



## **Effect of Holocene sea level change on aeolian activity in the coastal plain of Ras El Hekma area, NW coast of Egypt**

Enas Farghaly (1) and Magdy Torab (2)

(1) Faculty of Girls, Ain Shams University, Cairo, Egypt (stormywind.enas@hotmail.com), (2) Faculty of Arts, Damanhour University, Damanhour, Egypt (magdytorab@hotmail.com)

Ras El Hekma area located in north western coast of Egypt, west of Alexandria city for about 220 km, in this area, environmental changes during the Holocene can be interpreted based on morphological and sedimentological similarities between Holocene geomorphic features such as cemented beaches and fossilized dunes with recent coastal features.

Sand dunes and nebkhas are the most common aeolian landforms and they occur in semi-arid climatic conditions. The active separated coastal dunes and nebkhas dunes of Ras El-Hekma area are located between the swash zone and the coastal limestone ridges as well as in the coastal sabkhas. The effect of waves during storms reaches far beyond the actual beach and can cause great changes to sandy beaches at an exceptional speed.

Sand accumulated by swash drifts with the wind on open beaches and bays. The aeolian sand, which originates from fluvial-marine sediments washed by sea waves. the available sediment depends on fluvial transport to the littoral zone and on biological activity in the carbonate environments as well as on longshore and cross-shore currents.

This paper treats the coastal dunes in Ras El Hekma area in their entirety and defines the effects of sea level change on coastal sand dunes and sabkhas dunes, it depends upon field geomorphic surveying, sampling and mapping as well as satellite image interpretation using ENVI software and GIS techniques.