

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	Shikha Srikant
Project title	Identification of carnivore species using genetic tools and assess human-wildlife coexistence in the Balpakram Landscape, Meghalaya-India
RSG reference	18332-1
Reporting period	1 -12-2015 to 30-01-2017
Amount of grant	£5000
Your email address	shikha.srikant821@gmail.com
Date of this report	31-01-2017

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
Carnivore Species Identification using faecal matter				200 samples collected from the field are being analysed in the Wildlife Genetics Forensic Laboratory of Wildlife Institute of India, Dehradun. 100 samples have been extracted from scat and will undergo sequencing for species identification. I expect to finish the sequencing by end of March 2017
Diet Study for analysis of food and prey species of the carnivore species.				50 samples of scats are being analysed. Diet analyses of samples are completed, 150 remaining. We are identifying the prey species and insects up to genus level.
Human-carnivore interaction through people's perception survey (PPS)				<p>The people's perception survey (PPS) revealed-</p> <ol style="list-style-type: none"> 1. A map of conflict-prone zones in the landscape has been completed. 2. The species most frequently involved in the conflict have been identified. 3. Suggestions/recommendations by the communities have been noted and will be shared with the local authorities to improve understanding, coordination and wildlife management.
Sharing major research finding with community and stakeholders				The research findings can be shared once the laboratory findings are complete.

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

1. The project could not be completed within the proposed timeframe. While field work was completed on schedule, the laboratory work of DNA extraction, PCR and sequencing could not begin on time due to shortage of manpower in the laboratory. About 50% of the lab work is now complete and I expect to complete the project by April, 2017.
2. Costs of the laboratory sequencing work, estimated exceeded the budget because more samples were collected in the field than originally estimated. While this will improve the quality of the data, funds fell short.

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

Based on the current result analysis the following are the three major outcomes:

1. Hundred samples of 200 have been extracted successfully in lab followed by sequencing for identification of species. The sequencing of extracted DNA took time due to majority of samples being of unknown and small carnivores for which primer selection and reagent standardisation was a hold up.
2. Completed diet analysis from 20% of the carnivore scat samples reveal that majority of the prey species were birds, rodents and insects. For rodents I am making slides of hairs collected from scat and will be identified using reference slides. For insects, I am taking help of entomologist to identify the species at least till the genus level.
3. The results of the people's perception survey revealed that
 - a. The species most involved in conflict were as follows:
 - I. Crop depredation: Asiatic black bear, wild pig, porcupine, hare and elephant.
 - II. Poultry predation: clouded leopard, leopard cat, jungle cat, small Indian civet, large Indian civet and mongoose.
 - III. Poultry and livestock predation: leopard, Indian jackal, marbled cat and yellow throated marten.
 - b. Eighty-four percent of the villagers agreed that wildlife is needed in the landscape whereas 6% of the villagers thought otherwise. (According to this group wildlife create menace and financial loss.) The remaining 10% respondents were ignorant about the wildlife of the landscape and had no opinion.

- c. Forty-two percent villagers responded that it is necessary to have wildlife in forest as they play functional role in forest growth and regeneration as well as restoration of catchment areas which provides them with water source throughout the year. Many people have realised that due to the land use pattern changes there is an immense reduction in water sources and are therefore willing to preserve the forest and its wildlife for their own benefit. 27% felt the need of wildlife for enhancing the aesthetic beauty of the forest and 13% mentioned that the wildlife helps them to gain some incentive for the purpose of ecotourism and source of pride for Garo land. 9% of respondents didn't mention any specific reason for wildlife conservation and remaining 9% did not feel the need for wildlife at all.
- d. During the people's perception survey about 56% of villagers wanted the awareness/educational campaigns on wildlife conservation in the landscape whereas 12% villagers asked for education on mitigation measures and techniques that can be used in the local context with the support of forest department. 10% of villagers asked for compensation for financial loss due to crop depredation, whereas another 10% wanted the forest department to take active participation in patrolling the areas and encouraging the distribution of equipment such as torch lights to the villagers for night watch. The remaining 12% showed no interest and gave no response/feedback.

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

The community participated actively in the perception survey and quite often responded positively explaining their issues with the wildlife in the landscape. The survey results have identified the species most involved in conflict in the landscape. The communities also made important suggestions that help us to identify the key gaps in the management planning of forest authorities. I will share these data with the wildlife managers of forest department and to help them plan targeted mitigation strategies.

5. Are there any plans to continue this work?

Yes. The people's perception survey on human-carnivore interactions in the landscape, a major issue in many parts of India, revealed that unlike other regions of India this landscape is not severely affected by the carnivores. Based on my community interaction and people's perception survey conducted under the aegis of the project has revealed: a) people's high tolerance towards wildlife; and b) their positive appreciation and attitude for biodiversity as a whole. This has constituted future prospect to work with communities and forest authorities to strengthen wildlife

management practices involving local communities. My plan to continue conservation efforts in the landscape are in two folds: a. reaching-out community members through capacity building programmes and enhance their participation in wildlife management in community-owned land; and b. Bridging the gap between wildlife managers and community and mainstreaming community interaction in forest management through regular interaction with forest authorities (in form of meetings, workshop and extending inputs to wildlife management plans of protected areas of the landscape).

I have also come to know that the community are quite enthusiastic about their wilderness and are keen to conserve it in their own way by not getting into conflict with the animals at all.

This gives me an opportunity to collaborate with the community to further plan conservation strategies for management of the wild flora and fauna. Also the results of the people's perception survey has given me an outstanding opportunity and reason to continue the work further in setting an example of community-based conservation.

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

Currently, I am planning to hold local stakeholders meeting and education and awareness programmes in the villages, as requested by the villagers themselves during the perception survey. For this, I am seeking more funds.

The results on community perception survey wildlife conservation will be published in scientific journals.

It is my immense pleasure to share with you the news that the Balpakram landscape has been identified as an example of natural as well as cultural heritage(mixed) by the stakeholders and UNESCO Category 2 centre for which we are on the initial process of adding the area in the tentative list of the UNESCO categories. This project results play a crucial role in bonding up the link between the community and nature and will also provide baseline data on the community perspective to the nomination procedures of Balpakram as an inscribed World Heritage Site under mixed category.

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 grant was utilised in the period of December 2015 till December 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
Staff time	2,096.00	2,314.74	(218.74)	Hired more manpower at local level- especially daily wage worker during field camps and hired from local community
Equipment, Field gears and genetic tools	991.00	1,088.26	(97.26)	Spent more than budgeted amount for genetic tools
Field camps	856.00	625.83	230.17	
People's Perception Survey	454.00	416.80	37.20	
Travel	484.00	495.95	(11.95)	
Communication and stationary	119.00	92.31	26.69	
TOTAL	5,000.00	5,033.89	(33.89)	

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

- I. Having generated the requisite knowledge about the surviving biodiversity and people's perception towards the biodiversity, conservation wise, the next important step would be to initiate the required processes for conducting awareness and educational campaigns in the villagers taking into consideration all the community groups and students about the importance and role of carnivores in the forest ecosystem. I also plan to bring into mainstream discussion the adverse effects of the illegal activities such as coal mining on the biodiversity and the landscape.
- II. I am also planning to initiate a study to identify the important food species of frugivores in the forest and study their phenology. This data will be used to encourage and inform plantations of these species in jhum fallows, as well as in the monoculture plantations of cashew nut, areca nut and rubber, to aid recovery of the fallows and introduce diversity in the monocultures, while

sustaining the frugivore community and connected dispersal and regeneration processes.

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 RSGF logo was used in the PhD synopsis presentation given by PI at Wildlife Institute of India as a major source of funding support for the PhD work. The RSG logo would occupy prominently space both in the forthcoming workshop, as well as the maps that are currently under preparation.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

12. Any other comments?