

## A Venezuelan initiative for endangered Andean herps

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A new conservation center is being developed at an emblematic zoo in the Venezuelan Andes, the Chorros de Milla's Park Zoo in Merida City, under the leadership of the NGO Biocontacto. The initiative involves captive breeding of Andean herp species that are in some category of risk. Among the first species planned to fit the project are harlequin frogs (*Atelopus*), skunk frogs (*Aromobates*), collared frogs (*Mannophryne*), a rocket frog (*Leptodactylus*), high mountain lizards (*Anadia*), the Mountain Rattlesnake (*Crotalus maricelae*) and the Red-snout Lizard (*Ameiva provitali*).

The project currently includes two endangered frog species from the terrace where the city of Merida is located. Due to the increasing urban development of the city, and the lack of space for the city to expand, most of the suitable habitats for native species have disappeared. This process became more notorious since the middle of the last century, but is more conspicuous within this century. Habitat destruction has taken away most places where the Collared Frog (*Mannophryne collaris*) and a yet undescribed species of rocket frog (genus *Leptodactylus*) used to live. Given the urgency of rescuing the surviving populations, it was deemed appropriated to start the conservation project with these two taxa.

Captive facilities had to be adapted to the different ecological strategies for both species. The Collared Frog lives along cascading but also in slow water streams under seasonal semi-deciduous forests, while *Leptodactylus* sp. inhabits pools in open spaces under the same ecological unit. We have created enclosures for reproductive parents that try to emulate the contrasting natural conditions: those for *Leptodactylus* have more light and heat exposure, with artificial pools and a substrate with pebbles and sand; while those for *Mannophryne* have more plants, humidity and hiding places, a substrate of decaying leaves, and an artificial system combining rain, cascading stream and fog production.



An as yet un-named species of rocket frog (*Leptodactylus* sp.) from Merida City in Venezuela has now been successfully bred at the Venezuelan Andean Reptile and Amphibian Conservation Center. Photo: Biocontacto Archives.



Above: Habitat destruction around the city of Merida has taken away most places where the Collared Frog (*Mannophryne collaris*) used to exist. Photo: Biocontacto Archives.

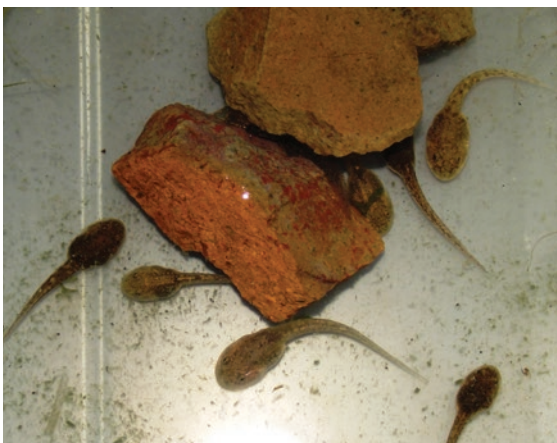
Both species responded well to the captive facilities and started to reproduce a few months after we began the project at the beginning of 2014. The first reproductive efforts for *Leptodactylus* were almost completely lost, due to the high percentage of diseases at the larval stage. Almost no information was available in the literature of captive breeding of rocket frogs, which is why we first started to improvise and then to follow a trial and error method. In spite of the hundreds of tadpoles produced by the parental stocks, very few managed to survive. Now we have accumulated experience that has yielded good results with food and micro ecological requirements for the larvae, with the outcome that about two dozen froglets completed metamorphosis and are now healthy and developing well.

The reproduction and rearing of *Mannophryne collaris* relied on an abundant and helpful amount of literature on captive breeding of dendrobatid frogs. In spite of the low production of eggs - usually less than a dozen - in every single reproductive event per mating pair, about fifty tadpoles have completed development and the small frogs are now heading towards maturity.

In the course of the project, a manual on captive breeding procedures has been developed, covering different topics such as equipment, light requirements, humidity and temperature conditions, as well as food production, detection and treatment of diseases, among other captive breeding aspects. The idea is to develop a manual in Spanish to help other regional and national initiatives that may take place in the future.

At the moment, the Venezuelan Andean Reptile and Amphibian Conservation Center (or VARAC Center) is the only one of its kind in the country. The regional initiative is also generating materials aimed at raising public awareness as long as it begins to get tangible results for the conservation of some endangered herp species.

Captive breeding of the Collared Frog in Venezuela has been very successful, with about fifty tadpoles from each reproductive event completing development. Photo: Biocontacto Archives.





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