

Let's look at how rivers can create meanders and oxbow lakes through both erosion and deposition.

In their middle and lower courses, where the gradient is gentler, rivers erode sideways or laterally. This creates sweeping bends called meanders.

A meander is created by both erosion and deposition. The river flows fastest on the outer bend. Lateral erosion cuts into the side, creating a steep bank known as a river cliff.

On the inner bend the current is slower, so sediment is deposited, building a slip-off slope or river beach.

As erosion cuts into the river cliff and deposition builds the slip off slope, the bend becomes more exaggerated.

Over time, meanders grow in size and move across the floodplain.

As the meander grows more curved, floods can cause the river to cut through the neck of the bend.

The river channel then straightens, leaving the loop of the old meander cut off from the river.

This horseshoe shaped feature is called an oxbow lake.

At first the oxbow lake contains water, but over time it may dry up to leave a meander scar.

Meanders and oxbow lakes are features that show how erosion and deposition work together to shape dynamic landscapes.