First molecular findings for the Anatolian Leopard (*Panthera pardus tulliana)* imply an extended range eastwards and a reassessment of subspecies level taxonomy

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As a highly adaptable species, leopard is the most wide-ranging of the large felids. However, in most of western Asia their numbers have declined during the last century. The enigmatic Anatolian Leopard continues to remain emblematic for the Turkish public yet it is considered either already extinct or critically endangered by experts. On the other hand, there is genetic research claiming a single subspecies, *Panthera pardus saxicolor* in all of western Asia (except for Arabia). Yet no samples from Turkey were ever analyzed and published to support this claim while rules of zoological nomenclature were incorrectly applied during lumping several former subspecies into one.

Here we present the first genetic findings on Anatolian leopards. DNA from five tissue samples were amplified from old pelts at museums and private collections. Additional genetic material was obtained from 13 specimens from northeastern Turkey, Afghanistan, Armenia, Azerbaijan, Iran and Turkmenistan. We amplified and sequenced NADH-5 and CR regions of the mitochondrial genome, and combined our results with published sequences to determine the phylogenetic position of Turkish leopards. Leopard samples from the Aegean coast to the Caspian littoral formed a separate cluster compared to samples from further south and east, and possessed population specific mtDNA haplotypes. Our findings suggest that *tulliana* is not restricted to western Anatolia but ranges throughout Turkey, the Caucasus, northern Iran and Turkmenistan. We discuss whether the evidence is sufficient to subsume *saxicolor* under *tulliana,* and the consequences of such a taxonomic decision for species conservation in the region.

Keywords: Anatolian Leopard, mtDNA, taxonomy, *Panthera pardus*, subspecies