

## Final Evaluation Report

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Your Details	
<b>Full Name</b>	Pravin Giri
<b>Project Title</b>	Assessment of Distribution, Habitat Characteristics and Awareness of Lutra lutra (Eurasian otter) in Kali Gandaki River, Nepal.
<b>Application ID</b>	37063-1
<b>Date of this Report</b>	20 <sup>th</sup> June 2023

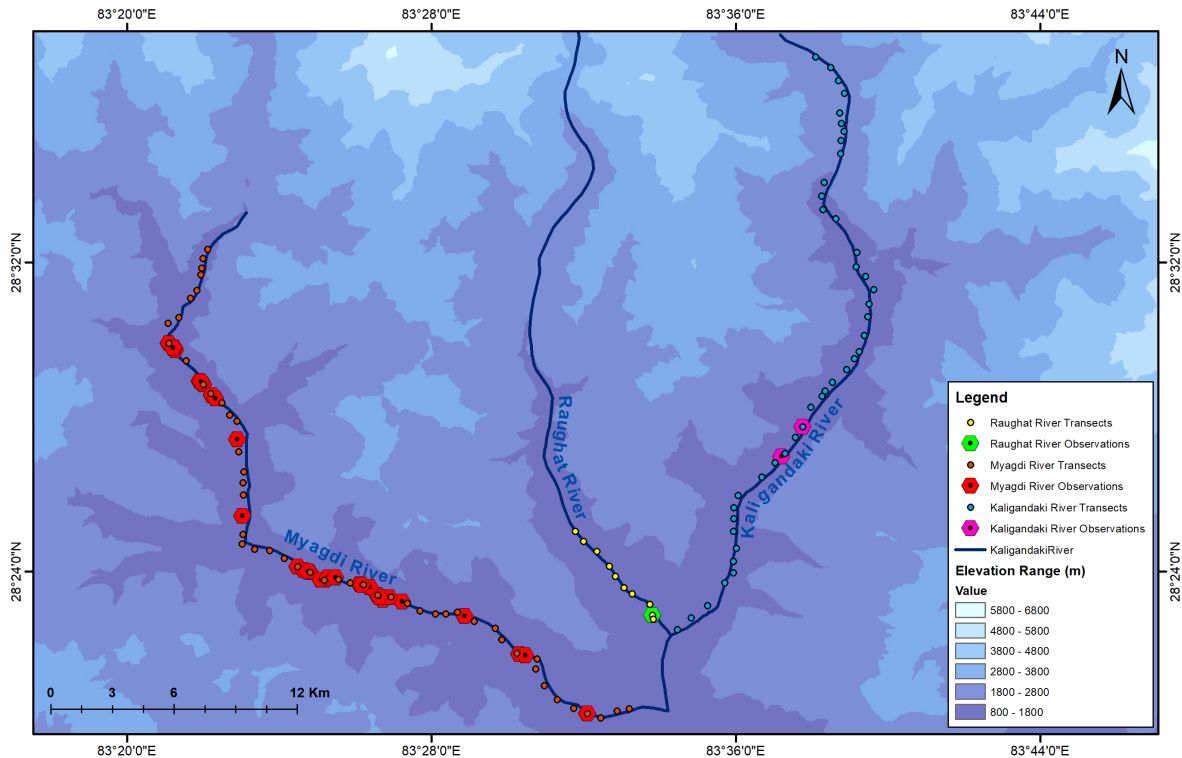
**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To collect the baseline information on status and distribution of Eurasian otter.				The reconnaissance survey was conducted prior to the detailed field survey and awareness programme. A sign survey was carried out in three rivers, the Kali Gandaki (38 km) and its two major tributaries, Myagdi (42 km) and Rahuganga River (7 km) with a total of 87 km. In total, 42 otter scats were counted in three different rivers. Low scat density (0.47 scat/km) was obtained, suggesting the sparse distribution of otters along the study area. Along with this, camera traps (seven sets) were also deployed for 10 days in the areas with higher scat density in Kali Gnadaki River for the image of an otter.
To explore the perceptions and knowledge of local people towards <i>Lutra lutra</i> and document pertinent threats.				The questionnaire survey (74 respondents) was conducted with the locals in proximity to the river applying a purposive sampling method. Most of the respondents comment on the decline of otters in the recent time. Thus, we reported no negative interactions between otters and humans. Locals express positive attitudes towards otters. The increasing construction of hydropower dams in the study area is marked as a prominent emerging threat to otters.
To conduct community and school outreach programme on Eurasian otter conservation.				An awareness programme was conducted in 10 schools and seven communities along the Kali Gandaki corridor reaching 500 individuals. Additionally, awareness materials relating to otter such as brochures (2000 copies) and posters (1000 copies) were printed and distributed to participants attended the programme. Posters were also pasted in various

				public locations along the corridor as an alternative awareness approach to pedestrians and local people.
To form otter-clubs in schools and developing young students as an emerging citizen scientist.				Seven otter clubs in seven different schools with five members in each club were formed. Each member of the club was provided with the information on identification key of otter spraint and knowledge was shared on distinguishing otter from other similar species. Hence, they were trained and motivated to be a citizen scientist.

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

- a) Documentation of baseline information on status and distribution of Eurasian otter:** In total, 87 km of the rivers were surveyed for understanding the status, distribution, and habitat characteristics of otters. A total of 41 otter scats/spraints were recorded. Out of the total signs recorded, the majority of otter signs (37 scats) were documented from the Myagdi River, and the rest of the scats were collected from the Kali Gandaki and Rahuganga Rivers. This indicates that the Myagdi River appeared to be a good otter habitat and assumed to have a good population of otters. However, scat distribution is sparse along the river indicating habitat use in limited areas along the study area. The questionnaire survey with locals mentioned that otters were observed frequently a decade ago, while there are no recent sightings of otters. This indicates that the otter population in the study area is in a small number.
- b) Publication and distribution of awareness materials (brochures and posters):** Awareness materials serve as the crucial and effective tools of the conservation project for disseminating information to a large audience through the easiest of processes. Therefore brochures (n=2000) and posters (n=1000) were prepared and printed with information on morphology, behaviour, distributions, pertinent threats, legal provisions for killing and hunting, and conservation measures of a Eurasian otter. These materials were distributed to local people, participants of awareness programmes, students, and to different institutions located around our study site. Moreover, posters were also pasted in various locations along the Kali Gandaki River corridor.



Picture: Lay out of transects and distribution map of otter' scats

**c) Community outreach programme and development of young students as emerging citizen scientists:** Engagement of local people in awareness and conservation programmes tends to lay a strong foundation for the sustainable conservation of threatened species. Through our community and school outreach programme, we directly reached out to 500 individuals and information shared about the conservation importance of Eurasian otters. Most importantly, young students were motivated to be involved in the conservation of Eurasian otters through knowledge sharing and training. The trained members were developed as emerging citizen scientists and they have the potential to contribute significantly to the long-term conservation of Eurasian otter and their habitat. We have considered this conservation activity as one of the most prominent and significant outcomes of our project.

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

On a few occasions, due to the challenging terrain, accessing and surveying the designated transects was really difficult. However, the support and guidance from the local guide played a supportive role in finding the trail and able to survey the transects.

People often provide lesser priority to environmental issues so convincing them to participate in the questionnaire surveys and awareness programme was a major challenge faced. However, with the help of local leaders and local guides accompanying us help manage the issue in many places.

Deploying camera traps along the river amidst higher human mobility and activities was challenging to get the intended results as the risk of losing camera traps was high. Despite this camera traps were installed along the study area.

#### **4. Describe the involvement of local communities and how they have benefited from the project.**

Local people actively participated in every phase of the project, starting from the initial reconnaissance survey all the way through the completion of project activities. The support and guidance of the local people have been crucial in the successful completion of the project activities.

The project was completed in three different phases so during each phase we hired different local guides for support and in the processes, five local people directly benefited. While more than 500 individuals were directly involved in our awareness and community outreach programme which has helped local people and students to understand the importance of the freshwater ecosystem and its associated species including otters. Furthermore, 74 individuals were interviewed, and discussed with them at the end of the interview about the importance of otter conservation. During the whole project tenure, we stayed at a homestay that directly support the local people financially.

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

This project documented the preliminary information on Eurasian otter. It consists of single season survey that may help reflect the general picture of the pertinent status of otter. But it is not adequate for the long-term conservation of otter. We may require continuing working on multiple seasons and as well for longer period of time in order to collect the in-depth and detailed information of otter. However, our work has laid the foundation to continue work in other dimension of otter. Therefore, we intend to scale up this work, basically focusing on the behavioural ecology and severity and extend of threats to otter.

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

The major findings of our study will be shared with different stakeholders in the form of report, presentation and publications. Firstly, the comprehensive report of the study will be prepared which will be submitted to several esteemed organisations such as Agriculture and Forestry University (AFU), Department of National Park and Wildlife Conservation (DNPWC), National Trust for Nature Conservation (NTNC) and Annapurna Conservation Area (ACA). Furthermore, the findings will also be disseminated through presentation with the students and staff of Agriculture and Forestry University, Faculty of Forestry, Hetauda Nepal. Additionally, we are currently in the processes of preparing a manuscript to publish and share our results in reputable peer-reviewed journals consequently the findings of the project will reach out to the large number of audiences in a scientific community.

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

The research on diet constituents, behavioral ecology, and population survey is the next essential steps regard to otters in Nepal. Along with this extensive awareness and community teaching programmes should also be prioritized in order to sensitise people about the conservation importance of otters.

While around my study area, evidence of otters has been gathered and a low population density of otters is estimated to be present. Therefore, to better protect the remaining population, awareness programmes, continue research and monitoring and banned on electric fishing are suggested. At the same time, research on other dimensions of otters such as behavioural ecology, diet and distribution pattern should also continue to better understand the status of otters. Moreover, the environmental aspect should be strictly considered when undertaking the development projects such as roads, electricity dams etc. as they are supposed to pose significant threats to otters and the aquatic habitat they inhabit.

**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?**

The logo of the Rufford Foundation was used in every awareness material: such as banners, posters and brochures. The logo is also used in the presentation we prepared for the purpose of information sharing to local people and students.

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

Team member	Role in the project
Pravin Giri (Team leader)	Pravin is a Principal Investigator. He developed proposal, implemented research activities, data management and report writing.
Purna Man Shrestha (Team member)	He assisted in research designing, content creation of awareness materials, sign survey, data management, and preparation of questionnaires and data collection sheet and manuscript preparation.
Subarna Raj Ghimire (Team member)	He assisted in research designing, content creation of awareness materials, data management, and preparation of questionnaires and data collection sheet and manuscript preparation.

**10. Any other comments?**

We are extremely grateful to The Rufford Foundation for trusting us and providing the financial support for the conduction of the project, without which the execution of the project activities was not possible. This has helped generate the baseline information on Eurasian otter from one of the important river systems of Nepal.

