



Human Elephant Conflict

A. K. Rafeek

The human elephant conflict has become a serious conservation problem in India with the increasing losses to property and human lives. Elephant require large areas of forage. If their natural areas were large enough, their daily or seasonal migration would not bring them in to contact with any cultivation. Once the elephant habitat is fragmented or reduced in size, the isolated elephant populations are hemmed in small patches of forests surrounded by vast area of agricultural crops. Elephants raid crops only when there is a significant loss or degradation of their home range.

Home Ranges

Home range sizes vary with habitat type and quality. Both clans and solitary males have specific home ranges within which they live their entire lives if undisturbed and if habitat conditions remain suitable. As resources (food, water and shelter) are not uniformly distributed over the forest, elephants need to have good knowledge of where the resources are available in order to survive. Over time clans search, find and remember what resources are found where, and repeatedly use these resources. Their movements get confined to the area, which contains all the resources they require for survival. This area is known as the home range. The areas used in different seasons are

known as seasonal ranges. Clans normally confine themselves to their home ranges and rarely venture outside.

Males have their own independent home ranges, which might overlap with those of other males and of clans. As they are solitary, their resource requirements are less than those of clans, and hence they can take charge of establishing new ranges. In Africa home ranges as small as 35 km² and as large as 5000 km² have been recorded. They will abandon their home range only under extremely stressful situations like severe drought, poaching and habitat degradation or fragmentation.

Poaching

Hunting of elephant for meat is not of much consequence in India. Capture of elephants for commercial purposes also stands banned after the 1986 amendment of the Wild Life (Protection) Act. The activity that is of serious consequence is the poaching of male tuskers. An estimated 100 male elephants were killed in the country every year by ivory poachers between 1980 and 1986. This has seriously affected the male and female ratio in many areas. Poaching for males with tusks has depleted the male population in south India. Today, with sex ratios in some parts of the elephant range reduced to 1:90, there are clear indications that poaching has had a very adverse impact on 1:20 population. At this stage, even the loss of one male is very serious.

While poaching has depleted the male population, the female population has been increasing over several decades. This can have an adverse impact on vegetation and therefore on habitat quality, and also increase conflict with surrounding human populations.

Human killing by elephants is the outcome of the elephants' incursion into cultivation and roughly half of these cases occur within human settlements. Even some of the killings by elephants within the forests have their origin in settlements, where elephants may be injured by bullets and later turn into rouses.

Control

The traditional scaring methods such as using fire, making loud noises with firecrackers and other devices have their limited scope and very often elephants get habituated to these. In the past, several kinds of physical barriers such as rubble wall, trenches were used for excluding elephant from the commercial plantations

Dr. A. K. Rafeek
Veterinary surgeon,
Veterinary dispensary,
Pinarayi, Kannur





and farming areas, as these methods are expensive to construct, maintain and also time consuming process. Much of the conflict can be alleviated if wild animals can be confined to areas set aside for them and conversely, domestic stock can be prevented from entering national parks where they have no legitimate place.

There is a need for an effective wild life barrier, which can be erected quickly and cheaply and is not too demanding in terms of maintenance as "Electric Fencing". Since its inception in 1982 the Wild Life Institute of India, with assistance from UNDP / FAO project has been experimenting with pulsating electric current fencing ("Power fencing") as a wild life barrier for Indian conditions. Power fences can be used as an alternative to other barriers for confining wild life within home range, protection of cultivation, protection habitat, grazing control etc.

Human population close proximity to wild life areas should be shifted to urban areas by providing adequate facilities for human settlement.

Settlement

Capture and translocation of elephant

Notorious crop-raiding elephants or small hemmed in populations, which are in regular conflict with people, may have to be translocated or captured for domestication. The tradition of domesticating elephants in India would make it possible for such small herds to be captured rather than killed. However, there may be no alternative but to eliminate adult animals, which have turned rousers and are dangerous to human lives. While selecting bulls for capture, due care should be taken to ensure that tuskless alone do not become targets - 'makhnas' (tuskless bulls) should also be taken to prevent imbalance in makhna - tusk ratio in a population.

Selective translocation of herd from one habitat to other can be done effectively by using chemical restraint method. The advent of morphine based drugs (Etorphine hydrochloride) with an admixture of suitable tranquiliser (Acetyl promazine) made chemical immobilisation more safe and easy. Captured elephant can be transported in mild sedation with Xylazine hydrochloride and Ketamine hydrochloride with the help of Koonki elephant to long distance. Methods of capturing have to be humane and more emphasis has to be laid to rehabilitate the proper place.

Major cause of threat to elephant population in India is degradation and fragmentation of the elephant habitat. Thus the goal of conservation is to maintain the size of population confined to areas set aside for them and to minimise human elephant conflict over a period of time.

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coordination of leg movements. Frequency of urination also increases. Towards the later stage of work there will be continuous appearance of tears from the eyes. Another sign is increase in spraying of saliva by trunk to its body. Maximum frequency of spraying of saliva observed was 2/minute and the maximum frequency of fanning of ears was found to be 45/minute.

Based on the above observations and other findings a fatigue scorecard for elephants in work has been developed. A score of 1 was given for every unit increase of pulse and respiration from the normal level at the end of each hour of work. In case of body temperature a score of 1 was given for every 0.1 unit increase in rectal temperature from the normal level. With respect to speed for every unit of reduction of speed at the end of each hour of work from the normal a score of 1 was allotted. Animals attaining a score of 15 were found to be fatigued.

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hours prior to parturition. Initially the animal will show a tendency to lie down and get up repeatedly. Vigorous repeated forcible straining is accompanied by the appearance of pink coloured water bag. With the protruding bag the female may move for a few minutes and then the bag ruptures with the fluid gushing out. Soon the female stretches out her hind legs wide apart and strains. The trunk and the forelimbs of the young one appear, followed by expulsion of head. The whole foetus is expelled out within seconds. The umbilical cord may tear off by its own, or it can be severed manually. The mother may turn the newborn and may throw sand over it to remove the placental debris. The newborn urinates, defecates and stands unassisted by the mother, walks and attempts sucking within an hour of birth. Expulsion of the placenta occurs within one to two hours. The placentation in elephant is annular and zonary and occupies the equator of an ovoid chorio-allantoic sac. The average birth weight of an elephant calf is 80-100 kg and the sex ratio is 1:1. Twinning is not uncommon in elephants. The mammary glands in elephants are pectoral and are two in number.

Development of scientific guided reproduction programmes will greatly enhance the potential for creating self-sustaining elephant population. For elephants it is critical that methods for evaluation of reproductive capacity including assessment of health status of female and male urogenital tracts as well as semen parameters be developed. Moreover it is high time to start assisted reproductive techniques in elephants too.

