amphibian ark

Keeping threatened amphibian species afloat

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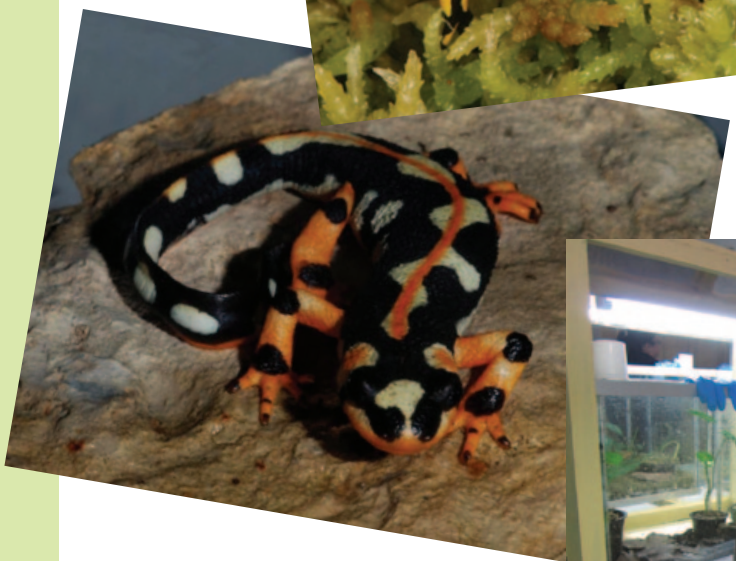

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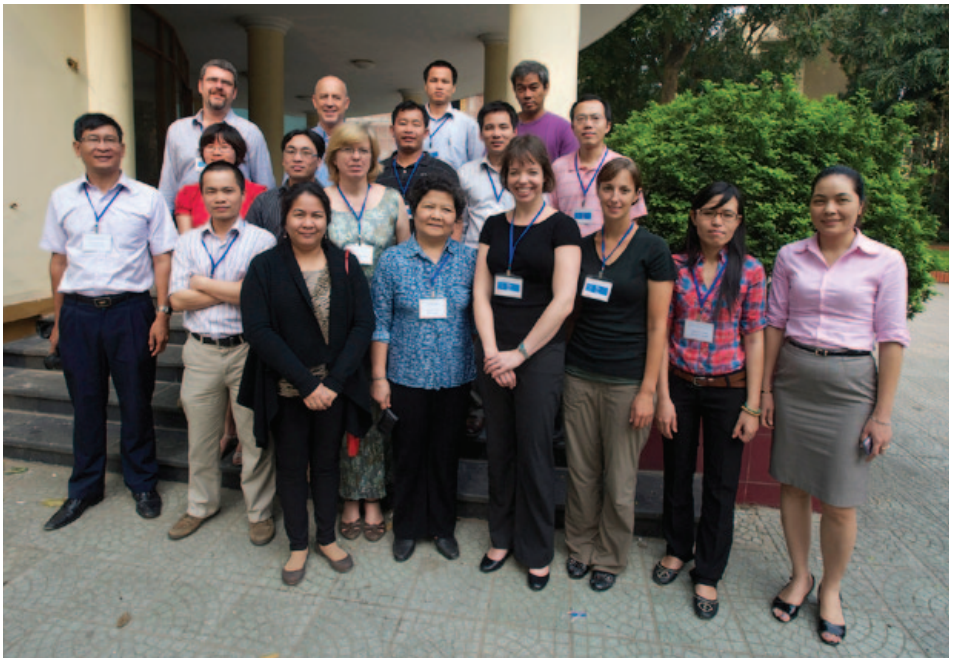
Recent Amphibian Conservation Needs Assessment workshops

Kevin Johnson, Taxon Officer, Amphibian Ark

Vietnam, Laos and Cambodia

The Institute of Institute of Ecology and Biological Resources, at the Vietnamese Academy of Science and Technology in Hanoi, Vietnam, hosted a five-day amphibian conservation needs assessment workshop from March 26-30, 2012. During the workshop, the conservation needs of 203 species of amphibians occurring in Vietnam, Laos and Cambodia were assessed.

Twenty participants met during the five-day period, with representatives from Vietnam, Laos, Cambodia, Germany, France, China, Australia, the Philippines, and the USA. The workshop was jointly funded by grants from the Conservation Food and Health Foundation, the Conservation and Collection Management Committee of the Columbus Zoo and Aquarium, and the Prince Bernhard Fund For Nature.



Twenty participants met in March 2012 to assess the conservation needs of the amphibians. Photo: Jeremy Holden.

Two main issues were re-iterated during the workshop. Firstly, there is very little known about many amphibian species in the wild in Vietnam, Laos and Cambodia, and a great deal more field research is required to obtain a thorough understanding of the status of the region's amphibians. Secondly, although a number of species occur in protected areas within the region, most of these protected areas are not providing effective protection, and there is still collection of animals, habitat destruction for agriculture and mining taking place in these areas. This is especially evident in Cambodia where there is almost not real protection for natural habitat.

During the workshop, 90 species were recommended for *in situ* conservation work to ensure their survival in the wild, 123 species (mostly classified as Data Deficient) require additional *in situ* research to determine their distribution or the threats they face, 5 species were identified as husbandry analogs for more threatened species or for *ex situ* research, 81 species were identified as being suitable for conservation education purposes and there were 25 species that do not require conservation action at this time. There are also a number of species that require further taxonomic work to determine correct species limits.

The complete results from the workshop are available on Amphibian Ark's data portal at www.amphibianark.org/assessmentresults.htm.

Participants at the Amphibian Conservation Needs Assessment for Ecuador. Photo: Pontificia Universidad Catolica del Ecuador.

Ecuador

In May 2012 the Pontificia Universidad Catolica del Ecuador (PUCE) in Quito, Ecuador, hosted a workshop to assess the conservation needs of Ecuadorian amphibians. During the workshop, 265 of Ecuador's 531 species of amphibians were assessed, including all 241 threatened species (Critically Endangered, Endangered, Vulnerable and Near Threatened), and 24 species categorized in the IUCN Red List as Least Concern or Data Deficient.

Participants representing eight different organizations systematically assessed the species using the AArk's conservation needs assessment process, with each species being recommended for one or more of the following conservation actions:

- **Rescue:** 55 species that are in imminent danger of extinction (nationally) and require *ex situ* management, as part of an integrated program, to ensure their survival.

- ***In Situ* Conservation:** 202 species for which mitigation of threats in the wild may still bring about their successful conservation.
- ***In Situ* Research:** 290 species that for one or more reasons require further *in situ* research to be carried out as part of the conservation action for the species. One or more critical pieces of information is not known at this time.
- ***Ex Situ* Research:** 28 species currently undergoing, or proposed for specific applied research that directly contributes to the conservation of the species, or a related species, in the wild (this includes clearly defined 'model' or 'surrogate' species).
- **Conservation Education:** 64 species that are specifically selected for management – primarily in zoos and aquariums - to inspire and increase knowledge in visitors, in order to promote positive behavioral change.
- **Biobanking:** 55 species for which the long-term storage of sperm or cells to perpetuate their genetic variation is urgently recommended, due the serious threat of extinction of the species.
- **No Conservation Action Required:** 22 species that do not require any conservation action at this point in time.

Due to time constraints 266 species classified as Least Concern or Data Deficient were not assessed during the workshop.

The complete results from the workshop are available on Amphibian Ark's data portal, www.amphibianark.org/assessmentresults.htm.

Funding for the workshop was generously provided by Saint Louis Zoo and Chicago Zoological Society's Chicago Board of Trade Endangered Species Fund, with Pontificia Universidad Catolica del Ecuador providing the workshop venue and equipment.

2012 AArk Seed Grant Winners

Amphibian Ark is pleased to announce the winners of the 2013 Seed Grant program. These $5,000 competitive grants are designed to fund small start-up projects that are in need of seed money in order to build successful long-term programs that attract larger funding. We would like to acknowledge the generous support of the Andrew Sabin Family Foundation, Ronna Erickson, Josie Lowman, Woodland Park Zoo and the European Association of Zoos and Aquariums in establishing these grants. Applications for seed grants in 2013 will be called for early in 2013.

Conservation Plan for *Eleutherodactylus juanariveroi* (Anura: Eleutherodactylidae): captive breeding and environmental assessment for future introduction efforts

Project Leader: Neftalí Ríos-López, e-mail: neftalirios@yahoo.com / neftali.rios@upr.edu
Team Members: Ariel Díaz-Pérez and Lelanee Ortíz Rivas,
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Total funding amount provided by Amphibian Ark to support this project: $5,000.

Executive Summary

Eleutherodactylus juanariveroi is an herbaceous palustrine wetland specialist from Puerto Rico, and it is designated Critically Endangered by Puerto Rico's Department of Natural and Environmental Resources (DNER 2007a, b) and by the International Union for Conservation of Nature (IUCN, 2011). The species has the smallest geographic distribution (~180 ha), lowest reproductive output (3 eggs/clutch), utilizes one a single plant species for egg laying (bulltongue arrowhead, *Sagittaria lancifolia*), and it has not been found beyond its type locality (Ríos-López and Thomas 2007). Biotic conditions of its wetland habitat, which presumably had a much wider geographic cover, are rarely found in Puerto Rico and this wetland site is highly threatened by a wide range of anthropogenic disturbances at the public, private, municipal, state, and federal governmental levels. Consequently, the conservation of the species and of the wetland ecosystem it depends on for reproduction and survival are of prime importance and require coordinated *ex situ* and *in situ* conservation efforts.

The proposed project is oriented at establishing a captive breeding program for the species and funds requested from Amphibian Ark will be devoted exclusively to the establishment of the captive breeding program and for related materials and equipment. Results from this project will include breeding, raising hatchlings to adulthood, and captive care and maintenance protocols for the species, which can also serve as guidelines for similar small-sized *Eleutherodactylus* species in need for *ex situ* conservation. Two related activities will be conducted simultaneously and consist of (1) the identification of wetlands suitable for rehabilitation and (2) determining optimal growing conditions for *S. lancifolia* for future largescale planting in wetlands selected for rehabilitation. We expect that these activities combined will set the basis for successful conservation of *E. juanariveroi* and the establishment of adequate regulatory mechanisms for better conservation policies for Puerto Rican *Eleutherodactylus* species.

The complete proposal can be viewed here: www.amphibianark.org/pdf/seed%20grants/Neftali%20Rios%20Lopez%202012%20AArk%20Proposal.pdf.

A male *Eleutherodactylus juanariveroi* calling. A captive breeding program for this Critically Endangered species will be established at the University of Puerto Rico at Humacao. Photo: Neftalí Ríos-López.

Honduran Amphibian Rescue and Conservation Center

Project Leader: Jonathan Kolby- PhD Candidate, James Cook University, & Senior Herpetologist, Operation Wallacea; J_Kolby@hotmail.com
Husbandry Supervisor: Jessi Krebs- Supervisor of Reptiles and Amphibians, Henry Doorly Zoo, Omaha, Nebraska; jkrebs@omaha-zoo.com

Honduran Government Liaison: Roberto Downing- Instituto Nacional de Conservacion y Desarollo Forestal, Areas Protegidas, y Vida Silvestre (ICF) (ICF is the Honduran equivalent of the US Fish and Wildlife Service); downing.roberto@gmail.com

Total funding amount provided by Amphibian Ark to support this project: $5,000.

Executive Summary
The endangered amphibians of Honduras are experiencing a storm of assaults from habitat destruction, climate change, and emerging infectious diseases. A growing number of species face an uncertain future unless *ex situ* management efforts are soon implemented to ensure long-term survival. From 2006 to present, I have been studying the amphibian populations of Cusuco National Park (CNP), a cloud forest recognized by the Alliance for Zero Extinction for the critical habitat it provides for endemic Honduran amphibians. There are seven amphibian species which can be only be found in CNP, a forest fragment about 10 mi x 12 mi in size. Amphibian abundance surveys conducted from 2007 to 2011 show an overall decline in the presence of stream-associated amphibians in CNP.

Amphibian chytrid fungus (*Bd*) has proven to be especially devastating to amphibian populations in Latin America, but the amphibians of Honduras have received little conservation attention relative to countries where *Bd* is belived to be a recent introduction. Although there is a common perception that extinction-prone species will primarily succumb rapidly only upon initial exposure, I recently completed a five-year *Bd* infection survey in Honduras that demonstrates otherwise; *Bd*-associated amphibian declines are still occurring even after long-term pathogen presence. To address this concern, the current project will ensure long-term survival of three Critically Endangered species in CNP: *Plectrohyla dasypus*, *Plectrohyla exquisita*, and *Duellmanohyla soralia*. Illegal deforestation and chytridiomycosis are negatively impacting each life stage of these species, culminating in the shrinkage of adult populations and pushing them deeper into an extinction-prone bottleneck. The rescue efforts proposed herein will tackle both short-term and long-term threats by performing a head-start program to quickly produce animals for wild populations supplementation while simultaneously building captive assurance populations for long-term protection and reintroduction.

The complete proposal can be viewed here: www.amphibianark.org/pdf/seed%20grants/Jonathan%20Kolby%202012%20AArk%20Seed%20Grant%20Proposal.pdf.

Duellmanohyla soralia, one of three Critically Endangered species from the Cusuco National Park that will be part of a new head-start program in Honduras.

Lake Oku Clawed Frog (*Xenopus longipes*) Recovery Project, Cameroon

Bova Wildlife Conservation Center, Buea, Cameroon

Total funding amount provided by Amphibian Ark to support this project: $5,000.

A captive breeding program will be established in Cameroon for the Critically Endangered Lake Oku Clawed Frog (*Xenopus longipes*). Photo: Gloria Enow Egbe.

Executive Summary
The African clawed frogs have undergone drastic changes in chromosome number during their evolution, making them some of the most genetically unusual creatures in the world. They exhibit polyploidy, meaning they have more than the two sets of chromosomes found in most other organisms (known as diploid). The Lake Oku Clawed Frog (*Xenopus longipes*) has 12 sets of chromosomes, so is dodecaploid. Once common, Lake Oku Clawed Frogs were thought to have been extirpated from Cameroon in the 1960s, until an isolated population was found in Lake Oku, in 1993. They are classified as Critically Endangered in Cameroon. In 2009, Bova Wildlife Conservation Center, Safe the Frog, Cameroon and HELP-SUSDEV Program came together to form the Lake Oku Clawed Frog (*Xenopus longipes*) Recovery Project.

The ultimate goal of the project is to increase the populations of Lake Oku Clawed frog by initiating a captive-breeding program for an assurance population in at least three institutions: Bova Wildlife Conservation Center, Cameroon, Limbe Zoo, Cameroon and University of Bamenda, Cameroon. It will require maintaining multiple small groups of adult frogs in different enclosures and breeding

them sustainably. Bova Center has been asked to help expand the overall capacity of this effort by building a full-scale head-starting facility and acquiring the equipment necessary to contribute to efforts to head-start the frog and assistance in drafting an updated Recovery Plan. We requested $5,000 from the AArk Seed Grant program to help reach these goals. AArk Seed Grant funds will cover some of the costs of materials to construct a head-starting facility at Bova Center, cover costs associated with transporting metamporphs to at least three institutions: Bova Wildlife Conservation Center, Cameroon, Limbe Zoo, Cameroon and University of Bamenda, Cameroon. We shall maintain multiple small groups of adult frogs in different enclosures and breed them sustainably. The grant will also cover the stipend of a student research technician who will assist the HELPSUSDEV in finalizing an updated Recovery Plan for the frog.

The complete proposal can be viewed here: www.amphibianark.org/pdf/seed%20grants/BovaCenter%202012%20Seed%20Grant.pdf.

Amphibian Ark booth at the Chicago ReptileFest

Robert Scherer, Matthew Scherer, Michael Scherer and Ben Lopez, AArk volunteers

A great time was had by all who helped host the Amphibian Ark booth at the 2012 ReptileFest (www.reptilefest.com), an annual event hosted by the Chicago Herpetological Society and the University of Illinois Chicago. It is a must-attend event for reptile and amphibian enthusiasts.

Our booth at the event was designed to create a fun environment to educate visitors about the crisis facing the world's amphibians by using games, videos, puppets, and quizzes. The background was a poster that featured an educational quiz and shared important facts about Amphibian Ark and their mission. To help draw attention to our booth we created some really fun games: a frog distance hop game, a dice chance game, and feed the frog game, where you had to throw a paper fly into a frog's mouth. Best of all, on the second day Danny Beckwith from the Shedd Aquarium brought the frog puppet from the AArk music video (www.youtube.com/watch?v=JAgAeJSrQAE) and that attracted plenty of visitors.

The volunteers created a brochure to help educate people about the goals of the Amphibian Ark during the ReptileFest.

While the kids were learning through games and fun, we informed their parents about the Amphibian Ark through a brochure we created to educate people about the goals of the AArk and encouraged them to visit the AArk website. Our dad and grandma also sold frog calendars to support the AArk in their fight to save amphibians around the world.

Robert Scherer and Ben Lopez, two of the volunteers at AArk's booth at the Chicago ReptileFest, explaining about amphibian conservation to some of the younger visitors. Photo: Michael Scherer.

The quiz we created was educational with a twist of humor. Our goal for the quiz was to provide visitors with interesting facts about amphibians and the threats they are facing around the world. The games and the quiz were a huge hit and we had to make an emergency run to the store to get more prizes for quiz-takers and game participants! At certain times during the fest we had a large gathering of visitors wanting to play games.

In our two days at ReptileFest we were able to sell fifty calendars, over fifty people signed up for the Amphibian Ark newsletter, and we met a lot of amazing exhibitors. Hopefully our efforts will help AArk continue their work. Thank you very much for letting us host a booth on your behalf as a volunteer project. We had such a great time that we are hoping we can do it again next year!

We are all proud Indian Guide Program members (www.algonquinlonghouse.org). This is a group that offers unique programs focused on the magic of the Native American theme that encourages and promotes the value of a strong parent and child relationship through fun and exciting activities. This group volunteered to promote the Amphibian Ark at the ReptileFest.

Facilities for captive breeding of endangered amphibians at the Gerhart-Hauptmann-School in Germany

Peter Bartsch, Gerhart-Hauptmann-School and Peter Janzen, Deutsche Gesellschaft für Herpetologie und Terrarienkunde (DGHT)

The Gerhart-Hauptmann-School in Gelsenkirchen, Germany, is the only school keeping endangered dendrobatid frogs and newts in Germany. As we reported in Amphibian Ark Newsletter No. 10 (www.amphibianark.org/Newsletters/pdf_newsletters/amphibian%20ark%20news%2010.pdf) this school's target is to breed endangered amphibians in captivity. Two species have been selected: the Endangered dendrobatid frog *Excidobates mysteriosus* from Peru and the Critically Endangered Iranian newt *Neurergus kaiseri*. All specimens are captive bred.

The specimens of *E. mysteriosus* were bred by private individuals and the Aquazoo in Duesseldorf and the newts were a kind donation from Riga Zoo, and are also captive-bred specimens. Initially there were fifteen students and has now grown to twenty-five (eighteen girls and seven boys). They are keeping eight *E. mysterious* in three terrariums and five *N. kaiseri* in an aquatic terrarium.

the Critically Endangered Iranian newt *Neurergus kaiseri is now being kept at* the Gerhart-Hauptmann-School in Gelsenkirchen, Germany. Photo: Peter Janzen.

Students from the Gerhart-Hauptmann-School in Gelsenkirchen, which is the only school keeping endangered dendrobatid frogs and newts in Germany. Photo: Peter Janzen.

At the beginning of this year the group had their first breeding success with *E. mysteriosus* and the students observed the first reproductive behavior of the newts. This work is scientifically assisted by the Stiftung Tierärztliche Hochschule Hannover (Foundation Veterinary College Hannover). The students measured the abiotic environmental factors in the terrariums and in the aquatic terrarium of the newts for three months and the data were processed in diagrammatic form and analyzed with the assistance of a scientific staff member from the Veterinary College in Hannover. The results were compared with available data from the natural environment of these species with the target of a continuous improvement of the maintenance conditions.

The students regularly report about their progress in professional journals and give presentations to different stakeholder groups. They are making a good contribution by providing information about the global extinction of amphibians to the general public.

Currently the group is discussing future cooperation with a German zoo which is integrated in the captive breeding alliance of private individuals and zoos in Germany, Switzerland and Austria. The target is to building up intact breeding groups of *E. mysteriosus* and *N. kaiseri*, with studbooks for each species.

A conservation program for *Atelopus* species at the Cali Zoo, Colombia

Catalina Silva, Diego Villaquiran and Camilo Londoño, Research center for endangered species conservation, Cali Zoo

The Arlequin frogs, belonging to the genus *Atelopus*, are considered one of the most threatened groups of amphibians, due to the rapid decline of their populations. Of the twenty-four species inhabiting lowland areas 58% have suffered drastic declines in their populations and about 38% are presumed to be extinct. It has been suggested that these declines and extinctions may be mainly due to an emerging epidemic known as chytridiomycosis, which is caused by the microscopic fungus *Batrachochytrium dendrobatidis* (*Bd*). This fungus is suspected to interact with effects off habitat destruction and climate change, and the restricted distribution and high endemism of these species makes them particularly vulnerable to extinction.

In Colombia the genus *Atelopus* was represented by thirty-six species distributed in both highland and lowland habitats. In previous years field trips have failed to find most of the Colombian species, so all have been classified under some criterion of threat, moreover, the presence of *Bd* has been confirmed in at least three of the species that can still be found. These facts indicate that captive management could be a vital strategy to safeguard some of the most threatened species, and captive management can contribute to our knowledge and conservation of these species. Currently there is little information published about the captive management of these species.

Faced with this alarming situation, the Amphibian Laboratory at the Cali Zoo and the Andes University joined forces to develop actions to address this environmental catastrophe, including the development of captive management protocols for lowland amphibian species, the study of geographic and taxonomic distribution of *Bd* to estimate the current distribution of the pathogen in the country, and experimental research on bacteria hosted by amphibian skin as a mechanism to help these toads to fight the lethal effects of the pathogen.

In 2009 we began a captive management program for a species of *Atelopus* from the border with Panama. This is a site where the Bd fungus has ravaged amphibian populations. In June the initial founders arrived at the amphibian laboratory comprising seventeen adults - ten males and seven females.

November saw the first egg-laying, with each ovoposition consisting of about 200-300 eggs, and tadpoles hatching within ten days. Since 2009 we have had nine successful hatchings, eight of which have fully metamorphosed.

Through study of disease in the laboratory and field investigations, we now know that chytrid fungus is present in the Andean, Pacific, Caribbean and the piedmont plains. It has been frequently found in species of the Valle del Cauca, but we do not know how many species may have already disappeared due to its catastrophic effects.

Our studies also indicate that bacteria that live on the skin of frogs may be involved in increased resistance to the fungus in at least one species of Arlequin frogs, which would have enabled it to survive. Some of these bacteria are able to almost completely inhibit the growth of the *Bd* fungus in experimental conditions. These results are very encouraging: they suggest the possibility of finding and developing a strategy that allows at least some species to face chytrid fungus.

With these results, we are making strides and gaining knowledge that contributes to the conservation of the Arlequin frogs, and could be applied to other species nationwide.

Atelopus spurelli in amplexus. Photo: Susan Posada.

An update from Andasibe, Madagascar

Devin Edmonds and Justin Claude Rakotoarisoa, Association Mitsinjo, Madagascar

In April 2011, the grassroots community-run organization Mitsinjo began maintaining four local frog species for training in the newly constructed biosecure amphibian captive breeding and husbandry research facility near the village of Andasibe, Madagascar. Launched through a Contract of Collaboration with the Amphibian Specialist Group of Madagascar and Le Direction Générale des Forêts, Mitsinjo's center is playing a crucial role in the implementation of the Sahonagasy Action Plan, which is the national strategy for amphibian conservation in Madagascar.

In the last year the project has made substantial progress. Eight members of Mitsinjo currently work at the facility, caring for live food and captive frog populations. Five cricket species, a fruit fly, a springtail, and a cockroach which does not fly or climb glass are being produced to feed captive frogs, all of which were sourced locally. Eight frog species are being maintained in about seventy terrariums, with shelving and additional housing being constructed daily to expand the capacity the center has to address current and future threats to local frog species.

Notably, two frog species (*Boophis pyrrhus* and *Mantidactylus betsileanus*) have already bred in captivity in 2012. The resulting tadpoles are being used to study the optimal husbandry requirements for the larvae of these species, which we hope can be applied to maintaining threatened frog species of similar ecological guilds should the need arise in the future. Additionally, technicians are gaining tremendously valuable experience raising tadpoles and frogs in captivity, and are developing a unique set of skills to aid future *ex situ* conservation action in Madagascar.

Mitsinjo now is seeking funding to expand our amphibian conservation activities to include an environmental education center which features live frogs on display alongside informational graphics for community members of Andasibe, and to develop a long-term monitoring program for local frog species which will compliment the organization's ongoing work monitoring the area for chytrid fungus as part of the nation-wide early detection plan.

Initial funding to launch the captive breeding and husbandry research facility was secured from Amphibian Ark, the Association of Zoos and Aquariums Conservation Endowment Fund, and the Wildlife Conservation Society. We are also extremely grateful to the additional organizations which have supported the continued development of the project during the last year: Woodland Park Zoo, Conservation International, Understory Enterprises, American Frog Day, Biopat, Durrell Wildlife Conservation Trust, Cleveland Metroparks Zoo and Zoological Society, Tree Walkers International, and Toronto Zoo.

Boophis pyrrhus, one of the local frog species being maintained at the Mitsinjo centre in Madagascar, was bred earlier this year. Photo: Devin Edmonds.

Below: Some of the terraria used for husbandry research at the Mitsinjo centre in Madagascar. Photo: Devin Edmonds.

The Mona Coquí - A Caribbean treasure

Rafael L. Joglar, University of Puerto Rico at Río Piedras, Jennifer Stabile, Albuquerque Biopark, and Louis Santiago, University of Puerto Rico at Río Piedras

In the heart of the Caribbean, 66 km (41 miles) west of Puerto Rico and 61 km (38 miles) east of the Dominican Republic lays a small jewel known as Mona. Mona, or Mona Island is considered by some to be the Galapagos of the Caribbean. Since it is a natural reserve there is no large-scale tourism, no hotels and no permanent residents; park rangers and biologists are responsible for guiding visitors and participating in research projects. Rich in history and biodiversity, large iguanas (*Cyclura stejnegeri*) roam the island that was once an important destination of pirates and privateers. The Mona Passage, the waters surrounding the island, connects the Atlantic Ocean with the Caribbean Sea. This 129 km (80 miles) stretch of sea is one of the most dangerous passages in the Caribbean, due to deep water and variable tide currents.

A pair of Mona Coquí in amplexus. Photo: Rafael L. Joglar.

Our boat left Boquerón (south-western Puerto Rico) at 5:00 am, transporting equipment and our herpetological research group. Mona Island belongs to Puerto Rico, and is managed by the Department of Natural and Environmental Resources (DNER) which issues a small number of permits to visit and work on the island. Because of its remoteness, Mona is the most isolated island in the archipelago of Puerto Rico and it is biogeographically unique. By mid-morning, large limestone cliffs and beautiful white sandy beaches with swaying palm trees came into view. As we approach closer, deep caves began to take shape in the sea cliffs of this 11 x 7 km (7 x 4 mile) kidney-shaped island. Ecologically it is a subtropical dry forest, rich in biodiversity and endemism, including the Mona Iguana (*Cyclura stejnegeri*), the Mona Gecko (*Sphaerodactylus monensis*), the Mona Teiid Lizard (*Ameiva alboguttata*) and the Mona Anole (*Anolis monensis*) just to name four of the nine endemic species of its terrestrial herpetofauna. As we enter the caves we encounter traces of history, such as pictographs of Taino or pretaino origin. The Taino, descendants of the Arawaks, settled in Mona pre-Columbian times. They gave the island its original name after a Taino Cacique, or chief, Amona.

We proceeded to monitor the transects previously established by our research team, taking data on temperature, moisture and pH levels. As the sun is beginning to set on Mona, the real gems of the island make themselves noticeable. We can hear sounds of dripping water filling the caves… only it is not the water. These sounds are produced by the only amphibian found on the island, the Mona Coquí (*Eleutherodactylus monensis*). This species, just like the other sixteen species of Puerto Rican frogs of the genus *Eleutherodactylus* is characterized by direct development, which means that they metamorphose directly into miniature coquis without going through a tadpole stage. These frogs lay their eggs in terrestrial conditions and most of them are on vegetation or under fallen leaves.

The Mona Coquí is endemic to Mona Island and little is known of its current population status. It is listed in the IUCN Red List as a Vulnerable species because of its restricted range and the effects of introduced predators on the island. In addition to its range of only 57 km^2 (22 square miles) our research group is also concerned with chytridiomycosis (*Bd*) already present on Mona, habitat alteration and climate change. If we take into consideration the status of amphibians in the Caribbean, with 87% of the species being threatened, and the status of amphibians in Puerto Rico where three species have disappeared and many face serious survival problems, we have in our hands a very delicate situation. This is why we decided to start a captive breeding program with the Mona Coquí. The objectives of this program are to (1) establish a captive assurance population (2) to learn about its reproductive biology and (3) to increase public awareness about the amphibian crisis.

Mona Island, 66 km (41 miles) west of Puerto Rico, is home to the endemic Mona Coquí (*Eleutherodactylus monensis*), which is threatened by chytrid fungus, habitat alteration and climate change. Photo: Rafael L. Joglar.

After a week of hard work our adventure on Mona ended successfully by capturing and transporting five potential breeding pairs (five males and five females) of the Mona Coquí to the Albuquerque BioPark in New Mexico to begin our captive program.

Captive-bred Southern Corroboree Frog eggs released

Michael McFadden, Unit Supervisor, Herpetofauna Division, Taronga Zoo

The Southern Corroboree Frog (*Pseudophryne corroboree*) is one of the world's most threatened amphibians, with less than fifty individuals remaining in the wild. Photo: Michael McFadden.

The Southern Corroboree Frog (*Pseudophryne corroboree*) is one of the world's most threatened amphibians, and is the target of one of the most concerted conservation efforts. With less than fifty individuals remaining in the wild across historic sites, the short-term persistence of this species in the wild may soon depend on the success of the *ex situ* breeding program. Fortunately, a well-established *ex situ* program exists for the Southern Corroboree Frog with a collaboration between the New South Wales Office of Environment and Heritage (NSW OEH), the Amphibian Research Centre, Taronga Conservation Society Australia and Zoos Victoria.

This year has proven to be an exceptionally successful breeding season for Taronga and Melbourne Zoos, with the majority of mature females producing eggs. After some difficulties breeding this species in the early years of the program, it appears the odds have turned in favour of the frogs with staff at the two zoos experiencing high reproductive success for two seasons in a row, indicating that captive breeding protocols for the species have been mostly established. The eggs were dug out of their moist terrestrial nests within their breeding tanks in March and April and held under close watch whilst the tadpoles underwent early development within the eggs.

Staff from the New South Wales Office of Environment and Heritage, Taronga Zoo and Zoos Victoria releasing captive-bred Southern Corroboree Frog eggs in one of the artificial chytrid-exclusion ponds. Photo: Michael McFadden.

In early May, staff from the NSW OEH, Taronga Zoo and Zoos Victoria travelled to a remote part of Kosciuszko National Park in the NSW Snowy Mountains to reintroduce over 750 eggs into a series of artificial chytrid-exclusion ponds at three sites. The large eggs, at a fully-developed stage and ready to hatch, were released into the chilly water where they will hatch, spend winter as tadpoles and metamorphose in late spring approximately six months later.

The results of releasing eggs using this experimental strategy will be noted over the next two years as the adults from the earliest egg translocations four years ago return to breed. Surveys for this species are only possible for mature calling males, as juveniles are quite cryptic and undetectable. Survival during the early life stages has shown some promise, with a high percentage of eggs reaching metamorphosis and exiting the ponds chytrid-free. This experimental reintroduction is one aspect of the recovery effort for the iconic Australian corroboree frogs and researchers are optimistic that with the current conservation program, they won't be lost to extinction.

An update from the Association of Zoos & Aquariums: March – May, 2012

Shelly Grow, Senior Conservation Biologist, AZA

Amphibian assessment meeting

On March 5-8, the Fort Worth Zoo (Fort Worth, Texas) hosted a second Amphibian Assessment Meeting for the United States, to update results from the original 2007 meeting. Results from this meeting can be found on Amphibian Ark's conservation portal (www.amphibianark.org/assessmentresults.htm) and thanks are given to the following institutions for providing financial support for this meeting: Fort Worth Zoo, Toledo Zoo, Houston Zoo, Sedgwick County Zoo, Milwaukee County Zoo, San Antonio and Aquarium, Denver Zoo, Woodland Park Zoo, and Binder Park Zoo.

Amphibian Taxon Advisory Group meeting

AZA's Amphibian Taxon Advisory Group held their annual meeting in Miami Beach, Florida on April 13. Program updates were provided, along with presentations on disease and nutrition issues, international and domestic conservation programs, and best practices for group management.

Amphibian Husbandry Resource Guide – expanded and updated version now available

The new edition of the AZA Amphibian Taxon Advisory Group's Amphibian Husbandry Resource Guide is now available on AZA's website at both: www.aza.org/amphibian-conservation-and-education-resources/, and www.aza.org/amphibian-conservation/. This newly expanded document (almost 240 pages!) includes chapters that have been significantly updated, as well as new chapters in Assisted Reproduction Technology and Amphibian Data Entry.

2011 Amphibian Conservation – Highlights and Accomplishments report available

AZA's 2011 Amphibian Conservation - Highlights and Accomplishments report is now available online (www.aza.org/amphibian-news/). This report features an array of both local and international amphibian conservation programs in which AZA-accredited facilities play an active role.

FrogWatch USA continues to expand

FrogWatch USA is the flagship citizen science program of the AZA. Volunteers register a wetland site and make multiple evening visits from February through August to collect data on the calls of frogs and toads. Participating individuals and families learn about the wetlands in their communities and help conserve amphibians.

In May, FrogWatch USA reached its 50th chapter and over 100 training sessions had been planned by chapters around the country. These chapters are located at AZA-accredited zoos and aquarium, nature centers, regional parks districts, and at other like-minded organizations. Learn more about this network at www.aza.org/frogwatch. Or follow FrogWatch USA on Facebook at: www.facebook.com/frogwatchusa.