

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	Julián Lescano
Project title	Exotic fishes in a fragile environment: an evaluation of trout impact on endemic mountain frogs in Sierras Grandes mountains, Argentina
RSG reference	8948-2
Reporting period	October 2013 – December 2014
Amount of grant	£5692
Your email address	lescanojul@gmail.com
Date of this report	12 December 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
To generate novel scientific information about trout impact in Sierras de Córdoba Mountains			X	
To provide an opportunity to increase local people's knowledge regarding the problem of biological invasions			X	
To generate materials directed to raise awareness regarding amphibian conservation			X	
To generate essential scientific information regarding the impact of recreational activities that implies the introduction of alien fishes, on the endemic amphibian fauna of Córdoba mountains			X	
To propose a change in the current regulation and also to begin a management plan that favours native fauna in the protected areas of this mountain range		X		We are working with National Parks Administration in changing the current fish regulations of "Quebrada del Condorito" National Park. The meetings and the work with provincial governmental agency to change the current fish regulation outside the national Park still are pending.

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

During the project development we detect that many local people introduce trout in small streams to be used as food. Therefore, we realised that providing information about trout diet (specifically that trout eats a lot of frogs and its tadpoles) could result counterproductive since could conduct to people to introduce trout in streams with high densities of amphibians. Taking this into account, our awareness and dissemination campaign was not directed to local people but was mainly for tourists,

anglers, technicians, decision makers and rangers. This was the main unforeseen difficulties that arose during the project.

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

We surveyed 120 stream stretches in 30 streams and rivers of Córdoba Mountains. The scientific information gathered represents the most extensive work in central Argentina developed with the aim to evaluate the impact of exotic fishes on vertebrates. The information obtained in this project was extremely useful to disseminate and to create awareness about the impact of biological invasions on native biodiversity. In this sense we think that our objectives were achieved, however, the problem of biological invasions is a very broad topic and it takes a lot more effort to generate awareness in the whole society.

The information obtained and the dissemination of the projects results was useful to demonstrate the impact of recreational activities that implies the introduction of alien fishes in Sierras de Córdoba Mountains. In addition, workshops with representatives of national parks administration were conducted. During these workshops, and on the basis of results of the project, endemic amphibians were included as conservation priorities for “Quebrada del Condorito” National Park. This park is the most important protected area of Sierras de Córdoba. This was an important outcome, since will permit to elaborate managements plans to mitigate the impact of trout and other threats for endemic amphibians within the protected area. In addition, the project results were the basis for changes in the fish regulations in the protected area. These changes are intended to reduce populations of exotic fish, promoting fishing without using “catch and release” technique. In this way it was possible to reconcile conservation interests with sports activities within the park.

The information obtained was spread by various media. First, printed graphic material on issues of amphibians in the region was generated. Furthermore, we participated in radio interviews to disseminate the project results. In addition, we created a page on which periodically we post about local and global problems facing amphibians. In this page we share the results of our conservation project. Also people can look and use our pictures of amphibian species from Argentina and to make queries about these topics.

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

Through information disseminated by this project, visitors, tourist and anglers were able to know the problematic that involves the introduction of trout in Córdoba Mountains. Through workshops, the park rangers and the technicians obtained training and knowledge about conservation issues facing amphibians. Also park rangers and national parks administrators and technicians got a valuable management tool because the results were made available in extensive technical reports. Part of the results obtained by the project indicates that trout generate an important impact on endemic amphibians populations, however we shown and highlight that in some cases and areas it is possible to harmonise nature conservation with some recreational or sporting activities. This last was very stimulating for anglers.

5. Are there any plans to continue this work?

Yes. We are still working evaluating the impact of trout on endemic herpetofauna. We detect a strong association between frogs and an endemic snake that strictly eat amphibians and its tadpoles. Therefore trout impact on amphibians populations could be affecting indirectly at this endemic snake. In this topic a student of biology is beginning her thesis. By other hand, together with park rangers, technicians and administrators from “Quebrada del Condorito” National Park we are planning to work on a plan for the management and the eventual elimination of invasive brook trout populations in small tributaries by constructing artificial barriers and removing trout populations using electro-fishing technique. It is of our interest to know if after trout management, trout impact on amphibians is reversible in short or medium term. If so, an extensive plan for management of trout population in small streams tributaries from “Quebrada del Condorito” National Park could be applied successfully. This last will very interesting not only because we could recovery several amphibians populations but also because it will be necessary to work together with neighbouring landowners of the park and hire local labor for these tasks of environmental remediation.

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

With the results obtained, we are working in the confection of one scientific article to be submitted to a journal specialised in ecology and conservation. Thus, the results will be available to the international scientific community.

On the other hand, at a more regional scale, we presented two detailed reports of the project results to the Secretaría de Ambiente de Córdoba (the environment agency of the provincial government) and to Administracion de Parques Nacionales (national parks agency). Sharing the results with these two governmental agencies was very useful, since is an important step to looking for a solution to the problem.

Part of the results obtained were presented in three works at the XIV and XV Congreso Argentino de Herpetología: “Impacto de los salmonidos introducidos sobre dos especies de anfibios endémicas de las sierras de Córdoba”(Impact of introduced Salmonids on two species of endemic amphibians of the Sierras de Córdoba); “Diferencias en el microhabitat de las larvas de dos especies de anfibios endémicas de las Sierras Pampeanas Centrales” (Differences in microhabitat used by tadpoles of two species of endemic amphibians from Sierras Pampeanas Centrales); “Anfibios de las Sierras Pampeanas centrales: evaluando la importancia relativa de distintos factores de Amenaza” (Amphibians from Sierras Pampeanas Centrales: assessing the relative importance of different threats).

Also the outcomes of the project were shared with technicians, local people and park rangers in two workshops that were developed in Villa Carlos Paz city (Córdoba province).

The information obtained was (and will be) spread by various media (as an example: <http://www.lavoz.com.ar/ambiente/las-truchas-acorralan-dos-anfibios-autoctonos>). Printed graphic material on issues of amphibians in the region was generated.

Furthermore, we create a page on which periodically we post about local and global problems facing amphibians. In this page we share the results of our project. Also people can look and use our pictures of amphibian’s species from Argentina and to make queries about these topics.

(<https://www.facebook.com/cbanfibios>). In this page there are a summary of project results and several images of our field work (<https://www.facebook.com/media/set/?set=a.656060251097045.1073741833.621405157895888&type=1>)

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

The project was developed between October 2013 and November 2014 (13 months). In the beginning, the project was planned to be executed in 12 months.

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
Headlights (Petzl pixa 3) (x 2)	226	250	-24	
Gps (E-trex 10 Glonass Alta)	189	195	-6	
Fuel for a maximum of 20 field trips to the area (300 km x 20 field trips) (1 fuel litre=1.1 £ sterling)	660	750	-90	the price of fuel has increased considerably over the last year in Argentina
Fishing rods and reels (x2)	170	190	-20	
Fishing lures and fishing accessories	80	60	+20	
Nets (for tadpoles surveys) (x2)	180	149	+31	
Laptop (for the courses and dissertations to students and national parks rangers)	550	700	-150	Imported technology in the country has increased its prices considerably during the last year. The original budget was not enough to buy a computer with the requirements we needed
Scientific meetings inscriptions (and associated travels) (x2 people)	600	550	+50	
Printed dissemination material and signboards	627	500	+127	Because we avoid installing signage in the field (see point 2 of the report), money spent here was less than originally budgeted.
Food 3 people for 60 days (for the field trips) (9 £ sterling per person per day)	1620	1700	-80	
Mountain tent	440	450	-10	
Mountain sleeping bags (x2)	350	340	+10	
TOTAL	5692	5834	-142	

Exchange rate (at 18-10-2013): 9.45 argentine pesos = 1 £ sterling.

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

According to the results, we identified several actions that should be performed to mitigate the impact of introduced fish in the Sierras de Cordoba on endemic amphibians of the region. An important step would be to implement a plan for control and eradication of these fish in small watersheds installing artificial barriers that prevent their re-invasion. In this sense we have the logistical support of the National Parks Administration. This institution has an electro-fisher, which is essential to eradicate punctual fish populations. These eradications should be following the installation of barriers (very small dams that prevent the re-invasion). After this, should be necessary to establish a short-medium term monitoring plan to detect the eventual recovery of amphibian populations. These mitigation measures arising directly from the project results and would be a very important step towards the conservation of aquatic fauna of these mountains. On the other hand, during the last years we have gathered important information on the state of conservation, habitat, distribution and threats to amphibians in the mountains of Cordoba. Therefore we believe that to move forward towards the conservation of this system it would be important and necessary to have a book on the amphibians of the area, in which knowledge about the distribution, biology of the species and its problematic conservation is synthesised.

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, the logo of RSGF was used in all the printed materials produced, in the dissertations made in the two scientific congress as well as in the workshops and in three oral presentation presented at the Facultad de Ciencias Exactas, Físicas y Naturales (Córdoba, Argentina).