

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 | Pablo Jesus Ramirez Barajas |
| Project title | Conservation of medium and large vertebrates in the Mayan Forest |
| RSG reference | 8790-1 |
| Reporting period | Conservation of medium and large vertebrates in the Mayan Forest |
| Amount of grant | £6000 |
| Your email address | pab_rb@yahoo.com.mx |
| Date of this report | May 31th 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 |
|---|--------------|--------------------|----------------|---|
| The objective is to estimate the relative abundance of medium and large vertebrates, individually and according to their feeding guild and habitat specificity, in areas of high and low damages caused by Hurricane Dean 5 years ago, in a biosphere reserve and communal lands. | | X | | We are in process to finish the field work and capture data, after that we proceed to analyse and write papers and manuscripts where we report main results of this project. We surveyed 864 km of transects in all area in a year to registry of tracks and signals of fauna and direct observations. We set 28 camera traps in five different sites accord to high and low damage of hurricane. A total average of trap nights (TN) for each site was 840 TN (4200 NT in all area). |

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

We increased the number of sampling sites from 12 to 16 and number of transects from two to three in each site; this effort was done to improve the spatial and temporal sampling and seasonal replicates. This design took longer time to open extra transects for sampling, so we needed more time to complete the field work and data processing. Also, we increased the number of sampling sites with camera traps from four to six, which has represented the spatial gradient of damage and recovery from Hurricane Dean. All of this was possible because the budget was administered more efficiently, and the cooperation of field local technicians and collaborating researchers were fundamental. An important factor that delayed the fieldwork was the rainy season of 2013 because was very strong and stopped our sampling at least 2 months, however, until now the field work was recovered.

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

We obtained the first photographic record of white-lipped peccary (WLP) near to Sian Ka'an Biosphere Reserve (SKBR) and other signs and tracks of WLP in sites that are out of SKBR where there are no registries since 1970. We are waiting to confirm this important finding with camera traps. The habitat and fauna have an evident recovery; however we still have not complete capture of data to analyse trends or significant differences. We are still performing the last field surveys to complete the temporal design (but see Figure 1 in Power point attached).

We have registry by mean of direct observations, tracks and photos of principal five felids, puma (*Puma concolor*), jaguar (*Panthera onca*), jaguarundi (*Puma yagouaroundi*), ocelot (*Leopardus pardalis*), and margay (*Leopardus wieddi*); large vertebrates including Bairdi's tapir (*Tapirus bairdii*),

white-tailed deer (*Odocoileus virginianus*), red and brown brocket deer (*Mazama temama* and *Mazama pandora*), white-lipped peccary (*Tayassu pecari*), collared peccary (*Tayassu tajacu*) and medium vertebrates like spotted paca (*Cuniculus paca*), Central American agouti (*Dasyprocta punctata*), coati (*Nasua narica*), nine-banded armadillo (*Dasykus novemcinctus*), great curassow (*Crax rubra*) and ocellated turkey (*Meleagris ocellata*). The presence of large fauna shows that the integrity of ecosystems can be in good conditions. However, we need to evaluate abundances to show population condition of each species in each temporal and spatial design.

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

We inform to local authorities in the communities about the project and they give us the permission to work in communal land and forest near to the reserve. We hope to finish the field work to make a presentation about main results and recommendations to protect critical species or areas to conserve the key resources to wildlife.

5. Are there any plans to continue this work?

Yes, this work is, at our best knowledge, the only one project that has a long-term monitoring activity (10 years) and the unique that study medium and large vertebrates for long time period in the Yucatan Peninsula. Is the first study about the effect of natural disaster (hurricanes) on the large vertebrates in relationship with recovery habitat and recovery of abundances of fauna. We are very interested to continue studying resilience processes and the history life of fauna that act in stress conditions. Our plans are search other opportunities to financial help to the next project with new objectives to have robust set of data that permit to evaluate trends and patterns of abundance.

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

We have contact with other researchers in south part of Mexico that are working with related species (i.e. white-tailed deer, white-lipped peccary and collared peccary) that can be interested in added efforts to investigate and analyse together the regional situation of Neotropical fauna. This situation is an exceptional opportunity to contribute to ecological knowledge and conservation of medium and large fauna shared by many countries of Central America.

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

We used the RSG over a 1-year period (between 2013 and 2014). However, due to weather conditions, heavy rainy season during 2013 and subsequent logistical reasons, we need two or three additional months because we cannot open transects to access to work area and survey sites. The project began and is related with my MSc and Doctoral thesis from 2002 to 2011 and can be continued with helping of other projects linked by common objectives.

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 |
|-----------------------|-----------------|---------------|------------|--|
| Clearing transects | 1258.0 | 1181.6 | -218.8 | We adjust the design of surveys; therefore, the budget of this item was lowest than original but was more efficient in quality of set of data. Also, the field technicians and colleagues helping with work. |
| Sampling tracks | 2358.7 | 2363.2 | -262.6 | We adjust the design of surveys; therefore, the budget of this item was lowest than original but was more efficient in quality of set of data. Also, the field technicians and colleagues helping with work. |
| Camera traps sampling | 157.2 | 246.1 | 88.9 | We exceeded the budget of this item because we made an adjustment in field work of camera traps, however we compensate in another items (p. e. Clearing transects). |
| Batteries | 589.7 | 1059.9 | 470.2 | We exceeded the budget of this item because we need more batteries, however we compensate in another items (p. e. Sampling tracks). |
| Sampling vegetation | 0 | | | |
| Camera traps | 0 | | | |
| New camera traps | 0 | | | |
| SD cards | 0 | | | |
| Fuel | 693.9 | 694 | 0 | We spend all the money of this item and take the strategy of using motorcycle and bikes to access to inaccessible sites. |
| Fieldwork expenses | 955.3 | 955.3 | 0 | We spend all budget of this item and take the rest of other items. |
| Total | £6012.9 | 6500.1 | 77.7 | Adjust in design and budget helps to compensate the effective cost of project. |

Note: The exchange rate was 18.28 each 1 £ sterling.

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

We will search all ways to communicate the results in scientific journals, congress, local communities, and research institutions. We will develop new proposals to continue the monitoring of species and apply to others financial funds including a second period with RSG.

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?

Until now we have not produced any material where mention the RSG, because we have not the complete results, but we want to use the logo in power point presentations in local communities, educational and scholar meets, congress, and scientific papers, newspaper notes and any future report.

11. Any other comments?

We are gratefully whit RSG for this fundamental contribution to continue the study of ecological and biological aspects of large vertebrates that have the main objective to conservation, management and sustainable use of fauna, and in general terms habitat and natural resources of Mayan communities.



Four of five felids in Sian Ka'an and around maya communities registred:
Puma, Ocelot, Margay and Jaguarundi.





Brown brocket deer



Collared peccary



White-lipped peccary



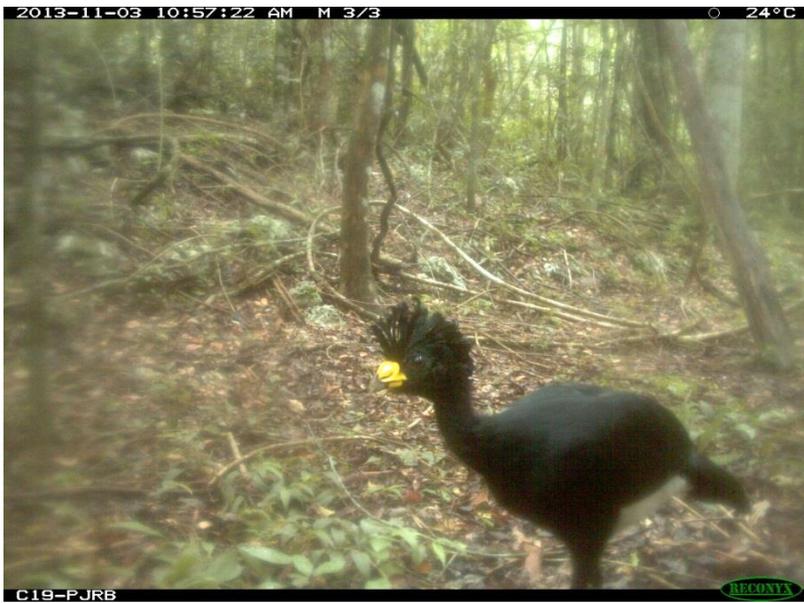
Spotted paca



Central American agouti



Coati



Great curassow



Ocellated turkey



Grey fox



Tayra



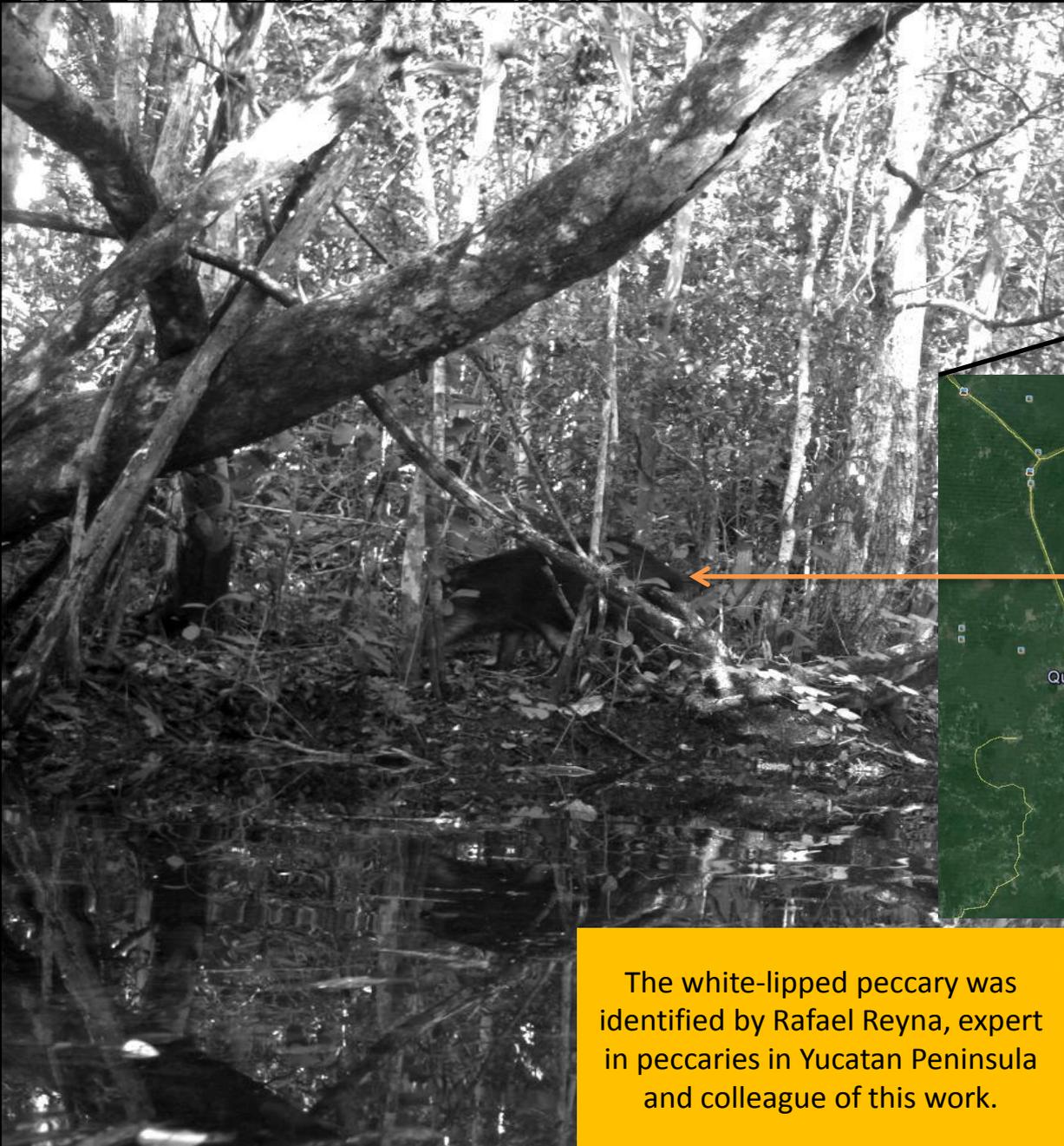
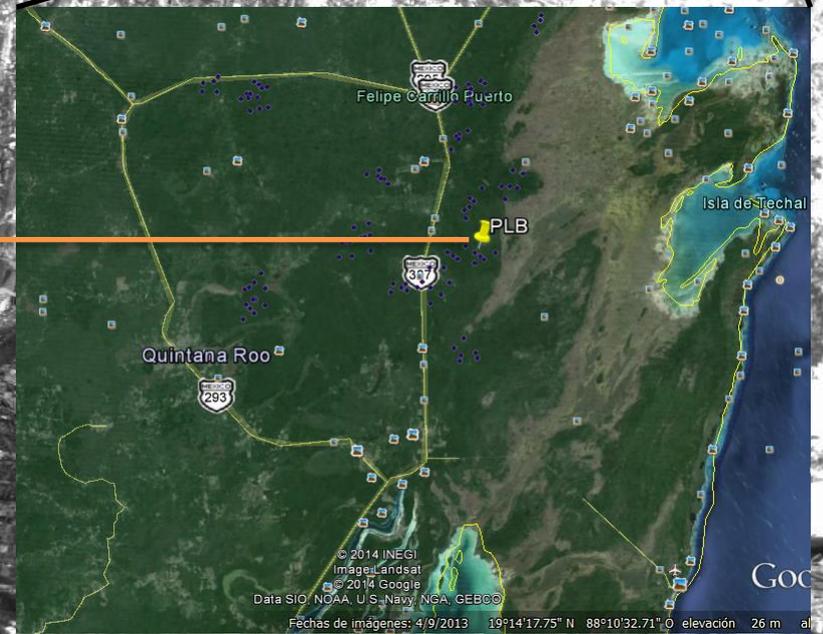
**Brown brocket deer
(*Mazama pandora*) and
Tayra (*Eyra barbara*)**

Quite the same position of camera in
2012 and 2013, where we found
tracks and signals of White lipped
peccari .

Coord.

N (19°19'12.2")

E (87°59'22.8")



The white-lipped peccary was identified by Rafael Reyna, expert in peccaries in Yucatan Peninsula and colleague of this work.

White -lipped peccary
Tayassu pecari
 Coord.
 N (19°19'11.2")
 E (87°59'21.8")

2012-12-14 2:58:58 PM M 2/3

○ 26°C



C16PJRB



Figure 1. Abundance (tracks/km) in 2008-2010 (blue bars) Vs. 2013-2014 (brown bar) period.

