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HORIZONS

ADVANCING CONSERVATION LEADERSHIP

Rhacophorus pseudomalabaricus. Photo: Harikrishnan S.

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FROM THE EDITOR

To every Future Leader of Amphibian Conservation—this magazine is for you.

When we first envisioned *Horizons*, we weren't thinking just about stories. We were thinking about space—a space to grow, to reflect, and to connect. Across this first issue, you'll find just that. You'll see projects from across continents, languages, ecosystems, and disciplines. You'll read about threatened frogs and bold solutions, citizen science and sewing workshops, telemetry and toad tracking. You'll also find professional advice, personal reflections, and moments of honesty that rarely make it into journals or grant reports.

This magazine was created to serve a growing global community of conservationists, researchers, and practitioners who are in the early stages of their careers. All of the contributors in this issue are alumni of the Amphibian Survival Alliance's (ASA) Future Leaders of Amphibian Conservation program—an initiative that supports early-career professionals through funding, training, and global community-building. Some are leading projects; others are contributing as field assistants, outreach specialists, researchers, or community organizers. What they all share is a commitment to amphibians—and a desire to do more.

This issue brings together voices from India, Madagascar, Argentina, South Africa, Pakistan, Peru, Uganda, and beyond—many of them first-time contributors. The themes range from invasive species and habitat restoration to grassroots outreach and fieldwork ethics. What they all share are courage, creativity, and commitment to protecting amphibians and strengthening conservation from the ground up.

In addition to external contributions, this issue also features articles developed by ASA and the editorial team that aim to support your growth as a conservation professional. You'll find practical guidance on writing grant proposals, leading without authority, managing conflict, and communicating your work with clarity and impact. These aren't abstract ideas—they're drawn from real challenges faced by conservationists every day.

You'll also notice that *Horizons* doesn't just publish polished, long-form stories. We celebrate small wins, quick updates, lessons learned, and field-side reflections. Our hope is that this publication becomes a living archive of your journeys—not just your results, but your resilience.

And this is only the beginning. *Horizons* is designed to evolve—with each issue shaped by the stories, submissions, and spirit of the community itself. Whether you're sharing a photo, a technical update, a question, or a hard-won field lesson—we want to hear from you.

To everyone who contributed to this launch issue: thank you. You've helped bring this idea to life.

To those reading it now: we hope you find something that resonates, and maybe even something that inspires you.

Because the future of amphibian conservation doesn't start "someday."

It's already in motion—and you're part of it.

Candace M. Hansen
Programs Director
Amphibian Survival Alliance

INTRODUCING THE FIRST 2025 ASA FUTURE LEADERS OF AMPHIBIAN CONSERVATION

Photo: Fahroni

By Candace M. Hansen, Amphibian Survival Alliance

The Amphibian Survival Alliance is pleased to introduce the first group of recipients of the Future Leaders of Amphibian Conservation Capacity Building Grant for 2025. These early-career conservationists are working across Latin America, Africa, South Asia, and island nations, tackling urgent threats to amphibians through research, education, and community engagement.

Selected through a competitive review process, each awardee demonstrated strong alignment with ASA's mission, a clear commitment to amphibian conservation, and the potential to grow their impact with targeted training. ASA is proud to support their development through courses delivered in collaboration with WildTeam UK and Durrell Conservation Academy.

Gabriel Callapa Escalera (Bolivia)
Gabriel is a biologist and co-founder of the Bolivian Amphibian Initiative. He has worked extensively on the conservation of threatened species such as *Telmatobius gigas*, *T. simonsi*, and *Atelopus tricolor*. His current efforts focus on strengthening the Titicaca Water Frog Sanctuary (*T. culeus*), supporting both technical conservation actions and local community involvement. Gabriel's work bridges research, environmental education, and grassroots engagement to support long-term amphibian conservation in Bolivia.

Melisa Rolón (Argentina)
Melisa is a PhD student focused on the ecology and conservation of the Critically Endangered Patagonia frog (*Atelognathus patagonicus*). Based at the Universidad Nacional de La Plata, she is developing research to better understand this species' population dynamics and inform its conservation. She also leads efforts in habitat restoration, the creation of sanctuaries, and species translocations to safeguard the species in the face of ongoing threats.

Brandon Brand Buitrago Marulanda (Colombia)
Brandon is a Biology undergraduate and co-director of the Herpetology Group at the University of Quindío. His work focuses on prioritizing conservation for poison frogs (Dendrobatidae), and includes species distribution modeling, field surveys, and community engagement. Brandon has led education projects and collaborated internationally through internships at the Smithsonian Tropical Research Institute and the University of Texas. He is currently preparing several publications related to amphibian ecology, morphology, and conservation planning.

Tiaan Botha (South Africa)
Tiaan is a PhD candidate working on active and adaptive amphibian conservation and Breviceps taxonomy. His research includes designing a conservation plan for the Critically Endangered Bilbo's Rain Frog (*Breviceps bagginsi*) in KwaZulu-Natal. Tiaan's work integrates biodiversity surveys,

Photos (left to right, top to bottom): Gabriel Callapa Escalera, Brandon Brand Buitrago Marulanda, Melisa Rolón, Rodrigo Calvo, and Tiaan Botha, Abraham Mugoya Wayirawo, Melisa Rolón, Rodrigo Calvo, and Gabriel Callapa Escalera. Amoghavarsha M



Photos (left to right, top to bottom): Dina Lydia Ramamonjisoa, Abraham Mugoya Wayirawo and Amoghavarsha M.

habitat assessments, and community-based conservation to address the urgent challenges facing South African amphibians.

Rodrigo Calvo (Argentina)
Rodrigo is dedicated to conserving Pleurodema somuncurense, a Critically Endangered amphibian endemic to the hot springs of the Somuncurá Plateau. His approach emphasizes local community involvement, science communication, and building shared values for conservation. Rodrigo is committed to strengthening awareness and advocacy for amphibians in Argentina, ensuring these unique species continue to have a place in the landscape.

Abraham Mugoya Wayirawo (Uganda)
Abraham is a conservationist focused on improving public understanding of reptiles and amphibians in Uganda. With experience at the Uganda Wildlife Education Center and Herp Fauna Foundation, he works on education and outreach that bridges science and local perspectives. His current efforts focus on shifting public perceptions through conservation education, particularly in addressing human–wildlife conflict. Abraham is also a member of the IUCN World Commission on Protected Areas.

Dina Lydie Ramamonjisoa (Madagascar)
Dina is the Project Coordinator for Miaro ny Sahona (MISA), a Malagasy amphibian conservation association affiliated with the IUCN SSC Amphibian Specialist Group. With a background in animal conservation biology and field research, she is building networks that link researchers, NGOs, and communities to strengthen amphibian protection across Madagascar. Dina aims to make MISA a central hub for amphibian conservation action and collaboration.

Amoghavarsha M (India)
Amoghavarsha is a researcher and educator whose work explores the ecology of lesser-known amphibians, invasive species impacts, and citizen science. Based in southern India, he combines research with public engagement through amphibian workshops and biodiversity training for students, forest staff, and communities. His interdisciplinary approach connects field-based conservation with education and data-driven monitoring to inform long-term amphibian protection strategies.

We would like to thank all of the reviewers who contributed their time and expertise during this round. Their careful assessments and thoughtful feedback helped shape the selection process and supported our goal of identifying applicants who are ready to grow their impact in amphibian conservation.

Ceratophrys ornata. Photo: Damián Fidanza

A DECADE OF CONSERVATION EFFORTS

THE JOURNEY TOWARDS AN INTEGRATED STRATEGY FOR THE HORNED FROG IN SOUTH AMERICAN TEMPERATE GRASSLANDS

By Camila Deutsch

Temperate grasslands are vanishing at an alarming rate, yet they continue to be overlooked in global conservation efforts (*1*). The South American temperate grasslands, extending across Argentina, Brazil, and Uruguay, constitute one of the largest and most globally productive ecosystems (*2*). The Argentine Pampas, in particular, harbor some of the most well-preserved grassland remnants (*3*). Nonetheless, the region is experiencing severe degradation driven by agricultural expansion, intensified cattle ranching, and urbanization (*4*). Land-use change not only alters terrestrial habitats but also represents a major cause of wetland deterioration and loss, resulting in critical impacts on native amphibians (*5*).

The Horned frog (*Ceratophrys ornata*) is an iconic amphibian from the South American temperate grasslands (*6*). Although several authors had mentioned population declines for over 30 years, there was no solid evidence to support those observations (*6*). Moreover, ecological and behavioral information remained unknown for a long time, limiting the development of evidence-based conservation actions (*6,7*).

In 2015, moved by growing concern over the species' apparent decline and the urgent need for action, I launched the "Giant of the Pampas" project together with Dr. Gabriela Agostini (*8*). It was the first species-specific project developed under the COANA Initiative (www.coana.com.ar), a wide-ranging effort focused on amphibian conservation in

Argentina. An initial effort to fill knowledge gaps soon became the cornerstone of my life's work in amphibian conservation. This journey, which began with more questions than answers, has defined my professional path and deepened my dedication to amphibian conservation. Driven by a profound personal commitment and the belief that conservation goals are best achieved through diverse teams, I assembled an interdisciplinary group to bridge the knowledge gaps and create conservation actions grounded in ecological evidence. Our main goal was clear and urgent: to safeguard the Horned frog and ensure the long-term survival of remaining populations.

ASA Future Leader Camila Deutsch, working in the field. Photo: Damián Fidanza

THE PATH

The first objective of the project was to update the species' distributional data, addressing a major knowledge gap. Thus, we launched a citizen science program, engaging participants across Argentina, Brazil, and Uruguay (*7,8*). To date, more than 1,000 confirmed records (between 1920–2025) have been gathered, significantly improving the understanding of the species' current range and informing conservation strategies (*6*).

The program has since evolved into a dynamic and ongoing real-time monitoring network that continues to generate valuable data on the Horned frog and represents an unprecedented tool for amphibian conservation in the region (*8*).

Additionally, we conducted passive acoustic monitoring in Uruguay and Brazil, in collaboration with local academic institutions, to detect remaining populations (*6*). The results indicated the extinction of the Horned frog in both countries, a finding corroborated by multiple data sources (*6*).

Collaborating with international partners helped strengthen conservation work across the region and highlighted the importance of coordinating efforts between countries to protect species that cross national borders. In Argentina, we identified two regions as critical for the conservation of the species: the northern Buenos Aires Atlantic Coast and the eastern Inland Pampa (*6,7*). Since 2019, we have carried out systematic fieldwork in priority areas to uncover key aspects of population dynamics, reproductive phenology, and habitat use. In parallel, we developed a comprehensive communication and environmental education strategy to engage local communities and build lasting support for amphibian conservation (*9*).

The results obtained through ten years of work under the "Giant of the Pampas" project were instrumental in achieving the global update of the species' conservation status on the IUCN Red List, moving it from Near Threatened to Vulnerable (see Supporting Materials: IUCN reassessment letter).

Citizen science in Brazil. Photo: Ignacio Ravinovich

THE PRESENT

After nearly a decade of research and community engagement, we identified two major challenges within the priority areas for the species' conservation.

First, intentional killings of frogs, driven by cultural myths and aversion, were identified as an ongoing threat to the Horned frog (*10*). To understand the extent and underlying drivers of this threat, we conducted a study revealing that 45% of people surveyed exhibited a strong aversion toward the species, leading to the intentional killing of at least 364 frogs (*10*). To mitigate the impact of elimination due to feelings of aversion, between 2019 and 2022, targeted education campaigns were implemented, incorporating culturally appropriate messaging and emphasizing the ecological importance of amphibians (*9*). The effectiveness of the education and communication tools was evaluated through surveys conducted in 2023 and 2024, which showed an increase in knowledge about the Horned frog, greater support for conservation actions, and a reduction in the tendency to kill individuals upon encounter (*9*). Educational efforts engaged hundreds of community members, fostering positive attitudes toward amphibians and strengthening local capacity for conservation actions (*9*).

Second, our studies indicate that the Horned frog is restricted to remnants of native grasslands, which are now facing increasing

threats (*6*). Two main pressures stand out. One is urban expansion, which continues to eliminate critical breeding habitats (*6*). To mitigate the threat, we launched an *ex situ* Management Plan in 2021 aimed at relocating individuals found in urban and peri-urban areas to pre-identified suitable areas. The Plan is supported by a network of citizen scientists who report sightings, as well as a dedicated rescue team of park rangers, biologists, and veterinarians responsible for carrying out the relocations (*11*). To date, we have rescued and relocated 143 individuals, an achievement that highlights the scale and urgency of this work. The second major threat, which we have long emphasized, is the degradation of wetlands and grasslands due to unsustainable livestock practices (*12*). Unlike urbanization, this challenge presents a valuable opportunity (*12*). We are working closely with ranchers and conservation organizations such as Fundación Vida Silvestre Argentina and Alianza del Pastizal to promote grazing strategies that protect amphibian habitat while also supporting sustainable livestock production.

THE FUTURE

Looking ahead, we are actively defining the future direction for the conservation of the Horned frog. Our team is focused on strengthening the autonomy of local stakeholders, with the clear objective of fostering a lasting commitment from communities to the protection of the species.

Intensifying territorial engagement and forging stronger collaborations with local governments and NGOs will be critical in advancing coordinated conservation actions. In this regard, we are working on creating a network of refuges and reserves with local governments and NGOs that will ensure the protection of critical native habitats essential for the species' survival.

Given the substantial overlap between the species' range and productive landscapes, it is crucial that we continue to generate solid scientific evidence demonstrating how sustainable productive practices can coexist with biodiversity conservation. To this end, we are beginning multitaxa studies involving species that cohabit in wetlands under cattle use (e.g., amphibians, birds, fish, bats, plankton, and aquatic insects). These studies will provide essential data on the ecological dynamics of these habitats and further support our efforts to show how production and conservation can be compatible. The development of management strategies will be built on consensus and driven by direct collaboration with landowners and producers, ensuring that conservation actions are not only effective but also widely supported.

Finally, we are planning in-depth population genetics studies, which will complement these efforts by providing insights into the genetic structure of the species, informing more targeted conservation actions.

Overall, the "Giant of the Pampas" project represents a model for integrative amphibian conservation strategies, combining scientific research, community engagement, and institutional advocacy. Such approaches are not only essential for the effective conservation of grassland- and wetland-dependent species in increasingly anthropized landscapes, but they also represent the only viable path to prevent the loss of species like the Horned frog. The project highlights an exceptional opportunity to conserve biodiversity in altered landscapes, which are, in fact, the last remaining refuges for native species. The "Giant of the Pampas" sets the foundation for lasting solutions, making conservation possible even in agricultural landscapes.

Acknowledgements

We sincerely thank all the people who shared their Horned frog records through our citizen science program and connected with the project. Their contributions have been essential. We are also grateful to the institutions and NGOs involved in this project: Instituto de Ecología, Genética y Evolución de Buenos Aires (UBA–CONICET), Universidad de la República, Universidade Federal do Rio Grande do Sul, Instituto Curicaca, Fundación Vida Silvestre Argentina, and Red de Reservas Privadas. We thank the governmental authorities of General Lavalle, La Costa, Las Flores, Rivadavia, General Villegas, and Trenque Lauquen for their ongoing collaboration, the Ministry of Environment of Buenos Aires Province for providing research permits, and the Bahía Samborombón ranger corps for their assistance with the Ex-situ Management Plan. Special thanks to our local collaborators Alexis Navarro, Pablo Otero, Fabián Arcuri, Melina Lunardelli, Paola Russo, Mariano González, Javier Beruhard, and Mauricio Saavedra, for their continued support. This work was made possible thanks to the generous support of The Rufford Foundation, Neotropical Grassland Conservancy, Amphibian Survival Alliance, Amphibian Ark, National Geographic Society, Idea Wild, Conservation Nation, and Argentinean scientific and academic institutions (Buenos Aires University, MINCyT and CONICET).

References

1. W. D. Henwood, *Great Plains Res.* **20**, 121–134 (2010). https://digitalcommons.unl.edu/greatplainsresearch/1074/

2. G. Baldi, J. P. Guerschman, J. M. Paruelo, *Agric. Ecosyst. Environ.* **116**, 197–208 (2006). DOI 10.1016/j.agee.2006.02.009

3. A. Soriano, in Natural Grasslands: Introduction and Western Hemisphere, R. Coupland, Ed. (Elsevier, Amsterdam, 1991), pp. 367–407

4. S. Baeza, J. M. Paruelo, *Remote Sens.* **12**, 381 (2020). DOI 10.3390/rs12030381

5. D. J. Hocking, K. J. Babbitt, *Herpetol. Conserv. Biol.* **9**, 1–17 (2014). http://www.herpconbio.org/Volume_9/Issue_1/Hocking_Babbitt_2014.pdf

6. C. Deutsch, D. N. Bilenca, J. P. Zurano, L. F. Marin da Fonte, N. D. Vargas, A. Kindel, R. Pittella, M. D. Freire, R. Maneyro, J. Faivovich, M. G. Agostini, *Perspect. Ecol. Conserv.* **22**, 35–42 (2024). DOI 10.1016/j.pecon.2023.11.002

7. C. Deutsch, D. N. Bilenca, M. G. Agostini, *Herpetol. Conserv. Biol.* **12**, 664–672 (2017). https://www.herpconbio.org/Volume_12/Issue_3/Deutsch_etal_2017.pdf

8. C. Deutsch, L. F. Marin da Fonte, R. Maneyro, A. Kindel, N. D. Vargas, M. D. Freire, G. Agostini, *FrogLog* **26**, 44–46 (2018).

9. C. Deutsch, Ph.D. Thesis, Universidad de Buenos Aires (2024).

10. C. Deutsch, J. Grisolia, D. Bilenca, M. G. Agostini, *Hum. Dimens. Wildl.* **26**, 210–227 (2021). DOI: 10.1080/10871209.2020.1808122

11. S. M. Perrone, *AArk Newsletter*. **60**, 20–22 (2022).

12. M.G. Agostini & D. Bilenca, *Agric. Ecosyst. Environ.* **361**, 108801 (2024). DOI: 10.1016/j.agee.2023.108801

WHEN LAKES TURN HOSTILE

THE AFRICAN CATFISH INVASION AND ITS TOLL ON MYSORE'S FROGS

Photo: Amoghavarsha M

By Amoghavarsha M.

Mysore, located in Southern India, is approximately 755 meters above sea level and receives an average annual rainfall of about 800 mm. Known for its rich cultural heritage and royal lineage, the city is also a gateway to some of India's prominent national parks, including Bandipur and Nagarahole, renowned for their significant populations of tigers and elephants.

Despite its proximity to these protected areas, Mysore's own urban and peri-urban landscapes harbor a diverse array of amphibian species. The region's unique topography and climate contribute to the formation of numerous seasonal lakes and wetlands, which play a crucial role in supporting amphibian life cycles.

The seasonal lakes of Mysore, formed during the monsoon months, provide ideal breeding habitats for various amphibian species. These water bodies typically dry out during the summer, creating fish-free environments that reduce predation pressure on amphibian eggs and tadpoles. This cyclical pattern has allowed amphibians to thrive in the region.

Mysore district is home to a rich diversity of amphibians, with 21 documented species, including the Indian Bullfrog (*Hoplobatrachus tigerinus*), Skittering Frog (*Euphlyctis cyanophlyctis*), and various burrowing frogs like the Indian Burrowing Frog (*Sphaerotheca breviceps*). These species have adapted to the transient nature of their habitats, timing their reproductive cycles to coincide with the availability of water.

In the 1990s, the African Sharptooth Catfish (*Clarias gariepinus*) was introduced to India for aquaculture purposes due to its rapid growth and adaptability. However, the species soon escaped into natural water bodies, establishing populations in various parts of the country. Recognizing the ecological threat posed by the species, the Indian government banned its farming and sale in 2000 under the Environment Protection Act. Further enforcement came with the National Green Tribunal's order in 2019, which prohibited the rearing of *C. gariepinus* due to its adverse impact on native aquatic species and ecosystems.

Despite these regulations, the African catfish continues to spread, often through interconnected water systems and illegal aquaculture practices. Cultural beliefs in some regions discourage the consumption of this fish, leading to a lack of natural predators and unchecked population growth.

Recent urban development initiatives in India have focused on interlinking lakes to improve water management and supply. While these projects aim to address water scarcity and flooding, they inadvertently create corridors for the spread of invasive species like the African catfish. When lakes are connected, the introduction of *C. gariepinus* into one water body can lead to its rapid dissemination across the entire network, threatening native aquatic fauna.

I began my project between June and July of 2019 and continued through 2021. What started as a study on the impact of lake interconnection gradually evolved into an investigation of the interaction between African catfish and amphibians.

Photo: Amoghavarsha M

My fieldwork focused on Baradanapura Lake, located about 20 km from the city center of Mysore. The lake, situated at 12°13'03"N, 76°33'00"E, was chosen as the study site because plans to interconnect several nearby lakes were being proposed at the time.

In 2019, the lake had no observed presence of catfish. That changed in 2020, when African catfish were first recorded, and their ecological impact soon became evident.

The study involved monthly sampling at 15 designated points around the lake, each measuring 3m x 3m. Observations included species identification, photographic documentation, and the capture of catfish specimens for verification. The results showed a clear decline in amphibian diversity and abundance following the catfish introduction in 2020. Some species showed a drop of nearly 80% compared to their initial population, an alarming trend.

Certain species exhibited greater declines than others, suggesting varying levels of vulnerability to both predation and competition.

The preliminary findings underscore the urgent need for conservation efforts in non-protected urban and peri-urban areas. Continuous monitoring of amphibian populations is essential to understand the long-term effects of invasive species like *C. gariepinus*. Implementing targeted management strategies, such as controlling the spread of invasive fish and preserving ephemeral wetlands, can help mitigate their impact.

Collaborative efforts involving local communities, policymakers, and conservationists are vital to safeguarding amphibian diversity. Public awareness campaigns and strict enforcement of existing regulations can also play a significant role in preventing the further spread of invasive species, which I am working towards.

References

1. J. E. Houlahan, C. S. Findlay, B. R. Schmidt, A. H. Meyer, S. L. Kuzmin, Quantitative evidence for global amphibian population declines. *Nature* **404**, 752–755 (2000).

2. L. B. Kats, R. P. Ferrer, Alien predators and amphibian declines: review of two decades of science and the transition to conservation. *Divers. Distrib.* **9**, 99–110 (2003).

3. A. K. Singh, A. Ansari, S. C. Srivastava, V. K. Shrivastava, An appraisal of introduced African catfish *Clarias gariepinus* (Burchell, 1822) in India: invasion and risks. *Annu. Res. Rev. Biol.* **6**, 41–58 (2014).

4. Frogs and Toads of Mysore Area, Mysore Nature (2023); https://www.mysorenature.org/mysorenature/Frogs-and-Toads-of-Mysore-Area

5. "Unpacking India's ban on African Catfish and related health concerns," The Daily Guardian (2021); https://thedailyguardian.com/opinion/unpacking-indias-ban-on-african-catfish-and-related-health-concerns/

6. Ministry of Environment, Forest and Climate Change (MoEFCC), India. Notification under the Environment (Protection) Act, 1986, banning *Clarias gariepinus farming* (2000).

7. Google Earth Pro, Satellite imagery and location data for Baradanapura Lake, Mysore, India (accessed 2024).

AMPHIBIAN CONSERVATION AND LOCAL DEVELOPMENT IN MAROMIZAHA, EASTERN MADAGASCAR

By Dina L. Ramamonjisoa[1], Randriamialisoa[2]

Fig. 1: Group photo of training participants with trainers. Photo: GERP

The Miaro ny Sahona Association (MISA) is a non-governmental organization based in Madagascar, helping to implement the activities of the IUCN SSC Amphibian Specialist Group (ASG-Madagascar) on the ground. MISA's activities focus on conservation and research on Malagasy amphibians and their habitats. Among MISA's current activities is the "Site Pilote" project, under which the association is helping to implement local development activities relating to the protection of amphibians.

There are currently 428 species of amphibian in Madagascar (Amphibiaweb, May 2025), many of which are found in the dense, humid forests of the eastern part. Maromizaha is one of the Protected Areas located in this eastern part of Madagascar. Characterized by a biodiversity typical of eastern Madagascar, it is one of the region's most popular tourist sites. In 2024, MISA chose Maromizaha as a pilot site, and as such, it serves as a guide for the association's amphibian research and conservation activities.

To make the project a reality, a collaboration agreement was signed in July 2024 between MISA and the Groupe d'Etudes et de Recherche sur les Primates de Madagascar (GERP), which has been managing the Reserve since 2018.

The Maromizaha Reserve is home to many endemic Malagasy species, including amphibians. It is also surrounded by a number of villages with over 2,660 inhabitants, of whom around 1,600 are women. As with most local communities in Madagascar, the poverty rate in these villages is quite high, living mainly from agriculture. Clearing land for slash-and-burn agriculture, charcoal burning, hunting and the exploitation of precious woods are among the main threats to biodiversity in Maromizaha. In terms of conservation, this represents a major challenge in the absence of effective strategies such as alternative income-generating activities.

In this context, earlier this year, training in embroidery and basic cutting and sewing techniques was organized by GERP and supported by MISA for women from the local community. This project aims to strengthen the conservation of the Reserve by supporting the sustainable development of local communities. The aims of the project were (1) to empower vulnerable women such as single mothers, who are quite numerous in the area, and (2) to promote ecotourism.

Forty women from the Maromizaha protected area (*Fig. 1*) benefited from the training, which lasted 10 consecutive days, from February 24 to March 5, 2025, at the GERP Eco-cultural Center in Maromizaha. The women were divided into two groups of 20: the first group attended the training in the morning and the second group in the afternoon. The training enabled the participants to learn basic embroidery and cutting and sewing techniques, and to carry out practical work


Fig. 2: A participant making a tote bag. Photo: GERP

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Fig. 3: A participant embroidering *Mantella baroni*. Photo: GERP

using materials supplied by MISA. By the end of the course, each participant was able to sew a tote bag (*Fig. 2*) and embroider the design of a number of Malagasy endemic species, such as *Mantella aurantiaca*, *M. baroni*, *Indri indri* and *Propithecus diadema* (*Fig. 3*). For the moment, the handicrafts are mainly sold to visitors to the Reserve, and the women continue to produce according to demand. At present, we are also looking for other potential sales markets so that the beneficiaries of the training can sell their products and make this activity a reliable source of income in the long term.

In addition to the women's empowerment project, MISA and GERP also plan to organize capacity-building for Maromizaha's tour guides in the near future. Also recruited from the local community, most of Maromizaha's tour guides have not gone far in their studies. Capacity building will help them to better master the techniques of tour guiding, in both French and English. Further capacity-building on scientific research and the identification of amphibian species is also planned for the guides in the coming months. We hope that these various training courses will help them to progress in their profession and achieve better results in current and future projects.

Within MISA, we are fully aware of the importance of local community development, through training in income-generating activities and capacity-building to ensure biodiversity conservation in Madagascar. We hope that in the coming years, with the support and backing of our partners and, why not, future collaborators, we will be able to extend our local development activities to other regions of Madagascar, especially where socio-economic conditions play a major role in the decline of amphibian populations and their natural habitats.

Population monitoring of the Titicaca water frog on Isla de la Luna, Bolivia. Photo: Arturo Muñoz

COMMUNITY-BASED CONSERVATION OF THE TITICACA WATER FROG

By G. Callapa[1], A. Muñoz.[1 2], P. Mendoza-Miranda[1] and J. Salamanca[1]

The Titicaca Water Frog (*Telmatobius culeus*) is the world's largest fully aquatic frog and is endemic to Lake Titicaca at almost 4000 m a.s.l. Despite its unique ecological and cultural value, the species is currently classified as Endangered (EN) by the IUCN and listed in Appendix I of CITES, due to severe population declines driven by water pollution, eutrophication, invasive species, and illegal harvesting for human consumption. Its highly permeable skin makes it particularly vulnerable to environmental degradation and a key bioindicator of freshwater health.

In Bolivia, one of the initiatives that responses to this crisis is the Titicaca Water Frog Sanctuary, a community-led conservation initiative on Isla de la Luna. Developed through the collaboration between local communities and the Bolivian Amphibian Initiative (BAI), the project which I am coordinator, combines scientific research, traditional ecological knowledge, and grassroots participation to protect this iconic species.

[1] Bolivian Amphibian Initiative, Cochabamba, Bolivia.
[2] Animal Nutrition Unit, Department of veterinary and biosciences Faculty of Veterinary Medicine, Ghent University, Belgium.

After over a decade of ecological monitoring, Isla de la Luna was identified as one of the best places for *T. culeus*, with relatively intact habitats and a culturally rooted connection to the frog—referred to locally as the Ispi Awatiri "shepherd of the ispi," a native fish species. The sanctuary uses a mix of underwater transects (via snorkeling) and Rapid Assessment Programs (RAPs) to identify key habitats. These assessments have highlighted two priority zones with high frog densities and documented over 200 other species, including the Endangered Titicaca grebe (*Rollandia microptera*), reinforcing the area's value as a biodiversity hotspot.

A cornerstone of the initiative is community empowerment. Local groups are receiving training in ecological monitoring, environmental education, and ecotourism guiding. Special emphasis is placed on women's participation, with the creation of a gender-inclusive component led by women from both the community and BAI. This ensures equitable involvement and strengthens the project's long-term sustainability.

The development of a community-based ecotourism program forms another key strategy. Early-stage activities aim to generate sustainable income for local families while supporting habitat conservation and species protection. This holistic approach links biodiversity conservation with social development, reinforcing local ownership.

Participatory meetings with residents of the Isla de la Luna community, Bolivia. Photo: Gabriel Callapa

Key challenges remain, including the lack of formal legal recognition for the sanctuary and ongoing risks from external pollution sources. To address this, we are working to build partnerships with government agencies, researchers, and conservation allies to scale up and secure the initiative.

The Titicaca Water Frog Sanctuary represents a promising model for amphibian conservation rooted in community leadership, scientific collaboration, and cultural identity. We invite partners and supporters to join us in strengthening this effort and ensuring a future for one of the world's most iconic amphibians.

MUNNAR AMPHIBIAN RECOVERY PROJECT

CONSERVATION OF AMPHIBIANS IN A MULTI-USE LANDSCAPE

By Harikrishnan S.

Fig. 1: The landscape of Munnar is a matrix of tea plantations, forests, and human settlements. Photo: Harikrishnan S.

On a rainy night in Munnar, Kerala, a tiny, glossy black frog with little blue spots perched on a pile of firewood in a cardamom plantation – the elusive and beautiful Galaxy frog (*Melanobatrachus indicus*), an unexpected encounter. This was a sign of things to come. This mountain landscape of plantations harbours a surprising number of threatened amphibians.

The Munnar landscape, in the Western Ghats of India, is known for its rolling misty hills predominantly covered in tea plantations. This region used to be rainforests until the arrival of the British planters in the mid-19th century. Today, the Munnar landscape is a of several commercial plantations – tea, cardamom, eucalyptus, and other spices. There are also many remnant forest patches spread across the plantation landscape, as well as six protected areas and many reserved forests, which together support a stunning diversity of amphibians. However, more than 50% of the amphibian species from this region under the threatened categories of the IUCN Red List. These include montane grassland specialists such as the Resplendent grass frog (*Raorchestes resplendens*), the stream-dwelling beautiful dancing frog (*Micrixalus adonis*), and the rainforest-dwelling Galaxy frog (*Melanobatrachus. indicus*).

Wildlife Trust of India's Munnar Amphibian Recovery Project, with the help of regional partners Kanan Devan Hills Plantation Company Pvt. Ltd. (KDHP) and the Anamudi Forest Development Agency (AFDA), and supported by Synchronicity Earth, is a collaborative effort to conserve the threatened amphibians and their habitats in this landscape. The project, initiated in 2021, aims to improve the conservation status of threatened amphibians in this landscape through research, outreach, and collaborative conservation action. Our goals are well defined and include: generate baseline data through ecological surveys, monitor the status of populations of threatened species, identify and implement conservation action where necessary, raise awareness and build capacities among the stakeholders for amphibian conservation within the landscape.

Starting in August 2023, we have been carrying out surveys in tea plantations of KDHP to map the distribution of threatened amphibians within the plantation landscape. Surveys conducted in four tea plantations, a cardamom plantation, and two protected areas (through 2024) have documented 47 species of frogs, of which 41 occurred in the remnant forests, swamps, and streams spread through the plantation landscape. Some threatened species such as the Endangered Kadalar Tree Frog (*Beddomixalus bijui*) and the Vulnerable Anamalai Gliding Frog (*Rhacophorus pseudomalabaricus*) were found occurring in patches of habitats (forest-swamps) that are spread across the plantation estates. Others such as the Endangered Resplendent Grass Frog (*Raorchestes resplendens*) and Shola Night Frog (*Nyctibatrachus deccanensis*) were habitat specialists, restricted to montane grassland and cloud forests above [1]800 m asl. The information generated from these surveys is crucial for understanding the current status of these species and for planning conservation action.

We also tested more than 25 species from this landscape for the presence of the fungal disease chytridiomycosis, caused by the fungal pathogen *Batrachochytrium dendrobatidis* (Bd). Bd is known to be indigenous to the Western Ghats, but most frogs from the plantation landscape tested negative for its presence. The prevalence was 10%, a figure similar to what was reported in a 2018 paper from the same landscape. Fungal spore loads seem to be low in all individuals that tested positive, and none showed signs of infection. This is a promising result, but periodic monitoring is necessary given the potential impacts of climate change.

Successful amphibian conservation in the Munnar landscape requires farming/plantation practices that are not detrimental to amphibians. Therefore, a key part of our work has been developing "Frog-Friendly Farming Practices" for plantations. In the first p we

Fig. 2: The Anamalai gliding frog (*Rhacophorus pseudomalabaricus*) is a flagship species for conservation of amphibians in the Munnar landscape. Photo: Harikrishnan S.

focused on green cardamom (*Elettaria cardamomum*). The state of Kerala produces about 70% of India's cardamom. Generally, these plantations use high amounts of agrochemicals, many of which are harmful to amphibians. Convincing farmers to adopt biodiversity-friendly practices is a tough task, given the paucity of resources and evidence for successful implementation of such practices in this region. Therefore, our efforts have been to understand and modify the management practices of cardamom plantations and create a guidance document with the help of local farmers. The cardamom plantations under the care of Windermere Estate in Munnar have been our testing ground for these practices. These include using alternate agrochemicals, changes in habitat management practices, creation of water bodies, among other measures. To date, we have created six artificial breeding ponds for amphibians in plantation estates, which are being used by 14 species of frogs. Through our ongoing monitoring programme, we hope to understand the effect of these practices on amphibians and cardamom production, which is key to scaling these practices across the broader cardamom plantation landscape.

The success of any conservation project depends on the actions of the local stakeholders. In this case, the plantation community – including those who are directly dependent on it and those indirectly dependent through tourism and other avenues – and the Forest Department are key players in their conservation. Our partnership with KDHP has allowed us to establish a field station in Munnar, which serves as the centre for long-term conservation activities in the landscape. Through our MoU with the AFDA, we not only managed to survey some of the protected areas but also provide training for several frontline staff of these PAs in identifying, surveying, and monitoring amphibians. Additionally, we conducted capacity-building workshops for students, plantation managers, and tour operators, the last one especially focusing on the do's and don'ts during 'herping' tours. We also provide opportunities for internships, which will help upcoming herpetologists and conservation biologists gain valuable experience.

When we started this project, approximately 25 species of frogs were thought to occur in the landscape. Today, that number has risen to 47, with at least 41 species confirmed in the plantation matrix. This suggests that if managed well, there is tremendous scope for amphibian conservation in the plantations of the Munnar landscape. We aim to build on this potential through sustained engagement with local stakeholders, while also expanding our research and outreach programmes across the region.

Fig. 3: The Amphibian Recovery Project conducts several awareness, outreach, and capacity building events in the Munnar landscape. Frog Assembly 2024 was one such event that brought together students from various parts of southern India. Photo: Wildlife Trust of India

AMPHIBIAN RESEARCH AND CONSERVATION AWARENESS MARATHON

IN THE POTHOHAR REGION AND ISLAMABAD CAPITAL TERRITORY

By Muhammad Rais

Young wildlife conservationists (Ahmed Junaid, Muzna Kashaf, and Unza Waqar) from Pir Mehr Ali Shah Arid Agriculture University Rawalpindi (PMAS-AAUR), Pakistan in collaboration with SAVE THE FROGS!, the Herpetology Lab (Department of Zoology, Wildlife and Fisheries, PMAS-AAUR), Nanjing Forestry University (China), GGHS Bilalabad, Islamabad Wildlife Management Board, and the Department of Zoology, University of Chakwal, held a series of amphibian conservation awareness activities and amphibian sampling in the Pothohar region and Islamabad Capital Territory from 25th April to 13th May 2025. This was the first event of its kind in Pakistan's history focusing on one of the least studied and appreciated wildlife groups: amphibians.

Participants in the inaugural session of Save The Frogs Day Pakistan on 25th April 2025 at PMAS-AAUR, Pakistan. Photo: Muhammad Rais

1. SEMINAR DAY

Location: Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan
Date: Friday, 25th April 2025

Mr. Ahmed Junaid organized a four-day Save The Frogs Day event from 25th to 28th April 2025. It began with a seminar at PMAS-AAUR on 25th April, attended by students and faculty from various institutions including PMAS-AAUR, International Islamic University Islamabad, Zoological Survey of Pakistan, WWF-Pakistan, IUCN-Pakistan, and Islamabad Wildlife Management Board. Dr. Muhammad Sajid Nadeem, Chairman of the Department of Zoology, Wildlife and Fisheries, welcomed participants and highlighted the department's conservation efforts and collaboration with SAVE THE FROGS! since 2024.

Waseem Ahmed, PhD, introduced the mission and global initiatives of SAVE THE FROGS!. Ahmed Junaid presented the history and purpose of Save The Frogs Day. Dr. Ayesha Akram discussed the ecological importance of frogs in ecosystem health. Keynote speaker Prof. Dr. Amaël Borzée from Nanjing Forestry University, China, spoke on amphibian ecology in agricultural landscapes and the need for public engagement. Dr. Altaf Hussain Khoro, Director of the Zoological Survey of Pakistan, shared insights into amphibian research in Pakistan. Prof. Dr. Muhammad Hanif praised the Herpetology Lab's efforts and emphasized the significance of the event. Dr. Muhammad Rais closed the seminar with remarks encouraging continued research.

In the evening, an amphibian survey in PMAS AAUR campus was conducted to provide training on aspects of behavioral ecology of the Marbled Toad (*Firouzophrynus stomaticus*).

Group photo of participants during community awareness and field day on 26th April 2025 in District Rawalpindi. Photo: Muhammad Rais

2. FIELD AND COMMUNITY AWARENESS DAY

Location: District Chakwal and District Rawalpindi
Date: Saturday, 26th April 2025

A team of young amphibian enthusiasts, including Dr. Muhammad Rais, Assistant Professor, Zoology Wildlife and Fisheries, PMAS-AAUR, and Prof. Dr. Amaël Borzée, conducted amphibian surveys and community education sessions in the agricultural landscapes of District Chakwal and District Rawalpindi. Locations included the University Research Farm (URF) in Koont, village sites in District Chakwal, and Rawal Dam, Islamabad. Observed amphibians were Skittering Frog (*Euphlyctis adolfi*), Pierre's Wart Frog (*Minervarya pierrei*), Nilphamari Narrow-mouthed Frog (*Microhyla nilphamariensis*), Indian Bullfrog (*Hoplobatrachus tigerinus*), Marbled Toad (*Firouzophrynus stomaticus*), and Common Toad (*Duttaphrynus melanostictus*).

A. Nilphamari Narrow-mouthed Frog (*Microhyla nilphamariensis*); B. Pierre's Wart Frog (*Minervarya pierrei*); C. Skittering Frog (*Euphlyctis adolfi*); D. Indian Bullfrog (*Hoplobatrachus tigerinus*). Photos: Prof. Dr. Amaël Borzée (A, D); Ahmed Junaid (B, C).

A. Marbled Toad (*Firouzophrynus stomaticus*); B. Common Toad (*Duttaphrynus melanostictus*); C. Indian Flapshell Turtle (*Lissemys punctata*); D. Changeable Lizard (*Calotes versicolor*). Photos: Prof. Dr. Amaël Borzée (A, B, C); Ahmed Junaid (D).

School students celebrating Save The Frogs Day on 28th April 2025 at GGHS Bilalabad, District Chakwal. Photo: Muhammad Rais

Additionally, an Indian Flapshell Turtle (*Lissemys punctata*) was rescued from mud and safely released back into a pond.

The survey provided participants with hands-on experience in amphibian identification, habitat exploration, and public engagement, fostering future conservation initiatives.

3. FIELD DAY

Location: District Rawalpindi
Date: Sunday, 27th April 2025

A team of 10 participants led by Prof. Dr. Amaël Borzée visited Misriot Dam, District Rawalpindi. Initial observations included Skittering Frog (*Euphlyctis adolfi*) and Marbled Toad (*Firouzophrynus stomaticus*) in agricultural fields. Further surveys recorded Pierre's Wart Frog (*Minervarya pierrei*) and Nilphamari Narrow-mouthed Frog (*Microhyla nilphamariensis*). A key objective was to locate the Indian Bullfrog (*Hoplobatrachus tigerinus*), the largest frog species in Pakistan, to provide hands-on training in species identification and obtaining samples for molecular identification using oral swaps.

4. SCHOOL DAY

Location: GGHS Bilalabad, District Chakwal
Date: Monday, 28th April 2025

The School Day event was held at Government Girls High School (GGHS) Bilalabad. Students and teachers participated in a seminar featuring presentations on SAVE THE FROGS!, its global mission, grant opportunities, and ecotours. The session included an overview of local frog species, amphibian habitats, threats faced by amphibians in Pakistan and globally, and addressed common myths, emphasizing amphibians' ecological importance.

Students engaged in a frog-themed drawing activity and were awarded certificates. The event concluded with group photos and refreshments. Participants were encouraged to act as local ambassadors for amphibian conservation.

Later, a final field survey in nearby agricultural areas recorded a Changeable Lizard (*Calotes versicolor*), various beetle species, and an Indian Bullfrog (*Hoplobatrachus tigerinus*).

Participants celebrating Save The Frogs Day on 3rd May 2025 at Trail 5, Margalla Hills National Park. Photo: Muhammad Rais

5. SEMINAR DAY

Location: Trail 5, Margalla Hills National Park, Islamabad
Date: Saturday, 3rd May 2025

Miss Muzna Kashaf organized Save The Frogs Day at Trail 5, Margalla Hills National Park, in collaboration with SAVE THE FROGS!, Air Foundation School System, Islamabad Wildlife Management Board (IWMB), and Ministry of Climate Change and Environmental Coordination (MoCC&EC). Participants included 9th and 10th grade students from Air Foundation School System.

The seminar featured guest speakers Dr. Muhammad Rais, Sakhawat Ali (Deputy Director, IWMB), and Mr. Muhammad Jamil (Joint Secretary, MoCC&EC), who shared valuable insights into amphibian conservation. Activities included an awareness walk through amphibian habitats and a creative postcard-writing session advocating frog protection. The event ended with distribution of souvenirs and refreshments, successfully raising awareness and inspiring youth to take responsibility for wildlife and ecosystem conservation.

6. SEMINAR DAY

Location: University of Chakwal, Pakistan
Date: Tuesday, 13th May 2025

Miss Unza Waqar organized a Save The Frogs Day event aimed at raising amphibian conservation awareness in a region often overlooked in environmental dialogues. The event featured an academic seminar, awareness sessions, and a frog-themed art competition involving over 150 students and faculty.

These activities highlighted frogs' ecological importance and the threats they face, including habitat loss and climate change. The event provided a rare platform for environmental discussion in a district with limited conservation exposure, emphasizing biodiversity's significance in local ecosystems.

Together, these efforts raised awareness and inspired communities and students to actively conserve these vital but often overlooked species.

Students and faculty at University of Chakwal participating in Save The Frogs Day on 13th May 2025. Photo: Muhammad Rais

TELEMETRY UNVEILS POISON FROGS' SECRETS

Fig. 1: *Allobates femoralis* wearing an HDF tag. Photo: Shirley Jennifer Serrano Rojas

By Shirley Jennifer Serrano Rojas

One of my current projects investigates how seasonality shapes poison frogs' behavioral space and microhabitat use in the Peruvian Amazon. To study frogs in their natural environment, I use one of the best approaches available: biotelemetry. I use two telemetry techniques: harmonic direction finding (HDF) and radiotelemetry, each offering distinct advantages.

HDF uses passive reflector tags made of diodes. These tags do not have a battery; instead, they rely on reflecting a signal emitted by a handheld transceiver. They are extremely lightweight (0.1 g) and inexpensive (can be made at home). However, their signal range is limited to about 15 meters, and they lack unique signals, so I color-code each tag for identification.

In contrast, radiotelemetry uses radio tags powered by small batteries. Each tag emits a unique frequency, making it easy to distinguish individuals. Their signal range extends up to 120 meters, ideal for frogs that move extensively. The downsides are their heavier weight (0.35+ g) and higher cost, depending on battery life and sample size. Tags must not exceed 10% of a frog's body weight.

Fig. 2: *Ameerega macero* wearing an HDF tag. Photo: Shirley Jennifer Serrano Rojas

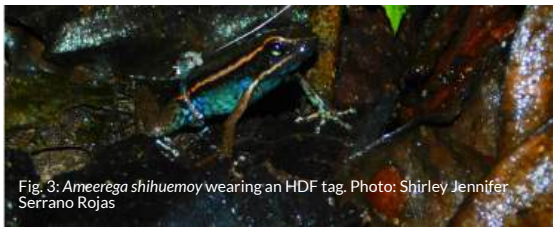

Fig. 3: *Ameerega shihuemoy* wearing an HDF tag. Photo: Shirley Jennifer Serrano Rojas

I use HDF telemetry for smaller species such as *Allobates femoralis* (*Fig. 1*), *Ameerega macero* (*Fig. 2*), and *Ameerega shihuemoy* (*Fig. 3*), which weigh between 1–2.5 g. For the larger *Ameerega trivittata* (3.5–7 g; *Fig. 4*), I use radiotelemetry. Fieldwork begins at 05:30 a.m. and often stretches past sunset, as poison frogs are diurnal. Capturing them is a challenge; poison frogs are fast and elusive. It always feels like a victory when we catch a frog cleanly. No leaf litter or soil, just the frog in a Ziploc bag.

Each frog is identified by its unique ventral pattern, like a frog fingerprint. I take morphometric measurements and attach tracking devices using "frog panties" (*Fig. 5*): a design made from surgical tubing, wire, and

Fig. 4: *Ameerega trivittata* wearing a radio tag. Photo: Shirley Jennifer Serrano Rojas

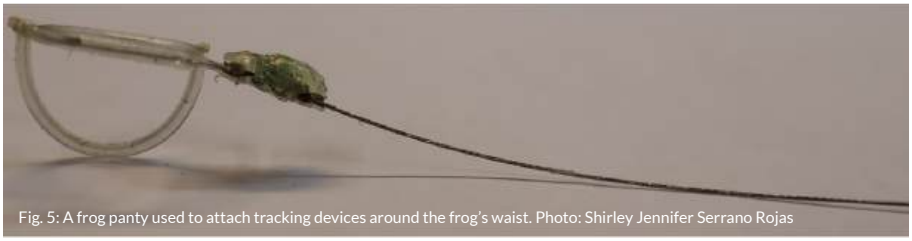

Fig. 5: A frog panty used to attach tracking devices around the frog's waist. Photo: Shirley Jennifer Serrano Rojas

cotton thread that wraps around the frog's waist.

Once tagged, I track each frog for ten days, recording its location, behavior, and microhabitat use five times per day. It is a real adventure; I follow them wherever they go (*Fig. 6*). I am constantly amazed by the behavioral secrets we uncover.

I'm not alone in this effort. I work with an incredible team of Peruvian frog trackers (*Fig. 7*), and together we've collected over 10,000 location points for each season—dry and wet. With this spatial data, we're asking key ecological questions: How does space use change between seasons? What microhabitats are critical year-round? How do syntopic species partition resources? These insights will help us protect key habitats or even design artificial ones to support poison frog conservation.

Fig. 6: Jenni following frogs across muddy areas: "We go wherever the frog takes us." Photo by Andrius Pasukonis.

Fig. 7: Our team of Peruvian frog trackers. Photo: Shirley Jennifer Serrano Rojas

NEW INSIGHTS INTO THE FEEDING ECOLOGY OF THE ENDANGERED TITICACA WATER FROG

By Gabriel Callapa

Telmatobius culeus. Photo: Arturo Muñoz

I am pleased to share that our latest article has been published in the journal Salamandra. The study, titled "Prey selection and dietary nutrient composition of an endangered amphibian, the Titicaca water frog (*Telmatobius culeus*)", investigates the feeding ecology of this iconic and endangered species endemic to Lake Titicaca. By analyzing stomach contents across different depths and seasons, the research provides valuable insights into prey selection and the nutritional composition of the frog's diet. These findings have important implications for both in situ conservation and the development of effective *ex situ* (captive) management programs. This publication is the result of over two years of fieldwork monitoring *T. culeus*, and we're excited to finally share these results with the broader amphibian conservation community.

STUDENT JOURNAL OF SCIENTIFIC INQUIRY "THE FROGS AND ME"

By Luis Castillo

We have published the first issue of the student journal of scientific inquiry *"The Frogs and Me"* (ISSN: 3084-7087), which compiles the abstracts of 14 school-based scientific research projects carried out between 2022 and 2023 with the support of the RANA Group. This publication marks a milestone by showcasing the first results of the project *"The Frogs and Me: Science and Community Empathy"*, focused on the conservation of the giant frog of Chinchaycocha (*Telmatobius macrostomus*) within the Junín National Reserve in Peru.

The main contributors are students aged 12 to 16, along with their Science and Technology teachers from 10 schools in the province of Junín. We dedicate this journal to all the allies, teachers, students, families, and volunteers whose commitment and enthusiasm made this collective achievement possible.

The journal is available at: https://www.gruporana.org/revista-estudiantil.

BETWEEN TWO WORLDS

By Gabriel Callapa

Presentation of the book Between Two Worlds and photo exhibition. Photo: Trendsetter Bolivia

I am pleased to share that I was invited by WCS Bolivia and Conservación Internacional Bolivia to participate in the presentation of the book Entre dos mundos, a work that reflects the beauty of these jewels of nature. During the event, I gave a talk on the current challenges and key strategies for the conservation of this fascinating and endangered group of animals. I am delighted that this project has become a reality, as I had the privilege of collaborating with Daniel and David from its earliest stages. I consider this work to be a fundamental contribution to raising awareness and promoting the conservation of amphibian biodiversity in our country.

As the saying goes: "When the amphibians stop singing, it will be the ecosystem that starts screaming".

Instagram

Facebook

WCS Bolivia

BRINGING AMPHIBIANS INTO THE CLASSROOM

ASA'S UPCOMING EDUCATION PILOT IN AUSTRALIA

By Natalie Calatayud, Amphibian Survival Alliance

Photo: Lance Johns

At the Amphibian Survival Alliance (ASA), we've always believed that conservation doesn't begin in the field or the lab, it begins with understanding, and one of the best places to foster that understanding is in the classroom.
That's why we're developing a new education initiative in Australia aimed at weaving amphibian conservation more closely into secondary science learning. The pilot program, which we're aiming to launch in 2026, is being co-designed with Luther College in Victoria, in close collaboration with Mr. Lance Johns, a dedicated and experienced science teacher at the school. Mr. Johns has been instrumental in shaping the vision and structure of this program, bringing deep insight into how to make complex scientific ideas accessible and engaging for students. His contributions are central to ensuring the curriculum is grounded in both pedagogical best practice and classroom realities.

Amphibians are central to many of the environmental challenges we face, whether it's disease, climate change, habitat loss, or water quality, but they rarely appear in school science

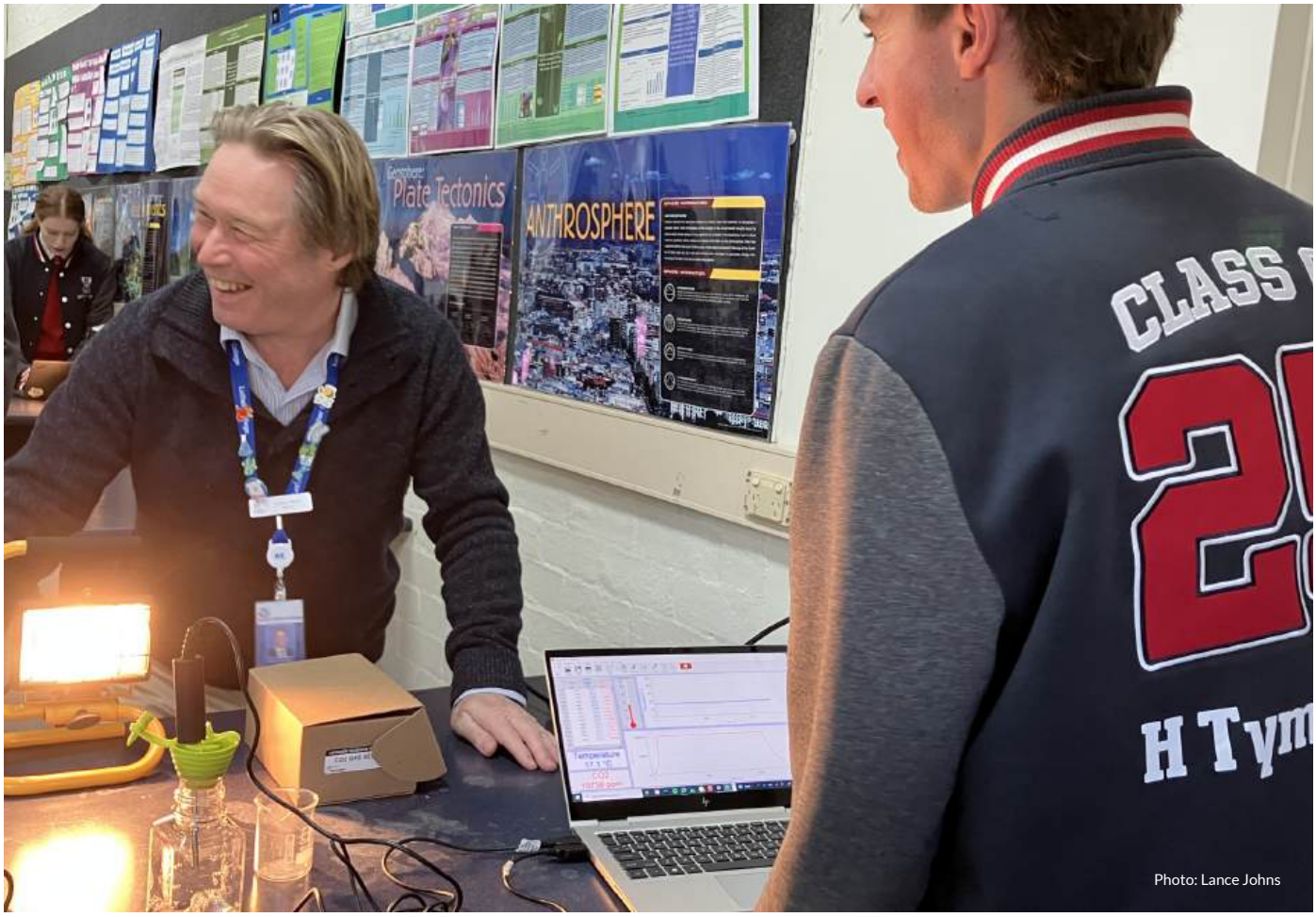

Photo: Lance Johns

materials. This project hopes to change that by placing amphibians at the heart of how students learn about adaptation, ecosystems, genetics, and conservation.

Rather than adding to the workload of teachers, our aim is to support and enrich existing lessons. The curriculum will be brought to life with case studies and interactive modules that highlight real-world science in action. Topics we plan to explore include the use of reproductive technologies to support endangered species, the impact of chytrid fungus on global amphibian populations, how genetic population management is being used as a safeguard for future conservation, and the role that conservation breeding programs play in species recovery. We will also touch on the ethics of de-extinction, the challenges of conserving species in urban environments, and how Indigenous knowledge intersects with modern conservation science. Importantly, this program is not just about delivering scientific content, it is about encouraging students to think critically and reflectively. By incorporating philosophical and ethical dimensions, such as what it means to conserve life, who gets to make decisions about species survival, and how we weigh competing environmental priorities, we aim to foster holistic thinking. This broader lens will help students connect science with values, responsibility, and their own role in shaping a sustainable future.

Throughout, the goal is to equip students not only with content knowledge but with broader scientific skills, such as critical thinking, data interpretation, and ethical reasoning, that align with both the Victorian Science Curriculum and all of the five VCE science study designs. This includes training in data collection and management to ensure meaningful analysis, referencing practices, and the ability to critically engage with published scientific literature, all of which are essential components of responsible scientific inquiry. Although this pilot will begin in Victoria, we envision a flexible, scalable program that other schools in Australia, and potentially internationally, can adopt in future iterations. We see amphibians as a compelling and underused entry point into many of the big questions facing science and conservation today.

For us at ASA, this initiative represents more than curriculum development, it reflects our commitment to cultivating the next generation of conservation thinkers. By bringing amphibians into the classroom in a meaningful way, and in full partnership with the educators who inspire students every day, we hope to spark curiosity, build capacity, and strengthen the long-term future of amphibian conservation.

As Mr. Lance Johns, lead educator on the project, puts it, “Curiosity and relevance are two powerful motivations for learning and should be a key objective in teaching practice. Curious students ask thoughtful questions and relevant content can engage students to see themselves as part of the answers to those questions. Studying amphibian conservation is one way that students can work together to be part of the solution to real world problems, broaden their global perspectives and contribute in meaningful ways to something that is bigger than themselves. At the same time, this program will enable students to build confidence in their practical skills while enhancing their ability to communicate and discuss scientific and ethical ideas.”

FUTURE LEADERS TOOLKIT

Photo: NewJadsada

MANAGING CONFLICT CONSTRUCTIVELY

By Candace M. Hansen, Amphibian Survival Alliance

Conflict is a reality in any professional field, but in conservation, it often carries a particular weight. Our work is driven by urgency, deeply held values, and diverse collaborations that span cultures, sectors, and continents. These same elements that make conservation meaningful also make it a fertile ground for misunderstandings, tension, and disagreement.

For early-career professionals, conflict can feel especially daunting. Many are entering collaborative spaces where they lack authority but hold important knowledge. Others are working across power imbalances, unfamiliar hierarchies, or cultural differences. Conflict might show up as a quiet undercurrent or an outright rupture. Either way, it matters—and how we respond to it can shape not only the health of our teams but the outcomes of the work itself.

Why Conflict Arises in Conservation

Conservation work brings together scientists, policy-makers, Indigenous communities, NGOs, funders, and volunteers—all of whom may carry different values, expectations, and definitions of success. Add to that the realities of limited funding, time pressure, and high emotional investment, and conflict becomes almost inevitable.

A disagreement about field protocols might stem from differing risk tolerances or local knowledge being dismissed. Tensions in a stakeholder meeting could result from a lack of transparency or perceived tokenism. Even interpersonal friction between colleagues—about workload, leadership style, or credit—can fester when left unaddressed.

From Reaction to Reflection

When we're in conflict, it's easy to slip into defensiveness, withdrawal, or over-accommodation. These are natural responses, but they rarely lead to resolution. Constructive conflict begins with self-regulation. This doesn't mean suppressing emotion—it means pausing to assess what's really happening.

What story are you telling yourself about the situation? What assumptions are you making? Are you interpreting disagreement as disrespect, when it might simply reflect a different worldview or communication style?

Listening as a Leadership Act

One of the most powerful tools in conflict resolution is listening—truly listening. This means not just waiting for your turn to speak, but making space to understand the other person's concerns, fears, or values.

In conservation settings, where cross-cultural collaboration is common, listening becomes even more essential. You don't have to agree to listen well. But when people feel heard, they are far more likely to engage in problem-solving.

Speaking Up Without Burning Bridges

There will be times when you need to raise a concern—about a decision, a dynamic, or a behavior that's creating harm. Constructive communication means being clear without being combative. It means naming what's not working, while signaling a desire to move forward collaboratively. This kind of framing invites dialogue rather than defensiveness.

Repair, Not Victory

In Western professional culture, conflict is often framed as something to win or resolve. But in conservation—where relationships are long-term and contexts are deeply complex—conflict is better viewed as something to repair and learn from.

Repaired conflict can actually deepen trust. It shows that relationships can hold discomfort, disagreement, and difference—and still remain intact.

Building Conflict Literacy into Conservation Culture

Ultimately, managing conflict constructively is not just an individual skill. It's a cultural capacity that conservation spaces need to build intentionally. Encouraging open dialogue, recognizing power dynamics, modeling humility—these are the foundations of conflict literacy and collective resilience.

Final Reflections

You don't have to enjoy conflict to handle it well. Most people don't. But avoidance comes at a cost—missed feedback, broken relationships, slow erosion of morale.

Constructive conflict is a skill, and like any skill, it can be learned. With practice, you can become someone who others trust in moments of tension. Someone who understands that conflict, handled wisely, is not a threat—but a tool.

Photo: macropixel

COLLABORATION WITHOUT BORDERS

By Candace M. Hansen, Amphibian Survival Alliance

If you're working in conservation today, chances are you're working across borders—geographic, linguistic, and cultural. That's the nature of a field that demands global cooperation: species move across ranges, ecosystems span countries, and conservation challenges rarely stop at national boundaries.

But international collaboration brings complexity. You may find yourself in a virtual meeting where some team members are just waking up, others are on their second cup of coffee, and a few are staying up past midnight. You may be reviewing a project proposal where terms like "community participation" or "monitoring strategy" mean different things to different partners. And you may be navigating email threads in a shared language that isn't native to anyone involved.

This is the landscape of modern conservation—and while it can be tricky to navigate, it's also one of the field's greatest strengths. Teams that cross cultures, time zones, and languages have the potential to generate more inclusive, innovative, and impactful work. But doing so takes skill, awareness, and intention.

Cultural Awareness Is a Leadership Skill

Culture shapes how we communicate, how we manage time, how we give and receive feedback, and even how we approach collaboration itself. Start by assuming cultural complexity. Don't interpret someone's behavior through your own cultural lens. Learn about your teammates' backgrounds, ask questions, and remain open to different work styles and communication preferences. Clarifying intentions and meanings early can prevent misunderstanding and help build respect across cultural differences.

Working in Multiple Languages: Patience, Clarity, and Equity

Even when English is used as a shared language, fluency, expressions, and tone can vary widely. Speak clearly, avoid idioms, and support clarity with written summaries. Respect the effort required to operate in a second or third language, and create space for everyone to contribute—regardless of language proficiency.

Time Zones Are More Than Inconvenient—They Require Care

Time zone coordination can impact morale. Rotating meeting times, planning ahead, and using asynchronous tools like shared documents and recordings can help balance the burden. Transparency and fairness in scheduling builds stronger, more respectful teams.

Build Trust Across Distance

When you don't see your teammates in person, relationships can feel transactional. Make time for check-ins, casual conversation, and small gestures of support. Document decisions, show appreciation, and follow through on your commitments—these simple behaviors build trust across distance and difference.

Create Shared Norms—Together

Collaborative teams benefit from shared agreements on communication, decision-making, document management, and feedback processes. Taking the time to co-create these norms respects everyone's time and reduces friction. Discuss expectations early, revisit them periodically, and be flexible as the team evolves.

Embrace the Complexity

Working across cultures, languages, and time zones is rarely simple—but it's always an opportunity. Show up with curiosity, humility, and a willingness to learn. Your career, your team, and your impact will be stronger for it.

LEADING WITHOUT AUTHORITY

NAVIGATING INFLUENCE AS AN EMERGING PROFESSIONAL

By Candace M. Hansen, Amphibian Survival Alliance

In the world of conservation, leadership rarely comes with a nameplate or corner office—many professionals spend years working without formal titles, official supervisory roles, or even a permanent desk. But that doesn't mean they aren't leading.

Some of the most effective conservationists exert influence not through position, but through presence. They shape ideas, guide decisions, and bring teams together through trust, consistency, and initiative. For early-career professionals, particularly those navigating research teams, field programs, or partner projects, leading without authority isn't just possible—it's often essential.

This article explores how to grow your influence from wherever you stand today. Whether you're an undergraduate student in a research group, a graduate fellow embedded in a multi-institutional project, or a junior staff member working across departments, these principles can help you lead meaningfully and ethically, even when you're not in charge.

Redefining Leadership in Conservation

Traditional models of leadership often center on hierarchy—those with decision-making power, formal authority, and high-level responsibilities. But conservation is a field where innovation, collaboration, and on-the-ground knowledge can come from anywhere. Leadership in this context must be more flexible, more relational, and often, more subtle.

You may not be the team lead, but you can be the person who proposes a more efficient method of data collection, mediates a disagreement in the field, or reminds the team of the project's goals when focus starts to drift. You can also lead by the example you set—through your work ethic, your tone, and the way you treat others. Leadership without authority doesn't require permission, but it does require awareness, intention, and emotional intelligence.

Take Initiative—But Do It Thoughtfully

Taking initiative is one of the clearest ways to demonstrate leadership, especially when you're still early in your career. That might mean volunteering to organize team logistics, suggesting a new way to visualize data, or offering to draft the first version of a group report. Done well, these actions signal to others that you're engaged, capable, and invested in the outcome of the project.

But initiative should be balanced with awareness. It's important to understand the context before stepping in. If you're new to a project or institution, take time to observe existing processes and power dynamics. Who is responsible for what? What norms already exist? Initiative becomes most valuable when it builds on that understanding rather than disrupting it.

Communicate clearly when you're taking action. Let others know your intentions, invite input, and avoid presenting your suggestions as directives. Leading without authority works best when it's collaborative, not prescriptive.

Build Trust Through Consistency and Follow-Through

If influence is the currency of informal leadership, trust is the foundation it's built on. And trust doesn't come from charisma or cleverness—it comes from consistency.

Being reliable in your work—meeting deadlines, responding to messages, preparing for meetings—signals to colleagues and supervisors that you're dependable. That reliability encourages others to listen to you, include you in decisions, and value your contributions, even if you don't have a formal leadership role.

Equally important is the ability to follow through on what you say you'll do. If you commit to a task, prioritize completing it—or communicate early if circumstances change. And when things go well, be quick to share credit. Recognizing others not only reflects generosity but also strengthens the sense of shared purpose that drives effective teams.

Develop Situational Awareness

Strong leaders—especially those operating without formal authority—know how to read the room. They understand when to contribute and when to listen, when to raise concerns and when to offer support quietly. This ability, often referred to as situational awareness, is crucial for anyone trying to lead from within a group.

To build this skill, start by observing. How are decisions made in your team? Who tends to speak up—and who doesn't? Are there dynamics that affect how people interact based on seniority, discipline, or culture? Pay attention to informal influence: some people may not have titles but still play central roles in shaping discussions or team direction.

You can also use this awareness to support others. If you notice a colleague is struggling to be heard, look for ways to amplify their voice. If a meeting is moving too quickly for everyone to contribute, suggest slowing down or summarizing key points. These small interventions demonstrate both leadership and care.

Communicate with Clarity and Respect

When you're not in a position of formal authority, the way you communicate becomes even more important. People will respond to your tone, your clarity, and your ability to express ideas respectfully and effectively.

Aim to be concise but thoughtful. Rambling or overly technical language can dilute your message and confuse your audience. Tailor your communication style to your context—what works in an academic setting may not land the same way in a cross-sector meeting with NGOs or policymakers.

Be especially mindful when offering feedback or proposing changes. Instead of saying, 'I think this is a bad idea,' try framing your thoughts as questions or suggestions: 'Would it be helpful to revisit the assumptions behind this approach?' or 'I noticed X pattern in the data—might that affect how we interpret this result?' This shows that you're contributing with curiosity and care, not ego or defensiveness.

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IMPOSTOR SYNDROME

REFRAMING DOUBT AS GROWTH

By Candace M. Hansen, Amphibian Survival Alliance

You've just received a fellowship. Or you're presenting at your first international conference. Or maybe you've joined a project team filled with people whose credentials make you question your own. Instead of feeling proud or excited, your stomach sinks. A voice in your head says, "They're going to realize I don't belong here."

This experience has a name: impostor syndrome.

In this article, we explore how impostor syndrome shows up in conservation and science, why it's more common than many people realize, and how it can be reframed not as a weakness to overcome, but as a sign that you're learning, stretching, and growing.

Why It Happens: The Landscape of Doubt
For early-career conservationists, the imposter phenomenon often begins when entering spaces where others seem to speak a different professional language—whether academic, institutional, or cultural. This feeling can be especially pronounced when people are the first in their family, region, or identity group to pursue a scientific career. Self-doubt becomes compounded by unfamiliar norms, unclear expectations, or the pressure to represent an entire group. In such environments, it's easy to believe that everyone else has access to a hidden rulebook you somehow missed.

These feelings are further amplified by environments that rarely acknowledge the behind-the-scenes struggle—dead ends in the field, hours spent troubleshooting analyses, the third draft of a rejected paper. When challenges are kept private, early-career individuals may assume their own struggles are a personal failing rather than a normal part of the process.

The Myth of the "Natural Scientist"
Popular media and academic narratives often romanticize scientific excellence as a trait of rare genius. Phrases like 'born leader' or 'gifted researcher' reinforce the idea that ability is innate rather than developed. This myth can be discouraging to those who learn differently, take longer to master technical skills, or arrive at science through unconventional pathways.

In truth, conservation is built on collaboration, adaptability, and cumulative effort. Effective scientists and practitioners are rarely those with perfect answers—they are the ones who ask good questions, stay curious, and build bridges across knowledge systems. Dismantling the myth of the 'natural' scientist opens the door for a more inclusive vision of scientific excellence—one that values persistence, creativity, and growth.

Reframing Doubt as a Developmental Signal
Impostor syndrome often signals a mismatch between internal experience and external perception. You may receive praise while feeling unprepared, or land a competitive opportunity and assume it was a fluke. But these feelings frequently arise when we're stretching—trying something new, navigating unfamiliar expectations, or stepping into leadership.

Rather than treating this discomfort as evidence of fraudulence, view it as part of the learning process. Just as muscles ache when growing stronger, discomfort in your professional identity can indicate growth. The key is learning to distinguish between helpful self-questioning and paralyzing self-doubt. One invites reflection; the other shuts you down.

The Power of Naming It
Impostor syndrome thrives in silence. Naming it aloud—to a peer, mentor, or yourself—can reduce its power. You'll likely find others feel the same way. When someone voices doubt, affirm their value. When you feel it yourself, know that you're not alone.

Systemic Roots, Individual Tools
While impostor syndrome is felt individually, its causes are often systemic. Scientific institutions, funding bodies, and field programs still carry implicit biases—about who is credible, who gets access, and whose knowledge is validated. This creates uneven psychological terrain, where some are uplifted by affirmation, and others must continually prove they belong.

Organizations must take responsibility for making their cultures more inclusive, transparent, and supportive. In the meantime, individuals can use structured reflection, feedback-seeking, and peer support to manage their own self-doubt. You are not alone, and you are not the problem—especially if the system was never designed with your experience in mind.

Final Reflections
Impostor feelings rarely disappear entirely. They tend to evolve as your role, visibility, or responsibilities increase. But with experience comes perspective. You begin to realize that even accomplished professionals doubt themselves at times—and that no one truly feels ready all the time.

The antidote to impostor syndrome is not false confidence, but honest reflection, community, and kindness—to yourself and to others. The conservation world needs your questions, your perspective, and your growth. You're already doing the work. That means you already belong.

MENTORSHIP IN MOTION

By Amphibian Survival Alliance

The journey doesn't end when your Future Leaders training course, conference or project concludes. At the Amphibian Survival Alliance, we believe that conservation careers are built not only through knowledge and fieldwork—but through community, shared insight, and ongoing support.

That's why we're preparing to launch a new initiative designed specifically for alumni of the Future Leaders of Amphibian Conservation program: a structured mentorship opportunity aimed at deepening your professional development, expanding your networks, and helping you navigate the next stages of your career with confidence.

This upcoming program will connect early-career amphibian conservationists with experienced mentors across a range of regions, disciplines, and career paths. Whether you're pursuing research, applied conservation, community-based work, or policy and advocacy, our goal is to offer guidance that's grounded, relevant, and relational.

The mentorship model will be collaborative and adaptive—matching mentors and mentees based on shared goals and interests, and providing flexible frameworks to shape the experience according to your context. This won't be a one-size-fits-all program, but a space for intentional growth, reflection, and support.

We're currently finalizing the structure and timeline, and more details will be shared in the coming months. For now, we simply encourage you to stay connected—and stay tuned.

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