

## The Rufford Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Minerva Angela Uribe Rivera
<b>Project title</b>	First acoustic monitoring system for bats in Natural Protected Areas of Baja California, Mexico
<b>RSG reference</b>	23783-2
<b>Reporting period</b>	December 2017 – December 2018
<b>Amount of grant</b>	£4947
<b>Your email address</b>	minerva.uribe@uabc.edu.mx
<b>Date of this report</b>	December 26 <sup>th</sup> 2018

**1. Please 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
Establish the first monitoring system of bats in natural protected areas of Baja California (ANPs)				We obtained annual data about richness, abundance and activity patterns of bat species in natural protected areas.
Elaborate the first reference acoustic library of bats of Baja California.				We are still working with acoustic files to make the acoustic library.
Train ANPs personnel on the monitoring of bats.				
Elaborate management proposals for bats conservation in ANPs.				Recommendations will be delivered to authorities and technicians of ANPs.
Entail with the Project developed by National Commission for the Knowledge and Use of Biodiversity (CONABIO)				
Dissemination of the information through digital platforms (web page).				This is the final step of the project. We will share the information after the elaboration of the acoustic library.

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

In summer of 2018 there was a fire in San Pedro Martir, for this reason we had to postpone field work. Weather conditions on winter also caused a delay of 3 months of the project.

**3. Briefly describe the three most important outcomes of your project.**

1. Establishment of the first monitoring system of bats in natural protected areas of Baja California: before this project, there was any monitoring system for bats in ANPs. The information recorded represents baseline information for actual richness and abundance of bat species and will allow to document any change in bats populations associated with negative impacts like habitat loss and construction of wind farms. Additionally, the elaboration of an acoustic library will be very useful for the study of bats in the north of Mexico.
2. Training of ANP personnel on the monitoring of bats: we trained rangers and technicians of San Pedro Martir to develop acoustic monitoring, this makes

monitoring more efficient and autonomous, securing long term monitoring. We also trained members of non-governmental organizations Terra Peninsular A.C. and Pro Natura A.C., as well as students of Autonomous University of Baja California.

3. Entailment with the project developed by National Commission for the Knowledge and Use of Biodiversity (CONABIO) through which the information will be available in a national level. For this project, we provided data from acoustic calls of bats of northwest Mexico.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

We involved people from local communities that work in natural protected areas by training them on acoustic monitoring of bats. We also talked with them about richness of bat species in Baja California and its importance for the ecosystems. In the workshop developed, locals were able to capture and release some bats, identify them and record their acoustic calls.

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

Yes. We plan to continue this work with the objective of strengthen a participative monitoring programme for bats through a project of citizen science that involves locals and visitors of natural protected areas.

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

Registered calls from bats will be included in acoustic reference library for Baja California. This library will be available in digital platforms for specialists and public in general interested on bat conservation. Additionally, with this project we worked with National Commission for the Knowledge and Use of Biodiversity (CONABIO), providing acoustic data of bats from the northwest region of Mexico.

**7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?**

The grant provided by Rufford Foundation was used for 1 year as planned from the beginning. Only the field work was delayed for 3 months because of weather conditions.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Material for 2 workshops	340	276	+ 64	We had less attendants because of the fire in San Pedro Martir
Gas	400	400	0	
Flight tickets	0	354	-354	We didn't consider this on the original budget.
Accommodation	188	188	0	
Travel expenses	400	400	0	
Echo Meter Touch 2 Pro Ultrasonic Module for iOS	269	277	-8	
Microphone and cable SMM-U1 External Ultrasonic Microphone for SM4BAT/ 10m cable	1030	558	+472	We considered an extra amount for importation that was not necessary
Acoustic detectors SM4BAT FS	2320	1381	+939	We considered an extra amount for importation that was not necessary
<b>Balance</b>	<b>4947</b>	<b>3833</b>	<b>1114</b>	We are using this amount to finish last field trips and elaborate the web page of the acoustic library

**Local exchange rate used: 1 sterling pound equals 25.18 Mexican pesos.**

### 9. Looking ahead, what do you feel are the important next steps?

After we collected acoustic data, we considered we have to make this information available at all levels and work more with local communities and citizens to accomplish a comprehensive conservation plan of bats in Baja California. Through workshops and developing an interactive app, we want to involve locals and visitors of natural protected areas on interacting with bats, recognising species, their acoustic calls and the importance of conserving bats. In this future stage, we plan to develop an interdisciplinary work collaborating with experts on environmental education and science communicators to develop a citizen science project.

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

Yes, we used Rufford Foundation logo during training workshops. In these workshops assistants included rangers and technicians of Parque Nacional Sierra de San Pedro Mártir, members of non-governmental organisations Terra Peninsular A.C. and Pro Natura A.C., as well as students of Autonomous University of Baja California.

**11. Please provide a full list of all the members of your team and briefly what was their role in the project.**

**Aldo Antonio Guevara Carizales** - Professor at Autonomous University of Baja California. He coordinated the workshops, fieldwork and data analysis. He also managed links with CONABIO and authorities from natural protected areas of Baja California.

**Minerva A. Uribe Rivera MSc** - graduated on arid zones ecosystems management. She was instructor during training workshops, analysed bat calls and is working on management recommendations for natural protected areas.

**Sayuri Rangel Martínez** - Student at master program at Autonomous University of Baja California. She developed field work and collaborated with workshops. The results of this project are going to be included in her thesis work.

**Mariana Aguas Hernández** - Biology student at Autonomous University of Baja California. She collaborated in fieldwork.

**12. Any other comments?**

As we mentioned above, we couldn't accomplish this project deadline because of external circumstances (snow and fire that kept busy personnel from natural protected areas). However, with the remaining budget, we are finishing last field trips and we are developing web page with an acoustic library. As soon as we create the acoustic library we will share our results with Rufford Foundation.



Bat captured in San Pedro Martir, Baja California



Training workshop for acoustic monitoring of bats



Training for the use of mist nets for capturing bats



Closure of the workshop for acoustic monitoring of bats of Baja California