**Vocabulary: River Erosion**



**Vocabulary**

* Cutbank – a steep or overhanging riverbank on the outside of a *meander*.
	+ Water flows more quickly on the outside of a meander, causing erosion to occur along the cutbank.
	+ Cutbanks (or cut banks) are also known as river cliffs.
* Discharge – the volume of water that flows past a point in a given period of time.
	+ Discharge is usually measured in cubic meters (m3) per second.
	+ For example, a discharge of 155 m3/s means that 155 cubic meters of water flow past a given point each second.
* Erosion – a surface process in which soil, rocks, and other materials are removed and transported to another place.
	+ Erosion can be caused by gravity, water, ice, or wind.
* Flood – an unusually high discharge in a river.
	+ During a flood, parts of the land surrounding the river that are usually dry are covered by water.
* Floodplain – a flat area surrounding a meandering river.
	+ The floodplain consists of sediments deposited by the river.
	+ The floodplain becomes covered by water during a flood. This water deposits new sediments on the floodplain.

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**Two meanders**

* Meander – a wide curve in a river.
	+ Water flows more quickly along the outside of the meander, near the cutbank, than on the inside of the meander near the *point bar*.
	+ Over time, a meander will grow wider as the cutbank erodes and sediments are deposited on the point bar.
* Meandering river – a river that forms many wide curves across a floodplain.
	+ Meandering rivers tend to have very gentle channel slopes and erode side to side rather than downward.
	+ Common features of meandering rivers include cutbanks, point bars, *oxbow lakes*, and floodplains.
	+ *Natural levees* are raised deposits of sediment that form along the banks of meandering rivers. These sediments are deposited during floods.
* Oxbow lake – a horseshoe-shaped body of water formed when a river breaks through the neck of a meander.

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**Formation of an oxbow lake**

* + As a meander widens, part of the land separating the two sides of the meander will become very narrow. (Image A)
	+ When the river erodes through this neck, water will no longer flow through the rest of the meander. A new bank forms that separates the river from the cut-off meander. The old meander is now an oxbow lake. (Images B and C)
* Point bar – a gently sloping deposit of sediments on the inside of a meander curve.
	+ Water flows more slowly on the inside of curves, allowing sediments to be deposited there.
* River speed – a measure of how fast water is flowing through a river channel.
* Riverbank – the side of a river channel.
* Riverbed – the bottom of a river channel.
* Sediments – rock fragments that have been transported to a different location.
	+ Sediments are classified by their grain size:

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| **Sediment type** | **Grain size range (mm)** |
| Clay | Less than 0.004 mm |
| Silt | 0.004 – 0.06 mm |
| Sand | 0.06 mm – 4 mm |
| Pebble | 4 – 64 mm (0.4 – 6.4 cm) |
| Cobble | 64 – 256 mm (6.4 – 25.6 cm) |
| Boulder | Greater than 256 mm (25.6 cm) |

* Slope – the steepness of a line or surface.
	+ The channel slope of a river is defined by how many meters the river channel drops over one horizontal kilometer. For example, a channel slope of 22 m/km means that the channel drops 22 meters every kilometer.
	+ Slope is also called *gradient*.
* Tributary – a smaller stream or river that flows into a larger stream or river.
* Weathering – a process in which rocks at Earth’s surface are gradually broken down into smaller pieces and eventually into soil.