

## Final Evaluation Report

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Your Details	
<b>Full Name</b>	Jefry Stifen Betancur Ortiz
<b>Project Title</b>	Vocal behaviour and dynamics in the occupancy of <i>Thryophilus sernai</i> , an endangered species endemic to the north of the Cauca River canyon in Antioquia-Colombia
<b>Application ID</b>	36260-1
<b>Date of this Report</b>	5/9/2023

**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
to evaluate the spatial variation in the vocal repertoire				
to evaluate the seasonal variation in the vocal activity				I collected all information. I have records from three sites, but Arbimon, which is the tool that I'm using to analyse the audios, is failing. So, I could only analyse one site (Santafe). I am looking for alternatives to analyse the other two sites.
to determine the dynamics in the occupancy probability both temporally and spatially				

**2. Describe the three most important outcomes of your project.**

- a) Our study helped to predict the probability of finding the Antioquia wren, according to environmental variables. We found that changes in occupancy probability were explained by distance to streams, land slope, and high secondary vegetation and forest cover, and we observed that occupancy was negatively affected after the dam flooded. Furthermore, we found that changes in colonisation were explained by greenness, and changes in extinction were explained by season.
- b) Our study showed that song repertoire similarity is affected by landscape configuration, probably due to habitat fragmentation. In summary we found that dissimilarity in song repertoire increased with increasing geographic distance, loss of connectivity, and increasing temperature.
- c) Finally, our data suggests that vocal activity in the Antioquia wren is related with environmental factors. We found that vocal activity varied positively with increasing precipitation and negatively with increasing temperature.

**3. Explain any unforeseen difficulties that arose during the project and how these were tackled.**

We did not have complex problems during the execution of the project. The main challenge that arose was during the analysis of the collected data, mainly for the study of vocal activity. We collected a large number of recordings, and the software had difficulties handling such amount of data. To overcome this problem, we are using other available tools such as Bird net from Cornell University. With the help of these free tools, I hope to be able to successfully complete that goal.

**4. Describe the involvement of local communities and how they have benefitted from the project.**

Local communities have been involved in different ways. First, during the sampling we needed assistance from the local communities since they know the region better. In this way, we could create local employment. Second, locals involved in data collection, had the opportunity to learn how to identify the Antioquia wren and about its natural history. In addition, they received training in field techniques. Last, but not least, we provided advice to local people about the Antioquia wren, and people who are thinking in starting birding tours and sustainable ecotourism businesses. Therefore, we have provided valuable information, so that their business can be friendly with the Antioquia wren, and we hope that it will be done in such a way that valuable information about the species can be collected, such as its reproductive biology or the survival probability. Of course, all these things would be done with the support and scientific advice of our research group.

**5. Are there any plans to continue this work?**

Yes. We want to continue with long-term monitoring. We also want to expand the monitoring to other regions and areas of knowledge such as evolutionary ecology and population ecology.

**6. How do you plan to share the results of your work with others?**

During the execution of the project, we participated in three conferences, in which we shared our partial results, obtaining quality feedback from the scientific community to improve our study. We are currently working on different manuscripts that will be submitted to publish them as soon as possible. Additionally, with the local communities, through socialisations, we are communicating our principal findings. We also want to give other types of talks at public events so that people in general can learn about our findings and learn about the Antioquia wren.

**7. Looking ahead, what do you feel are the important next steps?**

After this process, we believe that there are three very important steps to follow. First, continue with passive acoustic monitoring, in order to monitor population trends. Second, carry out a phylogeography study, which helps to understand the evolutionary origin from an environmental and geographical aspect, and in this way help to understand the past and future panorama of the species. Third, to study the

niche of the species, to better understand its geographical distribution and what limitations it poses for the species. We are currently working on the latter in collaboration with a student named Daniela López.

**8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

Yes. In each of the presentations that were made at the different conferences, the logo of The Rufford Foundation was added to give due recognition to their valuable help.

**9. Provide a full list of all the members of your team and their role in the project.**

**Hector Fabio Rivera:** Main Tutor.

**Juan Luis Parra:** Advisor.

**Laurel Symes:** Advisor.

**Mauricio Orozco-Alzate:** Advisor.

**Mauricio Díaz:** Help in installing equipment and processing recordings.

**Andres Chinome:** Help with spatial processing.

**Andrea Diaz:** Help with spatial processing.

**10. Any other comments?**