



# Lower Course - Landforms

Learning Objective:

- **Examine** the *formation* of deposition landforms



## Learning Outcomes:

- **Recall** how deposition occurs on a floodplain
- **Explain** the formation of levees
- **Suggest** what happens where the river meets the sea



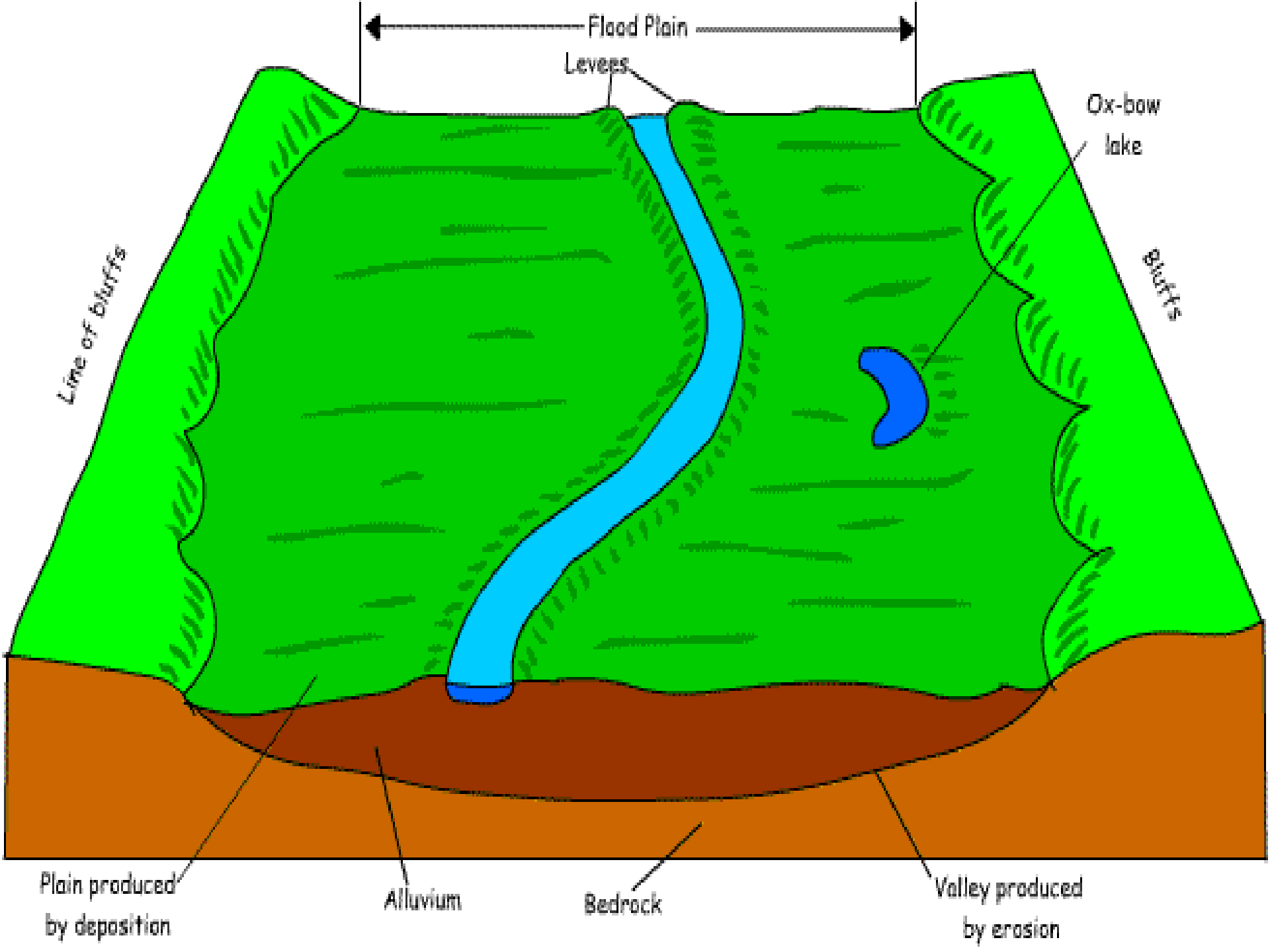
How can you link these images?



# How do rivers deposit?

- **Larger rocks** deposit in the upper course  
– during high flow they can be transported a short distance
- Suspended sediment will be **deposited on the banks** when velocity is slowed by friction
- Most deposition happens at **the river mouth** where there is a **gentle gradient** and interaction with **tides**
- All have a **reduction** in speed!





Flood Plain

Levees

Ox-bow lake

Bluffs

Line of bluffs

Plain produced by deposition

Alluvium

Bedrock

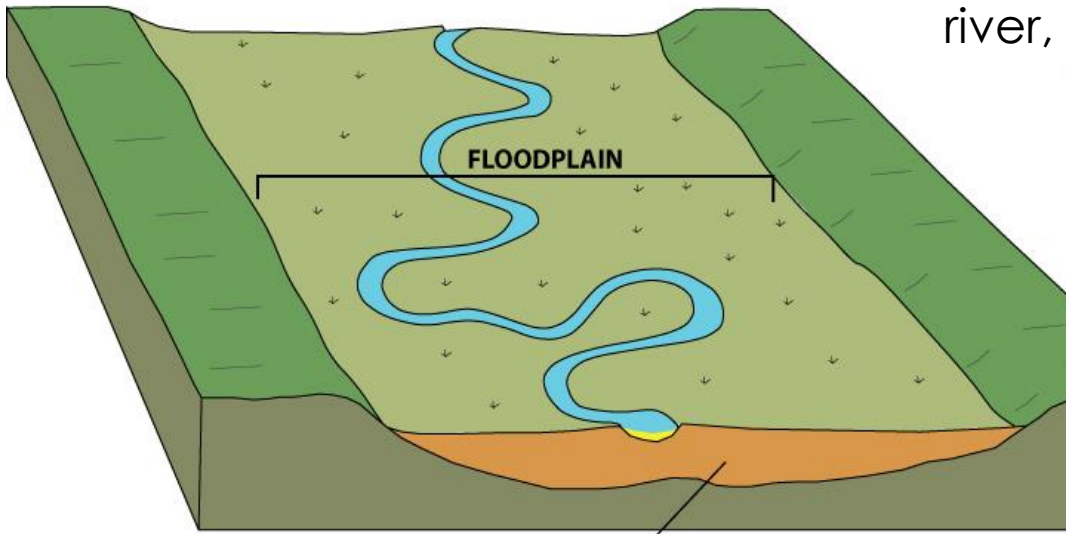
Valley produced by erosion

**River Dordogne, France**

**Wide and Flat Valley with extensive floodplain**



## NORMAL CONDITIONS



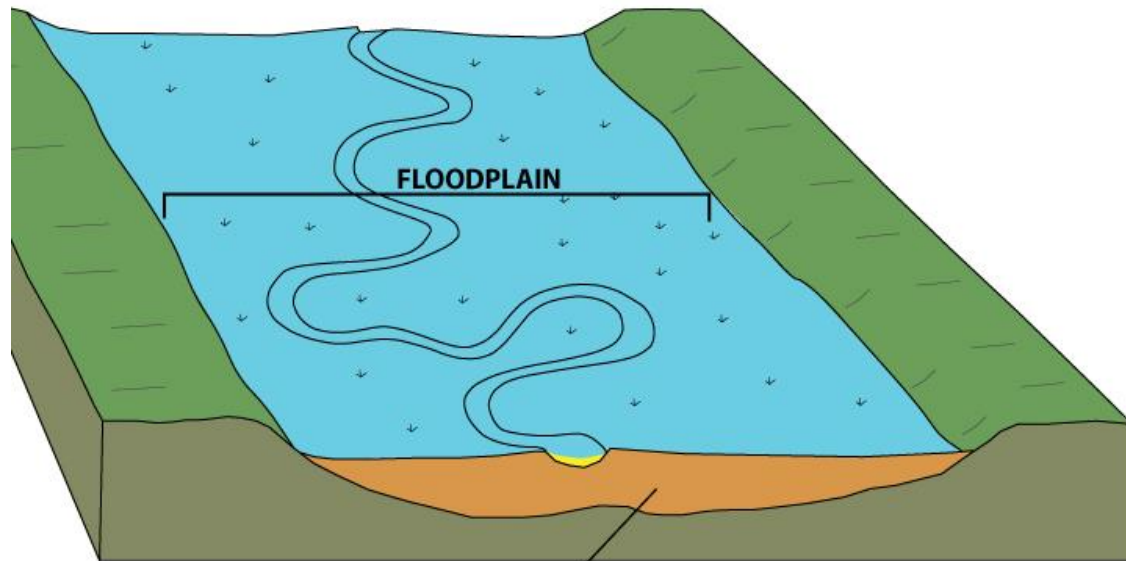
older river channel and floodplain sediments

**Alluvium** – sediments deposited by a river, including silt, clay, sand and gravel

## How are floodplains created?

1: Meanders **migrate** due to **lateral erosion**. They erode the valley side (**bluff**) when they reach the edge of the floodplain

## FLOOD CONDITIONS

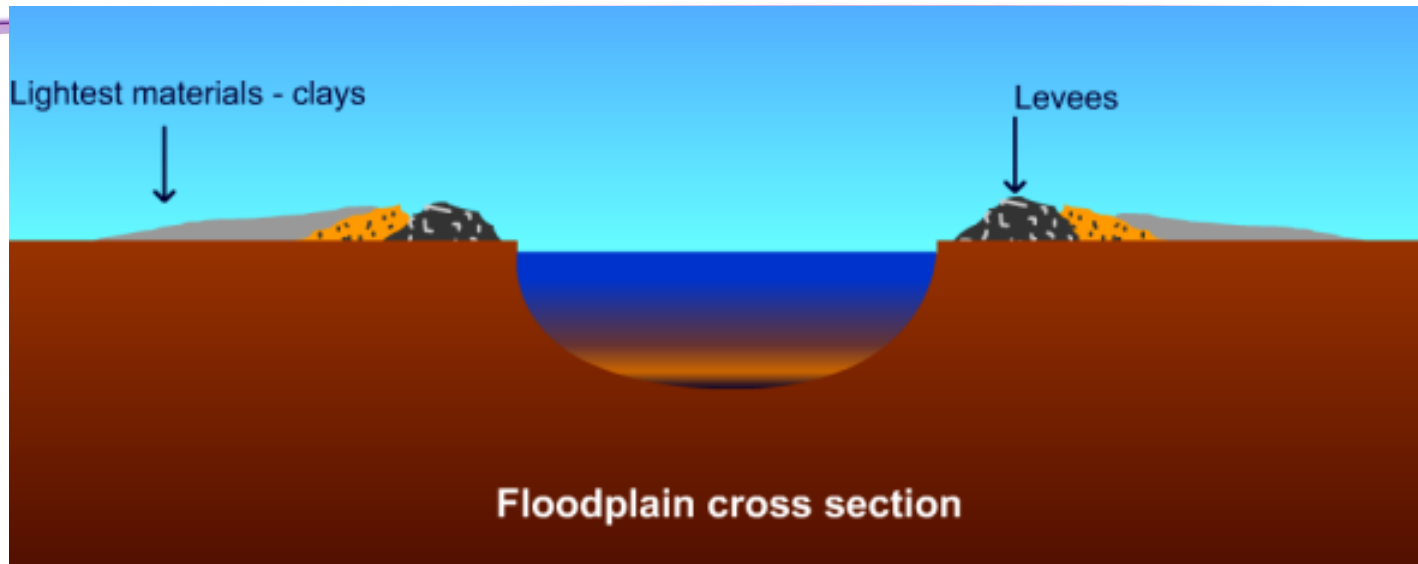


older river channel and floodplain sediments

2: During a **flood**, alluvium is deposited. **Layer upon layer builds** up over time to create a flat floodplain



# Levee formation – draw the diagram and explain

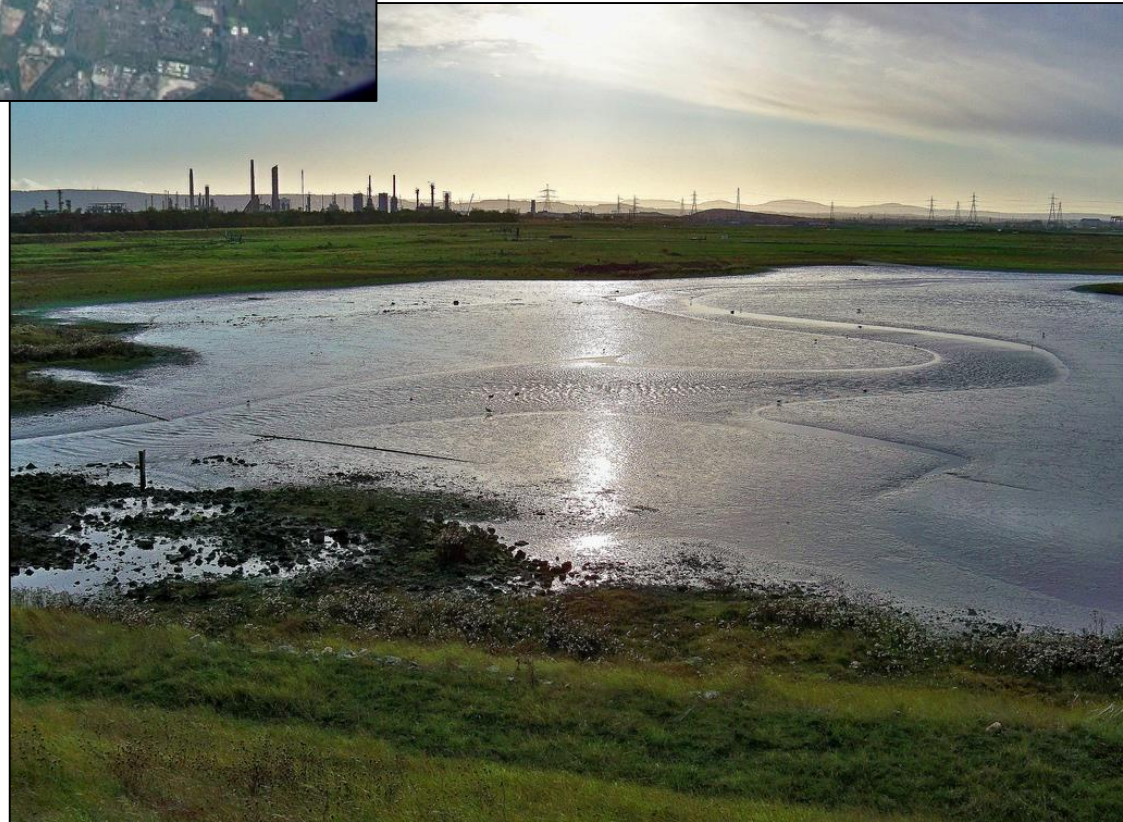


- Levees are **natural embankments** (raised areas) along the edges of a river channel.
- When a river **floods**, eroded material is deposited over the whole flood plain.
- The **coarsest, heaviest** material such as pebble-sized rocks are deposited closest to the river channel because it **gets dropped first** when the river slows down.
- The **finer silts and mud** are deposited **further way** as less energy is needed to carry them.
- Over time, the deposited **material builds up**, creating levees along the edge of the channel.





## River Tees – lower course



**Estuaries** are tidal areas where the river meets the sea.



- They are **transitional zones** between the river and the coast, being affected by waves and river processes.
- **Deposition** is key.
- **High tide** = river water can't reach the sea. The **velocity falls** and sediment deposition occurs. Over time, more mud builds up creating **large mudflats**.
- **Low tide** = the mudflats are exposed. These can develop over time into saltmarshes.

**Explain the formation of these areas in the lower course of the River Tees.**

