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## Kandyan home gardens: Faunal repositories in Sri Lanka.

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### Abstract

Kandyan home gardens are one of the major designs of sustainable land use systems that have evolved over hundreds of years incorporating high biodiversity and providing a diverse and stable supply of socio-economic products and service benefits to householders in Sri Lanka. A study was carried out in three home gardens in the Kandy district from May to December 2009 with the objectives of (a) identifying spatial distribution of terrestrial vertebrates in different vegetation strata, (b) their diurnal and seasonal variations, (c) plant-animal interactions, (d) nesting habits and (e) diet composition. A total of 93 terrestrial vertebrate species including seven amphibians, 23 mammals, 43 birds, and 20 reptiles were recorded. These comprised 14 endemic species, 71 native, four introduced mammals and two migrant birds. Terrestrial vertebrate assemblages were similar in Home garden 1 and 3. According to the fully-nested ANOVA, statistically significant differences were found in the composition of terrestrial vertebrates and the home gardens ( $P=0.005<0.05$ ), and their vegetation strata ( $P=0.005<0.05$ ). However, no statistically significant differences were observed between richness of terrestrial vertebrates and the monsoonal periods ( $P=0.966>0.05$ ), as well as the time of the day ( $P=0.775>0.05$ ). A positive relationship was obtained between canopy cover and number of bird nests in all home gardens ( $r_s = +1, \alpha = 0.05$ ).

Commensalism was the most frequently recorded relationship in all three home gardens. Overall, the diversity of animals and their interactions were different in the three Kandyan Home Gardens studied. Preventing the degradation of home gardens can be considered as a means of conserving biodiversity. There is scope to develop the Kandyan Home Garden system as an important strategy to conserve biodiversity outside the natural and protected area systems.

**Key Words:** Terrestrial vertebrates, plant-animal interactions, biodiversity, conservation