



**Revision of taxonomy, distribution,
abundance and habitat preference of
slender loris (Primate, lorisidae: *Loris*)
in Sri Lanka**

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ABSTRACT

The slender lorises are Strepsirrhini primates found only in India and Sri Lanka. Two species of slender lorises *Loris lydekkerianus* and *Loris tardigradus* are currently recognised in Sri Lanka. *Loris lydekkerianus* (Grey slender loris) is found in both India and Sri Lanka and *Loris tardigradus* (Red slender loris) is endemic to Sri Lanka. The classification of slender lorises has been subject to numerous debates for many decades, yet researchers are still essentially using Hill's classification for the taxonomy, with a slight revision by Groves. Hill classified four subspecies in Sri Lanka viz. Western red slender loris - *L. tardigradus tardigradus*, Montane slender loris - *L. tardigradus nycticeboides*, Highland grey slender loris - *L. lydekkerianus grandis*, and Northern grey slender loris - *L. lydekkerianus nordicus*. All of these subspecies are endemic to Sri Lanka and classified as Endangered by IUCN. However, information on the range distribution and occupancy of these four subspecies are limited and most of it was collected unsystematically more than 50 years ago. Valid taxonomy is essential at all points in the species conservation process. Furthermore, conservation and management needs more reliable data to verify the distribution boundaries of taxa for their identification as spatial conservation units. The *L. tardigradus* has a restricted range in the central and southwest part of Sri Lanka, where moist forest habitats have been severely reduced by widespread changes in land use patterns. Furthermore the EDGE programme of the Zoological Society ranked the *L. tardigradus* as an EDGE species. However, information available for the effective conservation of the *L. tardigradus* is both limited and often contradictory.

This research was undertaken to clarify the taxonomy and range distribution of slender lorises in Sri Lanka by examination of museum specimens and live specimens of all 'morphs' from throughout the island. Facial/pelage characters, morphometric measurements and genetic (CO1 region) data were collected and analysed. The study concludes that at least three species with several subspecies present in Sri Lanka: names are available for two of these species (*Loris tardigradus* and *Loris lydekkerianus*) and three subspecies (*Loris lydekkerianus grandis*, *Loris lydekkerianus nordicus* and *Loris tardigradus nycticeboides*) are described here, while proposing a new species in the northwestern region and two new subspecies to the Uva region and Rakwana region. Further, study factors influencing the distribution, occurrence and abundance of *L. tardigradus* using the technique of single season, occupancy modelling data was gathered. The results show that the probability of detection (p), site occupancy (Ψ) and abundance of the *L. tardigradus* varied due to numerous factors such as altitude, forest seral state, arboreal connectivity, sample size, forest size and level of habitat protection. Arboreal connectivity is the highest ranking factor, the arboreal connectivity good habitat gain highest p , Ψ and abundance. The results further indicate that p , Ψ and abundance are also positively associated with forest size, with large forests (>250ha) having the highest p , Ψ and abundance. Furthermore, p , Ψ and abundance are also associated with seral states; the best habitat for *L. tardigradus* is primary forest, with then next best being secondary forest.