

## Aeolian processes

Pre-reading. Explain these terms.

sediment   sparse   clay minerals   landforms   sphinx   sculpture   diameter   hollow

From Wikipedia, the free encyclopedia

6. Read about Aeolian processes and wind erosion and find what these terms refer to.

- a) Aeolus.....
- b) arid environments.....
- c) deflation .....
- d) abrasion .....
- e) desert varnish.....
- f) ventifacts .....
- g) yardang .....
- h) blowouts.....

Aeolian (or Eolian or Æolian) processes pertain to the activity of the winds and more specifically, to the winds' ability to shape the surface of the Earth and other planets. Winds may erode, transport, and deposit materials, and are effective agents in regions with sparse vegetation and a large supply of unconsolidated sediments. Although water is much more powerful than wind, aeolian processes are important in arid environments such as deserts. The term is derived from the name of the Greek god, Æolus, the keeper of the winds.

### Wind erosion

Wind erodes the Earth's surface by deflation (the removal of loose, fine-grained particles), by the turbulent eddy action of the wind and by abrasion (the wearing down of surfaces by the grinding action and sandblasting of windborne particles). Regions which experience intense and sustained erosion are called deflation zones. Most aeolian deflation zones are composed of desert pavement, a sheet-like surface of rock fragments that remains after wind and water have removed the fine particles. Almost half of Earth's desert surfaces are stony deflation zones. The rock mantle in desert pavements protects the underlying material from deflation.

A dark, shiny stain, called desert varnish or rock varnish, is often found on the surfaces of some desert rocks that have been exposed at the surface for a long period of time. Manganese, iron oxides, hydroxides, and clay minerals form most varnishes and provide the shine.

Deflation basins, called blowouts, are hollows formed by the removal of particles by wind. Blowouts are generally small, but may be up to several kilometers in diameter. Wind-driven grains abrade landforms. Grinding by particles carried in the wind creates grooves or small depressions. Ventifacts are rocks which have been cut, and sometimes polished, by the abrasive action of wind. Sculpted landforms, called yardangs, are up to tens of meters high and kilometers long and are forms that have been streamlined by desert winds. The famous sphinx at Giza in Egypt may be a modified yardang.

