

# Changes of species composition and diversity of Scarabaeinae dung beetle communities with forest disturbances at Mihintale Sanctuary

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Scarabaeinae beetles play a remarkable role in improving the nutrient recycling and soil structure through dung burial function. They are also a known indicator of forest disturbance. This study investigated the effects of forest disturbances on a dung beetle species community in the Mihintale sanctuary from March to June 2010. Dung beetle were sampled from undisturbed forest, disturbed forest, grassland and urban area using baited pitfall traps. 16 species from five orders were sampled in 30 trap days. Shannon diversity indices ( $H'$ ) of the undisturbed, disturbed, grass land and urban areas were 3.49, 1.59, 1.27 and 0 respectively.

Species richness was lower in disturbed (seven species) and grassland (six species) compared with undisturbed forest (nine species). The lowest species richness (one species) and diversity ( $H'=0.0$ ) were recorded in urban area. Species richness and abundance were positively related to disturbances. Species associations showed different responses to disturbance. Most dominant species in disturbed forest was *Onthophagus turbatus* while *Onthophagus unifasciatus* was dominant in undisturbed forest. *Copris signatus* and *Onthophagus spinifex* were restricted to the undisturbed forest. *Catharsius molossus* was found in all the habitats. Differences in the diversity, abundance and community composition between habitats indicate the sensitivity of dung beetles to habitat disturbance. The major threats for the dung beetles identified through this study are deforestation, illegal constructions and adding of foreign materials (solid waste) to the soil especially during the festival season.

**Key words:** Scarabaeinae, diversity, species richness