

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	Cecilia Smith Ramírez
Project title	Propagation of native ferns for the restoration of the threatened forests of Juan Fernandez Archipelago, Chile
RSG reference	12499-2
Reporting period	January 2013-March 2014
Amount of grant	£ 6.000
Your email address	csmith@willnet.cl
Date of this report	March 31, 2014

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
<i>Equip the existing greenhouse in JFA for storage plants for the propagation of ferns in JFA</i>			x	We built four big tables as shown in Figure 5. We brought materials to continue reproducing ferns: small and big plastic bag, peat-turf, fertiliser, and materials to improve a greenhouse.
<i>Transport a set of propagules from mainland to greenhouse in JFA where they will be stored</i>			x	During the reviewing of this proposal, this objective was discarded to avoid contaminating the greenhouse of JFA with insects present on mainland. A new objective was created, which was to reproduce all the ferns from spores during this project. The objective was achieved completely, and now the production is ongoing. Spores were sown in May 2013 and new spores were sown March 2014.
<i>To transplant the propagules in forest gaps created by the removal of invasive species</i>		X		In late summer 2014 (February), 60 ferns of 1 and 5 years were planted in the forest stand Plazoleta El Yunque (Figs.10, 11, 12). The development is being monitored. We consider this objective as partially achieved, because 60 more ferns will be planted in winter 2014. We decided do this essay outside Rufford's deadlines because we wait to obtain more fern survival if they are planted in winter.
<i>Train rangers park and interested local community of JFA in techniques of native ferns propagation</i>			x	We consider the achievement of this objective as a success. 18 people attended the workshop on "How to propagate ferns" in the town of San Juan B., Robinson Crusoe Island. We provided materials for the attendants of this class, park rangers and members of the community interested in this topic. (See Figures 12 and 13).
<i>Generate a document summarising the techniques of fern propagation of JFA</i>			x	The document is attached. The phrasing is simple, in white and black (for printing without the use of colour ink) and easy to download from the internet on Robinson Crusoe Island.
<i>To write a scientific publication about the results of fern transplant in forest gaps.</i>		x		I have made progress in this matter but the fern trials under different treatments are still being monitored. I will possibly be able to finish the document in one year more. I attached the document that

				showing the progress in the elaboration of this report.
--	--	--	--	---

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

We had logistic difficulties: We began the project with some delay due to administrative regulations of the JFA National Park. This delay prevented us from having more developed ferns to report here.

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

- To create awareness that it was necessary to restore the naked soil with ferns. To accomplish this awareness, the forestry tradition to restore with trees had to be broken. Trees are used to restore in spite of the fact that they are eaten by rabbits and they not stop the erosion.
- To improve a technique to cultivate ferns from Juan Fernandez Archipelago.
- To do trials transplanting ferns cultivated in greenhouses to the field and to learn about the problems to accomplish success in this activity. We found that rabbits destroyed some experiments since their territorial behaviour.
- At present, a technician (Karen Nuñez) who is partially paid by national park and another of my projects, continues doing the experiments and cultivating more ferns. A teacher from the school (Nelly Figueroa Neira) is teaching the students how to cultivate them.
- Spores of the Critically Endangered fern (*Elaphoglossum squamatum*, Figure 14, 15 and 16) have been sown in the Royal Botanic Garden (RBGE), Edinburgh. This was not an original objective of this project, we made the contact with RBGE and Rufford paid the field collecting of spores and the fast courier to UK.

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

The workshop was attended by 18 people, which is a large number to attend an environmental workshop in the town of San Juan Bautista. In addition, the secondary school teacher at the only school in Juan Fernandez Archipelago is teaching her students how to cultivate ferns with the help of the technician Karen Nuñez.

5. Are there any plans to continue this work?

Dr Rodrigo Vargas is developing a paid project on Robinson Crusoe Island to perform trials in order to control *Rubus* weeds and to restore these areas (project supported by National Science and Technology Committee (Conicyt-Chile)). Dr Vargas, me (with funds of my Institute) and National Forestry Committee are paying a technician to continue the work started in Rufford Small Grant. Now we are focused on producing only five species of ferns massively. But my future plan is that National Forestry Committee continues this work. For this, we need to show success in the transplanting of the ferns. With this objective we will continue transplanting in winter.

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

I am preparing a scientific report which will be ready in one more year, when we have results of the plantation. I attach one advance. An educative report was submitted to members of the JFA community.

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

Due to changes in the original schedule of the project (we not moved developed ferns from mainland to island) and problems with the administration of the park, we began the fern trials late. For this reason it would be better to inform about the results of this project in November 2014, after learning about the results of fern plantation which will take place in July 2014 (austral winter). Nevertheless, I think in this year we were able to advance in our objective and develop others related to soil restoration with ferns.

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.

Change: 716, 66 pounds per 1 Chilean pesos

Item	Budgeted Amount	Actual Amount	Difference	Comments
Salary (4 technician)	2649	0		
Food	775	-240		We used money from materials to cover costs in food of volunteers that work in fern transplant and workshops
Transport	749	0		
Materials	1633	720		We spent less money to wait in this item. We will spend this money during May when we improve the greenhouse like show in picture 9 of report.
Others (Tax, administration)	194	0		
TOTAL	6000			

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

I think we need to advance slowly to reproduce and to transplant ferns is not easy at all times, depending on the species and weather. Besides, we need to show progress to the community and the government in order to continue. We are now working with a very good technician and have more funds to continue this work. I think the next step is to continue working with the Chilean government to they do a programme to restore the naked soil with ferns of some areas Robinson Crusoe Island.

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?

During the PPT talks given to the community and Government we mentioned that this project is developed thanks to Rufford Small Grant. The logo RSGF is in our talks and also a poster that we presented in the annual meeting of the Ecology Society of Chile.

11. Any other comments?

If we, with the help of horticulturists of the Royal Botanic Garden of Edinburgh, succeed in reproducing *E. squamatum*, a critically endangered fern which we cannot reproduce, I'll write you. To reproduce and transplant ferns successfully has been hard, due to the isolation of the Robinson Crusoe Island. For some time we did not have much help, but I think we have made progress in creating protocols and raising awareness regarding the necessity to restore the naked soil of this island. The ferns are a good solution to accomplish this goal. Thank you very much for your help.