

The effects of management on wild vicuña: ecology and behavior as indicators of biological impact.

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To achieve sustainability of vicuñas being managed for fibre production through live capture, it is critical to apply methods for assessing impacts on populations before and during the implementation of such management techniques. Management goals include the adaptation of procedures minimizing impacts on the species and its habitat, and maximizing the socioeconomic benefits for local Andean communities.

The response of wild vicuñas to the capture and shearing was evaluated by monitoring etho-ecological responses and demographic parameters before and after the disturbance. Field studies were conducted during spring at Cieneguillas in the Pozuelos Biosphere Reserve, Jujuy, Argentina, where vicuñas were captured, shorn, and returned to the wild. Five fixed-width, line-transect censuses were carried out from 1999 to 2005, as well as, seasonal etho-ecological studies using scan and focal animal sampling from 2002 to 2005. The effect of capture and shearing was evaluated by physiological, ethological and demographic parameters: proportion of young born to shorn and unshorn females, mortality rate, and number of vicuñas pre- and post-capture. The effect on behavior was evaluated by comparing captured (n=98) versus non-captured/shorn animals (n=100) during the 2 years after capture.

It was found that negative impacts of capture and shearing can be reduced by decreasing the speed and distance of the chase and handling time during captivity. No changes were observed in mortality and birth rates, social organization, and habitat distribution. Subtle and short-term changes, however, were observed in individual movement behavior due to thermal and behavioral stress. Changes were low-impact because of their short duration and equal magnitude of other changes produced by stochastic events (such as drought).