

Change Detection Emphasis on Green Spaces and the Effect on Tehran Air Pollution: Aided by LANDSAT Imagery from 1980-2010

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Abstract

Because of geographical position of Tehran and existence of mountains in the northern part of it, transmit of the northwest prevailing wind to discharge pollution caused by urban activities seems to be complicated and also, construction of industrial factories in the city space and high amount of urban transportation, crisis the air in Tehran. So, study of the amount of green space and their change and role to reducing air pollution in Tehran - caused by urban activity is very important. The purpose of this study is green space developments per capita during the past three decades and its role in the evolution of present air pollution in Tehran. This study has been conducted in the Tehran with about 730 Square kilometers. To implement this study, LANDSAT imagery of 4 and 5 TM and ETM sensors in the past thirty years have been used. After radiometric and geometric correction and coordinates unification of all images, the images of study area in Tehran have been selected and then by use of maximum likelihood classification algorithms, images were classified and plant cover layer and green space extracted. In this section by use of the region borders, green space was calculated per capital and thematic map was presented. By using long time Tehran pollution zoning maps, all 22 regions of Tehran have been ranked in terms of pollution. And at last correlation between the amount of air pollution and green space was observed. The results show that, at first, the amount of green space per capita was undesirable than the global Standard and at the second, the role of green space to reduce pollution in different areas of Tehran has been impressive.

Keywords: *per capital green space, landSat images, air pollution, change detection, correlation*