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	Paloma Marques Santos
Project title	Landscape and local factors influencing the occurrence of the endangered maned sloth: subsidies for the species' conservation.
RSG reference	21498-1
Reporting period	April/2017 – July/2018
Amount of grant	4930
Your email address	paloma.marquessa@yahoo.com.br
Date of this report	07 – 26 - 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
Land use and land cover map.			■	
Randomization of 70 to 90 sampling stations.		■		As we said in the response-email, from 2017 January, we agreed to reduce the sampling stations to 35 points that together with the other 33 points previously sampled, we totalled 68 points.
Recognition and assessment of the fragments accessibility in loco (Pilot campaign).			■	
Establishment of sampling stations (Pilot campaign).			■	
Data collection of species' presence and absence in loco.			■	
Data collection of local variables			■	
Landscape structure variables			■	
Occupancy and detection modelling	■			We will perform this part on the second semester/2018, at Colorado State University – USA, in partnership with the Professor Larissa Bailey, Ph.D.

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

Although we already know the study, we had few unforeseen, resolved smoothly:

1) As we expected, at few landowners prohibited us to collect data on their fragments. This happened mainly in south part of study area – municipality of Domingos Martins - in which all the 16 sampled points belong to private properties. To avoid conflicts and continue our work, we cancelled those points, and re-randomized other in the same region.

2) We collected data in three protected areas: Augusto Ruschi Biological Reserve (Federal), Santa Lucia Biological Station (Federal) and São Lourenço

Municipal Natural Park (Municipal) – all located in Santa Teresa/ES, north part of study area. The authorisation to collect in those areas took a long time to leave, which made us delay the data collection, extending until July 2018.

3) Out of season rains have fallen in part of the study area, making it difficult our assessment and the maned sloth detection, during the second semester of 2017 (It was supposed to be a dry season). We had to delay the data collection at these points, postponing our schedule to end in November 2017, for July/2018.

4) Maybe, our biggest and most complicated problem was the presence of hunters in some areas – mainly in Santa Teresa. Unfortunately, in some areas, our ribbons marking the trees were undone and our transects were undone. We confirmed the hunters through the presence of pitfall traps in various parts. To avoid further problems, we stop our collection in those areas, resulting in only three occasions. Some of the protected area officials informed us that hunters are a constant problem and that the last years had several environmental police operations, along with environmental agencies, to inhibit hunt activity, without success.

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

1) We detected the maned sloth in 14 of 35 sampled stations (40%) - more than we expected. The species has a low detection, as consequence of its habit, and found it in nature becomes a difficult task. The experience of our previously work – performed in 2014 - allowed this positive outcome and facilitated the sloth identification on nature. In addition, we interviewed the local community (Ethic committee authorization CAAE 76982017.6.0000.5149), which assist us on this search. In total – including the data from 2014 – we detected the maned sloth in 32 of 68 sampled points.

2) Through preliminary analyses, we already observed some patterns: the percentage of pastures, the matrix permeability and the habitat quality may influence the presence of maned sloth. It seems that when it comes to a landscape with a greater contrast – more percentage of pasture, mainly - a strong resistance to species' mobility, and with few forest patches, the maned sloth presence decreases. This is a great result, since we unfound any relation between landscape composition and configuration and the maned sloth occupancy in previously published work (Santos et al., 2016). The habitat quality variables also come out with strong predictors, confirming that variables in different scale may influence the maned sloth occupancy.

3) Another important preliminary result shows different variables influencing the maned sloth in different scales. For example, the percentage of pasture influence the species occupancy in a 600 m buffer and the functional isolation influence in an 800 m buffer. This is an interesting outcome, because demonstrates how much we can lose information if we always fix the buffer area in a determinate scale and the importance of the multiscale approach.

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

We interviewed the local community, as part of search for the species. They helped us in many aspects and informed us about events that we did not know. As part of my scientific divulgation, we will return to these areas and we will show to about the regional biodiversity and its importance, which in many times, they do not know. This will help us in applying conservation projects.

5. Are there any plans to continue this work?

Yes. This is the second part of a 4-year work, as part of my doctorate. The third part will perform in 2018/2019, when we will apply robust statistical analyses, in a partnership with the Professor Larissa L. Bailey, from Colorado State University - USA. We will use the occupancy modelling to identify the main variables and to identify the areas with greater occupancy probability. This data will be necessary to start the last part of the project, in 2019/2020: the environmental modelling, including future scenarios. Through this part of the work, I can share with the community – local people, government, universities – what and how we must improve, when it comes to conservations measures.

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

We intend to share in three ways:

1) To the academic community – scientific papers in international periodicals;

2) To the general public – academic and conservation web sites, newspapers, videos;

3) To the local communities – workshops, flyers with explaining the project and demonstrating our results.

The academic part refers to scientific papers. We will submit at least three papers in international scientific periodicals – one next year, and two others by the May 2020. One of these scientific papers is in the final stages of preparation, and we will submit by the end of August 2018 in the scientific journal Ecology and we start to prepare the second scientific paper, which will be submitted in February 2019, in the scientific journal Plos One.

The local community will have a great return of this research, through workshops and pamphlets, about the importance of biodiversity conservation, using the maned sloth as a close example. With this return, we expected the local community know more about biodiversity, facilitating its conservation.

With the results of which variables may influence the probability of occupancy of the maned sloth, we will have the subsidies needed for species conservation, necessary for ICMBio to establish action plans focused on the species. This may have

internal ramifications and direct applications in the studied municipalities, by promoting practical projects aiming at improving the establishment of habitat connectivity or the creation of conservation units. We will monitor this with a consultation to the public entities.

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 Rufford Foundation grant were use all over the period, starting in April 2017 and ending in July 2018. The grant was our main resource to carry out the field work, and we used all grant.

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
Vehical rental	1880	1880		
Fuel	720	750	-30	Changes in the fuel price in Brazil, since the project application
Field Assistant - subsistence payments for local team	1200	200	+1000	We dismiss the field assistance because in most part of our field work we made along with a maters student that developed a project about the yellow fever (managed by Muriqui Project) on the same region. This important partnership allowed us to save this specific budget, applying to other necessary items.
Thermo Hygrometer	30	0	+30	We decided to apply this budget in fuel.
Binoculars Nikon 7245 Action 10x50	300	300		
Food		1000	-1000	We included this item since we save money in other items.
Lodging	800	800		

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

The occupancy analyses will be one of the greatest goal of this research, since we will use a robust statistical analysis. After this, it will be very important to disclose such data, through maps with the maned sloth occupancy probability and scientific papers, for example. Other important step will be the application of these results, through their use by decision-makers, such government and other environmental institution.

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, the Rufford Foundation logo was use in some small lectures at Universidade Federal de Minas Gerais/UFMG, and will be use in all kind of material that we will generate.

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

Nila Rássia Costa Gontijo – field assistance (Yellow fever project)

Acrísio Perini Júnior – field assistance

André Gomes – field assistance

Adriano Pereira Paglia – adviser

Milton César Ribeiro – co-adviser

Adriano Pereira Paglia – co-adviser

12. Any other comments?

The Rufford small grant was – and is – essential to the execution and continuity of our project, that is part of Paloma Marques Santos PhD research. Though this grant, we could execute all field work successfully. And, thanks to our effort we found important results that probably will be confirmed after the statistical analysis. The ICMBio already cited and included our project as part of conservation plan of the maned sloth, and this is quite rewarding.