

# Scientific evidence does not support the translocation of guanacos in Argentina

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## Abstract

The Argentinian Ministry of Environment has approved the translocation of 45 guanacos from Southern Patagonia to the Pampas region, a distance of 1500 km, as the initial phase toward future translocations into a National Park located in the Chaco region, another 1600 km further North. This decision raises concerns about the technical and ethical aspects of the translocation. Firstly, there is a lack of proper evaluation and scientific evidence to support the need, opportunity, and feasibility of this translocation. The guanaco population is currently over one million and is increasing, and genetic differences exist among local populations. The translocation could produce anthropogenic-driven admixed populations, leading to genetic swamping and disrupting evolutionary processes. Second, there are ethical conflicts around managing wild species populations that prioritize private objectives and disregard local, publicly funded science. Rewilding projects require a deep understanding of interacting ecosystem processes, and of the socio-economic context. This management decision violates guiding principles for rewilding and should have followed proper scientific evaluation and transparent local consultation.

## KEYWORDS

camelids, ethical concerns, genetic structure, public funding, reintroduction

Rewilding is receiving increasing attention from society, the media, and the scientific literature. However, due to the inherent variability and unpredictability of the natural world, it still shows high levels of uncertainty (Nogués-Bravo et al., 2016). In December 2022, the Argentinian Ministry of Environment, through the NGO “Fundación Rewilding Argentina,” approved the translocation of 45 guanacos (*Lama guanicoe*) from Southern Patagonia to a public reserve in the Pampas region

(Resolution Number 2022-404-APN-MAD). This represented a 1500-km movement likely never achieved by any guanaco before, as the initial phase toward future translocations into a National Park located in the Chaco region, another 1600 km further North (Cerón et al., 2022). This letter seeks to highlight two concerns regarding this practice. First, it addresses the technical aspects of a decision made without proper discussion and disregarding the current scientific evidence. This raises

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questions about the need, opportunity, and feasibility of translocating guanacos as planned. Second, it raises ethical concerns about managing populations of wild species prioritizing private objectives and disregarding local, publicly funded science.

While independent scientific review is essential to ensure that management decisions match the current scientific knowledge (Meffe et al., 1998), it is not uncommon that large-scale translocation of charismatic species is done without proper evaluation (e.g., Gopalaswamy et al., 2022). Guanaco numbers are currently estimated to be between 1.5 and 2.2 million individuals, with over 80% of them in Argentina and showing an increasing trend (González & Acebes, 2016). While in this country some local populations are small and isolated (Carmanchahi et al., 2019), there are several factors to consider when proposing a movement of individuals at a large spatial scale. Widespread species often show genetic structure associated with geographical distance (Allendorf et al., 2022), and the guanaco is no exception, showing genetic differences among local populations (Mate et al., 2005; Mesas et al., 2021) to the extent that is possible to identify the origin of translocated or captive individuals (González et al., 2014). Therefore, if successful, this management action will produce anthropogenically driven admixed populations. This would have the associated risk of losing genetic variants that are exclusive from the recipient population, a process known as genetic swamping (Allendorf et al., 2022). Populations in the periphery of distribution are often ecologically and genetically distinct from those in the center of distribution (Ivanter, 2017; Lesica & Allendorf, 1995; Levin, 1970). Patagonia, the Pampas, and the Chaco also represent very different ecoregions, each characterized by their own climate regime and evolutionary history, where local adaptations, pathogen diversity, and other aspects of the natural history of the guanaco have not been evaluated so far. Therefore, this translocation has the potential of disrupting evolutionary processes (Crandall et al., 2000). In addition, local threats such as hunting, invasive species, habitat degradation, and barriers to movement remain unaddressed despite their prevalence among local, endangered populations (Carmanchahi et al., 2019). Before undertaking any translocation, it is imperative to establish a strong guarantee that historical threats would not represent further risks to the prospective translocated populations (IUCN/SSC, 2013), a consideration unfortunately unattended to in this case. In fact, the conservation planning for this species prioritizes actions that mitigate main threats in order to favor increases in local population numbers, distribution range, and habitat connectivity (Baldi et al., 2016; Carmanchahi et al., 2019).

In concordance, before the translocation of guanacos was authorized, the technical staff of the National Park Administration reviewed the proposal, reporting that a more comprehensive assessment involving local scientists and other stakeholders was essential for determining its feasibility (Administración de Parques Nacionales, 2021). Nevertheless, although the precautionary principle should have prevailed, the Federal authority approved the translocation. This is related to our second concern. There are unsolved ethical issues concerning who, where, and with what aim manages biodiversity in Argentina. The country holds highly valuable scientific resources to advise and thrive in new paradigms of relationship with nature. The National Council of Science (CONICET) is globally ranked 17<sup>o</sup> among Government science institutions (Scimago, 2022), and encourages research on topics of public interest, including dozens of experts studying guanaco's populations from biological, economical, and social perspectives. In a context of restricted public funding, private research and conservation funds may be relevant and complementary (Carignano & Jaworski, 2019). However, rewilding projects require a deep understanding of interacting ecosystem processes, and of the socio-economic context. Thus, multidisciplinary evidence-based assessments of rewilding interventions are needed to make rewilding projects accountable to funders, the public, and the research community (Perino et al., 2019). Most of all, "rewilding should be inclusive of all stakeholders and embrace participatory approaches and transparent local consultation in the planning process for any project" (Carver et al., 2021).

While local academics recently started discussing this topic in the literature (Guerisoli et al., 2023), this is still widely decoupled from management decisions at the governmental level. It is worth asking if the public authorities intend to lead the country's biodiversity conservation agenda. It is contradictory to manage such an iconic species as the guanaco disregarding years of publicly funded research and outsourcing the management of the nation's natural biodiversity. This policy jeopardizes science, biological conservation, and sovereignty without guaranteeing benefits to society at large.

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