

Assessment of Environmental Quality of an Urban Setting

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Abstract : The rapid growth of cities is transforming the urban environment and posing significant challenges for environmental quality. This study examines the urban environment of Belagavi in Karnataka, India, using geostatistical methods to assess the spatial pattern and land use distribution of the city and to evaluate the quality of the urban environment. The study is driven by the necessity to assess the environmental impact of urbanisation. Satellite data was utilised to derive information on land use and land cover. The investigation revealed that land use had changed significantly over time, with a drop in plant cover and an increase in built-up areas. High-resolution satellite data was also utilised to map the city's open areas and gardens. GIS-based research was used to assess public green space accessibility and to identify regions with inadequate waste management practises. The findings revealed that garbage collection and disposal techniques in specific areas of the city needed to be improved. Moreover, the study evaluated the city's thermal environment using Landsat 8 land surface temperature (LST) data. The investigation found that built-up regions had higher LST values than green areas, pointing to the city's urban heat island (UHI) impact. The study's conclusions have far-reaching ramifications for urban planners and politicians in Belgaum and other similar cities. The findings may be utilised to create sustainable urban planning strategies that address the environmental effect of urbanisation while also improving the quality of life for city dwellers. Satellite data and high-resolution satellite pictures were gathered for the study, and remote sensing and GIS tools were utilised to process and analyse the data. Ground truthing surveys were also carried out to confirm the accuracy of the remote sensing and GIS-based data. Overall, this study provides a complete assessment of Belgaum's environmental quality and emphasizes the potential of remote sensing and geographic information systems (GIS) approaches in environmental assessment and management.

Keywords : environmental quality, UEQ, remote sensing, GIS

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