

## Final Evaluation Report

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Your Details	
Full Name	Chhimi Namgyal
Project Title	Investigating dietary overlap between the endangered dhole and the vulnerable snow leopard in the alpine ecosystem of Jigme Dorji National Park, Bhutan
Application ID	27964-2
Grant Amount	£5000
Email Address	Chhimi2010@gmail.com
Date of this Report	29 <sup>th</sup> May 2020

1. 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
To analyse dietary overlap between Snow leopard and Dhole				A total of 120 snow leopard scats and 90 dhole scats were collected from Soe, Lingzhi, Laya and Lunana under Jigme Dorji National park. Scats were collected during September, October and November 2019, when dholes were known to appear in the alpine regions. We have seen a high degree of dietary overlap between the two predators, particularly with blue sheep. We have also determined that pack sizes of dholes in the alpine region are smaller than in the lower regions.
Habitat mapping of Snow leopard and Dhole				Dhole and snow leopard distribution patterns in Jigme Dorji National Park were modelled and the spatial areas of habitat overlap were also identified – specifically in Soe, Lingzhi, Laya and Lunana.
Training and awareness to field staff and local community				Several field staff were trained to identify and differentiate between a dhole scat and a snow leopard scat, and to collect and process the scats for micro-histological analysis. The local community, particularly in Soe, were made aware of the ecological benefits and importance of dhole and snow leopard conservation.

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

I and my team initially underestimated the terrain ruggedness in our study area. Dhole scats were also hard to encounter in the alpine areas without prior knowledge of where they are known to frequent. When we started our scat collection in June 2019, we could not find any dhole scats and we were worried but when we intensified our searches later in September through to November in collaboration with the local yak herders, we started getting lot more from all of our study areas. We also worked together with field staff who were more familiar with the study sites, and it helped in getting the desired number of scats and georeferenced locations of dhole occurrences in the higher altitudes where snow leopard occurs.

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

**Dietary overlaps between snow leopard and dhole:**

We have uncovered dietary overlap between dhole and snow leopards in the alpine regions of Jigme Dorji National Park. During our scat analysis, we found 30 % of the dhole scats contained the hair of blue sheep, which is the principal prey for the snow leopard in Bhutan.

**Spatial overlap between dhole and snow leopard**

We also have pinpointed areas where dholes overlap with snow leopards in terms of habitat use, particularly in Soe, Lingzhi, Laya, and Lunana.

**Dhole is an occasional alpine visitor**

We learned that dholes occasionally venture into the snow leopard territories in the alpine areas, epically in the periods when there was no snowfall and the temperature is reasonably tolerable, especially in autumn seasons (August to October).

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

The local communities, particularly the people of Soe, were made aware on the conservation benefits of snow leopard and dholes. We could not replicate the same programme in other areas due to fund limitation. Local communities were also employed as paid local guides and porters during field data collection.

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

I would be interested to find out if similar patterns of dietary and habitat overlap between dholes and snow leopards are observed in other snow leopard habitats in the country, such as in Jigme Khesar Strict Nature Reserve, Wangchuck Centennial National Park, and Bumdeling Wildlife Sanctuary.

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

I plan to present the findings at several research seminars. I also plan to publish the findings in the peer-reviewed journals for wider dissemination.

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

The grant was used within the stipulated time period (May 2019 – April 2020), as specified below:

1. Procurement of scat collection kits - May and June 2019.
2. Training of field staff in scat collection - June 2019.

3. Scat and other ancillary data collection - June to November 2019.
4. Procurement of scat analysis kit - December 2019.
5. Training of field staff in scat analysis - December 2019.
6. Scat analysis (scat washing, drying, weighting, slide preparation, and analysis using a compound microscope) - February – April 2020.
7. Report writing – end of April 2020.

**8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Training on field assistants	£400	£400		
Procurement of scat collection and analysis kits	£400	£300		
Transportation, food expenses DSA for field assistants	£4,200	£3,800		
Public awareness meeting		£500		
<b>TOTAL</b>	<b>£5000</b>	<b>£5000</b>		I have fully spent the fund as per the itemised budget.

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

I am now very interested to learn and seek answers to what drives the dholes to venture into the unfamiliar territory in the alpine areas. Is it because of shortage of prey, competition from other predators, persecution by humans, or climate change?

Answer(s) to these questions will help in devising appropriate conservation activities to minimise potential conflicts between dholes and snow leopards and between dholes and yak herders.

**10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

The Rufford Foundation logo was used during the awareness meeting and field staff training to make them aware that the grant amount was received from the foundation. We have not made any media release as of now, because we want our results to be first scientifically accredited by publishing in a peer-reviewed journal. We will then publicise our findings in the mainstream media.

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

**Chhimi Namgyal** – Team leader

Field Assistants

Pema Kuenzang

Leki Wangdi

Kelzang Thinley

Kinley Dorji

Gyeltshen

Dorji Wangdi

Kuenzang Wangchuk

Sangay Penjor

Tshering Yargay

Field Collaborator

Pema Dorji

Leki

**12. Any other comments?**

We thank the esteemed Rufford Foundation for kindly supporting our project and many other projects in Bhutan. We request the foundation to continue supporting frontline conservation research and efforts in the low-income countries such as Bhutan.