

Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

Reason(s) for success/failure:

- International cooperation along with national & local commitment to the project was critical for fund raising and ensuring the requisite breadth of expertise was available.
- Lengthy period of protecting and allowing vegetation to re-establish within the park provided adequate grazing resources to sustain the addax post-release.
- A genetically diverse founder population of addax was established and stable population growth occurred during the first five years.
- Dispersal of addax outside of the fenced protected area resulted in the species returning to the Grand Erg Oriental, albeit in an unplanned way and efforts are now needed to assess this outcome.

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Experimental reintroduction of South Andean huemul and Guanaco in the Huilo Huilo Chilean Private Reserve, Chile

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Introduction

The largest herbivores of Chile, the South Andean huemul (*Hippocamelus bisulcus*) and the guanaco (*Lama guanicoe*) used to occur in most of central south Andean region in close proximity. Both species present local extinctions processes and fragmented populations all through their distribution range. The South Andean huemul is an endemic deer of Chile and Argentina patagonia. With an historical distribution range from 34°S to 54°S, total number of the binational population have been estimated to about 1,500 individuals. The species is included on the IUCN Red List as Endangered and on CITES Appendix I. It went extinct in the reintroduction area in the late 1980s. The Guanaco, present from 8°S to 55°S, is considered a Least Concern species by the IUCN. Even though there is not strong evidence of historical presence of guanacos in the “reintroduction/ introduction” area, the species is an important target prey for the top carnivore, the puma (*Puma concolor*) under the working group perception.

Huilo Huilo (S 39° 57' 17" W 071° 53' 54") at the central south Andean region has an extension of 100,000 ha with an elevation that stretches from 600 - 2,400 m, the reserve and their associated ecosystems of woodlands and grasslands offers an important habitat to both species which includes the “Mocho-Choshuenco” public reserve at 7,537 ha.



South Andean huemul

Goals

- **Goal 1:** Initiate a breeding center for both species in Huilo Huilo Reserve, with the huemul as the main target.
- **Goal 2:** Generate an umbrella for the effective protection of several other species present in the area.
- **Goal 3:** Incorporate local communities as real actors in the reintroduction project and global conservation.
- **Goal 4:** Reintroduce and introduce both species into the reserve which is a unique Andean ecosystem.

Success Indicators

- **Indicator 1:** Successful breeding has occurred for a decade and breeders were born at the center.
- **Indicator 2:** Logging activities decreased dramatically during the 10 years breeding process and finally stopped in the 65,000 ha before releasing the first group of South Andean huemuls into the wild. Areas with South Andean huemul presence are declared an exclusion spot for every anthropogenic activity except the working group and government inspectors - Servicio Agrícola y Ganadero (SAG). Several other species are under protection in the present since the reintroduction process began.
- **Indicator 3:** At least 90% of the rangers that protect the reserve and the animals are local residents. School children in several schools have incorporated the emblematic species as part of their lives and interest.
- **Indicator 4:** Individuals of both species have been released into the wild and we will establish the species over the long-term.

Project Summary

Feasibility: The project aims to return the South Andean huemul to Huilo Huilo reserve and Region de Los Rios, where the species became extinct in the late 1980s due to unknown reasons. The species which is included in the Shield of Arms of Chile, has never recovered in any population neither Chile or Argentina

regardless all binational efforts. Numbers tends to decrease, even though “the Chilean National Plan of Conservation” for the species considered *ex situ* projects with a reintroduction purpose and has been on-going for more than three decades. All the attempts to stablish a long-term breeding center failed in the past. Since the Guanaco, a highly charismatic ungulate, is observed in most of the places where the highest huemul populations occur. The



Rangers with a guanaco

species was incorporated into the reintroduction process, primarily, as an attempt to decrease puma predation impact over the few huemuls available for the reintroduction process.

Implementation: On 21st April 2005, after one year of presenting the Project to the Chilean authorities, the first two huemuls (out of six allowed) were captured in Aysen, Chilean Patagonia región. Both animals were

transported by air using two helicopters and one

military transport airplane of Ejército de Chile. Upon the successful arrival of the first male and female into Huilo Huilo reserve, resident people at the extraction region made a formal complain to local authorities. Even though the project demonstrated the legal right to capture the remaining four individuals, since there was an official government permit, the captures were stopped. Thus the Project had to attempt captive-breeding with just two individuals, the only ones in captivity on the whole planet!



Author and rangers working on a female huemul

The first fawn was born on October 2006, later the pregnant female was shot inside the fenced area and the project was left with just one adult male and one juvenile female. The Chilean wildlife authorities, "SAG", provided one adult female as a breeder to the project. The animal came from a different/distant population than those captured at the beginning. Since then the project reached a number of 18 individuals after 10 years of hard work, but all animals are the product of just three individuals. The project attempted to improve the genetic pool for 10 years, and also trying to convince the authorities about the importance of the project. The decision to initiate an experimental reintroduction came defying the belief that Huilo Huilo private reserve, would never release animals into the wild. Obtaining a reintroduction permit took almost one more year and as agreement with SAG to demonstrate that huemuls and guanacos would not be a sanitary threat for livestock. The animals were blood sampled for 1-Bovine leukosis virus, 2-Paratuberculosis, 3-Brucellosis and 4-Diarrea viral bovina (BVD) including an anti-helminthic treatment.

After analyzing the possible threats and the requirements to improve the survival of the animals to be released in conjunction with wildlife officers (SAG), the team decided that guanacos would be released one year earlier. The first release would have 20 adult Guanacos (males and females) and five adult huemuls (only males, a consideration for the first process to protect breeding females in the experimental stage). Both groups of animals would be soft-released from the breeding centers where they were born and at a distance of 5 km from each



Guanacos in their native habitat

other. Two years before, 3 (out of 6 adults) pumas were monitored by radio-telemetry in the area to learn more about their ecology.

Post-release monitoring:

During late November 2016, the reintroduction of South Andean huemul began with five adult males, all under radio-telemetry surveillance. Using ATS VHF radio collars, animals are evaluated twice a day, including guanacos which are monitored under the

same protocol. Upon visual contact with the animals, the GPS position is registered plus a general evaluation of every individual and composition of the group is recorded. As an additional effort, camera traps were installed as a fixed device, sometimes additional cameras are used for specific purposes. Every site with a positive presence of huemuls is considered “an exclusion area” for every anthropogenic activity and the rangers take positive control of the area, where logistically possible. Every dead animal carcass (huemul or guanaco) is inspected to determine the cause of death. Since the reintroduction began, six adult guanacos, plus two new born in the wild were predated upon in one year by pumas. Additionally, three guanacos were killed by domestic dogs (*Canis lupus familiaris*) in one day! After eight months, one huemul radio-collar was found in a river (animal missing) in the most southern border of the reserve with the local police starting an investigation. A new release process is being planned for both species, with 20 more guanacos (males and females) and five more huemuls (males and females).

Major difficulties faced

- The co-ordination and dialog with government organizations to reach an agreement for obtaining the permits for working with the species.
- Changing the perception that government organizations are not the only ones to work with this species.
- Convincing the government organizations that the project needs new genetic stock urgently.

Major lessons learned

- Even though huemuls were bred in a semi-captive program (70 ha), and they remained in captivity for 10 years, they have shown abilities to avoid pumas predation and live in the wild without any support.
- Guanaco as an alternative prey species, seems to be an important key for the conservation of the huemul.

- No matter about the preventive actions taken, poaching and domestic dogs are a real threat.
- Without the “real approval” of the Chilean authorities, it will always be at a serious risk of collapsing.

Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

Reason(s) for success/failure:

- Ten years of previous experience on captive-breeding and management of similar Chilean native deer, the pudu (*Pudu puda*).
- Team experience on wildlife capture, transport, rehabilitation and rearing.
- Habitat quality of Huilo Huilo reserve.
- Logistic support of Huilo Huilo foundation and Ejército de Chile.

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