



Feature Spotting at Freshwater!

Welcome to Freshwater...

Freshwater Bay is a small cove on the south coast of the Isle of Wight. You are going to be finding out about:

- ✓ The **physical geography** of Freshwater Bay: headlands and bays, and the formation of caves, arches and stacks
- ✓ **Human geography** of Freshwater Bay: What are the human characteristics?
- ✓ Interactions between the human and physical geography; flood risk etc.



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For starters...

Find a good place to sit and look at Freshwater Bay. Write down (in the table below) **3 physical** and **3 human** features of the Bay.

Physical Features	Human Features

Hard headlands and cushy coves...

Looking at Freshwater Bay, you will notice that, either side, two areas of rock 'stick out' into the sea; these are known as **headlands**.

Freshwater Bay is a small low-lying semi-circular bay or cove, which is surrounded by high chalk cliffs forming resistant headlands. But, resistant to what?...

...**Erosion** of course! But what is erosion? Circle **all** of the correct answers below:

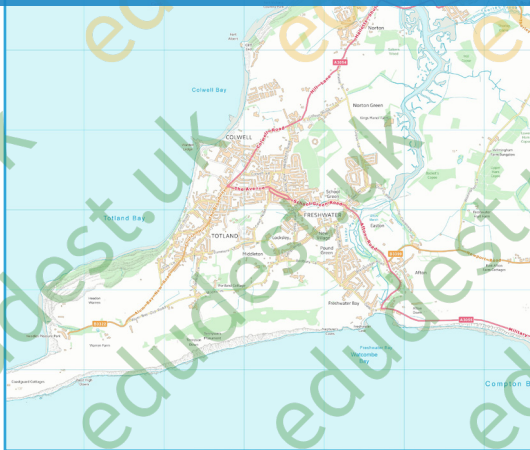
- ▶ A physical process in geography
- ▶ A process that forms certain landforms like stacks
- ▶ The transport of sediment in the water
- ▶ The wearing away of rock
- ▶ A process that moves sediment along the coast in a zig-zag pattern.

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erosion, so they remain sticking out.

The other thing that has contributed to the development of the Bay has been the River Western Yar. Study the map, left.

Once upon a time, the river was much larger and literally sliced the Island in two, creating a separate mini-island in the west; you had to get a boat across it before the bridges were built!

This large river has eroded down into the rock beneath to create a low-lying valley, which helped the sea to encroach inland to form a bay.

Stags and mermaids...

'You what?!' I hear you cry.... Well, notice those two spikey rocks on their own in the sea? That's what they are called; Stag Rock (on the right) and Mermaid Rock (on the left).

They are a geographical feature called a **stack**.



Stacks form on headlands, which jut out into the sea and are exposed to the full force of erosion.

Erosion attacks and widens **cracks** in the rock to form small **caves**. These caves would gradually enlarge and cut all the way through to the other side of the headland to form an **arch**.

Over time, the roof of the arch becomes weaker and weaker and eventually collapses, and all that is left is an isolated pillar of rock – a **stack**!

Activity: Find a good place to sit and make a simple sketch of the Bay.

Add labels to describe the key physical features, and **annotate** to explain how they formed.

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Beings in the Bay...

Back in the day, human beings decided they rather liked Freshwater Bay; there is evidence of a Roman harbour here, and a fort was built to stop the French landing here (can you see the steps up the cliff leading to it?).

Smugglers once used the caves in the chalk cliffs to land and stash their bounty. A whole host of famous people have lived or visited; renowned scientist, Robert Hooke (Hooke's law of elasticity!) was born here, and Alfred Lord Tennyson, a famous English poet and writer, lived here (you may see the monument on Tennyson Down above the Bay).

Activity: The Bay today...

Take a walk around and mark on the different **land-uses** that you see. Use your completed map to summarise what you think is the main **function** of Freshwater Bay today.

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Flood Alert!

This location is highly vulnerable to the south-west winds. The waves can be extremely powerful and storms regularly throw shingle up onto the promenade. Erosion rates here are predicted to increase steadily, especially as sea levels rise. The low-lying river valley behind the bay is at risk of coastal flooding.



Activity: How are humans trying to manage the physical processes here to reduce the risk of coastal erosion and flooding? Look for these types of management and try to explain how each one works.

