

## 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. 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**

Grant Recipient Details	
<b>Your name</b>	Jordi Salmona
<b>Project title</b>	Conservation, distribution and population size update of endangered nocturnal lemur species from Northern Madagascar
<b>RSG reference</b>	10941-1
<b>Reporting period</b>	June 2012 –November 2013
<b>Amount of grant</b>	£5987
<b>Your email address</b>	jordi.salmona@gmail.com
<b>Date of this report</b>	10 January 2013

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
1) Provide updates of <i>L. ankaranensis</i> , <i>M. tavaratra</i> , and <i>P. electromontis</i> distribution area, population size estimates and conservation status.				<i>Phaner</i> spp. population size, distribution and conservation status are still confusing and have to be updated using the collected data. <i>Microcebus tavaratra</i> and <i>Lepilemur ankaranensis</i> Conservation statuses and distribution updates were performed together with the IUCN/PSG committee, during a meeting in 2012. The report of the IUCN meeting has been published (Schwitzer et al. 2013) and can be found at the following address ( <a href="http://data.iucn.org/dbtw-wpd/edocs/2013-020.pdf">http://data.iucn.org/dbtw-wpd/edocs/2013-020.pdf</a> ). These data have been collected, part of the analysis and publication work still needs to be done.
2) Assess the effect of forest fragmentation on the populations and species' biology, correlating forest size, structure to natural history.				These analyses are performed in collaboration with two Malagasy students that I have co-supervised. They will be included in the Masters' thesis of Mohamed Thani Ibouroi for Sportive Lemurs (genus <i>Lepilemur</i> ) and will be part of the preliminary work of Ando Nantenaina Rakotonanahary who aims to develop a PhD project on <i>Microcebus tavaratra</i> . These data have been collected, part of the analysis and publication work still needs to be done.
3) Evaluate the effect of local population uses of the forest and traditional beliefs on <i>L. ankaranensis</i> <i>M. tavaratra</i> , and <i>P. electromontis</i> presence and densities.				These analyses are being performed in collaboration with the same two Malagasy students mentioned above and will be included in their reports in agreement with my PhD supervisor. The reasons why we collected fewer interviews than planned are discussed in the main report. Part of these data (forest uses) have been well collected. Fewer interviews than planned have been conducted.
4) For each visited forest fragments, we will provide general characteristics				Same as above but part of the data are already included in the main report. These data have been collected, part of the

(presence of mines, charcoal, zebu grazing, wood cutting, etc) nocturnal and diurnal vertebrates richness updates.				analysis and publication work still needs to be done.
At the landscape level, our study will provide patterns of nocturnal lemur species diversity and density, as this information is of high importance for local forest managers (Fanamby NGO and Madagascar National Park).				These data are included in the main report.
Concerning the educational and training aspect of the project, we will provide basic guiding and scientific field work training to two to four guides in each visited locality, and a complete training of two Malagasy Master students from Mahajanga and Antsiranana Universities. These trainings/courses will be composed of animal capture, handling and morphometric techniques, distance sampling methods, basic computing knowledge, computation of density estimates, basic statistics using the freely available R stat package and simple Geographical Information System tools (together with Google Earth).				See main report.

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

None.

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

Three advanced courses on GIS tools, animal density estimates, and the use of Excel were offered to the members of the teams during the field period. I conducted these courses. It allowed us to significantly increase the quality of the students' Master reports, analyses and led to shared publications in which all students took part.

Altogether the students fellows, and volunteers that were trained were: Mohamed Thani Ibouroi, Dhurham Said Ousseni, Ando Nantenaina Rakotonanahary, Andrianotahina Harivony Honoré, Tantely Nirina Ralantoharijaona, Radavison Zaranaina, Célia Kun-Rodrigues, Emmanuel Rasolondraibe, Fabien Jan, Barbara Le Pors and Marion Carreira .

Two scientific papers were published on the basis of the field data collected during the project or based on analyses done during the project. These two papers would not have been possible without the contribution of the Malagasy students, to gather the data, work on the GIS maps and compute independently densities. The expertise they gained during the field sessions were crucial.

Three students are currently analysing additional data that we collected during the project field work under my co-supervision. We plan to submit one or two simple papers to *Lemur News* in March 2014.

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

Local cooks and local guides were always hired in the localities or villages as close as possible to the areas we wanted to investigate.

Park agents and local guides together with volunteers, students and foreign volunteers were trained to the "line transect distance sampling" principles and practice. This allowed us to discuss the reasons why we were here and why we were interested in conservation. Discussions on the importance of conservation were also quite common when we decided to discuss how animal names were different across languages. By discussing the differences in Malagasy, French and "Latin" (i.e. scientific) names we could both learn each other languages and discuss the diversity of Madagascar vertebrates with guides and park agents. We also used field guides books as a support to illustrate the discussions, which allowed us to share our material. Local species were compared to species distributed elsewhere in Madagascar or illustrate Madagascar's peculiar biogeography and the important role of rivers and climate in driving diversity: in a few words, this allowed us to introduce local guides to some of the ideas that drive our work.

The importance of forest and biodiversity conservation was frequently discussed with guides, park agents and locals. The discussion was usually oriented in a way to led them to present their point of view concerning the deforestation-conservation trade-offs. In many ways this forced us (not them) to reconsider some of our simplistic view of conservation. It reminded us of their priorities, and of the fact that deforestation is often driven by the consuming habits.

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

My project is part of a more ambitious project which I wish to develop with my PhD supervisor. We cannot see our research work without practical applications in conservation. There are therefore plans to continue this work at different time scales.

In the upcoming couple of semesters I, together with other members of the project, will try to finalise data analysis and paper writing in order to publish the data gathered during the RSG project. In parallel we plan to keep working in the northern region of Madagascar, now focusing on the neighboring forests and inter-river systems (IRS). Different options are appearing.

On the first hand we would like to continue assessing lemurs' population distribution, density and conservation together with the sampling work done by the Population and Conservation Genetics Group.

On the other hand we are now developing a research and conservation project in the northeast (south of the region I worked on in this RSG project). This project will focus specifically on two forests that were visited in 2013 within the RSG project that was awarded to Mohamed Thani Ibouroi. Thani is a student that I have been co-supervising and whom I have trained for all the statistical methods he needed for his Masters project (density estimation, GIS analysis, basic statistics, etc.) since 2010. Thani obtained RSG funding for a project in which he plans to inventory lemurs and whenever possible provide new taxonomic data. I have helped him build the project and have been with him in the field together with several students. The two forest fragments that we visited, namely Analalava and Ambohitrandrina, are particularly interesting because of their peculiar geographic and conservation situation. They are close to the national road (i.e. not too difficult to access), but not yet managed and/or protected. As a consequence they are being actively degraded by a strong logging pressure. We thus aim to inventory and sample a largest range of vertebrates (not just lemurs) over a longer period in these two forest fragments. In fact we believe that it would be crucial to make our presence as permanent as possible in this area in order to build a trustful relationship with local communities and install the first steps of a reforestation/forest management project (administrative work and tree nursery plans). In fact we have started to develop a project together with previous Malagasy students, whom we trained in the previous years, and we created an association, which we hope could try and focus on forest management, reforestation and wildlife conservation in the Northern region of Madagascar.

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

The results of our work are currently publicised through different means. The different publications (articles, Master and PhD theses, and reports) are made available online as much as possible. Reports and papers are sent to all collaborators by emails as soon as they are published. Scientific posters are being (and will be) presented by the students and me in their own University and in National and international scientific meetings. News and pictures are also shared on the Facebook page of the team: <https://www.facebook.com/population.conservation.genetics.madagascar> which page was created during the project and is managed by most of the field members of the project.

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

The grant was used from July 2012 to November 2013. This is just a small two month shift from what was originally planned (May 2012 to October 2013).

**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.**

	Budgeted amount		Actual amount	Difference	Comments
	RSG (k£)	Other sources (FCT) Euros			
<b>BUDGET</b>					
<b>Equipment</b>					
Field Laptop netbook (250€ x2)	0.50		610.00	0.50	0.00
GPS garmin etrex H+connection cable (75€ x6)	0.22	0.22	524.60	0.43	0.00
Camping material, tent (50€ x4)	0.10	0.10	244.00	0.20	0.00
Rechargeable batteries for head lamp and GPS (AA and AAA 2€ x 100)	0.10	0.10	244.00	0.30	0.10
Battery Charger (8€ x4)	0.02		29.28	0.02	0.00
Head lamp (7€ x15)	0.11		128.10	0.20	0.10
Transportable Solar Panel (300€ x2)	0.30	0.30	732.00	0.60	0.00
Morphometrics material	0.05	0.05	122.00	0.10	0.00
Handling material (cotton bags and gardening gloves)	0.05	0.05	122.00	0.10	0.00
Blow pipe and consumables	0.20	0.20	488.00	0.40	0.00
<b>Personnel costs 1</b>					
Local guides (x4 x150€ per month x 8 months)	1.20	2.40	4392.00	4.20	0.60
Master student (x2 x100€ per month x 8 months)	0.80	0.80	1952.00	3.20	1.60
<b>Transportation</b>					
Travel from Portugal to Madagascar (1000€ x2)		2.00	2440.00	2.00	0.00
Team travels from town to field	0.10	0.10	244.00	0.20	0.00
Team travels from Locality to locality	0.30	0.30	732.00	0.80	0.20
4x4 location for extreme cases	0.20	0.20	488.00	0.20	-0.20
<b>Field costs</b>					
Food 10 month x 8 persons	0.70	0.70	1708.00	3.00	1.60
Parks and NGO Lodging	0.30	0.20	610.00	0.50	0.00
<b>Other costs</b>					
In town lodging (in Ambilobe)		0.20	244.00	0.20	0.00
Research permits (travels from Mahajanga to Antananarivo)	0.10	0.10	244.00	0.20	0.00
Local Master students defense	0.05	0.05	122.00	0.10	0.00
Overhead institution costs (10%)	0.59		723.46	0.59	0.00
<b>TOTAL</b>	<b>5.99</b>	<b>8.07</b>	<b>17143.44</b>	<b>14.05</b>	<b>0.00</b>

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

In the upcoming couple of semesters the members of the project will try to finalise data analysis and paper writing in order to optimise the valorization of the data gathered during the RSG project.

In parallel we plan to keep working in the northern region of Madagascar, now focusing on the neighbouring forests and inter-river system (IRS). Different projects' options are now appearing.

On the first hand we would like to continue assessing lemurs' population distribution, density and conservation together with the sampling work done by the Population and Conservation Genetics Group.

On the other hand we are now developing a research and conservation project in the northeast. This project will focus specifically on two forests shortly visited in 2013 during Mohamed Thani Ibouroy RSG project for lemurs' inventory and taxonomic purposes. These two forest fragments, namely

Analalava and Ambohitrandrina are of particular interest because of their peculiar geographic and conservation situation. They are close to the main road, not yet managed and/or protected and are actively degraded by a strong logging pressure. We thus aim to inventory and sample a largest range of vertebrates and plants over a longer period in this two forest fragments, make our presence almost permanent in the area in order to build a trustful relationship with local communities and install the first steps of a reforestation/forest management project (administrative work and tree nursery plans).

With the members of the project, during the last months of the field work, we built an association to facilitate these future projects. The association name is “Hazo tokana tsy mba ala” as the name being a Malagasy famous proverb literally meaning “a single tree does not make a forest” and with second meaning “union make strength”.

**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?**

The RSGF received publicity through the publications that involved time, advance courses or field work from the RSG project. Please find the list of publication below and note that the RSGF will receive publicity through all future publications following the criteria cited above.

Kun-Rodrigues C, Salmona J, Besolo A, Rasolondraibe E, Rabarivola J, Marques T, Chikhi L (2014) New Density Estimates of a Threatened Sifaka Species (*Propithecus coquereli*) in Ankarafantsika National Park. *Am J Primatol*

Salmona J, Jan F, Rasolondraibe E, Zaranaina R, Saïd Ousseni D, Mohamed-Thani I, Rakotonanahary A, Ralantoharijaona T, Kun-Rodrigues C, Carreira M, Wohlhauser S, Ranirison P, Zaonarivelo JR, Rabarivola JC, Chikhi L (2013) Survey of the critically endangered Perrier’s sifaka (*Propithecus Perrieri*) across most of its distribution range. *Lemur News* 17:9–12

Moreover, the RSGF logo has been and will be used in the reports published by Mohamed Thani Ibouroi, Dhurham Said Ousseni, Ando Nantenaina Rakotonanahary and Andrianotahina Harivony Honoré.

Finally the RSGF website and Facebook page received publicity through advertisement made in our group Facebook page.

**11. Any other comments?**

In the name of all participant of the RSG project I would to thank the RSGF for giving us the opportunity to bring this project to reality. This project allowed many of us to exchange knowledge, learn from each other’s, write scientific papers and have the opportunity to know each other much more up to the point that we decided to build an association together to continue working together for greater projects.