

## Comparison of leaf litter herpetofauna in selected Agro-ecosystems with a lowland rain forest in the southwestern wet-zone of Sir Lanka

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The objective of this study was to test whether agro ecosystems can be used as corridors to link habitat patches of leaf dwelling herpetofauna. Four sites with different land use types were selected in the Yakkalamulla, Galle district. These four sites represent three agro-eco systems (tea, rubber and oil palm) and a natural ecosystem. Quadrata sampling method was used to sample the herpetofauna. At each site eighteen 8 x 8m quadrata samples were carried out between September 2003 to November 2003.

A total of 279 individuals belonging to 23 species were recorded from the four study sites. These comprised sixteen species of reptiles and seven species of amphibians. The natural forest had the highest density of individuals (1571 animals/ha) compared to the three plantations. Among the plantations, oil palm had the highest individual density (399 animals/ha) while tea had the lowest density (165 animals / ha). The natural forest also supported a higher number of species (20) compared to the plantations (11). Of the plantations rubber and oil palm had the same species richness (9), while tea had the lowest richness (6). The natural forest had the highest species diversity ( $H' = 2.5563$ ) followed by oil palm ( $H' = 1.8313$ ), rubber ( $H' = 1.8159$ ) and tea ( $H' = 1.4938$ ). The evenness (E) was relatively high in all four sites indicating that no specific species dominated the species assemblage. This is further confirmed by low values obtained for the dominance index (D). A pair-wise comparison of the Sørensen similarity coefficient ( $C_s$ ) of herpetofaunal assemblage between each study site showed that there is a higher degree of similarity among the three man made ecosystems while the natural forest showed a low level of similarity to any of the three man made ecosystems.

The findings of this study clearly highlight the importance of natural vegetation for preservation of indigenous and endemic faunal assemblages. This study also indicates that manmade ecosystems are used by a large number of species. However, the species found here are mostly the common ones while the sensitive species were restricted to the natural forest. Therefore it can be concluded that while these three agro ecosystems play an important role in maintaining the population densities of common species they are unlikely to function as corridors to link fragmented habitat patches for leaf litter dwelling herpetofauna.