amphibian ark

keeping threatened amphibian species afloat

Newsletter

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Above: Junin Frog Guardian performing a survey in the Peruvian Andes. Below: 2023 AArk grant winners FUDECI and Fundación Temaikèn will work with the Rancho Grande harlequin toad (left) and the Patagonia frog (right).



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Species Survival Commission



World Association of Zoos and Aquariums | **WAZA** United for Conservation

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Increasing the visibility of *ex situ* amphibian conservation in Brazil

Although captive breeding programs have been established for several endangered amphibian species around the world, not many of these initiatives exist in Brazil. We are excited to announce that Renata Vaz and Cybele Lisboa will coordinate a program for Amphibian Ark this year to encourage Brazilian institutions to implement *ex situ* conservation programs for native amphibian species. Although Brazil is the most diverse country in terms of amphibian species (1188 species currently; Segalla et al. 2021), few institutions work with these animals in captivity, and even fewer are engaged in *ex situ* conservation projects. There are only four captive breeding programs in Brazil (Lisboa, Vaz, and Brasileiro 2021; "AArk Conservation Grants" 2022; Lisboa et al. 2023); Renata and Cybele aim to improve this situation.

The main goal of this program is to enable at least two institutions to engage in amphibian *ex situ* conservation. Institutions will be chosen after interest and qualifications have been evaluated for each candidate (*i.e.*, commitment and adequate space regarding husbandry of species). Targeted species will be selected based on the results of the 2020 Conservation Needs Assessment (CNA) workshop, which evaluated 67 endangered species and identified 13 high-priority species for rescue in Brazil (Lisboa et al. 2021). Of these, only three are currently included in specific conservation projects.

Other priorities for this first year are to build amphibian maintenance and husbandry capacity for technicians and institutions, and to help selected institutions obtain appropriate permits and licenses, as well as raise money through grant writing and fundraising. It is expected that, by the end of this first year, two institutions will be ready to receive and maintain a Brazilian amphibian species recommended for rescue.

Renata and Cybele are honored to lead this initiative with Amphibian Ark to expand and enhance ex situ conservation efforts in Brazil.

Renata Vaz has been involved with amphibian research, husbandry, and conservation in Brazil since 2009. She holds a Master's and PhD in amphibian ecophysiology and is currently a Program Officer at the Amphibian Specialist Group in Brazil (ASG – Brazil, IUCN/SSC).





Cybele Lisboa has been involved with amphibian *ex situ* conservation since 2009 as the Curator of Reptiles, Amphibians, and Invertebrates at São Paulo Zoo. She is the regional chair of the ASG – Brazil (IUCN/SCC) and holds a Master's degree in fauna conservation.

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Reintroduction site gives hope for endangered northern leopard frog in Western Canada

Rebecca Stanton | Wilder Institute, Calgary, AB, Canada Jasmine Louste-Fillion | Wilder Institute, Calgary, AB, Canada

Background

Once widespread across Canada, the northern leopard frog (*Lithobates pipiens*) is down to a single remnant population in British Columbia, designated as the Rocky Mountain population. This population is listed as Endangered federally and Critically Imperiled in British Columbia, likely due to habitat loss, invasive species, and disease. As part of the British Columbia Northern Leopard Frog Recovery Team, the Wilder Institute is using conservation translocations in hopes of preventing the local extinction of the species by reintroducing these frogs to parts of their historical range. The single extant population has become the source for reintroductions in the province as well as for the establishment of captive assurance and breeding populations at the Vancouver Aquarium, Wilder Institute, and Edmonton Valley Zoo.

Previous reintroduction efforts have met with limited success and it was thought that a lack of suitable habitat may have been the cause. For this reason, northern leopard frog reintroduction was initiated at a new site in the Kootenay Valley in 2022. This site was identified as the highest-ranking location for northern leopard frog reintroduction in the region following detailed habitat assessments conducted in 2021. Habitat assessments and reintroduction site selection focused on an extensive list of northern leopard frog habitat criteria, including good wetland breeding and upland foraging habitat, connectivity among seasonal habitats, and proximity to overwintering habitat (i.e., a nearby creek or channel).



Northern leopard frog (*Lithobates pipiens***).** Photo: Lea Randall, Wilder Institute



Young-of-year northern leopard frog at the new 2022 reintroduction site. Photo: Rebecca Stanton, Wilder Institute

A successful 2022 field season

Activities at the new reintroduction site in 2022 included releases of 1929 tadpoles via head-starting and wild-to-wild translocations, environmental monitoring, and weekly visual encounter surveys in the summer and fall. Despite releasing tadpoles in only four wetlands at the site, young-of-year (YOY) dispersed to at least 23 wetlands by the end of the field season, indicating suitable habitat features are available at most, if not all, of the wetlands present at the site. An overall population size estimate of 374 was determined through the use of mark-recapture data, resulting in a highly successful tadpole to YOY survival rate of 17.2-22.1%. For reference, survival in the literature for other ranid species from tadpole to YOY is typically 3-6% (Berven 1990; Biek et al. 2002). Lastly, the average size of frogs at the new site was 20% larger and 114% heavier than at the previous reintroduction site.

"Based on visual encounter surveys, our reintroduction efforts showed early signs of success, with young-of-year already reaching the size that you would expect from a two-year-old northern leopard frog," said Rebecca Stanton, Interim Conservation Research Population Ecologist with the Wilder Institute. "This is exciting news because size at metamorphosis is often an excellent predictor of overwinter survival, which can be a challenge for this Endangered species."

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Lea Randal releasing northern leopard frog tadpoles into a wetland at the new reintroduction site in British Columbia. Photo: Allison Scovil, Wilder Institute

What's next

Follow-up monitoring at the new reintroduction site has begun. Conservation breeding and translocation efforts will continue into this field season with expected releases of tadpoles that have been head-started and/or bred at Edmonton Valley Zoo, Vancouver Aquarium, and the Wilder Institute.

Additional field assessments added this year include collection of periphyton and

phytoplankton to assess tadpole food resources at the new reintroduction site, wide-scale disease swabbing of northern leopard frogs in late September, and an expansion of the survey area to check for population dispersal. These additional efforts aim to further understand population threats and recovery trajectories for the northern leopard frog.

Collaborators

The Wilder Institute looks forward to continuing this important work with their collaborators:

- * British Columbia Ministry of Water, Land and Resource Stewardship
- * British Columbia Ministry of Forests
- * British Columbia Northern Leopard Frog Recovery Team
- * Creston Valley Wildlife Management Area
- * Edmonton Valley Zoo
- * Fish and Wildlife Compensation Program
- * Nature Conservancy of Canada
- Private landowners
- Vancouver Aquarium

Recently metamorphosed young-of-year northern leopard frog that has not yet resorbed its tail. Photo: Jasmine Louste-Fillion, Wilder Institute



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Guardians of the Chinchaycocha frogs in the Central Andes of Peru: A conservation strategy for the future

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Matt T. Herbert | Denver Zoological Foundation, USA
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*Junín National Reserve, Chacamarca Historic Sanctuary, & Huayllay National Santuary

The giant frog (*Telmatobius macrostomus*) and the Junín/Pasco riverside frog, or wanchas, (*Telmatobius brachydactylus*) are both endemic to the Central Andes of Peru. Unfortunately, both species are listed as Endangered (EN) by the Red List of the International Union for the Conservation of Nature (IUCN SSC Amphibian Specialist Group, 2008a; IUCN SSC Amphibian Specialist Group, 2008b) and Peruvian legislation (D.S. N 004-2014-MINAGRI). These two species are in decline mainly due to the loss and degradation of their habitat, the illegal collection and sale of individuals for consumption, and the presence of an invasive exotic species, the rainbow trout (*Oncorhynchus mykiss*). These threats are exaserbated by the general lack of research and conservation actions for the giant frog and the wanchas frog.

In response to this lack of support for these species, the Denver Zoological Foundation began the pilot stage of a conservation project called "Guardians of the Chinchaycocha Frogs" in 2020. 'Chinchaycocha' is the local name for Lake Junín, the second largest lake in Peru and an important habitat for both species. This project brings together 47 local residents from 16 different communities within Junín and Pasco, as well as the three natural protected areas that occur within the range of these two species: the Junín National Reserve, the Chacamarca Historic Sanctuary, and the Huayllay National Sanctuary.





Eduardo Ruiz, park ranger at Junín National Reserve, with a Junín (wanchas) frog he logged during a November 2022 survey. Photo: Frog Guardians Project.

Matt Herbert, Denver Zoo Regional Conservation Director for Latin America, with local frog guardian Magloria Llana in Junín, Peru. Photo: Denver Zoo.

After the pilot period, this project officially began in 2022 with the explicit aim of conserving the giant frog and the wanchas frog through the participation and empowerment of local communities—via a holistic approach that combines scientific and ancestral knowledge, as well as a respect for the needs of the local communities. Our first year successes included the signing of conservation agreements, preparation of work plans, and selection of protection sites with the local communities. The first "Guardians of the Chinchaycocha Frogs" also went through capacity building workshops for monitoring and surveillance of frogs.

We are especially proud to report that we restored 8.75 hectares of rivers that serve as habitat for the two species.

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Frog Guardians in Oxapampa, Ninacaca, Pasco, Perú: guardians were trained to study frogs in their local river, including capture/release methodologies. Photo: Frog Guardians Project.

Within these protected sites, various education, protection, and habitat restoration activities were carried out with the guardians, including: 1) establishment of fences within the rivers to prevent the entry of trout; 2) building fences on the land to prevent cattle from entering the rivers; 3) collection of solid waste; 4) technical support for the creation and development of a frog breeding center; 5) installation of signs that discourage illegal hunting; and 6) distribution of environmental education materials developed by the Denver Zoological Foundation. We also conducted the first annual census of giant and wanchas frogs in 15 locations within the Junín National Reserve, the Huayllay National Sanctuary, and the Chacamarca Historical Sanctuary. This survey, which covered a total area of 6469 m², was carried out and led by the guardians. Using this new data, we were subsequently able to estimate a density of 3 adult frogs and 36 tadpoles per 1000m². Although these first findings show discouraging results, especially in light of other reported population declines for both species (Castillo et al., 2021), we hope that this project can aid in the recovery of their populations in the long term.

Each year, this project aims to recruit new 'Guardians of the Frogs' from each local community. We hope that following extensive training, each guardian will actively participate in the restoration and conservation of essential habitat and in scientific monitoring via population assessments. All the information obtained in the first year was presented at the first Annual Congress of Frog Keepers, which took place in October 2022 and had more than 45 attendees.

At the end of 2022, the NGO Natural Way Peru facilitated an activity called 'Rana Noel' with the guardians and other community members in Puno and in Junín. This consisted of a series of recreational activities for children to promote the importance of frogs—especially the giant frog of Titicaca in the environment around Christmas time. an important holiday for the members of the community, where a series of recreational activities were developed to pass on information about the importance of frogs in the environment. More than 150 children and their families participated.

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In situ conservation as an additional protection measure for the Mucuchíes frog

Enrique La Marca, Néstor Sánchez-Guillén, Janina Puente, Reinhold Martínez, & Erik La Marca | Rescue of Venezuelan Amphibian Species Center (REVA), Venezuela

The action plan for a species threatened with extinction must include all possible conservation strategies. In addition to carrying out a captive breeding program that allows the rescue of populations of the endangered species, an *in situ* conservation program must be implemented. A complementary environmental education program should also be established that involves local communities. The implementation of this set of articulated strategies is what we know at REVA as 'integrative conservation'. An example is the program we implemented for the critically endangered Mucuchies frog (*Aromobates zippeli*).

The *ex situ* conservation plan for the Mucuchies frog began with a seed grant from Amphibian Ark in 2018. With it, it was possible to start the maintenance and breeding of the species in captivity, which eventually ended with the reintroduction of the first generations of descendants in the sites of origin. A short time later, we implemented an environmental education program carried out in the region where this frog lives. We obtained a positive response from the communities, which provided data on the presence of some local amphibian populations.

Once we locate the new populations, we collect information on parameters and environmental conditions in those places to replicate them in our *ex situ* conservation program at REVA facilities. The information obtained on the presence of these populations, together with our own observations and current and historical data, has allowed us to reconstruct the total range of distribution for the species.

We believe that there are other isolated populations that have not yet been detected. It is therefore urgent to implement an *in situ* conservation plan that aims to find these populations and incorporate them into a comprehensive conservation master plan to guarantee the survival of the species.

In terms of *in situ* conservation activities, in addition to locating the remaining populations and documenting the state of the habitats they occupy, it is necessary to ensure the protection and maintenance of those places and populations. From our own field research and with the help of local communities, we have identified some places that maintain relatively stable populations of the Mucuchíes frog. They are dispersed within a large matrix of agricultural and urbanized areas that prevents any obvious gene flow between them.

Our next step is to create a protection area large enough that the genetic diversity of the species can be maintained and that the ecosystem processes that favor it are maintained. Once we manage to create such an area, it is necessary to ensure its protection. We plan to involve local communities and official environmental entities in this endeavor. It is essential that the local communities appropriate the knowledge of the regional biodiversity and that they consider themselves stewards of the natural resources that exist there.

The critically endangered Mucuchies frog (Aromobates zippeli) from Venezuela. Photo: Enrique La Marca





Panoramic view of the Mucuchíes region, Venezuelan Andes. Photo: Erik La Marca

Sites for the protection of the Mucuchies frog

So far, we have identified three sites with stable populations of the Mucuchies frog that could serve as a starting point for a comprehensive conservation plan for the species. The first is a small area (about two and a half acres) in the Moconoque sector. Through the Biogeos Foundation and local owners, we established a 20-year agreement to protect and ecologically restore 74 acres of a mountainous spur of the Sierra de La Culata with the aim of guaranteeing the permanence of the aquifers that feed a spring and a small stream where the frog lives.

The second place is a 44-acre wetland on the northern outskirts of the city of Mucuchies, in a site known as 'Los Pantanos', which is currently used as a grazing area. It is at risk of disappearing if it were to be drained to incorporate it into the urban grid. The place is propitious for the establishment of an urban

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Relics of forest in the basin of the La Carbonara mountain stream, Moconoque locality, Venezuela. Photo: Erik La Marca

or community forest that contributes to the protection of the springs and small streams there. The creation of said forest would represent a great advance in the mitigation of climate change and the scarcity of water for human consumption, as well as an improvement in living conditions for the entire surrounding population. In the short term we will be working so that the Mucuchies frog is declared an emblematic frog of the city and the region of Mucuchies, giving greater weight and impetus to our initiatives.

The third place is a narrow area of springs on a tectonic fault escarpment, about 12.5 acres in the Los Muros de Tadeo sector of San Rafael de Mucuchíes. Despite being small, this area maintains a relict population of the Mucuchíes frog, as well as the Mérida Andean tree frog (*Hyloscirtus platydactylus*), a species considered Vulnerable by the IUCN.

Los Pantanos site, north of the city of Mucuchíes. Pre-Hispanic terraces ('andenes') marked with the red letter 'T'. Base image: Google Earth

Given the high fragmentation of habitat in the region, it is not possible to establish a single representative conservation area of the ecosystem, which is a Montane dry forest. Consequently, we must be content with protecting small areas that still maintain native elements or that can be ecologically restored. We recommend that the Moconoque and the Muros de Tadeo sites be considered natural protected areas within the private farms where they are located. The area for restoration purposes in the Los Pantanos sector could remain under municipal or community administration. That way, the wetland would have a multipurpose utilitarian purpose, which would be more appropriate and would have a greater impact from the hydrological or environmental quality point of view.

The Mucuchies region has been subjected to intensive land use since pre-Hispanic times. This is clear from the archaeological evidence dating back more than two millennia, as well as by the existence of "andenes" (indigenous terraces). After the establishment of the European colonizers, the use of the land was intensified with the cultivation of wheat and later the planting of vegetables, which eventually destroyed almost all the native forest vegetation. In the last century, foreign coniferous plantations were established, representing the main forests that now prevail in the region. The Mucuchies frog is a true survivor of the environmental catastrophe caused by these human activities.

With *ex situ* breeding, the protection of forest remnants and the ecological restoration of original native forest, we hope to contribute to the preservation of the Mucuchíes frog. We need to further involve the local people and gain the necessary support to strengthen our *in situ* conservation program for this species.

The Mucuchies region in the Venezuelan Andes. Yellow circles: current populations of the Mucuchies frog. Red circles: extinct populations. Base image: Google Earth





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A leap forward for amphibian conservation: Introducing ASA's new Executive Director

Candace Hansen | Programs Director—Amphibian Survival Alliance (ASA)

We are thrilled to embark on a new chapter at the Amphibian Survival Alliance (ASA) with the appointment of Gina Della Togna as our new Executive Director, effective from May, 2023.

Gina's appointment marks a pivotal moment in the evolution of ASA, reflecting a synergy of ambition, dynamism, and passion that mirrors ASA's mission. Prepared to guide our global initiatives, she is committed to invigorating the partnership with pioneering strategies and impactful projects.

Her leadership is marked by diplomatic and empathetic traits, indispensable for managing our diverse global partnerships and collaborations. She demonstrates a deep comprehension of the multifaceted cultures, perspectives, and global challenges that are integral to ASA's work, pledging to address these with respect and understanding.

Gina is also dedicated to elevating the visibility of amphibian conservation and showcasing the far-reaching impacts of the work across the partnership. She will also be exploring and cultivating new sources of support, critical to advancing the conservation efforts across the amphibian community.

Many of you in our community may already be familiar with Gina's work. Her substantial contributions to amphibian conservation speak volumes about her dedication and deep-seated passion for our shared missions and visions.

Gina's steadfast determination and strategic foresight lay the foundation for a promising future at ASA. We look forward to sustained progress under her thoughtful leadership, and we invite the Amphibian Ark community to join us in welcoming Gina.

The Amphibian Survival Alliance (ASA) welcomes its new Executive Director: Gina Della Togna.



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Practical & theoretical course in amphibian medicine for *ex situ* programs



Dates: August 31 to September 2, 2023

Place: EcoParque, Buenos Aires, Argentina

Instructors: Allan Pessier, PhD, DVM;

María Forzán, PhD, DVM; Luis Carrillo, DVM

For more information & to apply, email:

luis@amphibianark.org

Please note: this course will be held in Spanish



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In the footsteps of harlequin frogs

José Luis Omaña | La Inventadera

*This article was originally published in La Inventadera (<u>link here</u>) and has been republished here with the permission of the author.

Francisco Nava, from the Venezuelan Institute of Scientific Investigation (IVIC)-Mérida, is a special biologist. He has managed to transcend the fetishism of the species he studies, typical of the biology schools of our colonial academies. He says that harlequin frogs (genus *Atelopus*) are bioindicators of the relations of production and reproduction of life and the history of peoples.

These little frogs are extremely vulnerable to climate change, the modernization of human populations, the introduction of extractive development, changes in land use, and the presence of some endemic diseases, such as a fungus that has brought them to the brink of extinction.

Since 2020, together with the Atelopus Venezuela Working Group, Francisco has combined popular environmentalism and liberating popular education. His thesis is that the harlequin frog survives in Cuyagua, Cata and Chuao (Aragua state) thanks to the strategies of care and protection of the lands, waters and biodiversity of these communities.

In the rest of the Venezuelan coastal range, the little frog has not faired as well. On the verge of extinction, the Atelopus frog of the coast only survives (as far as we know) in the aforementioned towns of Aragua state.

In the village of La Carbonera in the state of Mérida, almost 3,000 meters above sea level, the little frogs were seemingly everywhere until the 1980s. Today, grandparents remember that they raised these frogs as children. However, when the road was paved between Jají and La Carbonera, the little frogs began to disappear. They filled the newly paved roads, and the cars trampled them by the dozens. Today, only two frogs were reported to Francisco and his team by the residents of the village.

Sharing knowledge from school

Their method is simple: they invite the girls and boys from the local schools to investigate the little harlequin frog in the places where it was or is currently found. The students determine where and with whom to investigate. Through collective mapping, they identify potential risks and environmental hazards in the locality. They also identify the guardians of the town's memory, men and women who welcome them into their homes and workplaces. Then, together with the Working Group, they design the interview questions, they are introduced to the audiovisual language (see below), they study some techniques for the use of the camera and the audio recording, and thus they go out to meet the people, their experiences and their memories.

The students review their territories and, in many cases, walk them for the first time, while they recognize the importance of the "pueblo teachers" for the community. The school thus expands to the entire territory, becoming a space and a time to think about its recent



history, as well as the world context in which that history takes place.

With the frog as a motive, the objective is to provide the students with an auto-ethnographic experience, which allows them to symbolically represent themselves using artistic tools. The production of a collective audiovisual, the realization of a mural, drawing, the construction of a puppet show, creative writing, among many other techniques, allow them to organize, systematize and circulate the testimonies of the guardians of the

Ángel Ulloa, plastic artist and naturalist, interacts with students of the Bolivarian School of La Mucuy Bajo. Photo: Francisco Nava

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town's memory, registered by the students. It is an effective and sensitive exercise in the exchange of artistic and scientific knowledge (academic and popular) on climatic geopolitics, biodiversity and local memory.

Thus, three goals are achieved: 1. Promote the revision of scientific and political contents for the sovereignty of the territory, through the popular recognition of the little frog (*Atelopus carbonerensis*) as a sociocultural bioindicator and as a biocultural memory of the people; 2. Make a contribution to the symbolic self-representation of school students, with a focus on safeguarding biodiversity and the biocultural memory of their own people; and 3. Catalyze the conversation about the global environmental crisis, with a transdisciplinary perspective, which the students understand as a concrete fact present in their daily lives.

A necessary audiovisual tool

In the year 2020, with the girls and boys of Cuyagua (Aragua state), the Atelopus Venezuela Working Group committed itself to the production of the documentary "The little toad of resistance". With more than 60 students and 5 teachers, this documentary was planned, recorded and edited by the students themselves. They had the support of the teachers, directors, workers and administrative workers of the Cuyagua schools, as well as workers of Inparques.

Since 2021, in the village of La Carbonera, in the state of Mérida, Francisco has facilitated meetings with the teachers, employees and workers of the Mistajá Agricultural Technical Farm School. There, in each house visited and on each path, the students have "appropriated" the research, perfecting their questions, seeking deeper or more complex answers, while they have practiced the art of registering and audiovisual production.

In La Carbonera, the disappearance of the yellow toad opened the doors to community research. It activated the memory of the people through the inquiry of the students. Little by little, the causes of the disappearance of the toad became evident: the recent transformations in the territory due to the abrupt change in land use, especially due to the arrival of development and dependency policies.

With a method similar to that used in Cuyagua, and in the midst of the Covid-19 pandemic, the young people of the Mistajá School made the documentary "In the footsteps of the yellow toad of La Carbonera."



The return of the frog

To this day, and after the sighting of a pair of harlequin frogs in La Carbonera—recorded photographically by members of the village—the Atelopus Venezuela Working Group insists on facilitating the biocultural memory of Andean communities, where the harlequin frogs have disappeared for science but not completely for the inhabitants of the towns of the Merida mountain range.

At the beginning of 2023, the Group expanded its communication and artistic expression tools, because it now has new puppeteer allies, writers and visual artists who cross their knowledge with that of conservation biology, environmentalism and liberating education.

Extremely realistic models of four Atelopus species created by plastic artist and naturalist Ángel Ulloa. Photo: Francisco Nava

From Cuyagua to Mistajá to La Mucuy, the Group invites children to look for harlequin frogs, both deep in the forest and in people's memories. Science, arts and popular education intersect in this search, which is, finally, based on strengthening the collective ecological, political and community consciousness of the Andean and coastal peoples.

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2023 AArk Conservation Grant Winners

Startup Grant

Towards the return of the Patagonia frog (*Atelognathus patagonicus*) to Laguna Blanca, Argentina <u>Organization</u>: Fundación Temaikèn, Argentina Project Leader: Paula González Ciccia

The Patagonia frog, Atelognathus patagonicus, is an endemic, critically endangered species that lives in a small number of basaltic lagoons in Patagonia. During the last decade, populations of this species have declined by more than 90%. The largest local population of this species inhabited Laguna Blanca, and was in contact with other populations that resided in neighboring smaller lagoons. The illegal introduction of fish into Laguna Blanca caused the extinction of the largest population of the Patagonia frog species. In the neighboring lagoons, a combination of threats that include the eutrophication of the environment due to the presence of livestock, the existence of emerging diseases such as chytrid fungus and ranavirus, as well as the drying up of small lagoons caused by the climate change, have this species at the limit of its survival. The National Parks Administration (APN) began a series of projects aimed at evaluating and controlling the population of exotic fish in Laguna Blanca in order to restore its ecological conditions. They have managed to reduce the abundance of fish, thus promoting a more suitable habitat for native species, including the Patagonia frog. However, natural recolonization by the Patagonian Frog is unlikely due to the small size of the neighboring populations and the poor state of the corridors between the lagoons. APN and the Foundación Temaikèn joined forces to rescue individuals from desiccated temporary lagoons and establish a survival colony for ex situ breeding purposes. While the APN and the UNLP work on *in situ* on habitat restoration (e.g., exclusion of livestock and the creation of limnocorrals), we will develop a reproduction program that will hopefully generate individuals to carry out experimental recolonization. The final goal of this project is to return the Patagonia frog to Laguna Blanca, its main reproductive environment.



A rescued Patagonia frog (*Atelognathus patagonicus*) at the Temaikèn Bioparque in Argentina. Photo: Funación Temaikèn

Extension Grant

Ex situ rescue of the Rancho Grande harlequin frog (Atelopus cruciger) in Venezuela

<u>Organizations</u>: Fundación para el Desarrollo de las Ciencias Físicas, Matemáticas y Naturales (FUDECI) & Leslie Pantin Zoo <u>Project Leader</u>: Margarita Lampo



The Rancho Grande harlequin toad (Atelopus cruciger) continues to be the only harlequin toad with two known large subpopulations in Venezuela. Explorations during the last three years have failed to detect new populations. During 2022-2023, we established the Centro para la Reproducción e Investigación de Arlequines (CRIA) with two units, one at the Foundation for the Development of Physical, Mathematical, and Natural Sciences (FUDECI) in Caracas and another at the Leslie Pantin Zoo in Turmero, where an ex situ program for the Rancho Grande harlequin toad was initiated. The program currently supports 22 founders from one subpopulation in Cuyagua and a cohort of 35 F1 tadpoles in stages 34-38. At the Leslie Pantin Zoo, an exhibit on the Rancho Grande harlequin toad was set up as part of an educational program aimed at raising public awareness about the threats that this species currently faces. Our program was able to secure funds for CRIA's operation-thanks in part to Amphibian Ark-during its first 18 months as well as for exploring potential sites for future releases. With Amphibian Ark's Extension Grant, we expect to obtain F1 individuals from various parents to increase the size and genetic diversity of the captive population for future release. Funds will be applied to increase husbandry capacity, to replenish consumables and spare parts to secure CRIA's operation for 2023-2024.

A pair of Rancho Grande harlequin toads (*Atelopus cruciger*) in amplexus at CRIA in Venezuela. Photo: Margarita Lampo

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Amphibian Ark Donors, January-June 2023

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