

## Human-Elephant Conflict Due to Movement of Elephants between India and Nepal and WWF-India Initiatives to Address It

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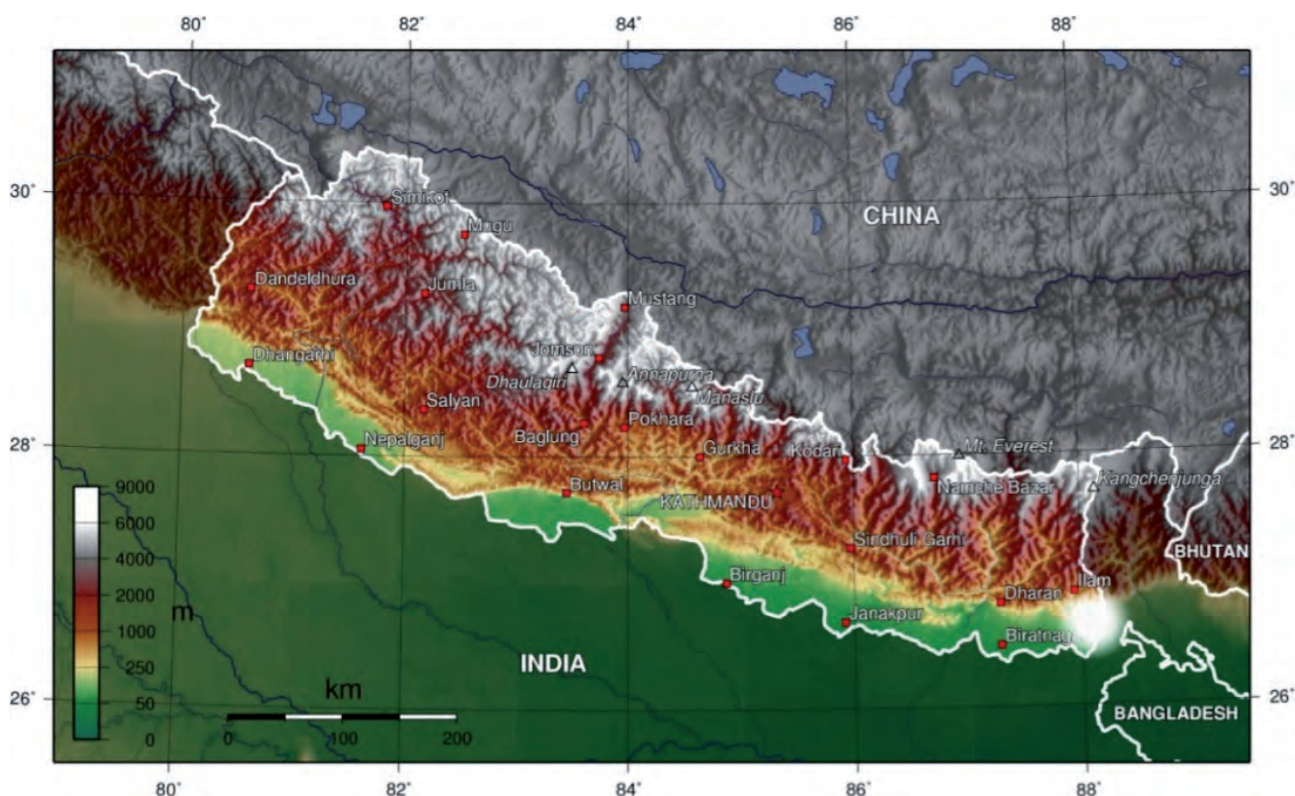
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### Introduction

Asian elephant populations of the northern districts in the Indian state of West Bengal have become an issue of discontent between India and Nepal in recent times. The elephant habitat in the state extending from the Sankosh river in the east, to the Mechi river in the west, houses a great assemblage of biological resources in the protected and reserve forests lying very close to the Himalayan foothills. These forests and adjoining territory in Eastern Nepal, Sikkim, Western Bhutan, and Assam also display rich biological components including some flagship species, and provide trans-boundary corridors for gene flow enhancing the global significance of this tract for conservation. However the human population and its growing demands for land

and biological resources affect this landscape to a great extent. Fragmentation of habitat, taking a heavy toll of grasslands in this region occurs primarily through infrastructure development, tea cultivation, large-scale construction of embankments and unregulated expansion of human settlements.

The escalation of human-elephant conflict due to seasonal movement of elephant herds from West Bengal to Nepal has generated mistrust among the locals, and such mistrust has caused casualties and injuries to elephant populations in the trans-boundary zone (Fig. 1). To ensure the current level of discontent and mistrust was brought down substantially over a period of time, a properly designed action plan and its implementation was needed.



**Figure 1.** Indo-Nepal trans-boundary region (white spot in lower right corner).

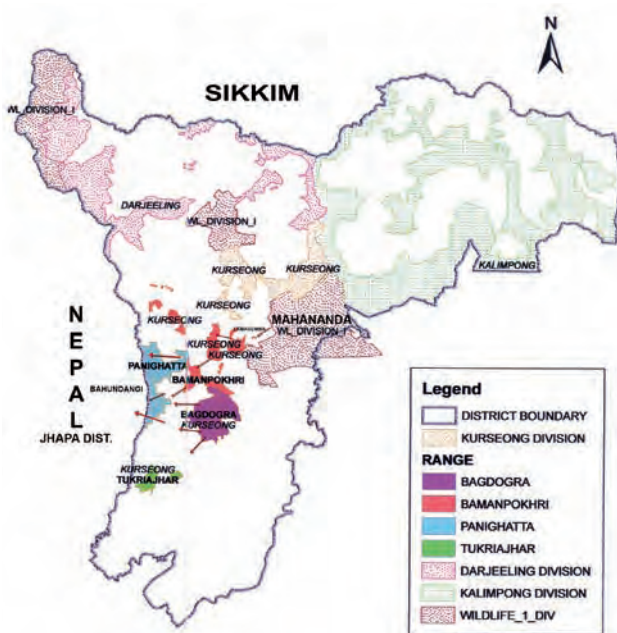


**Figure 2.** Elephants crossing the Mechi river in the evening (photo credit: Koushik).

### Pattern of elephant migration

A part of the elephant population of Northern West Bengal moves into Nepal crossing the River Mechi (Fig. 2). This movement of elephants is restricted to the two well-defined crop harvesting periods of paddy and maize in Nov-Dec and Jun-Jul respectively from India to Nepal.

In India, four ranges of Kurseong Division viz. Bamanpokhri, Tukriajhar, Bagdogra and Panighata, are the major conflict areas. Most of the paddy fields are located in the two forest ranges, Bamanpokhri and Tukriajhar. Big herds also migrate into Nepal, during the crop harvesting seasons through the Panighata (Kurseong Division) corridor via Mahananda-Lamagumpha-Bamanpokhri (Fig. 3).



**Figure 3.** Pattern of elephant movement in Terai, West Bengal (India) and points of entry to Nepal.

It has been reported by Baidya (2010) that the districts of Jhapa, Morang, and Sunsari (Fig. 4) used to be a contiguous forest area and a free movement route for wild elephants before eradication of malaria in the 1960s and destruction of forests in the eastern Terai of Nepal. The results from radio-collaring of elephants in North Bengal during 2005-2006 have indicated that parts of Jhapa district were included in the home range of certain elephant herds. Hence this landscape is an integrated habitat for elephants in spite of the existence of a political boundary between the two countries of India and Nepal.

### Current status of the elephant population

Northern West Bengal in India holds nearly 300-350 resident and 150 migratory elephants (census in 2005). The exact population recorded from Northern West Bengal was 292 in 2002 (Government of West Bengal 2009). However, recent updates from the latest census (2010) by the Forest Department, Government of West Bengal show the presence of nearly 500-550 elephants in this region.

Seasonally migrating elephants that move from West Bengal, India to Jhapa in Eastern Nepal figure around 50-70 individuals, and a resident herd of 10-13 individuals (Government of Nepal 2007) has been reported in Eastern Nepal.

The elephant population in the Terai region (Kurseong Division, Mahananda WLS and Baikunthapur Div together) has experienced a steady increase from 46 (2000) to 164 (2010) as



**Figure 4.** Terai districts in Eastern Nepal.

recorded by the Forest Department, Government of West Bengal.

This steady rise in the size of the migrating elephant population over the last decade can be attributed to the expansion of paddy and maize cultivation in the Terai of eastern Nepal during the same period.

### Present status of conflict

Conflict in the trans-boundary region dates back to the 1980's, but over the years this has worsened with the expansion of crop fields in close proximity to forests. Kurseong Division in West Bengal records a high number of human deaths due to human-elephant conflict (Table 1).

In Nepal, the Jhapa district recorded the maximum intensity of conflict. Unconfirmed reports indicate 5-8 human casualties and 3-4 elephant deaths every year in Eastern Nepal. However 20 people have been reported killed in Jhapa during 2003-07 (Table 2, Government of Nepal 2007). There have been reported killing of 24 elephants in the last two decades.

### Recent initiatives for mitigation of the conflict by WWF-India

Since 2011 WWF-India has facilitated dialogue and consultation between the two countries to develop an agreement for ensuring conservation of elephants and reducing the intensity of the conflict. Developing an action plan to mitigate human-elephant conflict and conservation of elephants in this region has also been a part of this initiative.

**Table 1.** Recorded damage, human casualties and injuries in trans-boundary region (Source: Kurseong Division and Wildlife Div I, Forest Dept., Govt. of West Bengal).

Year	# killed	# injured	# huts damaged
2002-03	20	13	718
2003-04	9	2	-
2004-05	11	29	273
2005-06	15	23	252
2006-07	12	15	337
2007-08	10	9	515
2008-09	1	7	803
2009-10	15	21	249
2010-11	12	8	787
2011-12	12	1	587
<b>Total</b>	<b>117</b>	<b>128</b>	<b>4521</b>

Accordingly, a series of community meetings and seminars involving administrative authorities and other stakeholders were held. Consultations and joint meetings were organized in Nepal and India for identification of key issues. There have been four group level meetings, two workshops and a cross border visit. Official representatives from Nepal and India attended the final workshop held at Siliguri in February 2013 to formulate a draft action plan through identification of the gap areas in controlling HEC and formulating a conservation strategy for the next 10 years. The draft plan includes following suggestions based on feedback from the series of consultations between the two countries.

- Development of a joint protocol by India and Nepal

**Table 2.** Loss of life and properties in Jhapa district, Nepal during the last 3 years (Source: DFO Office, Jhapa, Nepal, 2012).

Records	2009-10	2010-11	2011-12
Elephant deaths	1	0	2
Human deaths	0	3	9
Human injuries	2	6	12
Domestic animals killed	1	0	2
Loss of property (mio NR)	1.1	2.1	4.0
Effected households	31	44	135

- Formation of voluntary elephant driving squads in Jhapa, Nepal
- Compensatory benefits for loss of human life and properties in Nepal
- Awareness generation in both the countries
- Habitat analysis and vegetation survey along with habitat improvement in West Bengal.
- Improvement of basic road infrastructure in affected areas of Jhapa district, Nepal
- Raising physical barriers like solar energized fences in Nepal
- Capture and training of Kunkee elephant in Nepal
- Radio-telemetric study on the selected individuals from the elephant herd
- Feasibility survey of corridor connectivity between India and Nepal

A copy of the draft action plan was circulated to all stakeholders. A review meeting involving representatives of both Governments was held to decide on the final version of the action plan to facilitate the process of development of a bilateral agreement between the two participating countries.

Developing public awareness and building trust are key requirements in minimizing human-elephant conflict in the short term. To achieve this display boards at prominent locations are being set up to convey conservation messages in local languages. A new section was developed in



Elephants in West Bengal close to Indo-Nepal boundary (photo credit: Koushik).

the WWF-India website to emphasize the critical conservation issues in Northern West Bengal with special emphasis on WWF's intervention and role in such cases. This includes updates on project activities in the trans-boundary region of Eastern Nepal-West Bengal. Awareness campaigns were organized for local NGOs, schools, Village Development Committees, and defence personnel to develop the capacity of local stakeholders. All these efforts are directed to generate a favourable climate for two-way communication between the stakeholders and forest / wildlife management authorities of both the neighbouring countries.

### Acknowledgements

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