

## Summary

The drastic environmental degradation in the recent past necessitates appraising the current status of biodiversity in the island. This is specially relevant for bats as there is a dearth of ecological and biological data although they are the largest group of mammals in the island. Therefore, this study was initiated to study the diversity, distribution, roost characteristics, reproduction and migration of Sri Lankan bats. Investigations were carried out in all climatic zones by dividing these to 10 x10 km grids. During the study period over 400 day roosts of bats were examined.

We amassed quantitative data for bats, which were not available up to now. Observations indicated that fruit bats are widely distributed throughout all climatic zones and their population sizes are increasing. In contrast, the numbers of many microchiropterans are declining and in some species the distribution was restricted to certain climatic zones. Although all 4 megachiropterans were recorded, only 16 species of microchiropterans (out of 26) were recorded during this study.

With regard to the roost selection some bats (e.g. *M. schreibersii*, *H. lankadiva*, *H. lankadiva*, *P. tenuis*) are highly selective in their choice of a roost (specialists) where as others were found in variety of day roosts (e.g. *H. speoris*). *Cynopterus* sp. was the only species, which constructed a roost (tent) for roosting, which was not reported in Sri Lanka. Reproductive cycles of Sri Lankan bats can be described as seasonally monoestrous (*H. ater*, *H. fulvus*, *H. speoris*, *M. lyra*, *M. spasma*, *R. rouxii*, *M. schreibersii*), seasonally polyoestrous (*R. leschenaulti*) or aseasonal (*P. tenuis*, *P. ceylonicus*, *Cynopterus* sp.). There existed a close relationship between the timing of reproduction and the rainy seasons of the area. In most of the species the breeding took place either between February – May or between September – December. Our observation on the presence of two breeding cycles for seasonal monoestrous species, *R. rouxii* and *H. speoris*, underline the

importance of environmental conditions for reproductive timing of bats. This indicates that ecological parameters could override any reproductive convergence of bats. This study also records the breeding periods of two species (*K. picta* and *M. schreibersi*) for the first time in Sri Lanka. The results show that some species migrate to specific maternity caves only for parturition underlining the importance of day roosts in the survival of bats (specially young).

It is evident that the status of bats has changed due to the direct and indirect actions of humans. Bats are highly sensitive to changes in their roosting and foraging environment. Thus it is imperative that the investigations are extended to areas where sampling was not done and periodical assessment of the status of bats in identified colonies.