

**Title: DIVERSITY, DISTRIBUTION AND BIO-ECOLOGY OF BUTTERFLY COMMUNITIES OF WEST BENGAL**

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### **ABSTRACT**

The State of West Bengal has a diverse climate, which supports and favours a diversity of ecological habitats like forests, grasslands, wetlands, coastal and marine ecosystems, which harbour and sustain immense biodiversity. The information available on butterfly diversity and bio-ecology is sketchy and sporadic in West Bengal. This is an attempt to make an inventory of the butterfly communities based on bio-geographic zones of West Bengal. It also emphasizes the need for conservation of this delicate species as they are regularly traded from this part of India. The present study performed during 2008-2012 enabled to record a total of 330 species of butterflies belonging to 174 genera, 25 sub-families, and six families under two super-families. This included 33 species of butterflies belonging to family Papilionidae, 34 to family Pieridae, 90 to family Lycaenidae, 3 to family Riodinidae, 112 to family Nymphalidae, and 58 to family Hesperidae. The Lower Gangetic Plain (7B) was the species rich province having total count of 294 species, followed by Central Himalaya (2C) – 145 species, Chotta Nagpur (6B) – 88 species, and East Coast (8E) – 86 species. A total of 33 butterflies from four families (Pieridae – 2, Lycaenidae – 15, Nymphalidae – 3 and Hesperidae – 13) were recorded for the first time from West Bengal (range extension). Out of 330 butterfly species a total of 49 species are protected under three Schedules of Wildlife (Protection) Act of India, 1972 (Schedule I Part IV – 5, Schedule II Part II – 35, and Schedule IV – 9). Quantitative study on the species diversity, abundance, and habitat associations were performed across different habitats of Gorumara National Park from January 2010 to December 2011. The analysis of the recorded data revealed that availability of butterflies is distinctly influenced by the respective season where pre-monsoon (April-May) and post-monsoon (October-November) dominated. Maximum number of species and individuals were observed in forest habitat, followed by grassland and bamboo habitats. During the study period *Hybanthus enneaspermus* and *Adenium obesum* were recorded as new larval host plant for the two butterfly species namely *Acraea violae* and *Euploea core*. The total development time from egg laying to adult eclosion was determined as 24-29 days for *Appias libythea* and 28-33 days for *Hyarotis adrastus praba*. The natural risk includes attack by parasitoids and parasites and predators. Both natural and anthropogenic threats were identified for butterflies. Butterflies along with their habitats should be conserved through proper implementation of Laws and integrated management practices.

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