

Interim Project Report

We ask all grant recipients to send at least one update during your project. These updates help us to evaluate your progress and are a useful project management tool to keep your project on track and inform us of any changes. You are welcome to send additional project updates as and when you like.

Please fill in and submit this template approximately halfway through your project. This is intended to be a snapshot of your activities so far and does not need to be detailed. Where relevant, any specific details that are included should also be reported in your Final Evaluation Report (i.e. please do not omit key details from the final report just because you have already reported them here).

This Interim Project Report must be sent in **MS Word format (not PDF)** and completed in English. Note that the information may be edited before posting on our website.

Please email the completed report and accompanying Excel budget to jane@rufford.org.

Your Details	
Full name	
Project title	Filling spatial and ecological information gaps in threatened forest-sensitive bat species and endangered ecosystems in Nicaragua
Application ID	46310-2
Project start date	August, 2025
Expected end date or month	October, 2026
Date of this report	30-May-2026

1. Briefly summarise the activities conducted so far (c. 500 words or less)

We have advanced all aspects of our proposed work. The main achievements include:

1. Collecting and increasing bat occurrence data

During the February-April 2026 field season, we conducted bat capture and acoustic surveys at 77 sites throughout Nicaragua (Figure 1). We placed special emphasis on the Northeastern Caribbean Plain, where 67 survey sites were concentrated (Figures 2–3). As a result, northeastern Nicaragua has become one of the best surveyed regions in the country for bat diversity and distributions.

2. Expanding bat faecal sample collections to provide novel ecological data for understudied species

We continued collecting non-invasive faecal samples and increased our collection by 220 samples representing 24 bat species. This expands our existing archive to more than 400 samples from approximately 40 species. Although we have not yet been able to send these samples for laboratory analysis, we have actively developed collaborations with researchers in the United States and Germany to secure support for processing and analysis.

These samples will contribute to two primary objectives: (A) publishing DNA reference material for bat species in Nicaragua, which will help clarify taxonomic identities and improve understanding of species distributions across Central America; and (B) describing the diets of understudied bat species to provide insights into their ecology, habitat requirements, and conservation needs.

3. Building local capacity by training Nicaraguan biologists and students in bat research methods and technology

We provided advanced training to two undergraduate biology students and four young biologists in Nicaragua. I also offered guidance, mentoring, and support in designing undergraduate thesis projects for two students from the Universidad Nacional Autónoma de Nicaragua (UNAN-Managua). Participation in this project has opened additional opportunities for their professional development, including invitations to attend the annual bat count at La Selva Research Station and Cloudbridge Preserve in Costa Rica.

In addition, one of our long-term collaborators, Luis E. Gutiérrez-López, and I were invited to contribute to research projects in Guatemala, resulting in scientific publications (Trujillo et al., 2024, 2025). Likewise, one of my undergraduate students used records collected during our first grant to publish three bat species newly recorded for Nicaragua (Hernández-Espinal et al., 2026). Acoustic data gathered during our surveys also contributed to the publication of a new bat species record for Honduras (Turcios-Casco et al., 2025).

4. Conservation outcomes

We submitted a proposal to the Latin American and Caribbean Network for Bat Conservation (RELCOM) seeking recognition of Cerro Waylawás as a site of importance for bat conservation (Figure 4). This initiative is now led by my undergraduate student, Chengpy Wu-Sánchez. Surveys funded through our first grant showed that this site hosts nearly 20% of all bat species recorded in Nicaragua (Figure 5). We have promoted conservation of the area among local and national stakeholders, landowners, the Nicaraguan Bat Conservation Program, and a nearby teak plantation. Alongside our surveys, we organized more than 22 outreach talks focused on bat conservation and environmentally responsible approaches to managing human–vampire bat conflicts. These efforts continue strengthening regional research and conservation partnerships.

2. Describe any challenges you have faced (c. 250 words or less)

We had two main challenges:

1. The increased prices of fuel. This is due to geopolitical circumstances and there was nothing we could do about it. However, we were able to plan accordingly and stay within the budget originally allocated.
2. Weather conditions represented another big challenge. Abnormal rain patterns (rainy season started earlier than expected) also constituted a challenge and potentially reduced the effectiveness of our sampling efforts.

Despite the challenges mentioned above, we did not experience any major disruptions and we were able to conduct all of our planned work and achieve our goals.

3. Have there been any changes to the project plan? Are there any objectives or activities that you may struggle to achieve in the remaining project timeframe?

We do not anticipate any big changes for the remaining of this project.

4. What are the key activities planned for the coming months? (c. 250 words or less)

At this point we will continue summarizing and analysing data and samples collected over the course of our field season. Both of our students will also continue working on the publication of the survey results from the current and past funding periods.

We also expect that our request to achieve recognition of Cerro Waylawás as an internationally important site for bat conservation by the Latin American and Caribbean Network for Bat Conservation (RELCOM) will be approved by the end of this year. It is worth mentioning that both of my students and I have been invited to participate in the evaluations of the conservation status of the bats of Nicaragua. This is a Central America initiative and my students, and I (as a coordinator) will be evaluating the population trends, updating the known distribution of the species, and main conservation threats for all 116 bat species present in Nicaragua.

Finally, we are finishing our bat identification guide that we started developing in 2024 as a tool to help land managers and students to identify bat species in the country. We are working to make this guide freely available in digital form by the end of this year. We are also planning to release a few videos in Spanish that will help with common vampire identification. This effort is aimed to be used as a training tool for government agencies that conduct vampire bat eradication.

5. Have you been in regular contact with your supervisor/mentor? Please provide details.

Yes, all survey and methods have been conducted after coordinating with Dr. Carol Chambers at Northern Arizona University. Likewise, we have obtained all institutional animal use protocols approved by the university's committee (IACUC). Dr. Chambers has also continued to provide guidance in the writing and publication of our results in scientific journals (see publications in literature cited).

We have partnered with a researcher in Southern Illinois University to provide bat faecal samples for the study of changes in the microbiome that could be result of environmental disturbance and human-driven deforestation. Results of this research can provide important insights to conserve bat diversity and to reduce spill-over events among wildlife and humans. We expect to have preliminary results by the end of the year. In the meantime, we continue seeking opportunities for funds and partnerships that could be used to analyse the rest of

our bat faecal samples determining diet. In the next months, we are focusing on obtaining all the corresponding export permits for the samples.

6. Have you shared any project activities on social media? If so, please include details.

Yes, we have been very active in Instagram and Facebook posting about bat species of Nicaragua and Central America (See @josegabrielwildlife). In each opportunity we have tagged @ruffordgrants as our main support for our work in Nicaragua. Additionally, we have recognized the support by The Rufford Foundation in presentations conducted at the North American Bat Research Symposium (Guadalajara, Mexico 2024), International Bat Research Conference (Cairns, Australia 2025), Northern Arizona University Bat Research Symposium (Flagstaff, United States 2026), and as invited research talks as the GBatNet collective webinar series, University of Texas El Paso Ecology and Evolution Biology department seminar series, Bat Conservation International seminar series, and many more.

7. Please use the Excel template provided to complete your interim budget and return this via email along with the Interim Project Report.

Note that any large budget changes or reallocation of funds (10% or more of the grant amount) should be communicated to Rufford via email as soon as possible.

Literature cited

- Hernández-Espinal, J. A., Westeen, E. P., Trujillo, L. A., Fernández-Mena, M. A., Gutiérrez-López, L. E., Artola, Y. O., Harman, M. E. A., Somarriba, G., Pérez Rodríguez, T. I., Jarquín-G, O., Noble, W. O., Zahratka, J. L., Swenson, J. E., Chambers, C. L., & Martínez-Fonseca, J. (2026). New bat (Mammalia: Chiroptera) records from Nicaragua: First records of *Pteronotus psilotis*, *Dermanura azteca* and *Uroderma davisii*. *Therya Notes*, 7, 30–37.
https://doi.org/10.12933/therya_notes-25-228
- Trujillo, L. A., Miller, B., Ordoñez-Mazier, D. I., Salguero, D., Ávila-Palma, H., Estrada, N., Mansilla, D., Hooper, K., Alvarez-Jacinto, W., & Martínez-Fonseca, J. G. (2025). New insights into the distribution of *Myotis riparius* Handley, 1960 (Mammalia, Chiroptera) in northern Central America: First records for Guatemala, Belize, and El Salvador. *Check List*, 21(5), 930–939. <https://doi.org/10.15560/21.5.930>
- Trujillo, L. A., Mischler, C., Gutiérrez-López, L. E., Herrera, M., & Martínez-Fonseca, J. G. (2024). Noteworthy records of *Myotis* Kaup, 1829 species in northeastern Guatemala, including the first record of *M. volans* (H. Allen, 1866) (Chiroptera, Vespertilionidae) from the country. *Check List*, 20(4), 969–975.
<https://doi.org/10.15560/20.4.969>
- Turcios-Casco, M. A., Martínez-Fonseca, J. G., & Miller, B. (2025). Listening northward: First evidence of *Cormura brevirostris* (Wagner, 1843) (Emballonuridae, Chiroptera) in Honduras. *Check List*, 21(6), 1262–1270.
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Figures

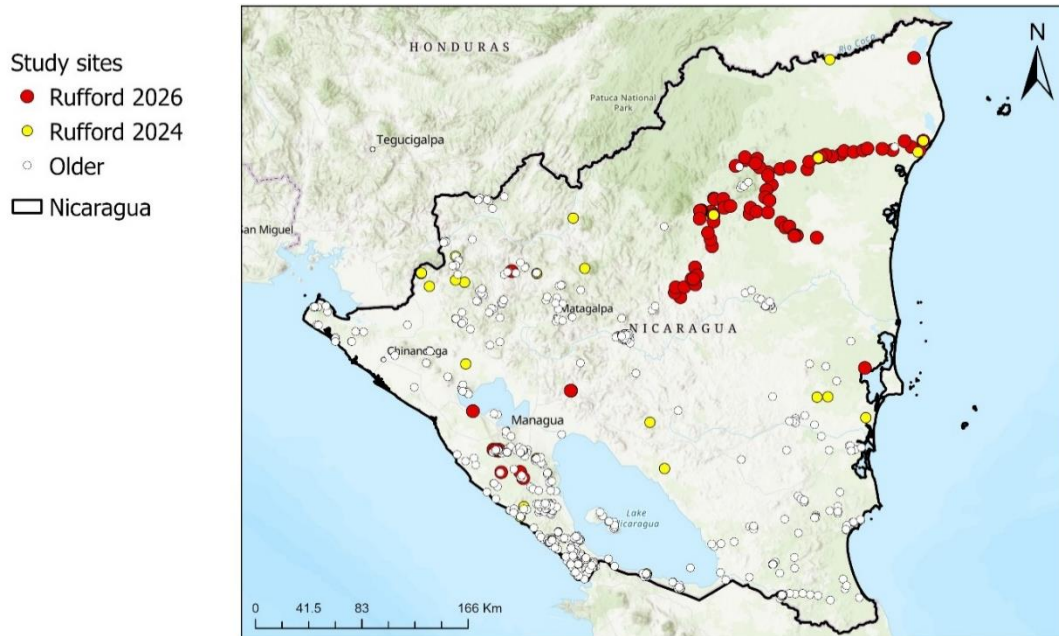


Figure 1. Surveyed sites during the first (2024-2025) and second (2025-2026) year grants from The Rufford Foundation in Nicaragua.



Figure 2. Bat survey team in the Caribbean pine savanna near Alamikamba, Nicaragua. Left to right: Luis Gutiérrez-López, Chengpy Wu-Sánchez*, José Martínez-Fonseca, James Hernández-Espinal*. *undergraduate students



Figure 3. Bat survey team in the Caribbean pine savanna near Alamikamba, Nicaragua. Note the wildfire in the grasses in the top right corner of the image.



Figure 4. Cerro Waylawás, near Siuna, Nicaragua. This is our proposed site to be internationally recognized as an Important Site for Bat Conservation. We have found 28 bat species in the caves and surroundings of this unique geological formation.



Figure 5. A colony of short-eared bats (*Cyttarops alecto*) found in our last visit to Cerro Waylawás (May 2026). This is an extremely rare bat species in Central America, and this record increases the global known range of the species over 100km northwards from the closest previous record.