



Geological landforms: Dorset and The Isle of Skye

A geological map of Dorset

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The detailed geology of Dorset has of course been mapped and this is the 1:50,000 sheet for the area. Here we have a couple of geological cross sections across part of the map and on the right we have a stratigraphic column. That gives us a general representation of the thickness of the strata with old rocks on the bottom and younger rocks on the top. If we look at the geological map we can see the strong relationships between the geology of the area and the landscape. A few kilometres in land from St Albans Head are these prominent east /west-running rocks shown in green. If I check the key then I can see that these are formations of cretaceous chalk and they overlie these rocks shown in olive green which, according to the key, are the Wealden Formation. These are composed mainly of shales and mudstones that are less resistant to erosion. This results in the chalk forming a prominent East! West-running escarpment.

The greater resistance of the chalk to erosion can be seen in the coast where it forms one of the more ephemeral landforms of the Dorset coast to the east –sea starts, such as those at Old Harry's Rocks. In places on the geological map we can see that the Chalk Escarpment is cut by these dark lines indicating the presence of a fault. This results in an area of weakness in the rocks that decreases the resistance to erosion with the result that we see steep sided valleys cutting down through the escarpment. This one divides Ballard Down from the continuation of the ridge at Godlinson Hill. Along the coast we can see the development of various bays and coves such as Lulworth Cove, Warbarrow Bay, Kimmeridge Bay and Chapman's Pool. How have these bays formed? Well, to answer this let's look at Lulworth Cove. As at St Albans Head, the coastal landform is related to the resistance of the rocks to erosion. In this case, however, there are added ingredients because the rocks are no longer lying horizontally but have been folded. At Lulworth a succession of very steeply dipping Jurassic limestone's runs parallel to the coastline presenting a rampart towards the forces of the sea. Behind this rampart are less resistant cretaceous rocks and behind these the chalk escarpment. Over time the less resistant rocks were eroded either by the action of streams or by the sea breaching the rampart of limestone. Once breached the less resistant rocks are easily eroded. Well I hope that's whetted your appetite to learn more about the geology of the Dorset coast. You'll find you can examine much of it with the aid of the 10 mile map.