OCCASIONAL REPORT NO. 5

ELEPHANTS IN EXILE

A Rapid Assesment of the Human-Elephant Conflict in Chhattisgarh

Rakesh K. Singh

Wildlife Trust of India

The Wildlife Trust of India (WTI) is a non-profit conservation organization committed to help conserve nature, especially endangered species and threatened habitats, in partnership with communities and governments.

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Elephants in Exile

A Rapid Assessment of the Human–Elephant Conflict in Chhattisgarh

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January 2002

An Occasional Report of a Rapid Action Project conducted by the Wildlife Trust of India as part of the Elephant Conservation Project

Wildlife Trust of India
www.wti.org.in

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PREFACE

When elephants appear in a new political entity, such as a state, there is normally feverish political activity in welcoming Ganesha to the region. Very soon, the excitement wanes and is replaced by apathy and even sooner, this apathy turns to fear, resentment and anger as conflict with the local populace grows. What is God turns villain as soon as the potential vote bank of a politician is seen to suffer. This was exactly the scenario that took place in Chattisgarh, the central Indian state that had not seen elephants for decades.

As elephants moved into the state from nearby Jharkhand, the Chattisgarh administration went through all the phases that face elephants in exile. The Wildlife Trust of India sent one of it senior officers to do a rapid assessment of the conflict levels of the state and the results were hardly surprising. Jharkhand has been laid waste by large scale open-cast mining and the elephant migrations into more suitable and secure habitat was as a direct result of this. Without trying to alleviate the root cause, a series of band-aids were however implemented in Chattisgarh as conflict reached alarming proportions and people started getting killed. In the long run however, it is clear that only landscape level planning, land-use solutions by the neighboring states sitting down in tandem and long-term conservation measures will have any level of success.

Vivek Menon
Executive Director, WTI

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The project was made possible with the help of the present PCCF, ex-Chief Wildlife Warden, Mr R. N. Mishra, who facilitated all permissions required for the project.

Last but not the least, our gratitude extends to all the staff and range officers of the forest department who assisted during the project.

EXECUTIVE SUMMARY

Large scale destruction of forests through illegal felling, encroachment, open-cast mining have resulted in the elephants of Jharkhand to move into the neighboring state of Chhattisgarh in search of natural habitat.

In 1988 elephants migrated from the prime elephant habitat of Jharkhand into Chhattisgarh and for the first time, caused extensive damage to life and property. In 1993, the Madhya Pradesh government captured 10 elephants in order to prevent any further invasions of elephants into Chhattisgarh. Just two years after this operation, i.e. from 1995 onwards, elephants have regularly gained access to Chhattisgarh, disproving the previous capture theory. Human-elephant conflict cases have been increasing from 2000, as the number of migratory elephants straying into Chhattisgarh has increased.

The present human population of Chhattisgarh, living in these forest areas, has never experienced wild elephants raiding their homes. Hence, whenever elephants come into contact with them, they try to drive them away without any effective plans. Consequently, elephants lose their orientation from their original paths of movement, causing extensive damage to property and life. WTI conducted a rapid survey of on-ground conditions that comprised identification of the entry-points of elephants, their source populations, problematic elephants and assessment of affected area, property and attitudes of the local populace.

Based on the assessment, the following preliminary steps were recommended:

Policy decision by Chattisgarh government for elephants: This includes research, study and conservation action. Along with scientific

mapping plans for herds and satellite imagery of forest cover and elephant corridors, awareness building and creating flying squads in forest divisions for the management of elephants is recommended.

Conflict Alleviation and Public Awareness: Compensation awarded by the state government must be regulated after assessment of evidence to deter undeserving claimants. Provision of grains for crop/grain damage will be more effective. Rate of compensation should be reorganized after collection of necessary information from other states.

Creation of an inter-state committee: An interstate committee comprising representatives from Chhattisgarh, Jharkhand and Orissa for the management of elephants is recommended under which concerned DFOs can share information. In this committee, individuals who worked on elephant related issues in Jharkhand and Orissa should also be involved so that an effective management plan can be developed for elephant populations.

Role of WTI: WTI can play multi-sector role in mitigating the elephant-human conflict. Its Wild Aid Programme can train and equip flying squads, which are being created to look into elephant movement in this area. Its Wild Lands Programme can work on identification and evaluation of elephant corridors especially migratory routes. The Communications programme can help in generating public awareness about elephants and their behaviour.

1. INTRODUCTION

The distribution of Asian elephants (*Elephas maximus*) used to cover the entire Indian peninsula. However, indiscriminate felling of forests, encroachments and development activities, such as industry, mining, dams, etc. have led to the shrinkage and degradation of elephant habitat. These activities have restricted the long-range movement of elephants and they are now probably confined only to four regions:

1. North: Uttaranchal and a small part of Uttar Pradesh
2. South: Karnataka, Kerala and Tamil Nadu and a small part of Andhra Pradesh
3. East: Jharkhand and Orissa
4. North-East: Assam, Arunachal, Northern West Bengal, Meghalaya, Mizoram, Nagaland and Tripura.

About 2,500 elephants are present in eastern India (Anon, 2001). Of these elephants, a few groups have migrated to Chhattisgarh and are currently in the midst of human–elephant conflict situation.

During the last few decades, the forested areas and elephant habitat in Jharkhand and Orissa have degraded remarkably due to illegal felling, encroachments, industrialization and mining (Singh and Chowdhury, 1999; Singh, 2000). Deterioration in habitat quality has forced the elephants of these states to undertake long-range disoriented movements by using smaller forest patches to move to other larger forest areas. This is one of the major causes for the recent invasion of elephants into Chhattisgarh.

Figure 1: Polluted River Koina: an important water source for elephants during the summers in Singhbhum forests

Historically, according to Forsyth (1889), northern Chhattisgarh used to be the home of elephants. However, they became locally extinct in the early part of the twentieth century (Krishnan, 1972). More recently, elephants entered Chhattisgarh in 1988 from Jharkhand and caused extensive damage to life and property. It was thought that these elephants had strayed away from their original migration routes and therefore had come to Chhattisgarh by mistake. In 1993, the then Madhya Pradesh government captured 10 elephants in order to prevent any further invasions of elephants into Chhattisgarh. Just two years after this operation, i.e. from 1995 onwards, elephants have regularly gained access to Chhattisgarh, disproving the previous capture theory. Human–elephant conflict cases have been increasing from 2000, as the number of migratory elephants straying into Chhattisgarh increased.

The present human population of Chhattisgarh, living in these forest areas, has never experienced wild elephants raiding their homes. Hence, whenever elephants come into contact with them, they try to drive them away without any effective plans. Consequently, elephants lose their orientation from their original paths of movement, causing extensive damage to property and life. At present, five forest divisions, Korba, Raigarh, Dhramjaygarh, Jashpur and Sarguja, are facing problems of human–elephant conflicts.

Seeking a solution to this problem, the Additional Principal Chief Conservator (APCCF) of Forests, Chhattisgarh, Mr. R.N. Mishra, drew the attention of all elephant experts in the country during the national elephant seminar held near Haridwar from 16th to 20th December, 2001. He requested all the experts to visit Chhattisgarh and submit a report to reduce the man–elephant conflicts. In response to his requests, the Wildlife Trust of India (WTI) decided to send a one-man investigative team to assess the situation on ground. WTI Programme Officer, Dr. R.K. Singh, visited the affected areas of Chhattisgarh from December 28, 2001 to January 8, 2002, to study the reasons behind the conflict and submitted his report to the state forest department. Dr. Singh had worked for the past six years on several elephant-related issues in Jharkhand's largest elephant habitats.

2. METHODS

28th December 2001 (Raipur - Raigarh): Discussion with PCCF was held followed by departure for Raigarh. At Raigarh, discussions were held with all SDFOs under Raigarh forest division to obtain preliminary information about the elephants and conflict problems.

Figure 2: Dr R.K. Singh along with the Raigarh Forest Division staff

29th December 2001 (Raigarh - Jashpur): Information on human–elephant conflict issues was collected from SDFO, Dhramjaygarh and Pathalgaon. Crop fields of a farmer, Mr. Bodh Ram Pakra near Belaghat, were visited, which were damaged by elephants a few days earlier. At Kunkiri, enquiries were made with local people about the entry point of elephants.

30th December 2001 (Jashpur - Pathalgaon): Discussion with DFO, Jashpur was held to get the overall picture of elephant movement and man–elephant conflict rates in the division. A meeting with SDFO, Badalkhol Wildlife Sanctuary at Kunkuri was held and the Tapkara forest area was also visited to assess the forest patch.

31st December 2001 (Pathalgaon - Lailunga): Sisringa and Sokhamura villages were surveyed to assess the damage caused by elephants. At Dharmjaygarh, a meeting was held with the local Press.

1st January 2002 (Lailunga - Raigarh): Kaya and Bartangarh villages were visited and the site, where elephants had in a very gruesome manner killed four persons, was assessed. Forest areas under Ghargora range were also visited.

2nd January 2002 (Raigarh - Jamgaon - Raigarh): Manuapali village and PF 828 forest were visited to track an elephant herd that was present in the area on the nights of 30th and 31st December 2001. Enquires were mede from villagers about the herd's composition. Villagers said that a tusker from the herd had caused extensive damage to the property. This tusker was last sighted at 7:00 AM near a *nallah*. Behramuda village in Orissa was later visited to enquire about elephant movement.

3rd January 2002 (Raigarh-Bangusia-Kenalibahal-Hamirpur-Parigaon-Tamnar-Dongamahua- Raigarh): The RF 768 and 769 forest patches, from where the forest department staff had attempted to drive the elephant herd to Orissa, were assessed. The spot at Kenalibahal village, where a 55 year-old lady was killed by an elephant on December 2, 2001, was also seen. A meeting with villagers was held, during which they were briefed about the elephants and their behaviour patterns. A colliery operated by M/s Jindal Steel and Power Limited at Dongamahua was also visited to assess the possible impact of mining operations on the habitat.

4th January 2002 (Raigarh-Sundergarh-Sambalpur-Raigarh): Along with DFO (Raigarh), Mr. Sunil Kumar Mishra, a visit was made to

Figure 3: Houses damaged by elephants in Korba Forest Division

Sundergarh and Sambalpur to meet respective DFOs and collect information about elephant populations and their movements in these regions.

5th January 2002 (Raigarh-Kharsia-Chal-Kudmura- Phulsari-Semikona-Boro-Dharmjaygarh-Raigarh): Meetings were held with villagers and forest staff to collect information regarding the composition of elephant herds and their movement patterns.

6th January 2002 (Raigarh): Office work at Raigarh was carried out.

7th January 2002 (Raigarh): A visit to Manuapali was repeated, where a lone tusker had damaged the property the previous night. A training

workshop for the field staff at Raigarh was conducted. The workshop focused on methods of collecting information related to elephants. A press conference along with DFOs of Raigarh and Dharmjaygarh was held. The preliminary report was finalized.

8th January 2002 (Raigarh - Raipur): Meeting with APCCF cum CWLW of Chattisgarh was held and the preliminary report was submitted.

3. PRELIMINARY FINDINGS

To draw a final conclusion on the human–elephant conflict issues in Chhattisgarh, attention was focused on the following:

3.1 Identifying elephant entry points in Chhattisgarh and source population:

Preliminary observations suggested that elephants could enter Chhattisgarh from three main points: a) southwestern forests of Jharkhand, b) northwestern forests of Sundergarh division (Orissa) to Tapkara range and c) northwestern forests of Himgir range of Sundergarh forest division (Orissa) to Raigarh range.

After examining the forest patches near Raigarh town, it was felt that the elephants in this area had come in from the neighboring forest of Sundergarh and/or Sambalpur forest division. However, information available with the DFO of Sundergarh suggested that there were no large elephant herds in this division that could come into Chhattisgarh. Records show that there was movement of elephants in Sundergarh forest division from 1993. However, from 2000, cases of conflict caused by a small herd of six to eight elephants in the western parts of Sundergarh and in Belpahar (Sambalpur Forest Division) have been recorded.

Figure 4: A male elephant using riverine habitat of Singhbhum forests, Jharkhand

In Sundergarh division, there are movement records of two elephants in the forest near Sundergarh town and of ten elephants in the forests near Rajgangpur town. This suggests that these elephants come from Bonai and Bhamra forests, as there are no movement records of these elephants in Himgir and Belpahar areas.

The Sundergarh forest division has a common boundary on the eastern side with Saranda (Jharkhand) and Bonai (Orissa) forest divisions and there have been a few incidences of elephant migration from Saranda to Jarikela-Bisra forest nearer to Rourkela in Orissa. Therefore, there is a great possibility of elephant movement from Saranda to Sundergarh via Bonai and Bhamra forest divisions, but these elephants cannot move towards the forest area in Chhattisgarh due to the existence of large agricultural areas and human settlements between these two forest areas.

Information related to elephants from Orissa suggests that elephant herds may enter Chhattisgarh from Badarma Wildlife Sanctuary if they cross the river Mahanadi. But this does not seem practical due to the presence of extensive agricultural fields and human settlements. However, information available with the RO of Belpahar (Sambalpur Forest Division) suggests that the movements of the present elephant herd were first recorded when the herd crossed the river Mahanadi during the drought in 2000.

The southern part of the Sambalpur forest division has about 54 elephants but these elephants cannot migrate to the Raigarh and Dharamjaygarh forest regions as the Hirakud reservoir acts as barrier.

Dharmjaygarh and Korba forest divisions in Chhattisgarh have regular movement records of a big elephant herd (approximately 12–14 elephants) since year 2000. There are no records to show that this herd returned to Jharkhand or Orissa. It is possible that these elephants migrated from West Singhbhum district (mainly from Saranda, Kolhan and Porhat forest divisions) through forest patches in Ranchi and Gumla districts of Jharkhand, the reason being a large-scale disturbance to their original habitat.

3.2 Total number of elephants and identification of problematic elephants:

Scanty information on elephant populations was available with the Raigarh and Dharamjaygarh FDs. A discussion with field staff and villagers of affected area suggested that there were two separate groups of elephants, which were causing all the damage to property and life.

Figure 5: A male elephant electrocuted by villagers at Balbhadrapur village, Raigarh Forest Division

Group 1: The total number of elephants in this herd is between 14 and 18 and this herd can be frequently seen in Tapkara, Lailunga, Kudmura, Chal and Boro ranges. A video film taken by the SDFO of Dharamjaygarh suggests that there is a *maljuria* pair (two male elephants) roaming in this area. Both the elephants in this *maljuria* pair have only the right tusk intact. One elephant does not have the left tusk while the the other elephant has a broken left tusk.

Assessment of the extensive damage to property in Dharamjaygarh and Lailunga ranges suggests that a few of the elephants of this *maljuria* pair were responsible for the damage. Enquiries made with the affected people and preliminary evidence (tusk marks on the walls, etc.) further support this inference about a few problematic elephants in this region.

In Bartangarh, three human beings were killed, while one person was killed in Kaya in a very gruesome manner. Though no one in these two villages have been able to identify the elephant responsible for these

killings, information given by villagers and movement records of elephants suggest that some of elephants, especially the single tusk elephants, from this *maljuria* group could be responsible for these attacks. Therefore, it is important to monitor the *maljuria* group so that suitable measures can be taken up in if any human being is killed in future.

Group 2: Initially, there were eight elephants in this group, which were mostly moving between the Tamnar and Raigrah ranges of Chattisgarh and Himgir and Belpahar ranges of Orissa. However, the herd has now been reduced to six after one elephant was killed in Balbhadrapur (Chattisgarh) and one in Ujjwalpur (Orissa).

3.3 Assessment of affected area and property:

Almost all the areas where elephant movements have been recorded in Chattisgarh have been affected. After a visit to these areas for viewing damaged property and interviewing affected villagers, it seems that in most of the cases, people may be claiming for more damages than those actually caused by elephants.

3.4 Assessment of movement pattern and habitat of elephant:

Except Dharamjaygarh and Raigarh forest divisions, none of the other forest divisions have collected records on location of elephants in their area. Therefore, an overview of movement patterns of elephant is recorded only in these forest divisions.

Probably none of the forest officers or staff posted in elephant affected areas have undertaken a wildlife management course, therefore, they are unable to collect proper information about wildlife. Under these circumstances, it would be difficult to draw up a suitable management plan for the elephant population of the state.

The reconnaissance survey undertaken by the investigator suggests that forest patches in Dharamjaygarh and Korba forests divisions can provide a good habitat for elephants, which will ultimately help in reducing human–elephant conflict cases.

3.5 Steps taken by the forest department:

To reduce man–elephant conflicts, steps taken by the local forest departments and local villagers are satisfactory even though they do not have any previous experience of handling man–elephant conflict issues. The additional responsibility of collecting elephant movement records given to the flying squad of Raigarh forest division has proved fruitful. However, no other forest divisions in the state have taken up such initiatives. The provision of fireworks to villagers and their frequent use should be discouraged otherwise the elephants will become immune to fireworks. Use of fireworks with loud sounds and light effects, however, can be used only when other traditional methods to drive the elephants have become ineffective (like lighting fires, making loud noise, beating drums, etc.) and when the elephants are in very close contact with human populations. Initiatives taken by the DFO and SDFO of Raigarh forest division to organize a half-day awareness workshop on elephant behaviour are appreciable. The workshop provided inputs on collecting necessary information that will be required for the scientific management of the elephant population in the state.

3.6 Attitude of local villagers and their behaviour towards elephants:

Surveys suggest that the locals are emotionally attached to elephants because of their religious beliefs. Since most of the villagers do not have any previous experience of dealing with wild elephants, they live in great fear. Irresponsible news published in the local newspapers have also

aggravated these fears. The masses are of the opinion that they will take suitable measures to protect their life and property if these elephants were to make the nearby forests their permanent home. A few of them preferred the stronger options of killing the elephants either by electrocution or by using firearms, if elephants cause extensive damage. It is also noticed that elephants were disturbed by villagers during the day in the forests and therefore, retaliated by extensively damaging village property. Awareness programmes among villagers would help control this threat to elephants.

4. PRELIMINARY SUGGESTIONS

Following are the preliminary suggestions for the management of elephants in Chattisgarh:

4.1 Policy decision by Chattisgarh government for elephants: The Chhattisgarh government should decide on a clear-cut policy for the management of the present elephant population of the state. If the government is willing to allocate resources for the management of these elephants, then the following steps should be taken as early as possible.

a) Research and scientific study:

i) Satellite images (1:2,50,000) should be procured to delineate the available forest cover and corridors that are utilized by the migrant elephant population.

ii) All the forest division maps should be converted to a digital format so that necessary information and variables for the wildlife management can be studied through computation.

iii) Scientific mapping plan for the herd should be worked out in conjunction with the local state university and WTI.

b) Elephant Conservation Action:

i) All the concerned forest divisions should create flying squads so that they can keep proper records of elephant movements and other variables important for management of elephant populations. All the team members of such a flying squad should be properly trained and equipped, including wireless sets, binoculars, and other equipment. The team members should also be mobile, have navigation equipment (GPS) and an anti-poaching kit, developed by Wildlife Trust of India (WTI), New Delhi, so that they can perform their duties efficiently.

ii) The state government must procure darting equipment after providing necessary training to two veterinarians, who should be posted at Raipur. In emergency cases, these veterinarians can be sent to the spot for health care and other needs of the elephants and other species.

iii) Of the two problem herds (described above), Group 2 (six elephants) should be translocated to the same forest area occupied by Group1 (if feasible).

iv) Awareness programmes for correspondents of local new papers and for the general public, should be held so that a positive attitude towards elephants can be created.

v) Micro-level assessment of ongoing developmental projects is needed particularly in areas utilised by elephants. Improper assessment will affect elephants and other wildlife in the region, and may lead to further migration of elephants to new areas as they have been forced to migrate from Jharkhand.

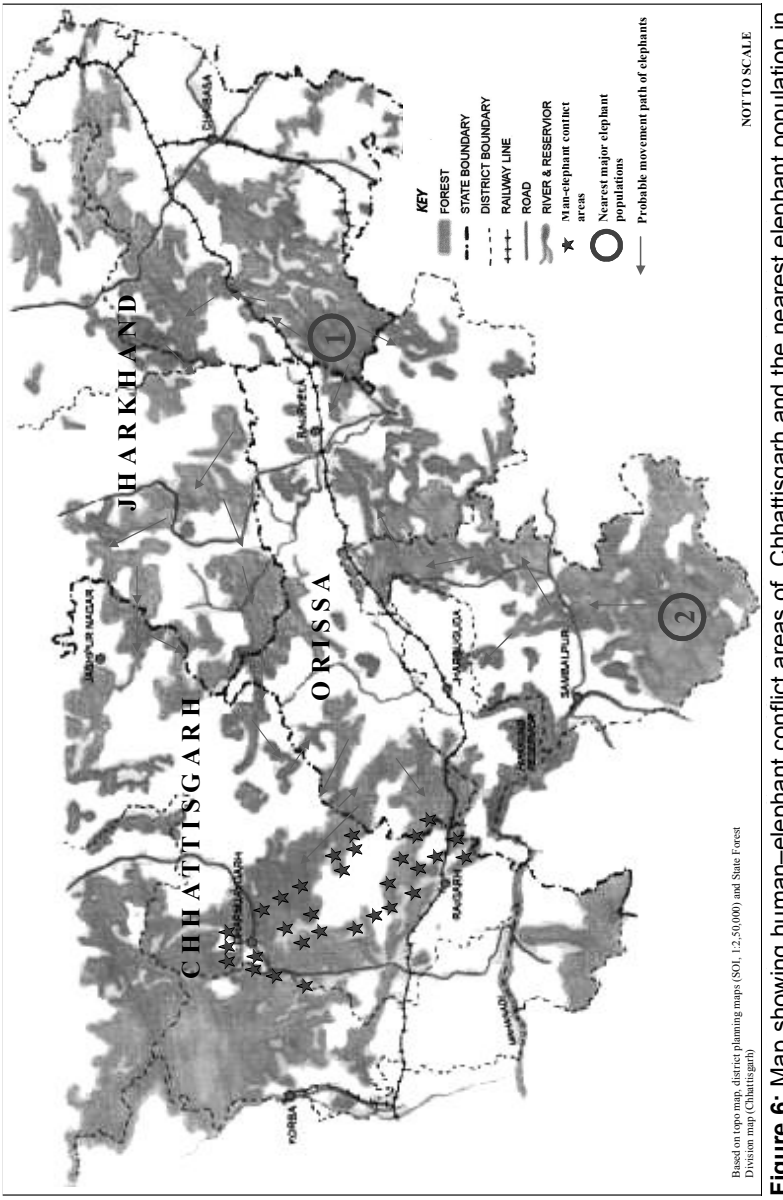

Figure 6: Map showing human–elephant conflict areas of Chhattisgarh and the nearest elephant population in neighbouring states

4.2 Conflict Alleviation and Public Awareness:

At present, the state government is providing compensation for all small and large damages but it should be regulated in such a manner that for a small quantum of damage no compensation should be given. After assessment of evidence collected from at several places, it is noticed that at many places people are cleverly claiming more than the actual damage caused by elephants. Therefore, providing compensation for small quantum of damage will develop an incorrect trend among anti-social elements in the society. Provision of grains for crop/grain damage will be more effective. Rate of compensation should be reorganized after collection of necessary information from other states.

4.3 Creation of an inter-state committee:

An interstate committee must be created comprising representatives from Chhattisgarh, Jharkhand and Orissa. This committee should decide on the collection of uniform information relevant for elephant management. The collected information should be shared directly between the concerned DFOs. This committee sholud involve individuals who have worked on elephant related issues in Jharkhand and Orissa so that an effective management plan can be developed for elephant populations. During these meetings, emphasis should be given on quality improvement of elephant habitat in Jharkhand and Orissa so that disoriented elephant migration can be stopped.

4.4 Role of WTI:

WTI can play multi-sector role in mitigating the human−elephant conflict in this region:

Its Human-Elephant Cell can train and equip flying squads, which are being created to look into elephant movement in this area.

Its Wild Lands Programme can work on identification and evaluation of elephant corridors especially migratory routes.

The Communications Programme can help in generating public awareness about elephants and their behaviour.

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Appendix I

Identification of elephant

Division: Range:

Date: Time:

(Put tick on appropriate)

a) Place: Forest / Non forest

b) Description of location: (Compartment:_____ Village: _____)

c) Which elephant sighted: Loner / Pair / Group (herd)

d) If loner then: Tusker / Tuskless

e) If pair then: Tusker / Tuskless

g) If sighted herd, then description:

#	Number of elephants							
	Adult		Sub-adult		Juvenile		Calf	
	Male	Female	Male	Female	Male	Female	Male	Female

h) Identification of tusker (based on no., appearance & structure of tusk)

#	No of tusks	App.tusk length		Emergence of tusk		Appearance from front				Growth of tusk				Broken
		Left	Right	Forward	Downward	Up	Converge	Diverge	Cross	Up	Down	Small	Big	
1				L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B
2				L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B	L R B

L=Left; R=Right; B=Both

I) Cut mark on ear: Left / Right

(Description:……)

j) White patches: Forehead / Left / Right / Trunk / Body / Others

(Description……...)

k) Tail hair: Bunch / Few / Very few / Nil

l) Description of any specific identification mark that is not mentioned above

……

……

……

m) If forefoot impression is clearly visible then its circumference (in cms):

……

Name & Designation

Questionnaire Survey

Division: Range: Village:

Name: Age: Category: Gen/ST/SC/OBC

Caste:

(Put tick on appropriate)

1. Do you know that long ago wild elephants were widely distributed in the forests of Chhattishgarh: Yes / No

2. If yes, then source of information: Grandparents/Folklore/Folk songs/others

( )

3. Have seen an elephant: Yes / No

4. If yes, then which type: Wild / domestic / both

5. When was the 1st time you sighted a wild elephant:

6. Location of sighted wild elephant: Neighbouring forest / outside forests

7. Activity of sighted wild elephant: Feeding/standing/walking/damaging property

8. Number of sighted wild elephants: Loner/pair/group (herd)

9. If sighted herd, then composition:

10. Before observing wild elephant causing property damage your opinion about wild elephant: God/ beautiful creature/ dangerous animal/ other

( )

11. After observing wild elephant causing property damage your opinion about wild elephant changed: Yes/No

(If yes then describe)

12. Have wild elephants damaged either property that is yours or of those you know: Yes/No

13. If yes then:

    a) Type of damage: Crop/ grains/ house/ human life

    b) Time of incident: Morning/ day/ evening/ night

14. If damaged crops/ grains then:

    a) Which crops/ grains:

b) Value:

c) Quantity:

d) Area (If damaged in crop field):

15. Description of other damaged property:

a) Type:

b) Value:

16. If elephant has damaged house then what was kept in that house:

17. If elephant attacked/ killed a person then behaviour of that person with same elephant:

18. Are you satisfied with the present compensation scheme in relation to:

a) Amount of compensation paid: Yes/No

b) Time for disbursement of compensation: Yes/No

19. If not then your expectation in relation to compensation:

a) Amount for crop/grain damage:

b) Amount for house damage:

c) Amount in case of permanent disability:

d) Amount in case of human death:

e) Time for disbursement of compensation:

20. Are you satisfied with present steps undertaken by forest department to reduce conflict: Yes/ No

21. If not then your suggestion:

22. If some elephant regularly damages your property then what will you do:

23. If killing is only solution for problematic (Rough) elephants then what method should be adopted:

Movement Pattern and Habitat Occupancy

Forest Division:

Date	TIme	Location of sighted elephant		Number of elephants							Who sighted	Behaviour with sighted elephant	Where elephant moved
		Forest (Comp)	Outside forest Description)	Adult		Sub adult		Juvenile		Calf			
				M	F	M	F	M	F		12	13	
1	2	3	4	5	6	7	8	9	10	11			14

Large-scale open-cast mining is one of the prime reasons for the destruction of elephant habitat in Jharkhand. As a result, the elephants from such dispossesed habitats have managed to move into new territories in Chhattisgarh. A Rapid Survey conducted over two weeks throws light on this issue and suggests preliminary methods to manage elephants in Chhattisgarh.

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