## Project Update January 2026

**Rufford I.D.:** 42877-1
**Project Title:** Evaluating Population Dynamics and Autecology of the Río Huallaga Harlequin Toad (Boulenger, 1882) in the Cordillera Escalera Regional Conservation Area

## Update:

**Field effort and results**
During April 2nd to 8th of 2025, Extensive surveys were conducted in the originally proposed main study area ("Biodiversidad" route, Cordillera Escalera ACR), involving two to three observers (one assistant named Valeria García and one local guide named Frank) over six days, with approximately 8 hours of sampling per day (96 person-hours). No individuals of *Atelopus pulcher* were detected. With the support of one of the project stakeholders, DendrobirdsPeru (Ángel Chujutalli) and one of its associates named Kefir, additional surveys were carried out at Catarata Huayrapurina, where five individuals were detected after two consecutive nights of intensive sampling. These surveys involved an effort of 6 person-hours per day for a total of 36 person-hours. Given these results, capture–recapture approaches to assess population dynamics are not feasible under current conditions.

**Logistical and methodological constraints**
Several factors limit the originally proposed design:

- Extremely low encounter rates across surveyed sites.
- Restricted access and prohibition of overnight stays in some areas. (Mainly Huayrapurina)
- Dependence on private transportation for remote sites.
- Risk of theft of unattended equipment (data loggers) along the "Biodiversidad" route.
- Discontinuation of the originally proposed HOBO data logger model and expert recommendations to use alternative approaches.
- Reduced feasibility of stakeholder-led activities (environmental education, long-term instrumentation) due to logistical and financial limitations.

**Revised approach and planned outputs**
In consultation with specialists, I propose a shift toward outputs that remain scientifically robust and conservation-relevant:

1. **Ecological niche modeling of *Atelopus pulcher*** within the Cordillera Escalera ACR, integrating newly collected occurrence data and existing records. Models will also be projected under climate change scenarios and will allow focus conservation effort and locate potential reintroduction sites. This work is my undergraduate thesis framework and aims for publication in peer-reviewed journals and presentation at scientific conferences, with full acknowledgment of Rufford Foundation support.

2. **Disease surveillance (Bd – *Batrachochytrium dendrobatidis*)** through:
    a. Amphibian skin swabbing in the Biodiversidad route, Pumarinri Amazon Lodge, and Bosque Guardián Lodge.
    b. Environmental sampling using Nalgene Filters (Thermo Scientific). These data will provide baseline information on Bd presence and prevalence within the ACR and adjacent areas. Results will be submitted to scientific journals and formally shared with park authorities.
3. **Microhabitat characterization using a limited number of data loggers (n = 3)** to record temperature and humidity. Rather than broad deployment, these devices will support a null-model approach based on historical distribution points previously obtained by Juan Carlos Cusi for the Biodiversidad route, allowing inference on microhabitat conditions potentially experienced by the species while minimizing theft risk.
4. **Herpetofaunal field catalogs** for three focal sites:
    a. Biodiversidad route
    b. Pumarinri Amazon Lodge
    c. Bosque Guardián Lodge
    These catalogs will be published through the FieldGuides platform, include the Rufford Foundation logo, and be presented as posters at scientific meetings.

**Environmental education and outreach**

A project presentation focused on *Atelopus pulcher* and its conservation was delivered at "Interscience", an educational science event involving multiple IB schools in Lima. This activity is considered part of the project's environmental education component. Additionally, project progress is expected to be presented at future editions of this event this year, reaching a broader student audience.