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Assessment of the genetic variability of the endangered big-headed turtle *Platysternon megacephalum* across its distributional range in Thailand

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Abstract:

The big-headed turtle *Platysternon megacephalum* Gray, 1831, is one of the five endangered turtles and tortoises of Thailand. It is classified as an endangered species on the IUCN Red List (2018) due to threats posed by human hunting for consumption, trade and habitat degradation. Most recent works on turtles and tortoises in Thailand has focused on their taxonomy, distribution and ecology. However, only few studies have been based on genetic structure particularly for the big-headed turtle *P. megacephalum*. This research project aims to assess the taxonomic relationship and genetic structure of the Big-headed Turtle *P. meacephalum*, across its distributional range combining morphological and molecular genetic analyses. This primary results confirms the occurrence of *P. megacephalum* in 10 National parks of Thailand. Among these, 10 localities at elevations of 450-1250 m were reported in this time. Most *P. megacephalum* individuals were found at night in small, often rapidly flowing mountain streams in dry dipterocarp and montane rainforests. The results of the molecular variance analysis will be don coming soon.

Based on the results of phylogeography, a gene map of the species was constructed to aid in retrieving traded turtles back to their habitat. In addition, fine scale macroecological approaches (gene flow models, population connectivity models) will be computed for conservation prioritization to contribute to future conservation measures for the species.

Keywords: *Platysternon megacephalum*, big-headed turtle, distribution, molecular genetics