

ABSTRACT

This study evaluated the diversity, distribution and abundance of grasshoppers and locusts in three ecological zones of Nakuru County, Kenya. A total of 456 individuals belonging to Acrididae family (93.4% with 16 species) and Pyrgomorphidae family (6.6% with 2 species) were recorded. *Ailopus thalassinus* was the most abundant (27.4%) and distributed species. There were 5 dominant and 3 rare species (in zone II only). Abundance was highest in zone II (47%) and lowest in zone IV (24.3%) but was not significantly different ($p > 0.05$) among the zones. Species diversity and abundance were highly correlated ($r = 0.99$, d.f. = 2, $p < 0.005$). Zone II and III, and Zone II and IV had highest species similarity (Jaccard and Sørensen similarity indices), while zone III and IV had the lowest. Zone II had the highest diversity (2.45), while zone III and IV had the lowest (1.37 and 1.30, respectively) at $t=0.04$ (Shannon-Wiener indices). Species were distributed more equitably (evenness) in zone II than the rest (Renyi diversity). Different areas in zone II had higher diversity (Shannon-Wiener), than those in zone III and IV at $t=0.0012$ and $t=0.0003$. Therefore, ecological zones affect species abundance and diversity and their conservation is threatened, thus forestry to improve biodiversity conservation should be encouraged.

Key words: Acrididae; Caelifera; Ecological zones; Nakuru County; Orthoptera