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Title	**:**	**The Impact of Land Use and Land Cover Change on Urban Environment: A Case Study of NCT of Delhi**

ABSTRACT

Land, the primary resources of human survival, is undergoing transformation from time immemorial. In ancient times, land cover was dominated by forest and with the passage of time, evolution of various economic activities especially agriculture resulted in simplification of complex patterns of forest and consequently, the land cover began to undergo transformation. Further, the evolution of settlements introduced the built-up aspect of land use other than agriculture land and forested land. Like other urban regions of world, the NCT of Delhi have also undergone rapid expansion of built-up at the cost of vegetation destruction which have considerable impact on urban environment in terms of increased Land Surface Temperature (LST). The purpose of the present research study is to analyze the impact of changes in land use/land cover on urban environment of NCT of Delhi. For the present research study satellite imageries of Landsat (TM) of 1990, Landsat (ETM+) of 2000 and Landsat (OLI) of 2015 have been used for analyzing the LULC along with depiction of LST and Normalized Difference Vegetation Index (NDVI) of the study area. Supervised classification technique along with maximum likelihood method was used to generate land use/land cover (LULC) maps of different categories

pertaining to study area for years 1990, 2000 and 2015. The present research study begins with identification of trends and patterns of LULC changes during the period 1990-2015. Moves ahead with assessment of relationship between the LULC changes and LST during the period 1990-2015. The analysis part of the present research study deals with assessment of relationship between NDVI and LST during the period 1990-2015. Lastly, study assess the impact of LULC changes on urban environment in terms of Urban Heat Island (UHI), winter warming effect and related socio-economic aspects of the study area. The findings of present research study have shown that the LULC category of built-up have increased considerably over the period 1990-2015 and have resulted in large scale destruction of vegetation in the study area. Further, LST values have shown considerable increase and NDVI values have shown considerable decrease for the study area during the period 1990-2015 and thus, justifying the increase intensification of Surface Urban Heat Island (SUHI) in the study area.

Key Words: Land Use/Land Cover, Urban Environment, Land Surface Temperature (LST), Normalized Difference Vegetation Index (NDVI), Urban Dwellers.