



LAND DEVELOPMENT ASSESSMENT ON THE PRESERVED AL SAMMALYAH ISLAND/UAE USING MULTI-TEMPORAL AERIAL PHOTOGRAPHS AND GIS

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Abstract:

The main objective of this study is to apply the most appropriate change detection techniques to assess land development achievements on Al Sarmalyah Island, off the coast of Abu Dhabi, United Arab Emirates capital city. This was accomplished by mapping trajectory of land cover change of the whole island between 1999 and 2005. Another objective was to assess the level of development that occurred on the island and the level of change in the local environment. Available historical large scale aerial photographs from the late nineties to the most recent 2005 were used for the multitemporal study. Geographic information systems (GIS) layers were created by on-screen digitizing of corrected and co-registered images. A GIS overlay analysis combined with post classification change detection method analysis schema was adopted. Results of the current study demonstrate intense land development occurring on the AL Sarmalyah Island; vegetation cover extent has increased from 3.742 km² (1.44 miles²) in 1999 to 5.101 km² (1.97 miles²) in 2005 that corresponds to 36.3% increase over this period. The study also shows that this increase in vegetation extent is mostly attributed to the increase in mangrove planted areas alone with an aerial increase from 2.256 km² (0.87 miles²) in 1999 to 3.568 km² (1.38 miles²) in 2005, an increase of 58.2% in seven years.

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