

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	A. Sofia Nanni
Project title	Consequences of ecological and land uses heterogeneity over multiple Ecosystem Services provision and biodiversity in a subtropical landscape of NW Argentina
RSG reference	18142-2
Reporting period	February 2016- March 2017
Amount of grant	£5000
Your email address	sofiananni@gmail.com
Date of this report	April, 4 th , 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
1- 2016 land cover map will be derived from Landsat TM images.				A 2016 land cover map for the study area was developed but was not used and its accuracy was not evaluated because through visual identification we noticed minor changes in comparison with the prior mapping date (2006), thus using that map was the same for our purposes.
2- 1986 and 2016 spatial explicit models of soil erosion will be performed with RUSLE				Spatial explicit models of soil erosion were successfully developed, which allowed us to calculate changes in soil retention due to land cover changes.
3- More robust quantitative assessments of the consequences of extensive and intensive land use trends and anthropogenic variables				Through additional sampling we achieved more robust results regarding the consequences of different land use practices over biodiversity. However, due to a lack of time we decided not to include trees in our analyses nor did we sample biodiversity in grasslands.
4- The generation of biodiversity (birds, medium-large mammals, trees) spatial explicit models				This objective was achieved with the use of MAXENT software, which generates species distribution models based on presence points, and associates species' frequencies with explanatory variables.
5- An integration of the biodiversity layers with other ES layers (crop yields, extensive and intensive livestock heads, forests carbon storage, soil erosion) in order to identify "hotspots" of ES provision and biodiversity conservation, spatial trade-offs and synergies				This objective was achieved and the tradeoffs and synergies among ES and biodiversity were assessed throughout the project.

and "cold spots" where both components are threatened by current land use trend				
6- The communication of the results and spatial explicit models to local authorities and the general public, in order to contribute to ongoing land use planning participatory initiatives.				This objective was achieved through: 1- a presentation at a conference; 2- the elaboration of a report for the Secretary of Environment in the province, from which one of the members contacted me because certain areas of the region have been selected for conservation in the on-going land use planning schemes; 3- currently one of the managers of a provincial protected area towards the east of my study area, contacted me for information about biodiversity in the area, which I provided; and 4- we began to monitor vertebrates biodiversity within the protected area to compare it with the data I collected outside its limits.

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

We did not come up with any unforeseen difficulties other than a lack of time to successfully perform all the proposed activities.

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

The three most important outcomes of my project are:

- 1- The simultaneous evaluation and spatial explicit assessment of multiple ES and biodiversity groups (birds and medium-large mammals).
- 2- The analysis and consideration of the role of landscape heterogeneity in shaping and conditioning both ES and biodiversity features and land use practices.
- 3- The identification of areas of conservation opportunities and priorities and the communication of this information to the local authorities and managers.

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

Local communities were not involved in the project *per se* but local authorities to whom the report of my results was sent are currently working with them in selected areas where conservation schemes will be applied.

5. Are there any plans to continue this work?

Yes. I will continue with this work but will focus on the lowland areas, where most threats due to agriculture expansion are found. These areas belong to the Gran Chaco, currently one of the most threatened areas globally, which also exhibits great conservation value.

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

My results have been shared and will continue to be shared through many means:

- 1- Publication in high impact journals - currently there are three publications in high impact journals concerning the results of this project and another one which constitutes the synthesis of this project has recently been sent and is under review in *Ecology & Society*.
- 2- Oral communication at workshops, national and international conferences - so far the result of my project have been shared at * Seminario de Desarrollo Profesional (PDS) sobre Gestión de servicios ecosistémicos de bosques tropicales, 25- 29th July, 2016 Liberia, Costa Rica (poster); * poster at Binational Ecology Meeting, Puerto Iguazú, Argentina. September, 2016 and * oral presentation at Global Land Project's 3rd Open Science Meeting, Beijing, China 24-27 October, 2016.
- 3- The development of a report for local land use planning, requested by the decision makers of Secretaría del Medio Ambiente, Tucumán, Argentina, with the main findings of the study and identifications of opportunities and threats for conservation in the study area, in the context of land use planning for that particular region.

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 Rufford Foundation grant was used over the period March, 2016- March, 2017. Overall this agrees with the anticipated length of the project although some items (e.g. biodiversity sampling in grasslands) were left aside.

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
5 camera-traps	658	910	+252	In the last years Argentina is undergoing a high inflation period for which prices change in a daily basis.

70 rechargeable batteries	109	210	+101	Due to budget issues and to prioritize field sampling, 40 instead of 70 rechargeable batteries were bought.
Gasoline and vehicle maintenance (60 days x 100km/day x £0.5/km)	300	576	+276	Gasoline went from £0.5/km to £0.96/km between the time of the project proposal and the field sampling.
Vehicle rent (60 days x £14/day)	840	840		Vehicle rent went up to £20/day but we covered the difference from other funds.
Food/per diems for 4 people in the field (60 days x £15/day)	900	900		
Supplies and materials (1 GPS and 1 Notebook)	1120	1000	-120	We only acquired one notebook.
Field equipment (identification guides, cameras maintenance, 1 sleeping bag, 1 tent)	550	550		£100 was invested in maintenance of 6 cameras that we already owned but were not working well while the rest of the money was invested in tent + sleeping bag + vehicle maintenance.
Total		4986		

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

Several steps are worth taking in relation to this project and its main findings. For example, it is urgent to communicate the authorities and the general public about the importance of implementing conservation actions in the lowlands (i.e., chaco ecoregion). When I checked the areas within the watershed that were selected for conservation management by the Secretary of Environment I was disappointed when I noticed they occurred in the mountains, where less conservation/production conflicts are found. While certain ecosystem services such as watershed protection can be especially provided in the highlands, my project clearly shows those areas are almost spontaneously protected due to abandonment of rural activities, among other factors. Thus, the next step in relation to this project and beyond it to include other areas within the Chaco but outside the watershed is to analyse the opportunities for biodiversity conservation and ES provision in forest remnants surrounded by matrices with different degrees of intensification (e.g. pastures, soybean), in order to orientate conservation and restoration actions within the area.

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

Yes. I used the RF logo in the 4 international publications related to this project; 3 oral presentations and in the report for the Secretary of Environment.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

1. Sofía Nanni
2. H.R. Grau (scientific adviser).
3. N.I. Gasparri (scientific adviser).
4. Mariana Aráoz (field assistant).
5. José Tisone (field assistant).
6. Hugo Salas (Secretary of Environment).

12. Any other comments?

This project would have not taken place without your support, for which me and my team are grateful and are also proud of the contribution to local and regional conservation derived of this project and achieved with your help.