# 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** | Karuna Karki |
| **Project title** | Determinants of Spatial and Temporal Patterns of Human-Snow Leopard Conflict in Nepal Trans-Himalaya |
| **RSG reference** | 19923-1 |
| **Reporting period** | August 2016-July 2017 |
| **Amount of grant** | £4920 |
| **Your email address** | karkikaruna08@gmail.com |
| **Date of this report** | 31 July 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 |
|---|---|---|---|---|
| Identify the villages affected by livestock depredation by the snow leopard | | | ■ | We conducted household level surveys in 30 villages. Livestock depredation by snow leopard was recorded in 30 villages. In absolute terms, Marang village had the highest livestock loss (339 livestock from April 2014-April 2017) to snow leopard whereas Samar village had lowest loss (12 livestock from April 2014-April 2017). |
| Identify the determinants of human-snow leopard conflict | | | ■ | We have recorded total livestock lost at household level for last 3 years (April 2014-April 2017) for 451 households. Data are being analysed to understand the impact of different factors (e.g., herding practice, herd size) on household level loss of livestock to snow leopard. We are also analysing data to understand why certain villages/pasture are predisposed to greater livestock depredation using Generalised Linear Models. |
| Assess human perception and understanding of human-snow leopard conflict | | | ■ | We conducted interview surveys with the livestock owners/herders in 30 village settlements using semi-structured questionnaire forms to quantify the actual livestock lost to snow leopard for last 2 years, and to examine their attitudes towards snow leopard conservation. A total of 451 respondents were interviewed. Data are being analysed to examine the relative influence of different socio-economic factors (age, sex, education, herd size, livelihood options), and other factors (experience of livestock depredation) on determining the attitude towards snow leopard conservation. |

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|---|---|---|---|---|
| Conduct local awareness program on snow leopard conservation | | | | We designed a poster that portrays conservation message on snow leopard. We distributed 500 copies of posters to local herders, local people, students, youth clubs and local organisations during the community outreach programme. A mini workshop was conducted to a group of seven herders at Lomangthang yak camp area and Chonnup in their yak shed about snow leopard and compensation scheme. Posters were also distributed to the herders. Similarly, another herder level mini workshop was conducted in Marang village. |
| Mapping conflict hotspots | | | | GPS locations of the kill site by snow leopard within the village, in and around the pasture area were also collected and based on these points conflict hotspots are being mapped. |

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

Since our study area was very large, we had difficulty in completing the work in scheduled time during the first phase. We had to postpone our field work due to the bad weather after our first phase of fieldwork in November 2016. We also faced some challenges in transportation due to its terrain and availability of people due to their temporal migration from high elevation settlements to low elevation settlements escape winter. However, we completed the remaining field work during April and May 2017.

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

1. We quantified actual livestock lost to snow leopards in 3 years (April 2014-April 2017) by 451 households in 30 settlements, which helped us to figure out the settlements that are more vulnerable to livestock depredation by snow leopard. We examined the livestock herding practices and ecological factors (elevation and terrain ruggedness) that are more likely to determine the variation in magnitude of livestock loss across settlements. These results have helped us to identify most conflict/depredation risk prone villages and plan mitigation measures to reduce further depredation.
2. We examined factors affecting the attitude of 451 individuals/herders towards snow leopard conservation, which helped us to understand what socio-economic factors are likely to result in negative attitude towards snow leopard conservation. Identification of those factors have helped to plan what characteristics of respondents (herders) need more immediate attention for conservation education programme.

3. We sensitised 20 students and 67 local herders/livestock owner about the importance of snow leopard conservation, 18 herders about better livestock guarding measures and the official process to be followed to get compensation from government for livestock loss. This greatly helped us in reaching out there in field, understand livestock depredation problems and finally build conservation awareness capacity among local communities.

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

Throughout the fieldwork, we had two research assistants who greatly helped us in collecting both household level livestock loss and socio-economic data. They were also the local inhabitants of the study area. We also had close interaction and communication with settlement's leaders and herders. We convened seven focus group discussions in seven village settlements for local communities including herders, where we discussed about the objectives of our project, and the ways it could benefit them by providing scientific evidences to mitigate livestock depredation. In most of the settlements herders even didn't know about the wildlife damage compensation scheme of the Government of Nepal. We sensitised them about the procedures one needs to follow to get compensation for livestock loss from the protected area management authority. Herders greatly appreciated this work. Similarly, we conducted one awareness programme to students where 20 school level students participated, which we hope helped build the plight of snow leopard conservation among young students. We also conducted two mini workshops on "Herder level mini workshop to conserve snow leopard" with the herders and one with the local community, where we sensitised 67 local herders/livestock owner about the importance of snow leopard conservation.

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

Yes, we plan to continue our work. We are now particularly interested in using our research findings to inform/plan on the ground conservation/management/outreach activities. Based on our research findings and interaction with herder communities, we have felt necessity of following activities.

1. Establish a community based livestock insurance scheme to compensate for the loss incurred due to livestock depredation by snow leopards. Local herders will have to pay minimum yearly premium for each livestock. During the initial phases of this scheme, external funding would be essential as seed fund. Both seed fund and insurance money will be managed by a committee elected by the villagers. There will be a livestock depredation verification volunteer team, which will verify the status of depredation and recommend for the compensation. This community based insurance scheme has been successfully implemented in Kachenjunga Conservation Area of eastern Nepal, and successful methods can be replicated in our project area as well.
2. Support programme to improve livestock herding practices: This programme will involve some matching fund support to construct improved communal

corrals/livestock shed for nomads, who doesn't have any corrals. This can greatly reduce livestock depredation.

3. Comprehensive community outreach and conservation programs to motivate people towards snow leopard conservation and ensure the survival of species.

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

Once our detailed technical report is ready (which is under preparation), we will share it with different stakeholders including the Department of National Parks and Wildlife Conservation, Annapurna Conservation Area Project. We are writing two research manuscripts based on the findings of this project, which we plan to submit to peer reviewed journals for publication. We also plan to attend the upcoming conference on Student Conference on Conservation Science (SCCS). We will acknowledge the funding received from the Rufford Foundation in our all publications, and results sharing meetings, conferences and workshops. The findings of the project will also be shared to the forest department and conservation area managers, local institutions working for snow leopard conservation and related authorities.

**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 approved project duration was Aug 2016-July 2017. The grant was used over this period. We had planned to complete household level livestock depredation survey in October 2016, which we unfortunately could not complete. We thus completed remaining work in April 2017. Apart from this there was no obvious departure in planned activities.

**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 |
|---|---|---|---|---|
| Field equipment (GPS, tents, sleeping bags, projector etc.) | 300 | 230 | +70 | Because we didn't buy PowerPoint projector, we rented it for a few days. |
| Travel (Air fare Kathmandu-pokhara mustang 2 way) and jeep and horse hiring during field work | 450 | 500 | -50 | The difference was due to the increase in fare. |

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|---|---|---|---|---|
| Accommodation for research team (3 person for 60 days @ 5/day) | 900 | 900 | | |
| Food for research team (3 person for 60 days @ 7/day) | 1260 | 1350 | -90 | The difference was due to the increase in food items in the remote field sites. |
| Wages to local guides(2 person for 60 days @ 8/day) | 960 | 880 | +80 | We used local guide only for 55 days. |
| Posters and pamphlets for awareness campaign (500 pieces) | 250 | 250 | | |
| Focus group discussions, herders meeting, stakeholders meeting and so on | 150 | 150 | | |
| Awareness activities for school students (art competition, essay competition) | 150 | 140 | -10 | The difference was due to change in awareness program from art and essay competition to herder level mini workshop and awareness program. |
| Stationary, data forms, field maps | 150 | 150 | | |
| Communication and internet | 150 | 150 | | |
| Result dissemination by organizing workshop | 200 | 200 | | |
| **Total** | 4920 | 4920 | | |

Exchange Rate: 1 = NRS 140

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

The herders and local people are the direct victim of the livestock depredation as their livelihood depends on the livestock rearing and they are the one who share the same space with snow leopard. It's on the hand of local people to conserve or endanger the snow leopard from the mountains. So, it is very important to make people aware and motivate them towards conservation. And it was found from our findings that most of the people have negative perception towards snow leopard. We feel that there is an urgent need for community based livestock insurance scheme to compensate them for their livestock loss, vaccination programs to improve health

of livestock, and planned community outreach and citizen science programmes to develop local constituencies for research and conservation.

**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?**

We have used the Rufford Foundation logo on poster/pamphlets developed for conservation awareness and on the banner of mini-workshops conducted for herders.

**11. Any other comments?**

We thank the Rufford Foundation for funding this project. We aim to continue working for snow leopard conservation in this region and we hope for similar support in the future as well.