

Insectivorous birds prefer highly connected and holistic habitat patches across diverse urban parks in the core city of Guangdong-Hong Kong-Macao Greater Bay Area, China

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Abstract: **【Objective】** Urbanization as a major cause of the decline in natural habitats and species richness brings great challenges for biodiversity conservation. Functional groups were defined by species' use of a large number of habitat features. Bird species diversity and functional groups were related to land use type. This study is focusing on dietary traits. **【Method】** We use feeding groups to assess better how functional avian biodiversity is related to heterogeneous landscapes to explain urbanization's effect on bird communities. Analyzes were of 199 species present in Guangzhou, and divided into four feeding groups, including Insectivorous, Carnivorous, Omnivorous, Florisugent & Carpophagous. Landscape-scale habitat features were generated based on the analysis of land use types in 20 urban parks. **【Result】** The results showed that insectivorous birds preferred highly connected and holistic habitat patches. The omnivorous birds were adapted to the complex landscape structure and are less affected by fragmentation. Carnivorous birds tend to prefer urban green spaces with good integrity and are positively influenced by edge effects. **【Conclusion】** Our findings suggested that structural heterogeneity in the landscape was an important determinant of bird biodiversity and also clarified spatial patterns and underlying drivers of different feeding groups.

Key words: landscape metrics; urban birds; feeding group; habitat fragmentation.