

WHEN MEGA VERTEBRATES MAKES RANCH THEIR HOME

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CONSERVING THE LANDSCAPE

Protected areas in Nepal were established to maintain the ecological process and to safeguard the biological diversity. Conservationists time and often have argued Nepal's protected areas are too small to support and ensure the survival of some of the evolutionary unique wildlife species. In order to bridge this ecosystem gap, a long term landscape level trans-boundary biodiversity conservation approach was initiated. Terai Arc Landscape (TAL) program attempts to connect four protected areas of the low land belts of Nepal by restoring and maintaining the functional wildlife corridor with other seven adjoining protected areas of India (Gurung, 2005). Protected areas from Eastern TAL of Nepal are: Parsa Wildlife Reserve (PWR) and Chitwan National Park (CNP), and from Western TAL are: Bardia National Park (BNP) and Suklaphant Wildlife Reserve (SWR).

Yet, communities living in the proximity of the parks, reserves and corridors of TAL were found to pose risk of crop depredation, human life loss and physical damage by the wildlife occurrence. Over the years, there has been series of human wildlife conflict (HWC) incidences in lowland protected areas which is making conservation a difficult and complex issue with socio-economic overtones.

CONFLICT'S PORTFOLIO

A human wildlife conflict in Terai is a manifestation of large mega vertebrates like elephants, tigers and rhinos. Elephants (*Elephas maximus bengalensis*), a flagship species occur in all four TAL-Nepal corridors such as Laljhadi, Basanta, Khata and Lamahi bottlenecks of SWR, BNP, CNP and PWR. The seasonal movements of elephant into the human settled buffer zone areas leave unsettling conflict between human and elephant. Over the years, the cases of human elephant conflict (HEC) incidences have increased as a result of increase in human activity at and around the buffer zone areas (Pandey, 2003; Karmacharya,

2004). For instance, in between 1990-2001, much of the previously fragmented natural habitats of the lowland protected areas of Nepal have been restored with an annual rate of increase of 0.01 % but for the same period there was decrease in forests outside the protected areas (DoF, 2005). The change in landuse outside the protected areas could be spatially linked with the increasing occurrence of elephants perhaps appealing them to human settled landscape to meet their food demand seasonally.

Many scholars have carried out appreciable number of research on human elephant conflicts in TAL in the past. Of these, Pradhan (2007) has indicated implications of a re-colonizing elephant population in Bardia and adjoining areas. Similarly, Bhatta (2004) has documented conflict in Terai protected areas with reference to Western TAL. In between 1992 to 2002/03 there were in total 3 cases of human life loss, one case of injury and 60 cases of house and property damages in the western TAL. Conservation issues are rarely discussed in length (Yonzon 2003; Karmacharya 2004). A study in an area of 3,305 Km² in TAL area identified 77 sites within 19 village development committees (VDC) of Kailali and Kanchanpur Districts, where elephant herds were known to raid crops seasonally, suggesting agriculture fields have sustained elephant diet seasonally (Yonzon et. al, 2003).

Rhino (*Rhinoceros unicornis*) is the main crop raiding animal in Chitwan and raiding intensity vary according to the places (Sharma, 1991). A recent case study from Piple buffer zone Village Development Committee reports that 56.7 % of households who were within the boundary of 500 m from the forest edge have faced the rhino crop raiding in the past (Paudyal, 2007). Increasing incidence of rhino in the buffer zone of the park is primarily attributed to the agricultural farming in former rhino habitat (DNPWC, 2006) and factors causing rhino food pressure includes proliferation of invasive alien species, regeneration of tree species in the grassland and uncontrolled livestock grazing into their

prime habitats. As when rhino strive for food into the buffer zone then human embark upon frequent showdown with them. There are several reports of local people confrontation with rhino making some people to die and injury to the others along with trampled cultivated fields (DNPWC, 2004/05).

Similarly, human-tiger (*Panthera tigris*) conflicts pose a major problem for communities living in or near tiger habitat as tiger attacks on humans have increased in recent years (WWF, webcontent). The surviving tiger's population suffers from significant habitat loss and decline in prey species population which makes them responsible for buffer zone household's livestock depredation and human attacks (Pradhan, 1995; Bhattra, 1999). There were even evidences of breeding tiger's population occurring outside the protected area (Gurung et al, 2006) emphasizing for the need to work beyond protected areas for their survival. Furthermore, villager's retaliatory killing as well as poaching of the crop raiding wildlife species also happens to be the tiger's preferred prey species, thus dwindling down the availability of the tiger's natural sources of food from the wild.

BOTTOM LINE

The extent of conflict wildlife occurring at the buffer zone and corridors of the TAL suggests that the nature of human-wildlife conflicts is both historical and recent. What seems inevitable is that human wildlife conflicts incidences will continue to occur in the present context of wildlife habitat instability and growing human population's activity at and around the park and reserves. Therefore, how human wildlife relationship will be improved in the future by minimizing damages and loss of human life is the fundamental question to ensure the existence of mega vertebrates in the Terai.

REFERENCES

Bhatta, S.R. 2004. Elephant-Human Conflict in Terai PA's of Nepal with particular emphasis to Western Terai Arc Landscape. Draft. WWF document.

- Bhattra, T.P. 1999. Livestock depredation and human harassment by wildlife and its control. BSc Thesis (unpublished). Institute of Forestry, Pokhara Campus, Tribhuvan University, Nepal
- DNPWC, 2004/05. Annual Report. Department of National Park and Wildlife Conservation. Ministry of Forests and Soil Conservation. Kathmandu. Nepal.
- DNPWC, 2006. The greater one-horned rhinoceros conservation action plan (2006-2011). Department of National Park and Wildlife Conservation. MoFSC, Nepal.
- DoF, 2005. Forest Cover Change Analysis of the Terai Districts (1990/91-2000/01). Department of Forest and Soil Conservation. Kathmandu Nepal.
- Gurung, B., Smith J.L.D and Shrestha, M. 2006. Using a "Bagh Heralu" Network to map the metapopulation structure of tigers in Nepal. Conservation Biology in Asia. Society of Conservation Biology in Asia Section. Kathmandu. Nepal.
- Gurung, C. 2005. Terai Arc Landscape. Edited by Sharma, U.R and Yonzon, P. People and protected areas in South Asia. IUCN World Commission on Protected Areas, South Asia and Resources Himalaya Foundation.
- Karmacharya, R. 2004. Falling forests, fleeting flagship. Habitat Himalaya. Vol. XI (II).
- Pandey, S.R. 2003. A brave new step twenty years after. Habitat Himalaya. Vol. X (I).
- Paudyal, A. 2007. Buffer zone resources and community conservation: A case study of Piple Buffer Zone VDC, Chitwan National Park. Master's Degree Dissertation (unpublished). Central Department of Environment Science. Tribhuvan University. Kirtipur.
- Pradhan, N. M. B. 2007. An ecological study of re-colonizing population of Asian Elephants in lowland Nepal. Ph. D. Thesis. Norwegian University of Life Sciences. Norway.
- Pradhan, N.M.B, 1995. Buffer Zone Management in Nepal: A case study in Bardia National Park with emphasis on sustainable use of fuel wood and timber resources. M.Sc. Thesis. Agricultural University of Norway, Norway
- Sharma, U. R. 1991. Park-People Interaction in Chitwan National Park, Nepal. Ph.D. Thesis. University of Arizona, USA
- WWF.webcontent.http://www.panda.org/about_wwf/what_we_do/species/problems/human_animal_conflict/index.cfm. Seen on August 2007.
- Yonzon, P. 2003. Buy elephants and get your Eden free. Habitat Himalaya. Vol. X (II).
- Yonzon, P., Karmacharya, R., Adhikari, G. and B. Baidya. 2003. Spatial status and dispersion of the wild elephants in the Terai Arc Landscape of far west Nepal. Resources Himalaya, US AID and WWF Nepal Programme. Kathmandu.

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