

**A COMPARISON OF LITTERFALL AND FLOOR LITTER IN
SELECTED DRY/WET ZONE FORESTS OF SRI LANKA**

K.A.J.M. Kuruppuarachchi^{1*}, G. Seneviratne² and B.D. Madurapperuma³

¹*Department of Botany, The Open University of Sri Lanka, Nawala, Sri Lanka*

²*Institute of Fundamental Studies, Kandy, Sri Lanka*

³*Department of Forestry and Natural Resources, Purdue University y, IN, USA*

**kajmKuruppu@gmail.com*

Understanding litterfall dynamics of wet/dry zone forests is useful to ascertain the process of carbon sequestration and nutrient cycles. The purpose of this study was to compare seasonal variation of litterfall and floor litter in two-forest sanctuaries *viz.*, Sigiriya Forest Sanctuary (SFS, in the dry zone) and Udawattakele Forest Sanctuary (UFS, in the wet zone). Litterfall collected in 8 litter traps (2 m x 2 m) and floor litter collected in 16 quadrates (1 m x 1 m) were measured in monthly intervals to cover an annual cycle in 2007. The amounts of litterfall, floor litter, total litter carbon, and total nitrogen were determined in the dry and wet seasons. The annual litterfalls of SFS and UFS were 1254 g/m² (74% fine litter) and 1183 g/m² (69% fine litter), respectively. Monthly average floor litter amounts were higher in the UFS [526 g/m²/month (73% fine litter)] than in the SFS [321g/m²/month (62% fine litter)]. Total litter carbon was higher in the UFS (46 ± 15%) than in the SFS (40 ± 15%). Total N of fine litterfall was marginally higher in the UFS (0.92 ± 0.35%) than in the SFS (0.89 ± 0.29%). Two litterfall peaks appeared in the SFS from May to June and again from October to November early monsoon season. Floor litter accumulation was observed throughout the year with a maximum in September. This could be due to the slow decomposition rate during the dry season because of low soil moisture content. Similarly, UFS contained a higher amount of floor litter than litterfall with fewer amounts of litter in the monsoonal and the post-monsoonal seasons (November to February). Nevertheless, seasonal variations of litterfall in UFS did not significantly fluctuate except for a slight increase from July to September. In addition, higher C/N ratios in litter appeared the UFS after heavy monsoonal rains. This could be due to a higher carbon amount of fine litterfall just after heavy rains. In contrast, the SFS showed a high C/N ratio during the dry season. It can be concluded that the amount of litterfall increases while the litter nutrient amount decreases at the peak of the dry season in both UFS and SFS.