

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	Galo Buitrón-Jurado
Project title	Magnet trees for birds in Venezuelan cloud-forests
RSG reference	9163-1
Reporting period	January 2011-January 2012
Amount of grant	£5146
Your email address	galobuitronj@yahoo.es
Date of this report	09 th April 2012

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
Document abundance of frugivorous birds and bird-dispersed trees in two cloud forests of Venezuela			X	Ten 1-ha plots were established in cloud forests of Yacambú National Park (5) and Altos de Pipe (5), bird abundance was recorded for 10 months and tree species collected and identified.
Document the foraging behaviour of frugivorous birds including threatened species.			X	We recorded more than 40 species of plants in the diet of frugivorous birds in each location; our data included data about the diet of one endemic parrot (<i>Pyrrhura haematotis</i>), as well as detailed data of fruiteaters <i>Pipreola</i> and three guans.
Identification of magnet trees important for frugivorous bird species			X	Important species in both locations were <i>Cecropia angustifolia</i> and <i>Miconia</i> spp., <i>M. theaezans</i> and <i>M. dodecandra</i> and the endemic <i>Rudgea karstenii</i> .
Support and train Venezuelan students about cloud forest ecology			X	Three students, Leonardo Alvarado, Vilisa Morón and Jessica Ortega participated in the project and received training in cloud forest ecology and fruit and tree diversity.
Provide tools and information to rangers and local stakeholders			X	Rangers from Yacambu and four nearest protected areas (Dinira, El Guache and Terepaima and Cerro Saroche National Parks) received an intensive course in bird, tree and fruit identification.
Make management recommendations		X		A complete checklist and a tree list for forestry actions in Venezuelan cloud forest was delivered to INPARQUES, they will begin to be implemented in forestry actions in Yacambu National Park (M. Méndez, pers. comm.).

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

As every field project some difficulties arose during the fieldwork and they should be shared. As in other few explored areas of the neotropics, to begin an ecological study is a challenge. The most

difficult task was the collection of fruit samples. Contrary to our predictions, tree species selected were sparsely distributed in the forest, they were difficult to localise and trees carried fruits for a short time. Furthermore, some species were dioecious which reduced the number of trees available to collect fruits. As a result, the fruit crop of several species used by birds was very small and difficult to obtain. On the other hand, our data showed that the main trees consumed by birds in both sites were species carrying small fruits. Due to the small size and large amount of fruits needed to obtain viable samples for conduct analyses of their content, extra field trips were needed. Additional field trips were realised during February 2012 for matching the fruiting season of trees in both locations. For this reason, fruit analyses should be delayed, and samples were finally sent the last month. Additional, difficulties were related to field assistantship because volunteers were in short demand. We solved this problem with an increase of volunteer fees, this increase was fair according with Venezuelan economy and the academic preparation of the participant students. Assistants from local communities were impractical because of the large distance between the study area and Sanare, besides of transportation fees.

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

1. Our project highlighted the importance of complete assemblages of frugivorous birds to preserve cloud forest dynamic. Small frugivorous birds as *Tangara* species were the main fruit removers in both locations; however, large fruit species were generally removed only by frugivorous birds of great body size.
2. Widespread species of trees as *Cecropia angustifolia* and *Miconia* spp. captured the larger amount of bird interactions in both locations acting as magnet trees and key resources in the forest. Nevertheless, endemic tree species as *Rudgea karstenii* and *Miconia towarensis* were important resources for birds in Altos de Pipe, implying that local tree diversity and fruit size is relevant to plant-animal interactions patterns and conservation actions.
3. To increase the local knowledge and sharing of information to local stakeholders is important to promote effective protection of tropical protected areas as Yacambu. Local communities are not completely aware about the importance, value and potential of native species in their lands. One important outcome was to provide scientifically data, training and advise to the rangers in order to help them with monitoring of biodiversity (species recognition) or forestry actions (assess the importance of native fruiting trees in the forest).

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

This project was planned to improve conservation actions based on the generation of ecological research in Venezuelan two cloud-forest areas, especially at Yacambu National Park. Three students working with cloud-forests birds were included and financially and academically benefit of the project because they participated as field assistants during the project. Additionally, one of the main objectives was to improve and provide didactic and useful material to the rangers for conservation activities in Yacambú. We conducted a workshop which included not only the rangers of Yacambú, but included also to rangers from four additional national parks with similar ecological conditions in Lara State. Rangers were trained and they learned about how to identify birds and fruits and how to use bird checklists and field guides to confidently recognise species within their parks. It is important to note that our checklist for Yacambu was especially welcomed by rangers of Guache National Park (the nearest park to Yacambu) where any bird inventory has been performed. The workshop and field plates were useful resources for helping rangers in their efforts to protect trees and birds by

means of environmental education of visitors and surrounding communities. They should promote the use native trees for forestry plans because species selection could not be performed without a minimum knowledge of the relative abundance of the species in the forest. Besides, they can recognise similar species of trees and what types of seeds can be hold for several months. Our inventories indicated also the presence of valuable timber species in Yacambu as *Tabebuia chrysantha*, *Billia rosea* which seems to represent local varieties adapted to cloud forest. Nevertheless, it is needed to conduct trials to determine the forestry potential of this seeds. On the other hand, they are now using this knowledge to improve tourist experience in the park. A similar effort was performed with the local community (including children) to highlight the importance of Yacambú as a refuge for threatened and endemic species as blood-eared parrot (*Pyrrhura haematotis*). Even when local people know the species they were surprised during the workshop by the fact of its distribution restricted to Venezuela. These activities have raised the interest of people in the biodiversity of the park and their importance to protect their water supply.

5. Are there any plans to continue this work?

Since I am nearing the end of my MSc degree, I do not plan to have another field season. However, most of the equipment necessary to repeat the project remains at Centro de Ecología of the Instituto Venezolano de Investigaciones Científicas (IVIC). Furthermore, some activities are in an ongoing progress to be completed in the next months including the editing and uploading of bird song repertoires and labelling and delivery of botanical samples to the Venezuelan National Herbarium. During the next months, scientific publications will be prepared and submitted to complete the extension of results. I will gladly assist any Venezuelan student with interest in study related aspects of bird plant interaction in Yacambu or Altos de Pipe. Currently, some of the botanical samples have been used by J. Grande from the National Herbarium of Venezuela in an ongoing study of Venezuelan bamboos.

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

This project was developed in order to be presented as part of the requirements for obtaining my Mastership thesis at the IVIC. Nevertheless, until now project information has been released in several ways to interested parties. First, didactic plates, posters, photos and the bird checklist has been delivered to INPARQUES personal for their use in Yacambú, El Guache, Terepaima and Dinira National Parks during the workshop conducted in October 2011. Furthermore, talks were presented to children of El Hacha community, near Yacambu Park. A collection of native fruit was also delivered to the rangers for permanent exhibition in Yacambu to help with their activities of environment education. On the other side, preliminary results were presented during a scientific talk in the IX Ornithological Congress in Cusco, Peru. It has been planned to sent two scientific papers to a wider academic audience, this goal is in ongoing process and publications will be developed immediately after of the Mastership document approval. As previously mentioned, bird song records are being prepared before upload them in XenoCanto database, which provide online access to any person with an interest in bird identification or the study of bird songs. Botanical samples will be delivered to the National Herbarium in Caracas to provide access to interesting parties.

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

The RSG funds were used throughout the duration of the fieldwork as planned. Plots in Altos de Pipe and Yacambu were monitored monthly since January 2011. Nevertheless, we needed to perform additional field trips to Yacambu in order to obtain fruit samples. Other expenses were accomplished according with the schedule with the exception of fruiting content analyses which was delayed due to the difficulties in obtaining appropriate amount of fruits.

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
Equipment (rangefinder, digital recording gear, others)	926	1262.66	-336.66	Savings from transportation and postage permit me to buy additional equipment (hard drive, binoculars).
Materials (alcohol, bags, vials, batteries, string)	162	258.66	-96.66	I spent more materials due to the large number of botanical samples obtained in both areas.
Food & Postage	1884	1641.93	242.07	
Field Assistant fees	166	450.11	-284.11	Salaries were calculated at a lower cost, but we need to increase the fees for participant students.
Travel expenses	693	556.56	136.44	Transport for four trips was provided by IVIC without charge.
Fruit content analysis	962	622.66	339.34	A lesser number of fruit samples could be obtained for analysing.
Publication of results (poster, didactic plates, copies)	352	312.57	39.34	
TOTAL		5105.16	39.84	1 GBP=1.55 USD= 4.3 BsF

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

During this project, a large amount of data were collected which need to be analysed completely before the submission of my MSc Thesis document. Considering this, ongoing work is being carried out to submit a final draft on July 2012. After that, we need to spend time for writing academic papers. This information will contribute to the assessment of the extinction risk of several species found in Yacambu as helmeted curassow (*Pauxi pauxi*) and blood-eared parrot (*Pyrrhura haematotis*). Likewise, we are still identifying botanical samples in order to provide a definitive and complete checklist of tree species found in Yacambu to INPARQUES. The results of the project indicated that endemic tree species act as magnet trees, thus is important to promote the replication of this project in other areas in Tropical Andes to determine how large scale forestry plans could include native species in their efforts. Nevertheless, my project did not assess the performance of seeds for forestry actions, an important step in order to promote a wider use of

native tree species for forestry plans. Looking ahead, this kind of studies using species as *Miconia theizans*, *Cecropia angustifolia*, *Richeria grandis*, *Vismia lindeniana* and others should be performed.

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?

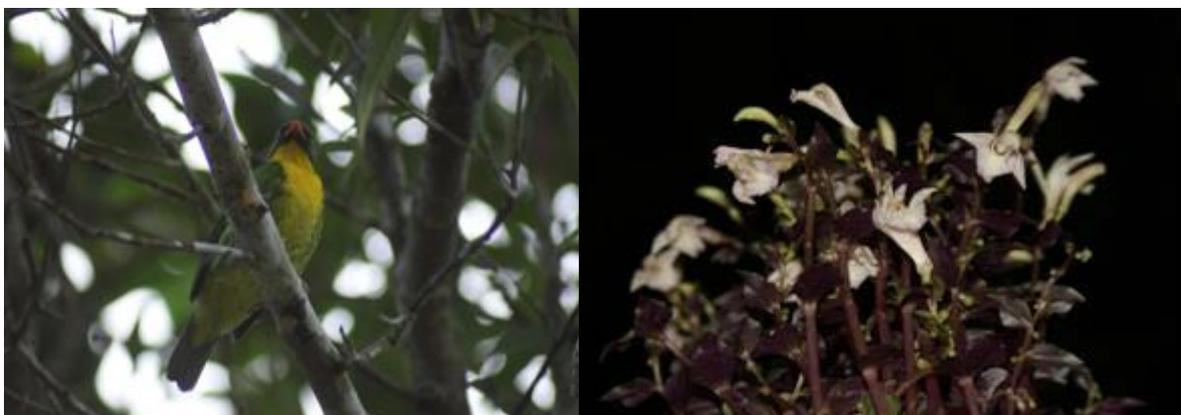
The RSGF logo was used in all material related to the project included posters and didactic plates delivered to the rangers and personal of The INPARQUES direction in Lara. RSGF logo was used also in my talk at the IX Ornithological Congress in Cusco, Peru and in Yacambu National Park talk with the community. RSGF is going to be acknowledged and mentioned in the Mastership thesis manuscript and will be acknowledging in any subsequent talks, presentations or writing publications.

11. Any other comments?

I sincerely appreciated the support of Rufford Small Grant Foundation. I look forward to collaborate with the foundation, and I believe that this kind of efforts make possible to think in carrying out high level conservation activities in tropical countries. They are many interesting aspects waiting for study in South American cloud forests; my project could only scratch the surface of this ecosystem.



Left: Rangers from Terepaima National Park identifying fruits and tree species found in Venezuelan cloud forests. **Right:** Talk with the children from El Hacha, adjacent to Yacambu National Park.



Left: Golden-breasted Fruiteater (*Pipreola aureopectus*) an important fruit remover in Altos de Pipe, Venezuela. **Right:** Unidentified orchid species found in Yacambu National Park during botanical sampling.