

**D-24: Periods of diurnal activity and relative abundance of selected *Lepidopteran* species in the core area of Bellanwila - Attidiya sanctuary**

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Bellanwila - Attidiya sanctuary is located 10 km south of Colombo. The core area of 60 ha comprises seasonally flooded open grasslands with scattered shrubs and low trees.

The objectives of this research project were to study the periods of diurnal activity and relative abundance of butterflies in the core area of Bellanwila - Attidiya sanctuary and to relate them to various interactive influences such as weather conditions (sunny and rainy), habitat type (closed and open) and Periods of the day (morning and afternoon)

This study was carried out from April to June 1994. Butterfly counts were taken and observations made on 12 sunny days and 8 rainy days, using the Line Transect method.

Butterfly species and their individual numbers were recorded while walking through a pre-determined path of 1200 m, along the bank of the Bolgoda canal upto a width of 5 m on either side of a foot path at a constant average speed of 20 m. Recordings were made from 6.00 a.m. till 6.00 p.m. at hourly intervals for both closed and open habitat types under rainy and sunny weather conditions.

Temperature, light intensity, rainfall and wind speeds prevailing on each "observation day" were recorded. The vegetation pattern and feeding and breeding plants were also recorded.

Of the 55 butterfly species that were recorded during the study, 35 were categorised as the most abundant species on the basis of being sighted more than 5 times for the period. Results were analysed using the Shannon Diversity Index, t test, correlation co-efficient and Analysis of Variance.

There is a statistically significant difference in activity and abundance of butterflies

- (a) in closed and open habitats;
- (b) on sunny and rainy days;
- (c) morning and afternoon

Activity and abundance begins around 6.00 a.m., increases upto noon and decrease thereafter on sunny as well as rainy days in both closed and open habitats.

The highest number of butterflies were observed in closed habitats on sunny mornings and the lowest number in open habitats on rainy afternoons. There is a weak correlation between temperature and light intensity with activity and abundance of butterflies. The most abundant species was *Precis atlites* (Grey Pansy), followed by *Neptis hylas* (Common Sailor) and *Precis almana* (Peacock Pansy) as their breeding plants (*Acanthus* and *Amaranthus*) and feeding plants (*Lantana* and *Jussieae*) were abundant at the core area of Bellanwila-Attidiya sanctuary.

Bellanwila-Attidiya sanctuary possess rich and diverse fauna of butterflies with at least 55 species of which 35 are abundant and 5 species are endemic. Periods of diurnal activity of butterflies vary with the habitat type, weather conditions and time of day.

The activity and abundance of butterflies increase till noon and decrease thereafter. Butterflies prefer closed habitats with an abundance of both their feeding and breeding plants and are most active on bright, sunny mornings.