

# GLOBAL RE-INTRODUCTION PERSPECTIVES

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



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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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## Re-introduction of Chinese alligators into the Gaojingmiao forestry farm, Anhui province, China

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### Introduction

The Chinese alligator (*Alligator sinensis*) is an endemic species in China and is listed in the first class national protected animals of China. It is classified as a CR species in the IUCN Red List of threatened species and listed in appendix I in CITES. The release site chosen for re-introduction of the Chinese alligator is Gaojingmiao forestry farm (119°12.132' E, 31°00.978' N), which is located in Langxi County, Anhui Province, China. The mean temperature there is 15.9° C and the annual rainfall is 1,294.4 mm. The forestry farm has an area of 10.37 km<sup>2</sup> and consists of forest, grassland, water bodies and marshes. Dominant shrubbery in the area is *Pteioblastus amarus-Rosa laevigata* and the vegetation community type there is *Pinus massoniana-Pteioblastus amarus-Pteridium aquilinum*. Before carrying out the project, some aquatic organism, such as fish and snail, has been put into the ponds for several times in order to establish the food chain for the Chinese alligator.

### Goals

- Goal 1: Establish a small stable population which could develop themselves.
- Goal 2: To gain the first-hand information on behavioral ecology, physiology and conservation biology of the released Chinese alligators.
- Goal 3: Develop strategies for the re-introduction project in the future.

### Success Indicators

- Indicator 1: Survive the winter successfully.
- Indicator 2: Breeding of released individuals.
- Indicator 3: Establishment of a small stable population.

### Project Summary

The Chinese alligator is one of the world's most endangered crocodylians. In recent years, because of habitat fragmentation and additionally the effect of increased industrialization, the



Chinese alligator (*Alligator sinensis*)

distribution area of the Chinese alligator has decreased rapidly. The population of wild Chinese alligators has already been on the verge of extinction. It is estimated that there is only a population of less than approximately 120 individuals occurring in Anhui Province of China. In contrast to the wild population, the captive population currently exceeds 10,000 individuals in Anhui Research Center for Chinese Alligator Reproduction. It is high time that the captive Chinese alligators be re-introduced into the

wild to save this precious species. With the financial support from the State Forestry Administration of Chinese Government, the Project of re-introduction of the Chinese alligator was launched in early 2006. The Gaojingmiao forestry farm is chosen for carrying out the project. The project is also highly supported by the local government.



Chinese alligator release site

All of the 25 candidate Chinese alligators to be released were donated by Anhui Research Center for Chinese Alligator Reproduction, which has the largest captive breeding population of the Chinese alligator. Physical examination was carried out before release in order to choose six healthy adult Chinese alligators (2 males and 4 females). All of the 25 Chinese alligators were marked by removing the specific tail scutes in an individual numbering pattern. According to the physical examination results, six healthy adult Chinese alligators were chosen at last. In order to tracking the released alligators efficiently in the field, each of them was attached with a transmitter weighing between 127 g - 129.5 g (HLPM-3140, Frequency 150 MHz, Wildlife Materials Inc.) on the foreside of the coronary tail. All of the transmitters were less than 4% of the released alligators' weight and each transmitter had been set a different frequency beforehand. All of the Chinese alligators were transported to Gaojingmiao forestry farm by vehicle on 28<sup>th</sup> April 2006. Before release, all of them were secured by binding their snout and put into gunny bags. At the release site, they were unbound and released directly into the pond.

After release, all the six Chinese alligators were monitored daily. Three main methods have been used to monitor their movement pattern and activity area. The preliminary results of each method are showed below:

**Radio-telemetry:** The results showed that each of the crocodiles gradually lived in a relatively stable region around the release site for about four weeks. All the crocodiles did not have their own territory as their region overlapped. As time went on, all the alligators started to explore the new environment a little further from the release site to broaden their range. In mid June, the individual M906 has

# Reptiles

the largest ranging pattern in an area of about 9.9 ha.

**Spotlight survey:** The results showed that the frequency of crocodiles observed was relatively stable between months. Months of high counts (May to July) have mostly likely been the result of frequent movements in the breeding season.

**Direct observation:** A female crocodile was found to make a cavity during the month of June but high water in July forced it to abandon the cavity. When the water level fell, the cavity was used by another individual. During the breeding season, courtship display and mating were observed but no reproduction was observed.

## Major difficulties faced

- Difficulties in observing the Chinese alligator directly due to the varied topography and dense vegetation.
- Limitation of funding.

## Major lessons learned

- Good choice of release site where the original source of decline/extinction has been eliminated or reduced to a manageable level is critically important.
- The Chinese alligator should be exercised before release.
- The Chinese alligator may be released earlier before the breeding season to adjust to the environment for successful reproduction.
- Scientific research should be carried out synchronously to direct the practice of re-introduction.

## Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

## Reasons for success/failure:

- All individuals survived the winter successfully.
- No individuals died after release.
- Courtship display and mating were observed but no reproduction was found in the first breeding season.