

The influence of the arid Andean high plateau on the phylogeography and population genetics of guanaco (*Lama guanicoe*) in South America

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A comprehensive study of the phylogeography and population genetics of the largest wild artiodactyl in the arid and cold-temperate South American environments, the guanaco (*Lama guanicoe*) was conducted. Patterns of molecular genetic structure were described using 514 bp of mtDNA sequence and 14 biparentally inherited microsatellite markers from 314 samples. These individuals originated from 17 localities throughout the current distribution across Peru, Bolivia, Argentina and Chile. This confirmed well-defined genetic differentiation and subspecies designation of populations geographically separated to the northwest (*L. g. cacsilensis*) and southeast (*L. g. guanicoe*) of the central Andes plateau. However, these populations are not completely isolated, as shown by admixture prevalent throughout a limited contact zone, and a strong signal of expansion from north to south in the beginning of the Holocene. Microsatellite analyses differentiated three northwestern and 4-5 southeastern populat