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SPATIOTEMPORAL DYNAMIC ANALYSIS OF URBAN GREEN AREA IN SEREMBAN

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Thesis submitted to the Universiti Teknologi MARA Malaysia in partial fulfilment for the award of the degree of the +Bachelor of Surveying Science and Geomatics (Honours)

JULY 2024

DECLARATION

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original, and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

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ABSTRACT

Urban green areas offer crucial environmental and societal advantages for urban areas; however, the fast-paced process of urbanization frequently poses a threat to these spaces. This investigation aims to classify and analyse the changes in urban green areas within Seremban from 2019 to 2023, using advanced geospatial techniques and temporal analyses. The study encompasses the entire Negeri Sembilan area (6686 km²) and utilized Sentinel-2 multi-spectral data processed with ERDAS Imagine and ArcGIS Pro software. The objectives are to classify the land use land cover including urban green areas and analyse the changes in land use land. Methodologically, the study employed supervised classification techniques, landscape matrices, and transition matrices to scrutinize urban green area dynamics comprehensively. The supervised classification approach ensures accurate differentiation of land cover types, while landscape and transition matrices provided insights into the patterns and trajectories of land cover change. The results reveal a significant increase in urban green areas by 6.79% and developed areas by 2.06%, coupled with a decrease in barren and forest areas by 5.24% and 4.30%, respectively. These findings underscore the impact of rapid urbanization on green spaces, highlighting the expansion of developed areas at the expense of natural landscapes. The study concluded that effective monitoring and management of urban green areas are crucial for maintaining ecological balance and promoting sustainable urban development. The results emphasize the need for informed urban planning to mitigate ecological fragmentation and ensure the preservation of green areas. This research provides valuable insights for urban planners and policymakers in Negeri Sembilan, advocating for strategies that prioritize environmental sustainability amidst urban growth.

Keywords: Urban, Green Area, Seremban, Spatiotemporal Dynamic Analysis, Remote Sensing

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