



JURASSIC COASTLINE: one coastal landscape - Dorset, south coast England.

LANDFORMS:

Large variety of landforms here as it has bands of hard and soft rock.

Stack: Old Harry's rocks created from a hard-rock chalk headland. Salt Weathering and Carbonation weathering and erosion are wearing rocks down. Biological weathering also is making it smaller.

Arch: Durdle Door. Formed from hard limestone headland. Hydraulic action created a cave, then arch. Being broken down by weathering.

Cove: Lulworth Cove is a small bay formed from softer clay rock behind harder limestone. Softer rock was eroded away creating a bay. Hard rock vulnerable to mass movement, slumps and slides.

Bay: Swanage Bay—made of clay, lots of erosion and longshore drift. Vegetation, stabilising and protect from weathering at the northern end of the bay. Where not stabilised, can be weakened by wet weather to see slumping.

PROCESSES AND CLIMATE

- **TEMPERATURE:** gets warm, dry summers (21 degrees) and mild, wet winters. Salt weathering (Mechanical weathering) due to the warmer temperatures happens. Salt crystals build up in small cracks, breaking rock up due to quick evaporation in the heat.
- **WIND:** it is exposed to wind from the south-west (prevailing winds) that bring storm from the Atlantic Ocean. The waves are destructive and erode the base of cliffs, increasing hydraulic action and abrasion to make mass movement and erosion of the rock more likely (creating landforms)
- **RAINFALL:** can have very wet winters, e.g during storms making the area prone to mass movement (e.g. Storm Frank 2016)

PROCESSES AND GEOLOGY (ROCK TYPE)

- Coastline made of hard and soft rock bands e.g. limestone and chalk (hard) and clay (soft). Varies between concordant and discordant.
- **Soft rock:** easily eroded (hydraulic action and abrasion) making Lulworth Cove
- **Hard rock:** weathered and eroded slowly and stick out forming headlands and stacks like Old Harry's Rocks and Durdle Door
- Chalk and limestone vulnerable to erosion by solution—dissolving rock.
- Weathering takes place slowly, encouraging small changes.

HUMAN ACTIVITY

Coastline is being eroded. Coastal management techniques are being used to protect people over the last 150 years.

- **GROYNES (used at Swanage Bay):** Built in 2005-06: wooden fences at right angles to the sea. Trap material and stop longshore drift, trapping sand, building a bigger beach, protecting the cliffs from erosion. BUT starves areas further down of sediment—increasing erosion down the coastline.
- **SEA WALLS** (used at Swanage Bay): concrete walls reflect wave energy back to sea preventing erosion of the cliffs. BUT it lowers level of the beach as it prevents new material being added by erosion, and the sea can erode under the wall. Cost large amounts in maintenance.
- **BEACH REPLENISHMENT:** Winter 2005/06, sand and shingle dredged Poole Harbour added to Swanage Beach. Costs £5 million to replenish and needs repeating every 20 years. Creates wider beaches which slow waves and protect from erosion.
- **TOURISM:** creates footpath erosion due to walking on coastal paths. Quarrying takes place to remove stone making it vulnerable to chemical weathering and erosion.

One coastal landscape UK

JURASSIC COASTLINE

Distinctive landscapes topic