

## 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	
Your name	Abigail Martinez Serena
Project title	The effect of oil palm plantations ( <i>Elaeis guineensis</i> ) on aerial insectivorous bats' assemblage in the Greater Lacandona ecosystem, Chiapas
RSG reference	17520-1
Reporting period	April 2015-August 2016
Amount of grant	£4260
Your email address	serena13@ciencias.unam.mx
Date of this report	September 04, 2016

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
Compare species richness of aerial insectivorous bats' assemblages between oil palm plantations, forest interior and tree fall gaps for dry and rainy season.			✓	The rainy season sampling was delayed for logistic reasons, but that does not affect the sampling in the season because rain was delayed too.
Compare dominance of aerial insectivorous bats' assemblages between oil palm plantations, forest interior and tree fall gaps for dry and rainy season.			✓	
Compare similarity in composition of aerial insectivorous bats' assemblage between oil palm plantations, forest interior and tree fall gaps for dry and rainy season.			✓	
Compare activity levels of aerial insectivorous bats' assemblage between oil palm plantations, forest interior and tree fall gaps for dry and rainy season.			✓	

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

For logistic reasons and security, it was not possible to maintain the originally distances determined for recording sites between and within categories (gaps and forest interior). The distances were modified, but trying to maintain homogeneity and continue with a standardize sampling.

In the rainy season, the time to set mist nets was reduced because the catchability was lowered due to rain, especially of aerial insectivorous bats. The period of mist netting was delimited to times with low or no rain, trying to be in accordance to the first peak activity of aerial insectivorous bats.

The duration of rechargeable batteries was considerably reduced every day faster than the calculated one. It could be for the low energy in the station to charge all the batteries. So, more frequently visits to sites were required to check batteries levels and replace them if it was necessary.

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

- The highest aerial insectivorous bats' species richness is in natural areas.
- There is a change in composition of aerial insectivorous bats' assemblage with the presence of forest dependent species just in non-disturbed habitats.
- Total activity levels of aerial insectivorous bats' are higher in natural habitats than in oil palm plantations.

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

The oil palm plantations' owners were involved in the process of the project sampling. They knew the relevance of this kind of studies and the project process. I also gave talks about the importance of bats, especially of aerial insectivorous bats, to children of elementary school in different communities of the region. It was of great benefit for them in their knowing concerning to bats. Many children did not know the great diversity of bats, and the impact of the habitat loss on them due to habitat modifications, like oil palm plantations.

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

For the moment, there is no plan to continue with the work, but in a near future it is possible to focus on the impact of oil palm plantations on aerial insectivorous bats' in other areas of the region.

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

The whole study will be online through the University (UNAM). The results of the study will also be published in an international journal. This way other students or researchers can access the results. A report will be generated for Natura y Ecosistemas Mexicanos A.C., because they have been working in the region with monitoring programmes and environmental education. The results will contribute to

guide their talks and activities with local communities. Additionally, these results will be presented in the North American Symposium for Bat Research (NASBR) in San Antonio, Texas in October 2016.

**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 RSGF funds were used from August 2015 to April 2016. Although some delayed, payments were made due to the first trip that started in April 2015. It was planned to go to fieldwork for rainy season in September 2015, but for logistic reason it was not possible and the fieldwork was delayed 3 months, that influenced in analysis time. This also was delayed because the amount of data recorded.

**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
Field fees	1716	1720	4	
Airfare to monitoring site (roundtrip)	471	214	214	It was reduced because the only flight was for educational talks.
Gas for in site transportation	514	1350	1393	Trips to the study area had to be by van to transport all the equipment. The reduction in batteries charge increase transportation between sites, and costs for gas and oil increase.
Local guide	429	700	271	We needed more visits to the sites to check batteries which increase local guide help.
Vehicle maintenance	128	176	48	Due to bad road conditions for rain, it was necessary to give extra vehicle maintenance.
Equipment (nets and poles)	1054	0	—	This amount was used to help with increases in costs

				of items above, and the Laboratory of Ecology (Ecology Institute-UNAM) borrowed part of the equipment.
<b>Total</b>	4312	4160	152	

The exchange rate used to calculate the budget amount was the same for the actual budget 1 GBP = 23.30 MXN pesos.

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

The next step is to assess the impact on aerial insectivorous bats´ in more isolated oil palm plantations, to know if the proximity with forest fragments reduced the real impact of this crop. The treatment of the plantation also have to be evaluated, because in plantations with use of insecticides or other chemicals could have major impacts in the composition and activity of bats. Another important step is to continue doing studies using acoustic methods to sampling the group of aerial insectivorous bats´ to obtain more information of this group and applied the knowledge to management and conservation efforts in other areas of the Lacandona region.

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

Yes, it was included in my presentation at the 1<sup>st</sup> forum "Conservación y Manejo de Murciélagos en Chiapas", in Chiapas, México. The RSGF logo was also included in my educational talks to local schools.

### 11. Any other comments?

This study using acoustic methods to assess the impact of oil palm plantations on insectivorous bats assemblage is the first for the region. Therefore, it is important to continue with this kind of efforts to answer similar questions about this under-sampling bats´ group and different land use changes in the relevant region of the Lacandona Rainforest.

I would also like to thank to the RSGF for the valuable support and trust in this project.

