**Phylogeography and evolutionary history of *Leopoldamys neilli*, a Murinae rodent endemic to limestone karsts, in Thailand**

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Limestone karsts are highly threatened biodiversity hotspots supporting high 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” and has important consequences for the genetic structure of endemic taxa. In present study, we have studied the phylogeography of Neill’s Rat *Leopoldamys neilli*, a threatened Murinae rodent species endemic to limestone karsts of Thailand, on the basis of two mitochondrial markers, two nuclear fragments, as well as twelve 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.

The evolutionary history of *L. neilli* was investigated using Approximate Bayesian computation (ABC) and our results suggest that the current phylogeographic pattern of this species result from several deep vicariant events during Plio-Pleistocene.

To conclude, 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 high interspecific but also intraspecific diversity.