

Vocal response of oriental Magpie Robin (*Copsychus saularis*) to urban environmental factors in Peninsular Malaysia

ABSTRACT

Anthropogenic noise and changes in environmental gradients resulted from urbanisation have been shown to alter vocalisation of urban birds in previous studies. This study examined the vocalisation of the Oriental Magpie Robin (*Copsychus saularis*; locally known as Murai Kampung) in relation to anthropogenic noise and environmental factors in the urban, suburban and rural areas in Peninsular Malaysia. We measured four ambient factors (i.e. ambient noise, temperature, relative humidity and light intensity) and two landscape factors (i.e. distance to building and distance to major roads) between January and June 2017 from six locations. A total of 147 recordings comprising territorial songs of the bird were obtained and transcribed into spectrograms. Six parameters, namely low frequency, high frequency, frequency ranges, length of strophe, number of elements per strophe, and time interval between strophes were derived from spectrograms for each recording. In urban areas, low frequency of the songs was found to have increased significantly as compared to those recorded in suburban and rural areas. The difference in noise, temperature and relative humidity in urban and suburban environment had led to both single and interaction effects towards the Oriental Magpie Robin's song parameters, i.e. low frequency, length of strophe, time interval between strophes and number of elements per strophe. The results evidenced the ability of the Oriental Magpie Robin in regulating and altering their song structure according to its surrounding environment. This implies its vocal plasticity which is important in ensuring the efficiency in transmission of songs and is likely to explain why the bird is less susceptible to urbanisation.

Keyword: Ambient and landscape factors; Bird species; Frequency; Urbanisation; Vocalisation