

# **Spatial Temporal of Urban Green Space in Tropical City of Kuching, Sarawak, Malaysia**

## **ABSTRACT**

Urban green space is one of the essential variables to influence urban climate. Urban green spaces offer evaporative cooling. The evaporative process is vital to mitigate the urban heat island. This paper investigates the spatial-temporal pattern changes of urban green space in the tropical city of Kuching, Malaysia, using remote sensing and GIS. To achieve the objective, this study required three steps. The first was a performed pre-processing, namely geometric correction, atmosphere correction, and radiometric correction. The next step was a retrieval of land surface temperature at the thermal band for every selected data for the year 1988, 2000, 2011, and 2019. The third step performed supervised classification for every selected data to generate a land cover map every selected year. The final step was to identify a correlation between urban greens space and LST. The results discovered spatial patterns of urban greens space significantly effects of cooling potential which the more urban green space areas encounter the stronger cooling effect of the urban heat island. The expansion of the urban areas significantly decreases urban green spaces areas. Correct spatial planning is an essential tool for improving urban green spaces infrastructure. This output can improve the knowledge planners, and policymakers understand green spaces recognized in urban areas and plan the urban green space strategically to mitigate UHI effects.