

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	Camila Molina González
Project title	Araucaria Forests in Southern Chile: Integrating Local Subsistence Needs and the Conservation of an Endangered Species
RSG reference	25333-1
Reporting period	June 2018 - February 2020
Amount of grant	£ 5,000
Your email address	camila.molina.gonzalez@gmail.com
Date of this report	March 26, 2020

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 evaluate the influence of cattle in the araucaria regeneration process and in the associated flora richness				A positive association was determined between cattle and regrowth regeneration, and negative for seed regeneration, suggesting that with a greater number of cattle the sexual regeneration decreases. The structure and composition of the <i>Araucaria</i> forests may be being modified by the presence of cattle, finding a threshold type behaviour in the flora richness and the regeneration.
Characterize the conservation status of the araucaria forests within the Nahuelbuta National Park				Important contribution in the scientific field, generating data on basal area, density of individuals and composition of species by type of araucaria plant association.
Compare the situation of the araucaria forests within the Nahuelbuta National Park and its buffer zone				A good number could not be reached to compare this time, but evident different forest conditions were noted.
To know the perception and opinion of the small araucaria forest owners of Nahuelbuta about the threatened situation of the species				Many smallholders value <i>Araucaria</i> protection status, but others consider it a problem. Some farmers want to sell their land or receive a conservation grant.
Propose management measures that integrate araucaria conservation and the subsistence needs of the local community				The number of surveys originally intended was not completed because of an initial erroneous dimension of time and space of the impact area. However, the depth of the interviews was a good approximation of lifestyles, and consequents management measures recommendations with local integration, end up with a master's thesis delivered to main stakeholders.

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

The main difficulty was related to fieldwork. First, the road to the study sites was in very poor condition even in summer, the presence of mud prevented access to remote places. Access was only possible with a 4 x 4 vehicle, which had to be brought from outside the city, complicating logistics and the budget. Forest sampling took longer than normal due to the complexity and slope of the study sites.

Another difficulty was related to contact with the small peasant owners, who mostly lived in sectors without a cell phone signal, making it difficult to maintain constant communication and know when they would be at home. This affected the number of surveys that could be applied, but not the depth of the interviews and information collected in the field.

Finally, another difficult situation was the heavy workload that had to fall on the project director (who writes this report) because she was the only person living in the study area, making it difficult for the other team members could participate more actively. However, there was support from people from organizations in the city of Angol interested in the conservation.

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

- 1) A great contribution is made in knowledge about the structure and composition of the *Araucaria* forests of Nahuelbuta, which have not been widely studied. It also discusses the situation of the use of protected areas as a cattle grazing site, which is a productive practice that should be eradicated from these units, even more so in the coastal mountain range of Chile, highly degraded, and under severe pressure of climate change.
- 2) Knowledge of the appreciation of the local community with respect to the araucaria forests of Nahuelbuta and its relationship with them.
- 3) The results of the influence of cattle in the conservation of the *Araucaria* forests, and proposed actions for the management of cattle, was part of the master's thesis prepared, and sent to the National Forest Corporation of Chile (CONAF), entity that administers the protected areas of the country.

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

The contact with the local community that surrounds the Nahuelbuta National Park was extensively covered, they were informed about the objectives of this project and information was obtained on the different appreciations of the forests of the Nahuelbuta Mountain Range and the dependence of the forest on rural families. Some farmers were informed of the results of the project and motivated to spread araucaria, protecting the forests from cattle.

5. Are there any plans to continue this work?

Sure! This project was part of my master’s thesis, which is part of my lifelong project to contribute to the conservation of native forests. During the development of this project I was able to generate valuable support networks, both academically and with foundations and organisations in the Nahuelbuta area, just as committed to the future of forests and water availability. I am planning how to continue this work by implementing experimental stations with livestock regulation, expanding variables to evaluate forest dynamics and dissemination of information.

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

- Outreach: We hope to give a talk at the meeting of the peasants of the Cordillera de Nahuelbuta and to have a discussion forum about araucaria forests in the city of Angol (community centres and Municipality).
- Scientific dissemination: We are currently writing a manuscript on whether the threatened species *Araucaria araucana* is being effectively protected within a state protected area. Will be submitted to a peer-reviewed journal. In addition, an article will be prepared on the proposed integration of conservation and subsistence objectives to be published in the local press and magazine.

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

Most of the funds provided by RF were used for fieldwork, salary for field assistants, materials, and transport.

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
Field equipment	460	460		
Vehicle rental	2900	3190	+290	Mobilization was self-managed
Fuel	540	740	+200	More time in the fieldwork
Meals (fieldwork)	450	510	+60	More time in the fieldwork
Salary for field assistants	290	290		
Salary for anthropologist	360	360		
Total	5000	5550	+550	£1.00= 825 CLP

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

It is necessary to promote the link of government institutions, universities and local actors to ensure the conservation of the araucaria forests. Currently, there is a working table for the restoration and conservation of the *Araucaria araucana* in the south of the Nahuelbuta mountain range, but actions by the entity that manages the public protected areas (CONAF) in the entire coastal distribution of the species are lacking. It is important to continue disseminating how native forests are affected by human actions, in order to articulate instances together with local actors to promote forest conservation and regulate the practice of livestock.

In addition, continue with the investigation of the dynamics of alterations that take place within the protected areas, in order to develop better management plans and prevent threats. For this, it is essential to know with the opinion and needs of those who inhabit the territories.

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?

The logo of the Rufford Foundation was used in the defence presentations of the master's Thesis, in addition to the talks held. The Rufford Foundation was mentioned to all the actors and networks contacted involved in the conservation of native forest in Chile, in addition to the journalistic note prepared by the Austral University of Chile¹. Also, the paper that we are writing has an acknowledgement to the Foundation.

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

Camila Molina, Project Director and Principal Investigator: Managed overall project activities throughout the project period and reporting.

Carlos Zamorano, Forest Ecologist: Design of the field methodology, support in the ecological analysis of the results and discussion.

Esteban Rivas, Anthropologist: Design of interviews and surveys, field work and analysis of the information obtained to prepare a management proposal.

Úrzula Barrientos, field assistant, support in data collection and logistics.

Christian Salas, Collaborator: Support with statistical data analysis.

¹ http://www.forestal.uach.cl/noticias/post.php?s=2019-11-04-investigacion-de-postgrado-abordo-influencia-del-ganado-en-regeneracion-de-araucaria-en-area-prottegida&fbclid=IwAR2_ZI_7axp86T1oDk7HbfiLepsqxt1NqzQ4fH8Y3C8vf5OrHIIKq1orfY

12. Any other comments?

Just thank The Rufford Foundation for funding projects for young scientists, surely without the support this idea could not have been implemented. Thanks to the National Forest Corporation for granting research permits and to the Angol Community Environmental Committee (organisation of which I am a part), for their support in the final stages of the project and in the dissemination.

I hope to be able to apply again with an organisation in the area to continue contributing to the conservation of Nahuelbuta forests.