The Rufford Foundation
Final Report

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Ivar Vleut
Project title	The movement ecology of two rare carnivorous bats in Mexico and prospects for their conservation
RSG reference	19232-1
Reporting period	06-2016 – 06-2017
Amount of grant	£ 4800
Your email address	Ivar8207@gmail.com
Date of this report	25-5-2017

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
Movement ecology of *Chrotopterus auritus*				
Movement ecology of *Vampyrum spectrum*				*Vampyrum spectrum* proved difficult to capture flying out of their roost and therefore we were not able to equip many individuals with the GPS trackers.

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

It proved very difficult to capture *Vampyrum spectrum* during the project. They refuge in hollow trees that have an opening at the top of the tree. We did not want to catch them too close enough to the entrance, because they might change their roost due to the disturbance. We were able to catch several individuals on the path nearby the roost and obtained a total of 4 days of movement. However, we hoped for more data.

The GPS trackers that we were using were not appropriate for the study area. They proved very difficult to work with and were not able to get satellite data from the movement of the bats. We therefore decided to change to other GPS trackers, namely Technosmart GiPSy5 trackers.

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

The *Chrotopterus auritus* individuals that were tracked with GPS trackers showed a relatively low home range of 102 ha or 1.02 km^2 and an average of 2.3 km maximum flight distance. They prefer to hunt in medium semi-deciduous forest, but have also been found to hunt nearby and in agricultural fields and secondary forest. Male individuals flew farther away from the roost than female individuals in the site of Hormiguero, but this increase in flight distance did not result in a significant increase in home range, which suggests that individuals intentionally fly a larger distance to forage in a specific area.

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

We involved people from the local communities as guides during the fieldwork.

5. Are there any plans to continue this work?

I am sure that the project will continue, it is a great area to study these amazing two bat species. We are just getting to know a little about their ecology and there is still so much to learn. This is the only known place in Latin America where we have roosts of both species in one area. However, my postdoc fellowship has come to an end, so it is unsure whether or not I will be able to continue working directly on the project.

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

We plan to present the results in conferences and publish them in journals with a relatively high impact factor.

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 RSG was used for 1 year compared to the total of 2 years and 3 months which is the actual length of the project.

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
GPS tracker x 4	804	1692	888	The GPS trackers did not function as we thought they would, and we therefore needed to buy more expensive trackers.
GPS	101	101	0	
Field trips	4000	4500	500	
Total	**4905**	**6293**	**1388**	

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

What we found during this project is that *Chrotopterus auritus* prefers to hunt in undisturbed late- successional forest. So this emphasizes the importance of these areas for the conservation of the species. The next step is study the same species, but in other areas. For example, in Campeche there are a lot of roosts available for this species, in both caves and ruin sites. However, in areas where there are less caves and ruins, this species will rely on hollow trees to roost and they may be more

difficult to encounter. Also, we studied the movement ecology of this bat species in areas where there is a large availability of late-successional undisturbed forest, it would be interesting to study the same bat species in a more fragmented landscape with less available late-successional undisturbed forest to see whether or not this species is able to live.

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, I used the logo during several national and international presentations of the project. National Geographic was shooting a documentary about the project and they will include Rufford in the credits.

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

12. Any other comments?

The GPS trackers are a very important tool to study exact movement of bats, other mammals and birds and can give us useful information about their habitat range and preference.