

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	Aritra Kshetry
Project title	A study of people-wildlife relationships in a high conflict region of northern West Bengal to identify feasible conflict resolution methods
RSG reference	16827-1
Reporting period	March 2015-April 2016
Amount of grant	4974
Your email address	kolkatalife@gmail.com
Date of this report	26 th April 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
Assessing the extent of conflict and understanding circumstances behind direct encounters between human and wildlife (leopards and elephants) in the region to identify feasible mitigation measures				The most important objective of the project was to understand how attacks on people by leopards and elephants occur in the region. We studied more than 250 cases where people were injured/killed by elephants/leopards and ascertained the causes of the incidences using semi structured interviews and qualitative analysis.
Identifying conflict hotspots in the region for focusing conservation efforts				We have been able to map 285 locations of elephant attacks on 330 locations of leopard attacks in the study area between 2009 to 2015 to identify spatial hotspots of such attacks and also temporal trends
Studying elephant movement routes to identify critical areas for their habitation				We collaborated with the State Forest Department for this and a comprehensive map of elephant movement route would need another years work since we found a lot of elephants using the landscape and the use varied for different groups at different times of the year. We have been able to build a citizen science platform for local enthusiasts to record the movement of the identified elephants. The database already has 16 identified males and five herds comprising of more than 50 elephants in total. We also have intensive photo and video documentation of the identified animals.
Integrating all stakeholders to understand their perception of conflict and their idea of socially acceptable conflict resolution methods				We shared the results of our study and the key findings with the forest department and tea estate management, the two most important stakeholder groups. The results were also shared with tea estate workers at informal gatherings when members of our team visited the various tea gardens. However, a formal meeting

			with the tea estate labour unions could not be planned since the state elections were declared in March 2016 and the unions could not find time. The meeting will be conducted post elections where we will share the results of the study and we will also make guidelines on avoiding direct encounters with leopards and elephants.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Unforeseen difficulties arose during two objectives of the project:

1. Studying elephant movement routes: we had initially planned tracking elephant movement for 1 year using direct observation as well as based on forest department sighting records. However, direct observations were difficult since most of the elephant movement in human use areas occurred at night and often in maize fields where the height of the standing crop hindered observations. To circumvent this hurdle, we mapped locations where elephants were present during such events rather than identifying particular individuals who have more propensities to visit agriculture fields. We have planned to identify these animals in the next year of the project using night vision equipment rather than using spotlights.
2. Integrating stakeholders: The social science team of the project spoke to all the stakeholder groups to understand their perceptions of conflict and what are feasible mitigation measures according to them, that leg of the project was successful and a detailed analysis was possible. Furthermore, we also shared our results with the groups during meetings and gatherings. The meeting with the labour unions could not materialise due to sudden announcement of state elections and this will be conducted once the elections are over.

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

1. People in the study area, for the first time have agreed that a solution to the age old conflict is possible. The tea estate management has come forward to discuss and affect changes in the tea garden practices to minimise leopard attacks. Many of the senior managers of the tea estates in the study area interact regularly with the research team and inform us about leopard and elephant activities in the gardens. Prima facie, it appears that trapping request for leopards in non forest areas have also gone down, a significant change may only be noticed over a period of two to three years. Previous studies have shown that leopard trapping and releases in far away forests may actually aggravate conflict as the leopards try to home back over unfamiliar and hostile territories. Elephant caused damage still persists and the recommendations which our team will make based on out study will be accepted by the tea management

and will be incorporated in the management plan for the forest department also. We have already engaged with the high ranking officials of the forest department and we shall formulate a mitigation strategy in consultation with the Forest Officials over the span of next few months.

2. In a first for the state of West Bengal, we now have a spatial map of elephant and leopard attacks that have occurred in the high conflict area between 2009 and 2015. The maps are vital to identify priority areas and focus mitigation measures in these areas. The maps along with the final consolidated report will be shared with all the stake holder groups.
3. As part of the project, ordinary citizens and wildlife enthusiasts have been involved. A simple initiative like a Facebook group helps monitor more than 15 male elephants and five herds in the small 2500 km² study area. The group <https://www.facebook.com/groups/181931938843388/?fref=ts> is very active and there are posts on elephant movement almost every day. Our team compiles all these observations and maintains a database of sighting locations and date. This initiative will be expanded to include more citizen scientists and to cover the greater north Bengal elephant landscape over the next few years.

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

The principal aim of the project was to involve and engage with local communities. Since the proposed project was to understand the extent and nature of conflict to identify suitable mitigation strategies, no immediate benefit to the communities was expected. Our team interacted with the various stakeholder groups comprising of the local communities to understand their perception of conflict and also to understand what kind of mitigation measures might be acceptable to them. In total we interacted with workers and inhabitants of from more than ~60 tea gardens and 20 villages in the study area to understand circumstances of attacks by leopards and elephants. Our team conducted intensive surveys in eight villages and four tea estates immediately adjacent to the forests to understand how the livelihood of the locals are affected by wildlife damages and what other social, economic and political problems are faced by them.

5. Are there any plans to continue this work?

We want to continue the project to implement the mitigation measures we have identified and also test its efficacy in a small area. If the mitigation measures are found to be successful then we plan to replicate our model over the larger landscape in the conflict affected sites to reduce leopard and elephant caused damages in the region. We have already started exploring funding options and would also like to approach The Rufford Foundation for further funding for the same.

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

We are preparing a consolidated report from the work including the results of the social surveys as well as the conflict interviews and elephant monitoring aspects. The consolidated report will include recommendations and proposed mitigation measures and will be shared with the West Bengal Forest Department and the Tea Estate Associations. We are also preparing two awareness documents to minimise chances of elephant and leopard attacks, this document will be in the local language and will be targeted at the tea estate workers mostly since most these communities face most of the damage.

Furthermore, we will also publish the results of the study in an international peer-reviewed journal as soon as we have completed analysing the data in its entirety.

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 between March 2015 to March 2016. The project is ongoing and the funding from Rufford was used between March 2015 and March 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
PI Stipend	1953.04	2194.22	-240	Project was extended for a month and hence the increase
Wages	427.23	116.21	311	Field assistant was hired initially but later field observations were made by the PI alone or with the help of local volunteers or Forest Department Personnel
Two Wheeler rent	274.65	376.09	-101	Was initially budgeted for 9 months but the two wheeler was required throughout the duration of field work of 12 months
Fuel	675	233	442	The fuel efficiency of the two wheeler used was very good and hence less fuel was consumed than budgeted for, also the fuel prices dropped considerably during the span of the project.

Accommodation	412	722	-310	The actual rent was found to be higher than the budgeted amount, also the field station was retained for 12 months rather than 9 months as budgeted.
Food	411	354	57	Food expenses as per requirement
Communication	60.84	149	-88	Internet charges were found to be higher at the field site than expected.
Overnight Travel	151	237	-86	Travel costs were slightly higher than budgeted
Stationery and Miscellaneous	203	273	-70	Slightly increased as field station was unfurnished and had to be furnished with bare essentials.
Expenses for social scientist	404.60	0		Only to and fro flight fare was requested by the social scientist and his food and accommodation was taken care of. He did not demand and salary since he also did his dissertation as part of the project.
Other unbudgeted expenses	320	320		Towards travel expenses for Social Scientist, vehicle repairs, postage and couriers etc.
Total	4974	4974	0	

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

Looking ahead, the most important step would be to implement the mitigation strategies as a pilot project in a few selected villages and tea estates and test the efficacy of the same. If the measures are found to be effective then we need to replicate and expand it over the larger area which is affected by leopard and elephant related conflict.

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 Foundation logo was used in the questionnaire forms and will also be used in the final awareness material. RSGF received publicity as we presented the study at the Students Conference on Conservation Science-India 2015 and The Rufford Foundation was mentioned as one of the principal funders of the ongoing project.