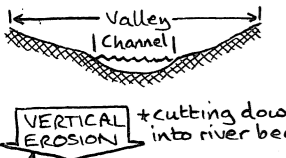


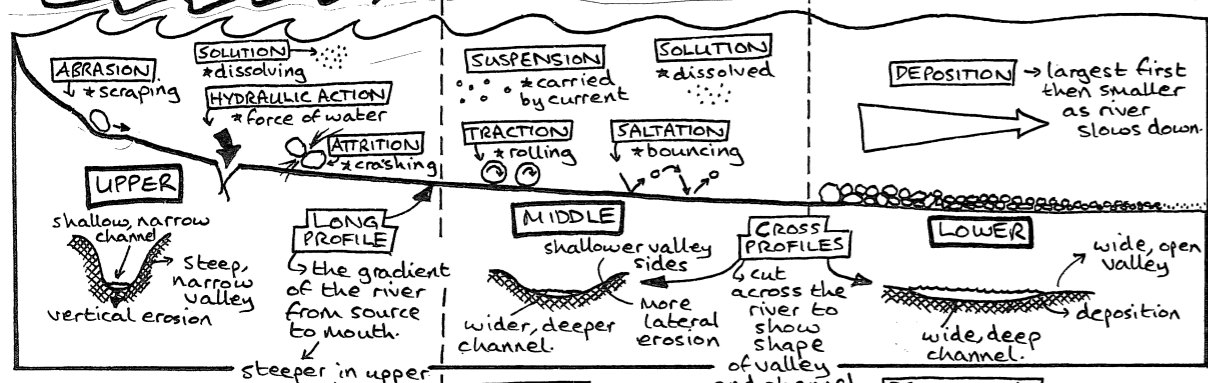
RIVER



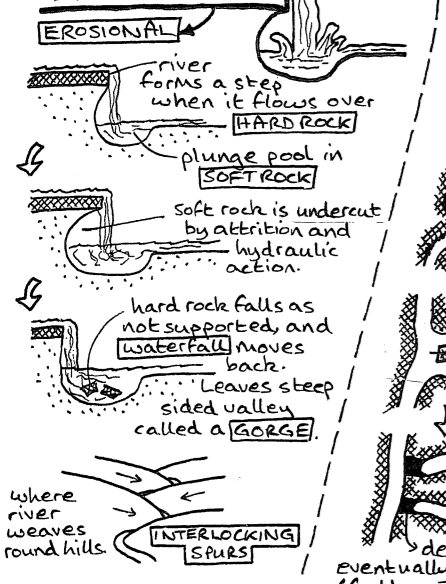
VERTICAL EROSION → cutting down into river bed

LATERAL EROSION → sideways erosion into the river banks.

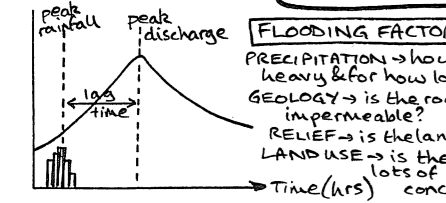
PROCESSES



LANDFORMS



FLOOD HYDROGRAPH



FLOODING FACTORS

PRECIPITATION → how heavy & for how long?

GEOLOGY → is the rock impermeable?

RELIEF → is the land steep?

LAND USE → is there lots of concrete?

Time (hrs) → concrete?

DAMS & RESERVOIRS → huge walls to create artificial lakes. water level can be controlled. X very expensive.

RELIEF CHANNELS → artificial channels to divert round important areas. protects areas & controlled where rejoins. X increased discharge.

STRAIGHTENING → remove meanders. water moves through quickly. X flooding/erosion downstream.

EMBANKMENTS → raised walls along banks. river holds more. X risk of breaking.

HARD ENGINEERING → designed to stop flooding.

MANAGEMENT STRATEGIES

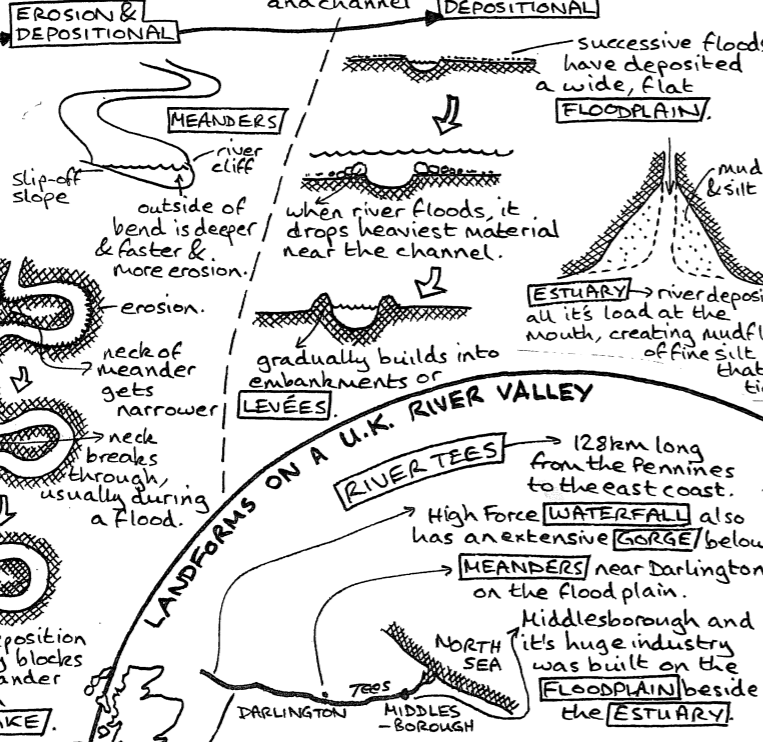
SOFT ENGINEERING → designed to reduce the impacts/effects.

FLOOD WARNINGS & PREPARATION → TV & radio warnings. Emergency planning. people are ready. X false sense of security.

FLOOD PLAIN ZONING → prevent building on high risk areas. reduces risks. X too late for some areas.

PLANTING TREES → plant trees across the drainage basin. absorbs lots of water. X less land for farming.

RIVER RESTORATION → restore natural river system to allow flood plain to flood. less risk downstream. X local flooding.

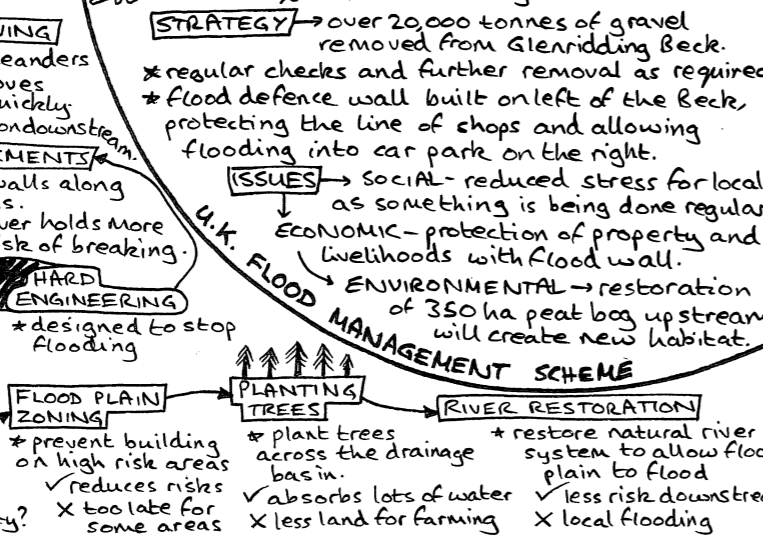


GLENRIDDING, LAKE DISTRICT

WHY MANAGEMENT WAS NEEDED → council were criticised for poor defences following flooding due to Storm Desmond in Dec 2015. £500million damages across Cumbria.

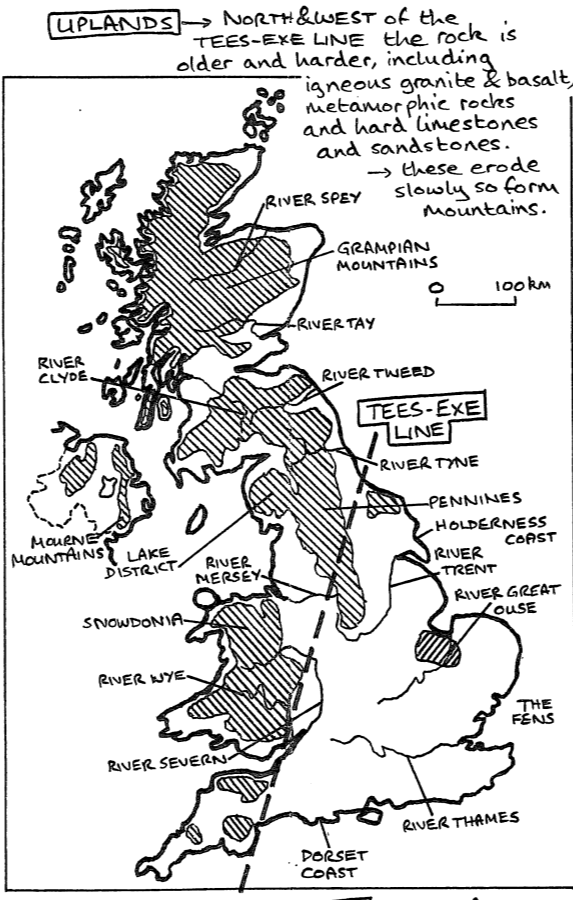
STRATEGY → over 20,000 tonnes of gravel removed from Glenridding Beck. regular checks and further removal as required. flood defence wall built on left of the Beck, protecting the line of shops and allowing flooding into car park on the right.

ISSUES → SOCIAL - reduced stress for locals as something is being done regularly. ECONOMIC - protection of property and livelihoods with flood wall. ENVIRONMENTAL → restoration of 350 ha peat bog up stream will create new habitat.

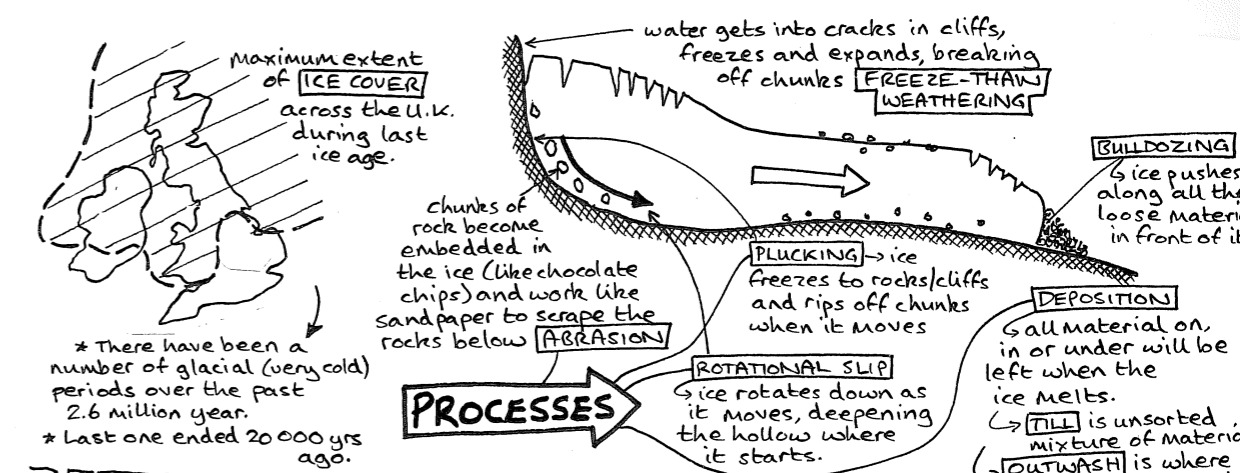


RIVERS in the U.K. tend to flow from upland areas out to sea. many of the major cities are located on the major rivers, e.g. London on the River Thames and Liverpool on the River Mersey.

RELIEF is the height and shape of the land. this is usually controlled by the **GEOLOGY** (the type of rock underneath).



around 80% of population live in lowlands. Most of the towns & cities are also here.



GLACIERS

There have been a number of glacial (very cold) periods over the past 2.6 million years. Last one ended 20,000 yrs ago.

