



# Global Re-introduction Perspectives: 2011

More case studies from around the globe  
Edited by Pritpal S. Soorae



IUCN/SSC Re-introduction Specialist Group (RSG)





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## Re-introduction of the white-winged guan in Lambayeque, Perú

Fernando Angulo Pratolongo

Director, Asociacion Cracidae Perú & CORBIDI. Los Alamos 390, Dpto. 301 Chiclayo, Lambayeque, Perú [chamaepetes@gmail.com](mailto:chamaepetes@gmail.com)

### Introduction

The white-winged guan (*Penelope albipennis*) is a Cracid (Galliformes) species endemic to the foothills dry forests of the Tumbesian region in northwestern Perú. Its wild population is approximately 200 individuals and its distribution area covers some 1,550 km<sup>2</sup>. The species was feared to be extinct over 100 years until its rediscovery in 1977 by Gustavo del Solar and J. O'Neill. The white-winged guan is classified as Critically Endangered by the IUCN and by the Peruvian legislation and is also listed on CITES Appendix I. Major threats for the species are hunting, habitat destruction and degradation including population and habitat fragmentation. A captive breeding program was started in the late 1970's with the aim of re-introducing the species into the wild. Between 2001 and 2007, about 55 guans have been released at two sites within the Lambayeque region in northwest Perú: Chaparri Private Reserve and Laquipampa Wildlife Refuge. Several release methods were proved with different types of captive-raising methods. Some birds were monitored after release using telemetry. Despite re-introduction efforts, its situation is still critical, and more releases are needed to keep connectivity between isolated populations. NGO Asociación Cracidae Perú has been leading efforts to re-introduce the species.

### Goals

- Goal 1: Save the species from extinction.
- Goal 2: Establish new viable populations in the long-term.
- Goal 3: Help connect isolated populations of white-winged guan and reinforce existing populations.
- Goal 4: Test rearing and pre- & release techniques.
- Goal 5: Improve the genetic status of the species.



Captive white-winged guan in Olmos Breeding Center © Fernando Angulo

## Success Indicators

- Indicator 1: Survival rate over time.
- Indicator 2: Breeding of released birds and survival of offspring.
- Indicator 3: Dispersal distance of released birds.
- Indicator 4: Change in the attitude of local people towards the species.
- Indicator 5: Local communities compromise in the species conservation.

## Project Summary

**Feasibility:** Hunting of white-winged guans has been reported to be opportunistic but involves 15% of the human population around its distribution area. This activity over the years has left large areas of suitable habitat without guans and these areas were chosen to start the re-introduction program on condition that they must be legally protected. Feasibility studies were carried out at least at one site, to establish if suitable habitat conditions for the white-winged guan still existed. Four factors were evaluated: (1) diversity and quantity of plant species that are part of the guan's diet, (2) availability of year-round water sources, (3) cover for nesting and resting during the day, and (4) undisturbed forest and undergrowth. The species distribution area is fragmented into two meta-populations. The southern one is composed of several forest patches with little or no connection between them. Isolated guans populations need to be connected to avoid inbreeding. The captive-breeding program aims to help this, together with other components such as creation of protected areas and awareness campaigns. The breeding center got its first captive bred chick in 1986 and by year 2000 there were over 100 individuals at the breeding center and it was decided to start the re-introduction program.

**Implementation:** Two release sites were chosen in the southern part of the distribution area, to re-introduce white-winged guans. Both sites were protected areas, in order to avoid hunting of released birds. These sites were the Chaparri Private Reserve (CPR) and Laquipampa Wildlife Refuge (LWR). The first is private and the second is administrated by the government. A feasibility study was carried out for Laquipampa before release, where it was found the presence of the species in the surrounding areas. Individuals for both sites were selected from the captive-breeding center taking into account the following considerations: a) Maximum distance in blood relationship between individuals in the release group to minimize inbreeding; b) 1:1 proportion of both sexes due to the monogamy of the species; c) optimal health status to avoid disease transmission between the release group with the wild population and other fauna; d) birds that have recently reached sexual maturity (2 years old), to enhance reproduction possibilities and at the same time, better adaptation to the new environment; e) First or second generation birds and parent-raised guans (Angulo, 2004). The first 16 guans were re-introduced in CPR in 2001 and between 2002 and 2005, a further 29 guans were released in the reserve. In February 2007, eight birds were released at Laquipampa. A total of 69 guans left the breeding centre between 2000 - 2007 as part of the re-introduction program run by the NGO Asociación Cracidae Perú. After 2007 no more releases have been carried out, although there are individuals and areas available.

**Post-release monitoring:**

In the first released group in 2001, nine white-winged guans were attached with backpack radio-transmitters and all individuals were released with leg bands that individually identify them. Anti-predator control and food supplementation was carried out as well. Monitoring in Chaparri reserve was carried out two years after release and survivorship was estimated in 55% - two years post-release.

Breeding of re-introduced birds was feasible, with

birds breeding within the first six months. A year later, another pair got two chicks (Angulo, 2004). Since 2001, there have been 50 wild white-winged guan chicks born from re-introduced birds, mostly due to artificial food availability (Angulo, 2008a). In Laquipampa, from the eight released birds, one was retired to the breeding center due to inappropriate behavior (too tame) and 20 months after the release, survivorship was 100%. Breeding of re-introduced birds occurred at Laquipampa within the first two months of release, when a pair was observed with two chicks. The same pair was found during the next year with two chicks. These differences in survivorship and breeding success are because habitat at Laquipampa has been former guan's habitat but Chaparri has marginal habitat, with low trees density and lack of key species for the white-winged guan survival such as figs (*Ficus spp.*), *Erythrina smithiana*, *Pithecellobium multiflorum* among others.



White-winged guan habitat in NW Perú

© Fernando Angulo

**Major difficulties faced**

- Experimentation with the size of the pre-release cage, time spent by individuals in the pre-release cage, time of the year for release, age of the individuals at the release time, rearing techniques and many other factors involved in the success of the re-introduction program are time consuming and use economical resources, that are not always available.
- Lack of long-term funding to ensure monitoring over the years and understand the released population structure development and determine the survival rate of chicks born from released individuals.
- At CPR, the released guans has been artificially feed to maintain them around a touristic lodge, what resulted in a artificial population growth and density, but no dispersion from the site to connect isolated populations (what was the original aim of the project). This can genetically erode the re-introduced population.

# Birds

- Development of a health protocol to assess white-winged guans before release was a major challenge since there was almost none information on this topic.
- The mortality rate of guans during transportation to release sites or predation both in semi-captivity and after release.

## Major lessons learned

- It is really important to establish and carry out a health screening in the birds to be released, to secure that only the healthy ones are re-introduced. In some cases like the white-winged guan, we had to start by finding what diseases have to be screened.
- Education and public outreach campaigns must be part of any re-introduction project. Any effort to re-introduce birds and the amount of funds involved on these projects can be put at risk if local people are not aware that there will be released birds in their area.
- It is necessary to carry out genetic work with the captive population and with the wild one (if possible), to determine the genetic status of both populations and to better direct future re-introduction efforts.
- It is necessary to create opportunities for the development of the local communities' economy, which does not affect the guan's habitat to ensure the long term conservation of the species. A few possibilities with many advantages include ecotourism (bird watching) and organic beekeeping.
- Feasibility studies prior to release help to determine the best areas to re-introduce birds. Sites must be compared to habitat of wild birds and determine if food, water, cover and breeding places are present. Birds in a site with no suitable conditions will need to be artificially fed to maintain them. This may cause an abnormal population growth that can bias conservation status of the species.

## Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

### Reason(s) for success/failure:

- It is important to carry out feasibility studies to determine the conditions at each potential release site before release. At Laquipampa this was implemented and the site seemed suitable and this was later reflected in the reproduction and survival of the guans.
- Lack of long-term monitoring and funding was one of the most important reasons for not keeping track of project development in areas such as survival and dispersal of released birds. Secure funds are important to determine success of the project.
- Permits from communities, land owners and state agencies in release sites are really important. Knowledge of local people on re-introduction issues is crucial. In the white-winged guan re-introduction program, there were some political issues that did not permit the project to be implemented in the right time in some areas.

- One important reason of success is that the implementation of releases was inside protected areas. In this way, released birds can improve their survival rates when they are not hunted in the initial phase, allowing breeding and later dispersal of wild-born birds. This give time to start educational and public outreach campaigns in areas where the offspring is more likely to disperse.
- Careful selection of individuals to be re-introduced (Angulo, 2006) from captive birds will determine whether they can breed on the wild and produce offspring. The more fast they breed more possibilities to establish a new population, since predation possibilities reduces on released birds and wild-born birds have greater chance to survive.

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