Chapter 7. Aeolian landform

7.1. Definition

Aeolian landform is produced by the erosive or constructive action of the wind. Wind erosion is the destruction of rocks and landforms by the wind. Wind action is most noticeable in regions where soils and rocks are not protected by vegetation cover (i.e. hot arid regions and very cold regions).

7.2. Aeolian landforms

7. 2. 1. Shapes formed by eolian erosion

A reg is a desert of stones, a stony surface cleared of fine elements by the wind (wind deflation). It corresponds to eroded bedrock or ancient layers of pebbles. Reg is the most widespread type of desert landscape, consisting of expanses of gravel and pebbles rounded by wind erosion. Very little vegetation survives.

Figure 7.1. A Reg in the Adrar region of Algeria

Hamada or hammada is a high plain or desert plateau where deflation has removed fine-grained surface materials and left the sand-swept bedrock with or without pebble veneer

or strewn with rocks. The Arabic word hamada means literally a flat rocky surface.

Figuer 7.2. Hamada in the Algerian Sahara

7. 2.2. Shapes created by aeolian deposits

A dune is a relief or landform composed of sand

Figure 7.3. A dune

Dunes can appear : as isolated reliefs, or in fields of separate or joined dunes: the latter are known as ergs.

The erg is the sandy desert, the end product of erosion (only 20% of the Sahara's surface).

Figure 7.4. Erg Awbari dune (Fezzan, Libya)

A **loess** (from German: *Löss* [lœs]) is a clastic, predominantly silt-sized sediment that is formed by the accumulation of wind-blown dust. Ten percent of Earth's land area is covered by loesses or similar deposits.

A loess is a aeolian (windborne) sediment, defined as an accumulation of 20% or less of clay with a balance of roughly equal parts sand and silt (with a typical grain size from 20 to 50 micrometers), often loosely cemented by calcium carbonate. Usually, they are homogeneous and highly porous and have vertical capillaries that permit the sediment to fracture and form vertical bluffs.

Figure 7.5. A lœss