The Rufford Foundation
Final Report

Congratulations on the completion of your project that was supported by The Rufford 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	Paula Leticia Perrig
Project title	Multitrophic links in the high Andes: importance of the puma-vicuña interaction for the conservation of Andean condors
RSG reference	20483-1
Reporting period	November 2016 - November 2017
Amount of grant	£4800
Your email address	pauperrig@gmail.com; perrig@wisc.edu
Date of this report	2nd of December, 2017

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
Marking and tracking Andean condors				
Monitor condor use of puma-killed camelids via camera traps				
Experimentally evaluate the degree to which different habitat factors influence the use of carcasses by condors				
Visit elementary and high schools and engage students in activities – including the creation of murals – to teach about condors, pumas, and camelids' biology, ecological interactions, and threats.				
Offer public workshops on condor conservation targeted to local ranchers, hunters, and provincial wildlife managers.				We worked closely with the provincial environmental ministry and the national park service in Argentina to distribute the information that we gathered during this study as well as scientific literature, educational materials, and visual media to share with the public during workshops.

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

The unimproved roads that access San Guillermo National Park (SGNP) were closed during different moments of our field season, generating logistical difficulties and delays in our schedule. For instance, part of our crew took 3 days and the support of four trucks to reach the area. When personnel were not able to leave or enter the field site, park rangers helped us access food and field supplies. We were able to tackle these difficulties thanks to invaluable logistic support by park rangers, resultant of the relationship our team has built with them.

Additionally, two tracked Andean condors stopped transmitting at the beginning of the year. We dedicated much effort to determine what happened to these tags or

birds, and to report to wildlife managers our findings. In particular, we were able to confirm that at least one bird had been poisoned. Here, again, we were able to react by having flexibility on our timeline and thanks to logistic support from the National Park Service.

We visited a number of schools during this project, but this took much more effort than anticipated due to unexpected teacher's strikes combined with highways being shut down so that students were unable to attend school.

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

We were successful engaging children in the condor-puma-camelid conservation and the protection of pristine landscapes by working with local high schools. We visited the institution Antártida Argentina, Angualasto, San Juan, where we worked with 19 students aged 12-15. During 2 work days, students conducted hands-on activities to learn about: (1) The main biological characteristics of emblematic species in the Puna ecosystem, (2) Direct and indirect interactions between these species, focusing especially on that of the condor-puma-camelid, (3) Conservation problems of our study species, and (4) The importance of conserving pristine ecosystems, with focus on SGNP. Since the school principal did not authorise the creation of a mural in the institution, we donated a 5 x 5 m plastic poster of the park. We also worked with the institution Bachillerato Columna Cabot, Villa Iglesia, San Juan. Here, we offered a 30 minute talk to ~100 students about the biology and trophic dependencies of condors, pumas and camelids, and our research project in SGNP. Then, a smaller group of 29 students worked on the topics 1-4 described above, and created a mural lead by biologist Juan Kantor. Finally, we visited a third high school in Cordoba province where we explained to 60 students our research project and its implications.

The second main outcome was successfully capturing and tracking Andean condors, and obtaining estimates of survival rates by confirming the intentional poisoning of condors. These findings were promptly informed to local wildlife managers.

Lastly, we collected enough field data to examine if there is a relationship between the availability and distribution of carrion with condor feeding habitat to understand how tightly linked pumas and condors are, and how climate, topography and habitat type (e.g., plains vs. canyon vs. meadows) influence condor selection and access to carcasses across the landscape. In particular, using camera traps we monitored 13 fresh vicuña carcasses and 22 experimental feeding stations to evaluate their use by scavengers. I am currently analysing the collected data.

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

As a result of our work on high schools, elementary school students of the Villa Iglesia, San Juan, conducted a research project on Andean condors – on which we assisted by providing bibliography and visual media – and participated on a regional

competition for schools. Since this is a public contest that involves all institutions of the province, the information reached most local families. Additionally, six local park rangers of SGNP were involved in all research activities, giving them enhanced experience with our research methods. All outreach activities were conducted in conjunction with the SGNP park rangers, in hopes that this will serve as a starting point for future educational opportunities provided by researchers and staff of SGNP.

5. Are there any plans to continue this work?

We have been conducting research in SGNP for several years, and will continue to do so. We plan to continue working closely with the Environmental Ministry to offer public workshops on condor conservation targeted to local ranchers, hunters, and provincial wildlife managers. This work will continue to raise awareness of the value of biodiversity in local communities.

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

Our results will be shared to the general public through newspaper articles, an active Facebook page, and a video that is being conducted with partners of the National Geographic. We already shared some of our results via reports provided to the environmental ministry, and we will continue to do so. Lastly, our research will generate scientific contributions, shared in peer-reviewed journals and meetings, to the understanding of condors, their trophic dependencies, and local conservation needs.

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

The funds granted were used between January and June of 2017, as planned, after which the collected data continues to be analysed as part of my doctoral dissertation.

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. 1 £ sterling = 18.436 ARG

Item	**Budgeted Amount**	**Actual Amount**	**Difference**	**Comments**
Financial cost	0	12	+12	Banking charges.
Ground transportation	700	547	-153	We had to drive more than expected, reducing the use of public transportation and increasing gas expenses.
Gas for vehicle	600	1092	+492	

Vehicle maintenance	1000	696	-304	The labour that the field truck needed was donated by a mechanic. Thus, we only paid for replaced vehicle parts.
Educational activities	1000	776	-224	Painting supplies were less expensive than originally anticipated, but these additional funds were utilized to offset unexpected costs associated primarily with food and gas.
Food in the field	1500	1677	+177	Because roads that accessed our field site were closed due to rain on several occasions, our fieldwork was extended. In addition, I needed a bigger field crew than planned (3 vs 2) since the experimental work was physically intensive.

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

Illegal hunting and habitat loss are main causes of biodiversity loss in the study region while many families live from intensive, unsustainable gold mining. Thus, educational activities and controlling poaching are paramount, with intensifying outreach as the critical next step. Meanwhile, further research should focus on spatial prioritisation for the joint conservation of condors, pumas and camelids.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

The RF logo was used in all talks given in local schools. We will continue to use it in future presentations of our results.

11. Any other comments?

Outreach is key for the conservation of Andean condors, pumas and camelids, and I found local interest and motivation to work on the subject not only from the general public and also from wildlife managers. I am very thankful for the opportunity to bring my research to the local community, and after this experience, I am convinced that any project would benefit tremendously from collaborators and additional resources aimed specifically at outreach.

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