Conservation of Chinese Alligator based on the Community Participatory Approach

Report to IUCN-SSC Crocodile Specialist Group on SRAS Project No. 09/7

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Background

The Chinese alligator is one of the world's most endangered reptiles, even though captive breeding has been successfully undertaken since the 1980s. At present, the wild populations are restricted to Xuancheng, Nanling, Jingxian, Wuhu, Langxi and Guangde counties in Anhui Province, China. Despite considerable conservation efforts, the species is still threatened by the loss of wetland habitats, chemical fertilizers, insecticides, hunting, increased drought and flooding. Over the last few decades, the alligator population in the wild had declined from 500 individuals in the early 1980s to less than 120 individuals in 2005.

Many of the surviving groups of alligators are found in small patches of lowland habitat that are subject to a variety of human uses, including conversion to rice paddies, as a source of water for irrigation, and rearing of fish or ducks. These areas have little or no buffer from the surrounding farming communities and if alligators are present, conflicts with farmers are all but inevitable. Here, the biggest challenge will be to find ways by which local people can benefit from the presence of alligators, and to actively involve the local communities in the safeguarding of their habitat. Those living near the alligator's habitat lack of awareness of alligator-threatening behaviors such as habitat destruction and improper use of pesticide that makes conservation a difficult task. It is necessary urgently to improve the awareness of alligator-threatening of the local villagers.

The proposal has two objectives:

1. Conducting a survey of alternative land use that can benefit both the alligators and the local communities and encouraging them to actively involve in safeguard the habitats of alligators. We will visit communities at sites with wild alligators and conduct surveys on land use patterns; livelihood and income of households; attitude of local farmers to alligator conservation in the selected village and the available alligator friendly practices in the region. We aim to identify possible practices that local farmers are interested in adopting.

2. Carrying out environmental education in the communities. We aim to enrich the knowledge of Chinese Alligators in the general public and foster cooperation with the re-introduction of the Chinese alligator.

Progress Report

Progress is reported for each of the two objectives (see above):

On 13-16 March 2009 we conducted a detailed community preliminary investigation on the Chinese alligator in the alligator national reserve (Fig. 1), based on semi-structured interviews. The investigation aimed to evaluate the level of the wildlife and nature protection consciousness of the local farmers and understanding of the current knowledge, attitude and behavior level of the local residents in order to be able to successfully design an awareness campaign and solicit the opinions concerning the potential for community co-management of sites currently occupied by alligators. Ten participants from three universities in Anhui Province took part in the investigation training and the interviews. A total of 300 effective questionnaires were received and the investigation sites (random sampling) included Changle in Nanling county, Shuangken and Zhongqiao in Jing county and Yangling and Hongxing in Xuancheng. The results will provide us with a better basis for linking communities to the conservation of alligators.

There are four objectives in this community investigation:

1. Target: A. the teachers around the reserve; B. the community citizens below 30 years old (especial around 20 years old); C. the keepers of the Chinese alligator.

2. Content of the publicity: A. the Chinese alligator is a critically endangered species and endemic to China; B. wild alligator act as the "Ashman" in the fishery and they just capture the sick and slow-motion fish and shrimp in the pond. C. the Chinese alligator is a peaceful animal and rarely attacks people and they are not like other aggressive species such as the Nile crocodile and saltwater crocodiles. D. fertilizer will pollute the inhabiting water of the alligator and the pollution will endanger alligator and local persons. E. pumping irrigation from the ponds where alligator inhabit will influence the survival of the alligator, especially the water line lower than that of the low water.

3. Measures of the publicity: A. provide the playing card with cartoon to the local person; B. play the movie; C. scientific lectures; D. interview face to the common community residents.

4. Expound the conflict between the human and the Chinese alligator: 1) The real damage: eating the fish and duck in the ponds, building burrows in the ridge of field, crushing the seedling and drawing away the clothes and meat that community resident are washing. 2) Opportunity cost (current conflict): the local people dare not to contract the fish pond and feed the duck and gooses owing to alligator eat their fish. 3) perceived lost: the Chinese alligator will attack the human especially the children.

OBJECTIVE 1

We have identified Hongxing Village as demonstration site where further study for community-based alligator conservation will be undertaken (Fig. 2). During the investigation, some local people presented some proposals. For example, In Hongxing Village, some local people presented: 1) local governments might buy or rent the lands around the protected ponds. 2) the protection departments of the Chinese alligator should compensate the part expense owing to their preservation to the

alligators' habitat (they could not breed ducks in the protected ponds or they could not irrigate using the water of the protected ponds). The compensatory ways included organizing agriculture scientific training or village fundamental construction (repair road or transform drinking water or toilet etc.). 3) local governments of the Yangtze Alligator National Nature Reserve should integrate the alligators' protection with the routine works of the local communities and urged the local communities to participate in the protection of the Chinese alligator.

OBJECTIVE 2

In July and August 2009, in collaboration with Anhui Normal University and Anhui Research Center of the Chinese Alligator Reproduction (ARCCAR), we conducted a set of education activities in the communities where wild alligator exist, aimed at enriching the knowledge of Chinese alligators in the general public and cooperate with the re-introduction of Chinese alligator (Fig. 3). The team of 9 undergraduates from the College of Life Sciences, Anhui Normal University, was the implementation body of this awareness-raising campaign.

Workshops were organized to introduce knowledge on environmental conservation and communication skills to those college students. Education materials including PowerPoint presentation, leaflets, T-shirts and conservation information boards were developed to provide basic information about Chinese alligator, their ecological importance and the knowledge of 're-introduction" as well. They visited villages within the nature reserve where wild alligators were found. Questionnaire was formulated and interview addressing to local people was conducted to understand the reletionship between the their attitude to Chinese Alligator and the environmental conservation. It is found during this campaign that the impression of Chinese alligator on those living near the alligator's habitat is not as bad as we thought. They regard Chinese alligator as dull, safe and need to be protected. It is their unawareness of alligator-threatened behaviors such as habitat destruction and improper use of pesticide that makes conservation a difficult task.

On 28-31 July 2009 we invited the expert, associate researcher Wang Renping from the ARCCAR, to make a speech on "Enter the World of the Chinese Alligator" (Fig. 4). In the report, Mr. Wang introduced some behaviors to help the local persons to know that the Chinese alligator was peaceable animal, as for the pollution, the fertilizer they used around the alligator ponds will pollute the inhabiting water of the alligator and the pollution will endanger alligator and local persons.

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Figure 1. Interview training (left) and interview surveys for the community involvement component of the project.



Figure 2. Interview surveys on alternative livelihoods.



Figure 3. Environmental education in the communities.



Figure 4. Environmental education in the communities.