

Variation of butterfly diversity and abundance with varying rainfall in a semi-urbanized intermediate zone area in Kurunegala, Sri Lanka

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Abstract

The present study was conducted to examine the variation of rainfall gradient with the butterfly diversity and abundance in a semi urbanized area in Kurunegala district. Two habitat types were identified as a forest area with a fresh water stream and home gardens. Sampling process was conducted in two fixed line transects, (500m length, 10m height) in each habitat type, by following a pollard walk at a very slow pace, in a randomly selected one day per week from 7.00am to 11.00am and 3.00pm to 6.00pm from June 2017 to May 2018, resulting a total of 104 walks. Number of individuals in each species were counted and identification was carried out using standard taxonomic keys. Counting was restricted to adult life stages. Presence or absence of rain was recorded in each sampling event and data regarding the magnitude of rain was obtained from National Metrological Department, Kurunegala. Minitab version 18 was used to analyze data. Monthly rainfall and monthly butterfly count were plotted as a time series graph. A total of 3564 individuals belonging to 66 species in 5 families were observed during the study period. These included 3 endemic butterfly species; *Troidus darsius*, *Appias galene*, *Nacaduba sinhala* and 2 vulnerable species; *Telicota bambusae*, *Nacaduba sinhala*. The highest species count and individual count was obtained in December, (66 species, 532 individuals) while the lowest was observed in September (34 species 129 individuals). A rapid increase of butterfly diversity and abundance was observed following the second inter monsoon season (October-November) and reached a steady level in North-west monsoon season (December-February). Diversity and abundance decrease started from first inter monsoon season (March-April) and continued to decline in the South-west monsoon season (May-September). The present study indicates a relationship between the rainfall and butterfly diversity and abundance.

Keywords: *Butterfly diversity and abundance, Intermediate zone, Rainfall gradient*

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