

1. At the Beach, local, national and international

The coastline is multi-purpose and used by many groups including local residents, business owners, farmers, environmentalists and many more. Erosion takes place along the coast. The UK's coastline is well over 6,000 kilometres long. It varies dramatically and has a number of different rocky habitats, ranging from calm, sheltered coves and rocky beaches to tall, rocky cliffs. Within each of these rocky habitats the conditions are constantly changing, due to the ever-changing tides as well as other environmental factors such as temperature and wind. Rocky shores are formed when waves erode softer rocks, leaving harder rocks exposed. Coasts are continually changing as a result of the movement of the plates that make up Earth's crusts. In the long term, sea levels rise and fall because of this movement. Scientists have also predicted that changes in climate caused by global warming will cause sea levels to rise. An increase in marine pollution is also affecting coasts and their delicate ecosystems. Living by the sea allowed people to trade with travellers from overseas. Coastal communities often have diverse cultures and foods, which reflect the wide variety of peoples that have visited their shores. Unwelcome visitors, such as invaders, may also make their first appearance at coastal areas. For this reason, Britain's coasts have many castles and other military buildings. For hundreds of years these buildings have provided a first line of defence against invasion. Conflict at the coast **occurs between different interest groups**. However, the main conflict is between conservationists and interests groups whose activities threaten marine ecology and biodiversity.

2. Dynamic Coasts – advance and retreat

Reasons why groups of people might be concerned about the coast:

- Erosion may be threatening beaches or coastal settlements.
- People may want to develop tourism in the area or existing tourism could be declining.
- There is a danger of flooding if sea levels rise.
- There could be a problem with sewage and/or pollution.

Durdle Door is one of **Dorset's** most photographed and iconic landmarks. It is part of the Jurassic Coast World Heritage Site and is an extremely popular beauty spot. Three processes operate along the coast, these include; transportation, erosion and deposition.

Sediment is carried by the waves along the coastline. The movement of the material is known as longshore drift. Waves approach the coast at an angle because of the direction of prevailing wind. The swash will carry the material towards the beach at an angle. The backwash then flows back to the sea, down the slope of the beach. The process repeats itself along the coast in the zigzag movement.

There are 4 types of erosion, hydraulic action, abrasion, corrosion and attrition. **hydraulic action** - this is the sheer power of the waves as they smash against the cliff. Air becomes trapped in the cracks in the rock and causes the rock to break apart. **Abrasion** - this is when pebbles grind along a rock platform, much like sandpaper. Over time the rock becomes smooth. **Attrition** - this is when rocks that the sea is carrying knock against each other. They break apart to become smaller and more rounded. Finally, **corrosion** - this is when sea water dissolves certain types of rocks. In the UK, chalk and limestone cliffs are prone to this type of erosion. There are 4 types of **transportation** including; saltation, solution, suspension and traction.

Solution - when minerals in rocks like chalk and limestone are dissolved in sea water and then carried in solution. The load is not visible. **Suspension** - small particles such as silts and clays are suspended in the flow of the water. **Saltation** – where small pieces of shingle or large sand grains are bounced along the sea bed. **Traction** – where pebbles and larger material are rolled along the sea bed.

3 Human Activity and the Environment Agency – Career link

Covering less than one percent of the marine environment, coral reefs are home to a quarter of marine species and are important nursery habitats to edible fish. It is estimated, one billion people depend on the reefs for food. This vital ecosystem and resource are under serious threat from global warming, coastal development, pollution and over-fishing.

4 Coastal Challenges and Solutions – ICT

5 Knowledge and Skills Review

6 Assessment: Presentation: Why are the worlds coastlines important?