

CHANGES IN BREEDING BIRD ABUNDANCE AND DIVERSITY ACROSS
URBAN-RURAL GRADIENTS IN NORTHEASTERN GEORGIA, USA

by

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ABSTRACT

Urbanization is rapidly changing the southeastern US landscape, particularly in Georgia, the fastest-growing Southeastern population center. Previous studies have suggested that avian communities and populations respond to landscape characteristics in scale-dependent ways. I conducted a 2-year (2007-2008) study of the response of breeding bird population abundance and community abundance, species richness, and relative diversity in young and mature residential developments to multiscale landscape characteristics at multiple scales across urban-rural development intensity gradients near Athens, Georgia. My data suggest that widely-available geospatial metrics of human disturbance, landscape composition and landscape configuration can be used to explain breeding bird abundance and diversity in residential developments (stepwise regressions: $0.33 < R^2_{adj} < 0.81$). This study sets the framework for a landscape-level understanding of the effects of housing developments on breeding birds in northeastern Georgia.

INDEX WORDS: Ornithology, Urban ecology, Urban-rural gradient, Urbanization, Multiscale landscape characteristics, Avian, Residential development, Landscape ecology