



KONFIGURASI LANSKAP DAN KEHADIRAN SPESIES BURUNG DI PROVINSI YOGYAKARTA

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INTISARI

Urbanisasi yang pesat di Daerah Istimewa Yogyakarta (DIY) telah mengubah konfigurasi lanskap alami menjadi area terbangun, menciptakan gradien ekologi yang mempengaruhi dinamika komunitas burung. Penelitian ini mengidentifikasi karakteristik konfigurasi lanskap dan mengevaluasi pengaruhnya terhadap kehadiran spesies burung. Metode survei *point count* dilakukan pada 300 plot pengamatan tersebar dalam 12 *grid* (2x2 km), secara *stratified random sampling* berdasarkan gradien ekologi (*Forest, Rural, Urban*). Analisis lanskap dilakukan menggunakan Google Earth Engine (GEE) dengan citra Sentinel-2 dan Landsat 8. Struktur komunitas dianalisis menggunakan indeks diversitas Shannon-Wiener, *Non-metric Multidimensional Scaling* (NMDS), dan *Generalized Linear Model* (GLM).

Hasil penelitian mencatat 107 spesies burung dari total 6.141 individu. Lanskap *forest* memiliki kekayaan spesies tertinggi (86 spesies) dan indeks keanekaragaman tertinggi ($H'=3,72$), berfungsi sebagai habitat *Source* yang mendukung spesies spesialis. Lanskap *rural* memiliki kelimpahan individu tertinggi (2.697 individu) namun didominasi oleh spesies generalis (*Lonchura leucogastroides*), sedangkan lanskap *urban* (Habitat *Sink*) memiliki kekayaan spesies terendah (30 spesies). Analisis GLM menunjukkan bahwa keberadaan Badan Air (koefisien 1,23), Permukiman (0,037), dan Luas Hutan (0,033) berpengaruh positif signifikan terhadap keanekaragaman burung. Hutan terbukti menjadi prediktor paling signifikan dalam mempertahankan biodiversitas. Penelitian ini menyimpulkan bahwa meskipun lanskap *rural* dan permukiman menyediakan sumber daya bagi spesies generalis, pelestarian fragmen hutan dan keberadaan badan air sangat krusial untuk mempertahankan konektivitas ekologis dan mencegah homogenisasi biotik di lanskap perkotaan DIY.

Kata Kunci: *Burung, Gradien Ekologi, Konfigurasi Lanskap*

LANDSCAPE CONFIGURATION AND BIRD SPECIES PRESENCE IN YOGYAKARTA PROVINCE

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ABSTRACT

Rapid urbanisation in the Special Region of Yogyakarta (DIY) has transformed the natural landscape configuration into built-up areas, creating ecological gradients that influence bird community dynamics. This study identifies landscape configuration characteristics and evaluates their influence on bird species presence. Point count surveys were conducted on 300 observation plots spread across 12 *grids* (2x2 km), using stratified random sampling based on ecological gradients (Forest, Rural, Urban). Landscape analysis was performed using Google Earth Engine (GEE) with Sentinel-2 and Landsat 8 imagery. Community structure was analysed using the Shannon-Wiener diversity index, Non-metric Multidimensional Scaling (NMDS), and Generalised Linear Model (GLM).

The study recorded 107 bird species from a total of 6,141 individuals. Forest landscape had the highest species richness (86 species) and the highest diversity index ($H'=3.72$), functioning as source habitats that support specialist species. The rural landscape had the highest abundance of individuals (2,697 individuals) but was dominated by generalist species (*Lonchura leucogastroides*), while the urban landscape as sink habitats had the lowest species richness (30 species). GLM analysis shows that the presence of Water Bodies (coefficient 1.23), Settlements (0.037), and Tree Cover (0.033) have a significant positive effect on bird diversity. Tree cover are proven to be the most significant predictor in maintaining biodiversity. This study concludes that although rural and urban areas provide *resources* for generalist species, the preservation of forest fragments and the presence of water bodies are crucial for maintaining ecological connectivity and preventing biotic homogenisation in the urban landscape of DIY.

Keywords: *Birds, Ecological Gradient, Landscape Configuration*