

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	Natalia Lucia Carrillo Reyna
Project title	Habitat preferences and landscape use of Bairds tapir (<i>Tapirus bairdii</i>) in Calakmul Biosphere Reserve and two human communities of their influence zone
RSG reference	17074-1
Reporting period	June 2015 – June 2016
Amount of grant	£ 4727
Your email address	ncarrillo@ecosur.edu.mx; atty_05@hotmail.com
Date of this report	24/06/2016

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
Relative abundance of tapirs inside and outside natural protected area			✓	The analyses show a major abundance of tapirs in the ejido Nuevo Becal, a human community bordering the north-eastern part of the natural reserve. This ejido shows a wetter climate regime and a big proportion of water holes, this can be the cause of major abundance of tapirs. It is an interesting result because we expected the tapirs avoid areas with human communities for the high levels of hunt.
Habitat characterization of study area			<input type="checkbox"/> ✓	The highest percentage of vegetation was medium tropical forest in the three study areas.
Habitat preferences inside and outside the natural protected area			✓	In the natural protected area the analyses show that tapirs prefer habitats with water holes. However, in the human communities tapirs are more generalists, preferring medium forests, water holes and cornfields. The fact that tapirs show a preference for cornfields consistently is a very interesting result by itself.
Identify the resources associated with tapirs movement outside the areas of continuous forest to areas managed by man		✓		This objective is in progress and almost fully completed.
Habitat classification according to habitat preference by tapirs in fragmented areas around the natural		✓		This objective is in progress and almost fully completed

protected areas				
Create vegetation corridors and habitat patches network for tapirs between the natural protected area and the human communities surround the natural protected area		✓		This objective is on progress, because I am still in the last stage of fieldwork and I am analysing the basic data required to complete these tasks, which also will take a little more time in terms of analytic work.
Create scenarios of change in the landscape structure outside the natural protected area and estimate their effects on population of tapir		✓		This objective is partially in progress because I am working in the primary analyses that are the basis for these final outcomes. Besides, I am waiting for the satellite images that I asked to a geographic institute, the images are essential to finish the spatial analysis.
Interviews with landowners and peasants		✓		The interviews are finished but the analyses of it are still in progress.

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

There were not big difficulties during the project, although there was a concern that needs immediate response: when I made the interviews some ejidatarios and peasants looked at me as if I were government official or if I can help them to boost her voice and can be heard by decision makers. The fact that my interviews were open, influenced the fact that diverted to the economic problems faced by ejidos, economic deprivation in which they live and “injustice” (in his words) of the support of government, which are few and support more the conservation of forests and not the economy of farmers.

Another issue that is complicated is the remoteness of the area of study but thanks to Rufford budget granted decreased the travel difficulties.

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

One of the most interesting and important results is that tapirs show preferences for the cornfields, matching his preference for medium forests and water holes, however, this in turn is worrying because some farmers do not have the patience or simply the need to respect a tapir and end up killing him as the best method to keep him far of planting. Another interesting result is to know what are the resources that attract tapirs to these systems, which in this case are crops that keep tubers, grasses and legumes and are cornfields that still maintain a regime of traditional work,

surrounded by jungle and not mechanized. Finally, it is interesting to know that there is greater abundance of tapirs in a human community that in protected natural area.

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

The immediate benefit obtain by villagers was the hiring of staff and field guide, upon learning that we were going to work on his ejido there was much interest in being hired to help me get to the jungle and guide me in the fieldwork, they all showed extremely cooperative and available. Beyond that, I understood what they need in long-term, is that students and scientists who turn to do research on their ejido support them by reaching their dissatisfaction and precarious situation to senior managers and decision makers. The inhabitants of these communities help scientists by kindness and because there is a salary through, but they are really interested in social work that improve their quality of life. The way this research can give more help is giving the results to decision makers so they know what happens in these suburbs, they need realize that they must create different approaches to conserve resources yet available, plans that fully include human communities that benefit directly from them and not exclude them plunging them further into poverty.

5. Are there any plans to continue this work?

Yes there are plans to continue the work taking into account that still have one year to complete the PhD, part of this investigation. After PhD I hope to continue the study on tapirs in the Yucatan peninsula, this because the peninsula still has large patches of forest that remain connection between all the Mayan jungle that include large protected natural areas of Guatemala and Belize and is also part of the Mesoamerican biological corridor. It is important then, know the flow of energy and matter that still exist in these forests and connectivity that still remain between them to try to preserve them and be aware of what can happen in the near future with the populations of wild animals if not preserve this region of great biological value.

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

Publishing each of the topics covered in my PhD, my plan is to divide the work in at least three publication researches and attend conferences and workshops. I plan to share a talk workshop with the communities where we carry out fieldwork at the end of my work (2017) to thank them and show them the results.

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

We initially proposed 16 months but do to a reorganization of time in field works the grant will be used for 14 months; research is still conducted with one more field visit in august and desk job for a period of one more year.

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
Payment to field guides	£ 1430	£ 1120	£ 310	The initial budget was planned for 16 months with stays in field about 10 days, however for logistics solutions we decided to travel every two months for periods of 15 days. Wages therefore declined because there were fewer days of payment.
Transportation and gasoline	£ 1303	£ 1674	£ 371	The costs of gasoline increase because we were in the field more days than originally planned and daily transportation within and between workstations and between the base camps greatly increases the cost of gasoline.
Food items for the work group	£ 724	£ 972	£ 248	There was an increase in feed costs because ECOSUR send with me in every travel a field technician as well as in all travel I invite to one more person (student, colleague, social service, volunteers interested in learning, etc.) that is, three person plus the field guide.
Batteries for 40 camera traps	£ 1135	£ 640	£ 495	Initially had proposed to buy rechargeable batteries and chargers, however, several colleagues told me that rechargeable batteries reduce their capacity with constant use due to the conditions we use them in the field, such as humidity and sudden temperature changes, so we decided to buy no rechargeable batteries which reduced costs.

				Although I change the batteries every two months for security in data collection, most of the batteries are useful for reuse so I will give batteries in the human communities where I work and those that do not use will be donated to other fellow students who are working with camera traps.
Security chains for camera traps	£ 135	£ 135	£ 0	
Total	£ 4727	£ 4541	£ 186	The remaining money will be used in the final travel to fieldwork in which the cameras will be collected and transects will closed.

* Local exchange rate: 1 GBP = 23 MXN

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

The following steps are analyse all the data obtained in this year and a half of fieldwork, publicize them through scientific journals and conferences and especially with the communities surrounding the natural protected area of Calakmul. This is important because these human communities are the main local actors in environmental issues that being experienced in the southeast of my country. I also want to continue this research in a region very poorly studied in the Yucatan peninsula that holds a lot of wildlife and forests in good state of preservation but is immersed in a process of deforestation and land use change due to the rapid human expansion. Linking these research and those of my colleagues and fellow scientists may have valuable information about the state of preservation of the Yucatan peninsula and help to create management plans that integrate long-term knowledge on wildlife, deforestation and the problems in which are involved human communities and environmental programs.

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?

I have not had a chance to publish or show my work in no instance since I have just finished my fieldwork and results are developing at this time.

11. Any other comments?

Thank to Rufford Small Grant for the economic support, without it, this investigation project would have gone through several logistical difficulties. It is especially valuable that several people in the human communities where carry out the field work could have an income, without forgetting that there was opportunity to hire

more field guides who learned about conservation efforts and the causes and consequences of them.

With regard to my research, I find myself still analysing data, but as soon as it ready my PhD thesis, scientific publications, and presentations at workshops and conferences, Rufford Foundation always will be present as logistical support, also still pending send to the institution a final report with all the results for this year and any scientific publications derived from this research.



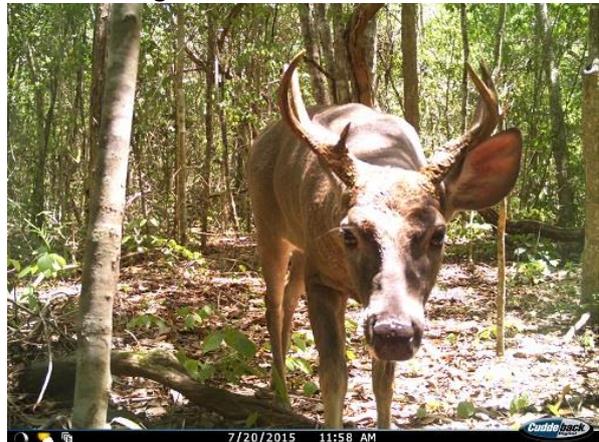
Working



Coatis having fun in the cornfield



Goatling deer (*Mazama temama*) most precious deer for hunting in the ejidos



White-tailed deer



Falcon after shower



Females Crax rubra



Four pumas in a water hole in the NPA. Maybe the mother and three juveniles



Jaguar resting in the most sought water hole in the NPA (the other animals have to wait)



Spider monkey below of trees



Tapir resting in the cornfield



Camera Name 68°F20°C 02-28-2016 17:58:45

Tapir in a cornfield



Camera Name 71°F21°C 12-12-2015 02:06:50

Tapir inside a water hole in Nuevo Becal Ejido



5/31/2015 7:20 PM

Tapir in water hole



5/18/2015 1:32 PM

Tayassu pecari. Very threatened by hunting in ejidos. They love cameras, smell them, lick them and move them.