

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	María José Andrade Núñez
Project title	Multi-scale analysis to predict local mammal species richness and composition in a human dominated landscape in Rivera Uruguay
RSG reference	35.12.07
Reporting period	January – December 2008
Amount of grant	£ 4,983
Your email address	quecucha@gmail.com
Date of this report	09 June, 2009

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
Determine land-use changes from 1990 to 2007 in the department of Rivera, Uruguay		X		Satellite images corresponding to 1990 were difficult to find and I had some problems classifying the images. However a land-use map of the study area was developed with Aster images from 2007.
Determine mammal species richness and composition in native forest, grassland and exotic tree plantation and determine which habitat and landscape variables are the best predictors of local species richness.			X	In addition I performed the analysis using relative abundance data of the species recorded. Furthermore, I performed an analysis using the data of the most abundant species recorded (<i>C. thous</i> and <i>D. novemcinctus</i>) to determine the spatial scale at which the abundance of these species is responding to habitat variables and habitat transformation.

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

Satellite image classification was difficult, mainly because it was difficult for the computer program to distinguish between native forest and exotic tree plantations. I used different programs such as Envi, R and Phyton to image classification. However after different procedures I could produce a confident land-use map of the study area.

The brand of camera traps that I used worked properly in general, however I had some difficulties to set them when the climate was too cold or too hot.

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

- 1) One of the most important outcomes of this project is that mammal community within a plantation matrix landscape is characterized by a predominance of generalist species and a low proportion of specialist species.
- 2) In addition, habitat and landscape variables were important determining the species richness, abundance and composition of medium and large mammals. The percent of forest and grassland in the landscape were important factors determining the species composition and abundance of species because most of the species use these habitats as primary or secondary habitat.
- 3) Another outcome is that *Eucalyptus* plantations can have positive and negative effects on medium and large mammals. Plantations are positively affecting mammals by increasing the local distribution of some forest species that avoid grassland. In contrast, plantations are

negatively affecting the local distribution of species such as *Dasypus hybridus*, a grassland specialist armadillo and the abundance of some other species.

- 4) Multi-scale approach at species level was useful to elucidate differences in the scale of response between *C. thous* and *D. novemcinctus*. From these results several conservation activities can be delineate to conserve these and other rare species.
- 5) Two conservation activities are proposed to conserve the mammal community in the region. The first is to conserve gallery forest by reducing logging and cattle grazing. This will help to maintain habitat characteristics that are relevant for medium mammals. Another important conservation activity at landscape scale would be to increase grassland buffer zones between plantation and forest to reduce the impact of plantation management procedures on forest species and to allow the persistence of grassland species within the plantation matrix.
- 6) Additionally, *Leopardus wiedii* (margay) was recorded by a photograph in one forest gallery. This species have not been detected in the region for a long period.

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

I conducted the study in properties of COFUSA Forestry Company. Part of my work was presented to the company as an internal report where conservation activities were proposed. The company will use this report in the annually certification evaluation.

5. Are there any plans to continue this work?

Yes. I would like to continue working with the forestry company to develop mammal surveys in other areas. In addition I expect that part of my Ph.D. will include a chapter on this theme or a related theme.

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

As I mention above I wrote an internal report for the forestry company where I conducted my research. I am also writing an informal note to the forestry bulletin and for a local newspaper of Uruguay and I am writing a manuscript that will be submitted in a scientific journal. This work is my master thesis so it will be also available at the library of the University of Puerto Rico on paper and microfilm format. As part of my master I orally presented my work to professors and graduate students at the University of Puerto Rico.

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

The RSG was used between January and December 2008 to conduct the field work of my master thesis. This was the period considered in the proposal. From March to June 2009 I worked in the data analyses and in the elaboration of the final manuscript and notes.

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
Per diem field assistant for 5 month	726.85	448.69	278.16	Field assistant in the second and third survey were needed just one day per week. Difference were used for cover gasoline, camera traps and part of compact flash card differences.
International transport for the research	1162.94	1226.93	- 63.99	Changes in travel rates and price availability
Gasoline	1000	1167.53	-167.53	High cost of gasoline in Uruguay approx. £ 1 per lt. and I did more long travel than expected
Camera traps	1308	1357.38	-49.38	Some cameras were stolen and I had to buy more
Compact flash card	116.28	243.48	-127.2	Some cards stop working and I also bought more to remove and place cameras in the same day
Batteries	203.4	290.164	-86.76	The duration of the batteries was less than expected
Data loggers	465.18	378.607	86.57	Difference was used to cover batteries difference
TOTAL	4982.65	5112.78	-130.136	(*)

Exchange rate= 2.01 American dollars per 1 £ sterling (exchange rate used by December 7 2008)

(*) Total difference was covered by other financial support.

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

The next step is to publish the results of this work in a scientific journal and in some Uruguayan journal or newspaper to contribute to the improvement of the knowledge of our fauna and their threats and to make that the scope of this work goes beyond the scientific world.

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?

I used the logo in my master thesis presentation and in some T-shirts that I used during the field work. I pretend to use the logo in the notes that I am writing for the forestry bulletin and for a local newspaper.

11. Any other comments?

I want to thanks the foundation to believe in my work, and to support me to make my dream of working in my country true. Thanks a lot!