

Costa Rican Amphibians Conservation Strategy Workshop September 28th -30th, October 1st, 2006. San José, Costa Rica

Executive Summary

Ten experts on the amphibians of Costa Rica met at the University of Costa Rica's San Ramon Biological Reserve from August 31st to September 2nd 2002, to analyze the population status of the 180 amphibian species native to the country. Information from this analysis was used as part of a Conservation Assessment and Management Plan (CAMP) Workshop of the Conservation and Breeding Specialist Group (CBSG) of the Species Survival Commission of the IUCN, and using CBSG's unique tools.

The information produced at this workshop was later used in discussions for the Costa Rican portion of the Global Amphibian Analysis (GAA) for the complete revision of the status of Central American amphibians.

Given the problems faced by the amphibians of Costa Rica, whose situation was defined through these meetings, we evaluated the necessity of a National Conservation Strategy for Costa Rican Amphibians. CBSG Mesoamerica, the University of Costa Rica's School of Biology and Amphibian Ark, organized this meeting with the support of Sea World, Chester Zoo, Twycross Zoo and Denver Zoo. The University of California at Berkeley contributed with the expenses of transportation and lodging for two experts, Drs. Marvalee and David Wake.

Fifty four people, representing 29 national and international institutions met at the Simón Bolívar Zoological Park and National Botanical Garden from 28 September-1 October 2006, to analyze amphibian problems in Costa Rica and propose a strategy for their conservation.

Both Costa Ricans and foreigners who work with amphibians in the country were invited to this meeting, as well as researchers and others involved in zoo exhibits; government authorities concerned with natural resources, control of diseases in animals and public education; university students and NGOs concerned with amphibian conservation. We especially wish to acknowledge the participation of Jay Savage who dedicated a great part of his academic life to studying the amphibians and reptiles of Costa Rica, and two people with excellent knowledge of less known orders of amphibians, David Wake who studies salamanders and Marvalee Wake, who studies caecilians.

The meeting was opened by Engineer Jorge Rodríguez, Vice-minister of Environment and Energy (MINAE), who, spoke about problems facing amphibians and the support that MINAE will give to actions for their conservation. Dr. Virginia Solís, Director of the Biology School of the University of Costa Rica spoke on the same theme.

The meeting began with a conference on amphibian problems in Costa Rica. Later, several specialists from Panama, Ecuador and the United States offered their experiences in *in-situ* and *ex-situ* management of amphibians, which were applicable to the conservation of threatened amphibian species Costa Rica. They presented action

plans which are being developed to conserve amphibian species in other regions and countries.

On the first day, CBSG methods were presented and working groups were organized, and began working before the end of the first day. During the next three days they established the problems that amphibians face, including: *ex-situ* conservation; *in-situ* conservation; training, and education. These problems were used to develop objectives and actions, leading to solutions.

The **Ex-situ Conservation Group** determined that the main problems for amphibian conservation in Costa Rica are:

1. Lack of knowledge regarding current population status of species which are known to be threatened.
2. Lack of organizational capacity, training, facilities, community organization, and national and regional coordination.
3. Challenges in collecting animals in the field, and legal challenges regarding their collection.
4. Lack of knowledge of natural history and captive management for most species.
5. Challenges in species management in terms of: health, nutrition, quarantine and genetic management.

The **In-situ Conservation Group** found that the main problems in this field are:

1. Lack of a national research program to: address deficiencies in information, measure the impact of the threats and to help the habitat and populations of amphibians recover
2. Lack of information about Costa Rican amphibian populations.

Finally, the **Training and Education Group** established one main problem in their field:

1. How to positively influence Costa Ricans so that they will act responsibly in the conservation of amphibians and their environment from the local and global perspective?

In order to find solutions for the problems, the participants proposed the following objectives and actions:

- Increase and update the available information on Costa Rican amphibian populations.
- Organize and improve historical data and catalogue old collections.
- Provide the Global Amphibian Assessment (GAA), and Amphibia Web with updated information to help Amphibia Web create a Spanish version for Costa Rica.
- Compile captive management information available (National and International) and integrate it with available *in-situ* information.
- Compile *ex-situ* information and include it in a database.

- Compile all available published information, as well as personal experiences, information from museums and the internet regarding management in captivity, nutrition, disease, veterinary medicine.
- Establish communications networks and improve those in existence.
- Construct a web page in Spanish with simple information and links to other important pages.
- Establish a network of researchers at the national and international level.
- Gather scientific information related to amphibians and environmental problems published as news outside Costa Rica, and make it available within Costa Rica.
- Improve amphibian population information available for Costa Rican species.
- Develop multidisciplinary research programs on taxonomy, ecology, physiology, reproduction, population genetics, natural history studies, socioeconomic value, distribution, monitoring, determination of risk zones, for all Costa Rican amphibian species, especially those that are data deficient.
- Establish research programs on nutrition, management in captivity, diseases and veterinary medicine in amphibians.
- Develop research programs to support *ex-situ* programs, such as translocation and reintroduction, monitoring released specimens, determining whether threat factors no longer are present in the habitat, and evaluating the quality of available habitat.
- Institutions authorized for *ex-situ* management must work in a system of scholarships and funds with universities to stimulate the participation of students in projects. Promote that *in-situ* researches are also *ex-situ* researchers and vice versa.
- Encourage university students to study at institutions which are participating in *ex-situ* management of amphibian species.
- Organize a meeting to define the necessary research and create a proposal for funding.
- Make *ex-situ* facilities available to *in-situ* researchers.
- Make a list of facilities that want to collaborate with this initiative. Identify facilities that want to participate, and fulfill national and international standards. Evaluate the capacity of the existing infrastructure.
- Obtain long-term population information on the amphibians of Costa Rica.
- Create a monitoring program for threatened and data deficient species. Analyze the threats to these amphibians in Costa Rica

- Conduct a workshop to review the population status of Costa Rican species and update the GAA. Conduct another workshop to determine which species are in greatest need of an *ex-situ* program.
- Establish a program for responding to identified threats. Evaluate the impact of threats on amphibian populations including; toxicology, epidemiology, and both legal and illegal collection.
- Form a group of trained experts to detect of diseases, polluting agents and other threats.
- Define protocols for responding to threats and generate action plans for each amphibian species.
- Develop plans for fast response for taxa with well-known status.
- Establish collection protocols (what, when, where, how), and identify potential places to keep specimens *ex-situ*.
- Train the staff in charge of managing threatened species in captivity. Identify training courses (AZA, Mexico, Ecuador, the USA, Colombia, and New Jersey) and select contents for a course for Costa Rican Amphibians. Identify people who could participate abroad in courses, and organize courses in Costa Rica, to be conducted by trained experts.
- Organize the *ex-situ* community at the local, national and regional level. Promote the participation of governments, zoos and university representatives.
- Obtain support from landowners, involve them in the conservation strategy, create agreements and promote landowner participation in meetings and workshops.
- Conduct an interdisciplinary workshop to create an action plan for environmental education focused on amphibian conservation. Create material for elementary schools high school, and non-formal education. Establish links between researchers and educators to make scientific information available to the general public. Promote workshops for children at Simón Bolívar National Zoo and the Conservation Center in Santa Ana.
- Establish a link with the news media to make scientific information available to the community. Take advantage of media opportunities to bring information about the importance of amphibians. Create advertising billboards with information on the amphibian situation.
- Analyze the problems relating to confiscated amphibians, and conduct a workshop to discuss confiscation policies in Costa Rica.
- Involve the government in the Conservation Strategy. Standardize collection protocols and collection management, and compile existing information. Create a

protocol draft and have the protocols endorsed by the authorities (MINAE, MAG, and Universities). Present the strategy using illustrated material.

- Carry out species management by creating programs such as: health, nutrition, quarantine, and genetic management. Develop a recovery plan for each species considered threatened and a population management plan for each species on which we will work.
- Create a management plan for each critical species including habitat, viability and accessibility. Create a training course for pedigree management and registry (similar to the program in the Association of Zoos and Aquariums, AZA). Investigate the role of genetic banking in amphibian conservation.

Establish an ethics committee and a Code of ethics and animal welfare.

A working group from this workshop was established to create the report from this workshop, which was edited by: Felix Carranza (MAG), Rita Sandí (MEP), Gilbert Canet (MINAE), Federico Bolaños (UCR), Yolanda Matamoros (CBSG Mesoamérica), Mario Baldí (UNA), Noemi Canet (Colegio de Biólogos), Guido Saborío (representing the students) and Danilo Leandro (FUNDAZOO).

The immediate working plan is:

1. Present this report to the government.
2. Create a proposal to finance the Amphibian Conservation Strategy, including the needs for human, economic and administrative resources.
3. Begin the activities that do not require financing.
4. Write a proposal to raise part of the funds needed, for the implementation of the Strategy in Costa Rica.

During creation of this report, some proposed actions were addressed. In May 2007, a listserv with the participants of the workshop and other specialists have been established (consanfi@biologia.ucr.ac.cr), a course for the management of amphibians in captivity for institution members of the Central American and the Caribbean Association of Zoos and Aquariums (AMACZOOA) is being planned, as is a Regional Workshop to establish the Regional Strategy for the Conservation of Amphibians.

In Costa Rica we are working to design an Amphibian Reproduction and Research Center to be constructed at Santa Ana Conservation Center. We are also organizing several educational activities for both Costa Rican national zoos and we are designing a national exhibition on amphibians. A CAMP workshop has been planned to review and update the information on the taxa evaluated in 2002, and a workshop to prioritize the species for *ex-situ* projects is being organized for the beginning of November 2007.