

Coasts [3].

Knowledge Organiser

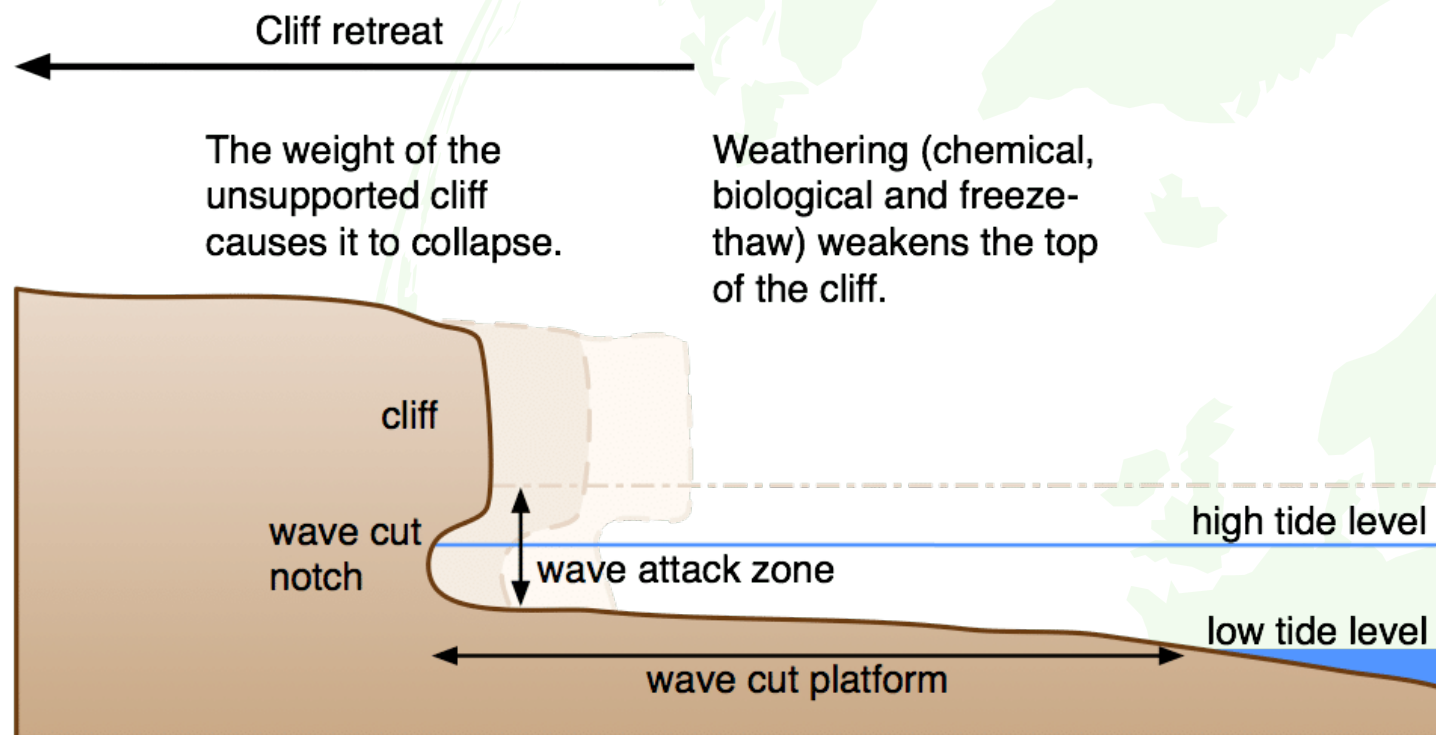
What is a wave cut platform?

A wave-cut platform is a wide, gently sloping surface found at the base of the cliff and extends into the sea.

How is a wave cut platform formed?

A wave-cut platform is formed when:

- The sea attacks a weakness in the base of the cliff. For example, this could be a joint in chalk;
- A wave-cut notch is created by erosional processes such as hydraulic action and abrasion;
- As the notch becomes larger the cliff becomes unstable and collapses as the result of gravity.
- The cliff retreats inland.
- The material from the collapsed cliff face is eroded and transported away. This leaves a wave-cut platform.
- The process repeats over time.

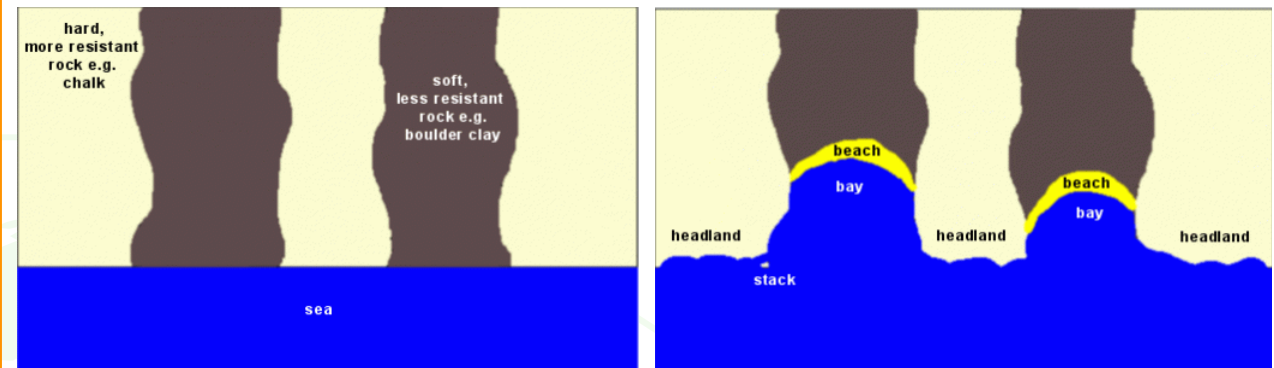


The sea creates a wave cut notch through hydraulic action and abrasion.

Backwash transports material from the base of the cliff forming a wave cut platform.

Bays and Headlands

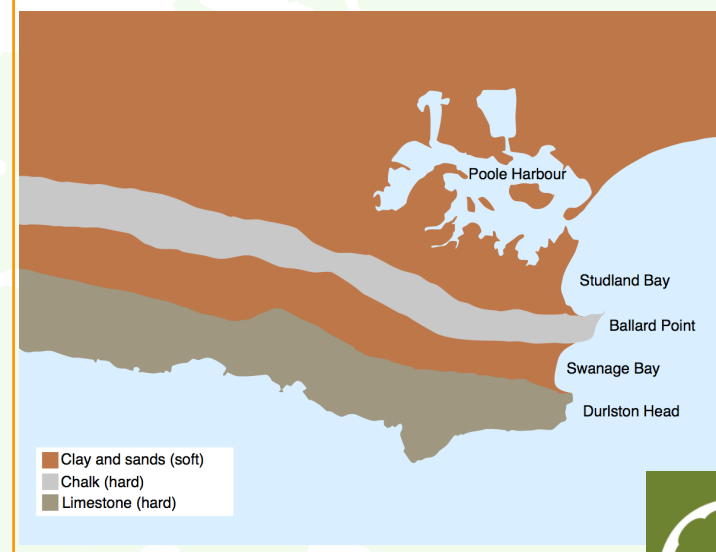
Headlands form along discordant coastlines where bands of soft and hard rock outcrop at right angles to the coastline (see image below). Due to the different nature of the rock erosion occurs at different rates. Less resistant rock (e.g. boulder clay) erodes more rapidly than less resistant rock (e.g. chalk).



The bands of soft rock, such as sand and clay, erode more quickly than those of more resistant rock, such as chalk. This leaves a section of land jutting out into the sea called a headland. The areas where the soft rock has eroded away, next to the headland, are called bays. Sandy beaches are often found the sheltered bays where waves lose energy, and their capacity to transport material decreases resulting in material being deposited.

Discordant and concordant coasts

Where the geology alternates between strata (bands) of soft and hard rock are called discordant coastlines. A concordant coastline is where the same rock runs along the length of the coast. Concordant coastlines tend to have fewer bays and headlands.



Along the coastline of Dorset, there are concordant and discordant coastlines.

The concordant coastline runs from west to east along the south coast. The discordant coastline runs from Studland Bay to Durlston Head as the geology changes from clay and sands, to chalk, to clay and sands again to limestone.



Check your knowledge.

Take a quiz.

Erosion of a headland

Notes

1. Cracks in the base of the headland are enlarged through hydraulic action. Air becomes compressed and widens the crack as it escapes.

4. The cave increases in size as refracted waves concentrate their energy on the sides further enlarging the cave.

5. Where two caves are aligned the waves may cut through to form an arch. Wave cut notches widen the arch.

7. The base of the stack will be eroded through abrasion and hydraulic action. Sub-aerial processes will weaken the stack.

2. Cracks enlarge by weathering processes such as salt crystallisation.

3. Cracks widen and a cave is formed through abrasion and hydraulic action.

6. Over time the roof can be weakened by weathering such as freeze-thaw. The arch will collapse under its own weight forming a stack.

8. Eventually, wave cut notches will form and the stack will collapse forming a stump.

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