

REVA Conservation Center Annual Report 2019

Amphibians currently present a global biodiversity crisis, which manifests itself with a high percentage of species with drastic declines and extinctions. To address the problem at the national level, in Venezuela in May 2018, under the auspice of the BIOGEO Foundation, REVA is created as an ex situ breeding center that focuses on amphibian declines and provides results that benefit the most affected species.



Fig. 1. Part of Team REVA at the Conservation Center.

Our main achievement has been to obtain, under artificial environmental conditions in captivity, the reproduction of threatened amphibians of which we did not know their biology and ecology. These successes have been achieved in conditions of a country that is in a political, economic and socially adverse situation. Despite this, the CC REVA has been able to generate quantifiable successful results. Below we detail the main achievements of REVA for the year 2019:

- Achieve the optimal environmental, food and spatial conditions necessary for the maintenance, reproduction and growth of threatened amphibian species.



Fig. 2. Cold room. Part of space where cold-environment species such as paramo and cloud forests frogs are maintained.

- Rediscovery of species that have not been observed in their natural habitat for decades, such as *Aromobates duranti* (Endangered) and *Pristimantis telefericus* (Not evaluated. IUCN Red List).
- Study, update and publication of the distribution and ecological data of threatened species such as: *Aromobates zippeli* and *Aromobates duranti*.
- IUCN threat categories are proposed for species not evaluated as *Aromobates zippeli* and *Pristimantis telefericus*.
- Understanding the biology and requirements necessary for the maintenance and development in captivity of species of minor concern (such as models for the breeding of related threatened species), and vulnerable and threatened species such as: *Aromobates zippeli*, *Aromobates duranti*, *Aromobates meridensis*, *Mannophryne collaris*, *Leptodactylus "meridensis"*, *Pristimantis telefericus*, *Hyloscirtus platydactylus* and *Boana cf. xerophylla*.
- Achievement in the reproduction of *Mannophryne collaris*, endangered species.
- Logro en la reproducción de *Leptodactylus "meridensis"*, una especie amenazada que estamos describiendo en REVA como nueva para la ciencia.
- Achievement in the reproduction of *Aromobates zippeli*, which we are proposing as a critically endangered species.
- Strengthening populations of *Aromobates meridensis* through reintroduction of juveniles and subadults raised ex situ from tadpoles extracted from their natural habitat.

- Contribution in the generation of data for the good management of species in captivity with the creation of a food preparation recipe for tadpoles bred in captivity.
- Carrying out environmental education activities in a primary elementary school in the town of Jají, Mérida state, where children and teachers were educated about the La Carbonera Frog (*Atelopus carbonerensis*) and the environmental consequences of the introduction of invasive species such as the Bull Frog (*Lithobates catesbeianus*).
- Participation in the XIX Meeting with Sciences in the Faculty of Sciences of the University of Los Andes, Mérida, Venezuela, where for three consecutive days environmental education was given on the importance of amphibian conservation in general and on frogs of the genus *Atelopus*. In this activity, more than six thousand people were attended, both primary and secondary school students, university students and the general public.
- Participation in the XII Venezuelan Congress of Ecology in the city of Caracas.
- Permanent publication in specialized journals on topics such as the REVA Conservation Center, how amphibian conservation is tackled in a country in crisis, artisan food for tadpoles, *Aromobates zippeli*: a proposed frog as critically endangered, and *Aromobates durante*: the rediscovery of an endangered species.
- Generation and collection of data that allowed writing manuals, conservation plans and guides for captive breeding of the species maintained in the CC REVA.
- The creation of a website (<https://revafrog.home.blog/>) and accounts in different social networks (@revafrog in YouTube, Facebook, Instagram, Twitter) to take relevant information on the conservation of threatened amphibians under threat beyond the doors of the REVA C.C.
- The acquisition of a power plant through the donation of Amphibian Ark.
- Sum of efforts in the search for lost species such as *Atelopus soriano* and *Atelopus carbonerensis*.