

The level of the earth's crust depends on what material is moved from or left on it. Isostasy refers to land level changing while eustasy refers to sea level changing.

Isostatic processes involve the change in sea level due to glacial meltwater or the sinking of the earth's crust.

During the ice age, there was a great weight of ice pushing down on the earth causing it to sink down a little lower than usual. Because of this the sea level can rise slightly.

After the ice age when the ice melted the crust rose back up. This is called isostasy.

River rejuvenation is a process of isostasy. This is when the river is attempting to renew their channel to find the ability to erode again.

The term rejuvenation means to become young again. This is what the river wants to do. It wants to be young and have the energy to erode its channel to its base level, the lowest level to get it to the sea. As the river's base level changes and Isostatic processes take place, landforms are created along the river. Eg. Knickpoints and river terraces.

Knickpoints are small waterfalls or rapids found in the mature or lower stage of the river. This is the point where the river once entered the sea at its old base level. However, as a result of Isostatic uplift the sea level is now lowered and the river had to travel over a longer course to reach the sea. The river was rejuvenated as it was given a new energy and ability to erode vertically into the land. The river then cuts into the land making a new profile for itself. Now, the place with the new profile meets the old profile and is called a Knickpoint. There are examples of knickpoints on many Irish rivers, eg. River Erne county Donegal.

Knickpoints are especially evident in the southern and eastern regions as the sea level once changed here, these knickpoints are now about 150 meters above sea level as sea level was much higher than it is now, eg. The river Barrow

Paired terraces are flat steps on each side of a rejuvenated river valley. They mark the point where a former floodplain lay and are created as the river vertically erodes, making the channel more narrow and deeper. Now, the old floodplain lies way above the level of the river and the river

overtime will have to make a new floodplain to mark its new base level. The original valley floor will now lie higher than the new floodplain giving it a stepped appearance on both sides of the river channel. If a river is rejuvenated more than once there will be more steps. These steps are known as paired terraces. Each set of terraces will usually be matched with Knickpoints. River terraces can be seen on the River Barrow