Rufford Small Grant – Progress Report

1. Project Details

Project Title: **An assessment of Status, Habitat Ecology and Conservation Initiatives of Alpine Musk Deer (Moschus chrysogaster) in Langtang National Park, Nepal**

Project Reference Number: **42822-1_birat-raj-rajak**

Project Duration: **May 2024 – April 2025**

Reporting Period Covered: **November 2024 – April 2025**

Principal Investigator: **Birat Raj Rajak**

Affiliation: **Conservation Himalaya, Kathmandu, Nepal**

Country: **Nepal**

Project Location: **Langtang National Park**

2. Summary of the Project

The project aims to assess the population status, distribution pattern, habitat ecology, and conservation threats to the Alpine Musk Deer (*Moschus chrysogaster*) in Langtang National Park, Nepal. The species is categorized as Endangered, and this project contributes to filling key knowledge gaps while implementing grassroots conservation initiatives with community engagement.

3. Progress and Activities Carried Out

During the reporting period from November 2024 to April 2025, the project made significant progress in both field research and community-based conservation planning. Activities were aligned with the core objectives of assessing the Alpine Musk Deer's population status, understanding its habitat ecology, and identifying key conservation threats.

3.1 Field Surveys (Winter Season)

A comprehensive field survey was conducted during the winter season to assess the presence, habitat characteristics, and threats to Alpine Musk Deer. The survey focused on high-altitude areas known or suspected to be AMD habitat, with the following methodological details:

Transect Sampling:

A total of 13 line transects, varying in length, were laid across potential AMD habitats. These transects collectively covered approximately 22 kilometres. Transects were placed in strategic locations with elevation, vegetation, and human disturbance gradients, ensuring wide spatial representation.

Quadrat Sampling:

- At 200-meter intervals along each transect, a 10 x 10 meter quadrat was established. Within each quadrat, detailed data were collected on:
- Presence/absence of AMD (via pellet groups, scrape marks, or sightings)
- Habitat characteristics such as vegetation type, canopy cover, ground cover, elevation, aspect, and slope
- Anthropogenic disturbance variables including fodder collection (FC), livestock grazing (CG), human presence (HP), human settlement proximity, and signs of feral dog (FD) activity
- A Human Disturbance Index (HDI) was also generated using standardised criteria

Threat Assessment:

Direct and indirect signs of poaching/trapping, feral dog activity, fodder and firewood collection, and human disturbance were recorded and georeferenced during transect and quadrat surveys. These findings are currently being analysed and have been partially incorporated into a Generalised Linear Model (GLM) to determine their influence on AMD presence (details in Section 4).

3.2 Community Engagement and Local Partnership

Informal interactions and focus group discussions were held with local villagers, herders, and tourism operators to understand the community's perception of AMD and related threats such as trapping and habitat degradation.

A collaborative partnership was initiated with the Langtang Alpine Youth Club (LAYC). The club agreed to engage in community-based patrolling of AMD habitats to identify and remove traps, snares, and monitor illegal activities. This is expected to be a long-term grassroots monitoring approach embedded within the local community.

3.3 Formation of the Conservation Committee

A local conservation committee was formally constituted, consisting of:

Park staff from Langtang National Park

Local government representatives

Hotel/lodge owners and tourism stakeholders

Youth representatives and farmer/herder

The committee aims to:

- Facilitate continuous dialogue among stakeholders
- Promote AMD conservation awareness at the community level
- Support patrolling, threat mitigation, and education campaigns

3.4 Institutional Collaboration

The project strengthened ties with the Langtang National Park authority and secured preliminary support for co-organising future awareness programs and co-monitoring key habitats. This collaboration will be instrumental in integrating project outcomes into local conservation action plans.

4. Preliminary Results / Findings

A preliminary Generalized Linear Model (GLM) analysis was performed to assess the influence of environmental and anthropogenic variables on the presence of Alpine Musk Deer. Key findings include:

Positive influences:

- Elevation, aspect, ground cover, and fodder collection (FC) significantly affected species presence.
- Distance from trekking routes also had a significant impact, suggesting that AMD avoids high-traffic areas.

Negative influences:

- Human disturbance index (HDI) and proximity to human settlements negatively influenced AMD presence.
- Though feral dogs (FD) were not statistically significant, field observations confirmed their continued presence in AMD habitat, posing a major conservation concern.

5. Challenges Faced and Solutions

Challenging terrain:
High altitudes and snow-covered areas during winter limited access to remote zones.

Infrastructure limitations:
Lack of bridges over the Langtang River beyond Kyanjin Gompa created logistical hurdles.

Solution:
Local guides and porters were hired to facilitate crossings; future surveys are planned in more favourable conditions.

6. Budget Summary

The grant has been used primarily for:

- Field equipment and supplies
- Travel and field expenses
- Community interaction and meeting costs
- Local guide and porter fees

7. Next Steps / Remaining Work

- Summer field survey (June–July 2025) to complete seasonal data collection
- Questionnaire surveys to understand local perceptions and attitudes toward AMD conservation
- Capacity building of the local committee and Langtang Alpine Youth Club
- Awareness and education campaigns:
- Community workshops and stakeholder meetings

- School-level awareness programs
- Installation of hoarding boards at key trekking routes
- Distribution of T-shirts and caps with conservation messages

8. Acknowledgements

We sincerely thank the Rufford Foundation for their generous support. We also acknowledge the assistance of Langtang National Park officials, Langtang Alpine Youth Club, and local communities for their cooperation and participation in the project.

9. Conservation Committee Members

Name	Occupation	Contact
Ganesh Prasad Tiwari	Conservation Officer, Langtang National Park	+977-9863195105
Thupten Lama	Ward President, Gosaikunda Rural Municipality	+977-9843023847
Pasang Tenzin Lama	Member, Alpine Langtang Youth Club	+977-9862107506
Nima Lama	Hospitality Worker, Memorial Guest House Langtang Village	+977-9840005124
Yang Ki Lama	Farmer, Langtang Village	+977-9848322479

10. Photo Plates

Winter field survey (November-December 2024)

Meeting and interaction with locals and Alpine Langtang Youth Club members

Poaching evidence as discovered by Alpine Langtang Youth Club members during field monitoring on 24th December 2024

A. Poachers offered their prayers.

B. Yellow-throated martin killed in the trap kept for Musk Deer. [INTENTIONALLY DELETED]

C. The skeleton of Musk Deer found at the spot where poachers stayed.

D. Dead Musk Deer found trapped in snare in the forest. [INTENTIONALLY DELETED]

E. Detergent Soap used by Poachers for cleaning.