

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	Manuel Alejandro Barrios Izas
Project title	Strengthening montane ecosystems conservation at Guatemala assessing it from leaf litter weevil diversity and endemism's
RSG reference	17005-2
Reporting period	June-2015 to june-2016
Amount of grant	£5000
Your email address	manuelbarriosgt@gmail.com
Date of this report	10/8/2016

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
<p>To increase the knowledge of the weevil fauna by recording new areas distribution of known species and the description of unknown species to science</p>			<p>Yes</p>	<p>As we collected in new localities we have a bigger collection of leaf litter weevils. A manuscript on the description on a new genus of leaf litter weevils of northern Mesoamerica has been accepted for publication at Zootaxa. New species of <i>Theognetes</i> Champion 1905 and specimens of a new genus of <i>Lymantini</i> were sent to the Canadian Museum of Nature for their description. We are also sorting new species of <i>Eurhoptus</i> LeConte 1876.</p> <p>We are also participating in the creation of the National System of Biodiversity Information. We pretend to give access to the public to the information of Guatemalan species distribution and conservation status. This project is being manage by the National Council of Protected Areas, and specimen information from Rufford Grant projects will be available at this site in the future.</p> <p>We also modelled species richness of montane leaf litter weevils at Guatemala by using four different ecological niche models. We are preparing a manuscript, by now we have received the comments to the manuscript form colleagues of the universities of Mexico and Minnesota. The manuscript will be submitted to the Journal of Insect Diversity and Conservation. We will also</p>

				do an oral presentation at the Belize Congress of the Mesoamerican Society for Biology and Conservation on August 22.
to increase the protection of endangered species by habitat loss			Yes	We are participating in the update of the list of endangered species (LES) of Guatemala. As weevils are not being endangered by hunting as most of the species at the LES we are proposing a category the protection of species that are endangered by habitat loss. The proposal of this category is to be accounted in the analyses done by authorities when allowing activities. An example of this is the construction of an electric towers and lines at a remnant of cloud forest at Nebaj were a species of endemic <i>Theognete</i> inhabits and is only present at this patch; if the conservation status of this weevil species were considered, authorities probably would suggest to trace the building of the towers over agricultural lands instead of cutting and dissecting the cloud forest patch.
To strength the inventory of weevils and other arthropods at local and foreign insect collections				The inventory of weevils from Guatemala at our insect collection we consider that has almost duplicate. We are preparing a Memorandum of Agreement with the Canadian Museum of Nature, in this agreement the exchange of specimens is considered. We will also be sending specimens after we study them to the Natural History Museum at London, Smithsonian Institute, University of Arizona and Charlie O'Brien Collection. We will also exchange ants with the University of Utah, spiders to the University of Harvard and the Natural History Museum of San Carlos University, we are also exchanging Rover beetles with the University of Hidalgo.

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

Our main difficulties have been to get permits from private and communal owners, but we got access to almost all places. We also have a delay in processing the specimens due to our molecular biology lab will be ready by the end of August 2016. We hope that DNA extraction from all specimens will be done by July 2017, after that we will start mounting and labelling.

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

The project had a big contribution in the increase of species and specimens at the collection of the University. The specimen information will be used to generate information that will help to protect Guatemalan biodiversity.

With the information that has already been generated, some weevil species will be included in the National List of Endangered Species.

The information generated from the project will be available at the National Biodiversity Information System that is being creating by the National Council of Protected Areas. All information from specimens of our collection will be available at this site.

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

We always include local people from the communities in the collecting of specimens. The best involvement we can consider is of a local indigenous woman, Ana Rivera, and her son. She has been working actively for environment protection at Nebaj communal properties.

5. Are there any plans to continue this work?

Yes, we are working in the description of new species and in the systematics and evolution of Mesoamerican weevils. We also plan to assess the status of biodiversity of more species at Mesoamerica, especially at montane forest but we are also interested in help studying weevils from dry forest due their habitat loss by agriculture.

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

A manuscript on a new genus (nine species) has already been accepted for publication at Zootaxa. We are also preparing a new manuscript on montane weevil's species richest sites from Guatemala, an oral presentation will be given at the Belize Congress for Biology and Conservation on August 22.

The results will be also available at the National System of Biodiversity Information that is being created. Information will also be shared with park managers.

Other manuscripts will be also prepared in the future.

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

The grant was used during the field working trips and for buying lab material from until August 2016.

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 for vehicles	400	400	0	
Food for field trips	1500	1500	0	
Accommodation during field trips	1500	1500	0	
Maxi Winkler Sacs (10)	750	750	0	Made locally
Unit Trays	850	850	0	Bought at Bioquip
Total	5000	1500	0	

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

Due Guatemala is a small country and belongs to the Central American nucleus, we consider the protection of leaf litter weevils must be seen from a regional view. We would try to explore other sites at southern Mexico, Honduras, El Salvador and northern Nicaragua.

We also consider to study other important groups of weevils from dry forest, especially weevils associated with Cactaceae, such as the genus *Gerstaeckeria*

Champion 1905. We have found three new species and we have seen some level of protection is needed because this habitat is endangered by watermelon production for international trade.

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?

Yes. The RSGF is being acknowledge in the papers were the information from Rufford Projects were used. The logo will also be used at the congress of Biology and Conservation at Belize. The project was also promoted at the University at Zacapa and also at social media.

11. Any other comments?

We are grateful with the RSGF about supporting the increase of knowledge of leaf litter arthropods, especially weevils. Also by supporting conservation of Mesoamerica based on data supported on scientific studies.