



read

Coastal Landscapes

Weathering and Mass Movement



quiz



The Big Picture



Weathering

Weathering is the process of breaking up or dissolving rocks in situ. It is the physical and chemical breakdown of rocks and minerals at or near the Earth's surface.



Key Terms



Chemical weathering – The break down of rock due to chemical changes.



Landslide – Rapid mass movement of surface material down a slope.



Mass movement – The downhill movement of material under gravity.



Mechanical weathering – The breakdown of rock without chemical changes.



Rockfall – Fragments of rock break away from the cliff face.



Slumping – Cliffs slide down a curved slip plane.



Weathering – The breakdown of rock in situ.



Types of Weathering

Chemical Weathering

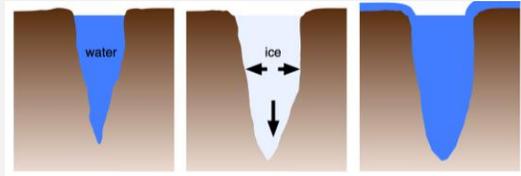
Carbonation – Carbon dioxide, dissolved in rainwater forms a weak carbonic acid. This reacts with calcium carbonate (limestone and chalk) which forms calcium bicarbonate.

Hydrolysis – Acidic rainwater reacts with minerals in granite, causing it to crumble.

Oxidation – Oxygen dissolved in water reacts with iron-rich minerals causing rocks to crumble.

Mechanical Weathering

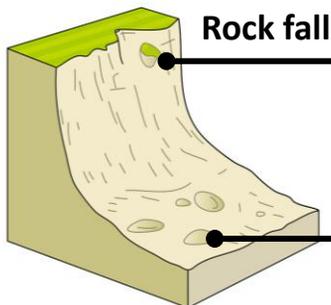
Freeze-thaw



Salt weathering – crystals of salt grow in cracks and expand causing rock fragments to flake away.



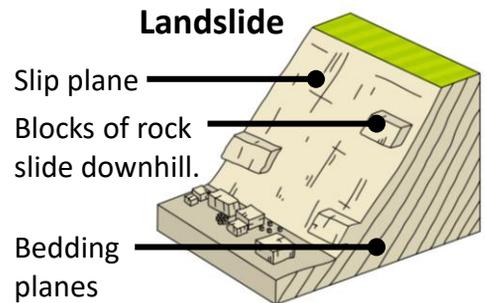
Mass Movement



Rock fall

Fragments of rock break away from the cliff face due to weathering e.g. freeze-thaw.

Scree

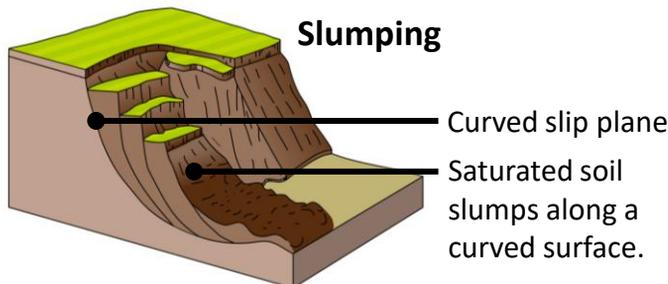


Landslide

Slip plane

Blocks of rock slide downhill.

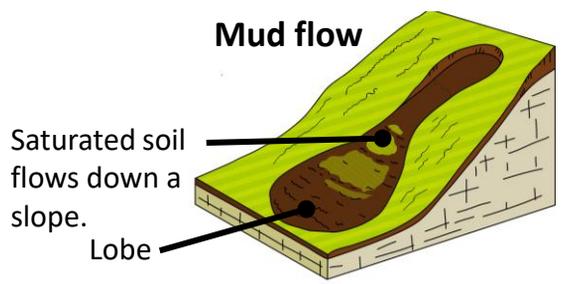
Bedding planes



Slumping

Curved slip plane

Saturated soil slumps along a curved surface.



Mud flow

Saturated soil flows down a slope.

Lobe