

Erosion Encyclopedia Article

Erosion

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Erosion

Erosion is the reduction or breakdown of **landforms** exposed to the forces of **weathering** (disintegration and decomposition). Weathering and subsequent erosion may be caused by both chemical or mechanical forces. Mechanical weathering agents include **wind**, **water**, and **ice**. Chemical weathering leading to erosion results from bio-organic breakdown, hydration, hydrolysis, and oxidation processes. The process of transportation describes the movements of eroded materials.

Erosion requires a transport mechanism (e.g., **gravity**, wind, water, or ice). Wind, water, and ice are also agents of erosion that cause the physical breakdown of **rock** and landforms.

A special form of erosion, **mass wasting**, describes the transport of material downslope under the influence of gravity. Landslides are a common example of mass wasting.

Erosion processes can also cause indirect landform alteration by breaking down overburden of rock and precipitating a pressure release that can crack and shift rock layers. The cracking process results in peels, **exfoliation**, or spalling. For example, the erosion of overburden can expose batholiths and these exposed formations can form exfoliation domes.

Organic materials can frequently contribute to erosion by pressure that results in structural cracking or in the formation of acidic compounds that **weather** rock.

Rapid **temperature** changes or large diurnal temperature changes (the difference between the highest daytime temperature and the coolest nighttime temperature) can accelerate erosional exfoliation, jointing, and ice wedging.

See Also

Acid Rain; Catastrophic Mass Movements; Depositional Environments; Dunes; Eolian Processes; Faults and Fractures; Freezing and Melting; Glacial Landforms; Glaciation; Hydrothermal Processes; Ice Heaving and Ice Wedging; Impact Crater; Landforms; Landscape Evolution; Leaching; Oxidation-Reduction Reaction; Precipitation; Rapids and Waterfalls; Rate Factors in Geologic Processes; Rock; Rockfall; Salt Wedging; Seawalls and Beach Erosion; Soil and Soil Horizons; Talus Pile or Talus Slope.