

## ABSTRAK

### STUDI TENTANG FENOMENA *URBAN HEAT ISLAND* (UHI) PADA KOTA BANDAR LAMPUNG DAN KABUPATEN KARAWANG

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Perubahan tata guna lahan akibat urbanisasi yang pesat memicu peningkatan suhu permukaan dan berkurangnya vegetasi di kawasan perkotaan. Penelitian ini bertujuan mengidentifikasi fenomena *Urban Heat Island* (UHI) serta menganalisis hubungan antara suhu permukaan, kerapatan vegetasi (*Normalized Difference Vegetation Index*/NDVI), dan kepadatan bangunan (*Normalized Difference Built-up Index*/NDBI) di Kota Bandar Lampung dan Kabupaten Karawang. Data yang digunakan meliputi citra satelit Landsat 8 OLI/TIRS tahun 2014, 2019, dan 2024, serta data suhu harian dari *MarkSim* dan pengukuran lapangan. Analisis dilakukan dengan metode penginderaan jauh menggunakan perangkat lunak *ArcGIS* 10.8 untuk menghasilkan peta UHI, NDVI, dan NDBI. Hasil penelitian menunjukkan bahwa fenomena UHI teridentifikasi jelas di Bandar Lampung dengan pola peningkatan suhu dari wilayah pinggiran menuju pusat kota, sedangkan di Karawang distribusi suhu lebih merata akibat dominasi kawasan industri. Temuan ini mengungkapkan adanya hubungan negatif antara NDVI dan suhu permukaan, serta hubungan positif antara NDBI dan peningkatan suhu. Penambahan ruang terbuka hijau serta pengendalian pembangunan kawasan terbangun menjadi langkah penting untuk mitigasi UHI di wilayah perkotaan.

Kata kunci: Bandar Lampung, Karawang, NDBI, NDVI, penginderaan jauh, UHI

## **ABSTRACT**

### **STUDY OF THE URBAN HEAT ISLAND (UHI) PHENOMENON IN BANDAR LAMPUNG CITY AND KARAWANG REGENCY**

**By**

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*Land-use change caused by rapid urbanization has led to increasing surface temperatures and reduced vegetation cover in urban areas. This study aims to identify the Urban Heat Island (UHI) phenomenon and analyse the relationship between surface temperature, vegetation density (Normalized Difference Vegetation Index/NDVI), and building density (Normalized Difference Built-up Index/NDBI) in Bandar Lampung City and Karawang Regency. The data used include Landsat 8 OLI/TIRS satellite imagery from 2014, 2019, and 2024, as well as daily temperature data from Maksim and field measurements. The analysis was conducted using remote sensing methods with ArcGIS 10.8 software to generate UHI, NDVI, and NDBI maps. The results show that the UHI phenomenon is clearly identified in Bandar Lampung, characterized by increasing temperatures from suburban to downtown areas, while in Karawang, temperature distribution tends to be more uniform due to the dominance of industrial zones. The findings reveal a negative relationship between NDVI and surface temperature, and a positive relationship between NDBI and temperature increase. Expanding green open spaces and controlling urban development are essential strategies to mitigate the impact of UHI in urban areas.*

*Keywords: Bandar Lampung, Karawang, NDBI, NDVI, remote sensing, UHI*