

Factsheet No.1 in the Environment Agency educational series

1

The Story of a river

- Stages of a river
- The work of a river
- River Landforms
- Man-made features



ENVIRONMENT
AGENCY

In our country there are many different types of scenery. In northern England and Wales, there are very high mountains and deep valleys. In most of southern and eastern England, the land is mostly flat and low-lying.

Although these places look very different, they have all been shaped by rivers. Locally, it is the River Thames that has shaped the land and has a great effect on the way we live.

STAGES OF A RIVER

When it rains, some of the water will sink into the ground, but a lot of it will not. The water will begin to flow across the surface, as it is pulled downhill by gravity. If you watch rain falling against a window, the



water droplets join up before trickling down the window. The same thing happens when rainwater hits the ground. The droplets merge and start to flow downhill in a river channel. The place where the river channel begins is called the source. The source of the River Thames is in the Cotswolds, at a place called Kemble in Gloucestershire.

The Thames, like all rivers, begins as a small stream, which joins with other small streams to form larger and larger streams and finally a river. The small streams that enter a large river are called tributaries. Tributaries collect water from a wide area before they enter the river. The place where a river ends is called the mouth. Most rivers end by flowing into a sea or large lake. The River Thames enters the North Sea through the Thames Estuary, east of London.

THE WORK OF A RIVER

When water moves, it is very powerful. This moving water is able to erode, or wear away solid rock. If the rock is very soft or loose, then the moving water will erode it quickly or simply wash it away.

As gravity pulls water downwards, it will flow quickly down a steep slope, but slowly down a gentle slope. When a river is flowing fast, it erodes quickly making a steep sided valley. But where the river is moving slowly, the valley will be wide and shallow.

The moving water does not only erode the rock, it carries the loose material away. The eroded material is called the load. If the load is made up of large pieces of rock, they roll along the riverbed. They bang into each other and become smooth before slowly breaking up. As they move, the rocks also scrape away at the riverbank and riverbed, slowly eroding it. The largest rocks will only be moved when the water is moving very fast such as happens after heavy rain. The smaller pieces are carried more easily by the river.

When the material becomes very small, it is called silt. This is carried very easily by the river, but it makes the water look brown and dirty. Where the water slows down, the load will sink, collecting on the riverbed. This is called deposition. This might happen on the inside of a river bend or at the end of the river, where it enters the sea.

RIVER LANDFORMS

There are three different things happening in the river - erosion, transportation and deposition. These three processes help to shape our countryside and make special features. Because most of the land in this region is flat, the rivers are not fast flowing, but there are still features to be seen such as a-

1. **Meander** - these are bends in the river. As the water moves quickly round the outside of the bend, it



erodes the riverbank. But as the water moves slowly around the inside of the bend, it deposits material. These two process help to make the bend bigger and bigger.

2. Flood Plain - this is the area of flat land next to the river. If a lot of rain falls, there might be too



much water to fit in the river channel. If this happens, the water spills out and flows over the flat land,

as can be seen in this photograph of the River Thames.



3. Estuary - this is where a river enters the sea, like the Thames Estuary shown here. As the water moves out of the river channel, it loses energy, slows down and deposition happens. This forms large deposits of mud.

MAN-MADE FEATURES

Rivers have been flowing across the land for millions of years. But, since humans appeared, these rivers have been affected more and more. Today, there are almost no rivers left untouched. There are bridges



over the rivers, paths and building next to the rivers, and boats on the rivers. It is one of the roles of the Environment Agency to protect and improve the natural environment of these rivers.

THE ENVIRONMENT AGENCY

The Environment Agency was formed by a merger of the National Rivers Authority with Her Majesty's Inspectorate of Pollution and the Waste Regulation Authorities. This new organisation began operating on 1 April 1996, and has responsibilities for the environmental protection of water, land and air.

ENVIRONMENT AGENCY



017833

MANAGEMENT AND CONTACTS:

The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS12 4UD
Tel: 01454 624 400 Fax: 01454 624 409

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

NORTH EAST

Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

SOUTH WEST

Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

NORTH WEST

Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

THAMES

Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

MIDLANDS

Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

WELSH

Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0LT
Tel: 01222 770 088
Fax: 01222 798 555



ENVIRONMENT AGENCY

NATIONAL LIBRARY &
INFORMATION SERVICE

THAMES REGION

Kings Meadow House, Kings Meadow
Road, Reading RG1 8DQ

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



ENVIRONMENT
AGENCY