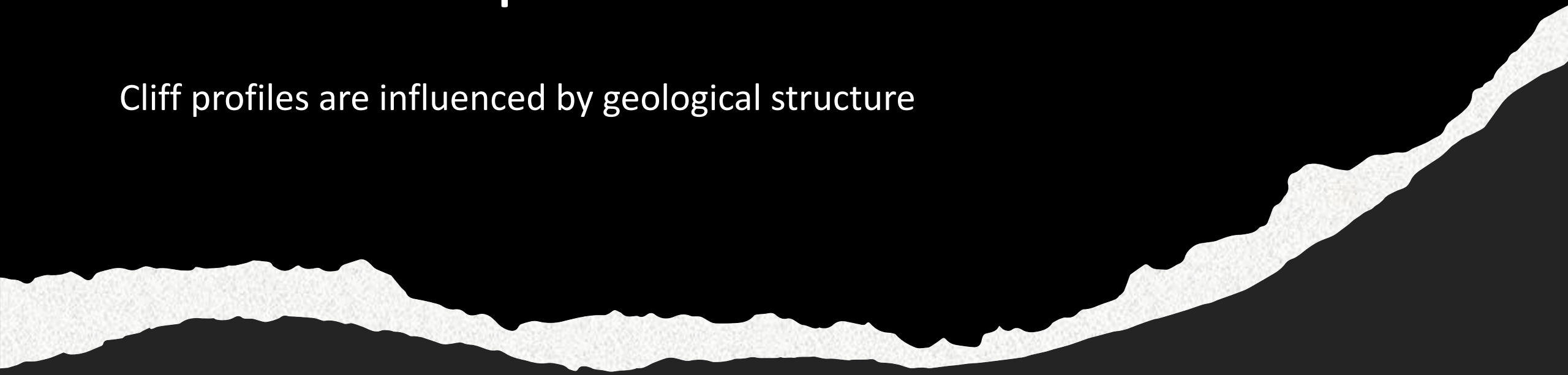


Rock type, lithology and cliff profiles

Cliff profiles are influenced by geological structure



Coastal morphology is related not only to the underlying geology, or rock type, but also to its *lithology* – its geological structure. Lithology means any of the following characteristics:

- ◆ Strata – layers of rock
- ◆ Bedding planes – horizontal, natural breaks in the strata, caused by gaps in time during periods of rock formation
- ◆ Joints – vertical fractures caused either by contraction as sediments dry out, or by earth movements during uplift
- ◆ Folds – formed by pressure during tectonic activity, which makes rocks buckle and crumple (e.g. the Lulworth Crumple)
- ◆ Faults – formed when the stress or pressure to which a rock is subjected, exceeds its internal strength (causing it to fracture). The faults then slip or move along fault planes
- ◆ Dip – refers to the angle at which rock strata lie (horizontally, vertically, dipping towards the sea, or dipping inland).

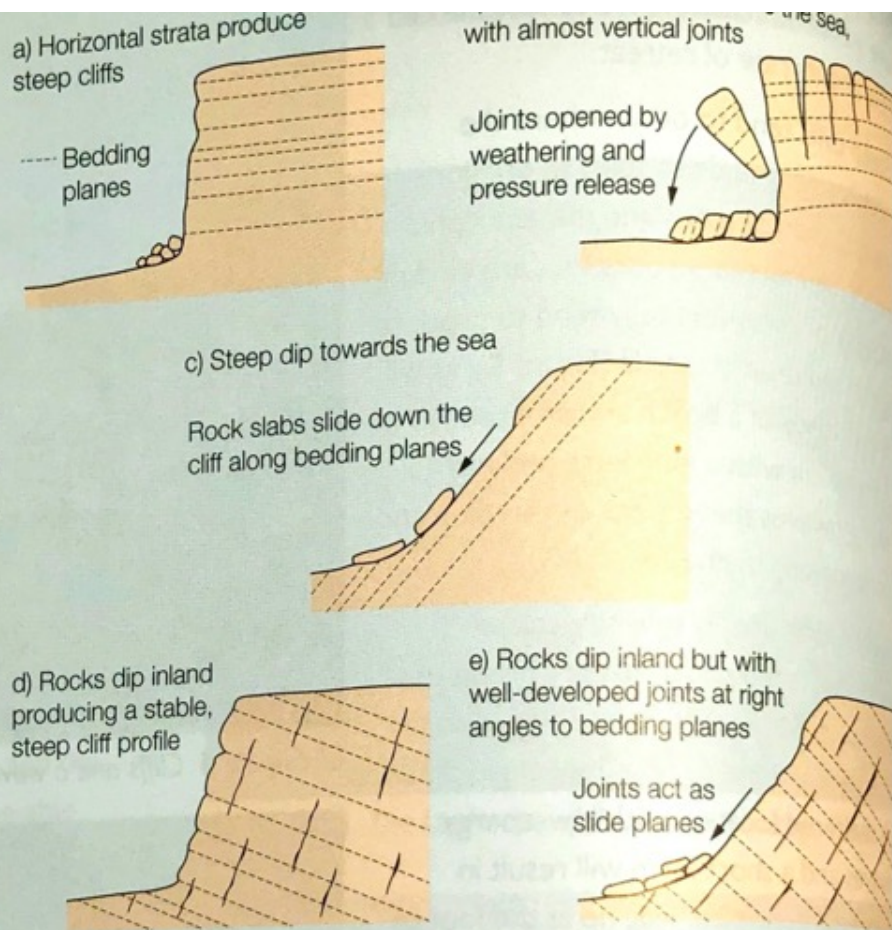


Figure 7 Cliff profiles and geological structure

The relief – or height and slope of land – is also affected by geology and geological structure. There is a direct relationship between rock type, lithology and cliff profiles. The five diagrams that make up **Figure 7** help to illustrate this.

The **dip** of the rocks is also a major factor. The steepest cliffs tend to form in rocks that have horizontal strata or which dip gently inland, whereas rocks that dip towards the coast tend to produce much more gently sloping features (**Figure 3.16**).

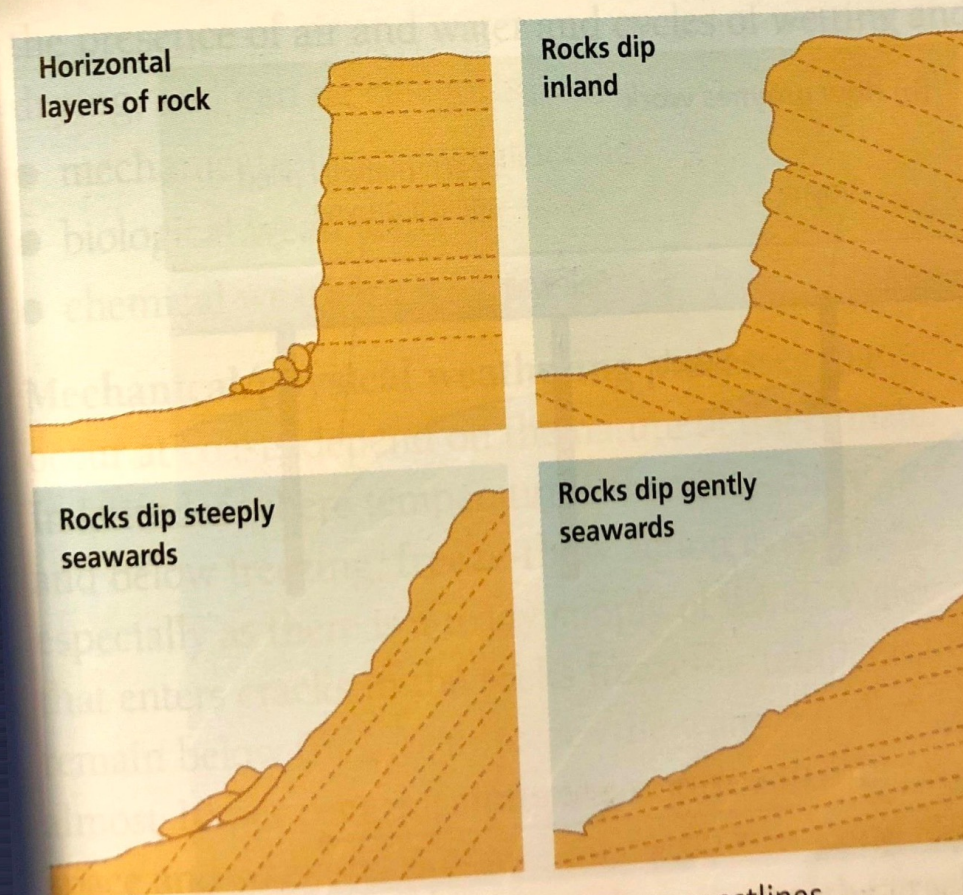


Figure 3.16 The influence of rock strata on coastlines