

2018

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Abubakar, Z.K (2018) Investigation of butterfly (Lepidoptera) diversity along rural–urban gradient in Morogoro Municipality, Tanzania. Master dissertation, University of Dar es Salaam, Dar es Salaam.

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**Investigation of butterfly (Lepidoptera) diversity along rural–urban gradient in
Morogoro Municipality, Tanzania**

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The rapid spreading and expanding rural–urban transformation pose threat to the biodiversity of the world, which challenge the urban planners and conservationists. Biodiversity information including data from butterfly studies along rural- urban gradient may be useful in conservation of urban environment, planning and management of urban land uses, for sustainable human welfare while preventing an increased loss of biodiversity. The study was undertaken to investigate the impact of rural–urban land transformations on the butterfly diversity along rural–urban gradient in Morogoro Municipality. Between May and June 2016 butterflies were sampled using fruit-baited traps and sweep nets from four transects across the whole Municipal. The transects were directed North, South, East and West of the Municipality, three sites representing rural, peri–urban and urban were established along each transect. A total of 999 individual butterflies belong to 80 morphospecies were identified from 5 families. The most abundant species was *Acraea eponina* (20.82%), followed by *Colotis antevippe* (7.01%), *Bicyclus safitza* (6.21%), and *Junonia oenone* (6.01%). Abundance of butterflies were (41.44% in peri–urban, 32.63% in rural and 25.93% in urban sites) species richness were (52 species in peri–urban, 45 species in rural and 38 species in urban) butterfly species diversity were ($H' = 3.36$ in peri–urban, 3.08 in rural, and 3.03 in urban) and turnover of butterfly species was slightly higher between peri–urban and urban areas (40%) than between peri–urban and rural areas (38.03%) and between rural and urban (38.33%). Butterflies are regarded as representative of natural environment, but this study, noted that butterflies abundance, species richness, species diversity and species turnover was highest in disturbed sites (peri–urban). The findings from this study did not follow the clear pattern of the rural–urban gradient as hypothesized but were in line with Intermediate disturbance hypothesis. As a result peri–urban sites are essential for butterflies' survival, it deserves high conservation status. Therefore urban planners, policy makers and conservationists, may encouraged to find ways to foster peri– urban biodiversity, in particular, butterflies as cities continue to expand.