



Status and Conservation Threats of Large Mammals outside the Protected Areas

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Editorial Note

This research aims to find out population status, habitat, distribution and conservation threats of large mammals in Laljhadi-Mohana Biological Corridor. Line Transect Survey was done by making 43 grids each of 2 x 2 sq. km covering whole study area avoiding inaccessible areas with single replication. For the purpose of data collection, transects of 1.5 – 2 km each were laid randomly in the grids. Habitat occupancy survey was also done and anthropogenic pressure was recorded sidewise in the field. In order to explore people's perception and gather more evidences on the details of large mammals including their conservation threats, social survey was conducted focusing on key informant survey and shared learning dialogue. As for the ranking of conservation threats to large mammals, relative whole-site ranking method was used. Data analysis revealed that Sal forest is the major habitat of large mammals that supports elephant, tiger, leopard, blue bull. Endangered species *Panthera tigris tigris* and *Elephas maximus* seasonally used the corridor. Encroachment, habitat fragmentation and open grazing are ranked as relatively high threats among eight major threats discussed.

Keywords: Conservation, Corridor, Grids, Large mammals, Threats, Transect

Abstract

Nepal is exemplified as a biodiversity rich country that represents a significant share of global biodiversity, although it comprises 0.09% of global land area (ICIMOD, 2007). It contains 212 species of mammals including threatened flagship species such as *Panthera tigris tigris*, *Elephas maximus*, *Rhinoceros unicornis* and *Platanista gangetica* (Amin et al. 2018). With more than 76% of the countries land surface never likely to be managed within legally designated protected areas, biodiversity interventions across all landscapes are vital. Mainstreaming biodiversity and wildlife conservation in biological corridors can address this need.

Corridor is distinct component of the landscape that provides connectivity (Ament & Callahan, 2014). Wildlife corridor is linear landscape element which serves as linkage between

historically connected habitat/natural areas, and is meant to facilitate movement of two natural areas (McEuen, 1993). Conservation biologist generally agrees that landscape connectivity enhances population viability for many species and that, until recently; most species lived in well-connected landscapes (Gilpin & Soule, 1986). The habitat corridor facilitates the movement and dispersal of wildlife, especially Tiger, Rhino and Elephant. As an isolation unit, the PAs will not be able to maintain viable population of large mammals over the next 100-200 years (Bhujju et al.2001).

Wildlife species are becoming increasingly isolated in the patches of habitat, surrounded by human-dominated landscape. Current protected areas are simply not large enough to encompass the variety of species, process, & habitats necessary to fully conserve biodiversity. Therefore, restoration & rehabilitation of corridor and connectivity areas between wildlife is the priority activity. But lack of information about wildlife in critical corridor in Nepal has resulted lack of conservation programs leading towards extinction of endangered species. Laljhadi –Mohana corridor is one of them. Also the biological corridors lack research work despite it provides habitat and connectivity to large number of wildlife.

This study will reflect the status and conservation threats of large mammals outside the protected areas to some extent. Mainly, the research will explore information about large mammals at Laljhadi- Mohana corridor. This research will help to aware the local people and make worthy focus of national and international agencies at local level conservation. Moreover, it will provide the baseline data for action plan preparation and implementation, basis for formulation of strategy to conserve biodiversity and be helpful in district level biodiversity and wildlife promotion plan outside the protected areas in the future

Materials and Methods Study Area

The study was carried out in the Laljhadi-Mohana Biological corridor which lies within the TAL in the Far-western region, Kanchanpur, Nepal. According to the Strategy and Action plan (2015-2025) TAL, LMBC is declared as corridor and protected forest. It has mentioned this corridor with a total coverage of 355 sq. km in which forest corridor occupies 202 sq. km and impact zone occupies 153 sq. km. It is located in Kanchanpur district which is bordered with Kailali district in east, Dadeldhura district in north and with modern day in India in south and west. The majority of population is occupied by ethnic Tharu community. It expands from 28°38' to 29°28' Northern latitudes and 80°30' to 80°33' Eastern longitudes. The LMBC corridor forest patches act as a trans-boundary wildlife corridor that connect Shuklaphanta National Park and churiya forest in Nepal with Dudhwa National Park in India. The study area has great fluctuation in the temperature. Sal forest is dominant over major parts of the corridor. The major species of the study are *Shorea robusta*, *Terminalia tomentosa*, *Schima wallichii*, *Syzygium cumini*, *Cirsium argyracanthum*