

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	Taggert Butterfield
Project title	Ecology of the Endemic Mexican Spotted Wood Turtle (<i>Rhinoclemmys rubida perixantha</i>)
RSG reference	17543-1
Reporting period	2015-2016
Amount of grant	£4552
Your email address	taggertbutterfield3@gmail.com
Date of this report	May 24 th 2017

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
Provide first information regarding the natural history of the near threatened Mexican Spotted Wood Turtle				We observed turtles in the field over 1,000 times, measured home range, activity patterns, microhabitat, and diet using faecal samples and stable isotopes.
Quantifying home-range size, microhabitat, and composition of diet of the Mexican Spotted Wood Turtle				We monitored 12 turtles (six males and six females) and measured microhabitat, home range, and activity patterns. These data have recently been accepted into the journal Herpetologica.
Identify if Mexican Spotted Wood Turtles are potential seed dispersing agent.				We conducted a germination experiment and found a higher percentage of <i>Opuntia</i> seeds germinated when they were consumed by turtles.
Use stable isotopes to measure the composition of turtle diets and analyse how their diet changes of their lifetime				These data are currently being analysed. However, we have measured the percent of potential resources incorporated into turtles' diets and have observed that their diet changes throughout their life, with a shift from herbivorous to omnivorous diets as they grow.

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

The only unforeseen difficulty in this project was Hurricane Patricia that made landfall on October 27th 2015 directly on our study site. Rated 5 on the Saffir-Simpson hurricane wind scale, Patricia transformed the landscape of the field station and severely damaged surrounding villages. Luckily, this occurred at the end of the wet season and turtles were not being monitored. Unfortunately, we could not participate with local communities in the annual open doors event in December 2015 because the damage was so severe, the Chamela Biology Station could not host the event. Instead, we raised a money (\$5,000 dollars) to help local families who suffered damage during the hurricane.

December 2016, following a second field season, we were able to share our work at the annual open doors event at the Chamela Biology Stations.

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

The most important outcome was discovering the home range size, microhabitat, activity patterns, and diet in the Mexican spotted wood turtle (*Rhinoclemmys rubida perixantha*). This data is the first of its kind for terrestrial turtles in the tropics and a first step in understanding what we need to conserve and someday reintroduce this and similar species. Second, we educated individuals, especially kids, in local communities about our project and the importance of turtles in the ecosystem. Although we interacted with local communities less than expected, the third most important outcome was establishing relationships with the local and tourist communities which will allow us to expand our influence in the coming years.

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

Besides our participation in the annual open doors event in December 2016, our involvement in the community was informal. I used every interaction to educate local people and tourist on what I do and what we do at the biological field station. Our original plan was to go to the local schools and provide lessons on what we do. Although we did not accomplish our original goal we have established relationships with local organizations that will make it easier to be involved with the community in the future.

5. Are there any plans to continue this work?

We will continue this study at through 2020. However, we are expanding this study to include all three turtle species present at the study site in Chamela, Jalisco and begin working with a similar turtle community in Oaxaca, Mexico. We are also going to expand are influence in the local community.

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

We will share this work with the scientific community through at least two publications in peer-review journals, one of which titled: "Habitat use and Activity Patterns of a Terrestrial Turtle (*Rhinoclemmys rubida perixantha*) in a Seasonally Dry Tropical Forest" has recently been accepted in the journal *Herpetologica*. Furthermore, we will share our work with the local communities in continued visits to local schools and participation in the annual open doors event at the Chamela Biology Stations.

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 Rufford Foundation grant was used from November 2015 to July 2016. The use of this grant exceeded the anticipated length of the project because the project was extended through September 2016. Also, processing of the stable isotopes took longer than expected and was not finished and fully paid until July 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
Test for Stable Isotopes	1539	1262	-277	We spent less on isotopes to compensate for the expensive field station stay.
Radio transmitters	880	1836	+953	Additional radios were purchased out of pocket.
Plane Tickets	833	833	0	These did not deviate from the budget.
TR-4 VHF radio receiver	384	0	-384	We did not buy the receiver to compensate for the expensive field station stay.
RA-23K VHF Antenna	160	160	0	This did not deviate from the budget.
Field station stay	756	2,633	+1,877	Because I stayed at the field station for 11 months, this was by far the most expensive expense over the course of the study period.
Total	4552	6724	-2172	Considering that Rufford was the biggest source of funding for my project. The differences that were not mentioned in the budget were considered self-expenses.

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

The important next step is finding a sustainable way to interact with the local community. In addition to local towns, there is a score of local hotels that offer an opportunity to educate people from around the world about the endangered tropical deciduous forest ecosystem. Also, given that Chamela is perhaps the greatest tropical deciduous forest field station in the world, I believe the local

communities should know more about this ecosystem than any other community in the world. Unfortunately, this is not the case, and many locals don't know what we do at the field station and there are even rumours that we release dangerous animals close to villages. I think the best solution is find a way to interact with local schools on an annual basis. This will create a future generation of adults who understand the importance of the Chamela biology station and the tropical dry forest ecosystem they live in.

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?

The Rufford logo was used in a presentation at the International Turtle Survival Alliance (TSA) conference in New Orleans, LA, August 2016, where I was awarded the second best student presentation. I have also acknowledged the Rufford foundation in the journal *Herpetologica* in our recently accepted manuscript.

11. Any other comments?

This project would not have been possible without the Rufford foundation. In fact, this project was only successful because of the Rufford foundations generous grant. It is increasingly difficult to find funds for autecological studies and in this study we discovered ecological aspects of a terrestrial forest dwelling turtle in the tropical dry forest ecosystem for the first time. I sincerely thank Rufford for making this project possible.

