

# The Urban Avifauna of Kuching, Borneo, and the possible impact of cats on its structure

ARLEEN HONG AND JAYASILAN MOHD-AZLAN<sup>1</sup>

Animal Resource Science and Management, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia. <sup>1</sup>Corresponding author Email:

[azlan@unimas.my](mailto:azlan@unimas.my)

**Summary:** Urban landscapes have depauperate avifaunas, but there have been few studies of urban bird communities in Southeast Asia. Domestic cats can attain very high densities in urban environments, and are known to have detrimental effects on local avian assemblages. The aim of this study was to describe the urban bird assemblage of Kuching, an equatorial city in Borneo, and to investigate its potential relationship with the abundance of cats. The density of birds and domestic cats was examined in ten discrete urban areas from November 2014 to April 2015 using line transects. A total of 1,844 bird observations were made, involving 27 species. Bird species richness and diversity were negatively related to cat density ( $R^2 = 0.41$  and  $0.43$ , respectively), but cat density did not significantly affect bird density ( $R^2 = 0.032$ ). Bird species richness was strongly correlated with the size of urban areas ( $R^2 = 0.76$ ,  $P = 0.001$ ) suggesting that larger areas offer additional habitat or niches (e.g. street trees, parks, waterways), which in turn support more species. Reduction of habitat heterogeneity and type of surrounding matrix, as well as the presence of abundant introduced predators may play important roles in structuring the composition and population dynamics of this urban bird community. Urban areas do have some biodiversity conservation value, but the challenge is to enhance this value through better planning.

**Ringkasan:** Lanskap kota memiliki avifauna yang telah berkurang keanekaragaman jenisnya, namun hanya sedikit penelitian tentang komunitas burung perkotaan di Asia Tenggara. Kucing domestik dapat mencapai kepadatan yang sangat tinggi di lingkungan perkotaan, dan diketahui memiliki efek merugikan pada kelompok unggas lokal. Tujuan dari penelitian ini adalah untuk mendeskripsikan kumpulan burung perkotaan Kuching, sebuah kota khatulistiwa di Borneo, dan untuk menyelidiki hubungan potensial dengan kelimpahan kucing. Kepadatan burung dan kucing domestik diperiksa di sepuluh daerah perkotaan terpisah mulai November 2014 sampai April 2015 dengan menggunakan transek garis. Sebanyak 1.844 pengamatan burung dilakukan, melibatkan 27 spesies. Kekayaan dan keragaman spesies burung secara negatif terkait dengan kepadatan kucing, namun kepadatan kucing tidak mempengaruhi kepadatan burung secara signifikan. Kekayaan spesies burung berkorelasi kuat dengan ukuran daerah perkotaan menunjukkan bahwa daerah yang lebih luas secara struktural dan floristik lebih beragam yang menawarkan relung habitat tambahan dan justru itu mendukung lebih banyak spesies. Daerah perkotaan tidak boleh dianggap tiada nilai konservasi namun tantangannya adalah melihat bagaimana meningkatkan nilai habitat daerah-daerah ini melalui perencanaan yang lebih baik.

## Introduction

Urbanisation has played a major role in the extirpation of wildlife through wholesale destruction of natural habitats such as forests and wetlands (Savard *et al.* 2000; McKinney 2002; Czech 2005; Shochat *et al.* 2010; Litteral & Wu 2012; Baharudin *et al.* 2014). In 2015, the urban population Malaysia accounted for 74.7% of the total population, and the annual rate of urbanisation from year 2010 to 2015 was 2.66% (Central Intelligence Agency 2017). While