

# DISTRIBUTION MODELLING OF SABAH'S STATE BUTTERFLY, *TROIDES ANDROMACHE* (LEPIDOPTERA: PAPILIONIDAE) IN SABAH

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## ABSTRACT

Borneo, being one of the world's biodiversity hotspots, is home to many butterflies that are endemic to the island. Species distribution modelling is one of the conservation efforts used to identify potential hotspots of the species and their relationship with environmental factors. The aim of this study was to predict the potential distribution of *Troides andromache* butterflies across Sabah and determine the conservation status and potential threats. There are three subspecies of the Kinabalu Birdwing Butterfly recorded in Sabah, namely *Troides andromache* ssp. *andromache*, *Troides andromache* ssp. *merapokensis* and *Troides andromache* ssp. *nishikawai*. The species occurrence data were obtained from voucher specimens of *Troides andromache* deposited at the Insect Collection of Forest Research Centre, Kinabalu Park and Universiti Malaysia Sabah. The obtained data were analysed using Maximum Entropy (MaxEnt) software to compute the potential distribution modelling of the species. Majority of the high suitability of the species lie in the Northwest (mostly at Crocker Range, Trusmadi Range and Mt Kinabalu area) until Southwest (Sapulut, Kalabakan, Sipitang and Tenom districts). Environmental variables that affect the species distribution are annual temperature (Bio1), mean diurnal range (Bio2), precipitation of driest month (Bio14), temperature seasonality (Bio4) and elevation. Knowledge about the distribution of the *Troides andromache* is one of the conservation efforts and measures in dealing with potential threats to the butterfly. There are a few threats and issues that may affect the population of the Kinabalu Birdwing Butterfly in Sabah, including forest fire, changes in land-use and climate change.

**Keywords:** *Troides andromache*, Species Distribution Modelling (SDM), conservation, threats.