The Rufford Small Grants Foundation

Final Report

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

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. 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. 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	Ana Carolina Moreira Martins
Project title	Phyllostomid bats in Amazonian fragmented landscapes: a multiple scales approach
RSG reference	12680-1
Reporting period	January 2013 to May 2014
Amount of grant	£5286
Your email address	martins79.ana@gmail.com
Date of this report	5th May 2014

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
Data collection			X	
1) Which organisational levels do bats respond to landscape fragmentation (community or feeding guilds)?		X		These three issues that are part of the project objectives can be answered only after the calculation of landscape metrics, conducting statistical analyses and selection of the best models. The data have been collected and are in the initial phase of the analysis. These objectives will be fully achieved by the end of my PhD in 2016
2) These responses are scale dependent?		X		
3) What scale contributes more to regional diversity?		X		
Specific guidelines for landscape conservation in the studied areas will be produced and delivered in local town halls and environmental agencies		X		Specific guidelines for landscape conservation in the studied areas are already being produced in the form of a report, which should act as a reference source for any doubt that farmers may have regarding bats, species and their environmental services. This material will also be presented indications of how maintain bats away from homes and farm buildings without exterminate them. This report will be delivered to all farmers and local environmental agencies by the end of June 2014.
General conservation recommendations concluded from the project will be published in the media for the general public		X		These publications will be conducted only after the publication of scientific papers, in order to take the main message of this study to the general public.
Generate scientific papers to be published in high impact journals		X		The publication of scientific papers should be completed by 2016, as many analyses should be conducted so that we can reach the ideal models of how the bat communities is affected by fragmentation in the Amazon

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

The sampling design was modified due to difficulties experienced in the first field trip. Many of the fragments chosen for sampling had no access due to fallen bridges, interrupted roads, or access only by pastures. Therefore, there were only 24 sites that follow the same protocol samples: 10 mist nets (12 x 2.6 m) arranged along trails in the understory, open 6 hours per night. Field surveys were conducted in four trips of 24 days, with two trips in the dry season (May 2013 to July 2013) and two trips in the rainy season (October 2013 to March 2014).

In the first sampling survey, we had also to make new trails for our movement in all areas. This demanded more time than we had expected, 30 days of work at 15 hours/day, with a larger team with four researchers and two local field assistants. With this massive effort, it was possible to install the entire field infrastructure that was used throughout the project and still accomplish to conduct the first survey.

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

During fieldwork in 1712 individuals of 56 species of bats were captured. Of these, eight are not phyllostomid bats and three species are awaiting identification of specialists. Until now we have 45 phyllostomid species, including three species in need of confirmation. The richness of sites ranged from 8-22 species.

But the main results of the project are linked to the question of bat scale-dependent responses to forest deforestation, and these have not yet been analysed, they still depend on the calculation of landscape metrics and subsequent statistical analyses.

However, I can say that in the middle of the work, an exploratory analysis was done and we could see that there are two kinds of patterns in communities: 1) Metacommunities partially nested, obtained by sorting for richness and abundance, indicating a gradient of species loss due to intense forest fragmentation; 2) Replacement of species in a possible environmental gradient, obtained by sorting the Scores of Correspondence Analysis, indicating that environmental factors such as level of fragmentation, forest cover, percentage anthropic matrix, among others, may be acting causing this species turnover.

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

Local communities were involved of several ways:

1. Local farmers relatives who had already participated in past researches one were contracted to assist in data collection, trained and informed about the importance of bat conservation, since they are important seed dispersers, forest remaining maintainers and recovering deforested areas.
2. Students from regional universities participated in data collection, learning about new techniques, getting in touch with a new group of animals, which expands the knowledge and prepares them both for continuing vocational training in post -graduate as for the market.
3. Many farmers who allowed their properties in our work helped in opening tracks, indicating field hazards and even lending more suitable vehicles to cross pastures (e.g. tractor, motorcycle).

5. Are there any plans to continue this work?

The study will continue because I am still in the middle of the Doctorate, and the most important part of the work results of analyses which have not been performed. Thus, it will be finalised in 2016.

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

a) Specific guidelines for landscape conservation in the studied areas will be produced and delivered in local town halls and environmental agencies. These guidelines are already being produced in the form of a report, which should act as a reference source for any doubt that farmers may have regarding bats, species and their environmental services. This material will also be presented indications of how bats away from homes and farm buildings without exterminate them. This report will be delivered to all farmers and local environmental agencies by the end of June.

b) General conservation recommendations concluded from the project will be published in the media for the general public. These publications will be conducted only after the publication of scientific papers, in order to take the main message of this study to the general public.

c) Scientific papers will be published in high impact journals by 2016, because many analyses should be conducted so that we can reach the ideal models of how the bat communities were affected by fragmentation in the Amazon.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

The RSG was used in initial period of my project. The project is 4 years (duration of a full doctorate) and the time we use the RSG was 1 year or a quarter 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
Travel costs	2400	2500	-100	Relocation of funds
AA bateries	533	376.2	156.8	The use of rechargeable flashlight purchased with relocation of funds has reduced the cost of batteries and releasing funds for meals and travel costs
Meals	600	820	-220	Relocation of funds
Mist nets	180	180	0	
Aluminum poles	1133	500	633	The aluminium poles selected cost £ 1133, but I found another brand for £ 500, leaving £ 633 for other items not submitted in my proposal (*)

Scales (Pesola)*	0	120	-120	Relocation of funds
Headlamps*	0	90	-90	Relocation of funds
Extra mist nets*	0	256	-256	Relocation of funds
Marking rings	333	333		
Insect repellent	107	107		
TOTAL	5286	5282.2		

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

The next steps should be deliver reports to the farmers, calculate landscape metrics and community parameters, and starting the statistical analysis.

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

We used RSGF logo on t-shirts that identified my team in field and also used in all project presentations that were done at the University.

11. Any other comments?

RSG was very important to perform the data collection in my study.