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Preliminary study on Lampyrids in Kiralakelle nature reserve, Matara District, Southern Sri Lanka; An ecotourism perspective

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Abstract

Lampyrids or fireflies are one of the ecotourism subjects throughout the world and there is a possibility to use them as a rapidly increasing tourism aspect in Sri Lanka. Previous records have revealed 63 species of fireflies belonging to 24 genera were listed in the country. However, the ecotourism significance of Sri Lankan firefly fauna is poorly studied and never been documented. The aim of the present study was to introduce the existing lampyrid fauna of Kiralakelle nature reserve in ecotourism view point as one of proposed tourism development site in Southern Province, Matara, Sri Lanka.

Study carried out throughout year 2010 from 6.00 p.m. to 22.00 p.m. as one sampling in each month. Fireflies were observed using 6 observation points located in two types of landscapes (1-3 points closer to forest patches and 4-6 closer to marshy water filling lands) along the main pathway of the nature reserve. Each point had 2.5 m radius and distance between two points was 250m. Abundance and diversity indices were estimated.

Totally, 7 adult firefly species, namely *Luciola cingulata*, *L. extricans*, *L. melaspis*, *L. praeusta* complex, and *Asymmetricata humeralis*, *Curtos costipennis* and *Lamprigera tenebrosa* were recorded. Genus- *Luciola* was the dominant lampyrid group in nature reserve and the lowest abundance was recorded in genus- *Lamprigera* fireflies. While *A. humeralis* was the highly abundant species in nature reserve, *L. extricans* was recorded as the less abundant one. The highest percentage abundance of recorded lampyrids was shown in observation point 1 and the lowest in point 5. The average percentage abundance of lampyrids was high in 1-3 observation points closer to forest patches than others. *L. cingulata*, *L. praeusta* complex and *A. humeralis* were shown their abundance throughout the year in Kiralakelle nature reserve and the other 4 species were recorded as seasonally dominant lampyrids. The highest Shannon Wiener diversity was obtained from observation point 2 (1.554) and the lowest in point 6 (1.240).

Records of this study will be helpful for better understanding of firefly fauna in Kiralakelle nature reserve and provide clear outline of their usability for tourism success. The site currently has threatened by illegal human activities such as felling, garbage filling, animal hunting and forests firing. Hence, additional conservation strategies are needed to protect the lampyrid fauna in this nature reserve. Sustainable ecotourism based on lampyrids will be a vital aspect to succeed the night-tourism industry in Kiralakelle nature reserve in future and throughout Sri Lanka as well.

Key words: Ecotourism, Kiralakelle nature reserve, Lampyrids