

Is there space for vicuñas? Habitat overlap and competition between vicuñas and livestock in Laguna Blanca, Catamarca, Argentina

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Spatial and diet interactions between vicuñas (*Vicugna vicugna vicugna*) and livestock (feral donkeys, cows, sheep and goats) were studied in Laguna Blanca Biosphere Reserve (Catamarca, Argentina) during 2002 and 2003. Abundance, distribution, and habitat use of each ungulate species were recorded in a fix wide transect survey, and feces collected for microhistological analysis of diet. Vicuñas had a broader distribution and were generalists in their use of habitat. They mainly used steppes distant from human settlements and utilized preferred habitat less than expected based upon foraging preference. Livestock was found grouped in richer areas (wet *vegas* and *salinas*) near human settlements where shepherds took them for grazing. Diet overlap between vicuñas and livestock was high, whereas overlap in habitat use was lower. The coexistence of vicuñas and livestock was founded upon the former occupying suboptimal habitat, facilitated by their adaptations for living in deserts and consuming poor quality forage. Spatial segregation was mainly related to human disturbance associated with pastoral activity, and not to a direct effect of livestock interaction with vicuñas. Feral donkeys showed an intermediate pattern of habitat use and diet, and could be potential competitors for vicuñas and other livestock. Estimated carrying capacity of the reserve suggested conditions are adequate for sustaining the current vicuña population, but critical when all ungulates (wild and domestic) are included. This work suggests a negative impact on native wildlife by introduced exotic livestock to the reserve. It is one of the first studies to investigate interactions between the southern subspecies of vicunas and free-ranging, sympatric ungulates in their puna.