of rocks and sediment between them. These overlay the millstone grit and upper limestone group and are found throughout much of Durham.

Millstone grit formed approximately **320 million years ago** is a hard, coarse-grained type of sandstone and along with **upper limestone** form the highlands to the north and south of Weardale.

Middle limestone formed approximately **340 million years ago** is the oldest rock exposed in the area and outcrops in upper Weardale.

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 Wear catchment.

The wet peat soils of the Wear's headwaters respond quickly to rainfall and produce very 'flashy' river flows. This means rivers can rise suddenly and dramatically during floods. Serious flooding occurred in June 2000 when the River Gaunless and many parts of Upper Weardale were badly affected.

Flood defence schemes, such as the £7.8 million scheme on the

River Gaunless, on-going maintenance of existing defences and general maintenance of watercourses all help in the battle to reduce flood risk.

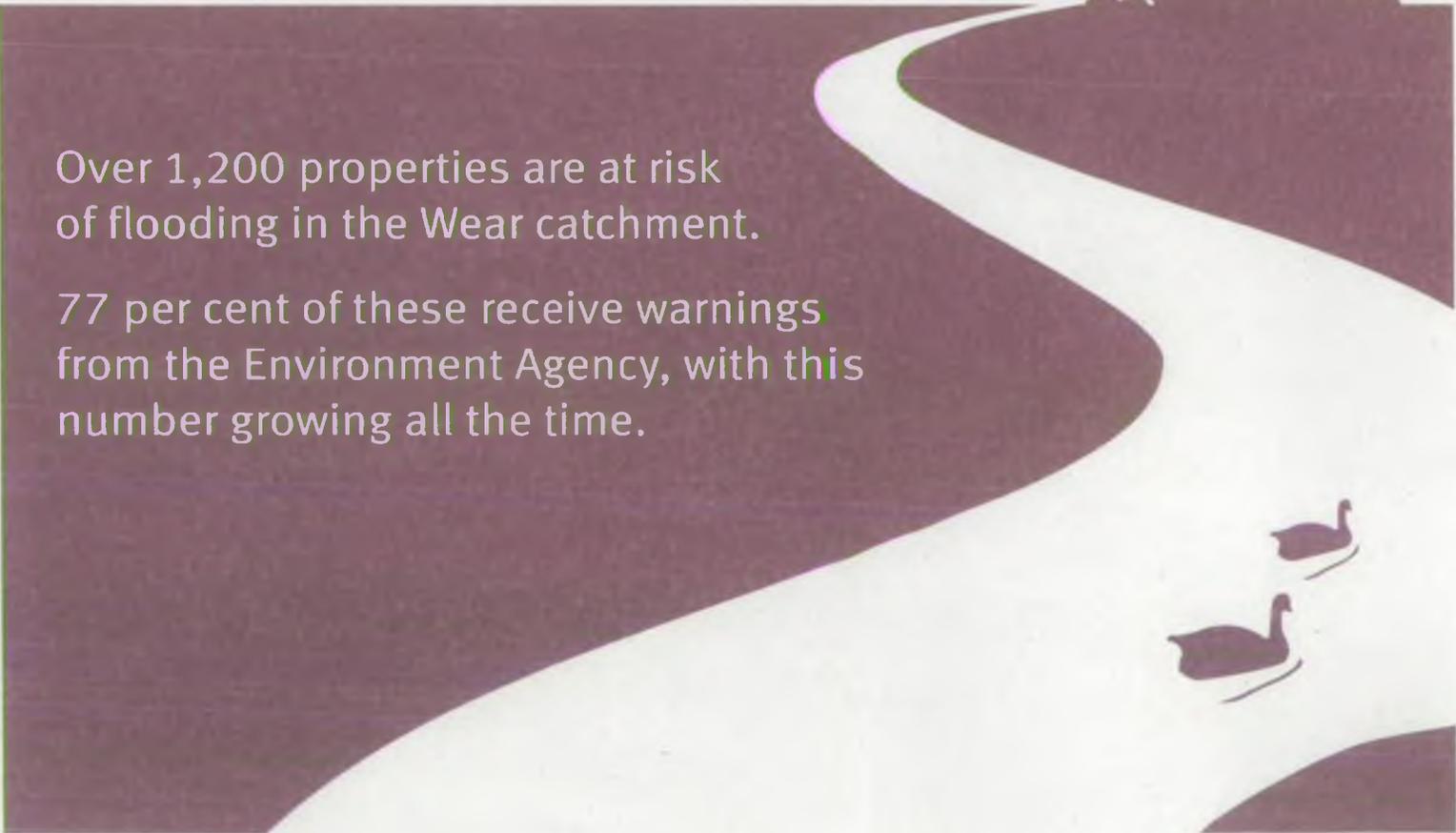
The flood warning service is continually being updated and improved to give people the opportunity to protect themselves, their valuables and, wherever possible, their properties from flooding.

Improvements on the River Gaunless, Smallhope Burn and River Wear at Fatfield in 2004 means that over 80 additional

properties will be able to take advantage of the chance to receive warnings direct by phone.

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.



Over 1,200 properties are at risk of flooding in the Wear catchment.

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

Get the most from your rivers



Walking – The area is well served by a network of footpaths and public rights of way, including the Weardale Way from Killhope Burn to the sea. The River Wear Trail stretches for 15 miles along both banks of the estuary from the sea to Fatfield. Public access to the river for walking is available at many points in the villages along the upper reaches.

Angling – There are numerous opportunities for angling in the Wear catchment. Angling clubs control many of the waters, although there are stretches of free fishing on the main river. We own about seven miles of game fishing rights on the River Wear upstream of Stanhope, which is leased to the Weardale Fly Fishers. For more information get a copy of our **North of England Angling Guide** by contacting us on 08708 506 506.

Cycling – A major cycling coast to coast route passes through Rookhope and Stanhope, along the Waskerley Way and on through Chester-le-Street and Washington to Sunderland.

Rowing – There is an active club based at Chester-le-Street but the City of Durham Club is the biggest centre for rowing on the Wear. The Durham Regatta is a major national event, which draws crews from all over the country.

Canoeing and windsurfing – Facilities are now available on the estuary for a variety of watersports including windsurfing and canoeing.

Useful contacts

Sunderland Tourist Information 0191 553 2000 tourist.info@sunderland.gov.uk

Durham City Tourist Information 0191 384 3720 touristinfo@durhamcity.gov.uk

Bishop Auckland Tourist Information 01388 602 610

Stanhope Tourist Information 01388 527 650 durham.dales.centre@durham.gov.uk

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or about your environment?**

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