

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	Nicolas Ferreyra
Project title	Impact of the Red Deer (<i>Cervus elaphus</i>) on high priority conservation native forest in Patagonia, Argentina
RSG reference	8856-1
Reporting period	5th November 2010 – 30th November 2011
Amount of grant	£ 5970
Your email address	Ferreyra.nicolas@gmail.com
Date of this report	30th November 2011

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
Implementation of Vegetation Monitoring Protocol		X		We successfully implement this protocol, measuring 71 transects within 14 plots (50 x 50 m). These permanent plots were established in different high priority forests (Lenga, Coihue-Rauli & Ñire) throughout three areas with different deer invasion history and hunting pressure. Although we measured some plots without deer presence, we still have to set up some plots in Quillén (control site).
Deer population Survey			X	We set up eight camera traps (six bought with this grant and two borrowed by Elizabeth Chang Reissig / 5738-1 Rufford reference). The cameras were installed on 2 nd February 2011 and checked periodically (nowadays still working). In average, each camera was active 127 days. With the cameras we surveyed five different vegetation types (Lenga, Ñire, Cipres, Rauli and Araucaria forest)
Strengthen human resources			X	We make three workshops with National Park Rangers and Hunting Guides. The field work was carried out with National Park Rangers, summer graduate student volunteers and technicians from Lanín National Park.

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

One difficulty arose with the implementation of the camera trap survey. We underestimated the amount of money in order to set up and periodically check these cameras.

We identify another difficulty within the setup of permanent plots. Although the sampling design had some accessibility criteria, we failed to ease access to some of the pre-established plots points on field due to dense colihue bamboo and ñire shrub.

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

A) Thirty-two species of trees and shrubs were recorded. Within this total diversity of species, 72% was observed with browsing, with on average 35% of the individuals affected. Twenty-five per cent of the sampled forests had more than 50% of the individuals with browsing; the

most affected forests were Lenga (*Nothofagus pumilio*) in Lolog area.

B) There is a direct relationship between the relative abundance of plants and the frequency of browsing per species or with browsing severity (Figure 1). We found a great variability on browsing index by species between basins in all forest's types (Figure 2). Some rare species suffer high browsing pressure, so could be more threatened by red deer. We notice a quiet clear pattern of loss of vertical vegetation complexity at the understory in places with higher rates of browsing.

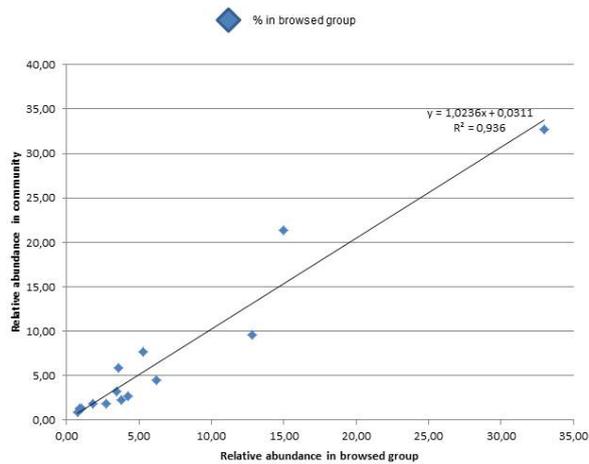


Figure 1. Relationship between relative abundance and browsing frequency.

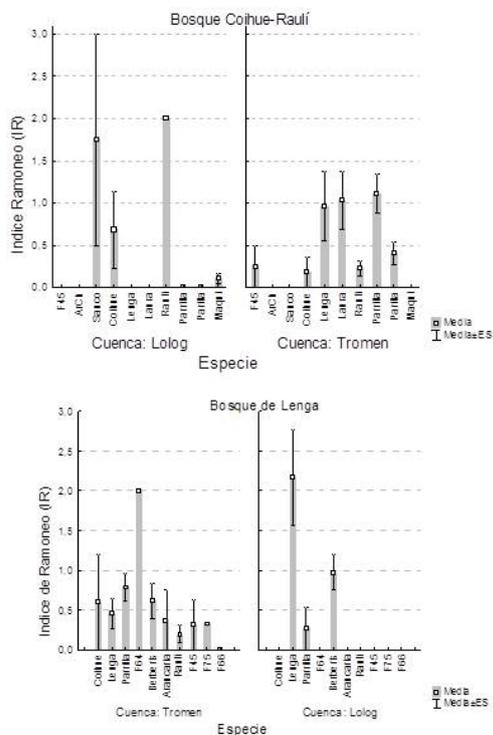


Figure 2. Variation in browsing index between sites.

C) In Tromen (Cañadon Grande & Chico), after 127 active days, the camera trap obtained photos of groups of females, males with females, solitary males and females with calves and wild boar (*Sus scrofa*), hare (*Lepus europaeus*), culpeo foxes (*Pseudalopex culpaeus*) and pumas (*Puma concolor*) (the latter two are native species). Regarding the red deer population structure, we obtained a 4:1 female: male ratio only in summertime, and then the ratio remained near 1:1 all year round.

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

The Rufford funding helped to put forward the red deer management discussion with hunter, guide hunter's, ranchers and government at this region in order to guarantee forest conservation through red deer population management. These stakeholders slowly realise that are more hunting and economical opportunities when red deer management approach is adopted.

5. Are there any plans to continue this work?

Yes. Regarding the vegetation monitoring, we urge to sample Quillén's understory in order to have our control place. In 2012/2013 we need to re-measure deer pellet permanent transects with the aim of compare the ones made about 5 years ago and start building the population status tendency. Furthermore, we will analyse the tooth patterns of hunted deer to unveil the exact age of the individuals in order to reconstruct the population age structure. With this information we could put in practise some management policies (e.g. hunting pressure to different age classes, establish the minimal age for trophy to be hunt).

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

During this year we present an oral exposition at the Environmental Sciences Congress carried out at Esquel (Chubut province). After, we carried out a workshop with Guide Hunter's. We deliver updates and reports to Patagonian Regional Technician Offices within National Park Administration government and to others National Parks who had the same invasive species. For the future, we're planning to make the first workshop of invasive fauna and flora within the National Park Administration with including other National Parks (May 2012). Also, we are planning to continue and to increase the meetings with ranchers, hunters and guide hunters to share our results and to discuss future and new red deer management options according to the Red Deer Management Plan approved by the government in 2008.

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

November 2010 to November 2011. Our vegetation monitoring effort starts on November until March, when the hunting season begins. The camera trap survey goes all year round. Pellet counts estimations at permanent transect are usually carried out during the summer. All mentioned actions belong to the Red Deer Management Plan, started about 5 years ago, and will continue 5 more years up to its review period.

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
Capture IR™ Digital Game Cameras (with battery & SD)	£ 1.556,00	£ 1220,31	£ 335,69	Not in budget but yet necessary: wire + batteries + battery charger.
Library	£ 30,00	£ 15,57	£ 14,43	Surely will spend in coming months.
Plot Center Stick	£ 170,00	£ 0,00	£ 170,00	Not purchased. Instead we mark the beginning and end of transects with colour plastic tape.
Sleeping bag	£ 100,00	£ 61,53	£ 38,47	On the overall of sleeping bag + pad the budget was spend.
Therm-a-Rest Z-Lite Sleeping Pad	£ 27,00	£ 55,92	£ (+ 28,92)	On the overall of sleeping bag + pad the budget was spend.
Pro-Line Nylon Clad Steel Tapes (50m)	£ 37,00	£ 52,26	£ (+15,26)	We buy a 100 m tape, not 50 m.
Diameter Tape (3m)	£ 10,00	£ 38,91	£ (+28,91)	We buy 2 more metric tapes.
Vehicle fuel	£ 70,00	£ 349,23	£ (+279,23)	We spend more fuel due to set up and check of the cameras, not well estimated on budget.
Food	£ 1.000,00	£ 581,23	£ 418,77	Still miss Quillen survey (volunteer per diem + food)
Subsistence payments	£ 2.500,00	£ 2213,11	£ 286,89	Just difference in exchange values (from 2010 to 2011)
Workshops costs (food)	£ 500,00	£ 117,44	£ 382,56	We did not make the total of workshops planned.
TOTAL	£ 6.000,00	£ 4705,51	£1294,49	miss Quillén survey

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

We need to intensify the red deer surveys through more camera traps and by training new Rangers so we can improve our effort. Besides, we priority need to re-sample the pellet counts at the permanent transect in order to have data about the re deer population trend. Finally, we need to finish the vegetation monitoring by setting up more plots per forest type (Lenga, Coihue-Rauli and Ñire) including the area without deer (Quillen). If we met theses steps, we could achieve a great and permanent contribution of information for its use on the red deer management in northern Patagonia.

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?

Yes.

11. Any other comments?

I hopefully expect to receive more help and support from Rufford to continue this project in order to consolidate their contribution to the conservation of highly priority forests at northern Patagonia.