

## Ecological Characteristics of the Freshwater Crab, *Isolapotamon bauense* in One of Wallace's Collecting Sites

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**Abstract** Effective conservation of biodiversity requires good ecological information on species, populations and communities. This is particularly true for the Malaysia state of Sarawak in Borneo, whose rich biological diversity remains poorly documented, with many wetland species facing serious threats resulting from habitat alteration, pollution and overexploitation. This study aims to quantify the ecological characteristics of an endemic potamid freshwater crab, *Isolapotamon bauense* Ng 1987, a species listed as 'Vulnerable' in the IUCN Red List of Threatened Species. A capture-mark-recapture exercise was conducted at two sites along a stream at Gunung Serambu in the Bau region to better understand the ecology of this species. Our results reveal a sex ratio of 1:1, whereas analysis of carapace width-weight relationship document a negative allometric growth pattern and a relatively low condition factor for intermediate sized specimens. Males and females do not differ significantly in body mass and there is no obvious sexual size dimorphism. Over the month long study, the size frequency of carapace classes indicates the population was dominated by smaller size-classes. A linear regression shows a trend in the number of crabs captured with lower air temperatures and higher relative humidity. It also suggests a strong positive correlation with the depth of associated streams, used as a proxy for soil water saturation. We use the MARK program to estimate the overall population size at 90 m<sup>2</sup> sampling area, utilizing Akaike's Information Criterion for model selection. The best model incorporated individual heterogeneity and the effect of rain during the survey on capture probability. The population estimate is 133 individuals with 95 % confidence interval of 106–187. Other ecological aspects of the species, such as local distribution and,

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