Final Evaluation Report

Your Details	
Full Name	Mr. Birat Raj Rajak
Project Title	An assessment of Status, habitat ecology and conservation initiatives of Alpine musk deer (Moschus chrysogaster) in Langtang National Park, Nepal
Application ID	42822-1
Date of this Report	28th July 2025

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
Status and Habitat ecology of Alpine Musk Deer in Langtang National Park			√	We surveyed 13 line transects of varied length, adding to a total of 21.8 km in the Langtang Valley trek from Ghodatabela to Yala Peak glacier in both seasons. We collected habitat variables, environmental variables and topographic variables. This survey covered almost all the areas where Musk deer could be present in the Langtang Valley trek of Langtang National Park. During the field survey, we sighted 3 musk deer directly, and we sighted pellets of musk deer as an indirect sign of their presence. The field data from the winter and summer seasons is currently being analysed. Once the analysis is complete, the objective will be fully achieved, and we will proceed with paper writing and publication.
People's Perception Towards the Alpine Musk Deer in Langtang National Park			√	We interviewed a total of 52 people from varied occupational background within approximately 95 households to understand their attitude towards the species and extract information about the species. The data is being analysed.
Conservation Initiatives of Alpine Musk Deer in Langtang National Park			√	

2. Describe the three most important outcomes of your project.

a). Identification of Key Threats to Alpine Musk Deer

One of the most significant outcomes of the project was the identification of major threats to the Alpine Musk Deer (AMD) population in Langtang National Park. Our fieldwork revealed that the free-roaming population of feral dogs poses a serious and direct threat to the species, especially in areas close to human settlements and trails. During our survey, we witnessed their free roaming in the Musk Deer habitat. The locals also provided video and photographic evidence of feral dogs surrounding and attacking the Yak and also shared information on feral dogs killing the Yak and Horse calves. Additionally, during both the survey seasons, we discovered and dismantled snare traps set for Musk Deer in one of the core habitats. The monitoring team of Alpine Langtang Youth Club found two Musk Deer and a Yellow Throated Martin dead trapped in snares during their patrolling in December 2024. The Nepal army team designated to protect the biodiversity of the park informed us that they removed around 200 snares set for Musk Deer from its habitat in the month of October-November 2024 while patrolling. Thus, intensive poaching activities during the winter months, particularly in December, were found to be a critical conservation concern. Through field observations and local interviews, we identified specific hotspots and seasonal patterns where and when poachers set traps targeting musk deer, especially when snow limits the deer's mobility. These findings provide a strong foundation for targeted anti-poaching efforts and feral dog management programmes.

b). Understanding of Seasonal Habitat Use and Distribution

The second major outcome is the improved understanding of the seasonal habitat preferences, ecology, and distribution patterns of Alpine Musk Deer within Langtang National Park. We conducted line transect survey and recorded habitat and environmental variables at every 200m on each line transect by laying a 10m by 10m quadrat to record ecological variables such as ground cover, canopy cover, weather condition, vegetation type, distance from water, distance from walking trail, distance from human settlements, slope, elevation, aspect, terrain roughness, signs of musk deer presence and anthropogenic activities. We were able to map key habitats and determine how the species utilises different parts of the landscape throughout the year. Our findings suggest that musk deer prefer low-disturbance wintering dense Betula utilis and Rhododendron north slopes, and more open environments in summer for grazing. These results form the core of informing future conservation, habitat preservation, and landscape-scale conservation management.

c). Community Awareness and Local Capacity Enhanced

The third success factor is the mobilization and empowerment of local stakeholders and communities towards conserving Alpine Musk Deer. Local stakeholders, including park rangers, field assistants, and youth groups had undergone capacity-building workshops where they had received on-the-job training in monitoring species, threat assessment, and sustainable conservation techniques. A total of 29 people participated in the capacity building workshop. The participants were three game scouts, two rangers and a conservation officer of LNP, president and two

members of Buffer Zone Committee of LNP, president and 3 members ward of Gosaikunga Rural Municipality, army members, including the chief, members of Alpine Langtang Youth Club, hotel personnel, and the farmers. Parallel to this, our education and outreach program involved extensive outreach to various stakeholders including the community, school children, and village leaders, educating them on the ecological importance and conservation status of the Alpine Musk Deer. Specifically, we worked with 95 families of hotel workers and farmers who live within the park, and held drawing competitions in two schools, where 220 students participated by creating creative slogans for the conservation of Alpine Musk Deer in its natural habitat at Syafrubesi. One of the schools within the park, based at Langtang village, was closed this year as its students relocated to Kathmandu. Overall, directly benefiting about 300 people, our outreach activities were conducted. These programs instilled a sense of higher ownership and responsibility among local stakeholders and laid the ground for carrying out community-based conservation work in the future.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

One unforeseen difficulty we encountered was seasonal variation in the glacier stream. During the winter months, the stream was low on water and could be safely crossed to access our survey points. During the summer months, the stream was big with rainfall and glacier meltwater and was too dangerous to cross. This altered situation restricted our access to some of our planned survey points. In order to overcome this, we consulted with local field assistants who helped us identify and use a different route to reach the target regions safely, but it took us two extra days.

Another unforeseen challenge was the seasonal change in vegetation density. In winter, the thorny shrub lands along one of the transects were relatively dry and sparse, allowing us to navigate through them with minimal difficulty. However, during the summer, these shrubs became extremely dense and overgrown, making the area nearly impenetrable and unsafe for fieldwork. As a result, we were not able to conduct surveys on this transect at all during the summer. This limitation was noted in our survey notes, and we will alter the transect.

4. Describe the involvement of local communities and how they have benefitted from the project.

The residents of the area were involved in various components of the project and have benefited directly. They attended education and awareness workshops and learned about the status, ecological role, and conservation value of the Alpine Musk Deer. Many local residents also participated in questionnaire-based interviews without hesitation, providing their traditional knowledge and recent observations on the species freely. In addition, local park authorities and guides actively assisted in our fieldwork; a park ranger, a game scout, and a field guide were present during the surveys and provided useful inputs in the field. A Conservation Committee was also formed to facilitate long-term local stewardship consisting of the Conservation Officer of Langtang National Park, the ward president, a Buffer Zone Committee member, and the members of the Alpine Langtang Youth Club.

To further support involvement and generate awareness, we distributed educational materials including brochures, posters, conservation-message t-shirts and caps. We

installed one large hoarding board at the very entrance point of LNP and three hoarding boards are in the process to be installed inside the park at essential location in collaboration with park authority, hotel personnel, and Alpine Langtang Youth Club. More importantly, the locals became increasingly aware of the vital role that the Alpine Musk Deer has in maintaining a healthy and harmonious ecosystem, and how it could be used as a possible local ecotourism source. This shift in attitude has created a heightened sense of stewardship and willingness to support conservation activities.

5. Are there any plans to continue this work?
Yes, we plan to follow up and continue this work. Future research will attempt to broaden the study area to Manaslu Conservation Area in the west and Gaurishankar National Park in the east of Langtang National Park. Our focus will be to study population connectivity and genetic diversity of the Alpine Musk Deer in this broader landscape. We also intend to assess the distribution of the species in unprotected areas between these protected areas that might serve as vital corridors or habitats. We further intend to conduct further awareness campaigns and capacity-building for increased local stakeholders and community understanding and support for musk deer conservation in such areas.

6. How do you plan to share the results of your work with others?
We plan to publish the results of our research in both scientific and general media. Currently, we are analysing field data and survey responses from the local community attitudes. We plan to draft two scientific papers from these analyses: one on the status and habitat ecology of the Alpine Musk Deer, and the other on local community attitudes towards the species. We have already shared and discussed our initial findings with park management and will also share our final findings obtained from data analysis to develop an anti-poaching program. We will also share our final findings with the IUCN SSC Deer Specialist Group and other associated INGOs and NGOs. Apart from that, we intend to disseminate our results to a broader public by writing a news report in national newspapers and online media. We are creating a short video with a conservation message to share on social media using the photos and information obtained from the field survey and data analysis. This will trigger higher public support and awareness of Alpine Musk Deer conservation.

7. Looking ahead, what do you feel are the important next steps?
In the future, our current findings outline a series of priority actions towards continuing conservation of the Alpine Musk Deer. Hotspots determined through the survey, particularly those utilised between November to January, must be constantly updated regarding species occurrence and possible threats. Of specific interest is the major forest patch on the northern slope towards Kyanjin village, which is increasingly under pressure due to timber harvesting for firewood. This hotspot requires emergency restoration by community plantation initiatives and enhanced regulation of timber gathering. Another top priority sector for urgent action is addressing the feral dog threat, which has become a highly serious danger for the Alpine Musk Deer population. We plan to submit our final report to the Department of National Parks and Wildlife Conservation (DNPWC) and urge them to take certain actions to combat these threats and support long-term conservation activities.

8. 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?

Yes, we have used The Rufford Foundation logo on all conservation materials that have been designed under the project course. All these includes brochures, posters, stickers, t-shirts, caps, banners, and hoarding boards. The logo was put in a prominent position to mark and express gratitude for the contribution of The Rufford Foundation in all outreach and awareness activities.

9. Provide a full list of all the members of your team and their role in the project.

Asmit Limbu, MSc
Ecology and Environment
Supported in designing the field survey and assisted in survey during winter season

Krishna Tamang, MSc
Ecology and Environment
Assisted in field survey during winter season

Madhu Chaudhary, MSc
Ecology and Environment
Assisted in field survey and organising and carrying out conservation activities

Pukar Pandey MHS
Sociologist
Assisted in organising conservation activities and questionnaire interview to collect data on people's attitude and information on the species

Ganesh Prasad Tiwari
Conservation Officer, Langtang National Park
Coordinated the field survey and conservation activities

Nilam Karki
Ranger, Syafru Post, Langtang National Park
Coordinated for hoarding board installation and strengthening the regular monitoring of habitat of AMD

Pasang Tamang
Langtang National Park Buffer Zone President
Locally coordinated the conservation activities among community people and local stakeholders

Dhir Bhadur Bhujel
Langtang Village Army Barrack Chief
Assisted in field surveys and conservation activities

Dundu Lama
Gosaikunda-4 Ward President

Locally coordinated with community people and stakeholders to organise the conservation activities

Pasang Tenzin Lama
Member, Alpine Langtang Youth Club
Assisted in field survey and information sharing, and also regularly patrolled hotspot area of AMD with his teammates

Pasang Tamang
Local Field Guide
Assisted in field survey in Kyanjin region

Nima Lama
Local Field Guide
Assisted in field survey in Langtang village region

10. Any other comments?

ANNEX – Financial Report

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