



International Elephant Foundation Final Report

**Using education and awareness as a tool to
promote elephant conservation and reduce
negative interactions in a biodiversity hotspot**

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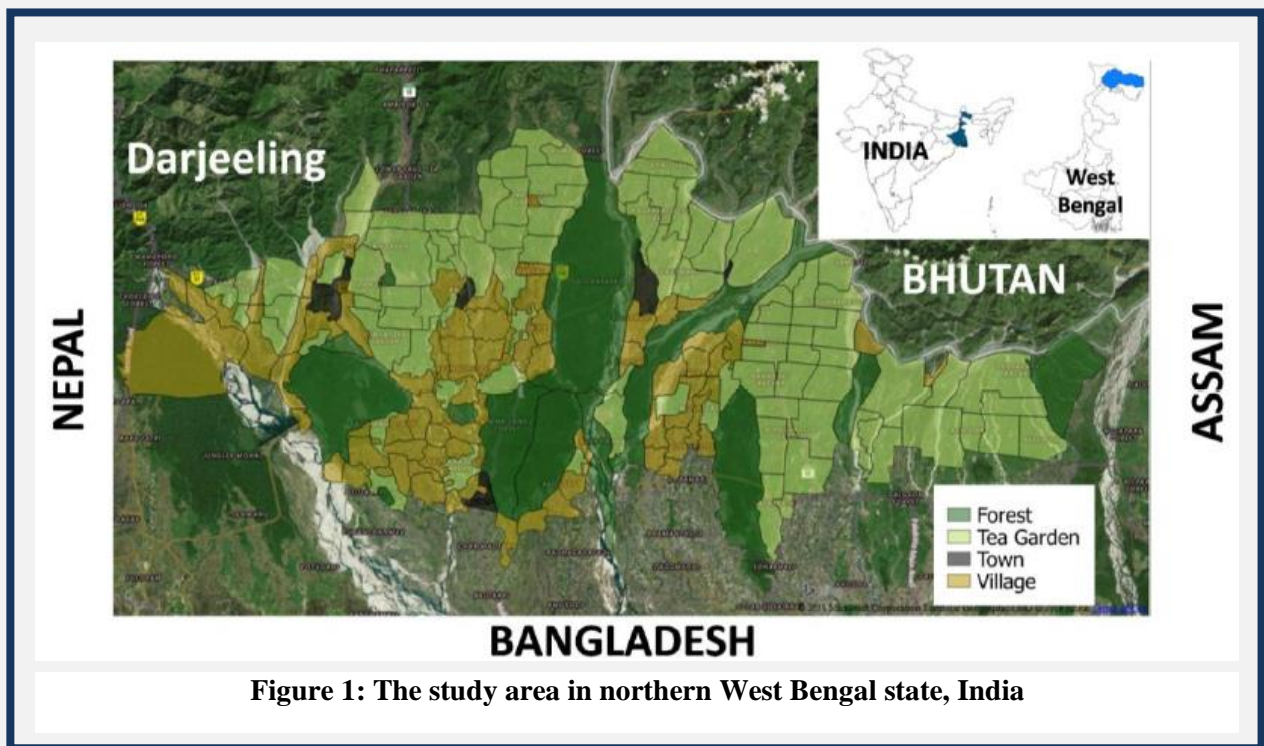


Introduction:

The northern districts of West Bengal state is a matrix of forest patches and tea-estates. It is a critical trans-boundary movement route for elephants in north-eastern India. The said landscape ensures connectivity of elephant populations between Bhutan, India and Nepal. However, the fragmented nature of the landscape and limited knowledge of elephant behaviour and safety precautions has led to 40-50 human deaths per year and as many injuries for more than a decade due to encounters with elephants. More than 150 people have died and 300 injured between 2009 and 2018 alone in a 2500 sq km area due to encounters with elephants. The intensity and frequency of conflicts are nowhere else more grave needing immediate attention and resolution (Das 2013). Our long term research on elephant ecology and the nature of these incidents indicate that these encounters are mostly accidental in nature and may be therefore reduced if proper precautions are observed. The ongoing project funded by IEF is a part of our long term research on wildlife in human-use areas, the aim being to ensure safer shared spaces between people and endangered wildlife. Loss of human life is the primary hurdle to elephant persistence in the said landscape and in the absence of focused mitigation, the fate of elephants in this region may be sealed forever. Our previous studies indicate that most of the elephant caused casualties occur due to the lack of safety protocols adopted by local people and also due to alcoholism. This implies that sustained education efforts may be useful in reducing the chance of such incidents.

The project funded by International Elephant Foundation focussed on using education and awareness as a tool to mitigate human-elephant conflict in the tea-estate landscape of West Bengal, India. The region comprises of the districts of Jalpaiguri, Darjeeling and Alipur Duar and has a elephant population of ~500 individuals spread over a 4000 sq km landscape of forests, tea-plantations, agricultural land and built-up areas. We have focussed on a 2500 sq km project area within this greater landscape where frequency of human casualties due to elephants is highest, the Gorumara Wildlife Division near the Gorumara National Park.

Between February 2019 and March 2020, we have conducted more than 50 awareness sessions across 20 tea-estates and 16 highly affected villages in the study area. We have also mapped all locations of human casualty due to elephants in the study area that have occurred between 2009 and 2019. Our awareness sessions have also led to the formation of local voluntary teams called Quick Response Teams. These teams are comprised of local youths who have been trained by our team and the State Forest Department to help in local crowd management and to ensure safe passage for elephants when they pass through human use areas. So far 18 such teams have been formed with partial support from IEF and partial support from Indian Non-Governmental Agencies and State Forest Department.



Goal:

The goal of the project is to foster local support for elephant conservation outside forested areas by minimizing the risk of human casualties.

Objectives:

- Identify administrative units (villages-tea-estates) with the highest frequency of human casualties within the 2500 sq km project area
- Conduct repeated informal awareness sessions in each of the high priority estates and villages
- Assess the efficacy of the workshops using interviews before and after the workshops
- Identify elephant movement patterns using Satellite Telemetry (**New Objective added**)

Activities:

a. Identify administrative units (villages-tea-estates) with highest frequency of human casualties within the 2500 sq km project area:

We have surveyed ~60 tea-estates and 40 villages between 2016 and 2018 to record all instances of human casualties due to elephants that occurred between 2009 and 2018. We have investigated each and every case to note down the details of the circumstances which led up to the incident. Based on our findings, the incidents of human injuries are not randomly distributed over the entire area but are clustered in certain areas. Based on the frequency of incidents such as human casualty and property damage, we have identified such highly affected areas to start the awareness program in order to minimize the risk of such incidents. This is being done by geo-referencing all locations of human casualty and then plotting them on the map of the landscape to identify the critical areas. House damage reports from local newspapers and forest offices are being compiled to isolate villages/tea estates where such incidents are most frequent.

b. Conduct repeated informal awareness sessions in each of the high priority estates and villages:

Our prior studies found that most of the human casualties occur when people try to chase away elephants or when people are not aware of safety precautions in elephant areas. Our findings indicate that focused and sustained contact programs such as regular meetings at the village level may be useful in reducing the risk of such incidents and also help build trust among various stakeholders during the workshops. All the workshop content has been designed using our findings on how the negative encounters occur and what could be done to reduce them.

c. Assess the efficacy of the workshops using interviews before and after the workshops

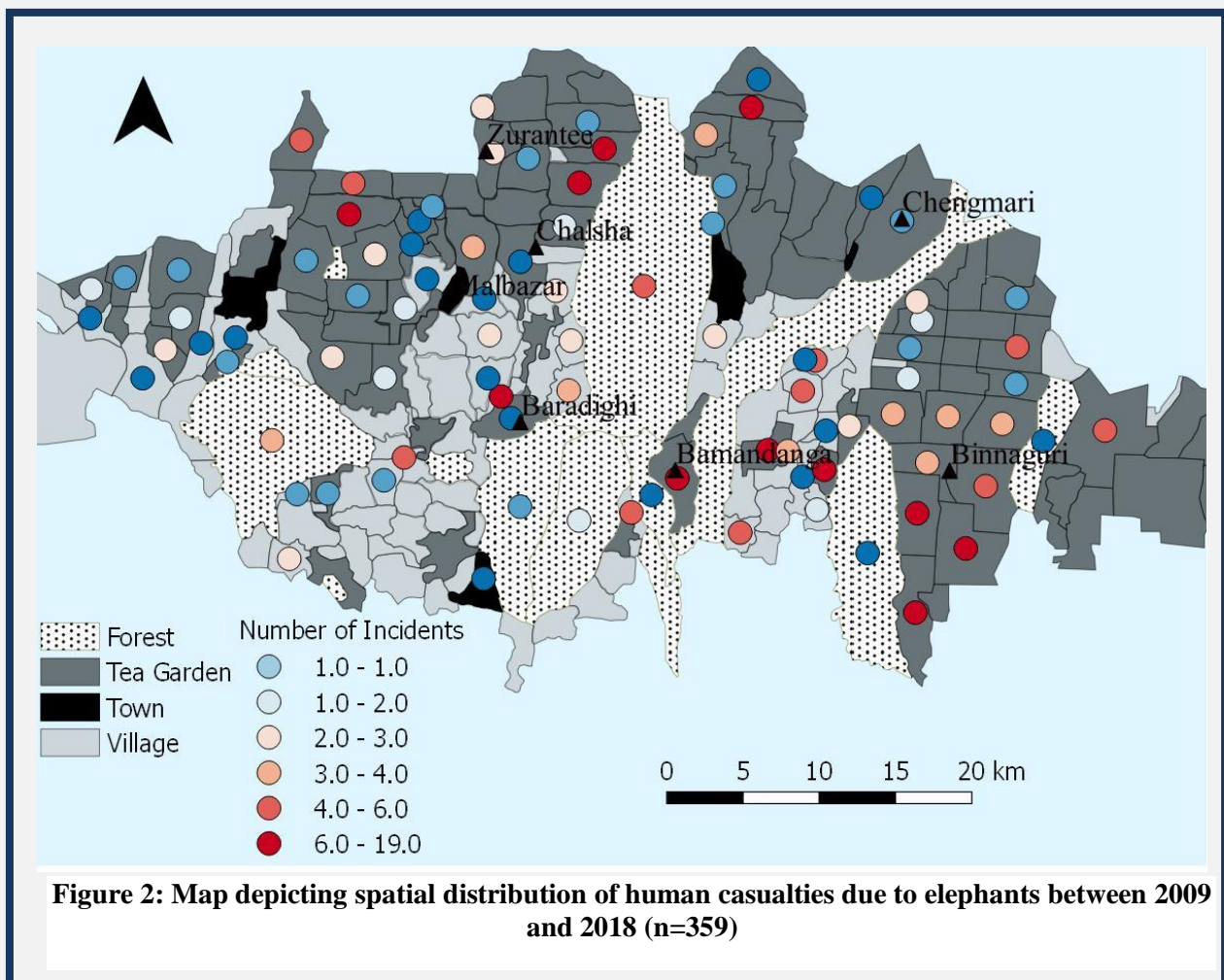
We start each of our contact programs with a general discussion on livelihood issues and various problems faced by people in the region. Thereafter, we speak about wildlife related issues the local peoples' beliefs and ideas about elephants in the region and their experiences. This enables us to understand how deeply rooted the problem is (if any) with respect to elephants. We found out that other social and economic issues mean that wildlife is not very high in the concerns of the people. However, in certain highly affected areas, people are afraid of elephants since they cause considerable damage to property and on certain occasions also result in the death of people. We then cater our programs based on the concerns of the people and try to share safety practices on how they can avoid these encounters. Post workshops we again discuss the same topics discussed earlier to assess if our discussions have had any positive impact on the people.

d. Identify elephant movement patterns using Satellite Telemetry (**New Objective added**)

In 2019, we collared three Female Elephants in our project site. The collars were funded by Rotterdam Zoo and the monitoring of the female elephants is being done as an additional objective of the International Elephant Foundation Funding support. Our team is monitoring their daily movement and identifying their movement routes and also looking at the change in herd composition over time.

Major findings, outcomes for elephants and local communities:

1. Based on the number of human casualties in the project area, we have been able to identify the critical hotspots of these incidents. Our awareness work and contact programs will be focussed on these hotspots.



2. Many interesting insights were gained on peoples' beliefs around the elephants. The dominant theme was that of Mahakal, the elephant god which is revered by several local communities. Certain communities like the Adivasis and Rajbanshis also offer annual prayers to the Mahakal god to please him and to avoid damage to life and property. Furthermore, we also found out that these communities believing in the Mahakal god do not claim compensation for loss of crops because of the belief that the communities will get a better harvest next year if Mahakal (elephants) feed on part of their crop. In contrast, it was also found that certain tea-estate settlements and villages have stopped growing paddy altogether due to continued damages from elephants. Our next step would be to try out mitigation measures so minimize such losses.

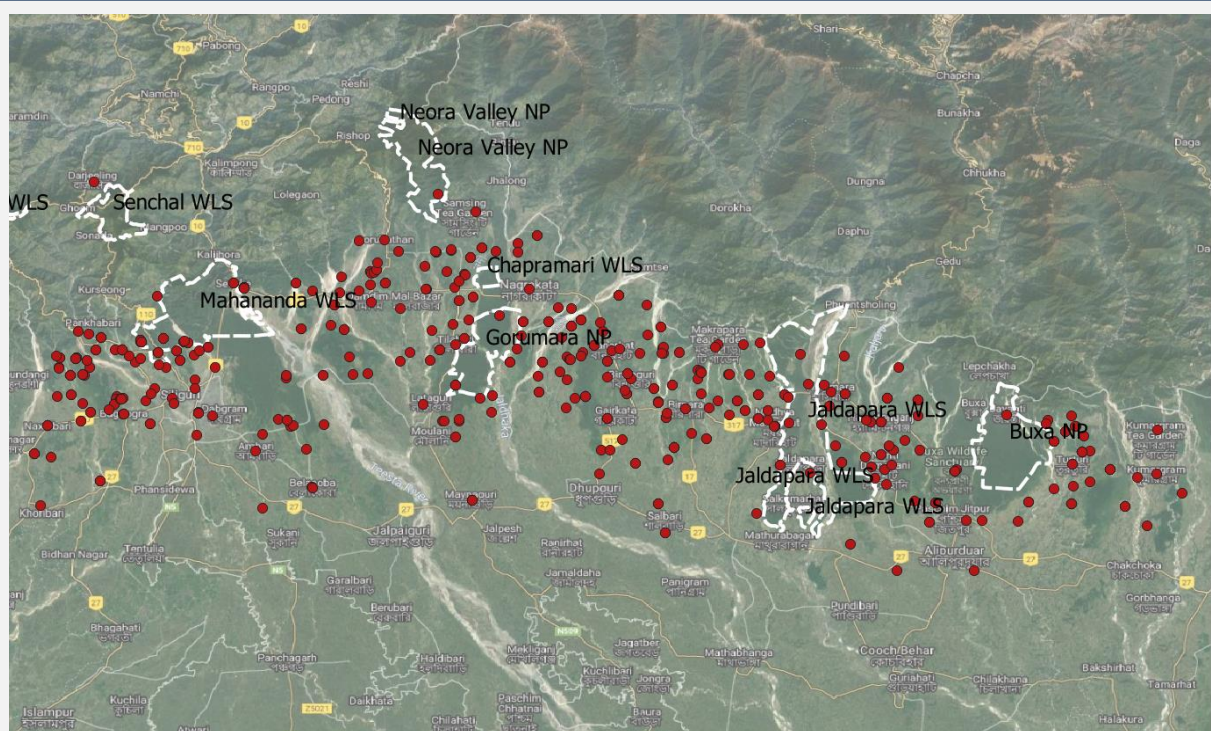


Figure 3: Figure Showing spatial locations of human deaths due to elephants between 2003 and 2019

3. With regard to human casualties, there is a general consensus that most of the incidents occur due to lack of safety precautions, inadequate lighting in the tea-plantations and village and also when there is house breakage by solitary elephants to access stored food. Our team members discussed the safety practices which need to be followed in the areas where elephants come frequently and our suggestions have been well received by most of the communities. We have more than 50 awareness camps so far across 20 tea estates and 16 villages. A large proportion of these camps have been conducted in collaboration with the West Bengal Forest Department and other regional Non-Governmental Organisations.

4. Based on our previous studies on the circumstances of human casualties due to elephants, we have proposed the following safety practices:

- a. No chasing of wild elephants from crop fields, especially after consumption of liquor by the men.
- b. Always to carry torches or flashlights when moving around at night and to always expect to encounter elephants.
- c. Not to sleep on the side of the house where food is stored, so that if elephants break in, there is no risk of injury
- d. Avoid brewing of country liquor as it attracts the elephants.
- e. Create local teams (trained and facilitated by our project members) to keep a vigil on elephant presence in the villages, especially during peak elephants season (3-4 months per year)

Other precautions have been designed into a poster (Annexure1) in the local languages. These posters were designed in 2018 and have been shared with the participants of the awareness sessions. We have also produced a short video in local languages (Hindi and Bengali) on measures to safely share space with elephants. A short video has also been made in local languages Hindi and Bengali to be circulated among the local communities. The West Bengal Forest Department has also aired the video in regional television for greater public reach. The video is also available online In YouTube and our project website.

<https://www.youtube.com/watch?v=E7oJkf9BPJo> (Hindi)

<https://www.youtube.com/watch?v=zF3w-G1t6Dg> (Bengali)

<https://www.coexistenceproject.org/awareness-materials> (Videos and all awareness material)

Impact on communities and elephants:

The ongoing project on awareness and education has completed a full year with support from the International Elephant Foundation. While it is not possible to empirically estimate how many people have been affected, we can make an approximate assumption based on the following criteria:

- a. Number of villages/tea-estates covered by the program
- b. Total population of the village/tea-estate
- c. Number of participants of the workshops
- d. The workshop participants will share the findings within their communities
- e. The village leaders present during the event will disseminate the learning within his village

So far more than 3000 people have participated in the awareness sessions and workshops. Based on the populations of the villages and tea-estates, approximately 10% of the people living in the area have participated in the camps. If we assume that, our programs have impacted 30000 people so far spanning 20 tea-estates and 16 villages. Since elephants are landscape species and range over vast areas, it is difficult to estimate how many elephants are impacted directly by our efforts. However, since the entire landscape has approximately 500 elephants and our work roughly covers half a total area, we have been able to affect 250-300 elephants which use this project area. Moreover, what we are trying to achieve is a conducive environment for elephant conservation in the long run by minimizing damages faced by people.

With the collaring project, we are able to monitor three herds whose composition varied from 6 animals on one family, 16 in one and 12 animals in another family to 45 animals in a herd and 33 animals in another herd. Hence we are able to monitor a maximum of 100 elephants and a minimum of 36 elephants at any given time.

Challenges faced:

The main challenge faced during the initial project period was entirely administrative in nature. Due to new laws and regulations in India regarding the receipt of foreign contributions to Foundations, the grant amount could not be received from the funding agency. However, the project was still started and funds available from other projects and with the Asian Nature Conservation foundation was used to take care of project related expenses. We are hopeful that the administrative hurdles will be overcome soon and then the expenses could be adjusted.

In terms of fieldwork, there has not been any major challenge except inclement weather and a flood situation in the project site last month.

Evaluation:

The short term goal of the project was to first compile the data on human casualties in the region and then plot in on a GIS platform. This was successfully done and based on the locations of incidents, we identified our priority areas.

The next goal was to pilot test the awareness camps in 5 different areas. This was crucial to assess the content of the sessions, responses of the local people and the challenges faced by our team in communicating effectively with the people. The pilot camps were successful, especially since our

project team comprises of local people represented from three communities here (Adivasi, Nepali and Muslim).

Thereafter we aimed to complete at least 40 camps across 20 tea-gardens/villages. Some areas required repeated sessions to engage more freely with the locals and reinforce the safety practices and methods to minimize losses to elephants. However, we were able to cover may more areas than originally intended due to local demands for awareness camps. At the end of the project period we conducted over 50 awareness sessions across 20 tea-estates and 16 villages. Majority of the sessions were co-conducted with the State Forest Department personnel and members of local non-governmental organisations.

The Elephant Fair: Stories from Field

The elephant fair is a rare event in northern West Bengal (also called north Bengal), there is no fixed date in the lunar calendar that governs it. It occurs four or five times a year when elephants, while moving between forest patches, are stranded in the open at dawn, usually within the tea-plantations which abound the region. I have been fortunate (or unfortunate) to be witness to a number of such cases but never for an entire day. In my earlier attempt to be objective about ‘collecting data’ on the behavior of elephants in response to human aggression, I failed to appreciate the larger picture of such interactions between people and elephants.



Figure 4: People gathering to watch elephants in a tea-estate

An early morning phone call from one local in a tea garden, and I was at once on my way, carrying the usual paraphernalia including my camera, notebook, binoculars and my GPS device. Despite the remonstrations of my seventeen year old motorcycle, my faithful companion in my search for the elephants, I was on my way. As I approached the tea-estate where I got a call from, I could see young men on bicycles, motorbikes and on foot headed in a particular direction and I had no problem in identifying the place where the elephants were.

I parked my motorcycle along with the twenty odd other vehicles where were already parked at the ‘designated parking spot’ and then I continued on foot. I could see the elephants clearly from the parking spot since they towered well over the tea bushes (tea-bush is about 2.5-3 feet in height). When I reached closer, I could also see tiny trunks (of elephants) probing just above the tea bush, I hit jackpot with tiny calves which were barely taller than the tea bushes. Presence of calves would make the herd more circumspect about their activities and would make for interesting behavioural observations. Especially, since at least 500 people now surrounded the elephants from all four sides of the tea-section. The elephants were in the middle of a square which would be approximately 400 sq metres.



Figure 5: Chasing elephants is a popular spectator sport among youths, something our project aims to change through continuous awareness and education

After exchanging pleasantries with my local contact and other acquaintances in the particular garden,

I met the members of the state Forest Department to understand their course of action. The police were present and also an ambulance in case things turned sour. Most people were happily watching the elephants from a distance; however, there is always at least one group of youths who will always find ways to taunt the animals in a game to see who can get closest to the animals without being trampled on. Some youths, who were too nervous to get close to the animals, were also hurling crackers in the air, which has negligible impact on the elephants who are far more experienced in this game than the enthusiastic youths. The elephants were in a tight formation as is common when they are in human-use areas. The calves were sticking to their mothers, the juveniles and sub-adults were at the centre of the group, the two sides were taken up by the two largest females. The male, was also in the formation and kept moving here and there. One of the leading females was sometimes mock chased some of the youths if they came too close and then the youths started running back, immensely gratified with this feat. The crowd kept increasing slowly, children skipped school, women returned early from work in the tea-plantation and soon there were two thousand people at the scene. Some people gifted with strong business acumen saw the scope of this gathering. People started selling gutkha (chewing tobacco) packets, cigarettes and pan (betel leaves), men in cycle came with locally made ice-cream served in cones and hindi and Bhojpuri songs blaring from a plastic carry-bag hung from their bicycles. The ice-cream vendors raced for the best place to sell and this was the closest spot to the elephants where most of the crowd had gathered. The vendors continued to arrive, this time they came with puffed rice and other snacks and savouries and business was good as people thronged to these stalls. The elephants were now almost forgotten in the frenzy except for the shrill cries of a calf which brought people back to their purpose.



Figure 6: Ice-cream seller doing brisk business during the impromptu elephant fair

The forest department and the police were alert so that people do not go too close to the elephants. They continuously announced in their Public Address Systems that the animals should not be teased. However, I felt that both the elephants and the administration were playing a waiting game. Neither was eager to make a move. The elephants knew where they had to go, yet they chose to stay put. The local crowd now comprised of people of all ages, most of them (barring about 20 youths) were happy to watch the animals from a distance and they also cursed the youths for teasing the gentle animals. People felt sympathy for the animals and accepted that they have nowhere to go. I asked some of the youths why they were teasing the animals and going so close endangering their own safety. One of the leaders promptly replied asking why elephant came to their houses and in their tea-estates. I was noting his response when suddenly an elderly gentleman beside me shouted back to the leader saying that the elephants fed on the elderly gentleman's banana and areca nut tree and he does not have a problem with it then why is the youth teasing the animal? Such interesting dichotomies are frequent as people have varying attitudes towards the gentle giants.



Figure 7: Crowd increases as the day progresses

The crowd represented a multitude of communities comprising of the adivasis, who have been forced to settle in the area more than a century ago by the British to work in the tea plantations. The Bengali Muslim community has been residing in these areas since the partition of India and some families

continue to come from the bordering country Bangladesh to settle here. The Bengali Hindus moved to these areas to work in the tea plantations as managers and supervisors. The Nepali and Bhutia communities have settled from the nearby bordering countries of Nepal and Bhutan respectively. The indigenous tribes of the area (Mech, Minj and Rajbangshi among others) survive in small pockets and settlements in the region. People from Bihar, Gujarat and Rajasthan have also settled in the area and are mostly engaged in manual labour or business and trading.

The elephant fair represented all these communities and it was remarkable how a wildlife species was responsible to get all these communities together. Such congregations are rare since all these communities have their own festivals and rituals and the only other time that they all meet is probably during the Durga Puja which is the single largest gathering of eclectic and diverse communities. The crowd lulled during the afternoon as many people went back to their homes for lunch but in an hour or so they were back, this time with their families and kids in tow. By 4 p.m. the crowd was even larger and the elephants also started becoming restless due to the lack of food and water. The animals then started to move towards the river but could not make much progress as the people followed them and some even blocked their way. I could see the adult elephants pumping water from their bodies and spraying them on the young ones and on themselves to keep cool, elephants are known to do that often during water stress. Meanwhile, the sale of ice-cream and snacks also soared as more people thronged to the area. I was also feeling tired after standing for six hours continuously and was relieved when some locals got me samosa (local snacks) and water. I was reassured since it started to get dark and soon and the crowd would disperse and the elephants would be able to move wherever they wanted. However, that was not to be as powerful torch-lights suddenly emerged from inside the shirts of the men and people who owned motorcycles used the headlights to great advantage. The elephants were followed into darkness. Now finally the Forest Department had enough of this and they got into action. They pushed their own vehicles between the crowd and the elephants and gave the animals some room to move. Slowly and nervously the animals moved away towards the river, had their fill of water and slowly moved to the safety of the forests across the water. I returned to my base camp more enriched with not only the knowledge of elephant behaviour in human presence but also that of the people in presence of the giants.

Summary:

The northern districts of West Bengal state is a mosaic of tea-plantations, Protected Areas and human habitations. The 4000 sq km landscape is flanked by the countries of Bhutan and Nepal and is home to approximately 500-600 elephants. Due to the fragmented nature of the landscape, the elephants need to move between forest patches using human-use areas such as tea-plantations and villages, which bring them into frequent interactions with the high density of people in the region (700 people per sq km). Between 2009 and 2018, more than 150 people died and more than 300 were injured due to encounters with elephants. Our research (2014 onwards) on the circumstances of these incidents showed that most of these cases are due to the lack of safety practices followed by people. we found out that majority of the cases occurred when people were moving at night without flashlights in the tea plantations or villages, and also when people tried to chase away elephants from their crop fields in an intoxicated state. We formulated specific best practices which could be followed in elephant prone areas to avoid human casualties. We also mapped all the incidents to identify hotspots and priority areas. Based on the hotspots, we have identified targeted villages/tea-estates to start targeted awareness and education programs (contact programs). We are a team of 5 people (three locals and two researchers) and we reach out to the local communities using interactive games, awareness sessions and posters to discuss the issues of personal safety and how accidental encounters with elephants could be avoided. We are currently operating over a 2500 sq km landscape and focussing on 20 highly affected tea-estates and 10 highly affected villages with a combined population of over 100,000 people. We have held 50+ sessions in 20 tea-estates and 16 villages involving 1500 people and reaching out to 15000 people so far. We are evaluating the effect of the contact programs by conducting before after surveys on local perception regarding elephants. We have also started forming small voluntary Quick Response Teams in each of the target areas so that there is efficient communication regarding elephant presence and also crowd management till the Wildlife Department Teams arrive at the scene. Furthermore, we have also collared three elephant herds in the region and are regularly following their movement to identify the movement routes and also warning local people regarding their movement through WhatsApp groups to avoid accidental encounters.



Figure 8: Training exercise for Quick Response Teams

Partner Organizations:

1. West Bengal Forest Department:

The West Bengal forest department provided all records of human casualties and also helps in organising the awareness workshops in the tea-plantations.

2. Dooars Branch of Indian Tea Association:

The Indian Tea Association is a body of tea-management for the majority of the plantations within our study area. The association provides logistical support and permissions for conducting research and conservation initiatives in the tea-estates.

3. Asian Nature Conservation Foundation:

The Asian Nature Conservation Foundation provides institutional support to the project and handles all accounts and financial audits. Prof. Raman Sukumar from the foundation is a mentor of the project and provides guidance to the team.

Media Links:

The findings from the project will be published in the form of a report submitted to the International Elephant Foundation. The findings will also be shared through popular articles to be published in leading conservation magazines and newspapers.

The project has received considerable coverage in the local language newspapers and local news media.

1. www.coexistenceproject.org
2. <http://www.asiannature.org/>
3. <https://www.facebook.com/groups/181931938843388/>
4. <https://india.mongabay.com/2020/02/looking-beyond-protected-areas-to-serve-species-in-tea-garden-terrains/>

Financial Statement:

Head	Details	Amount (INR)	USD
Local Salaries	1. Salary for Coordinator for 12 months	180000	2520
	2. Salary for Three field Assistants for 12 months	252000	3528
Local Travel	1. Two Wheeler rent for two two-wheelers	24000	336
	2. Fuel for field vehicles	160000	2240
	2. Travel from and to field site	60000	840
Materials	1. Workshop Materials Printing	10000	140
	2. QRT Team Kits	22000	306
	3. Miscellaneous	20000	280
Total		728000	10400
	1 USD = 70 INR (approx.)		

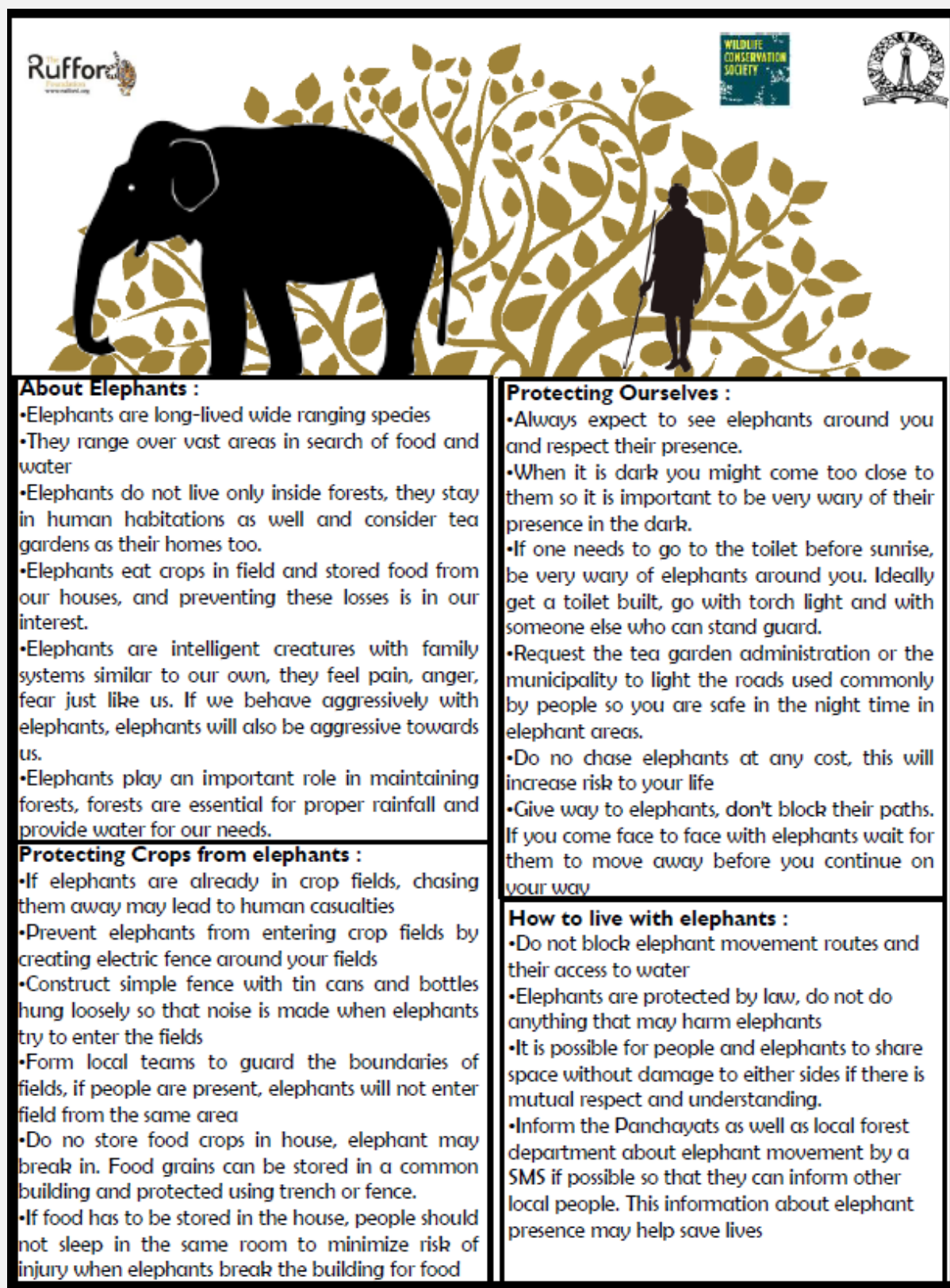


Figure 9: Awareness posters on sharing space with elephants which was distributed during the sessions

