AN ANALYSIS OF ELEPHANT DEATH IN BUXA TIGER RESERVE AREA OF WEST BENGAL, INDIA

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ABSTRACT

The aims of this study are to access the factual reasons of elephant death that is often highlighted as the result of trains speeding through the forest area in Buxa Tiger Reserve of Dooars region in West Bengal. In order to find out the reality, site specific time framed study along with man – animal conflict prevailing in the area was carried out. In depth study account of elephant death in this area clearly indicates a host of factors responsible for such issues but does not show railway track as the sole liable factor; rather exposes health hazards and other factors involved in such unfortunate incidence.

KEYWORDS: Elephant death, Cardio respiratory failure, Electrocution, Train accident

INTRODUCTION

Death is a natural biological phenomenon that used to happen to every living organism, may it be human or animal. But, wild animals by virtue of their less intellect compared to human being are more vulnerable to death, may there are few exceptions. Since origin, man have been dominating over the animals to meet their ever increasing needs, lust and desires and they have killed a number of species arrogantly. But, it is also true that sometimes, there is natural death or pre-mature death of wild animal caused due to different health hazards or such other factors for which the common people are not responsible directly. The present study has been carried out in order to justify the magnitude of human induced causes of elephant death related to railway track crossing the area of Buxa Tiger Reserve of West Bengal to access the reality i.e. to what extent the railway track is accountable for elephant death or there are other reasons behind that. To unveil the fact and to justify the arguments put by railway and forest department on account of elephant death, a comprehensive study has been carried out.

Elephants since time immemorial have been worshipped in different religions particularly among Hindu's and Buddhist's as it symbolizes the lord Ganesha- the God of success. Simultaneously, there has been also report of elephant killing particularly for their ivory, since the long past (Allen, 2010). These two completely different facets of jumbos are still going on and later i.e. elephant killing is no doubt the most concerned issue of today because elephants represent the fame of success and side by side ecologically important because of their multifaceted contributions to the environment. Elephants play an important role as 'keystone' and 'umbrella' species, maintaining biodiversity of the ecosystems they inhabit (Omandi and Ngene, 2012; Perera, 2009). Due to their requirement for large areas of forest habitat, conservation of elephants automatically ensures the conservation of other species that co-exist in the same habitat. However, they can also modify the environment in positive as well as negative ways by their actions. The elephant is also a 'flagship' species, especially in Asian countries, being closely associated with the social and cultural aspects of people, and this factor can be harnessed to promote its conservation (Pastorini, 2010). But, the unknown is also the proper causes of their death (Sukumar, 1989).

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Asian elephants are likely to endure further reduction of their natural heart. At present 20 percent of world's population lives in and around the area inhabited by the Asian elephants (Bandara and Tisdell, 2002).

Influx of humans and conversion of natural habitat to human dominated land-use causes fragmentation and loss of elephant habitat. But this does not mean that anthropogenic factors are the sole factor of elephant death. Along with this, there are both identified and non-recognized causes of elephant deaths which need to be minutely studied to reach at the factual reasons, otherwise, incomplete information related to their death or killing cannot provide mitigation strategies to the problem.

IDENTIFY OF THE AREA

The present study has been carried out in order to find out the causes of elephant death in Buxa Tiger Reserve area of West Bengal, India to resolve the long run warp and woof between Forest and Railway department. The area is located in the northern part of the West Bengal state in the district of Jalpaiguri, adjacent to the foothill of Himalaya in between $23^0$30' N to $23^0$50'N latitude and $89^0$25'E and $89^0$55'E longitude.

MATERIAL AND METHODS

The diagnosis of the problem has been carried out taking the elephant death from 2005 to 2010 based on primary and secondary data by visiting sites of elephant death along the railway line passing in the forest area, sites other than either side of railway track and by collecting death records from both the forest and railway department. The reason of death, if unknown has been considered as the result of non-railway induced fact. The gathered information has been processed with the suitable cartographic and statistical tools to ease and justify the causes of such cruelty.

RESULTS AND DISCUSSIONS

TABLE-1, NUMBER OF ELEPHANT DIED FROM 2005 TO 2010

Year	No. of Elephants died	Sex		
		Male	Female	Unknown
2005	06	01	04	01
2006	12	08	04	00
2007	14	08	06	00
2008	12	08	04	00
2009	05	05	00	00
2010	10	06	03	01
Total	59	36	21	02

Source: Annual Report of Field Director Office of Buxa Tiger Reserve

Table-1 shows the temporal pattern of elephant died from the year 2005 to 2010 in the Buxa Tiger Reserve. About 59 Jumbos died in this area due to various reasons, out of which 36 are male, 21 are female and 2 of unidentified sex. In the year 2005, 5 elephants are died in BTR region with composition of 3 male, 1 female and 1 of unidentified sex. About 12 elephants, consisting of 8 male and 4 female died in the study area in the year 2006. This indicates a marked increase in the number of elephant death in this region. In the year 2007, 8 male and 6 female elephants died in the study area. Likewise, in 2008, 12 elephants and in 2009, 5 elephants died. There is increase in the number of died elephant in 2010 which is 10 in number with composition of 6 male, 3 female and 1 of unknown sex.

TABLE-2, AGE GROUP OF ELEPHANT DIED FROM 2005-2010

Age group	No. of elephant died
>1 years	10
1-10 years	20
11-20 years	05
21-30 years	08
31-40 years	05
<40 years	11
Total	59

Source: Annual Report of Field Director office of Buxa Tiger Reserve

In Table 2, died elephants of BTR are classified on the basis of their age. About 10 died elephants are >1 year old. About 18 elephants between the age group 1-10 years. In the age group 11-20, there are 4 elephants. 6 elephants died in the age group of 21-30 years and 5 elephants died of age group 31-40 years. 10 elephants are adult, more than 40 years old.

TABLE-3, DEATH DENSITY OF ELEPHANT IN BTR (W) DURING 2005-10

Range in which death occurred	No. of elephant died	Area of the Range (ha)	Death Density/ha	Reasons
Hamiltonganj	5	5733.70	0.000872	Other, Cardio-respiratory Failure
Pana	4	7348.34	0.000544	Cardio-respiratory Failure, Fighting, other
Nimati	9	3583.43	0.002512	Electrocution, fighting, Train Accident, Drowning, Fall down, Cardio-respiratory Failure, Unknown
West Damanpur	4	3779.28	0.001058	Train Accident, Fighting, old age, Cardio-respiratory Failure
East Damanpur	1	4765.60	0.00021	Train Accident,
WRVK	4	6790.82	0.000589	Train Accident, Disease
ERVK	3	4606.24	0.000651	Unknown, Fighting, Cardio-respiratory Failure

Source: Annual Report of Field Director Office of Buxa Tiger Reserve

Table 3 shows elephant death density in BTR (W) during 2005-10 in different ranges. The death density of elephants in Hamiltonganj range of BTR (W) is 0.000872/hac. The density of elephant death in Pana range is 0.000544 /hac. Per hectare death density of elephants in Nimati is 0.002512. In West Damanpur, East Damanpur, East Rajabhatkhawa and West Rajabhatkhawa Range of BTR (W), death density of elephants are 0.001058, 0.00021, 0.000589 and 0.000651 per hectare respectively. The maximum cases of elephant death occurs in Nimati Range, due to electrocution, fighting, train accident, drowning, fall down in pit cardio-respiratory failure etc.

TABLE-4, DEATH DENSITY OF ELEPHANT IN BTR (E) DURING 2005-10

Range in which death occurred	No. of elephant died	Area of the Range (ha)	Death Density/ha	Reasons
Buxaduar	02	9221.32	0.000216	Natural
Jainti	03	8257.22	0.000363	Natural
Hatipota	03	3904.80	0.000768	Natural and Poaching
North Raidak	04	5452.62	0.000734	Natural
South Raidak	09	5645.46	0.0016	Unknown and Electrocution
Bholka	02	3829.55	0.000522	Natural
Kumargram	06	3098.96	0.00193	Unknown and electrocution

Source: Annual Report of Field Director office of Buxa Tiger Reserve (West)

Table 4 shows elephant death density in BTR (E) during 2005-10 in different ranges. The death density of elephants in Buxaduar, Jainti, hatipota, North Raidak, South Raidak, Bholka and Kumargram ranges of BTR (E) are 0.000216, 0.000363, 0.000768, 0.000734, 0.0016, 0.000522 and 0.00193 per hectare respectively.

TABLE-5, REASONS OF ELEPHANT DEATH IN BTR AREA

Reason of elephant death	No. of elephant died	Percentage
Cardio-respiratory failure	10	16.95
Train accident	06	10.17
Electrocution	08	13.56
Fighting	05	8.47
Natural	11	18.64
Poaching	01	1.69
Others	18	30.50
Total	59	

Source: Annual Report of Field Director office of Buxa Tiger Reserve

From the table-5, it seems that several causes are responsible for elephant death in the area under study among which 16.95 percent of death is due to cardio-respiratory attack, 10.17 percent is for the train accident, 13.56 percent is due to electrocution, 8.47 percent of elephant died due to fighting, 18.64 percent died naturally, poaching contributed 1.69 percent and other factors (abortion, diseases, falling in pit etc.) shared 30.50 percent.

Cardio-respiratory failure

About 10 of the elephants in BTR died due to cardio respiratory failure. There is no single reason for the cardio respiratory failure. Sudden fall in pit is one of the reasons for it. Due to its huge size, it is unable to recover the situation and heart stops functioning. Heart failure due to sudden electrocution is also one reason. A cattle grazing in forests is serious problem which deprives the elephants resulting into heart failure. Due to clear felling of large forest tracts, conversion of natural forests into plantations of teak, eucalyptus and other non-fodder species, large scale extraction of bamboo and canes also result into scarcity of food in forest which deprives elephants.

Train accident

Trains plying on the Siliguri-Alipurduar track recently knocked down about 8 elphants in Buxa Tiger Reserve. The killer tracks which runs through Buxa Tiger Reserve, crosses migratory routes of several animals including elephant and such accidents are bound to happen. Due to broad gauge, trains able to pick up speed and the average speed of trains here is 80-90 km/hour despite the fact that the recommended speed through forest stretches is 15-20 km/hour. Elephant are mostly forced to cross the deadly railway tracks to raid the adjoining paddy fields or in search of water. In the most cases, at the time of crossing the deadly tracks, they are hitted by the train. Another crucial factor for the train accident of elephant is a steep mound along the track. An elephant was trapped because of the mound and was hit by a speeding engine. This is where elephants try to be cautious and take time. But if a train is approaching fast, it does not give the elephant the required time to negotiate the slope safely. Majority of accidents took place between dusk and dawn (6pm and 5am), when the frequency of train passing through the area is more.

The possible factors other than the railway track which are responsible for accident of elephants are as follows:

Electrocution

The annual report of Ministry of Environment and Forests elephant task force has also identified electrocution as one of the principal causes of elephant deaths. High-tension electric lines passing through forest areas, specifically in elephant corridors, is a major threat. The electricity poles supporting the wires are placed far apart, causing the wires to hang low. Between the years 2005 to 2010, about 8 elephants died due to electrocution in the study area.

Fighting

During year 2005 to 2010, about 5 elephants died due to fighting among elephants which mainly results due to abnormal sex ratio. It has been suggested by some experts (Dey, 1991) that the male-female ratio among adult wild elephants in Dooars and Tarai which is 1:0.75 (based on the 1992 census) is somewhat abnormal whereas the ideal sex-ratio should be 1:3 or at least 1:2. In other words, adult bulls outnumber adult cows, which have lead to more competition among the bulls and resulted in a higher number of solitaries and *maljurias* (male groups) and they fight for female elephants for the purpose of mating (Barua, 1995).

Poaching

Poaching was the severe problem in the past but it has been found that from the year 2005 to 2010, only single elephant is poached. Forest officials are able to reduce the incidents of poaching in the Buxa Tiger Reserve.

Others

Except above reasons for elephant death which are mentioned above, many elephants died due to other reasons like abortion, various diseases, thundering, and septicemia. Various diseases are spreading in the forest due to cattle grazing resulting into increased elephant's mortality.

CONCLUSION

After analyzing the reason of elephant death in BTR, it is concluded that only railway track is not prime factor for death of jumbo's in this area. The death percentage of elephants due to cardio respiratory failure is much more than train accident. Electrocution due to high-tension electric lines passing through forest areas, specifically in elephant

corridors, is also a major threat. About 16.95 percent of death is due to cardio-respiratory attack and 13.56 percent is due to electrocution while, 10.17 percent contributes for the train accident. So, along with preventing such accidental death of elephants in the railway track, other causes must be checked and act accordingly.

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