

## The Rufford Foundation Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Kaushal Yadav
<b>Project title</b>	Assessing the extent of Human-Himalayan Black Bear <i>Ursus thibetanus</i> Conflict and Initiating Conservation Outreach Program in Parche, Nepal.
<b>RSG reference</b>	13973-1
<b>Reporting period</b>	September 2016 – September 2017
<b>Amount of grant</b>	£5000
<b>Your email address</b>	Yadavkaushal13@gmail.com
<b>Date of this report</b>	6 <sup>th</sup> August 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
Assessment human-Himalayan Black bear conflict				Structured questionnaire was prepared and survey was conducted among 131 respondents chosen systematically. Transects not more than 500 m in length were laid in the forest close to the settlement and corrals. After consultation with community in the research area, three persons with information on human-black bear conflict were identified and interviewed.
Digitization of Human-Black bear conflict locations				Eleven geo-locations were identified where the conflict had occurred previously. Those location points were plotted in map using Arc GIS 10.1.
Initiating Conservation Outreach Program				Two secondary schools were chosen from the research area as per the suggestion from the local leaders and social worker. Students from grade 8, 9 and 10 along with teachers were invited for black bear conservation camps. Conservation material like brochures and poster were distributed in those camps as well as in the community also.
Local Workshop				Due to the political activities and local level election, local workshop was not successful as expected. Also the early monsoon and busy schedules of local community in their farming resulted in very less attendant in the workshop.

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

Untimed heavy monsoon made data collection of social survey a bit difficult to conduct, which was tackled by extending time period of data collection in both settlements (Sikles and Tangting).

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

1) Human-Himalayan Black Bear conflict assessment

a) Structured survey

Sikles and Tangting were selected as two settlements for structured questionnaire survey. More than 10% of the household were selected for human-Himalayan black bear conflict assessment using systematic random sampling. Altogether 131 households were approached for structured survey with the help of three enumerators.

On the basis of our study, crop raiding by wild animals was focused as main problem faced by the respondents. Around 35% of the respondent reported crop depredation by wild animals as major challenge for living in the village (Figure 1).

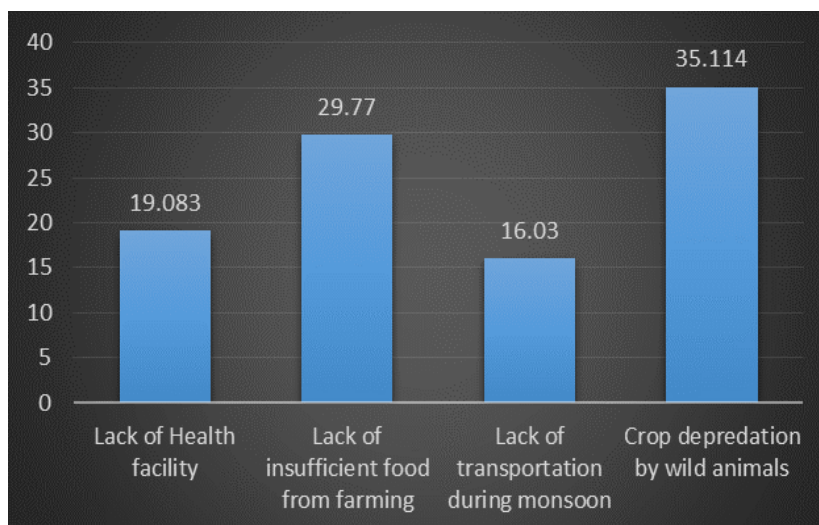


Figure 1: Challenges in living in Sikles & Tangting

Himalayan black bear (black bear hereafter) was the most problematic animal followed by common leopard. Around 37% of the respondent reported black bear as major animal of human-wildlife conflict followed by common leopard (Figure 2).

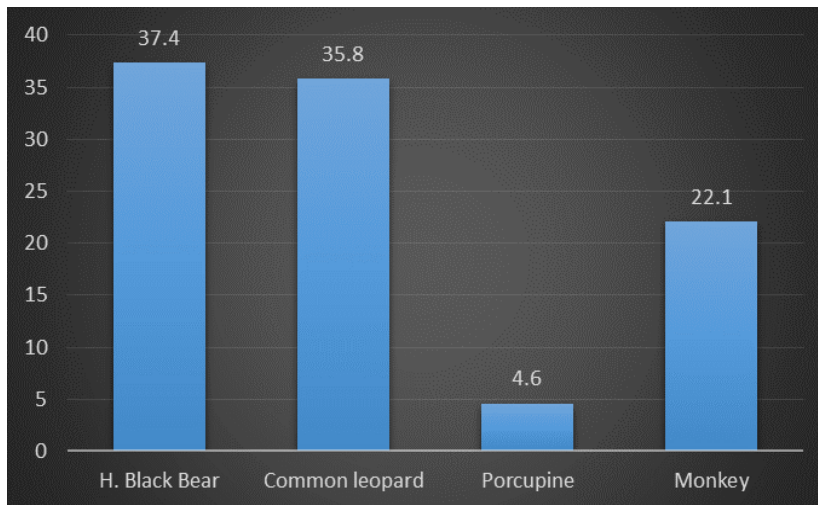


Figure 2: Problematic wildlife in Sikles & Tangting

Generally conflict with black bear was reported to occur frequently during July and August (Figure 3). These months indicate harvesting season for the crops like maize and millet. This could possibly attract black bear for easy foraging in the farmland. Winter months were comparatively passive regarding the conflict incidents between human and black bear.

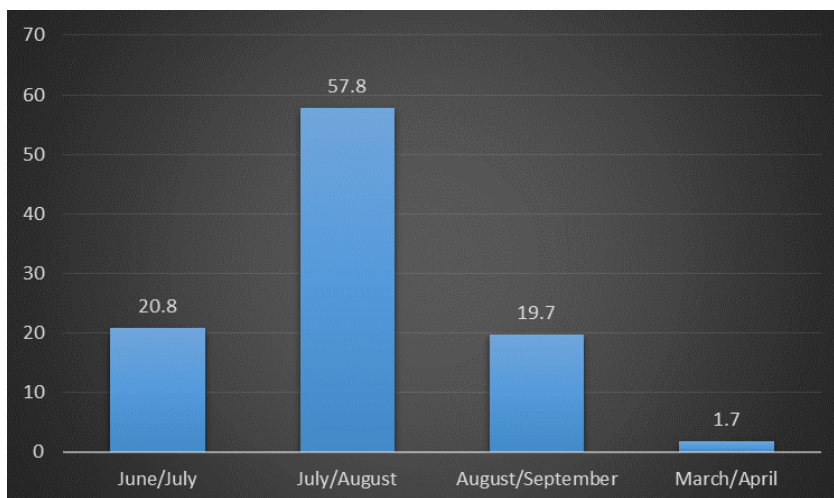


Figure 3: Seasonal trend of human-Black bear conflict

Around 80% of the conflict events were reported at night. Damage of crops in farmland by black bear was mostly at night. However attacks on humans by black bear were mostly reported at dusk.

On analysing the trend of human-black bear conflict type for the last 10 years, as reported by more than 70% of the respondents, crop depredation and loss of property has increased. However the trend of human casualty is reported as normal by similar percentage of respondents (73%).

Sudden encounter with black bear and easy foraging in farmland than in forest were major reason for the human-black bear conflict (Figure 4).

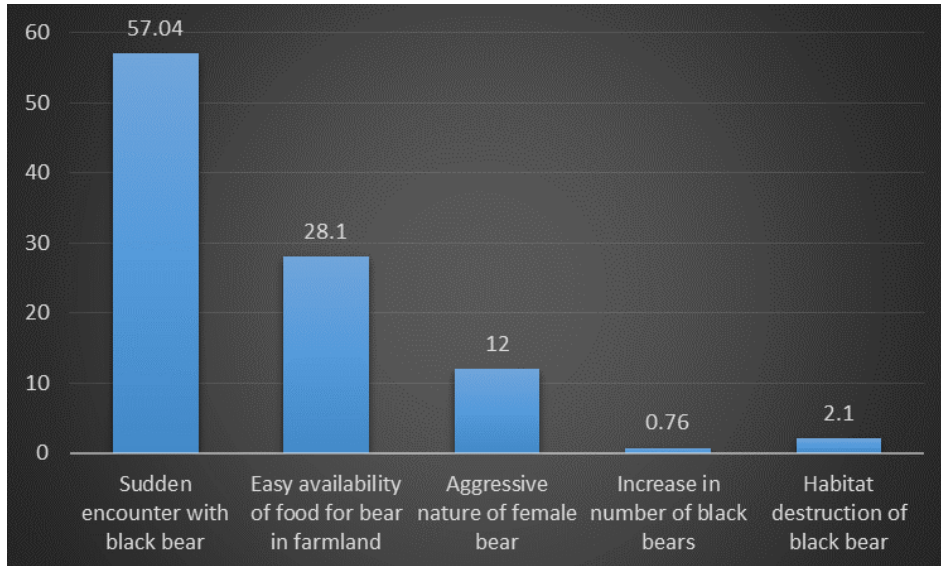


Figure 4: Reason of Human-Black Bear conflict

#### b) Transect survey

Strip transect of 5 m width with length less than 600 m were purposively laid on the forest near the farmland and corals. Altogether 12 transects were walked and signs of black bear, i.e. scat, pugmark, claw marks, were recorded using GPS unit.

Altogether, 7.2 km was walked during transect survey recording 12 indirect signs (scat, pugmark and claw mark) was recorded. Scat within radius of 100 m was recorded under single location. Also the geo-locations of camera stations which successfully captured photograph of black bear were included in map after retrieving the camera traps.

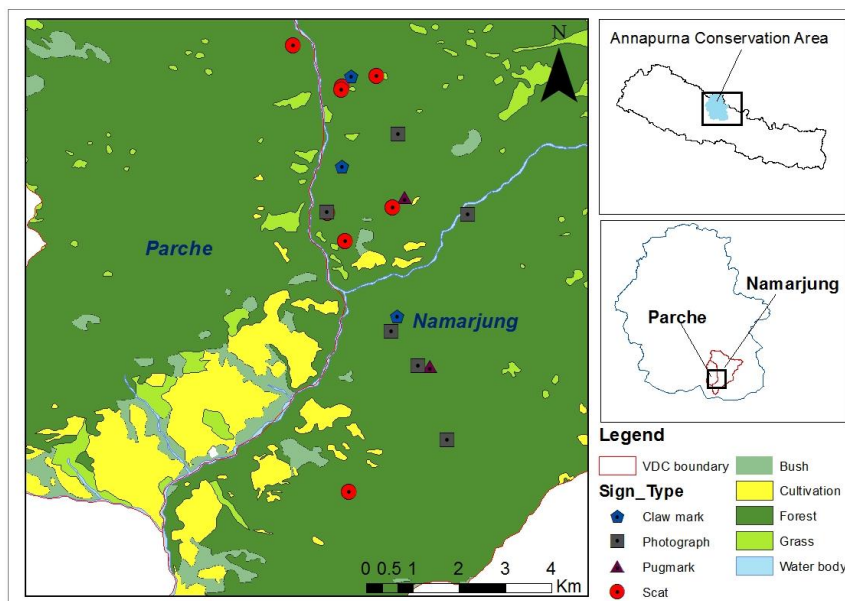


Figure 4: Indirect evidence of black bear recorded during transect survey



## 2) Digitization of human black bear conflict locations

On consultation with key informants and from the information of respondents, 11 locations were identified. Coordinates of those locations were recorded which were later plotted in map using Arc GIS 10.1.

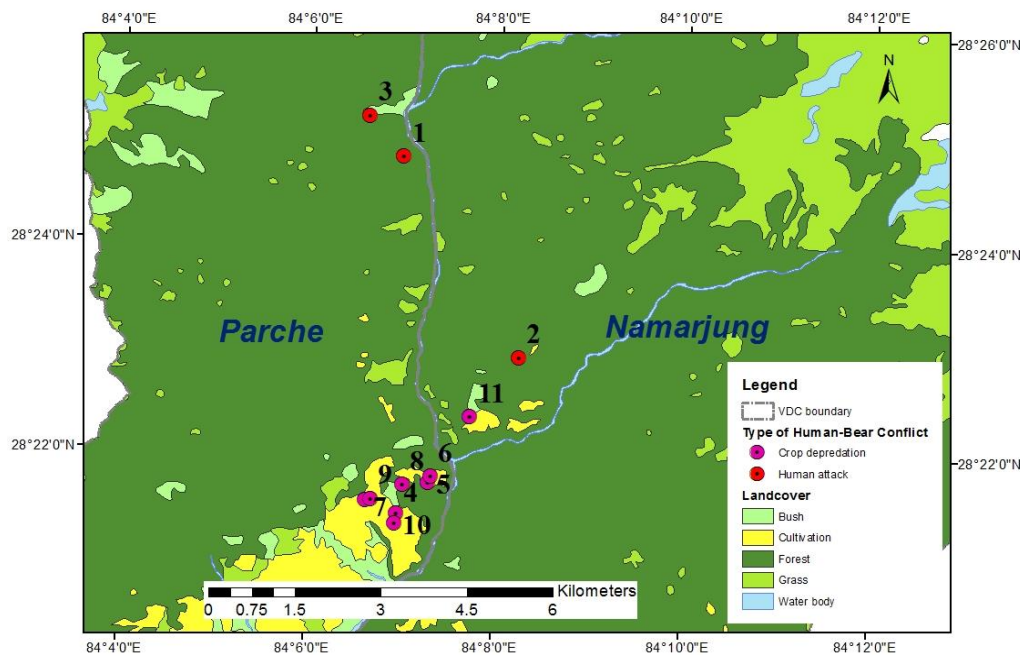


Figure 7: Human-black bear conflict geo-location

## 3) Conservation outreach program

Himalaya-Milan Secondary School of Tangting and Annapurna Secondary School of Sikles, Parche were chosen to conduct black bear conservation camp. Students from grade 8, 9 and 10 were selected for the conservation camp. Pre- and post-evaluation form were filled up by the participants.

Powerpoint presentation, video and photos of black bear were shown and discussion on conservation of black bear was done in the camps. Scats, pugmarks and claw marks of black bear were shown to the participants. Brochures and posters containing general information of black bear and conservation message were distributed among the participants.



Figure 8: Conservation awareness camp in Tangting & Sikles

#### 4) Other outcomes

With the support of Friends of Nature, (FON), Nepal, we installed 11 camera traps in the jungle near Sikles and Tangting. Camera traps were successful to capture the image of black bear in six locations.



Figure 9: Images of Himalayan Black Bear captured by camera traps

In order to educate the local people, hoarding (flex) board containing safety tips were installed in four major entrances to jungle from settlement. Two boards were installed in Tangting and two of those were installed in Sikles. Hoarding board contained safety tips to be followed in case of sudden encounter with black bear in forest.



Figure 10: Hoarding (Flex) board displaying safety measures on sudden encounter with Black bear

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

Entire field work of the project was accomplished with the help of local supporting staff from the communities. Field enumerators (Bir Gurung, Hari Gurung, Khum Bahadur Gurung) were chosen according to their ability to understand both Nepali and local (Gurung) language in order to facilitate structured survey. Porters and local guide (Pas Bahadur Gurung, Aas Bahdur Pariyar etc.) were very much helpful in conducting sign surveys of black bear. School staff, teachers, local leaders (Dilli Gurung, Prakash Gurung, Suraj Gurung, Bimala Gurung etc.) from the community facilitated the conservation camps. Overall field work was completed with the support from local communities as they were generous enough to provide past information on black bear conflict.

#### 5. Are there any plans to continue this work?

Yes, there are further plans to step up this research project. During our sign survey we found excessive use of some part of the forest by black bear. Thus we are further planning to determine the habitat use of black bear during the winter. Along with this we are also planning to provide techniques and safety equipment (bear spray, whistle etc.) to villagers in case of sudden encounter with black bear.

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

We have shared our outcomes with the local communities during our workshop. Further the report will be made available through publication in scientific journal.



Hard copies will be printed and made available to the community area management committee and other relevant organizations.

**7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?**

Rufford Small Grant was used along the year of the project period. Beginning from the development of questionnaire, preparation for sign survey, production of conservation materials, conducting field work till the report writing; budget from RSG was used. Apart from the anticipated expenses, payment for the vehicle was also done during the fieldwork

**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. 1 £ sterling = 4.44 Nuevo Sol**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Scheduled Survey	510	480	30	
Key Informant Interview	100	140	-40	
Conservation camps	250	400	-150	
Local workshop	2250	1350	900	Less than expected number of attendant were present in the workshop.
Posters and brochures	700	750	-50	
Local supporting staff	1160	1900	-740	Increase in per day rate of potter and also in increase in number of field days raised the estimated expense of local supporting staff
Miscellaneous	30	15	15	
<b>Total</b>	<b>5000</b>	<b>5035</b>		<b>We also had developed hoarding boards to deliver safety tips to the community bear attack. Expense for this hoarding boards and GBP 35 was covered from the matching fund (GBP 4290) provided by Friends of Nature.</b>

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

After completion of this research project, further conservation awareness, especially to the herders and farmers was observed as important next steps. Despite being inside the protected area, community were reluctant to understand the ecological importance of black bear.

As mentioned earlier, understanding seasonal activity/habitat use by black bear will be next significant research.

**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?**

Rufford Foundation logo was used in every conservation material like brochures, posters and hoarding boards. Banners used in conservation camps and workshop also had logo of The Rufford Foundation. Colleagues and research partners appreciating the generosity of the foundation in wildlife research of Nepal.

**11. Any other comments?**

We have completed our human-Himalayan black bear research project and like to heartily acknowledge Rufford Foundation for their financial support.

**Some photographs:**



Photo 1: Installing camera traps



Photo 2: Recording signs during transect survey



Photo 3: Victim showing his scars from bear attack



Photo 4: Hoarding board installed on way to jungle





Photo 5: Conducting conservation camp in Sikles



Photo 6: Conducting conservation camp in Tangting



Photo 7: Student filling up evaluation form



Photo 8: Student wearing bear mask during camp



Photo 9: Research Team, supporting staff and local herders