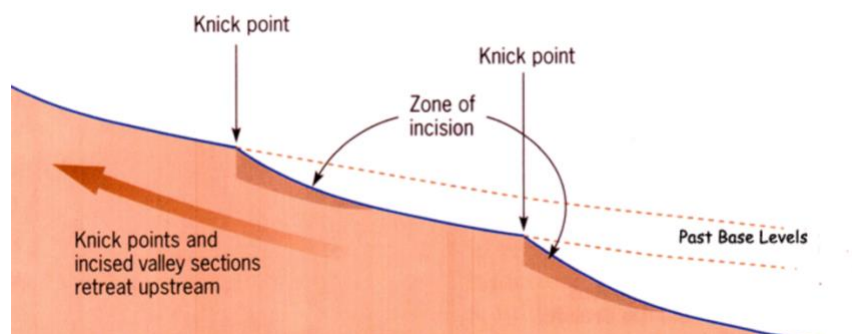


Explain how rivers adjust to a change in base level, with reference to example(s) that you have studied.

(30 marks)

The base level of a river is the lowest level at which river erosion can take place, which is sea level. Changes in sea level over time can be a result of climate or tectonic activity. If the land level rises or the sea level falls, there is a drop in the base level. This will result in the land rising when compared to the sea level. The new river profile will now flow faster to the sea as vertical erosion cuts into the river bed. This process is called rejuvenation. New landforms such as knickpoints and paired terraces are formed as a result.

Waterfalls are usually only found in the youthful stage of a river as the river runs down a steep slope, vertically eroding. Knickpoints are small waterfalls found in the lower course of a river. They occur at the point where the river once entered the sea. Due to isostatic uplift the sea level was lowered and the river had to now travel a longer distance to reach the sea. The river was "*rejuvenated*" as it was given renewed ability to vertically. The rejuvenated river cuts a new profile for itself and the place where the new profile meets the old profile is known as the knickpoint. An example of a knickpoint in Ireland can be seen on the River Erne in Co. Donegal at Kathleen's Falls.



When a former flood plain of the old age stage is uplifted, river rejuvenation affects this region to form the second feature I will discuss which are paired terraces. A new narrow flood plain is cut into the older, wider flood plain as hydraulic action, abrasion and most importantly vertical erosion is renewed. The river erodes the clay, silt and bedrock in its floodplain. The original valley floor is left high above the new floodplain and is seen as steps in the land on either side of the river. These steps are called paired terraces. Sometimes a river can be rejuvenated more than once and so another set of terraces are formed resulting in a river valley with stepped sides. Examples of paired terraces can be seen on the River Barrow in Co. Kilkenny.