

كلمية الآداب

أولاً: الماجستير

قسم الجغرافيا

الأخطار الجيومورفولوجية في النطاق الشمالي الغربي لدلتا النيل بين مصب رشيد والهوامش الغربية للدلتا

باستخدام تقنيات الاستشعار عن بعد ونظم المعلومات الجغرافية (GIS)
**GEOMORPHOLOGIC HAZARDS IN THE NORTHWESTERN
SECTOR OF THE NILE DELTA BETWEEN ROSETTA
PROMONTORY AND THE WESTERN
DELTA MARGINS**

منا محمد عصام حسن العسال

SUMMARY

This study handled the geomorphologic hazards in the NW sector of the Nile Delta between Rosetta promontory and the western boundaries of the Delta using the techniques of remote sensing and Geographic Information System (GIS), as the geomorphologic hazards are the main obstacles facing human activities and the development plans in the study area. The study came out in six chapters in addition to an introduction and a summary.

Chapter One discussed the physical properties of the study area in terms of geological features, climate and soil, geomorphologic units, and wild plants. The area of study aged as Quaternary (both Pleistocene and Holocene), and is characterized by the Mediterranean climate and is considered as the most rainfall stations in Egypt especially at the high-relief projections of Agami, Abu Qir, and Rosetta. The soil of the study area is classified into two zones: ١) Idku soil that somposed of a muddy old and recent soil and a sandy soil; ٢) Mariut soil that composed of a series of lime, sand, sandy clay, sandy lime, and gypsum soils. The study area is composed of three geomorphologic units including the Hills series separated by long depressions, flood plains, the sand dunes that turn to

sand sheets as the human activities increase, and lastly the wild plants. Because of the high rainfall rate in the studied area, it is considered as the most rich botany zones in Egypt.

Chapter Two handled the weathering effects as one of the geomorphologic agents causes some geomorphologic hazards in the study area, and the human role and living organisms as additional geomorphologic agents contributing in enhancing the weathering effects. Various geomorphologic hazards occur such as the weathering of buildings and other constructions, particularly those directly on the Mediterranean coast or along the banks of Idku and Mariut lagoons. The weathering effects are better recognized on the constructions over the sabkha plains as a result of water leakage such as those at the eastern Idku lagoon and the Abu Qir old lagoon, now dried out, and used in agriculture and construction processes. Parts of the areas from east Abu Qir to west Al-Hammam, where the Hills series extend, are also affected by weathering.

Chapter Three was concerned in the study of coastal hazards such as the variable degrees of marine weathering and erosion. The Rosetta mouth is considered as the most place affected by this erosion because of the following factors: ١) the tectonic subsidence, ٢) the recent climatic changes and resulting sea level rise, and ٣) lack of flooded deposits because of the High Dam. However, the Egyptian Coastal Protection Authority constructed many concrete walls to govern the erosion rate either at the Alexandria coastal beaches or at Rosetta mouth. These efforts succeeded in controlling the sediment movements due to waves, beach currents and tides.

Chapter Four discussed hazards of lakes and sabkhas including lakes of Idku, Abu Qir, Mariut, and Agami. These lakes have been affected by several hazards led to the disappearance of Abu Qir and Agami lakes, and diminished Idku and Mariut surface areas. The frequent increase of human activities unbalanced the two lakes ecology. This is reflected in the water nature and quality that becoming harmful to the living biota specially fishes and transferred to the human body causing several diseases.

Chapter Five is dealing with the hazards of soil and underground water. Underground water in the study area is subjected to undirected pump out in overrates that resulted in several geomorphologic hazards such as: ١) the merging of sea water and saline lakes with the underground water, ٢) Pollution of the underground water with heavy metals, and ٣) rising the water table and increasing the soil salinity. These factors are greatly affect the human activities in the region.

Chapter Six discussed the ways of overcoming the geomorphologic hazards, and suggested solutions and means of protecting coastal lines, lakes, sabkhas, underground water from the geomorphologic hazards that continuously threaten the region.