

# Phylogeny, phylogeography and diversification history of the westernmost Asian cobra (*Naja oxiana*) in the Trans-Caspian region

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## Abstract

We conducted a comprehensive analysis of the phylogenetic, phylogeographic, and demographic relationships of Caspian cobra (*Naja oxiana*; Eichwald, 1831) populations based on a concatenated dataset of two mtDNA genes (cyt b and ND4) across the species' range in Iran, Afghanistan, and Turkmenistan, along with other members of Asian cobras (i.e. subgenus *Naja Laurenti*, 1768). Our results provided strong support that *N. oxiana* is monophyletic and its divergence from its sister taxon, *N. kaouthia*, during early Pleistocene. Our results also highlight the existence of only one major evolutionary lineage in the Trans-Caspian region, suggesting a rapid expansion of the Caspian cobra from eastern to western Asia, coupled with a rapid range expansion from east of Iran to the northeast. However, the subdivision of eastern and northeastern populations in Iran was not supported; hence we propose only one evolutionary significant unit across the Iranian range of *N. oxiana* to be considered for conservation efforts.

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