

## **Conflict with Wild Giant (*Elephas Maximus*) and Us in Northern West Bengal: A Review.**

**Chiranjib Nad**

*Research Scholar, Department of Geography, Raiganj University, Uttar Dinajpur, West Bengal, India.  
Corresponding Author': Chiranjib Nad*

---

**ABSTRACT:** Man elephant conflict in Hill, Terai and Dooars region of Northern West Bengal is now common these days and it will increase day after day. This situation makes environmentalist little much worry because the losses in both direction of it increase tremendously in future. The most well known protected forest like Sinchal WLS, Mahananda WLS, Singalila NP, Neora Valley NP, Jorepokhari WLS etc. protected forest of undivided Darjeeling district and Gorumara NP, Jaldapara NP, Chapramari WLS, Buxa NP & WLS etc protected forest of undivided Jalpaiguri district hold some rare species like Asiatic Elephant, Red Panda, One Horn Rhino, Bengal Tiger etc. Due to the shortage of forest habitat and food, land use changes or biological movement over long time through Elephant corridor wild elephants passes to forest surrounded locality as a result MAN AND WILD ELEPHANT CONFLICT took place. This paper is an attempt to focus on the different forms of MAN ELEPHANT CONFLICT, find out its causes and consequence result in and around forest and surrounded areas, suggest some remedies to save wild elephants and human being in Hill, Terai and Dooars region of Northern West Bengal.

**Key Words:** Hill, Terai, Dooars, Northern West Bengal, Human- Elephant Conflicts, Protected Area.

---

Date of Submission: 09-01-2018

Date of acceptance: 25-01-2018

---

### **I. INTRODUCTION**

Asian Elephant (*Elephas maximus*) is a giant herbivore of land surface. Loss of major wild animals in forest due to natural death, road/ rail accident, poachers' activity, direct conflict between man animal (including elephant) and so on in Northern West Bengal now common these days and it will increasing day after day. Every day the headline of news paper depict that forest encroach for regional development, animals death by train or road accident, poachers are caught by forest department with elephant tusk, animal skin, snake poison, horn, living animals and so on. This situation makes little much worry that if the rate of loss of forest wild animals continued after some decade the wild animals become finished from the Northern West Bengal forest. For increasing human population we over stepping towards forest and grassland or encroaching forest land for established our settlement. Land use change due to increasing human population, where agricultural fields being expanded and spread to areas which were initially wildlife habitats, plays a major role in conflict development. This would result in landowners and elephants competing for the land. In some cases, abandoned land which would have already become a temporary elephant habitat, being reoccupied by people after a long period would also result in conflict. Secondary vegetation closer to the human settlements created largely because of human activities are known to attract elephants thus bringing them closer to agricultural fields and increasing the risks of crop raiding (Nauhgtton *et al.*, 1999; Lhamo., 2008). High anthropogenic pressure, rapid population growth, rapid economic growth, development of Agricultural and other means of occupation activity lead to high land diversion within study area. Unplanned constructional activity, transport routes, tea garden, unplanned settlement and so on changing cultural landscape in and around protected forest land not only poses serious threat to environment also responsible for elephant habitat and corridor destruction. The negative impact includes Man – Elephant conflict, Life and property loss of humans, Loss of life of wild animals including elephant, forest fragmentation, environmental degradation etc took place in the study area as a result of sharing same space or coexistence of human dwellers and elephant within the study area. Major elephant's movements take place through the tea gardens. Almost 90% tea gardens of Jalpaiguri are within the zone of conflict. The tree stands in the tea garden provides cover and some amount of fodders to the Elephants. Haphazard's labour line distribution and their activities for crop cultivation and brewing rice alcohol are the major problems for Man- Elephant conflict in North Bengal (Das. 2013; Mukherjee. 2016).

## II. OBJECTIVES

The prime objectives of this paper are-

- To identify major forms (Direct and Indirect) of MAN ELEPHANT CONFLICT.
- To find out the causes and consequence impact of MAN ELEPHANT CONFLICT in the study area.
- To suggest some remedies to overcome the existing problem.

## III. STUDY AREA

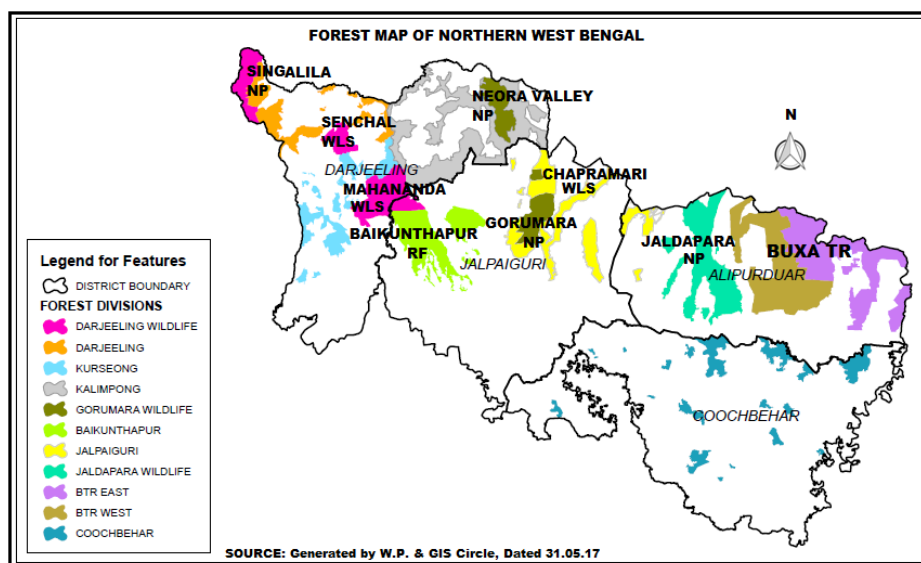
The study area cover hill, terai, dooars region of Northern West Bengal and it comprises five district of concerned area namely Darjeeling, Kalimpong, Jalpaiguri, Alipurduar and Cooch Behar district of West Bengal. The total geographical area is 12763 sq km. Among total geographical area 2598 sq km are reserve forest, 259 sq km are protected forest and 194 sq km are unclassified state forest.

**Table No: 1-** District wise distribution of Geographical area and Recorded Forest land in Northern West Bengal.

SL NO.	DISTRICT	GEOGRAPHICAL AREA (Km <sup>2</sup> )	RESERVE FOREST (Km <sup>2</sup> )	PROTECTED FOREST (Km <sup>2</sup> )	OTHERS (Km <sup>2</sup> )	TOTAL (Km <sup>2</sup> )	PERCENT AGE (%)
1.	Darjeeling and Kalimpong	3149	1115	-	89	1204	38.23
2.	Jalpaiguri and Alipurduar	6227	1483	217	90	1790	28.75
3.	Cooch Behar	3387	-	42	15	57	1.68
STUDY AREA		12763	2598	259	194	3051	23.90
WEST BENGAL		88752	7054	3772	1053	11879	13.38

Source: State Annual Forest Report, West Bengal.

The total land area of undivided Darjeeling district is 3149 sq km, undivided Jalpaiguri district is 6227 sq km and Cooch Behar district is 3387 sq km. The study area covers 1204 sq km, 1790 sq km and 57 sq km forest area respectively of undivided Darjeeling, undivided Jalpaiguri and Cooch Behar district. Undivided Darjeeling district has 1115 sq km reserved forest and 89 sq km unclassified state forest. Whereas undivided Jalpaiguri district has 1483 sq km reserved forest, 217 sq km protected forest and 90 sq km unclassified state forest and Cooch Behar district has 42 sq km protected forest and 15 sq km unclassified state forest. The forest area covers 38.23%, 28.75% and 1.68% land area respectively of concerned district. These forest areas have high rich with flora and fauna resources. The most well known reserve forest like Sinchal WLS, Mahananda WLS, Singalila NP, Jorepokhari WLS etc. reserve forest of Darjeeling district, Neora Valley NP of Kalimpong district, Gorumara NP, Chapramari WLS of Jalpaiguri district and Jaldapara NP, Buxa Tiger Reserve (including NP and WLS) of Alipurduar district hold some rare species like Asiatic Elephant, Red Panda, Indian Gaur, One Horn Rhino etc. But day after day forest resources of the study area losses due to Human Activity in form of forest encroachment, increasing poachers' activity, pollution, deforestation, structural construction, tourism and so on.



**Fig 1:** Forest Map of Northern West Bengal.

**Table No: 2-** Protected area of the Study Area.

SL NO.	NAME OF PROTECTED AREA	AREA (Sq Km)	BIO-GEOGRAPHIC ZONE	DISTRICT
<b>NATIONAL PARKS (NP)</b>				
1.	SINGALILA N.P	78.6	2C	DARJEELING
2.	NEORA VALLEY N.P	159.9	2C	KALIMPONG
3.	BUXA N.P	117.1	7B	ALIPURDUAR
4.	GORUMARA N.P	79.45	7B	JALPAIGURI
5.	JALDAPARA N.P	216.52	7B	ALIPURDUAR
<b>WILD LIFE SANCTUARIES (WLS.)</b>				
1.	JOPEKHRI SALAMANDER W.L.S	0.04	2C	DARJEELING
2.	SENCAL W.L.S	38.88	2C	DARJEELING
3.	MAHANANDA W.L.S	158.04	7B	DARJEELING & JALPAIGURI
4.	CHAPRAMARI W.L.S	9.60	7B	JALPAIGURI
5.	BUXA W.L.S	314.52	7B	ALIPURDUAR
<b>TIGER AND ELEPHANT RESERVE (TR. &amp; ER)</b>				
1.	BUXA TIGER RESERVE	760.87	7B	ALIPURDUAR
2.	EASTERN DUARS ELEPHANT RESERVE	977.51	7B	ALIPURDUAR & JALPAIGURI

#### IV. METHODOLOGY

The overall study is based on field observation and secondary data. The data of different form of man elephant conflict is taken from DFOs office, State Annual Forest Reports and published research study/article of referred authors. Census report of India and News Paper report is also consult for the study. Field interview is also taken to collect recent data of man elephant conflict. The cartogram is prepared by using MS Excel software. A pragmatic approach of research is followed to complete the study.

#### V. DISCUSSION

The Northern West Bengal comprises of eight districts i.e. Darjeeling, Kalimpong, Jalpaiguri, Alipurduar, Cooch Behar, Uttar Dinajpur, Dakshin Dinajpur and Malda with an area of 21855 sq km. Table number-2 shows that in the study area there is 5 National Park, 5 Wildlife Sanctuaries and 1 each of Tiger and Elephant Reserve. The forest land holds some rare endangered species like Asian Elephant, Bengal Tiger, Asian One Horn Rhino and Red Panda etc. The Northern West Bengal forest is the habitat of > 50 Bengal Tigers (As per 2004 census), > 250 Leopard (As per 2002 census), > 500 Asian Elephants (As per 2010 census), > 200 Asian One Horn Rhino (As per 2010 annual report) and others many kind of animal.

The human population increased tremendously in the study area. In 2001 the total population is 7889500 and in 2011 the population of study area is 8534489. For habitat, agricultural land and other means of occupation activity, industrial and development activity people encroaching forest land. In the same time the Elephant population in the northern forest land of West Bengal increased (Table no. 3). Due to lack of food in one forest or biological movement of migration over long period from one forest land to another or some other reason whatever else they move through tea garden and surrounding settlement, crop field (Crop season of Paddy and Maize), railway tract etc. which causes Man- Elephant Conflict. As a result for food and habitat both human and wild elephant enter each other territory and Man and Elephant Conflict took place in the study area.

#### ELEPHANT

The Asiatic Elephant is an Endangered Species according to the RED LIST of IUCN<sup>1</sup>. As per recent forest census report 2010 the number of elephants in northern West Bengal forest is 529. But death of wild Asiatic Elephant in the study area is common. Beside Natural death the main causes of wild elephant death are-

<sup>1</sup> Red List - The IUCN Red list of Threatened species is recognized as the most comprehensive, objective global approach for evaluating the conservation status of plant & animal species.

Train Accident, Poaching, Elephant deaths in trans-boundary conflict due to gun-shot or injury, death due to electrocution and other forms of Human- Elephant Conflict.

**Table No: 3** – Numbers of Human and Elephant Population (2001 & 2011) in Northern West Bengal.

HUMAN POPULATION		ELEPHANT POPULATION	
2001	7889500	2001	328
2011	8534489	2011	529
Population Increase	644989	Population Increase	201

Source- Census report of India, State Annual Forest Report, 2001 and 2011, West Bengal

**Table No: 4-** Census of Wild Elephant in West Bengal.

RECENT CENSUS OF WILD ASIATIC ELEPHANT IN WEST BENGAL (AS PER 2010 CENSUS)		
NORTH BENGAL	SOUTH BENGAL	TOTAL
529	118	647

Source: State Annual Forest Report, West Bengal.

### Different Form of Man Elephant Conflict-

#### A. DIRECT CONFLICT-

The elephants population inhabiting the region is spread across the districts of Darjeeling and Jalpaiguri (Including newly formed Kalimpong and Alipurduar district) comprising nine forest divisions of Kurseong, Wildlife I, Baikunthapur, Kalimpong, Wildlife-II, Jalpaiguri, Cooch Behar, Buxa Tiger Reserve (West) and Buxa Tiger Reserve (East) in a forest area of 1954 Km<sup>2</sup> (Barua and Bist., 1996; Roy and Sukumar., 2015). The total range of the elephants in NW Bengal is 3051 km<sup>2</sup> and the forest cover is 1954 km<sup>2</sup> (Lahiri-Choudhury., 1980; Barua and Bist., 1995; Roy and Sukumar., 2015). The habitat is characterized by a high degree of fragmentation and intense human- elephant conflict, resulting not only in loss of agricultural crops and properties but also of human lives, - 50 annually (Lahiri- Choudhury., 1975; Choudhury *et al.*, 1997; Sukumar *et al.*, 2003; Roy *et al.*, 2009).



#### 1. CONFLICT IN SEARCH OF FOOD-

In and around forest surrounded locality and tea garden elephant enter in search of food. To protect them and their property the local people always attack elephants which is the prime causes of man elephant conflict. Sometime people attack wild elephant and forced them to move in wrong direction. Due to lack of employers in forest department, excitement of local people to see the elephant, take photo or selfie (It is a Self- photograph, typically taken with a digital camera, webcam or camera phone held in hand or by using selfie-stick and share via social media) with wild elephant this problem become more complex. It was observed that in the study area almost all the people make country liquor in their homes for commercial purposes. Elephants are also seemed to be fond of this liquor. When they get the smell of the liquor they tore down a house in search of the liquor (Borah *et al.*, 2005).

**Table No: 5- Recent Man and Elephant Conflict in the Study Area.**

SL. NO	DATE & PLACE	MAN		ELEPHANT		PROPERTY LOSS/REMARK
		INJURED	DEATH	INJURED	DEATH	
1.	4 Mar, 2016 Bichabhanga Banabasty Primary School					Partly destroy School building and mid day meal kitchen.
2.	2 Mar, 2016 Lataguri Saraswati Banabasti Primary School					Partly destroy School building and mid day meal kitchen.
3.	1 Mar 2016 Subhasnagar Area, Banarhat	1				Partly destroy 2 Building.
4.	10 Feb 2016, Siliguri				1	Partly or Totally destroy 80 houses.
5.	11 Feb 2016, Ambari Falakata	2	1			A car of forest department was damaged.
6.	25 Feb 2016, Riabari Tea Garden, Banarhat					Partly destroy 2 houses of tea workers.
7.	4 Jan, 2016, Banarhat Banabasti					Partly destroy 8 houses of tea garden workers.
8.	6 Dec 2015, Factory Line, Kathalguri Tea Garden, Banarhat	3				Partly or totally destroy 8 houses of tea garden workers.
9.	14 Feb 2016, Khaarbari, Nagrakata				1	Death of a Tuskers
10.	30 Nov 2015, Dyna beat office					Partly destroy Dyna toll gate beat office.

Source- Field Survey (data collected through Interview Method).

## 2. POACHING-

Elephant is one of the targets of poachers. For the Tusk of Elephant poachers killed them. The Tusk of elephant has good market price. The law and regulation of India are not adequate to solve the problem.

**Table No: 6- Death of Elephant due to Poaching.**

Date of Incidence	Sex	Age (Yrs)	Place of Incidence
Oct, 2002	M	Calf	WL- I Division
14.12.2002	M	50, Tusker	Baikunthapur Division
Dec, 2003	M	22, Tusker	WL- I Division
Jan, 2004	M	30 approx., Tusker	WL- I Division
Feb, 2005	M	30 approx., Tusker	Coach Behar Division
2.07.2006	M	20 approx., Tusker	Baikunthapur Division
12.02.2013			BTR East
Feb, 2013			BTR East

Source: Field Survey.

## B. INDIRECT CONFLICT-

### 1. TRAIN ACCIDENT-

According to the State Wild Life Annual Forest Report 2013- 2014 were recorded out of 57 death of wild elephant about 30 nos. of elephant death is natural death. But some environmentalists questioning these 30 nos. death are not natural death, these caused by lack of food in forest land and diseases. West Bengal is the 2nd highest in death of wild elephants due to development activity in railway sector. Since 1987, the country has lost more than 150 elephants due to train hits. These include 36% cases recorded from Assam, 26% in West Bengal, 14% in Uttarakhand, 10% in Jharkhand, 6% in Tamil Nadu, 3% in Uttar Pradesh, 3% in Kerala and 2% in Odisha (Roy *et. al.*, 2009; Rangarajan *et. al.*, 2010; Mohammed., 2015).

Table number 7 shows that about 74 km of railway track runs within forest area and elephant corridor of Northern West Bengal. In the time of metre gauge during Feb 1958 to Oct 2002 in 44 years only 29 wild elephant death were recorded. But after Broad Gauge conversion of railway tract the accidental death of wild Asiatic elephants were increased. After Broad Gauge conversion from 2004 to 2013 only 10 years 47 of wild Asiatic elephant death were recorded (Table Nos. 8) due to collision with train. In this time more than 4 wild elephant/ yr death incident took place due to train accident in Northern West Bengal.

**Table No- 7:** Railway Stretches in the Forest Areas of Northern West Bengal.

Sl. No	Existing Railway Tract	Total Distance (Km)
1.	Buxa Tiger Reserve	18
2.	Jaldapara WLS	12
3.	Jalpaiguri Division	06
4.	Chapramari WLS	12
5.	Kalimpong Division	08
6.	Baikunthapur Division	06
7.	Mahananda WLS	12
TOTAL		74

Source: Roy *et al.*, 2009.

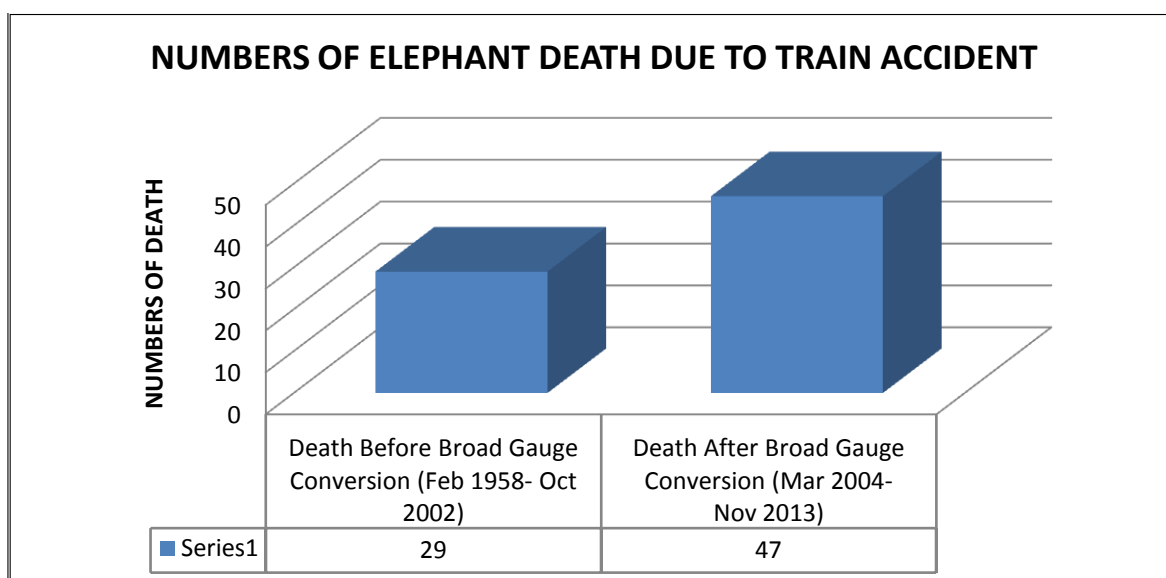


Fig 2- Numbers of Elephant death recorded before and after Broad Gauge Conversion in Northern West Bengal.

The 161 Km long Siliguri- Alipurduar junction was converted from MG to BG in 2003 and the BG train movement started in 2004. Before gauge conversion, the trains that ran on this track had limited speed, but after it the speed are so high that many times elephants dash against the trains while passing through from one forest patch to another or during crop raiding season while passing through tea garden to villages, and die (Roy *et al.*, 2009).

**Table No- 8:** Death of Elephant due to Train Accident (2004- 2013).

Sl. No	Date	No. Of Elephant death and Age	Place and Other Information
1.	16 Mar, 2004	1	In Mahananda WLS by collision with Goods Train.
2.	25 May, 2006	1	In Buxa Tiger Reserve Forest by collision with Mahananda Express.
3.	28 May, 2006	1 Calf/ Juv.	In Good Hope tea garden of Kalimpong Subdivision.
4.	28 May, 2006	1 Adult	Near Damanpur in Buxa Tiger Res. (W) Subdivision.
5.	29 May, 2006	1	Near Madarihat by collision with Passenger Train.
6.	13 Nov, 2006	1	Near Madarihat by collision with Goods Train.
7.	18 Nov, 2006	1	Near Mongpo by collision with Military Special Train accident.

8.	11 Apr, 2007	1	In Buxa Reserve Forest by collision with Goods train.
9.	25 July, 2007	1	In Mahananda Reserve Forest by collision with Guhati-Jhaja Express.
10.	9 Nov, 2007	1	Near Buxa Reserve Forest by collision with Rail Engine
11.	15 Jan, 2008	1	In Buxa Reserve Forest by collision with Goods train.
12.	22 July, 2008	1 Male Sub adult (Tusker)	In Gulmakhola under Mahananda WLS by collision with Jhaja Express.
13.	4 Oct, 2008	1 female adult	Near Pampu Basty under East Damampur Range by collision with Goods train.
14.	27 May, 2009	1	In Jaldapara National Park.
15.	31 May, 2010	1	Near Redbank Tea Estate by collision with Intercity Express.
16.	3 June, 2010	1	Near Buxa Reserve Forest by collision with B.S.F Special Train.
17.	18 July, 2010	1	In Singimari Block by collision with Goods train.
18.	9 Aug, 2010	1	In Chapramari WLS by collision with Train Engine
19.	22 Sept, 2010	7	In Moraghat tea garden near Banarhat by collision with Goods train.
20.	15 Nov, 2010	1	Near Rahimpur tea garden by collision with Mahananda Express.
21.	16 Nov, 2010	1	In Mahananda Wild life Sanctuary by collision with Goods trains.
22.	25 June, 2011	2	Beside Redbank tea garden by collision with Asansol Express.
23.	3 Oct, 2011	1	In Mahananda Wild life Sanctuary by collision with Army Train.
24.	6 Nov, 2011	1	In Jaldapara NP by collision with Guhati-Ranchi Express.
25.	3 Dec, 2012	1	In Mahananda WLS.
26.	5 Jan, 2013	3	In Rajabhatkhawa by collision with Jhaja Express.
27.	30 May, 2013	5	Five Nos. Of death by UP Mahananda Link Express in between Banarhat & Binnaguri Railway Station, Jalpaiguri Division
28.	10 Oct, 2013	1	One Nos. By UP Siliguri- Alipurduar Passenger Train at Mongpong, Chel Range, Kalimpong Division
29.	13 Nov, 2013	6	Six Nos. By Kabiguru Express, in between Chalsa to Jaldhaka bridge, Hillajhora-2, Nagrakata Beat of Chalsa range, Jalpaiguri Division
Total	10 Years	Total 47 Nos. of death were recorded.	

Source: Anandabazar Patrika, Siliguri, Tuesday, 8 Jan, 2013, State Annual Forest Report and Field Survey.

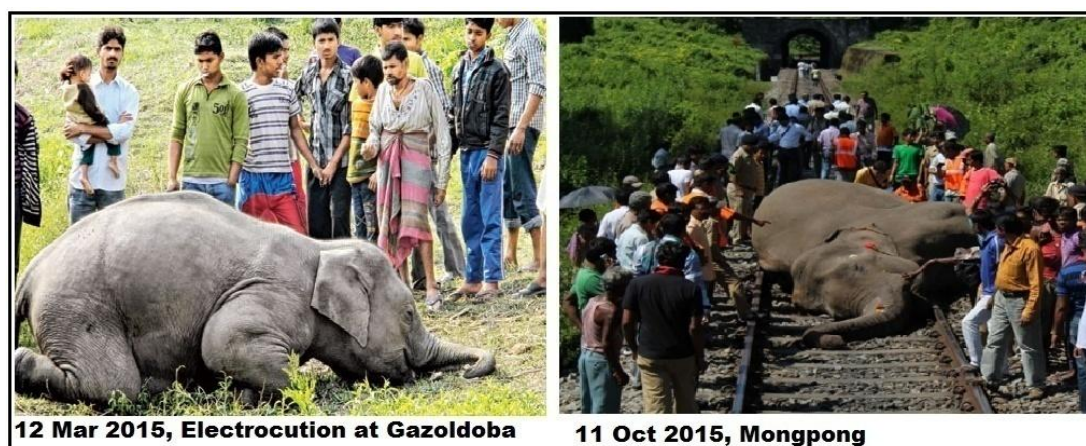
## 2. TRANS- BOUNDARY CONFLICT-

We often saw several incidents in past few years' elephant getting injured or killed by villagers in Nepal. In search of food the North Bengal elephants often use the Mechi River corridor to enter Jhapa District of Nepal through Kolabari- Tukriajhaer. The villagers for protect their paddy field often attack wild elephants, some time they killed elephants or sometimes they returned injured in India. From 2007 to 2011 in this five years 8 wild elephant's death were recorded due to trans-boundary conflict gun-shot or injury.

**Table No: 9-** Elephant deaths in trans-boundary conflict due to gun-shot or injury

Sl. No	Year	Numbers of death
1.	2007	02
2.	2008	02
3.	2009	01
4.	2010	02
5.	2011	01
Total	5 Years	08

Source- Das, 2013.



**12 Mar 2015, Electrocution at Gazoldoba**

**11 Oct 2015, Mongpong**

### 3. ELECTROCUTION-

Another cause of elephant death is electrocution in army cantonment and rural villages. In Army cantonment and villages soldiers and villagers to protect themselves and their crop they use power fencing. During the movement of wild elephant from one forest habitat to another through regular corridor they often enter to corridor dependent villages and Army cantonment. In the time of paddy and maize the villagers illegally use power fencing around their crop field. During 2009- 14 in West Bengal 8 death of wild elephant were recorded due to electrocution among them 5 incident in Northern West Bengal were recorded.

**Table No: 10-** Death of ELEPHANTS Caused by ELECTROCUTION during 2008- 13 in Northern West Bengal.

Date of Incidence	Sex	Age (Yrs)	Place of Incidence	Division	Remark
25 May 2008	F	20	In a Maize field at Dakshin Satali (Andamanpara)	Wildlife- III	-
15 Aug 2009	F	35	Behind Army Public School, Army Cantonment, Binnaguri under Wildlife Squad III	Wildlife Div. II	-
25 Jul 2013	M	30	Army Cantonment Station Head Quarter, DPO Unit, Wildlife Squad- III, Binnaguri.	Gorumara WL Division	Accident
24 Aug 2013	F	10	Binnaguri Army Cantonment Area of Wildlife Squad- III	Gorumara WL Division	Accident
13 Oct 2013	M	15- 16	Kanjali Basti (North) of Madarihat Beat under North Rydak Range.	Buxa Tiger Res. (E)	Accident

Source: State Annual Forest Report, West Bengal.

### 4. DEATH INTO DITCH/ DEEP EXCAVATION/ WATER WELL:

In many parts of tea garden, tea garden labour colonies and rural houses of study area there is created deep excavation by digging, boring or drilling to access ground water. Sometime wild elephant (mainly infant) fall down into the deep excavation or water well. In very few cases they rescued by forest department.

**Table No: 11** - Death of Elephants due to stuck or falls down into Ditch/ Deep Excavation/ Water Well.

Date of Incidence	Sex	Age (Yrs)	Place of Incidence
Sept, 2008		Calf	Mahananda WLS
Oct, 2014	F	Calf	Ashapur Tea Garden
23.06.2015	F	Sub Adult	Rethi Forest

Source: Field Survey.



## 5. DECLARED AS ROUGE, SHOT DEAD:

A rouge elephant is someone that behaves abnormal from others and often causing damages. Sometime to eliminate damage from rouge elephant to save human live and property forest department declared as rouge elephant and shot dead.

**Table No: 12-** Death of Elephant due to Declared as Rouge and shot dead.

Date of Incidence	Sex	Age (Yrs)	Division
25 Jun 2002	F, Adult	25- 30	WL- I
24 Aug 2002	M, Tusker	Adult	
07 Aug 2005	Tusker	35 Approx.	Jalpaiguri Division

Source: Field Survey.

## VI. CONCLUSION

The following recommendation may be helpful to protect wild Asiatic Elephant in Northern West Bengal are-

- i. Strict rules and their implementation to poachers, No politics should welcome for forest encroachment and Forest based Tourism should stopped.
- ii. Involve the forest surrounded local people to save biodiversity, increased awareness of local villagers about the importance of biodiversity.
- iii. Use automatic thermal sensor in forest corridors to save the Elephant from train accident. Railway and Environment Department should finance and construct pillar based hanging railway Tract Bridge above the forest area.
- iv. Save and Translocation of Carnivore animals from others forest area.
- v. New method should be welcome to estimate number of wild elephant population in the study area.
- vi. The number of workers of forest department should be increased.
- vii. Reforestation in the forest fringe areas, Plantation of food vegetation instead of commercial Silviculture, conserves the forest grassland in forest fringe areas instead of agriculture land for herbivore animals which restrict Man Animal Conflict with some extent.
- viii. The railway department should finance for existing alternative railway tract as double or triple line from NJP to New Alipurduar via Falakata, New Cooch Behar instead of Elephant killer railway tract From NJP to New Alipurduar Jn. via Chalsa, New Mal Jn., and Rajabhatkhowa.

In the conclusion it is clear beside the existing infrastructure Man and Elephant Conflict continue in different form and in different magnitude. The wild animals only need habitat and food. Beside that they have no demand but we human due to our greed we stolen their habitat. As a result Man – Elephant Conflict increases day after day. So we need cooperation from every corner of our society to save them otherwise they are become a story from our next generation.

## ACKNOWLEDGEMENT

This paper could not have been completed without significant valuable support of following people and organisation. I am thankful to Prof. (Dr.) Ranjan Roy, Department of Geography and Applied Geography, NBU, Siliguri. My heartfelt thanks to DFOs, Baikunthapur, Jalpaiguri, Gorumara, Jaldapara, Buxa East and west for provide me valuable inputs from their highly enriched sources. I am also thankful to all the Institution and Organisation who co-operated with me for conducting the study.

## REFERENCES

- [1]. Roy M, Baskaran N, and Sukumar R., The Death of Jumbos on Railway Tracks in Northern West Bengal, *Gajaha* 31 (2009), pp- 36-39.
- [2]. Roy M, Sukumar R., Elephant Corridors in Northern West Bengal, *Gajah* 43 (2015), pp- 26- 35.
- [3]. Chakraborty S, Human- Animal Conflicts in Northern West Bengal: Losses on Both Sides, *International Journal of Pure & Applied Bioscience*. 3 (3), June 2015, pp 35-44, Available at <http://www.ijpab.com>.
- [4]. Das K, Man- Elephant Conflicts in North Bengal, Available at <http://www.teriuniversity.ac.in/mct/pdf/assignment/Kalyan-Das.pdf>, 2013, pp 1-26.
- [5]. Lhamo N, *Extent of Human- Elephant Conflicts and the Threat to Elephant Population in Southern Bhutan*, M.Sc. diss., University of Natural Resources and Applied Life Sciences, Vienna, 2008
- [6]. Mohammed G S, The Scenario of Man and Elephant Conflict over Habitat in India: A Review, *International Journal of Geology, Earth & Environmental Science*, 2015, Vol. 5 (1), January- April, pp. 66-72, Available at <http://www.cibtech.org/jgee.htm>

- [7]. Mukherjee N, A Brief Appraisal of Human Wildlife Conflict in Jalpaiguri and Alipurduar District of West Bengal, *International Journal of Scientific and Research Publications*, Volume 6, Issue 8, August 2016, pp. 131- 136.
- [8]. Borah J., Thakuria K., Baruah K. K., Sarma N. K., Deka K., Man- Elephant Conflict Problem: A Case Study, *ZOOS' PRINT*, Volume XX, Number 7, July 2005, pp- 22- 24.
- [9]. Mallick. J K, Trans- Boundary Human- Elephant Conflict in the Indo- Nepal Terai Landscape, *TIGERPAPER*, Vol. 39: No. 4, October- December 2012, pp 7- 13.
- [10]. Mallick. J K, Past and Present Status of the Indian Tiger in Northern West Bengal, India: An Overview, *Journal of Threatened Taxa (JoTT Review) 2 (3)*, March 2010, pp 739- 752, Available at <http://www.threatenedtaxa.org>
- [11]. Manoj K., Bhattacharya R., and Padhy P.K., Forest and Wildlife Scenarios of Northern West Bengal, India: A Review, *International Research of Biological Sciences*, Vol. 2 (7), July 2013, pp 70-79, Available at <http://www.isca.in>.
- [12]. State Forest Report 2006- 2007, West Bengal, Government of West Bengal, Directorate of Forests, Office of the Principle Chief Conservator of Forests, Kolkata.
- [13]. State Forest Report 2008- 2009, West Bengal, Government of West Bengal, Directorate of Forests, Office of the Principle Chief Conservator of Forests, Kolkata.
- [14]. State Forest Report 2009- 2010, March 2011, West Bengal, Government of West Bengal, Directorate of Forests, Office of the Principle Chief Conservator of Forests, Kolkata.
- [15]. State Forest Report 2010- 2011, Government of West Bengal, Directorate of Forests, Office of the Principle Chief Conservator of Forests and Head of Forests Force, Aranya Bhaban, Saltlake, Kolkata.
- [16]. State Forest Report 2011- 2012, Government of West Bengal, Directorate of Forests, Office of the Principle Chief Conservator of Forests and Head of Forests Force, Aranya Bhaban, Saltlake, Kolkata.
- [17]. State Forest Report 2012- 2013, Government of West Bengal, Directorate of Forests, Kolkata, 2014.
- [18]. Annual Report 2013- 2014, Wildlife Wing, Directorate of Forests, Government of West Bengal, Available at <http://www.wildbengal.com>
- [19]. Status of Tigers, Co-predators and Prey in India, 2010, Y.V. Jhala, Q. Qureshi, R. Gopal and P.R. Sinha (Eds.) (2011), National Tiger Conservation Authority, Govt. of India, New Delhi and Wildlife Institute of India, Dehradun, TR 2011/003, p- 160.
- [20]. India Tiger Estimate 2010, March 2011, Ministry of Environment and Forests, Government of India.

IOSR Journal Of Humanities And Social Science (IOSR-JHSS) is UGC approved Journal with Sl. No. 5070, Journal no. 49323.

Chiranjib Nad "Conflict with Wild Giant (Elephas Maximus) and Us in Northern West Bengal: A Review." IOSR Journal Of Humanities And Social Science (IOSR-JHSS). vol. 23 no. 1, 2018, pp. 13-22.