Geophysical Research Abstracts
Vol. 12, EGU2010-361, 2010
EGU General Assembly 2010

MANAGEMENT OF GROUNDWATER RESERVOIR IN MAGHAGH AQUIFER SYSTEM USING MODELING AND REMOT SENSING TECHNIQE (Upper Egypt)

Abdalla fayed, Belal Abdel Aziz, and Hassan Ahmed
(ab_faid@yahoo.com)

1. Abstracts
According to the rapid extension of reclamation in Maghagha area, monitoring was essential to evaluate the reclamation impacts on the groundwater potentiality. Change detection map was produced, which was reflects the change in reclaimed lands. The main objective of this work is to study the reclamation impacts on the groundwater reservoir by using the modeling and Remote Sensing Techniques. The study led to producing two land use maps for the study area in years 1988 and 2006 and consequently a change detection map for the time period between 1988 and 2006.From land use maps of the study area for year 2006, it was observed a lot of changes in development areas especially on the border of the old land. The change in land reclaimed area was estimated with 44% in the period from year 1988 to 2006.There is a change in groundwater level during the period between 1988 –2006 due to; the effect extends to the adjacent areas, and the lack of recharge. The impacts of the present and future development have been evaluated by using the two-dimensional numerical groundwater flow Simulation Package (GWSTE). The package was used to construct and calibrate a numerical model that can be used to simulate the response of the aquifer in the study area under implementing different management alternatives in the form of changes in piezometric levels and salinity.

Keywords: Remote Sensing; Management of Aquifer Systems; Simulation Modeling; Upper Egypt