



Environment  
Agency

## River factfiles

The Esk 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 partners, we are making your environment cleaner and healthier.

The Environment Agency is making your environment a better place.



Published by:

Environment Agency  
Rivers House  
21 Park Square South  
Leeds LS1 2QG  
Tel: 08708 506 506  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

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The River Esk rises on the North York Moors and is the only major river in Yorkshire that drains directly into the North Sea. This catchment is mainly rural with the river passing through small communities as it makes its way to the sea at Whitby. The main industries are based around tourism, agriculture and mainly livestock farming.

## The Esk catchment

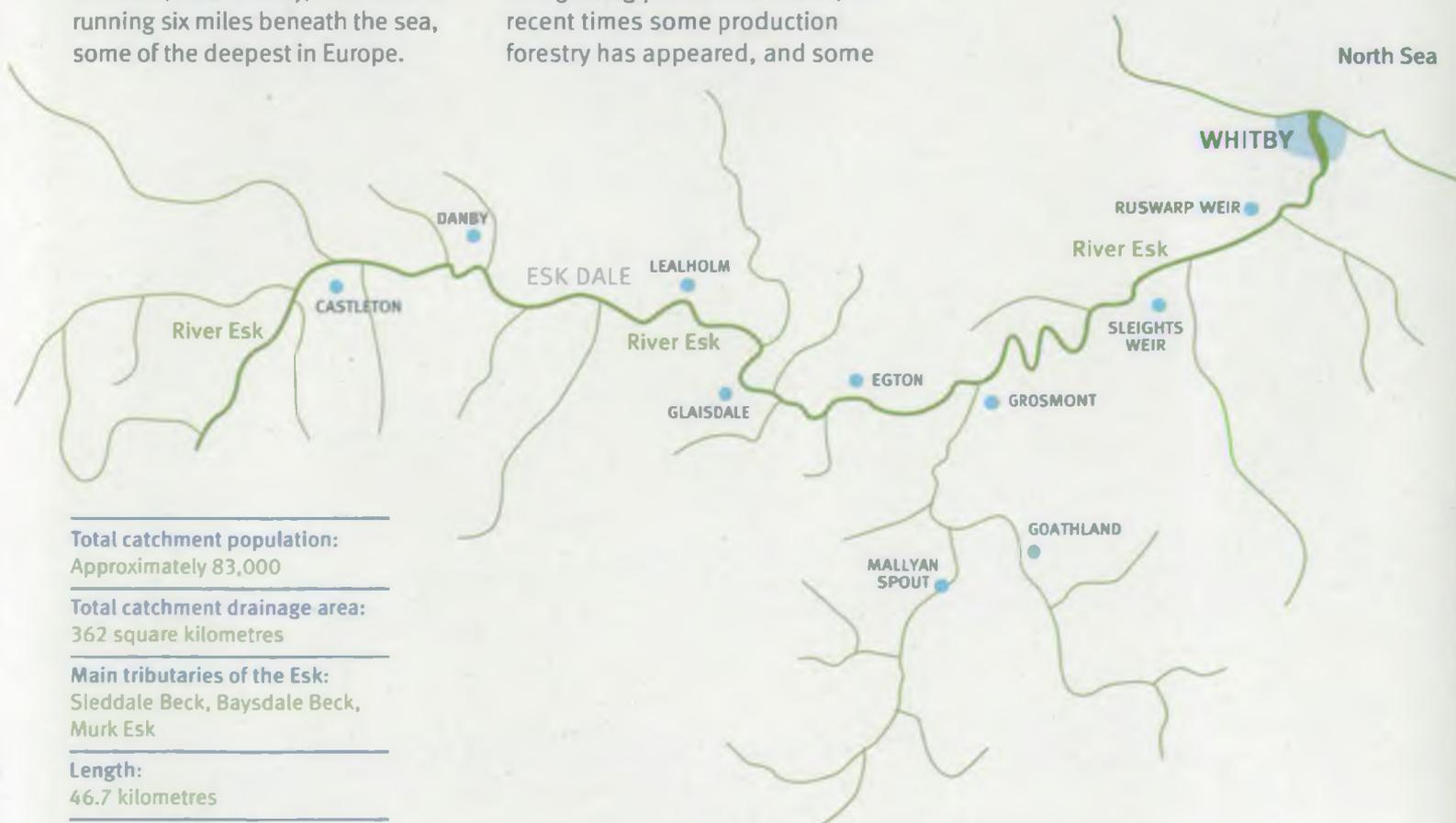
The River Esk has played an important role throughout history. The small towns along the river were at one time of great industrial importance to the north east, with coal mined in the valleys, and iron ore dug from quarries on the surrounding moors.

Today, all that remains are the deserted mine shafts, though potash is mined, near Boulby, with tunnels running six miles beneath the sea, some of the deepest in Europe.

The River Esk is almost wholly contained within the North York Moors National Park boundary. The area is mainly rural, although the landscapes of the region have been heavily modified since the stone age, when woodland was cleared to make way for agriculture.

The catchment is now characterised by large swathes of open moorland and grazing pasture. However, in recent times some production forestry has appeared, and some

pockets of ancient woodland remain on the valley sides. This semi-natural habitat now supports a number of key species of national and international importance, and there are many designated environmental sites.



**Total catchment population:**  
Approximately 83,000

**Total catchment drainage area:**  
362 square kilometres

**Main tributaries of the Esk:**  
Sleddale Beck, Baysdale Beck,  
Murk Esk

**Length:**  
46.7 kilometres

**Highest point in catchment  
(above sea level or Ordnance  
Datum):**  
Between 300 and 400 metres

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# How clean are your rivers?

The waters of the Esk and its tributaries are of excellent quality and suitable for drinking.

The overall rural nature of this river catchment means it has not faced the major problems of pollution from industry that other urban rivers have. But is still at risk and we have to keep a close eye on the potential problems all industries can cause.

Agricultural effluents pose a particular problem in rural areas and can have devastating consequences if they find their way into a watercourse.

Silage liquor, which is 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 problems even in small concentrations. A single pollution incident can cause the deaths of many thousands of fish.

One of the major economies within the area is tourism so the population is very seasonal. But even this can bring its own problems, particularly during the summer months, when a substantial increase in visitor numbers can place considerable strain on undersized rural foul drainage systems.

Many moorland streams can also be affected by natural flushes of acidity, usually caused by heavy rainfall after a long, dry spell onto the dried out peat. These acidic flushes can kill fish. The presence of iron from old mine workings also makes some streams turn orange.

Despite the many pressures on our rivers, the past decade has seen improvements in water quality for most watercourses in the north of England thanks to tougher regulation and investment – and the Esk is no exception to this.

Our officers will continue to work with water companies, the agricultural community, industry and business to make sure the water quality of the Esk is protected and, wherever possible, improved for future generations.

## Water company investment pays off case study

Major investment in the environment by Yorkshire Water since 1990 has had a dramatic effect on the quality of the region'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 Yorkshire 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 thanks to the clean-up of the rivers running through them. This 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.

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](http://www.environment-agency.gov.uk).

## Water quality classification 2004

The inland River Esk and its tributaries,  
67.6km



- Class A – very good 40.5%
- Class B – good 59.5%

**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.

## The River Esk Estuary, 4.7km



- Class A – good 100%

Estuaries are classified as Class A – good, Class B – fair, Class C – poor or Class D – bad, and 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.

“The River Esk is one of the country’s best sea trout rivers, with catch rates among the highest in England and Wales because of the large size of the fish. Added to this, salmon numbers are slowly on the increase too – more good news for Yorkshire’s principal salmon river!”

Andrew Delaney, Environment Agency fisheries officer



## Fisheries

A mark of the purity of these rivers is their ability to support salmon and sea trout. Spawning takes place between November and January, mainly in the 24 kilometres of river upstream of Sleights Weir.

From July onwards salmon and sea trout can be found in significant numbers near the mouth of the estuary. With the rising of each tide, some fish migrate into the estuary and upstream as far as Ruswarp Weir. Here the fish need sufficient flows to go over the weir and down the fish pass to make their way upstream – otherwise they will drop back out to sea again.

Fishing in the tidal stretch is now banned by law but poaching here can still be a problem.

In a bid to tackle the problem, surveillance operations are carried out both day and night by our officers.

Although the Esk is dominated by migratory fish, other species, including eels, minnow and stoneloach, are also found in its waters.

# Wildlife and conservation



Rare and protected species, including otters, water voles and freshwater pearl mussels, 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 Esk catchment lies entirely within the North York Moors National Park, apart from the most downstream sections where it flows through Whitby. It is home to sites of national and international importance for wildlife. Extensive areas of the upper catchment are designated as a Special Area of Conservation. The coastline to the north and south of Whitby is of ecological and geological importance and has been designated as a Heritage Coast site.

The River Esk has remained relatively untouched by people, compared to many other rivers which were heavily engineered for navigation purposes, and so remains in a very natural state. We continue to work with many other organisations to protect and improve the habitats of this valuable catchment and the wildlife they attract.

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**Otters** are found throughout the catchment.

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**Water voles** are present at number of moorland sites in the upper Esk catchment.

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**Dippers** are seen throughout the catchment.

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**Freshwater pearl mussels** can be found in the middle sections.

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**Golden-ringed dragonflies** are found along moorland streams in the upper Esk, close to the River Derwent tributaries.

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**Snipe, lapwing and curlew** are found on low lying farmland next to the Esk along its whole length.

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River and stream valleys containing the native riverside tree, **Alder**, are typical of the Esk catchment.

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# 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 Esk 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 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 and we are working with farming organisations in a bid to wipe out bad practice and reduce damaging 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](http://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, 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.

Within the Esk catchment, the majority of abstraction is from surface water and used for public water supply. The largest reservoir in the area is Scaling Dam, which is used to supply the coastal towns. There is also a large abstraction from the River Esk at Ruswarp, which provides a public water supply for the Whitby area.

Springs within the Esk Valley are also a source of public water supply with several abstractions at Hazel Head. The remaining spring abstractions are for domestic and agricultural use.



## 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.

# What's under your feet?



Throughout its length the Esk flows through a narrow valley cut into the soft shale beds of the **Jurassic rocks of the North York Moors**, which are around 150 to 200 million years old.

During the Ice Age a glacier blocked Eskdale and the impounded waters of the Esk rose to form a lake in the main valley. The level of Lake Eskdale stabilised when its rising waters found an overflow channel to the south through Newtondale, now part of the route of the North York Moors Railway.

# 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 in flood warning systems throughout the Esk catchment as the Esk's steep-sided valleys mean that river levels rise quickly following heavy rainfall. More recent investment has led to new schemes for residents of Leatholm and Ruswarp.

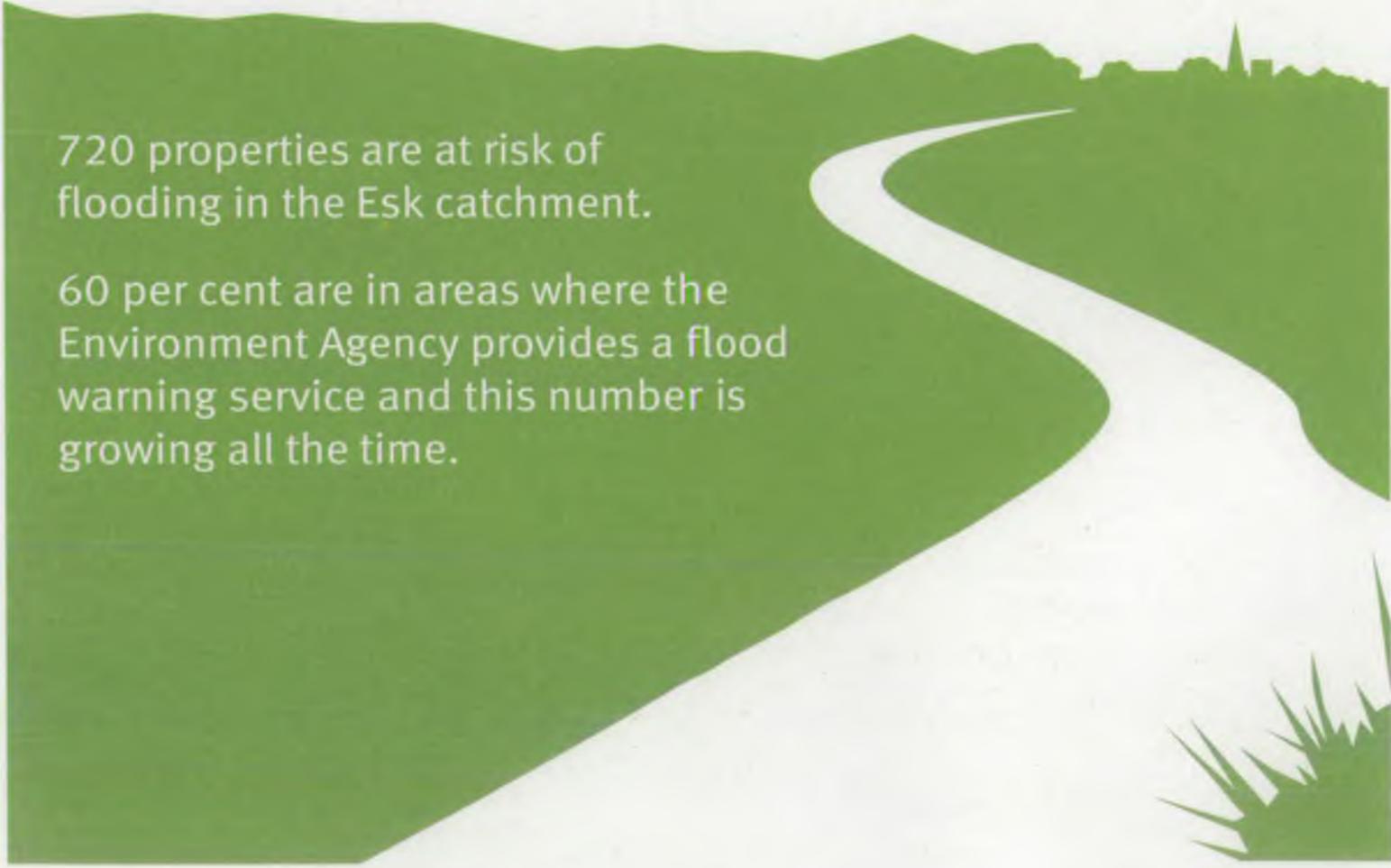
Major floods occurred in 1930 and again in 1931 when a number of road and railway bridges were completely destroyed by the force of the floodwaters and lives were lost during these floods.

On the coast North Sea tidal surges have caused serious flooding of property in Whitby's Inner Harbour, South Bay Scarborough, Robin Hood's Bay, Sandsend, Staithes, Runswick, Skinningrove and parts of Redcar.

We are constantly looking at ways to manage flood risk and alongside this work and investment is the on-going general maintenance of watercourses, which helps in the battle to reduce flood risk by removing debris and other obstructions from the river.

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.



720 properties are at risk of flooding in the Esk catchment.

60 per cent are in areas where the Environment Agency provides a flood warning service and this number is growing all the time.

# Get the most from your rivers



**Walking** – There are numerous walking opportunities in this picturesque river catchment. The Esk Valley Walk follows the Esk from its source to the sea, a total of 27 miles, and the Eskdale Way is an 82 mile, circular walk round the valley.

**Angling** – The Esk is popular for fishermen. For more information get a copy of our North of England Angling Guide by contacting us on 08708 506 506.

**Navigation, sailing and canoeing** – Boating takes place on the non-tidal stretch at Ruswarp and on the tidal Esk there is boating, sailing and canoeing. As the river widens into an estuary at Whitby, there is a large marina and a great deal of boating activity.

## Useful contacts

Danby Tourist Information Centre 01287 660 654

Whitby Tourist Information Centre 01947 602 674

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

**Then call us on**

**08708 506 506** (Mon-Fri 8-6)

**email**

**enquiries@environment-agency.gov.uk**

**or visit our website**

**www.environment-agency.gov.uk**

**incident hotline 0800 80 70 60** (24hrs)

**floodline 0845 988 1188**



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