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Temporal Analysis of Water Bodies in Ten Mega Cities of India

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Wetlands play an important role in recharging aquifers and stabilizing urban ecosystem. Wetlands attenuate the severe floods by storing water, provides habitat to different kinds of flora and fauna and improves water quality. Thus wetlands play a vital role in urban ecology. In recent years, many of these wetlands are being threatened due to increased landuse activities. Thus the study highlights the landuse analysis of ten mega cities of India that substantially showed decline in lakes and tanks of the city due to urbanization process. As a result of rapid urbanization, many of the water bodies have been lost and some are totally polluted. Urban sprawl is the major cause for the environmental degradation, makes greater demand on natural resources and hence associated with loss of wetlands. Medium and high-rise buildings have come up on some of these lakes and show the deterioration in the natural catchments flow and degrade the water quality. Unplanned urbanization and development activities have effected tremendously on these wetlands led to substantially decline in the storage capacity of the aquifers. The prime objective of this study is the wetlands dynamics of ten cities using remote sensing dataset and also to understand the rate of change in spatial extent of these wetlands during last four decades. Landuse analysis was done to show the changes in four major categories- urban, vegetation, water bodies and others that revealed drastic increase in urban category with sharp decline in the water bodies.

Keywords: Water bodies, wetlands, remote sensing and GIS, urbanization.

