

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details

Your name	Javier Pereira
Project title	Conserving carnivores in a country of cows: effects of cattle management on the spatial ecology and demography of Geoffroy's cat in Argentina
RSG reference	44.09.06
Reporting period	March 2007 – March 2008
Amount of grant	£ 5,000
Your email address	javipereira@yahoo.com
Date of this report	April 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
To capture and radio-collar 20 Geoffroy's cats (10 in the protected area and 10 in adjacent cattle ranches)		X		I caught and radio-collared 13 cats in the park and 9 in the ranches. Although the number of cats equipped in ranches was lower than the originally planned, these animals were monitored for relatively long periods of time. This fact helped me to obtain solid information in spite of the lower number of animals.
To estimate through radio-telemetry home-range size, habitat use, and movements of captured cats			X	
To estimate density of Geoffroy's cat through camera trapping			X	
To estimate the survival rate of adult and cub Geoffroy's cats in both areas		X		Survival rate of adults was successfully estimated. However, I failed to estimate cub survival because I was unable to find the necessary number of litters to perform the analysis.
To estimate litter size and seasonality of births			X	
To estimate main causes of mortality in the studied population of Geoffroy's cat			X	

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

The study area was subjected to a prolonged drought during the period 2005 – 2008. As a result, several Geoffroy's cats dispersed from the study area during the course of the study. Although this fact partially affected the long-term estimation of some parameters of the spatial ecology (e.g., long-term home range) of the two subpopulations (park and ranches), I obtained valuable information on an additional demographic variable: the dispersal rate.

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

- I studied for the first time the effects of livestock management and associated disturbances (e.g., hunting) on the ecology of Geoffroy's cats by comparing diet composition, prey selection, home-range size, daily movements, density, and habitat preference between cattle ranches and an adjacent national park. My results showed that Geoffroy's cats exhibited behavioural plasticity, as the two subpopulations in close proximity had contrasting trophic and spatial ecology. To the best of my knowledge, this is the first thorough study to estimate the effects of livestock management on the spatial ecology of a small-sized feline in the wild.
- My study provides the first estimates of survival, cause-specific mortality, litter size, and emigration rates and distances of Geoffroy's cats in the wild. To the best of my knowledge, this is the first study to obtain comparative information on these demographic parameters for a wild feline in South America.
- I have proposed a new mechanism (the "hypothesis of the matrix with intermediate demographic adversity") to explain the dynamics of Geoffroy's cat population at the landscape level. This mechanism intend to explain the interaction between subpopulation of the species inhabiting patches with different habitat quality and highlight the role of protected areas for the maintenance of healthy subpopulations of the species from the demographic point of view.

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

Local cattle ranchers actively participated in the project. Since I conducted most of the study on their properties, they were involved in several stages of the work (e.g., capture of cats, monitoring by radio-telemetry). We discovered that one of the potential threats to predators in the region is the transmission of infectious diseases from domestic (cats and dogs) to wild carnivores. In order to deal with this problem, the veterinary team of the project taught ranchers some tips to keep their pets, providing medicines and advice to improve the health status of domestic carnivores. This information was transmitted from rancher to rancher in the region, increasing the effectiveness of our action and the health of domestic cats and dogs.

5. Are there any plans to continue this work?

Yes. I believe is necessary to obtain more data to support the existence of the above mentioned hypothesis; thus, I'm planning new objectives to continue this work. On the other hand, several new objectives have been inferred from this project. Although some of my students are currently working on some of this objectives, I'm planning a new project with high impact for the conservation of this species. I will shortly apply with this project to a Booster Grant.

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

First, I have sent my PhD thesis to several colleagues interested in carnivore issues. I have also presented (in paper and talks) the main results of my work to political authorities and managers in charge of the species and the area of coverage of my study (La Pampa Province and the National Wildlife Agency). I have already submitted three manuscripts for publication (*Journal of Zoology*, *Journal of Mammalogy*, and *Biological Conservation*). Finally, I'm writing informative material to publish the results of my work in popular magazines, in order to present the Geoffroy's cats status and threats to the general public.

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

Due to the drought occurred in the area, several cats dispersed shortly after been collared. For this reason, some animals provided scarce information to study their spatial ecology. To increase my data pool, I expanded the study period to 1 additional year (until March 2009) and performed a new capture attempt to equipped cats with collars. These activities extended the expected length of the project in 1 year (March 2007 – March 2009) and let me obtain enough data to accurately describe the spatial ecology of the species.

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
Radio collars	1920	1920	0	
Gasoline - <i>Partial</i>	350	480	+130	More miles were needed to monitor the collared cats
Accommodation and food	1430	1400	-30	
Batteries - <i>Partial</i>	250	300	+50	More batteries were needed to run the camera traps
Photographic film and processing - <i>Partial</i>	220	220	0	
Maps and satellite images	90	90	0	
Disposable materials and drugs	590	590	0	
Contingency	150	150	0	
Total	5,000	5,000	0	

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

I feel that at least two studies could be important for the conservation of the species. First, based on the ability of Geoffroy's cats to live in cattle ranches, I have demonstrated that they are flexible predators. However, in order to obtain a generalized pattern, new studies should be performed considering other types of disturbances (e.g., cultivated fields, forestry plantations). Each disturb type has its own way to modify the habitat and prey abundance, suggesting that different abilities could be necessary to survive under different scenarios. Second, I have demonstrated that the species has the ability to disperse long distances (up to 130 km) in spite of its relative small size (up to 5 kg.). This ability may have a strong influence on the gene flow and genetic structure of populations, even in highly-fragmented areas. A project based on the comparison of the genetic structure and gene flow between populations of Geoffroy's cat in regions with different degree of

habitat alteration and fragmentation could bring important information to accurately manage and conserve this species.

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?

Between 2007 and 2009, I have presented the project in three international scientific meetings and three national scientific meetings. The support of the Rufford Small Grants Foundation was always stated in these events. In addition, articles on the project activities have been published in the newsletter of the NGO I belong to (ACEN – Asociación para la Conservación y el Estudio de la Naturaleza) and in two specialized magazines of USA: *Wild Cat News* (the newsletter of The Cougar Network) and the *Newsletter of the Feline Conservation Federation*, where I highlighted the Rufford support. In the same way, the Rufford support was stressed in a complete report about the project presented to the IUCN – SSC – Cat Specialist Group. This report was then highlighted as the “Project of the Month” in the web portal of the IUCN – SSC – CSG (http://www.catsg.org/catsgportal/project-o-month/02_webarchive/grafics/october2007.pdf).

11. Any other comments?

Since a lot of information was obtained during the course of this study, and all this information constituted part of my PhD thesis, I considerably delayed my final report to Rufford Small Grants Foundation. After a year of processing data and writing up my thesis, I finally obtained my PhD degree at the end of 2009. I’m currently translating my thesis from Spanish to English as a final report to Rufford, but this is – for me – a long time-demanding work.