HASTINGS PIER CHARITY

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Geography of Hastings

Hastings Coast, (HPC014.071)

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Geography of Hastings

The Sovereign reef lies southwest off the Pier and is notable for supporting a diverse range of species including the Thornback ray, Short-snouted seahorse and Oyster. The Royal Sovereign Light Tower can be seen on the horizon and it marks the southern part of the reef. Other offshore features which are also sandstone and mixed sediments and shingles includes the Horse of Willingdon reef, My Lord's Rock and the sandstone platform off the Hastings cliffs.

The bays between Beachy Head and Dungeness provide calmer seas with gentle currents but the more open Channel has strong tidal currents and especially off Dungeness tides can be very high as water from the North Sea meets the English Channel waters.

Weather and sea action combine to erode the Hastings cliffs and there has been an increase in cliff falls in recent years. The cliffs are made up of different strata of clays and sandstones and react differently to heavy rains and severe frosts, making them vulnerable to erosion.

Management has to take account of Long-shore drift and beach protection. The beach absorbs the energy of the waves and also buffers the promenade. Groynes and breakwaters reduce the tendency of the drift to move beach materials westwards. Breakwaters, groynes, jetties and the sea wall are regularly inspected and the breakwaters are replaced or repaired where they become broken by the force of the sea and shingle.

As shingle and sand is displaced eastwards there is a regular need for beach re-profiling using heavy machinery and lorries to bring shingle back to areas where it has been washed away and also to restore the condition and shape of the beach. When this is done, there are effects elsewhere along the coast as stabilisation at Hastings will reduce the amount of shingle and sediment moving towards the east.

The beach is covered by a layer of SHINGLE, stones of different kinds rounded and smoothed by the sea which together form a covering of the

sea coast all along this area of Sussex and Kent. The shingle moves slowly westwards due to the action of LONGSHORE DRIFT. Towards Rye and Dungeness, the shingle forms a special kind of landform, sometimes described as shingle desert. It is one of the largest of its' kind in Western Europe and has its' own communities of wild flowers and insects.

Cliff erosion in Hastings 2016 (HPC014.070)

Cliffs and Rocks

The cliffs of Hastings are a special feature of the WEALD of ENGLAND. A large area of CLAYS and SANDSTONES with a famous history and prehistory. This is the only part of the Weald which reaches our coastline as sea cliff. The sea cliff is made up of strata of different minerals, especially clays and sandstones. Some strata hold more water than others and this means that the weather affects the cliffs. The cliffs are slumping and after heavy rains and frosts there can be some cliff fall. The cliffs are slowly retreating as they erode, causing changes to the outline of the coast.

The cliffs featured in a recent display of Dinosaurs at the Natural History Museum, London. The tools and safety ropes and maps of the fossil hunters was presented in a cabinet. The Weald is a CRETACEOUS formation of the age of DINOSAURS and Iguanodon bones and footprints are still being found around the cliffs and shore. The cliffs are internationally famous for their geology and for the fossil record of the Cretaceous for both animals and plants. Sandstone outcrops along the beaches both east and west of the pier have the remains of Neolithic forest and tree stumps are visible at low tide. The outcrops are the remains of a huge tropical river delta that existed here 138 million years ago.

This sandstone, clay and limestone geology is the border of a feature called the 'Weald-Artois Anticline.' which continues under the sea and reappears on the coast of France.

The relatively calmer waters of the bays have mud and sand bottoms which are home to many marine animals which burrow into the sediment. Elsewhere peat and clay outcrops rock ridges, pools, lagoons, rossworm reefs and mussel beds provide a great ecological diversity complimenting the areas of mud and sand.

The Sea cliffs themselves are important habitats for coastal insects and plants. There is a moist north-westerly element to the flora and fauna but also a southern warm climate element to the coast with rare bees and beetles and other insects and spiders which are adapted to a drier warmer summer climate. Ghyll valleys in the sea cliff support important communities of ferns and bryophytes. Neolithic human communities lived on the coastal cliffs. The Cliffs are very visible from the sea as they are between two bays and so act as a marker and guide to migrating birds as well as seafarers.