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	Felipe de Jesús Osuna López
Project title	Distribution, habitat use and population genetics of the volcano rabbit (*Romerolagus diazi*) with conservation implications
RSG reference	21217-1
Reporting period	February 2017 – February 2018
Amount of grant	5000.00
Your email address	felipe.osuna@posgrado.ecologia.edu.mx
Date of this report	28 May 2018

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
Determine the current distribution of the volcano rabbit				I undertook the wide-range distribution exploration and registered more than 100 patches occupied by the volcano rabbit.
Study their Habitat use				I analysed 175 occupied /unoccupied patches and identified that human disturbances are the most important factors that negatively affects the habitat use (presence and abundance) of the volcano rabbit.
Describe their population genetics				I collected volcano rabbit´s faeces from 100 patches and I am currently working in laboratory to process it.
Workshops and conformation of a community-monitoring group of Río Frío				I imparted workshops for the community-monitoring group from Río Frío and helped them and the National Park Izta-Popo in the coordination of a temporal project about monitoring focus in the volcano rabbit.

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

The weather was an important factor in the fieldwork and some expeditions had to be cancelled and other delayed for this. There were also some logistical imperfections such as problems with the car, but nothing too serious that affected the objectives of the project.

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

1. About the distribution of the volcano rabbit, I have formally reported a new important distribution area in the north part of Sierra Nevada (volcanoes Telapón and Tláloc), which represents more than 5000 ha that now benefit with the umbrella effect that exert the volcano rabbit. Unfortunately, I have also detected local and peripheral extinctions, principally in Sierra Chichinautzin, associated with isolation, agricultural expansion, grazing and fire.

2. I have studied the habitat use of the volcano rabbit with a data set of 175 occupied/unoccupied patches of their entire distribution and, found that human factors are negatively affecting it. Even though their patterns of distribution and abundance are influenced by a combination of biotic (i.e. bunchgrasses cover and *S. cunicuarius* abundance), abiotic (i.e. rock cover) and human factors (i.e. cattle grazing and distance to communities), the last ones are the most important factors detected; cattle grazing is negatively impacting the probability of presence in a patch and the distance to communities is negatively impacting the abundance of the volcano rabbit. This result denotes the sensitivity of the volcano rabbit to human disturbances and the critical role that the human communities and their activities have on the volcano rabbits and their habitat.

3. I imparted theoretical and practical workshops to the community-monitoring group of Río Frío. The workshops were about the biodiversity that their forest possesses, some basic monitoring techniques and particularly about biological and monitoring aspects around the volcano rabbit. The important outcome mentioned in the point 1 about the new distribution area registered was shared with the National Park Izta-Popo, a park that includes the new distribution area reported and another important distribution range of the volcano rabbit in the rest of Sierra Nevada, and the presence of the volcano rabbit justified that the community-monitoring group of Río Frío participated and won a Community Project for Sustainable Development 'PROCODES'. This project was for fauna monitoring focus on the volcano rabbit in the new distribution range reported. I had the opportunity to help the community-monitoring group and the park in the coordination of this project.

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

The community-monitoring group of Río Frío (conformed by a diverse group of 10 men from 18 to 64 years old) have received theoretical and practical workshops about their local biodiversity and basic monitoring techniques, knowledge that brings them the opportunity to design some elemental conservation projects and be able to get a "green" income. The community-monitoring group won a temporal project 'PROCODES' for fauna monitoring focus on the volcano rabbit in the National Park Izta-Popo, awarded for the 'CONANP' Comision Nacional de Áreas Naturales Protegidas. This project directly benefited the 10 members of the community-monitoring group with job for 3 months; which represents a green income for 10 families of a marginalised and scarce economic community, Río Frío. With this project the community-monitoring group has the opportunity to apply the learned in the workshops and get a valuable experience taking on a monitoring project. They also participated in a couple of local and regional reunions of community-monitoring groups from different communities to share experience organised by the CONANP.

5. Are there any plans to continue this work?

Yes. The wide-range distribution survey has been done but to get a precise current distribution is still needed more explorations to some locations. The population genetics are in the laboratory phase. And about the community-monitoring group from Río Frío, we keep in contact and they are interested in get another workshops. The community-monitoring group is participating too in different calls to get another conservation project, and, in case they get some one I will help them in the coordination.

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

I have written a research article about the negative impact of the human factors on the habitat use of the volcano rabbit, and now is in the final revisions by my PhD committee, that also conformed my team in this project. Once ready I will send it to *Oryx – The International Journal of Conservation*.

I have participated too in two workshops about "conservation of the volcano rabbit" that is organised by the DGZVS (Dirección General de Zoológicos y Vida Silvestre) of Mexico City. In these workshops I have had the opportunity to discuss some aspects about my investigation and contribute to the design of the conservation strategies. For the next workshop, in coordination with the organisers we have accorded to expose in detail the results of my investigations about habitat use and distribution, to particularly discuss it and the direct implications that they have for the conservation strategies.

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

From February 2017 to February 2018. There was similar, just a little delay for aspects mentioned in the point 2.

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
Fuel, food, tollbooths, lodging and equipment to take the interviews with the people of the communities and give the training workshops	550	1,050	500	Given the opportunity to help in the coordination of the temporal project of the community-monitoring group I was able to impart more workshops and spend more time in the field with

				them, so that I spent more resources.
Fuel, food, tollbooths, lodging and GPS for search the Volcano rabbit, carry out the ecological measures and collect pellets	2,700	3,200	500	For logistical issues as the weather and car troubles I had to cancel and delay some expeditions, so I spent more resources that expected
DNA extraction kits, PcR material and sequencing of the molecular markers	1,750	750	1000	I used this resource to resolve the unforeseen events mentioned up.

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

About the distribution there are several localities that still need to be explore to determine their current status and conservation situation. With this finest mapping distribution, and the wide-range distribution done, will be useful to implement the "systematic plan for conservation" and select priority areas for the conservation of the volcano rabbit.

Continue studying the population genetics of the volcano rabbit at different hierarchical levels of organization: fine scale population genetics, metapopulation genetics and landscape genetics. These different scales will lead us to understand not only the population genetics per se, but also different aspects about the biology of the elusive volcano rabbit.

Keep in contact with the community-monitoring group of Río Frío and eventually impart more workshops and help them in any conservation project that they awarded and benefit the volcano rabbit directly or their habitat.

Continue participating in the workshops for the conservation of the volcano rabbit organised by the DGZVS from CDMX.

Organise workshops about the volcano rabbit and their habitat with another two community-monitoring groups that I have met in the workshops organised by the DGZVS from CDMX, the groups from Milpa Alta and Topilejo. These two groups work in different areas in sierra Chichinautzin and represent another valuable allies for the conservation of the volcano rabbit.

Environmental education is a powerful weapon for the conservation and a conservation strategy that is necessary to implement in the communities that cohabit with the volcano rabbit.

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

N/A.

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

Dr Espinosa de los Monteros Solís, **Dr Jorge Arturo González Astorga**, **Dr Roger Guevara** and **Dr Enrique Martínez Meyer.** Periodically we had meets to discuss the advances and results of the project.

Silvia Concesa Osuna López brought an invaluable help in a lot of expeditions.

12. Any other comments?

Thank you very much for this opportunity of carried on a conservation project. I feel very proud about my results and excited to continue working for the conservation of the volcano rabbit and their habitat. I most admit that takes on conservation in a development country where there are serious troubles of education, corruption and insecurity is hard, but the sensation of been doing something different and that this can helps, a little at least, an amazing creature as the volcano rabbit and their habitat, is great. And again, thank you very much.