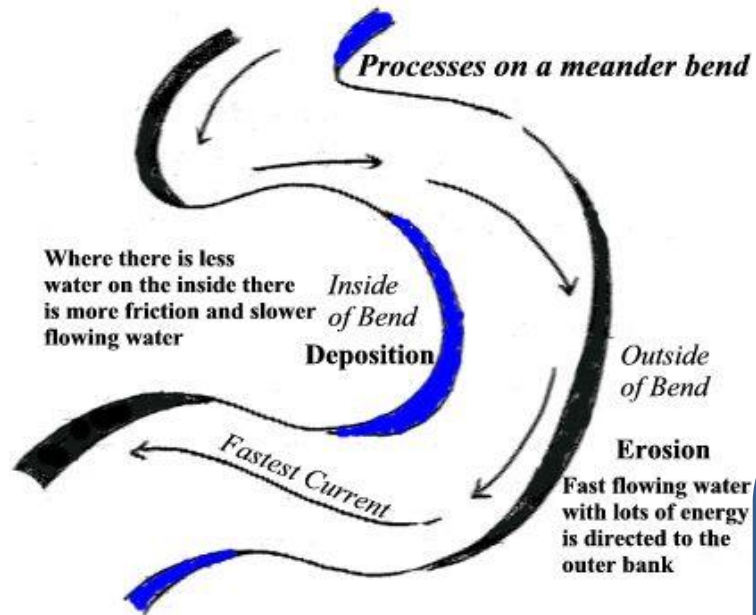
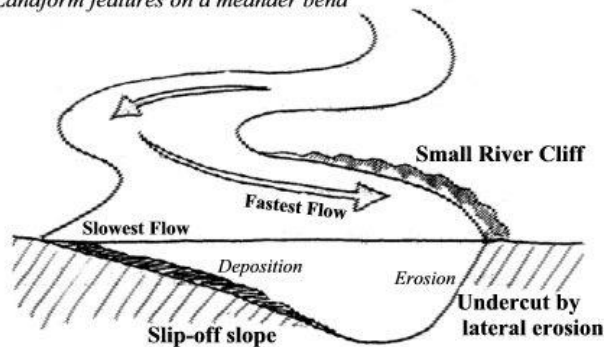


How do meanders form?



Landform features on a meander bend



A meander is asymmetrical in cross-section (see diagram above). It is deeper on the outer bend (due to greater erosion) and shallower on the inside bend (an area of deposition).

Meanders are found in the **middle course** of a river. Here the river channel has become much wider and deeper as the channel has been eroded and the river has been fed by many tributaries upstream. Consequently, despite the gentler gradient the velocity (speed) of flow may be as fast as in the uplands, which means erosion is still taking place. As the river gets bigger it can carry larger amounts of material. The material will be small in size, as larger rocks will have broken up on their way from the mountains. Much of the material will be carried in **suspension** and will erode the river banks through **abrasion (or corrasion)**.

A meander forms when the river channel bends, most of the water is directed to the outside of the bend. This reduces friction and increases the speed of the river at this point. The river therefore has more energy to transport material through **suspension**, which will lead to erosion of the outside bank by **abrasion (or corrasion)**. The bank will be undercut, collapse and retreat to leave a small **river cliff**. The river is now eroding sideways into its banks, rather than downwards, a process called **lateral erosion**. Meanwhile, there is less water on the inside of the bend, there is an increase in friction and a decrease in velocity (speed). As the river loses energy, it **deposits** some of its load to form a **slip-off slope**. Over time meanders gradually change shape and migrate across the floodplain. As they do so meander bends become pronounced due to further lateral erosion and eventually an **ox-bow lake** may form.

Independent Study

See more at:

http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_landforms_rev2.shtml

<http://geobytesgcse.blogspot.co.uk/2006/11/middle-course-of-river-meanders-ox-bow.html>