

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. 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	Hari Prasad Sharma
Project title	Conservation of Red Pandas in Nepal: Characterizing Disease,
	Livestock Mitigation, and Public Education
RSG reference	14617-2
Reporting period	January 2014 to July 2015
Amount of grant	£6000
Your email address	himalayanhari@gmail.com
Date of this report	June 3, 2015



1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not	Partially	Fully	Comments
	achieved	achieved	achieved	
Identify parasites on red panda and livestock.			V	Basically, the programme is fruitful and successful to enumerate for the first time red panda and livestock's parasite in some extent. However, it was difficult to go up to species level to characterise parasites without a molecular study. We did analysis only from faeces during this time. So, a molecular study is necessary to finalise the parasite in future research.
Describe potential modes of parasite transmission.			V	We estimated the higher total parasite load in livestock than red panda in both study area. The reason may be due to larger foraging range (distribution) of livestock than red panda. Inhabiting in various habitats in different climatic zones and higher chance of contamination with other groups' may favour the higher load of parasite in livestock. It results in higher chance of contamination from livestock to red panda because of their similar feeding habits and habitat.
Conservation Awareness programme			\checkmark	It is continuous process. Two graduate students; Mr Dipendra Adhakari and Mr Bishnu Achhami involved for this programme in both field and lab works. Interaction programme about parasite and mode of their transmission and their effect in local people especially community groups and school children in presence of park officials were imperative and effective during this study.



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

We did not have any difficulties during the project except the parasite identification that took a long time.

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

We estimated the prevalence of 11 most commonly seen parasite taxa, including seven nematodes (Ascarid nematodes, *Ancylostoma* spp., *Capillaria* spp., spiruid nematodes, strongyle nematodes, *Strongyliodes* spp. and *Trichuris* spp.), two cestodes (*Moniezia* spp. and *Taenia* spp.), one trematode (*Fasciola* spp.) and one coccidian.

Parasite prevalence is higher in Langtang National Park's livestock than Rara National Park's except for coccidians. Coccidians had a higher prevalence in red panda in both parks, while higher only in RNP for livestock. Parasitic prevalence is comparatively similar in red panda in both areas, while higher in livestock at LNP than RNP. We found parasite eggs in 96.7% samples of both groups from both park's livestock and red panda.

Graduate students tried to take expertise on field and lab works. Interaction programme about parasite and mode of their transmission and their effect in local people especially community groups and school children in presence of park officials were imperative and effective during this study.

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

Interaction with local people, herders and park authorities was imperative. A red panda ecoclub was established and a small amount of seed money was provided this year to run the programme in the future in Rara. The capacity building of local assistants from two different potential habitats of red panda has been great achievement of this project. These locals' students can conduct similar surveys for same and different species.

5. Are there any plans to continue this work?

From this result, we found that red panda are suffering from parasites, however, we don't have exact data how many pandas are suffering. So, identification of individual red panda and presence of disease is another immediate necessary research. Similarly, we do not know the conservation threats on red panda through loss of genetic diversity and gene flow. This may happen to red panda because of habitat fragmentation outside protected areas and between protected and unprotected areas. So, it is necessary to continue the project to determine the gene flow, which help to establish corridor to the populations where genetic diversity is low.



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

We are submitting the manuscript for publication in international peer-reviewed journal from this project. I am planning to participate in workshops and conferences for paper presentation. The result of this project will be available for broad international and national audience through Research Gate and academia.edu and also through library.

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

We spent the RSG throughout the project cycle for field and lab work and manuscript preparation. We five people went to the field and three people were worked for lab. A big amount of the grant was spent during the field research and lab work when we tried to identify parasites to species level, however, it becomes difficult for identification up to species level. Accommodation and field assistants' salary was big amounts spent at that time too. Towards the end of project cycle there was no expenditure.

Item	Budgeted	Actual	Difference	Comments			
	Amount	Amount					
Travel from	1400.00	1500.00	-100.00	Travel cost increased slightly			
Kathmandu to two				than I proposed due to lack of			
different fields				regular flight to Rara National			
				Park			
Logistic	2000.00	1975.00	+25.00	Due to our past project and			
Accommodation of PI				relation to the area it becomes			
and assistants				cheaper for this time.			
Subsistence payment	850.00	850.00	0	I maintained this.			
for a local assistant							
Equipment,	800.00	1150.00	-350.00	Used for chemicals, equipment			
stationery, and				and identification of parasites			
expendable materials				(some equipment also used			
				from CDZ, TU from this we			
				saved some cost). The cost			
				difference is due to cost			
				fluctuation and also for			
				identification.			
Workshop, seminars,	950.00	600.00	+350.00	We did not do formal press			
and press conference				conference, however our work			
				is published in daily news.			

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.



Total	6000.00	6075.00	-75.00	Ι	spent	а	little	over	the
				ар	proved	buc	dget (7	75.00),	but I
				will manage the difference.					

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

Effective conservation and management of the red panda requires in-depth knowledge of the current level of genetic diversity and gene flow among the populations. No genetic studies have been conducted on this species in Nepal so far. So, there is urgent need of genetical study for the determination of the level of genetic variation, population structure and gene flow among populations throughout the Nepal.

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?

I have used the RSGF logo in my presentation in seminal and workshops. The RSGF received some publicity during the course of this project. I mentioned the RSGF's name in all applications filed to get a permission to carry out research. Also, I mentioned your organisation's name to eco- clubs when they asked me about the funding source. I recommended them to apply for the grant if they wish.

11. Any other comments?

The project was successful. It is the first field data on gastro-intestinal parasites for livestock and red panda from the same habitat. I would like to thank The Rufford Small Grant Foundation, London, provided funding for this study. The Department of National Parks and Wildlife Conservation, Nepal, permitted this research. I thank Ashok Bam, Bishnu Bajagain, Dipendra Adhikari, Bishnu Achhami and staff of Rara and Langtang National Parks for their support. I appreciate the cooperation from Central Department of Zoology, TU, School Children, local people, community leaders and herders. I thank Dr Pei-Jen Lee Shaner and Linghua Ke for parasite identification.