

# GLOBAL RE-INTRODUCTION PERSPECTIVES

*Re-introduction case-studies from around the globe*



**Edited by  
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**Published by:** IUCN/SSC Re-introduction Specialist Group

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**Citation:** Soorae, P. S. (ed.) (2008) GLOBAL RE-INTRODUCTION PERSPECTIVES: re-introduction case-studies from around the globe. IUCN/SSC Re-introduction Specialist Group, Abu Dhabi, UAE. viii + 284 pp.

**ISBN:** 978-2-8317-1113-3

**Cover photo:** Clockwise starting from top-left:

- Formosan salmon stream, Taiwan
- Students in Madagascar with tree seedlings
- Virgin Islands boa

**Produced by:** IUCN/SSC Re-introduction Specialist Group

**Printed by:** Abu Dhabi Printing & Publishing Co., Abu Dhabi, UAE

**Downloadable from:** <http://www.iucnsscrg.org> (downloads section)

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## Re-introduction of mona monkeys to supplement a depleted population in community forest in southeast Nigeria

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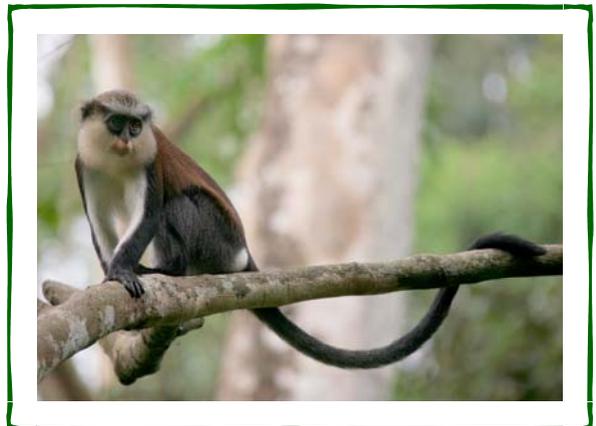
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### Introduction

The project site (5°40' 12" N 8°13' 12" E) occurs in Iko Esai community rainforest (forest that is traditionally owned and outside any state or nationally protected area) in southeast Nigeria. It lies within the Cross-Sanaga bioregion: between the Cross River in Nigeria and Sanaga River in Cameroon. Nigeria has lost >90% of its lowland rainforest, and >60% of Nigeria's endangered plant and animal species occur in the forests of the southeast. This region's forests and wildlife are threatened by deforestation due to logging and shifting agriculture, exploitation of non-timber forest products, hunting, and lack of effective protection. Mona monkeys (*Cercopithecus mona*, Schreber 1774) are smaller-bodied (3.5 - 6.5 kg), primarily frugivorous, and diurnal primates; the species' extent of occurrence ranges from Ghana to southern Cameroon. Monas are considered quite adaptable and occur in a variety of forest types, including tropical wet rainforest, tropical dry forest, and mangroves. Although monas are classified as Lower Risk by the IUCN, Ukizintambara and Thebaud (2002) report that they may be under serious threat in the future as they occur mainly in regions with high human population density. Mona monkeys have been legally protected by federal decree in Nigeria since 1985, although this law is not well known and rarely enforced.

### Goals

- Goal 1: Restore species diversity of diurnal primates in community forest in southeast Nigeria by re-introducing two nearly extirpated species: first *C. mona* and later *Cercocebus torquatus*.
- Goal 2: Contribute to the



Mona monkey (*Cercopithecus mona*)  
CERCOPAN/Sherrard

understanding of re-introduction science and practice by assessing and monitoring the ability of rehabilitated wild-born and captive-reared primates to adapt to a natural environment after release.

- **Goal 3:** Increase protection of southeast Nigeria's fragile rainforests by developing and implementing forest-protection measures for previously unprotected forest in conjunction with local communities.
- **Goal 4:** Gain long-term support for and appreciation of the re-introduction project from the host community by integrating community members in planning and decision-making and providing educational, skills-training, and job opportunities.
- **Goal 5:** Contribute to tropical rainforest discovery and capacity building by offering and promoting educational and research opportunities for Nigerian and international students and researchers.

## Success Indicators

- **Indicator 1:** Reproduction of released individuals and growth of mona population in community forest and adjacent forest.
- **Indicator 2:** Percent survival and general health and wellbeing of released individuals.
- **Indicator 3:** Number of violations of established local protection laws (such as number of incidents of primate hunting); number of violators tried by the governing council of chiefs, according to local tradition.
- **Indicator 4:** Number of complaints from or disagreements with the local community.
- **Indicator 5:** Number of students and researchers who conduct research at field site; number of successfully completed research projects; number of academic training events conducted.

## Project Summary

**Feasibility:** We (CERCOPAN) had four major requirements for the re-introduction site: It must i) have lost or been depleted of one or more diurnal primate species held in captivity by CERCOPAN; ii) provide suitable habitat for monkeys; iii) have no official protection (so protection of the site would result in increased regional forest protection); and iv) involve a receptive host community with strong leadership. In addition, we wanted to ensure the site was relatively accessible so it could function as a permanent research and education centre.

**Requirement 1:** In Cross River State (CRS), intensive hunting over many years has depleted the primate community in number and species. Iko Esai alone has >60 hunters. A 2004 study of exploitation in Iko Esai forest showed that primates comprised 11% of species taken. During an 8-month intensive survey of a 400 ha forest zone (to become the immediate release site), density estimate of resident primates (*Cercopithecus nictitans* and *C. erythrotis* in association) was 4.6 individuals/km<sup>2</sup>. Only three sightings of solitary *C. mona* individuals were made. Reliable reports from hunters indicate both *C. mona* and *C. torquatus* were formerly abundant in this forest. Reconnaissance surveys over a larger area in adjacent forest indicated similar trends.

**Requirement 2:** The selected site met the following criteria: was relatively intact forest in close proximity to a large river, provided adequate primate habitat, and was reasonably accessible. We conducted vegetation surveys, including a botanical inventory, plant phenology, and description of forest structure, to confirm availability of resources for primates. There are few data on specific food items of monas: About 40 species have been recorded (based on a search of the literature), and nearly one-half of these occur at the release site. We have also confirmed the presence of many other food species palatable to monas.

**Requirement 3:** We narrowed our search to forest near or adjacent to Cross River National Park (CRNP), so as to ensure dispersal potential, increase the number of protected forests in the region, and bolster protection of the perimeter around CRNP. We also sought forest with a medium to high degree of threat from outside commercial interests so that protection would be particularly beneficial. The final site selected, Iko Esai, is approximately 10 km west of CRNP and 90 km from the urban centre of Calabar.

**Requirement 4:** The rural poor in CRS are economically dependent on forest resources. Iko Esai youths were concerned about their forest disappearing and damage to their only access road, both due to logging. They wanted to reduce this threat and needed assistance. Women in the community also supported this appeal. They were keen to invite a conservation organization to help them and pleased that employment and other opportunities would accompany the project. In addition, Iko Esai people have traditionally never used snares for hunting; this is beneficial for long-term protection of terrestrial wildlife.

### **Implementation:**

**Threat mitigation:** To address the main threat to primates (hunting), in 2000 we established a 400 ha protected area, which is patrolled 24 hours by former hunters employed by CERCOPAN. It is adjacent to a larger forest block of 3,000 ha that is co-managed with the community and has less stringent protection. This is described in a 99-year memorandum of understanding (MOU), negotiated over 18 months with Iko Esai. We further worked with the community to implement a community-wide ban on primate hunting in 2006. We have also used a community-based participatory process to implement a land-use management plan for all community forest. This plan sets aside >12,000 ha for conservation, protected from logging and farming.

**Community support:** Direct and indirect economic benefits to the community are considered critically important to long-term success of the project. In a survey of hunters, employment was considered the most important benefit (91%). CERCOPAN employs >90% of its field-based staff from the community. There are also indirect economic benefits (e.g. local food purchases). More than one-half of hunters interviewed said their families gained economically from CERCOPAN's presence, even though they were not directly employed. Other project support for the community includes quarterly payments to a community account to support development, alternative-livelihood training, apprenticeships for youth and women, and facilitation of civil works such as road improvements and water



Celebrations marking release of monkeys © CERCOPAN/Snell

provision.

**Post-release monitoring:** One group of three individuals was released on 1<sup>st</sup> November 2007: an adult male, adult female, and sub-adult female. All were micro-chipped, and the two adults were fitted with radio transmitters. Research assistants conduct dawn-to-dusk follows and collect data on ranging, feeding, and behavior. The monkeys were initially supplemented daily with high-energy foods, but this was reduced due to their success at foraging on wild foods. At the time of writing, the group is cohesive; forages on a variety of fruits, insects, and leaves; and seems to have a daily routine similar to other wild *Cercopithecus* species. To date, they have established a core home range of approximately 2 ha.

## Major difficulties faced

- Delay in releasing monkeys was caused by inadequate funding and the length of time required obtaining permission from relevant authorities. This resulted in husbandry (mainly space) issues for release candidates.
- Mistrust among some community members, based on rumors about what was termed the organization's "hidden agenda," was present in the early stages of the project and required additional community-relations work. Such mistrust was likely due to the region's long history of outsiders receiving the lion's share of economic benefit from forest exploitation and local communities receiving very little.
- Local support for special primate protection required extensive work with the community, particularly hunters, including education and trust-building. This required additional investments (financial and human resources).
- Insufficient funding and lack of personnel with livelihood-training experience caused delays in offering alternative-livelihood programs for the community. Also, extra time was needed to build a reputation with donors, develop partnerships with other non-governmental organizations, and source training expertise.
- Additional time and effort were needed to identify and evaluate the cause of a condition that affected the health of primarily juveniles and nursing females in the captive population. This condition caused muscular weakness and was fatal in only a few severe cases. After thorough documentation, analysis of 10 years of diet and husbandry data, and consultation with veterinary experts, it was concluded the condition was caused by a nutritional deficiency, which was most likely caused by a recent change in management and husbandry. This

issue was resolved prior to release, and any individuals who had previously suffered from this condition were no longer considered release candidates. No new cases have been observed since we implemented the dietary changes.

## Major lessons learned

- This re-introduction project required a large investment in time (in this case, seven years) to establish a strong relationship with the local community. In general, communities in developing nations may see international projects as having extensive funds and thus expect immediate and large rewards. Managers should be prepared for such situations and plan accordingly.
- Re-introductions of this nature may struggle to succeed without accompanying education and alternative-livelihood programs. CERCOPAN invested heavily in both programs, and even with this investment, more people in the community wanted and expected jobs and training. The education program targeted not only children and schools, but also adults, and it was instrumental in helping change widespread utilitarian-based views of nature; this facilitated the promotion of conservation and land-use changes.
- Experienced veterinarians, including project employees and external advisors, should be part of nearly all stages of a re-introduction project. CERCOPAN was faced with a major challenge when the above-described condition affected some release candidates. Only with the help of the project's long-time experienced veterinary advisor was the condition correctly diagnosed and resolved. The entire re-introduction might have been at risk if not for the careful evaluation and actions of the veterinary team.
- Due to unforeseen circumstances, funding limitations, etc., plans for housing and husbandry of release candidates were prone to change and required a flexible management staff. Re-introduction managers need to have such flexibility and the ability to adapt to unexpected situations.
- Obtaining official permissions may take longer than expected. Managers should start early to obtain official approval and involve relevant authorities early in program development.
- Funding should be a foremost concern of re-introduction project managers. Without adequate financial support, delays will be inevitable, and managers will struggle to complete activities needed to achieve desired goals. Although difficult, funding should be secured in advance whenever possible.

## Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

### Reasons for success/failure:

- It is too early to evaluate success in terms of percent survival of released individuals or restoration of primate diversity via re-establishment of a **C. mona** population. However, some aspects of the overall re-introduction project can be considered successful or highly successful (see bullets below).

- There have been few complaints from the community; community support is now strong and continues to improve over time. CERCOPAN has also been approached by two neighboring communities seeking community development and conservation support.
- Long-term protection of the Iko Esai community forest is assured via the 99-year MOU, and there have been few violations of traditional laws.
- A community ban on primate hunting was established by unanimous vote by the Council of Chiefs and Hunters' Association in 2006 (at this time, there are no data which we can evaluate the success of this ban, though anecdotal information indicates the ban is being respected by nearly all hunters).
- Twelve local residents have been employed as research assistants and trained in the following skills: wildlife monitoring, radio-telemetry, and data collection (survey) methods.
- CERCOPAN has trained nearly 50 local people in alternative-livelihood programs (beekeeping, snail farming, bread making, tailoring, driving, and afang cultivation). These programs were implemented in 2006, and we do not yet have data on the number of people who earn an income from this training.

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