



The Impact of Green Spaces on the Thermal Environment of a Megacity



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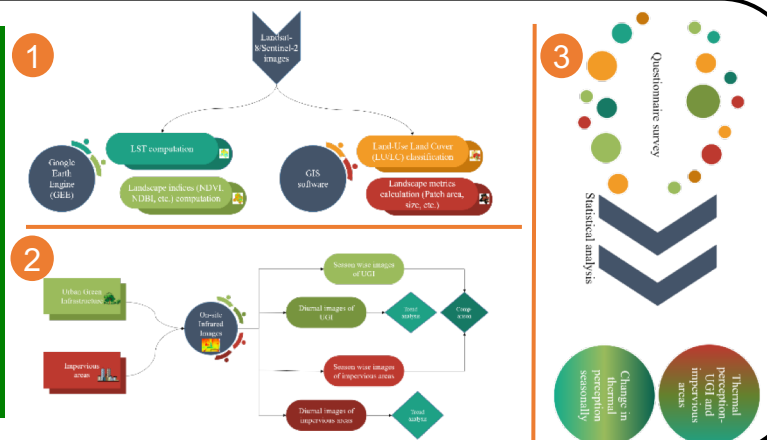
Overview

India is rapidly urbanizing, which is changing the socioeconomic structure of the cities as well as the environment. India's capital city, Delhi, is affected by this at a far higher incidence than other cities. The metropolis has over 19 million residents and the greatest population density (11,312 per km²) in the nation. The months of March and April this year reportedly experienced the greatest temperatures in 122 years, according to the India Meteorological Department (IMD). Delhi experienced average maximum temperatures of 40.2°C, the second-highest in 72 years. There are several physical and physiological problems brought on by high temperatures. These have an impact on not just the socio-economic dynamics but also on health. With a dramatic rise in power use, such high temperatures not only make people feel uncomfortable thermally, but they also put more strain on natural resources. Nature-based Solutions (NbS) can be a useful instrument in the fight against the problem of rising heat stress. We're interested in finding out how much green space can improve the thermal environment by lowering LST.

Objectives

1. To identify spatiotemporal variations in the thermal environment dynamics and Land Use Land Cover (LULC).
2. To study the impact of urban green infrastructure (UGI) on the dynamics of the surrounding thermal environment.
3. To comprehend and evaluate the thermal environment of the UGI community.

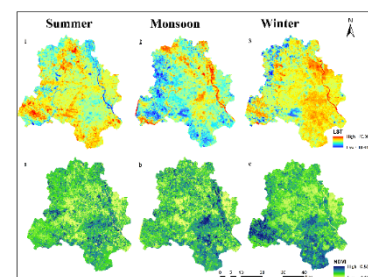
Methodology



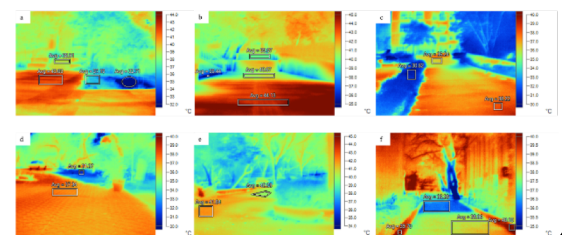
Expected Outputs

1. Seasonal LST patterns in the research area will be inferred to be affected by LULC and fragmentation.
2. Thermal environment variations within green infrastructure, such as parks and impermeable areas, will be visible.
3. The practical thermal experience of people with the presence of UGI will be known.
4. The findings can assist urban planners in creating sustainable urban policies by taking into account the composition and structure of UGI as well as the practical needs of the urban populations.

LST and NDVI of Delhi in different seasons



Infrared imagery of the study sites showing impervious and green areas



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