Chapter 6. River systems and shapes

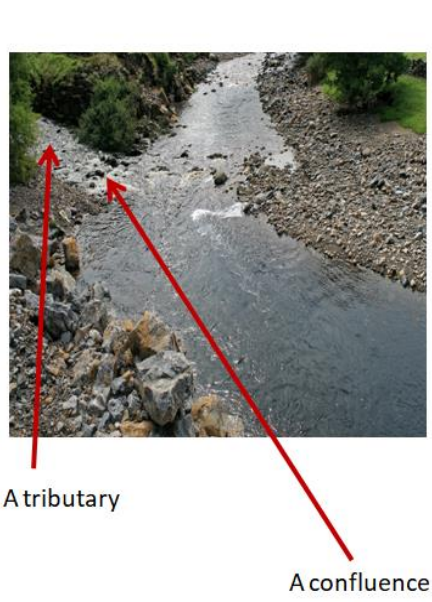
6.1.Definitions

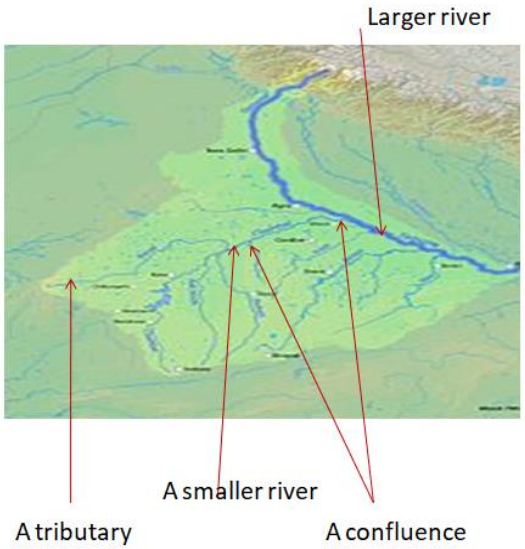
A river system: refers to watercourses, especially rivers, but also to tributaries and confluences such as streams. The whole of a fluvial system characterizes a river basin (Watershed).

Watershed : the area of land from which all surface run-off flows through a sequence of streams (يصرف المياه), rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta.

A river basin is an area of land drained by a river and its tributaries. River basins have typical features, these include: Tributary – a smaller river or stream flowing into a larger river. A confluence – where a river joins another river.

Figure 6.1. A Watershed





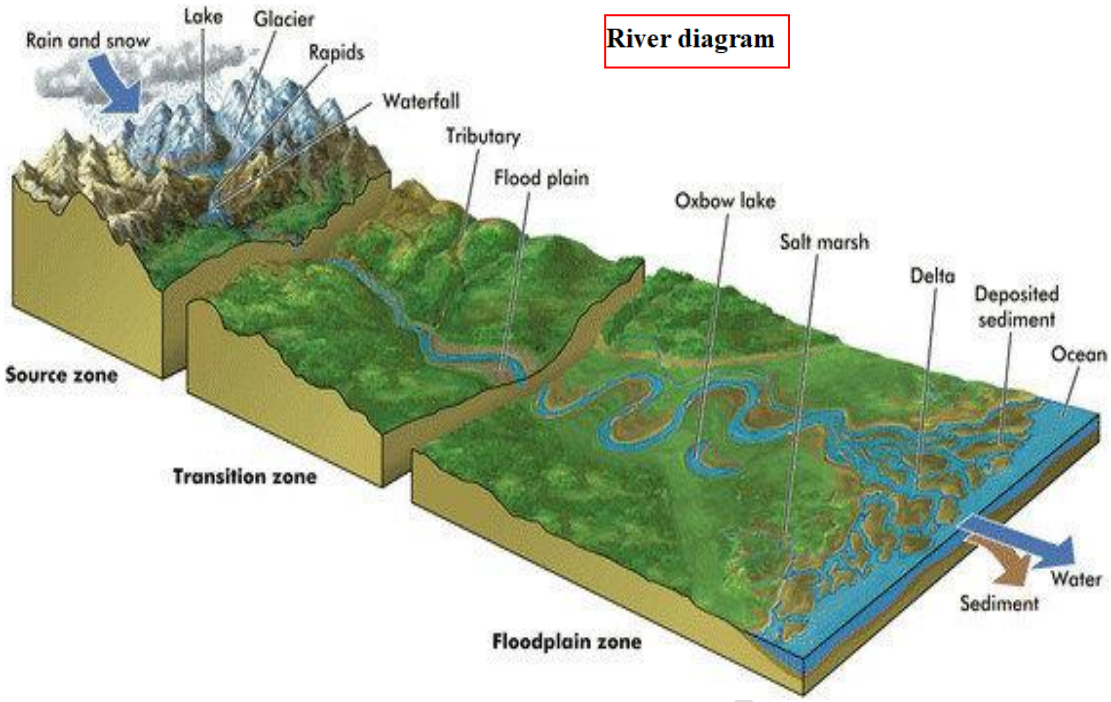


Figure 6.2. River Diagram

Fluvial is a term used in geography and Earth science to refer to the processes associated with rivers and streams and the deposits and landforms created by them

Fluvial dynamics, or fluvial geodynamics, studies the geomorphological evolution of watercourses (the resulting forms are known as fluvial morphology).

The fluvial hydrosystem is a systemic concept relating to a section of watercourse including the minor streambed, the major streambed, the phreatic water (aquifer), within the watershed.

The transport of sediments by waterways is often called “solid transport” or “sedimentary transit.”

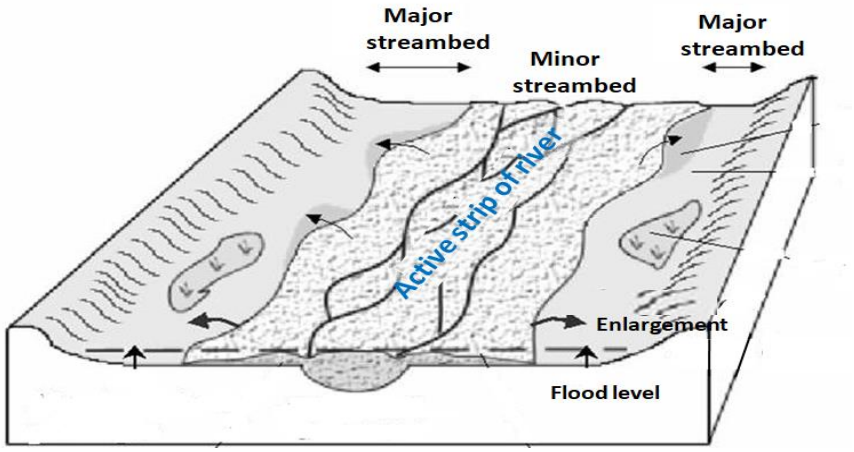


Figure 6.3. Major and Minor streambed

6.2. River styles

- **A torrent** is a mountain watercourse characterized by a steep slope and sometimes episodic flow.

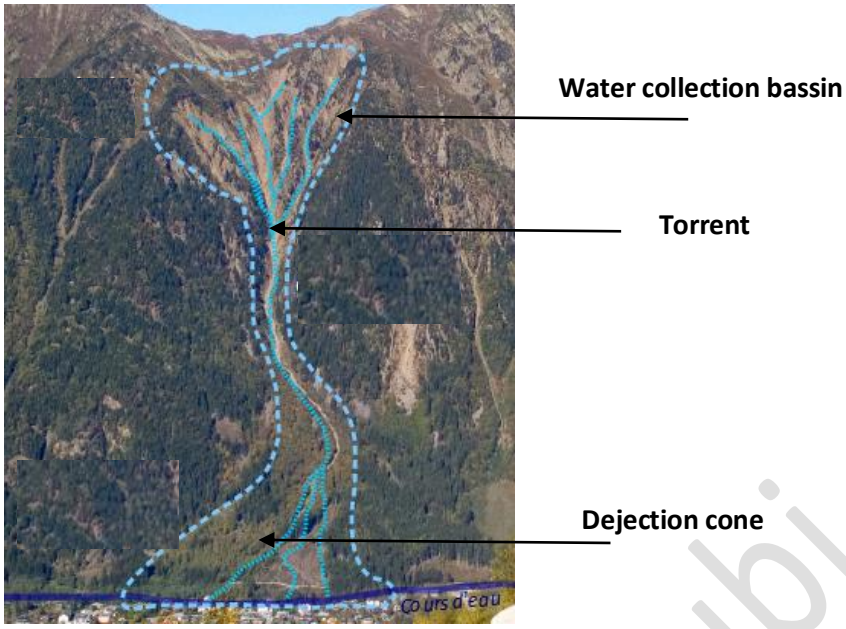


Figure 6.4. A torrent

- **A braided river** (also called braided channel or braided stream) consists of a network of river channels separated by small, often temporary

Figure 6.5. A braided river

- **Divagant Rivers**: the divagate style is an intermediate stage between meandering and braiding. Solid transport decreases, as does the number of braids. Meanders begin to take shape.

Figure 6.6. A Divagant river

- **Meandering rivers**: the river follows a sinuous course. The riverbed is unique, and solid transport is almost exclusively by suspension rather than by bedload.

Figure 6.7. Meandering in the Soummam valley (Béjaia-Algeria)

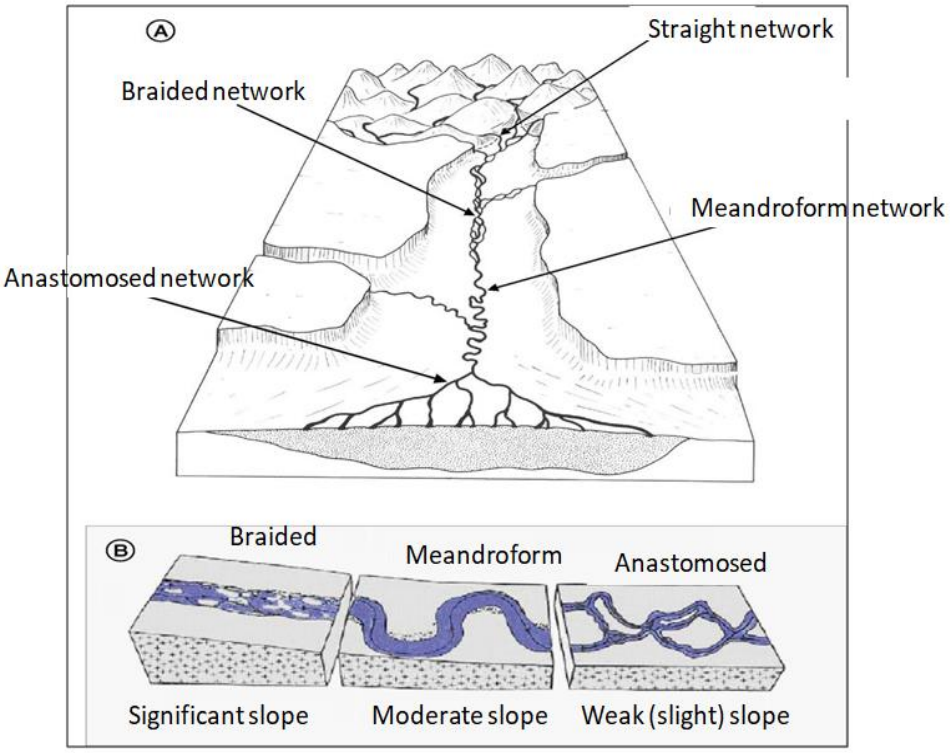


Figure 6.8. River styles

6. 3. The floodplain is generally a flat or gently sloping area adjacent to the river channel that is inundated during floods.

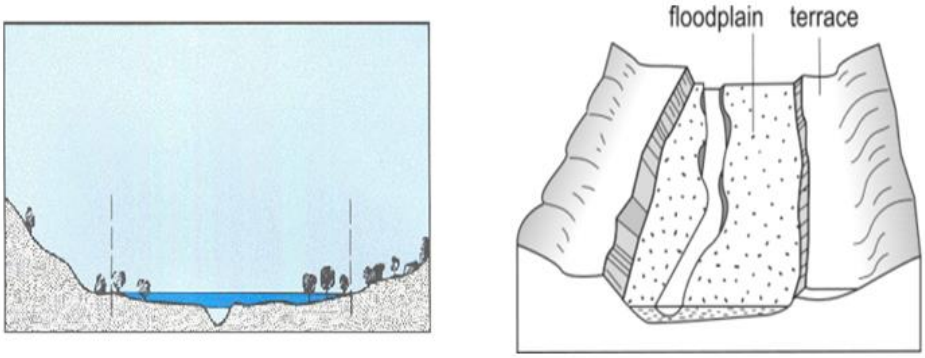


Figure 6.9. The floodplain

6.4. Nested fluvial terraces

Most recent are the lowest, where the river flows, the oldest are the highest

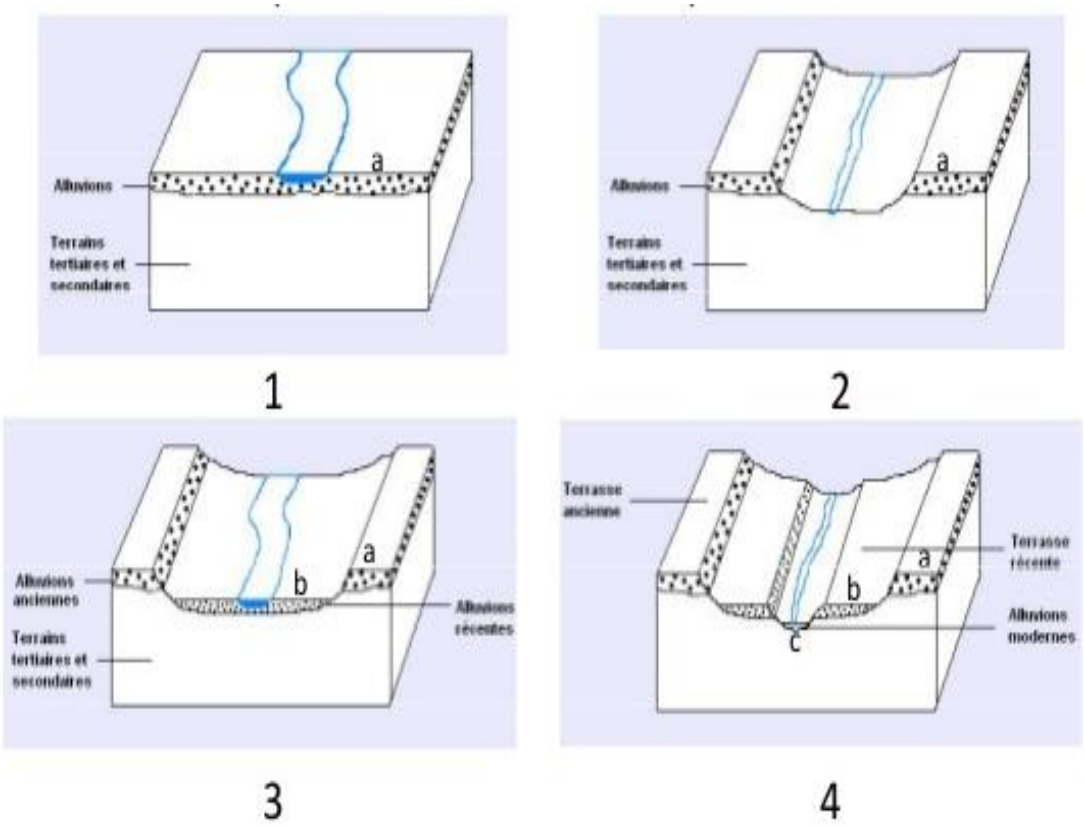


Figure 6.9. Nested fluvial terraces

6. 5. **River delta** is a landform shaped like a triangle, created by the deposition of sediment that is carried by a river and enters slower-moving or stagnant water.

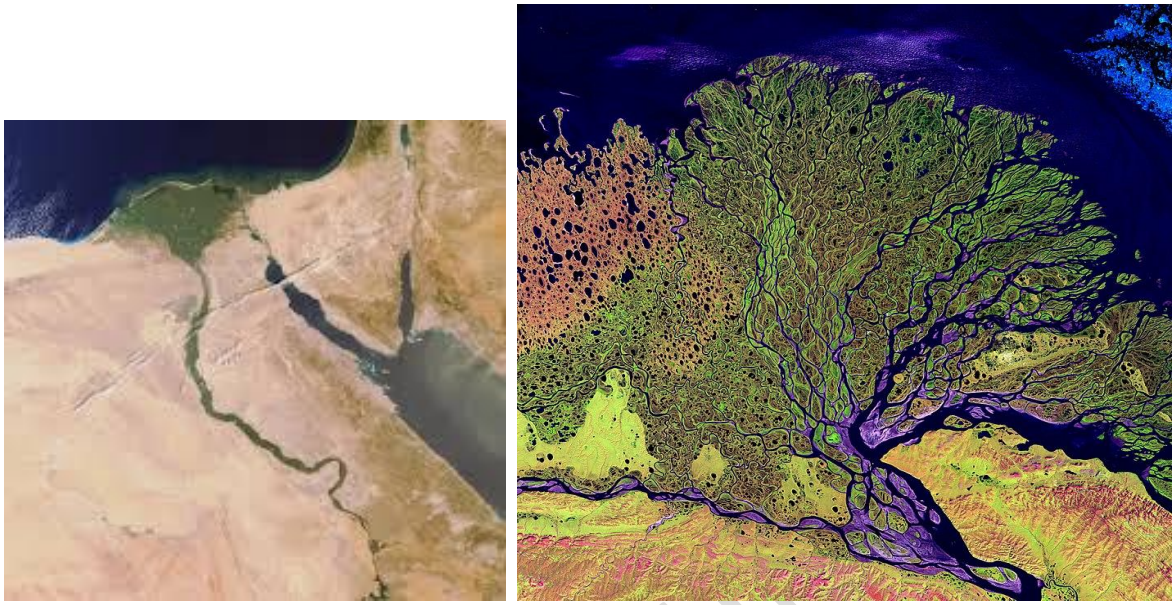


Figure 6.10. River Delta

A delta: is a type of outlet that a river may form where it flows into an ocean, sea or lake.