



Coastal change

The Isle of Wight has some of the most dramatic and beautiful coastal scenery in the United Kingdom. This coastline, including its estuaries, is undergoing constant change from the effects of waves, tidal currents and the changing climate. Coastal change is nothing new and will continue to happen.

As sea water meets cliffs and shores, it causes sediment or rocks to be broken down and washed out to sea. This is coastal erosion. In some instances, this material may be moved to a different part of the coast and be deposited in large quantities, causing accretion - the opposite of erosion. The sand and shingle that make our beaches are products of erosion and, to remain in balance, we need a continued supply of this material.

Erosion can happen under any conditions but its rate tends to increase when waves are powerful and water levels are high – for instance during storms or in high winds.

Another influence on the development of the coastline has been human interaction, particularly in attempts to stop the effect of erosion or flooding at particular locations. In many cases this has taken place with limited understanding of the consequences of carrying out these works on other locations up and down the coast.

How erosion affects our coast

The way erosion changes different parts of our coast depends largely on the type of rock - in other words, the geology. Locations where the coastline is composed of harder rocks tend to erode more slowly and can form dramatic rock formations over time, for example at the Needles.

Where coastal geology is formed out of softer deposits, such as the cliffs along the south-west coast and surrounding Sandown Bay, erosion processes can be faster and therefore pose more of a risk for human settlements and transport links. Coastal erosion and coastal flooding are natural processes that are often linked to each other and can impact on each other. Erosion of shorelines that separate the sea from flat, low-lying land can increase the potential for coastal flooding.

Coastal erosion is not always gradual and can occur through events such as landslides, where many metres of land may be lost in sudden, dramatic, single events. The coastlines of the Ventnor Undercliff and Cowes to Gurnard are particularly vulnerable to ground movements caused by the reactivation of landslides.

Rates of erosion and the risk of flooding are expected to increase by the end of this century because of increasing storminess and rising sea levels brought about by climate change, as the local geological formations are prone to erosion.



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