



Essays and Perspectives - Rewilding South American Landscapes

A review of a multispecies reintroduction to restore a large ecosystem: The Iberá Rewilding Program (Argentina)



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ABSTRACT

Iberá Nature Reserve in the province of Corrientes, Argentina has suffered one of the worst defaunation processes in the country. After acquiring lands within the Reserve, The Conservation Land Trust started the Iberá Rewilding Program in 2007, with the aim of reintroducing all animal species that had been extirpated locally in historic times. Along with its ecological value, this program intended to improve local economies by positioning Iberá as an ecotourism destination. So far, two self-sustaining populations of two species (giant anteater and pampas deer) and five initial population nuclei of four species (giant anteater, pampas deer, tapir, peccary and green-winged macaw) have been established, as well as an ongoing jaguar breeding program. Major obstacles faced during the rewilding process included communication challenges (communicating the program results openly and clearly); bureaucratic challenges (overcoming initial resistance from authorities, academia, and other stakeholders by producing high quality recovery plans and communicating consistently) and species-specific challenges (recognizing each species' requirements and learning from individual animals' responses). This experience demonstrates that rewilding projects require abundant suitable habitat, long-term financial and organizational commitment, a solid interdisciplinary team and a high level of flexibility in order to adapt in a changing context. One of the first programs of this kind in the Americas, the Iberá Rewilding Program is being adopted by government authorities, private conservationists and the general public in Argentina, as a model for proactive conservation.

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Introduction

Over the last few decades, the reintroduction of species with primary conservation purposes has been increasingly used as a conservation approach to reverse species extinction (IUCN, 2013). Also, rewilding initiatives involving the reintroduction of species to restore an ecosystem functioning (Seddon et al., 2014) are starting to be carried in Europe (Navarro and Pereira, 2015), North America (Foreman, 2004), Africa (Varty and Buchanan, 1999; Hofmeyr et al., 2003). Species reintroductions have also been reported within South America, with some examples in Argentina (Juliá, 2002; Tavarone, 2004; Jacome and Astore, 2016), in what still represents a fledging conservation field in the region. One of the most remarkable attempts to carry out the rewilding of a large ecosystem by the

reintroduction of several species is the Iberá Rewilding Program in North East Argentina.

The Iberá region experienced one of the worst defaunation processes in Northern Argentina during the XXth century (Parera, 2004; Giraud et al., 2006). Iberá was considered in the past as an untamed territory with abundant wildlife, where only hunters or explorers would venture to enter. A long history of European colonization, combined with cattle ranching activity based on the frequent use of fires and dogs, along with subsistence and intensive commercial hunting for fulfilling the European market of animal products (fur, leather, feathers, etc.) during the second half of the past century, were primary contributors to this defaunation process (Parera, 2004; Di Blanco, 2014). Species such as giant anteaters (*Myrmecophaga tridactyla*), collared peccaries

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(Peccary *tajacu*), tapirs (*Tapirus terrestris*), green-winged macaws (*Ara chloroptera*), jaguars (*Panthera onca*), giant otter (*Pteronura brasiliensis*), which inhabited the area became extinct in the whole province, while two of the three pampas deer (*Ozotoceros bezoarticus*) populations in the province also disappeared (Parera, 2004; Giraudo et al., 2006). Other species such as the maned wolf (*Crisozyon brachiurus*), marsh deer (*Blastoceros dichotomus*) and cougar (*Puma concolor*) became very scarce in the region (Fabri et al., 2003). In 1983, with an increasing national interest in conservation, Iberá was declared a 13,000 km² nature reserve (Iberá Nature Reserve – INR). Later, in 2009, a portion of its public lands were declared a Provincial Park. These protection measures enabled the slow recovery of the region's wildlife, including what are presently abundant populations of caimans (*Caiman latirostris* and *C. yacare*), marsh deer (*Blastoceros dichotomus*), brocket deer (*Mazama gouazoubira*) and rheas (*Rhea americana*).

Since 1999, an international non-profit conservation organization, The Conservation Land Trust (CLT, <http://www.theconservationlandtrust.org/>), funded by philanthropists Douglas and Kristine Tompkins, bought 1500 km² of private lands inside the INR. These lands were then managed for conservation and ecological restoration purposes in order to be turned into a 1400 km² national park, adjacent to the 5500 km² Iberá Provincial Park. In 2016, the presidents of CLT and Argentina signed a protocol to establish a national park which, combined with the existing provincial park, would form Iberá Park (<http://parqueibera.corrientes.gob.ar/>); the largest protected area of its kind in Argentina (7000 km²).

In addition to the parks creation, a group of Argentinean scientists recommended the reintroduction of several extirpated species that would not be capable to recolonize the region by themselves (Parera, 2004). Following these recommendations, CLT developed the Iberá Rewilding Program (IRP), aimed at re-establishing sustainable populations of all locally extirpated fauna. The IRP follows the definition of rewilding described by Seddon et al. (2014) as “species reintroduction to restore an ecosystem functioning”. Hence, our reintroductions were mainly aimed to advance ecological restoration instead of individual species endangered recovery. This program is part of the larger Iberá Project, which also aims to create Iberá Park and promote local development and pride through ecotourism (<http://www.proyectoibera.org/en/especiesamenazadas.htm>). The IRP started in 2007 and nowadays includes the reintroduction of giant anteaters (*Myrmecophaga tridactyla*), pampas deer (*Ozotoceros bezoarticus*), collared peccaries (*Peccary tajacu*), tapirs (*Tapirus terrestris*), and green-winged macaws (*Ara chloroptera*). We also started an onsite breeding program aimed at restoring the role of jaguars (*Panthera onca*) as top-predators to the area. Even if cougar (*Puma concolor*) presence in Iberá has been registered during recent years in camera traps there have not been images of cubs or different individuals that indicate the presence of a resident population of this predator. Besides its ecological potential, rewilding has also been used to promote the Iberá region as a wildlife tourism destination that would encourage local development.

As far as we are aware, the IRP represents the largest initiative aimed to restore several animal species in a single ecosystem within the Neotropics. This fact, along with the conservation opportunity that Iberá Park represents in terms of size and protection level, converts the restoration of Iberá into a unique case in a continent where the creation and management of protected areas is more common than the proactive management of wildlife species for recovery. The past ten years of wildlife reintroduction in Iberá have generated a great amount of practical experience, not only in terms of species management, but also in terms of organizational, political and administrative issues. The objective of this manuscript is to describe the Iberá Rewilding program, its methods, approaches,

results and lessons learnt. In this way, we expect to motivate other projects aimed at restoring species or ecosystems in the region, thereby generating an expansive movement toward using rewilding as a tool for proactive wildlife restoration.

The Iberá Reserve

The INR (13,000 km²) is located in the province of Corrientes, in Northeastern Argentina (Fig. 1). Local climate is subtropical with mean temperatures varying from 15 °C to 28 °C in the coldest and warmest months respectively, and an annual rainfall of between 1.500 and 1.800 mm (Neiff and Poi de Neiff, 2006). Iberá is composed of various environments including marshes, lagoons, small rivers, temporarily flooded grasslands, savannas, and forests. INR was created in 1983 (Provincial Law 3773/83) and combines public and private lands. In 2009, 5530 km² of public lands were declared as a Provincial Park, and were thereby strictly protected by provincial authorities. Among private lands, most of which are dedicated to cattle ranching and pine production, The Conservation Land Trust (CLT) holds 1500 km², currently protected as six private reserves, which will be donated to the nation to create a national park, adjacent to the existing provincial park (CLT, 2017).

Among CLT's reserves, three have been chosen for wildlife reintroductions: Socorro, San Alonso and Cambyretá (Fig. 1). These lands were operated as cattle ranches until they were bought by CLT, at which point cattle was excluded and a natural restoration process began. Socorro is located at the Southeastern edge of INR, and consists of 124 km² of grasslands, gallery forest and wooded savannas, bordered by wetlands to the North, the town of Pellegrini to the East and private lands to the South and West. San Alonso is a 114 km² island surrounded by the Paraná lagoon and the Carambola stream to the West, with uninhabited wetlands around its remaining limits. It represents the most elevated land within its surroundings, which contributes to its high vegetation diversity, composed of temporarily flooded and well-drained grasslands, forests patches and palm trees. Cambyretá is a 225 km² piece of land located in the Northern portion of INR. Its landscape is composed of grasslands, forests patches and marshes. Cambyretá was the first section of the CLT reserves to be donated to create Iberá National Park and, since 2016, it is being managed by the National Parks Administration.

Villages and small towns surround INR, the most populated of which are the city of Ituzaingó (20,000 in by 2010), and the villages of San Miguel (4700 in by 2010), Concepción (4000 in by 2010), Loreto (2000 in by 2010) and Colonia Carlos Pellegrini (890 by 2010) (INDEC, 2010). There are also some small hamlets adjacent to or immersed in the Iberá reserve, where a few families (i.e. less than 1000 people in total) live off of cattle and subsistence farming.

Steps in the reintroduction process

Planning, feasibility assessments and permits

We initially listed the species that had been extirpated from Iberá and for which evidence of their past presence in the region was available (Fabri et al., 2003; Parera, 2004; Giraudo et al., 2006). In 2005, we carried out a participative workshop with local experts and the director of INR to establish a first list of species that should be reintroduced based on their conservation status and habitat suitability. We designed and wrote recovery plans for all reintroduced species; giant anteater (Jiménez Pérez, 2006), pampas deer (Jiménez Pérez et al., 2009a), collared peccary (Jiménez Pérez and Altrichter, 2010), tapir (Di Martino et al., 2015), green-winged macaw (Berkunsky and Di Giacomo, 2015) and jaguar (The Conservation Land Trust, 2013). For some species (anteater and jaguar)

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