



Global Re-introduction Perspectives: 2016

Case-studies from around the globe

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IUCN/SSC Re-introduction Specialist Group (RSG)



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v. Tasmanian Devil, Maria Island, Tasmania @ Simon DeSalis
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Re-introduction of the pampas deer in Iberá Nature Reserve, Corrientes, Argentina

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Introduction

The pampas deer (*Ozotoceros bezoarticus*) was the dominant ungulate over most of the vast plain areas of southern South America (González *et al.*, 2010). Originally distributed throughout the Argentinean grasslands, pampas deer suffered a dramatic decline within this country due to habitat loss and fragmentation, hunting, and the competition with livestock. It is considered internationally as a Nearly Threatened species and as Endangered in Argentina. Out of the pampas deer populations remaining in this country, one is located on the Aguapey grasslands (Corrientes province, north-eastern Argentina), which holds around 1,500 individuals living in private cattle ranches (Zamboni *et al.*, 2015). Many of these ranches are being transformed into pine plantations or intensive livestock production. Adjacent to the Aguapey grasslands, The Iberá Nature Reserve (INR) is a 13,000 km² multiple use protected area that includes significant grassland habitats. At least two pampas deer populations became extinct around INR during the late 20th century. When INR was established in 1983 remnant wildlife populations started to recover and several authors proposed the re-introduction of extirpated fauna. Thus, The Conservation Land Trust (CLT) started a project aimed to restore pampas deer within some of its own reserves sited inside INR.

Goals

The following goal was included within the Pampas Deer Recovery Plan presented by CLT and approved by the government of Corrientes (Jiménez-Pérez *et al.*, 2009a):

- Goal 1: Establishing, at least, one population of pampas deer inside Iberá Nature Reserve that will augment the



Released deer © Juan Ramon Diaz Colodrero

species distribution in Corrientes province and that will assure its long-term survival.

Success Indicators

The above plan did not include explicit indicators of performance. Therefore, we include basic demographic indicators related to our general goal:

- Indicator 1: Number of pampas deer present in the re-introduced populations.
- Indicator 2: Ratio between reproduction and mortality in the re-introduced populations.
- Indicator 3: Rate of increase in the re-introduced populations.

Project Summary

Feasibility: In 2001, a group of consultants presented to CLT a proposal to re-introduce pampas deer inside San Alonso 100 km² private reserve. In 2006, a technical team within CLT revised this proposal to turn it into a recovery plan that could be implemented by the foundation and approved by relevant authorities. First, we asked Argentinean and Brazilian experts to visit both the capture and release areas to review and plan translocation methods. All agreed that wild animals should be captured from the Aguapey population and then released into an acclimation pen at San Alonso before actual release. Pampas deer at the source population inhabit flooded grasslands that are impassable by truck and these animals could not be approached on foot or by horse. Hence, we had to dart the deer from a tractor carrying an especially designed platform on this rear. Since the CLT team did not have actual experience in darting, immobilizing and transporting pampas deer we had to look for an external expert to coordinate the first captures. Coordination was given to Dr. Mauricio Barbanti from Brazil, who was at that time the person with the most experience in capturing and handling pampas deer internationally. He helped us to design capture, transport, radio-tagging and pre-release methods.

A Population Viability Assessment (PVA) was carried out to choose different translocation strategies and to assess demographic and genetic impact on the source population (Jiménez-Pérez *et al.*, 2009b). Once we had chosen a translocation coordinator, we presented a recovery plan to provincial authorities for its approval. This plan included three potential re-introductions sites within INR in order of descending priority: San Alonso, San Nicolás (200 km²) and Rincón del Socorro/Iberá (300 km²). Explanatory meetings and personal visits were held with local landowners to explain the project rationale, goals and methods. General response to the idea was unenthusiastic, since cattle ranches tended to be reluctant to cooperate with conservationists that “interfere” in the management of their properties. During this process we were in contact with national wildlife authorities that were coordinating a national recovery plan for the species. Simultaneously, a PhD thesis showed good genetic variability within the source population in Aguapey (Raimondi, 2013).

Implementation: Since all pampas deer live in private property and no landowner was willing to let us capture animals at their land, we purchased a 5 km² property sited in the best area for the species. Within this property cattle was excluded and

small burns were carried out to create optimum habitat for pampas deer. A park ranger watched the area and started habituating deer to the tractor that would be used in the captures. The first translocation campaign was coordinated by an external expert (i.e. Mauricio Barbanti) with assistance from our team, and supervision from provincial authorities on June 2009. During this campaign five animals were captured and



Darting from a tractor © Gustavo Correa

translocated (3 females:1 male) to San Alonso. Two of the females died at the pre-release pen due to the translocation process. In July 2009, a second campaign was coordinated by our veterinarians who gained experience on the previous operation. On this occasion 4 females were captured and translocated, one of which died due to the impact of the dart on its hip (Jiménez-Pérez *et al.*, 2009b). During 2011, five more female deer were translocated San Alonso and all of them survived. During 2012, 10 more animals were translocated to the area (9 females:1 male) with zero casualties during the translocation and pre-release phases. During the following 2 months after their release 4 female deer died after drowning in the swamps that surround San Alonso Island.

On 2012, 6 animals (4 females:2 males) were translocated from Aguapey to San Nicolás on western INR. During the following months, 1 female drowned in a lagoon, 1 male swam to San Alonso and remains there, 2 moved to pine plantations outside INR and died there, and 2 were captured and translocated to San Alonso, one of which died after translocation. As a result of this, further re-introductions to San Nicolás reserve were halted. In 2015 a third population was started in Rincón del Socorro on south-eastern INR. Seven animals were translocated with zero casualties during the captures. One animal died at the pre-release pen from wounds unrelated to the captures, and the remaining 6 animals were released from the pen. Later a female deer died after leaving the protected area to move into private cattle ranches, while the remaining 5 animals seem to have settled in protected prime habitat. This incipient population will be reinforced with more animals during the following years.

Post-release monitoring: All translocated animals carried VHF collars and were monitored regularly. After settling in the area, pampas deer started breeding fast in San Alonso. By June 2015, 48 fawns have been identified in San Alonso and the estimated population was 55 - 60 animals. Annual pregnancy rate and annual survival were estimated at 86% and 90% respectively, which gave an estimated

intrinsic population growth rate (i.e. λ) of 1.67 and an annual rate of population increase of 33% (Zamboni *et al.*, 2015). With this information in hand the re-introduced population should grow and persist in the long term at San Alonso and, most likely, colonize other sites in western INR, like San Nicolás, from there.

Major difficulties faced

- Pampas deer are difficult to capture, immobilize and handle: These are small deer that can suffer from capture stress, and have a small muscular area for darting. We have lost several animals during captures. Even though we have been able to minimize losses through experience and changes in drugs and type of darts, there is still a significant chance that an animal could die in any capture. As a result of this, we decided to stop capturing animals in San Alonso to put radio-collars and we also stopped further releases once we saw that these were not essential. We also saw that putting new animals in well-established groups could promote migration that could end up in animals being lost or drowned.
- We did not have actual experience in capturing and translocating these animals: Solutions to this problem are explained below.
- Pampas deer is a high-profile species with a negative precedent regarding capture and translocation: This is one of the most popular endangered species in Argentina. As a result of this, many people get anxious when someone proposes proactive management, which could result in potential individual losses. There was also a precedent in the 1960s when the Argentinean Hunters Association and the Army carried out a large-scale operation aimed to capture and rescue an endangered population of this species in Buenos Aires province. The result of this operation was the eventual death of all animals involved. This created a very negative precedent within a national conservation culture that also lacked clear examples of successful re-introductions with other species.
- As a consequence of the previous challenges, it was difficult to get permits to capture and translocate pampas deer in order to establish a new population: Getting these permits took patience, getting the best external advice, establishing good methods and managing interpersonal relations.
- Relations with landowners at the source population were difficult: Local landowners were very distrustful of conservationists, and especially of people working for CLT because they feared that we wanted to set limits to their land use or have some hidden agenda. They let us get into their properties to census pampas deer but did not let us get animals from their ranches. This forced us to buy a small property where we could work in a safe and predictable manner, which was an expensive alternative. After the translocations, some neighbors were outraged that we were taking away “their” deer, even though we had all legal permits, we worked inside our property, we did not tell them what to do in their land, they did not have any legal right on the animals, or carried out any activity with them. These complaints did not stop the authorities from authorizing several translocations, though they did complicate the whole process.

Major lessons learned

- Bring the best practical available knowledge into your plans: It is important to identify those people with the best practical experience on the matter and learn from them. Listen but also be cautious from experts with much biological and theoretical knowledge who have no previous experience in actual re-introductions. If you want to learn about how to re-introduce a species, you should mostly look for people with experience on similar re-introductions, not so much for experts on the species biology. Instead of asking who of your friends knows the most about the subject, try to identify whoever in the World has the best practical knowledge about your case and turn him or her into your friend and collaborator. If the project is sensible they will probably come to your help without charging for it. It is important to gather the best available information and show that your plan and methods are sensible and well-grounded. Having good experts on your side and a professionally written plan also helps the authorities to grant the requested permits for capture and translocation.
- Listen to everybody's opinion but get ready to displease someone when you try to change the status quo: Working with high-profile species is a delicate matter and it is easy to get entangled in interpersonal and inter-institutional conflict. Quite often conservationists are conservative and feel more comfortable if things are left the way they are, (i.e. the present status quo) than if someone tries to change them. In these cases, benign neglect is seen with understanding, while proactive management is watched with skepticism, when not hostility. If something goes wrong someone should be blamed, you, scientists who supported the project or the authority that authorized it, and this makes some people highly defensive or critical, in order to avoid getting caught in an eventual public "cross-fire". Also, be aware of consultants that propose plans that are very costly to your institution in terms of limited resources (time, land, money or personnel) because they want to save face with their peers in case that something goes wrong. Though it is critical to get the best external advice, it is also key that final decisions are taken by the team and institution that, in any case, will have to pay the final price. Finally, while it is important to take in account everybody's opinions, if you try to make everybody happy, you may end up not doing anything substantial or just pretending that you did it.



Darted pampas deer

Mammals

- Be respectful and patient without stalling: Invest time and respect with all authorities, stakeholders and experts. We probably went too fast with national authorities without recognizing what they saw as their legitimate authority, and this created unnecessary tensions through the years. We could also have invested more time getting the landowners on our side, though it is possible that would not have changed what already was an excellent biological result (i.e. an established and growing re-introduced population).
- Get ready for losses but also be aware that progress is incremental and things improve when you persist, monitor, evaluate and learn from mistakes: During the first two captures we had significant mortality related to the translocation process. Whoever, these two operations were critical to establish a well-trained local team and to identify points for improvement. Subsequent translocations reduced animal losses to a minimum and allowed us to build a sustainable population. Hence, it is very important to understand that nothing starts with perfection, and that with these delicate animals this will imply initial deaths. However, if you persist and learn fast the overall result will be positive for the species conservation status as long as there is good habitat. If a good project is halted after the first setbacks you may lose the opportunity to learn and create significant improvements, while you may also establish a bad precedent for future similar initiatives.

Success of project

Highly Successful	Successful	Partially Successful	Failure
	√		

Reason(s) for success/failure:

- Long-term commitment and high availability of optimal habitat: CLT was ready to invest on this project for as many years as necessary. Patience and persistence were critical for eventual success. It was also critical that CLT managed vast areas with good grasslands and no threats for the species, and that the area lacked large predators like puma or jaguar, which would have affected survival of re-introduced animals.
- Excellent advisors: Support and commitment from experienced external advisors helped us to design professional plans, to get them authorized and, most important, to train a local team that now has optimal experience in capturing, translocating, monitoring and managing pampas deer.
- Team work: During these years of work we have been able to establish a highly motivated team of professionals who share a common vision, are able to put aside personal agendas, take management decisions in a cooperative way, manage interpersonal conflicts in an educated and positive manner, and enjoy working with each other. This has been crucial to invest all our energy in getting results, learning fast and avoiding waste of energy in unproductive conflict, blaming each other or interpersonal fights.
- Establishing a learning culture: Being a pioneer project, we needed to try and test new methods in order to respond to losses, or to improve our management techniques. In this regard it was critical to monitor the different stages of the re-introduction process: immobilization, transport, acclimation,

release, survival and reproduction in the wild. Every translocation operation and regular monitoring of re-introduced animals has helped us to improve our knowledge on the species needs and how to manage it. After 7 years of working with these animals we still have much to learn about them (e.g. we still do not know why the deer chose to leave San Nicolás reserve) but we have been able to improve our techniques to achieve high survival of captured and, especially, released animals.

- **Proactive communication and transparency:** The project was quick to communicate to authorities, neighbors, academics, conservationists and the general public both the good and the bad news. For some time this gave “fuel” to some groups that had a negative predisposition towards the project. However, on the long run, once it was clear that the re-introduced population was closely monitored and growing quickly, there was general acceptance that gains surpassed any losses, and that it was a good opportunity to establish a new population of this cervid inside what is presently its largest strictly protected area in Argentina.

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