

Bee diversity and floral resources along a disturbance gradient, coastal Kenya

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Abstract:

Kaya forests are rich in biodiversity and endemism along the coastal ecosystems of Kenya. The role of bees in pollination service that maintains native plant populations and resilience of such critical ecosystems is unprecedented. This study examined the diversity and floral resources for bees in Kaya Muhaka forest, forest edge, surrounding fallow farmlands and crop fields along a disturbance gradient with aim of informing local conservation and livelihood projects. In total, 755 individual bees, representing 52 species were recorded. Families; Apidae, Halictidae and Megachilidae were recorded. Overall, Apidae were most abundant with a proportion of 76%, Halictidae at 14% and Megachilidae at 10%. Bee composition was closely similar between forest edge and crop fields as compared to other habitats. However, bee diversity did not change significantly with increasing distance from the forest to surrounding farmlands, a pointer to high resilience of bee species. High abundance of bee populations was recorded in fallow farmlands, explained by high abundance of floral resources in the habitat. We noted a significant effect of floral resources richness on bee species richness. We compare these results to several recent bee faunal surveys including surveys in other parts of East Africa, Europe and Asia. These findings are important for understanding the effects of land use change on bee populations for effective conservation planning.

Key words: Conservation; Bee diversity; Kaya forests, Pollination, Disturbance gradient