

Ecological study on congregating fireflies (coleoptera: lampyridae) in sulaman lake forest reserve, Sabah, east Malaysia

ABSTRACT

The purpose of this study was to examine the correlation between firefly population and abiotic factors in Sulaman Lake Forest Reserve (SLFR), Sabah, East Malaysia. Sampling was conducted at four sampling stations of SLFR using a sweep net. Water sampling has also been conducted. The study was conducted in July, October, and December 2021. The SLFR is dominated by one mangrove species tree, *Rhizophora apiculata*. A total of 97 individual fireflies were collected, with *Pteropytx bearni* (67) being the most abundant firefly species compared to *P. gelasina* (30). The average water quality of the SLFR was found to be in an acceptable standard value as determined by the Interim National Water Quality Standard (INWQS) Malaysia. Apart from other abiotic influences, water temperature (WT) and wind speed (WS) were found to be significantly different between stations ($P < 0.05$) and months of sampling ($P < 0.05$) between stations. Pearson correlation and stepwise regression analysis showed that there was a positive correlation ($P < 0.001$) between relative humidity (RH) and the firefly population. Because of their sensitivity to the environment, fireflies are considered strong indicators of the health of ecosystems. An unfavourable atmosphere would eventually reduce the number of fireflies.