

River Landscapes

Rivers, and the landscapes they are in, are constantly changing and evolving.

Many things can affect these, including physical processes (when things happen naturally) and human processes (when people make the changes).

Some changes can happen very slowly, over a number of years. Others can happen more quickly.

What things do you think can change a river and its landscape?



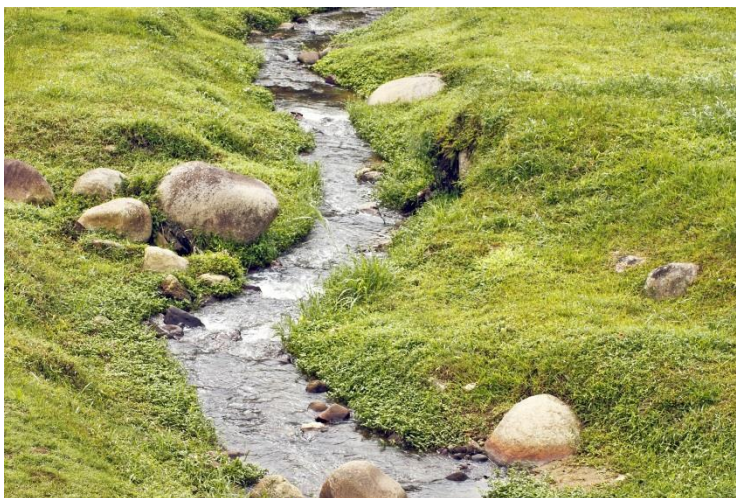
How a river starts

Where a river begins is called the source. It usually starts in a mountainous area or place high above sea level.

It could begin with rainwater, melted ice or snow, or an underground spring.

You can see on this OS map of north Wales how rivers start on higher ground.

In its upper course, the river is smaller but the water has more energy and flows rapidly downhill. In its middle course the river gets larger and slower. In its lower course, where the land is a lot flatter, the water slows right down.



River systems

As the river forms, it is joined by other little streams and brooks called tributaries. The point at which these meet the main river is called a confluence. The whole network is called a river system and the area it covers is called a river basin.

The amount of water in a river changes. Sometimes it is just a trickle and at other times the flow is strong and deep depending on the weather and the seasons. Why do you think this is?



Flooding

The bottom of a river is called a bed and the sides are called banks. After particularly heavy rainfall, there can be too much water in the river system. The large amount of water flowing down the river can be too much for the banks to hold and it comes up over the sides.

We then say a river has 'burst its banks'. In severe cases, water can flood the low-lying area around the river – called a flood plain.



Comparing over time

Have a look at these two Ordnance Survey maps. One is from 1883 and one is from 2014. It shows the same stretch of land, including the river Trent. Can you see how the river and the surrounding area have changed over 100 years? What differences do you notice and what do you think caused them?



Changing rivers

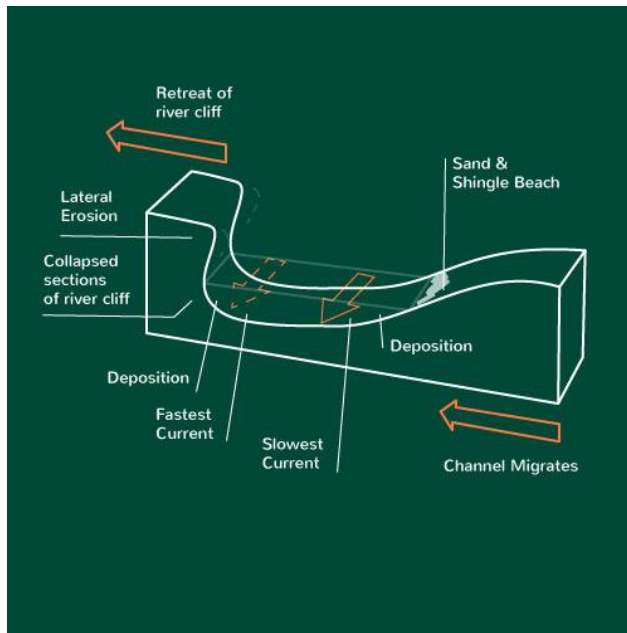
Rivers change over time, altering the landscape through which they flow.

Three physical processes happen when a river moves: **Erosion**, **transportation** and **deposition**.

Water can be a powerful force and **erosion** happens when the water wears away at material (such as soil, stones, sand and vegetation) on the river banks or bed.

Transportation occurs when the water picks up the material and carries it downstream.

When there is not enough flow to carry the material any further, it will be deposited or dropped (**deposition**). The dropped material on a river bed is called sediment.



Meanders

On lower ground, when water isn't as fast flowing, a river is more likely to meander or change course.

This is due to the process of erosion and deposition. As one bank of the river is eroded, deposits are left on the other side.



River valleys

In its upper course, a river will cut a steep, v-shaped valley. As it gets nearer the sea, the river becomes larger and wider and so does the valley it flows through.

As more silt and sediment is carried downstream, this is deposited at the mouth of the river where a delta can be formed.

One of the most spectacular examples of how a river has helped to carve the landscape is the Grand Canyon in the USA.



Settlements

From the earliest times, people have settled by rivers, particularly near the mouth.

What benefits do you think there are to living by a river?

Fresh water to drink

Irrigation for crops

Transporting goods

Fish to eat

Method of travel from one place to another

Providing means of power (from a simple mill grinding grain into flour to big hydro-electric dams).

Cooling towers for industry

How have people changed the river landscape?

Bridges

Canals

Docks

Weirs

Reservoir

Sport/ leisure craft on rivers

Place names

From the earliest times, settlements have developed by rivers, and the names of some villages, towns and cities reflect this.

Mapzone resources

For example, Tynemouth is at the **mouth** of the river **Tyne**

Cambridge is at a crossing point (**bridge**) on the river **Cam**

Ham is the Anglo-Saxon word for 'enclosure within the bend of a river' which has given its name to places such as Dur**ham**.

What other examples of can you see by looking at towns near rivers on this OS map of Great Britain?

What's in a name?

Have a look at this modern map of Durham. Considering the meaning of its name, where do you think the first settlement began?

Now click to reveal the much earlier map to see if you are correct.

What is Durham's grid reference today?