



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. 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	Aseneth Ureña Ramón
Project title	Effect of defaunation on large seed removal of <i>Spondias mombin</i> L. in the Lacandona rain forest, Chiapas,
RSG reference	12243-1
Reporting period	November 2012- December 2013
Amount of grant	£5500
Your email address	ase_ure@hotmail.com
Date of this report	May, 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
Compare the dispersion process of seed of <i>Spondias mombin</i> between a preserved habitat and a defaunated habitat at the Lacandona rainforest, Chiapas, Mexico.		✓		During the course of this work, there was no evidence of seed removal of <i>S. mombin</i> by any medium or large terrestrial wildlife. However, I observed the consumption of <i>S. mombin</i> fruits by small rodents.
Determine the potential terrestrial fruit eaters for <i>Spondias mombin</i> in a preserved habitat and one defaunated habitat at the Lacandona rainforest.			✓	Using the camera traps, it was possible to detect community composition of wildlife between preserved habitat and defaunated habitat. In the preserved habitat there were large terrestrial mammals such as tapir, peccary and red brocket deer. For the defaunated habitat, there was only the presence of medium-sized mammals like agouti and raccoons among others.
Determine the possible role like dispersion or seed predator of <i>S. mombin</i> , of terrestrial largest frugivores of the Lacandona rainforest			✓	Due to lack of seed dispersal in field tests, I did experiments with frugivores in captivity at the zoo Miguel Alvarez del Toro at Tuxtla Gutierrez, Chiapas. I used six species of large and medium-sized frugivores of the Lacandona rainforest: tapir, white lipped peccary, collared peccary, whitetail deer, red brocket, deer and agouti. I checked the number of seeds that were recovered and the integrity of these.
Determine the percentage of <i>S. mombin</i> seeds infested by bruchids (Coleoptera: Bruchidae) under the parental tree in a preserved			✓	It was considered important to quantify the percentage of infested seeds by bruchid, because other authors reported that predation of <i>S.</i>

habitat and one defaunated.			<p><i>mombin</i> seed by this group of insects, is higher than 90%. Also I considered relevant given the chance discovery of the activity of a shield bugs (Cydnidae: <i>Prolobodes</i>). This gender is a new record for Mexico, and apparently is a new species to science. This shield bugs buried much of the seeds in the experimental units.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

During the field work, the medium or large terrestrial faunal was not attracted toward the *S. mombin* fruits, so it was not possible to determine in field the species of seed dispersers and seed predators. For information, I ask for permission to Miguel Alvarez del Toro Zoo (ZOOMAT) in Tuxtla Gutierrez, Chiapas, to perform test offering in captivity to analyse the type of manipulation that seed received by frugivores.

In field, I observed the unexpected interference of an underground bug (Cydnidae: *Prolobodes*). According to the expert, genus *Prolobodes* is a new record for Mexico, and this specimen is a new species to science. This bug buried all the fruits underneath a few mm off ground within experiments. Until now, there was no bibliographic report about these bugs or its effects on the wild fruit species.

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

According to the data obtained, it can be speculated that in the sampling site in the Lacandona rainforest, no terrestrial dispersal of *S. mombin* seed, unlike that reported for other locations in neotropical forest.

Through testing in captivity I could speculate that unlike expected, the tapir (*Tapirus bairdii*) could be one of the main predators of *S. mombin* seeds in the field, since the number of seeds recovered from dung of them, was the lowest and 70% from these were destroyed.

I found an underground bug (Cynidae) *Prolobodes* genus. This genus is a new record for Mexico, and according to the preliminary characterisation, the specimens belong to a new species to science. This is the first study in which the interaction between these bugs and fruits of *S. mombin* is reported.

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

To carry out the field work I required the participation of members of the local community, both to

the location of the sampling sites and for identification of *S. mombin* trees. To interested persons I taught them how to use the cameras traps.

I talked to the landowners about possible implications that might have the presence of this new species of bug (*Prolobodes* sp.) on their crops. People in the community said ignore the existence of this insect.

5. Are there any plans to continue this work?

There are plans to continue the work in a second stage, because in this study I have collected information until now unknown regarding the dispersal and predation of an important species of largest-seed plant in the Lacandon rainforest. This information is different in some respects to the existing one.

It is also necessary to know more about the interaction between this new species of insect and plants and the implications that could bring to the process of natural regeneration of Lacandona rainforest.

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

The results of this work will be sent to the administration of the Reserva de la Biosfera Montes Azules and the administration of Miguel Alvarez del Toro Zoo. Also, it is planned the development of a scientific article.

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

The resources provided by the RSG were used for the purchase of equipment used in field experiments and to cover the cost of the sampling period in the Lacandona rainforest, which was between the months of May to October 2013. This represented approximately 50% of the actual length of the project.

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
Bus fare		181.73	181.73	A visit to ZOOMAT Tuxtla Gutierrez, Chiapas, it had not been considered.
Gas	500	593.25	93.25	There were extra costs of gas for transportation by boat.
Roads	114	114.08	0.08	
Food	360	456.34	96.34	It was necessary to cover the cost of food in Tuxtla Gutiérrez,

				Chiapas.
Accommodation	450	547.61	97.61	It was necessary to cover the cost of accommodation in Tuxtla Gutierrez, Chiapas.
Payment to local people	430	387.89	-42.11	It was necessary to increase the number of working days.
Mesh	100	180	80	
Miscellaneous	121	91	-30	
Camera-traps	3425	3425		
Total	5500	5976.9	476.9	1,00 GBP = 21.91 MXN

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

The next work is: a more comprehensive work to determine if really there is not terrestrial dispersion of *S. mombin* seed in the Lacandona rainforest and, determine their significance in compare with seed dispersal on level the treetops.

Another stage is analyse what are the implications of the interaction between this underground bug and *S. mombin* fruit and seeds and other possible species of wild plants, because so far this genre of Cydnidae family, alone has been documented as a predator the roots of commercial crop like potato and corn.

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?

Since the beginning of this project we let to know about RSGF to colleagues and collaborating institutions (CONANP and ZOOMAT) also dedicated to research in other fields and who not heard about RSGF. Also in all presentations and acknowledgments logo was used and expressed our gratitude towards RSGF for their support.

11. Any other comments?

I am greatly appreciate the support from the RSGF thanks to which it was possible had make this work by which I obtained such unexpected and highly interesting results.