

Coasts [2].

Knowledge Organiser

Coastal Erosion

Coastal erosion is the wearing away of the land by the sea.

Processes of coastal erosion

There are 5 main processes of coastal erosion. These are:

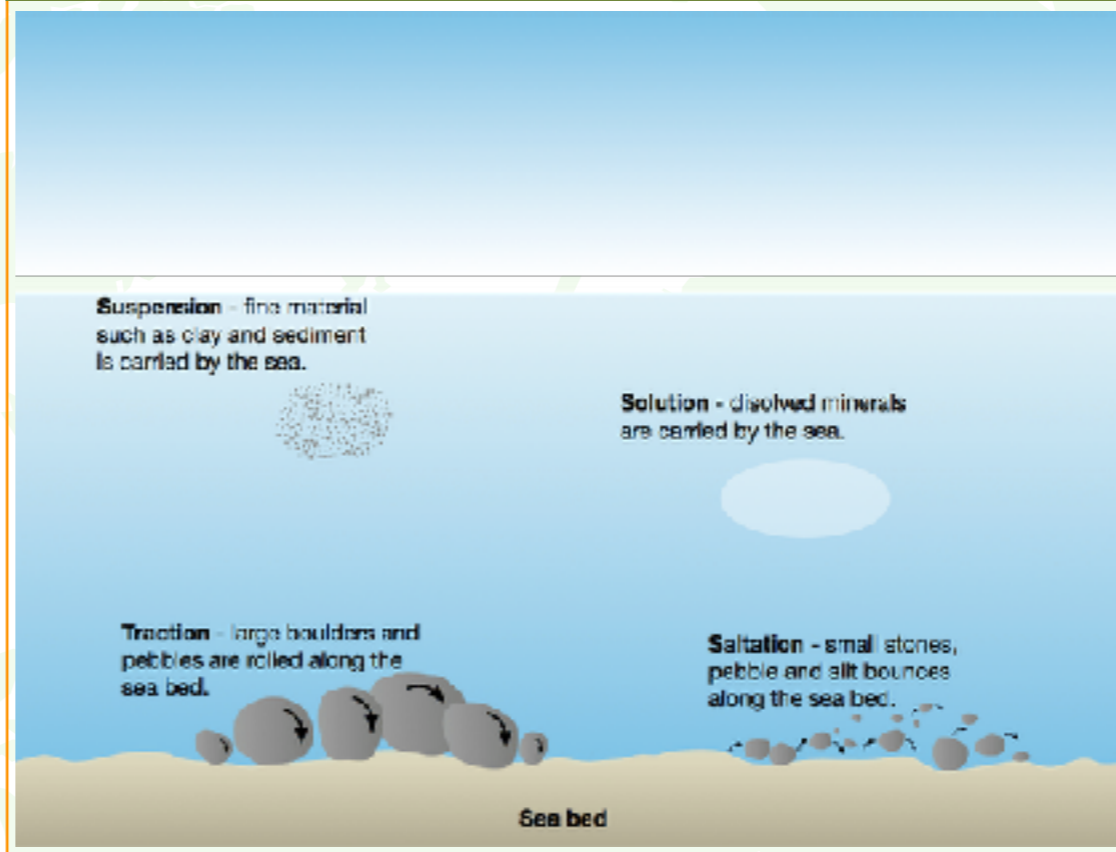
- **Corrasion** is when destructive waves pick up beach material (e.g. pebbles) and hurl them at the base of a cliff. Over time this can loosen cliff material forming a wave-cut notch.
- **Abrasion** occurs as breaking waves, concentrated between the high and low watermarks, which contain sand and larger fragments wear away the base of a cliff or headland. It is commonly known as the sand paper effect. This process is particularly effective in high-energy storm conditions
- When waves hit the base of a cliff air is compressed into cracks. Repeated changes in air pressure are caused by water and air being forced in and out of joints, folds and bedding planes. When the wave retreats the air rushes out of the gap. This causes an explosive effect as pressure is suddenly released. This process is supported further by the weakening effect of weathering. Material breaks off cliffs, sometimes in huge chunks. This process is known as **hydraulic action**.
- **Attrition** is when waves cause rocks and pebbles to bump into each other and break up.
- **Corrosion/solution** is when certain types of cliff erode as a result of weak acids in the sea.

Coastal Erosion

Coastal erosion is greatest when:

- waves have a large fetch e.g. the south-west coast has an 8000 kilometre fetch across the Atlantic Ocean;
- strong winds blow for a long time creating destructive waves;
- an area of coastline has no beach to buffer the waves;
- the cliff material is soft e.g. soft boulder clay along the Holderness Coast means it experiences the highest rate of erosion in Europe;
- cliffs made from rock have many joints;
- a headland sticks out into the sea and waves converge on it (wave refraction).

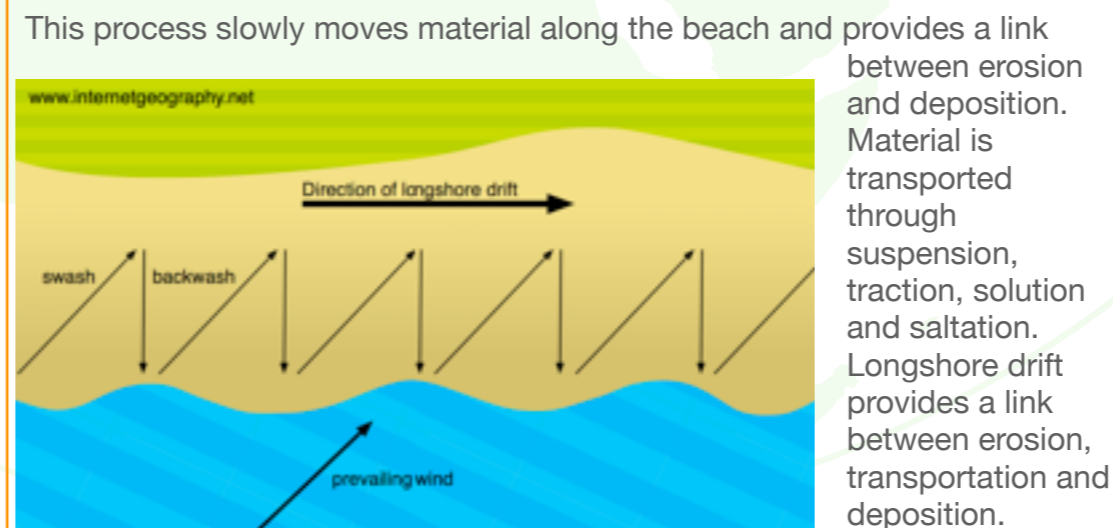
Coastal Transportation



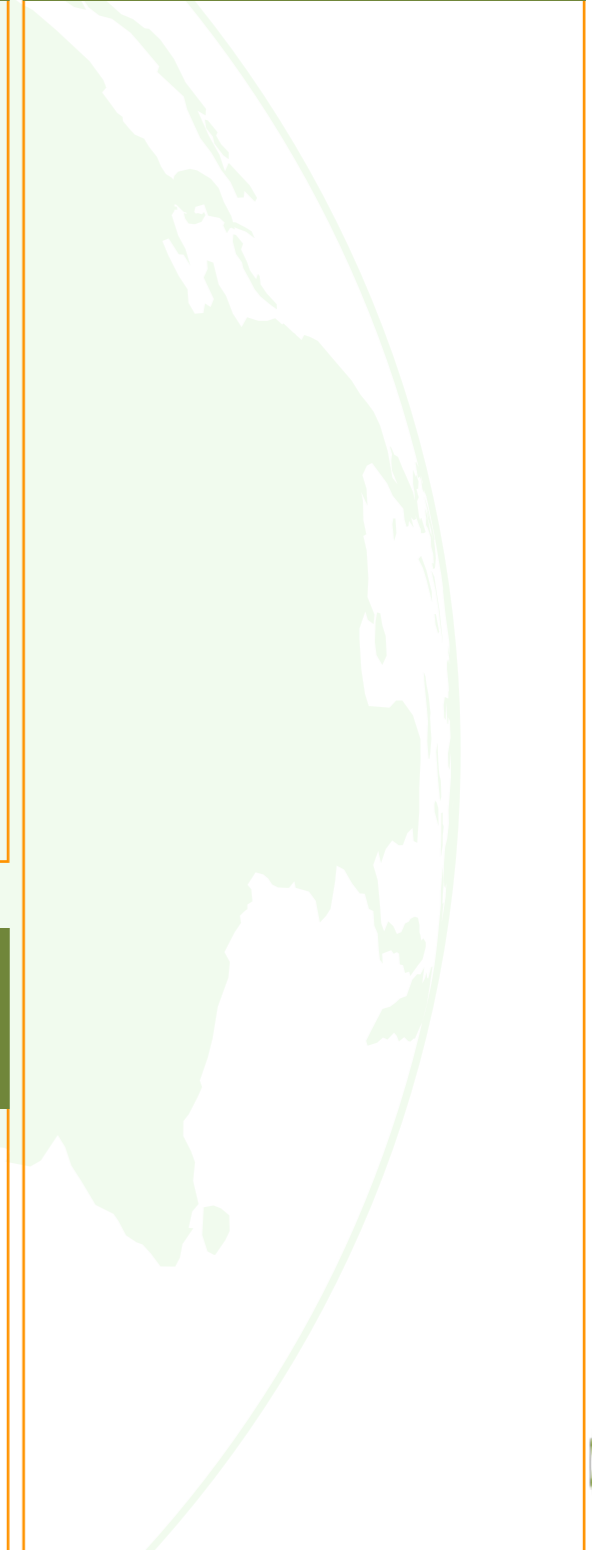
Longshore Drift

Longshore (littoral) drift is the movement of material along the shore by wave action. It happens when:

- waves approach the beach at an angle
- the swash (waves moving up the beach) carries material up and along the beach.
- the backwash (waves moving back down the beach) carries material back down the beach at right angles. This is the result of gravity.



Notes



Check your knowledge.
Take a quiz.

