

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/374977411>

Human–Elephant Conflict in Surguja Division CG India

Article · October 2023

CITATIONS

0

READS

239

4 authors, including:



[Hiran Das Mahar](#)

RG Govt PG Autonomous College Ambikapur

32 PUBLICATIONS 27 CITATIONS

SEE PROFILE

Human-Elephant Conflict in Surguja Division CG India

¹H D Mahar, ²Durgesh Mahar, ³Divya Mahar ⁴Narendra Banjare

¹HOD Botany , RG PG College Ambikapur CG India

²SRF Devi Ahilyabai University Indore MP India

³AT, FFCI Hyderabad Telangana India

⁴Phylosophical Society Ledari Manendragarh India

Abstract: Elephants were friendly living before 30 -40 years. We were looking Elephant with an ivory or Mahaut (an Elephant Rider). This animal is very sensitive, emotional and wise, so that they were pet in India. They were also kept as a friend (Even elephant was used in war in History, and yet praised as Lord Ganesha, Since, it is biggest land life and herbivorous). But from 2-3 decades Elephants behave as an enemy of man. There are regular witnesses of cases of man-elephant conflict in CG India. Dozens of people have been killed by wild elephants in recent years in the region. Elephants are also killed by man as revenge. Some illegal poachers kill these animals for leather, ivory and bones. This paper deals with the minimization a Human- Animal conflicts.

Keywords: Elephant Problem, Human Animal conflict, Animal Attack, Tusker Killing, Elephant project.

INTRODUCTION

A report by the World Wide Fund is that hundreds of people in Asia are killed very year by elephants, with up to 300 deaths in India alone. More people in India are killed by elephants than tigers. An elephant can split a man's skull by a flick of its trunk, and a badly treated elephant will look for the first opportunity to do so. Most attacks are blamed on the "clearance of forests for settlement and agriculture which is disrupting traditional elephant migration routes and leading to violent clashes between people and elephants when hungry elephants raid crops." One naturalist documented over 160 deaths in a 2,150 square mile forest reserve in India over 15 years. Most of the deaths are caused by bull elephants who can eat up a farmer's field in one afternoon, sometimes just few days before the harvest. (1)

National News the Millennium post, on 1 March 2013, Raipur, wrote a headlines that Elephant attacks killed 82 in Chhattisgarh. A total of 82 people died in Chhattisgarh in elephant attacks in a span of three years. Altogether 82 people, including 29 women and 53 men were killed in elephant attacks in seven districts of the state between 1 January, 2010 and 31 December, 2012. Out of the 82 deaths, 26 occurred in Koriya district followed by 25 in Raigarh district, it said. About 16 deaths were reported in Surguja, while casualties also reported in Korba -2, Koriya -2, Surajpur -3 and Balrampur -8, The state government disbursed a total compensation of about Rs 1.53 crore for the loss of human lives in elephant attacks. Of the 21 deaths, eight died of elephants in the Dharamjaigarh forest division of the district. The thickly-forested northern region, comprising Surguja, Korba, Raigarh, Jashpur and Korea district, are notorious for human-elephant conflict incidents.(2)

A report of survey done by India Express News Authority declared that up to 300 people may be killed annually in human-elephant conflicts in India: Most of them are tribals adjoining their settlement, in those areas of elephant habitat beside forest.. Studies on conflict between elephants and humans in Asia and in Africa have identified crop raiding as the main form of conflict. (3)

Elephant-human conflict is a result of habitat loss and fragmentation. When elephants and humans interact, there is conflict from crop raiding, injuries and deaths to humans caused by elephants, and elephants being killed by humans for reasons other than ivory and habitat degradation. Elephants cause damage amounting from a few thousand dollars to millions of Rupees. Every year, 100 humans (in some years it may be 300 people) and 40-50 elephants are killed during crop raiding in India. (4)

Lethal retaliation against elephant's encounters can result in elephants being viewed as a nuisance and killed. This was illustrated in the case of 60 elephants found dead in retaliation incidents in North Eastern India Sumatra in 2001 Human-elephant conflict. This can take their toll both on human lives and property as well as elephant populations. Ways of reducing or resolving such conflicts are vital for the viable conservation of Asian elephants. Elephants across Asia live in a variety of habitats and landscapes. These include large contiguous areas surrounded by crop fields, or in highly degraded areas with other agricultural encroachments and they are also found in fragmented landscapes with a mosaic of crop fields, plantations and patches of forest. Elephants may prefer feeding on crops when compared to wild forage because of their higher nutritive content and palatability. However, latest studies on Asian elephants living in contiguous compact habitats show that not all elephants in a population raid crops. However, in highly fragmented landscapes, the entire population may be involved in elephant-human conflict. In addition to these direct conflicts between humans and elephants, Elephants also suffer indirect costs like degradation of habitat and loss of food plants. The problems facing elephants in Asia and Africa are varied and complex. WWF suggests to conserve elephants through specific program aiming to improve elephant protection and management, building capacity within range states, mitigate human-elephant conflict and reduce illegal trade.(5)

"Since July 30 2013 to June 2014 , there have been 17 attacks by elephants in which they have destroyed more than 19 houses and a youth was critically injured. On complaining to the forest officials they rarely reach. Later, they promise compensation. 20 people have been killed in 2011-2012. It has been revealed that a compensation of Rs four crore has been

given to kins of 56 people who have died in last six years and to 8,095 people whose property were damaged. In 2001, when a group of 13 elephants were spotted in the dense forests of Dharamjaigarh. By 2006, they started breeding here and settled in the forests finding themselves content with food and proper space. With the increase in their population, problems came knocking the doors of locals leading to human-elephant conflict. "Now the elephant population has reached to more than 100. They chase away people from the farms, injure and kill many of them, break their houses. This has led to so much terror that people do not sleep during night to keep a watch. Tusker menace in Chhattisgarh isn't a new problem. Reports of more than 30 elephants spotted at Tapkara in Jashpur on August 20 had terrified people for their safety. Residents had also threatened to take up arms and kill the elephants a few months ago. A rogue elephant that has killed eight people and caused widespread damage in Chhattisgarh's Jashpur district is to be hunted - with tranquilizer gun - the state government announced after affected villagers started a road blockade.(7)

OBJECTIVE OF STUDY

If any animal is full stomach, it won't attack. therefore *Ficus* production should be done for elephant and bear applying Air layering, Vegetative propagation and Tissue culture technology.

Commonly, elephants attack to human not to eat but to protect its area and at the anger of sex. But bear may attack to eat. The photo gallery of bear attacks in net-search is observed. The goal of the project is to understand animal psychology of attacking and explore it among tribals of concerned area for their precaution of life and property.

Nowadays biotechnology is advanced. Edible Vaccine are available for man through Genetically Modified Plants. There is possibility to insert or delete a gene So that their reproduction rate be reduced .Both animals Feed on different species of *Ficus*. Therefore it can be genetically modified by applying recombinant DNA technology. The Sex gene of bear and elephant can be altered for their sterilization .Till its success we can IVS and de uterine system surgery at its very young stage *Parthenium* weed has negative and allergic effect to soft portin of the body. It generates scars on the dermis and epithelium . animal gets irritated and attacks . The objective of this projective is to findout the solution to control *Parthenium* .(8,9)

METHODOLOGY

(i) ANIMAL LOCATION AND ANALYSIS OF OBSERVATION:

Survey of forests and sample design of forest area would be made . Animal Tracing would be done for identification of locations or premises by using identity of Foot print , excreta, debris, their food remains and enquiry with tribal people. And at most probable places on the way of their drinking water. The application of dark vision Camera CCTV would be fixed , in the manner such that apparatus would not be damaged and not stolen and the place be could remarked to be again identified . After Ten days the results would be analyzes and Ecological parameters e.g. Density Frequency, Abundance would be calculated the attacking incident also would be recorded.

(ii) MICROCHIP INSERTION AND RADIO SIGNALING SYSTEM:

The behavior of animals would be studied by microchips insertion and Radio signaling system with a safety for self and for animals. The expert committee from veterinary hospital Forest officers would be called for help and they would be paid honorary money. There is already developed smart gun (N), which has no need to operate after tranquilizing anesthesia. Smart gun inserts the chip accurately where ever it is needed.

(iii) COMPUTATION AND ANALYSIS OF RESULTS FROM REDIO SIGNALING OF MICROCHIPS

The total behavior in their cave or tuft would be observed with this system . Their animal- sociability, Reproduction rate , food pattern , etc would be studied .

The Instrumental Manual will be compulsory for suppliers assisting this project with Chemicals and Instruments .Suppliers Company would be Invited to first operation and to fix in lab. If by any incident, impossible, PI would be visited to manufacturer, as a part of projector to understand its manufacturing theory of complex electro-magnetic instruments and Infra red Lamps, giving observation and comfort in practical .Table 1 Represent The list of Instruments and are as following with quantity and cost. Table 2 Represent required Chemicals. It is firmly assured that Use of risky chemical and instrument will be Under supervision of experts , Invited by honorary paid service . If any circumstances, in their absence the practical will be postponed till they are present. Table 3 represents list of books and journals for references and studies .Cost of all requirements are approximate and the govt. rule of purchase of articles would strictly be followed. Humanity and kindness for animal will be maintained.

(iv) REPRODUCTION OF FICUS GENUS:

(A) BY AIR LAYERING

For optimum rooting, make air layers in the spring on shoots produced during the previous season or in mid-summer on mature shoots from the current season's growth. On woody plants, stems of pencil size or larger are best. The stem may be much thicker on the more herbaceous plants Method of wounding woody plants such as fig, banyan and boe and similar plants. With a sharp knife, make two parallel cuts about 1 1/2 inches apart around the stem and through the bark and cambium layer. Connect the two parallel cuts with one long cut and remove the ring of bark leaving the inner woody tissue exposed Method of wounding plants having less woody stems in preparation for air layering. rubber plant, (*Ficus benjamini* and *Ficus elastica*) With a sharp knife, make a long upward cut from 1 1/2 to 2 inches long, almost to the center of the stem. Insert a twisted piece of sphagnum moss into the wound to hold it open and prevent cut tissue from reuniting. At this point, the wounded area may be dusted with one of the commercial rooting compounds to speed up the rooting process. Such compounds, however, do not insure root production on difficult-to-root varieties. We applied a handful of damp sphagnum moss so that it envelopes the wounded portion of the stem. Tying the moss in place with string helps to keep it in position while completing the process. The sphagnum moss would be soaked several hours to insure that it is thoroughly moist. Squeeze out surplus water before using, since excessive moisture will result in decay and deterioration of the plant tissue. Using a sheet of polyethylene film approximately 6" X 12" or 8" X 12", depending upon the size of the plant stem, wrap the ball of sphagnum moss using the

butchers fold (see insert) to secure a tight seal where the two ends of the sheet are joined.. We will draw the upper end of the film snugly around stem making sure that none of the moss is exposed. We will Fasten securely with electricians tape, taking care that the tape extends beyond the film and adheres to the stem. Repeat the procedure on the lower end, again making sure there is a snug fit. Moisture must not escape and excess moisture must not enter when watering or syring the plants. Support the plant with stake or splint to prevent breakage at the wounded area. After the new roots have penetrated the moss ball and are visible on all sides, the rooted branch may be removed from the parent plant. The rooting time will vary with plant variety as well as the season in which it is performed. Remove the newly rooted plant from the parent plant with a sharp knife or pruning shears, making the cut just below the ball of moss and roots. (Not illustrated) Carefully remove the polyethylene film. Without disturbing the roots or removing the ball of moss, plant in a container using a good potting mixture or plant in a well-prepared soil bed.Placing a polyethylene tent over the newly potted plant for 4 to 8 days until the root system is well established is helpful as it will aid in preventing excessive loss of moisture. Keep the plant under a light shade and avoid direct sunlight until the new root system is well developed. Many plants are lost in the final stage of the process because the root system is not sufficiently developed to sustain the top portion of the new plant. By utilizing the plastic tent ,by keeping the new plant in a humid environment, it is possible to develop a good root system on rather large cuttings. Once the plant is well established, it is best to harden off the foliage by gradually exposing it to normal atmosphere. This can be done by cutting a few holes every few days in the plastic tent to reduce the humidity until it is similar to the external atmosphere.

(B) BY TISSUE CULTURE

Plant tissue culture is a collection of techniques used to maintain or grow plant cells, tissues or organs under sterile conditions on a nutrient culture medium of known composition. Plant tissue culture is widely used to produce clones of a plant in a method known as micro propagation. Different techniques in plant tissue culture may offer certain advantages over traditional methods of propagation .SsTissue Culture of *Ficus* and Rooting of Micro shoots in Sand would be ditto applied technique by H K Saiju et al.(Ref 8) Tissue culture of a mature *Ficus carica* , *F benghalensis* and *F glomerata* and *F religiosa* L.was carried out. The shoot tips (explants) from mature trees would be removed and washed in running tap water for one hour. These shoot tips would be sterilized with 0.1% mercuric chloride solution for five minutes and washed thoroughly in distilled water. The innermost shoot tip would be removed and cultured in Murashige & Skoog (MS) medium supplemented with 0.01mg/1 naphthaleneacetic acid (NAA) and 10% coconut milk. The medium would be maintained with pH 5.8 before autoclaving. It would be incubated at 25°C and 3 kilo lux light supplied by fluorescent tubes (Philips) for sixteen hours/day. The established shoot tips would be kept in the same medium for 6 more weeks. It would be subcultured in MS medium supplemented with 0.5 mg/1 6-benzylaminopurine (BAP) and 10% coconut milk at an interval of every eight weeks. Six to eight multiple micro shoots developed after the fifth subculture.

The flasks with micro shoots was kept in room temperature for two weeks before rooting for acclimatization, hardening and change to autotrophic mode of nutrition.

Rooting of these micro-shoots would be done in non-sterile sand. Sand would be cleaned thoroughly by washing several times in water and sun dried for two days. The sand would be wetted evenly with 10% water in a box. The micro-shoots would be cut into one inch long pieces and dipped in 1 mg/1 NAA for five minutes. They would be planted in sand and covered with polythene sheet. The box temperature would be maintained at 30°C, 80% humidity and 825 kilolux sun-light intensity. The roots developed within 3 weeks period. They were left in the same box for two more weeks to develop healthy roots. In this way micro propagation of fig tree has been possible for field plantation for an incensement of fodder plants. Scientific search of a myth *i.e.* beat of birds containing *Ficus* seeds , the only condition of germination

(c) PARTHENIUM ERADICATION

Parthenium genus (All sps.) is very harm full herb to the environment and socio economics. It is progressively spreading in India and all over globe by a fast rate. *Parthenium* weed is main competitor of grasses , eaten by elephants .IT would be eradicated by methods of :(a)Physical Method of uprooting using shovel and gaiti.(b) Biological Controle of two methods *i.e.*By Microbial attack (Fungi): Pathogenic fungi would be searched for its eradication .:and ,by Parthenium feeding Insects.: Insect past would searched , who feed on Parthenium (c) Chemical control Method : Use of Herbicides (like Fresh Dung , Fresh Urine or 2-4-D. etc. Figure 1 represents elephants damaging crope in field figure2 represents baby elephant has dermatitis figure 3 represents Parthenium poisonous plant and its effect on human skin is depicted in figure 4.



Figure1.Elephants in agriculture



Figure2 Skin disease on baby elephant



Figure3 Parthenium weed



Figure4 Skin disease by Parthenium weed

(V) CONTROL OF POPULATION OF ELEPHANT:

Following methods would be applied with the help of forest officers, veterinary doctor, and expert like tranquilizing doctor, They would be paid honorarium amount for help and we will be able to reduce the population of Elephants and Bears.

~ (a) NSV of male elephants and bears in baby life. (b) De-uteri-ration of female elephants and bears in baby life. Comparative study of Auto-ecology of Bear and elephant shall be studied. *frequency, Density, Abundance and Biodiversity index* shall be calculated separately then shall compared. *Parthenium* control, *Ficus* (all local species) propagation and tissue culture plantation, animal sterilization and genetic engineering etc paper will be published and presented in Conferences. A Final project report along with all annexure would be prepared and will send to UGC at the end of second year.

(VI) PROTECTION TO TRIBAL AND SOCIAL AWARENESS:

(A) Pure social level working would be done for awareness about behavior of elephant and black bears. The attacking posture and mood of Elephant and Bear would be studied and LCD would be shown to Tribal of Shahadol and Surguja divisions to save their lives and properties.

(B) An alarm system would be developed using remote sensing and waves receptor antenna system so that the tuft of tusker may be located and alarmed to tribal for their life guard.

CONCLUSION :

The Animal Behavior of Elephant should understand, and men-elephant conflict be solved under WWF guidelines providing fodder forest trees at their drinking place of river.

REFERENCE :

1. WWF Asian Rhinos and Elephants Action Strategy (AREAS) [http://wwf.panda.org//WWF African Elephant Programme](http://wwf.panda.org//WWF%20African%20Elephant%20Programme) WWF personnel fit radio collars to elephants as part of the research effort to understand the Borneo pigmy elephant and conserve its future.
2. The Times of India Raipur, [http://India times.com](http://India%20times.com) TNN | Aug 22, 2013, 11.07PM IST
3. Millenium post Jumbo attraction: Hakkim's moving 'elephants' spice up poll campaign, Sunday March 18, 2014
4. http://economictimes.Indiatimes.landscape.com/flora_fauna/Chhattisgarh_govt.tohunt_killer_elephant/ Article show/3302215cms.
5. H.D.Mahar and Kaushalya Bhagat "Ecological parameters of *Parthenium hysterophorus* weed and its socio-economic impacts in forest area of C.G. India: Intern. MS Conference, 2010, Baecelona Spain abstract id No. 2784.
6. Ray, Dennis T.; Terry A. Coffelt and David A. Dierig (2004). "Breeding Guayule for commercial production". *Industrial Crops and Products* 22 (1): 15–25. doi:10.1016/j.indcrop.2004.06.005.
7. Vyom Parasar, Rashmi Parasar, Bechan Sharma, Avinas C. Pandey "Parthenium leaf extract mediated synthesis of silver nanoparticles: A novel approach toward weed utilization" *Journal of Nanomaterials and Biostructures* Vol. 4, No.1, March 2009, p. 45 -50.
8. Saiju, H.K., Malla, S.B., Rajbhandary, S.B. Tissue Culture of *Ficus carica* L. and Rooting of Micro shoots in Sand Physiology Tissue Culture of *Ficus* Poster 99:S2.01-00 Correspondence: H.K. Saiju, National Herbarium & Plant Labs., Plant Research Division, Department of Plant Resources, Godavari, G.P.O. Box 3708, Kathmandu, Nepal.
9. H.D.Mahar (2010). "Measurement of ecological parameters of *Parthenium hysterophorus* weed and its socio-economic impacts in India" accepted in International Conference MS'10 University of Barcelona, Spain (15-17 July 2010).
10. Mahar, H. D. (2011) "Measurement of Biodiversity index of *Parthenium hystosporous*" National Seminar on Biodiversity conservation and its economic significance Sponsored by UGC Bhopal in Dept. of Botany, RG Govt. PG College Ambikapur (March 2—3, 2014) Suppli. Astract. NO. 10.
11. Biodiversity of Asian elephants in Surguja Forest and Energy of Unverse' International seminar on conservation of Biodiversity and and sustainable Energy; Law and Practice, Campus Law Centre University of Delhi, 12-14 February 2016, Ab.26.