

## 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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#### Grant Recipient Details

<b>Your name</b>	Mariana Bastos Carvalho
<b>Project title</b>	Commercial hunting of endemic Columbidae birds in the island of São Tomé: extent, impact, and options for intervention
<b>RSG reference</b>	25.11.08
<b>Reporting period</b>	01.06.2009 to 30.06.2010
<b>Amount of grant</b>	£6,000
<b>Your email address</b>	<a href="mailto:marianafruitdove@gmail.com">marianafruitdove@gmail.com</a>
<b>Date of this report</b>	15.11.2010

**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
Assessment of the hunting pressure a) determine the number of bird hunters in the island		X		The total number of hunters was estimated and most of them were identified, but it wasn't possible to conduct all the interviews, besides the effort that way. So, this is still a work in progress. More than 50 interviews were conducted with hunters island-wide, of which almost a quarter specialised in bird hunting.
b) quantify demand and characterise consumers		x		This has proven to be a difficult task due to its variance throughout the territory. The places where bird meat is sold were identified, but also because of some suspicious behaviour, it wasn't possible to sample demand properly. Consumers were identified, some were interviewed and showed two kinds of opposite patterns; either rural consumers that catch birds for daily subsistence or middle/high class consumers that afford and buy a considerable number of birds for a special meal.
c) quantify bird offtake		x		The difficulty associated with this task is general, and has to do with problems of communication with the hunters. Even though they were available to cooperate, the frequency of hunting was unpredictable, so it was very hard to get access to offtake.
d) analyse patterns of hunting			X	Hunting patterns were sampled and analysed, and its seasonal and spatial variations. Hunters' profiles, methods used and preferential hunting sites were assessed.
e) quantify profitability and analyse alternative livelihoods		X		This objective was accomplished for a sub-sample of bird hunters.
Assessment of the population status and biological information				This was the main investment of the project and the task was fully achieved. There are clear patterns of distribution of the species, with spatial and seasonal

a) collect data on species distribution and relative abundance			x	variations, that can be statistically related to food availability and habitat characteristics.
b) gather information on habitat use and seasonal patterns			X	
c) collect information on the species biological cycles		X		The information is incomplete but for all the species data on breeding seasonality was collected and being processed, as well as biological information of the birds, like moulting patterns, fat accumulation and general biometrics.

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

One of the major difficulties of the project was to conduct periodic sampling of dead birds with the hunters, as it showed to be logistically very complicated. Most (or all) of bird hunters are partially enrolled in other activities, and hunting is a non-regular part of their professional life. So, it was very hard to find when they were out to hunt so that I can follow this activity. Still, a considerable travelling around the island was made in order to contact the hunters and assess their hunting patterns, even that most of the times we couldn't assess the offtake.

A new objective came during the project, as to somehow compensate for the difficulties felt in hunting follow, but mainly to improve the quality of the information of the census data. So that we could understand the patterns of distribution and abundance of pigeons throughout the year, we decided to conduct also a regular sampling of more than 100 fruit trees (the species identified within hunters interviews and other experts information as a part of the Columbidae's diets) of 20 species, in different locations and habitats of the island, so that we could assess the patterns of fructification and quantify food availability among them. This data is essential to understand the local and seasonal movements of the endemic pigeons, and to suggest regulation measures of hunting within different habitats and throughout the year.

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

1. The relative abundance of the four endemic pigeons in the islands' main habitats, and its seasonality – 250 points assessed monthly for a year and plus 100 assessed twice, in primary highland and lowland forest, secondary forest, shade forest and other habitats (savannah, agroforest, and palm).
2. The monthly phenology of 20 species of fruit trees (more than 100 trees) in the same habitats, and its fruiting patterns, sampled for a year, determining the food availability for the Columbidae species.
3. The assessment of hunting patterns and pressure over the bird species, and both its seasonal and spatial distribution within the island.

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

The involvement of local communities was basically restricted to the participating hunters, who were enrolled always that possible in the project. This included their active participation in the networking for other hunters and important contacts within the communities, but also a detailed explanation and awareness of the projects aims and methods, with some eventual participation on the search for sampling sites or feeding/nesting/other relevant information on the species. Two of the hunters were also identified to participate in an awareness campaign for local biodiversity, funded by ECOFAC, which included a 3-day training session and a community presentation of the value of biodiversity, made by themselves in their own communities. Other hunters were also contacted as field assistants for other ecological work being developed in the island, or as nature guides, which obviously gave them some economical reward and informal training, besides some empathy with the conservation cause.

On the other hand, I was invited to the discussion of the hunting law together with the competent authorities, which has been subject to approval since 1991. The discussion is not yet over, though some important aspects were now taken into account, namely the importance of weapons used specifically for birds (air guns), and the need to prohibit hunting to threatened species as the maroon pigeon. This is still to continue and the law is being rewritten.

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

Yes, definitely. The work has suffered from logistical difficulties, of personal type, that forced a delay on the fulfilment of all the objectives, though they are still to accomplish. At the present time a new round of sampling is to begin, focusing most exclusively on the hunting follow and offtake sampling, but also the role of hunting in rural life and the socioeconomics around this activity. This project, in a larger scale and with a broader team, has achieved funding from FCT (Project Foundation for Science and Technology), and though this is still to begin it will ensure that a complete picture of the situation of the endemic Columbidae of Sao Tome island will be assessed, and will reinforce the data achieved until now (and from now on), for the definition and application of specific hunting legislation and protection of the species.

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

For the first place, this is the basis of my PhD thesis, which will be published in a couple of years from now. It will be shared through the submission of scientific papers on the different issues studied during the time being. Besides, I intend to conduct oral and poster presentations in international and local meetings and to present reports (in Portuguese) to the local authorities concerned with the subject, which has already being made in an annual basis. It will also be used to develop an awareness campaign (eventually in local media and specifically in the communities of the Protected Area buffer zone) for the conservation of endemic birds and the threat posed by hunting (semi-professional and occasional), focusing on the need to respect biological cycles and relative abundance of birds.

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

The RSG grant was used for all the extent of the period initially previewed, so that all the sampling in the forest was completed (birds and fruits). The total project length was anticipated to be shorter than it turned out to be, due to some personal and health issues that arose during its completion. There was a reinforcement of the sampling of fruiting trees, not initially scheduled, that somehow compensated the lack of sampling of the hunting offtakes. This latter component is still being processed.

**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
Local field assistants	£4320	200 Euro*2*12 months = 4800 Euro £4224	£96	The NGO asked for a higher salary for field assistants than I had calculated before. So, I had to reduce the number of assistants to suit the budget.
Travel expenses – hunter follows and fruiting patterns	£900	Average 9 Euros/day*5days*12 months = 540Euro £475	£425	The expenses on fuel ended up to be higher than initially estimated, mainly due to the difficult terrain and the car type (4WD). There was a reduction on the initially previewed number of days out for hunter follows, but also an increase of the days out for sampling fruiting trees.
Travel expenses - census	£900	Average 15 Euros/day*9 days*12 months = 1620 Euro £1426	- £526	The same as above. There is also a surplus on these expenses for the regular longer distance to the main transects, and the addition of shorter transects sampled twice during the project period.
Daily expenses during field work (lunch)	£1800	Average 5 Euros/day*14 days*2,5 people*12 months = 2100 Euro £1848	- £48	Not always the three people were in the field at the same time, but most times expenses included more than just one meal, as at least one entire day in the field was needed to conduct sampling.

<b>GPS unit</b>	£400	£387	£13	
<b>Consumables</b>	£100	£86	£14	
<b>Field Material</b>	£150	£250	- £100	I bought some extra material needed for field work, namely a tent and a hammock, and a few more specific materials for the analysis of the caught birds. I will leave some of these with my partner NGO.
<b>Subtotal</b>	£8570	£8696		
<b>Contingency (10%)</b>	£8570	£8696		
<b>TOTAL</b>	£8656	£8783	- £1	

(NOTE: exchange rate used 1 Euro=£0.88, according to average conversion rates during project period)

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

1. An improvement of the sampling among hunters and more complete offtake information.
2. Define a work plan with the communities, authorities and stakeholders to develop the awareness of birds as unique heritage, and the need of controlling hunting.
3. Continuing the work with the authorities to establish the hunting regulations.

### 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?

At the present time it did not happen, because I still didn't leave Sao Tome for the dissemination of results. It is my intention to do it during the year 2011, with the presentation of data in two international meetings on Biological Conservation and Game Biology, for which I am preparing the abstracts to submit.

### 11. Any other comments?

I believe that great part of the deviation on the original budgeting was to do with the inflated prices of most products in the island (as most of them are imported), including canned or packed food, and the high consumption of fuel even in small distances, due to the vehicle characteristics and the rough terrain, which I wasn't used to consider.