



Compton Cliffs and Hazardous Hanover!



Introducing Compton

Welcome to Compton Bay, located in the south-west of the Isle of Wight. This is the Island's most famous surf spot, and there is a reason for this.

The coastline faces the prevailing south-west winds and the long distance of sea over which the wind blows (the fetch) creates good surfing waves! However, these same waves that the surfers seek out are also responsible for some of the fastest rates of erosion on the Island and, indeed, the UK.

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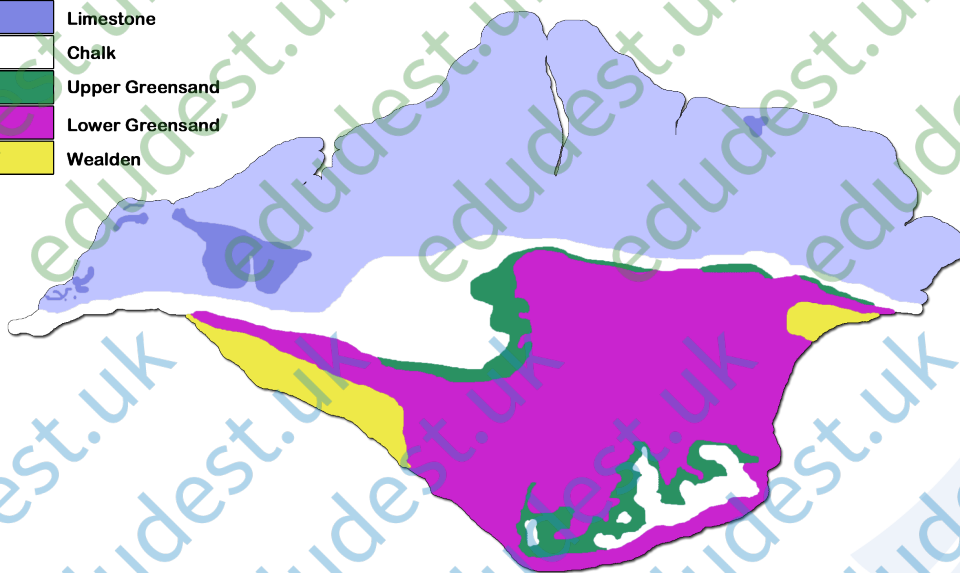
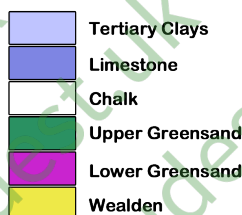
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Then, in the foreground are the Greensand and Wealden sands which make up Compton Bay; these are far 'softer' and less resistant to erosion and the cliffs here are highly unstable.

The map below shows the basic geological structure of the Island; on it you can see the rocks visible in the picture above.



Cliff collapse!

Marine erosion at the foot of the cliff combined with sub-aerial processes of weathering and erosion acting on the face and tops of the cliffs here leads to **mass movement**.

Mass movement is the down-slope movement of weathered material under the force of gravity, and it is more likely to occur on soft-rock coastlines where resistance to erosion is low and exposure is high.

The cliffs at Compton are the perfect recipe!

Rockfalls

Rockfalls occur on steep cliff faces – rock particles and blocks detach along joints and fall to the bottom of the cliff. **Rotational slides/slumping** occurs in weak geologies where material slides down a distinctive curve-plane. It often follows heavy or persistent rainfall causing waterlogging. **Mudslides** occur when accumulated debris at the base of a slump absorbs water and slides slowly downslope where it forms a 'lobe' which is gradually washed away by the sea.

Activity: Evidence enquiry...

Walk a little way up and down along the beach and look closely at the cliffs. Can you find evidence of the following?

1. **Biological weathering** (this is where plants and animals help to break up the rocks by their 'actions')

2. Rockfalls

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4. Mudslides



Activity: Collapsing Car Park!

The photo shows the car park slowly collapsing into the sea...

Imagine that it has just happened (it actually occurred during the February 2014 storms). Write a newspaper headline to go with the picture:

Fossils and Footprints!

The Isle of Wight is the richest source of dinosaur remains in Europe, and the best place to go hunting for fossils and footprints is **Compton Bay**.

About 125 million years ago, dinosaurs roamed the muddy lagoons that existed along this coast, and they left their footprints in the mud. When they died, their bones became **fossilised** in the sediments that now make up the **sedimentary rocks** of the cliffs.

Rapid rates of **erosion** of the soft cliffs along this stretch of coastline means that buried dinosaur remains fall from them on a regular basis. More than 20 different types of dinosaur remains have been discovered here.

Activity: Dinosaur detectives!

What will you find? See if you can find any of the following:



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Black and shiny fossil bones

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Dinosaur teeth



'Hello' to Hanover...

A wave-cut-platform can be seen at low tide at Hanover Point, at the eastern end of Compton Bay (pictured).



Wave-cut-platforms are evidence of cliff retreat. They form when waves attacking the base of the cliff form a **wave-cut-notch**.

As the notch gets larger, the cliff is undermined and weakened and the rock above the notch eventually collapses.

The process repeats again and again and, over time, a platform of gently sloping rock is left at the base of the cliff, exposed at low tide; this is a **wave-cut-platform**.

Habitats

The rocky ledges of the wave-cut-platform here provide a diverse range of intertidal habitats such as rocky reefs which support diverse red algae communities and kelp beds.

The whole stretch sits within the South Wight Maritime SAC (Special Area of Conservation) and the Compton Chine to Steephill Cove SSSI (Site of Special Scientific Interest). It is recognised for its conservation value and, as such, is protected from activities and developments that may adversely affect it.

But also... hazards...

The rocky ledges on this stretch of coastline are a bit of a ship's graveyard. Many a ship has floundered in stormy seas and met their end on these rocky shores.

At Compton Bay, at extremely low tides, the water is so low that the decaying wreckage of SS Carbon which ran

aground on the ledges here in 1947 can be seen. Built in 1896, the 75.5 foot SS Carbon was an Admiralty steam tug

came to a

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mercy of the sea. She sits in 4 metres of water, but at exceptionally low tides you can walk right out to her decaying skeleton.



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The picture above shows the Thimble visible at low tide.

Activity: Low water wander...

Take a walk at low tide (being careful on the slippery rocks and watching the tide so you don't get cut off!). See what you can find amongst the rocky reefs and ledges off Hanover Point.

Before it was also claimed by the sea, it would have been possible to walk out to the 'Thimble' at very low tide too. The Thimble was a stone marker built off the coast out of concrete filled sandbags in 1911. The aim of the thimble was to act as a safety marker to ensure that shells fired from Fort Redoubt at Freshwater Bay were fired south of the marker and not towards the land, where some had previously been fired in poor visibility. However, the February 2014 storms that caused the car park to collapse also caused the Thimble to finally be knocked down.