

# EVIDENCE OF COMPLEX PHYLOGEOGRAPHIC STRUCTURE FOR THE THREATENED RODENT *LEOPOLDAMYS NEILLI* ENDEMICK TO LIMESTONE KARSTS OF THAILAND

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Limestone karsts are highly threatened biodiversity hotspots supporting huge levels of endemic species. Karsts are patchy distributed within Southeast Asia and their isolation from one another give them the features of “islands on the continent”. We have studied the phylogeography of Neill’s Rat *Leopoldamys neilli*, a threatened murine rodent species endemic to limestone karsts of Thailand, in order to assess the influence of its endemicity to karst habitat on its phylogeographic pattern.

Two hundred twenty-two individuals of *L. neilli* were collected in 26 limestone karsts throughout the geographical range of this species and were used in this study.

Phylogeographic structure and population genetics of *L. neilli* were investigated on the basis of two mitochondrial markers, the cytochrome *b* gene and the cytochrome *c* oxydase subunit I gene, two nuclear fragments, the  $\beta$ -fibrinogen intron 7 and the intron 1 of the X-linked gene G6pd, and 12 microsatellite loci.

Our study gave evidence of a complex and strong geographic structure of the genetic diversity for *L. neilli*. Several highly differentiated genetic lineages were observed throughout Thailand. These results suggest a severe fragmentation of *L. neilli*’s populations, correlated to the fragmented distribution of its habitat and highlight its high endemicity to limestone karsts.

In conclusion, this study revealed an unexpected high level of intraspecific diversity within *L. neilli*. These results consolidate the importance to strengthen the protection of limestone habitats and to preserve not only their huge interspecific but also intraspecific diversity.