GLOBAL RE-INTRODUCTION PERSPECTIVES

Re-introduction case-studies from around the globe

Edited by

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Cover photo: Clockwise starting from top-left:

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

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Translocation of Romer's Tree Frog in Hong Kong SAR, China

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Introduction

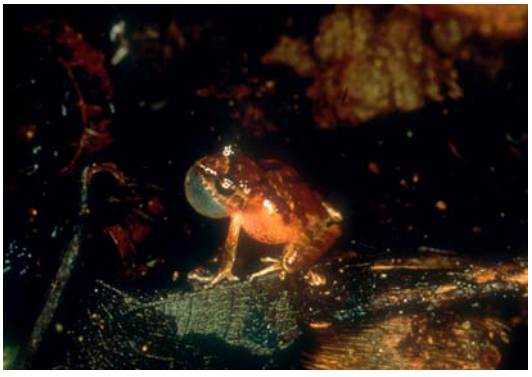
Romer's tree frog used to be called ***Philautus romeri,*** but a recent taxonomic review places it tentatively in the genus ***Chirixalus*** due to its free-swimming larval stage. This species is listed as Endangered by the IUCN and is protected in Hong Kong under the "Wild Animals Protection Ordinance". It is endemic to Hong Kong and is naturally known from four off-shore islands. The species became threatened when Chek Lap Kok, one of the four islands originally inhabited by this species, was chosen as the site for the new airport in 1989. In late 1991, the Royal Hong Kong Jockey Charities Ltd. supported the University of Hong Kong to conserve Romer's tree frog. Rescue operations were carried out from November 1991 to December 1992 and captive-breeding programs were established at the University of Hong Kong (UHK) and at Melbourne Zoo (MZ). Habitat requirements, ecology and genetic relationships among the different populations were also studied. Suitable release sites were identified in the New Territories and Hong Kong Island where natural populations were absent and translocations were carried out from 1993 to 1996.

Goals

- Goal 1: To establish viable populations of the Chek Lap Kok population of Romer's tree frogs in the release sites.
- Goal 2: To increase the number of individuals through captive breeding.
- Goal 3: To gain knowledge on the ecology, breeding biology, genetics and captive care of this species through field study and captive observations.

Success indicators

- Indicator 1: Viable populations established in the release sites and their range expanded.
- Indicator 2: The captive-breeding program is successful, producing the required number of individuals for the releases.
- Indicator 3: Enough knowledge



Romer's tree frog (*Philautus romeri*)

gained on this species to ensure a high degree of success in both the captive breeding and translocation programs.

Project Summary

Feasibility Stage: Funding was secured by the UHK. A literature search was carried out to determine important success factors and concerns in cases of amphibian and reptile re-introductions. Field work was carried out on Chek Lap Kok to assess the species' distribution and a small number of frogs were captured and maintained in captivity before the project started.

Implementation Stage: Rescue operations were carried out from 1991 to 1992 when construction had already started. Field studies were conducted into habitat requirements and ecology. Partners in captive-breeding programs were sought through the IUCN/SSC Captive Breeding Specialist Group. Melbourne Zoo and Frankfurt Zoo agreed to join the program and breeding was successful in the UHK and MZ. Frogs bred at MZ were transferred to UHK for subsequent release. Genetic studies were undertaken to look at the genetic relationships among the different insular populations and it was found that there was some genetic differentiation among them. Hence, release of the Chek Lap Kok frogs to the other three islands was ruled out. Potential release sites were identified in the mainland New Territories and Hong Kong Island. Discussions were carried out with the relevant government departments and Kadoorie Farm & Botanic Garden (KFBG) to select sites where frogs would be protected in the future and to carry out habitat management work to provide suitable breeding habitats. In 1993, trial release of tadpoles was carried out in three sites and they were monitored weekly. Marked adults were only released when tadpoles survived and grew. The released individuals were again monitored regularly. Translocation was expanded to five additional sites in 1994 after tadpoles succeeded in metamorphosing and calling males were located in the three trial sites.

Post-release Monitoring Stage: The released populations were monitored at least once every year during the breeding season to locate individuals (in particular calling males and tadpoles) and to map their distribution. Follow-up work was needed for some sites to maintain the breeding habitats. Even after the project finished, monitoring was carried out initially by the project implementer (Michael Lau at the UHK) and later taken up by the Agriculture, Fisheries & Conservation Department and KFBG.

Breeding tubs for released individuals

Major difficulties faced

- Very little was known about this species when the project started.

- The rescue work had a very limited time frame as construction had already started before the project began.
- The captive-breeding program consumed a lot of time and manpower as this species matures in less than a year and produces several clutches per year.
- Not many well-documented successful amphibian re-introduction examples to draw from.

Major lessons learned

- Adequate understanding of the species' ecology, biology and genetics is essential.
- A project of this nature takes at least five years (even on a species with very short generation time). This might be more than a funding agency is willing to cover and more than the normal time span of a post-graduate project.
- Captive-breeding can be very time-consuming and resource demanding and partnerships should be established with other organizations, especially zoos as they have the expertise and facilities.
- If the project requires captive-breeding, this should involve more than one institution to reduce the impact of potential accidents.
- Captive-breeding and re-introduction programs are good at attracting media and public attention. This should then be used to raise community awareness and promote conservation of the species and its habitats.
- Open exchange of information and experiences very important for project success.
- Continual monitoring is required to prevent habitat degradation and to maintain suitable conditions for the target species.

Success of project

Highly Successful	**Successful**	Partially Successful	Failure
	√		

Reasons for success/failure:

1. Major funding to enable the necessary studies to be undertaken.
2. A committed individual with the necessary skills and expertise to work consistently on the project from the outset.
3. Having consistent institutional support.
4. An external partner organization to provide captive management/breeding support, which was important in the initial stages to spread the risk of captive management failure.