Rancher Perspectives of a Livestock-Wildlife Conflict in Southern Chile

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On the Ground

- Biodiversity is an important ecosystem service provided by rangelands. However, the close link between biodiversity and rangelands often results in conflicts between human livelihood and biological conservation, as is occurring with the livestock-guanaco (Lama guanicoe) conflict in Patagonia, Chile.
- Understanding community attitudes and perspectives regarding conservation is critical for successful conservation. We conducted a study to assess rancher perspectives of traditional land-use practices and biological conservation to identify incentives for, and barriers to, guanaco conservation.
- Ranchers strongly valued biodiversity and demonstrated stronger support for the cultural value, rather than economic value, of guanacos. However, a negative perception was associated with guanacos, and guanaco overabundance was identified as the primary cause of the conflict.
- Use of a sustainable-harvest approach of guanaco products, which emphasizes the commercial value of guanacos, may not be an effective conservation tool for the species under current conditions. Moreover, identifying the cultural carrying capacity, ecological carrying capacity, and minimum viable population of guanacos will be important in guiding conflict resolution.

Keywords: Chile, guanaco, livestock-wildlife conflict, Patagonia, ranching, Tierra del Fuego.

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"[Wildlife] has many values. It forms part of the landscape, just as the prairie forms part of the landscape...It would not be perceived well if the guanaco was exterminated, if a bird was exterminated, or any other species. A culture now exists toward that end [conservation], and that has value." – Rancher, Tierra del Fuego, Chile

Rangelands play an integral role in the global well-being of human societies. Humans derive many goods and products from rangelands such as timber, grazing, and recreation. Many of the ecological processes that are critical to human livelihood, such as energy flow, water recharge, and soil development, also occur on rangelands.1 In addition, much of the terrestrial global biodiversity may be found on rangelands.2

Biodiversity is an ecosystem service that historically has been undervalued but recently has garnered much societal support.7 Biodiversity and its conservation increasingly are being valued by society on moral, ethical, and aesthetic grounds.8 However, the close link between biodiversity and the more utilitarian uses of rangelands often results in conflicts between human subsistence and biological conservation. One example of such socio-ecological struggle is the livestock-guanaco (Lama guanicoe) conflict occurring on the Patagonian steppe of southern Chile.

The guanaco is one of the most culturally and ecologically important species of South America (Fig. 1A). Guanacos played an important role in the culture of native people.4 They also helped shape the vegetation of the continent, being the only native ungulate to inhabit the Patagonian steppe since the end of the Pleistocene5 and historically were the most common large herbivore on the Patagonian steppe, numbering 30 to 50 million.6 However, guanaco populations declined drastically with the arrival of Europeans during the 1800s and the introduction of domestic sheep.5 Although several factors contributed to the guanaco decline, conflict with sheep ranching is considered a primary cause. The diets of sheep and guanacos overlap considerably, resulting in substantial interspecific competition.7 In addition, sheep grazing has resulted in vegetation shifts from palatable to unpalatable plants and has contributed to desertification of the steppe.8 Today, guanaco populations are estimated at about 500,000 to 600,000 and believed to occupy only 40% of their original range.8

Sheep ranching historically has been the primary land use in Patagonia and is a major economic force in the region (Fig. 1B). Conflict with sheep ranching therefore poses a real obstacle to guanaco conservation. Conservation agencies have