

## 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).

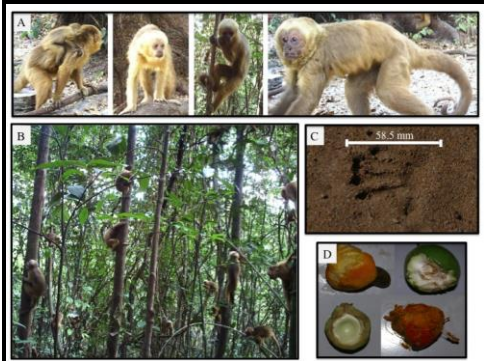
Thank you for your help.

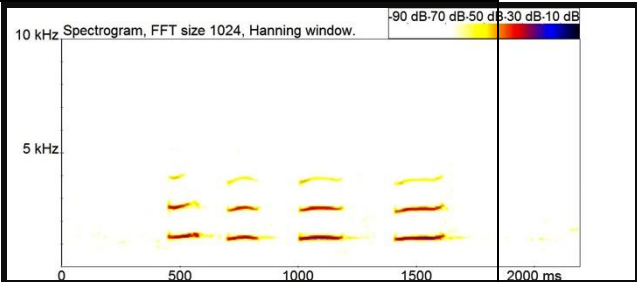
**Josh Cole, Grants Director**

Grant Recipient Details	
Your name	Bruna Martins Bezerra
Project title	In situ conservation of the blond capuchin, <i>Cebus flavius</i> , in fragments of Atlantic Rain Forest in the Northeast of Brazil.
RSG reference	7925-1
Reporting period	July 2010 to March 2011
Amount of grant	£6000
Your email address	<a href="mailto:bruna.bezerra@bristol.ac.uk">bruna.bezerra@bristol.ac.uk</a>
Date of this report	30/03/12

**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
Obtain fieldwork licences			✓	We have obtained the appropriate licences from The Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) to conduct the project in forest fragments in the Northeast of Brazil (Licence number: 25727-1)
Raise funding for a pilot season and a 1-year field season			✓	Funding for the project has been secured from the Rufford Small Grant, a Mohamed bin Zayed grant, Margot Marsh Biodiversity Foundation, and FACEPE (Fundação de Amparo a Pesquisa do estado de Pernambuco) and CNPq (Brazilian National Counsel of Technological and Scientific Development).
Establish field sites			✓	During the pilot season, two field sites have been established. One is located in the state of Pernambuco and has approximately 210 ha (07°47.162'S – 035°00.788'W). The forest fragment is property of the Usina São José. The other field site is located in the state of Paraíba and has approximately 800 ha (06°29.902'S – 034°29.704'W) (Figure 2). The site is property of the Mineradora Millenium Chemical Inorganic do Brasil SA. Formal authorization has been obtained to conduct fieldwork in the areas.
Survey the field sites and conduct behavioural and ecological observations of the monkeys			✓	A pilot field season has been conducted from September 2010 to February 2011. A second field season began in August 2011 and is currently on-going in both field sites established during the pilot season. Each field site has been visited at least one week out of each month. We have observed the animals directly (e.g. obtaining video footages, still images and recordings of vocalisations of the animals) and indirectly (e.g. detecting ground tracks, leftover diet items, excrements, and still images from cameras trap). The animals were

			<p>observed in primary and secondary Atlantic Forest, as well as areas of sand dunes, mangroves, sugar cane and corn plantations, all of which bordered the forest fragments. They were observed using all layers of the forest. The size of the tracks of the blond capuchins on the ground were <math>72.40 \text{ mm} \pm 3.12 \text{ SEM}</math> for hand (n=20) and <math>95 \text{ mm} \pm 2.87 \text{ SEM}</math> for foot (n=22). So far, direct observations and camera trapping revealed social groups of up to 52 individuals in the Pernambuco site and 72 individuals in the Paraíba site. A total of 24 different items was found in the diet of the species (ranging from fruits, leaves, invertebrates and small vertebrates). Infants have been observed in all fieldwork months so far and were usually carried by females (Figure 1).</p>  <p><b>Figure 1.</b> <i>Sapajus flavius</i> in the study sites. (A) Images of animals from different age classes and (B) of a monkey group obtained by our cameras trap; (C) Track of <i>S. flavius</i> on the ground; (D) Some of the species diet items.</p> <p>Recordings of the vocalisations of the blond capuchin have shown fundamental frequencies ranging from 0,5 to 4 kHz (e.g. Figure 2).</p>
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				 <p>10 kHz Spectrogram, FFT size 1024, Hanning window. -90 dB-70 dB-50 dB-30 dB-10 dB</p>
				<p><b>Figure 2.</b> Spectrogram of a blond apuchin contact call.</p>
Train students to work on the project			✓	Seven local students have been trained and had fieldwork experience through this project. One of the students entered an MSc course at the Federal University of Pernambuco and is working on our blond capuchin study as part of her MSc dissertation/project.
Optimise molecular techniques used in the project		✓		Non-invasive genetic techniques have been tested and will continue to be optimized at the Universidade Federal de Pernambuco (Brazil). These techniques will be used at the end of the field season (i.e. August 2012) to treat the biological samples that are currently being collected in the field (e.g. faecal and saliva samples). So far, over 300 samples have been collected.
Modelling geographic distribution		✓		The modelling of the geographic distribution of the species is in progress.
Writing papers to be published in scientific journals and scientific conferences			✓	Two abstracts have been accepted for presentation in the International Primatological Conference that will happen in August 2012 in Mexico: Bezerra B, Bastos M, Reed D, Souto A, Schiel N, Eason P, Jones G. Using camera traps to investigate aspects of the behaviour and ecology of wild blond capuchins, <i>Sapajus flavius</i> (former <i>Cebus flavius</i> ). Bastos M, Souto A, Jones G, Schiel N, Eason P, Reed D, Bezerra B. Vocal behaviour of wild blonde capuchins, <i>Sapajus flavius</i> (former <i>Cebus flavius</i> ). Manuscripts related to the project are currently in preparation.

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

Sadly, one of our collaborators passed away. We will miss Dr. Reed immensely. He was one of the responsible researchers for the genetic analysis of our project. Due to his death, his lab became no longer available and thus, we had to look for a new venue to conduct the genetics of the project. The analysis will now be conducted at the Universidade Federal de Pernambuco in Brazil. The initial contact with the new lab has already been made.

As another difficulty, I can only point out the challenges of doing fieldwork in privately owned forest fragments (i.e. owned by companies involved with sugar cane and mining industries). It was not easy to establish the field sites and have free access to the areas. The forest fragments are fascinating, but the fact that they are privately owned imposes some limitations to the study. For instance, for legal and safety reasons (and the companies' rules), there are limitations in the daily hours we can spend in the forest following the monkeys. Also, there are restrictions regarding the areas of the properties that we can enter.

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

1. Through the use of non-invasive techniques, we have been able to obtain new and important information on the behaviour, social and molecular ecology of the rare and Critically Endangered blond capuchins.
2. Several local undergraduate students have been trained through this project. They have acquired skills on ecology, behaviour and bioacoustics. They will be able to use these skills later on in their careers.
3. By using the blond capuchin as a flagship species, we have been able to indirectly help the conservation of several other species in the fragments of Atlantic Rain forest in the study sites.

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

Local inhabitants have been working as field-guides on the project. Their knowledge on animal conservation, behaviour and ecology has increased considerably.

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

A long-term research conservation project is planned for the blond capuchins. Over the course of the long-term project, we plan to train more Brazilian undergraduate students (fieldwork volunteers) and thereby enhance their understanding of non-human primates and foster their interest and expertise in conservation biology. We will encourage them to learn bioacoustics, habitat modelling and molecular techniques.

We intend to use the results of this project as basis for the creation of an effective conservation and management plan for the blond capuchins. We are hoping that our results will provide a basis for urgent conservation actions such as the designation of potential parks, reserves and protected forests, the creation of biological corridors and the implementation of a powerful conservation education plan in the area. This may even generate jobs for local people to work in ecotourism and research in the study areas.

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

We plan to present the findings of the project in:

Local and international scientific meetings (e.g. International Primatological Society Congress and Brazilian Primatological Society Conference). Two papers have already been accepted for presentation in the International Journal of Primatology in August 2012 in Mexico.

- Lectures at universities.
- Lectures at local schools to promote environmental education for local children, increase their knowledge about the types of animals present in the region, and enhance their awareness about the importance of the conservation of the forest fragments.
- Articles in scientific journals.
- Regular reports to sponsors.
- Articles in popular magazines and newspapers.
- Interviews broadcast on local television and radio.
- A short film about the study species, which will be presented in scientific meetings, schools and zoos.

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

It is worth to point out that the fieldwork schedule has changed to adapt the project to the availability of the study sites. From September 2010 to February 2011, a pilot field season has been conducted. The second field-season began in August 2011 and is currently on-going in both field sites established during the pilot season. The second field-season is schedule to continue until August 2012. So far, each field site has been visited at least one week out of each month. Overall, fieldwork time has increased from 10 to 17 months. The RSGF was used during the pilot season and part of the second season.

## 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
Hiring local field assistant (Field-guides and field-assistants subsistence)	3000	1430.1	1569.9	We managed to obtain a local scholarship for one of the field-assistants during part of the second field season, thus, reducing the costs with this item.
Fieldwork consumables**	500	401.94	98.06	Part of the fieldwork consumables were paid by other grants obtained for the project (e.g. Margot Marsh biodiversity Foundation, Mohamed Species conservation Fund)
Fieldwork molecular consumables	600	0	600	Part of the fieldwork molecular consumables was paid by other grants obtained for the project (e.g. Margot Marsh biodiversity

				Foundation, Mohamed Species conservation Fund) as well as through the collaboration with Dr. Reed.
Communication in the field	350	0	350	A local company in the Northeast of Brazil has provided a 3G internet dongle, reducing the costs with communication.
Petrol	800	176.09	623.91	Part of the petrol was paid by other grants obtained for the project (e.g. Margot Marsh biodiversity Foundation, Mohamed Species conservation Fund).
Car rent***	4500	3870.7	629.3	This item was included to allow the fieldwork travelling.
Fieldwork accommodation**	750	121.17	628.83	Part of the fieldwork accommodation was paid by other grants obtained for the project (e.g. Mohamed Species conservation Fund).
<b>Total</b>	<b>10500</b>	<b>6000</b>	<b>4500</b>	Exchange rate: £ 1 = ~ R\$ 2,72.

\*This is the actual amount used until March 2012 from the RSCG. The fieldwork is scheduled to continue until August 2012. Other grants were obtained to allow the completion of the field season.

\*\* In our RSGF application we had included the item "fieldwork accommodation" as part of the item "fieldwork consumables". Here we have treated them separately.

\*\*\*Item added to the budget as needed for the project. Overall, the grant money was relocated to the different items as needed.

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

In the near future, one important next step is to establish a long-term research/conservation project for the blond capuchin, a Critically Endangered species, currently on the brink of extinction. Areas with the species should be monitored and investigated using non-invasive techniques to minimise disturbance and stress for both the animals and the researchers. Several other threatened Neotropical primate species would also highly benefit from a long-term non-invasive research/conservation project.

## 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?

So far, I have used the RSGF logo in talks that I have presented at the Universidade Federal de Pernambuco. I will use the logo in my presentations in the International Primatological Conference in August 2012. Also, the RSGF will be acknowledged in all publications and media resulting from this project.

## 11. Any other comments?

We would like to thank the RSGF for the financial support provided. It was essential for the success of the fieldwork of the blond capuchin project. I truly hope to count with the support of the RSGF again in the future when conducting further research on animal conservation biology.