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Review Of Research



IDENTIFICATION OF ELEPHANT'S ENTRY POINTS FROM THE NAGARAHOLE RESERVE FOREST



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ABSTRACT

The relationship between wildlife and man, historically and prehistorically, has often been antagonistic. People have hunted wild animals for food in all parts of the world. Animals have attacked agricultural crops and livestock since the beginning of agriculture and settled lifestyle about 10,000 years ago. Many wild animals are potential competitors to humans for food resources or threats to human life. Wild animals that directly compete with humans for resources such as food or water quickly become 'problem animals' are included in the "man-animal conflict" category

KEYWORDS :Elephant's Entry Pointsfrom , historically and prehistorically , antagonistic.

INTRODUCTION

At the time of mapping of the entry points of elephants, initially it was planned to take the help of Google earth as it would be very easier. But at the time of actual mapping with the help of Google earth, obscure entry points were encountered. Realizing the lapses and chances of false of entry points, the mapping with the help of Google earth was discarded. Vowing to the requirement and significance of the appropriated entry points of elephants, finally it was decided to track the points through GPS by foot. But it was a herculean task to cover, tracking along the forest boundary was a task not done before either by the forest department or any other organization.

Having a clear knowledge of risk involved due to the threat from wild animals, despite of this, the survey through foot was the only option. Apart from the risk of animal attack, undulating and hard

terrain, covering a long distance of 450 km from southern bank of river Cauvery to northern bank of river kabini was a challenging task. Perhaps the elephants might not have trekked for 450 km of distance within the duration of ten days. Keeping aside the risk factors, the entry points of elephants were taken with the help of GPS with firm determination of completion what so ever hardship that was cropped up, this was done in spite of twice Elephant chased and a tiger's stare encountered for being trespassed in to its boundary.

Completion of surveying and marking the entry points of the elephants with GPS along the boundary of Nagarahole forest was a relief and satisfaction, for being done for ever first time. And it is a small contribution done for the welfare of both man and wild animals.

In the second stage, the GPS points thus collected were brought on the kml file, and overlaid on the Google earth image of Nagarhole forest boundary map of Arc GIS platform. Based on the forest boundary track line, a 5 km buffer zone towards the non-forest region that is agricultural and village boundary was demarcated. As per the demarcation there are 176 villages comes under 5 km buffer zone from the forest boundary line of Nagarhole forest, covering three taluks of Mysore districts such as, Periyapattana, Hunsur and H.D.Kote. Out of 176 villages Periyapattanataluk has 65 villages along the Nagarhole forest boundary, followed by 50 and 61 villages in Hunsur and H.D. Kote respectively.

In the ArcGIS platform fishnet tool was activated for 500 Meters. The 500 meters grid was generated for the entire stretch between southern banks of river Cauvery to northern bank of river kabini covering 450 km, within 5kms buffer zone villages.

2. IDENTIFICATION OF ELEPHANT'S ENTRY POINTS:

A startling of facts got unfolded. The fact number one is, more numbers of entry points are concentrated in specific region in the study area, accordingly the more number of entry points are calculated and a ranking list is prepared. Thus the villages which are highly prone to elephant conflict could be identified.

The second fact is relationship existing between the density of vegetative cover along the forest boundary and the entry points.

Thirdly, there is a relationship with geo morphological landscape produced by stream path and the entry points.

Fourthly, the cropping pattern and the shape of the forest boundary are also determines the elephant entry points. Lastly preventive measures adapted such as, solar fence, trenches, and barricades which are constructed along the forest boundary are other factors influencing on the elephant entry points.

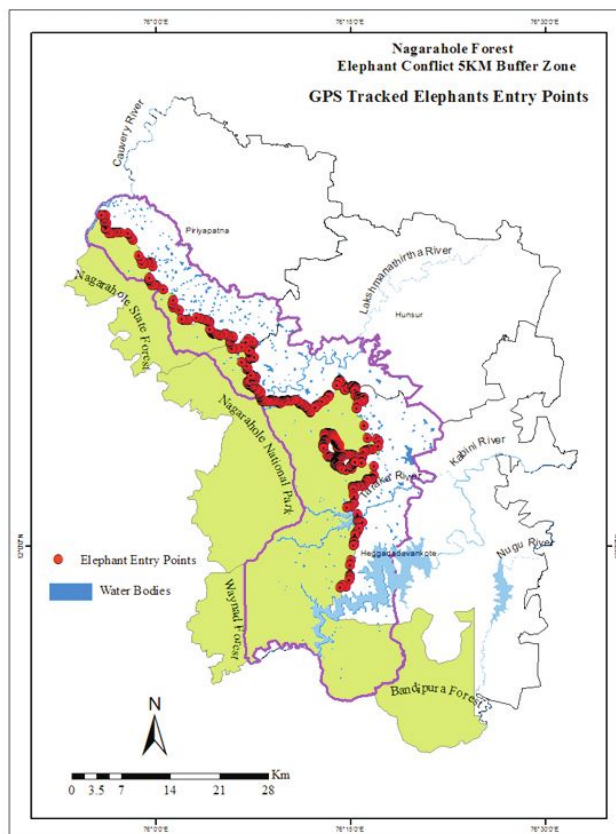
The elephant entry points which have identified during the field survey are unique in nature, these entry points are determined by the factors like morphology, density of forest, availability of food and water, etc. the relationship of entry points with these factors are established as follows.

- Entry points with geo morphological land scape:
- Entry points through villages:
- Entry points with forest density:
- Entry points are small in size not too large:
- Entry points with cropping pattern:
- Entry points with Water source:

• **Entry points with geo morphological land scape:**

There is a unique factor in the elephant entry points, that is out of 518 entry points 400 entry points are confined to the lowland and 118 entry points are scattered in the other areas, which means elephants are preferring the stream path land for their entry from the forest than the elevated land areas, and the entry points are thus related with morphology of a place. Hence the elephant entry points are more common in the stream path areas than the up land areas, in other words, more the stream paths; higher the elephant entry points.

Map no: 4.3GPS Tracked elephants entry points

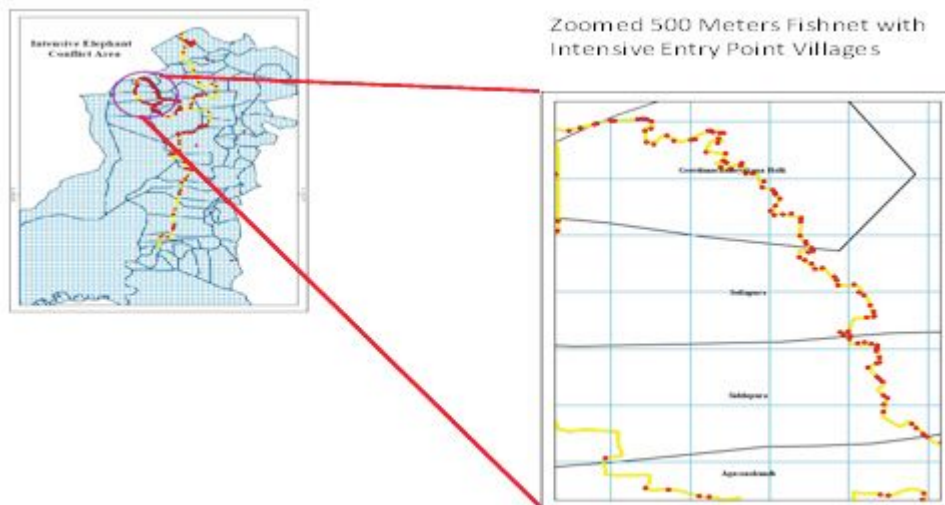


• **Entry points through villages:**

According to the GPS survey conducted by foot, covering 450 kms of distance from the river Cauvery in north to the river kabini in south, 518 elephant entry points have identified (see Map no 4.4).

The average entry points of each village were 16.79 percent and the average entry points per km is 8.68 percent. These elephant entry points are unevenly distributed, in the villages like Metikuppe (51), Gowdimachanayakanahalli (48), Agasanahundi (41), Konanahosalli (31). These villages are having more entry points ranging between 30-60. Sollepura (29), Siddapura (17), Uduvepura (18), Kurubarahosalli (18), villages are having entry points ranging from 15-30, and Doddahejjur (12), Chikkahejjur (11), Alalur (13), are having less than 10-15 entry points.

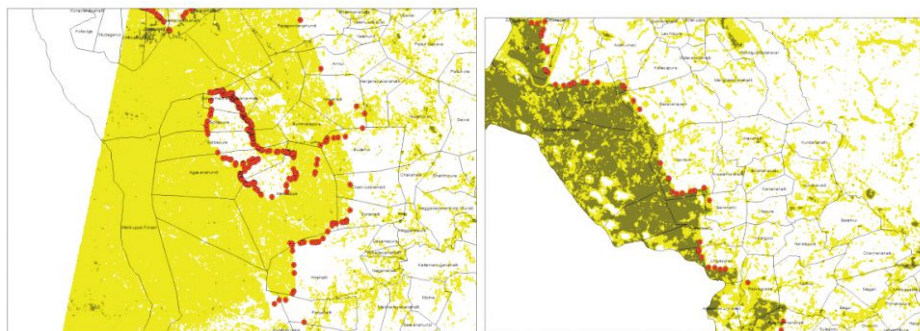
Map no: 4.4 fishnet with intensive entry point villages



• Entry points with density of the forest:

There is a relationship between elephant entry points and the density of forest in the study area. There are 317 elephant entry points which are confined to the very thin forest region, and 126 entry points are at the thin forest region, whereas at the thick forest region is consisting of only 75 entry points. This clearly indicates that, more number of entry points are found at the areas of thinner vegetation due to the scarcity of food in the forest.

Figure no: 4.1 elephant entry point with forest cover



• Entry points are the narrow passages; rather than wide highways:

According to the observation and data collected from field survey in the study area, the elephant entry points are very narrow passages. They are too clever and smart while they pass through the trenches, solar fences, proof walls and barricades at the edges of the forest boundary. They pass through the trenches in a systematic way in queue manner like one after the other. During the field work it is observed and literally measured the entry points. According to the field observation that 468 (90.34%) out of 518 entry points measures 0.987meters of width, remaining 50 entry points measures more than 1.89 meters of width, thus it clearly indicates that elephant entry points are very narrow

passages.

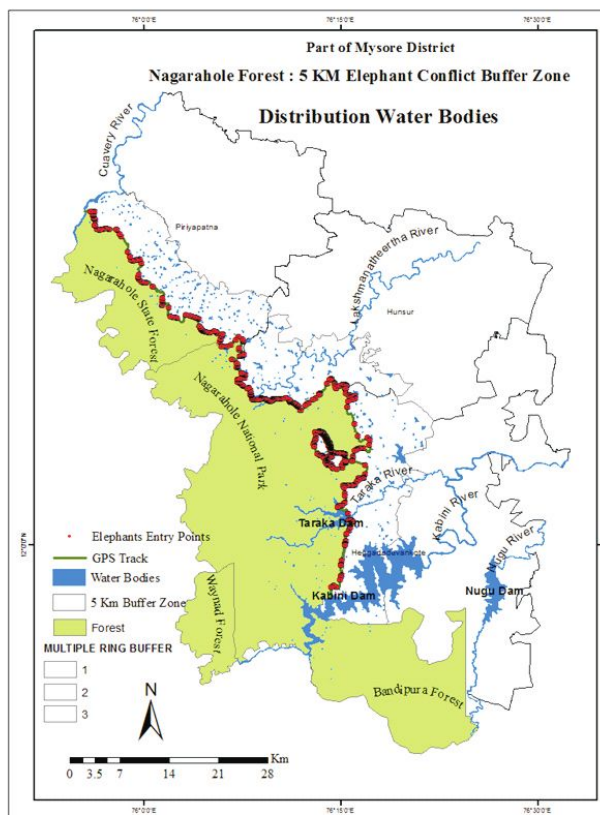
• **Entry points with cropping pattern:**

According to Mark McGinley (2010), every day the elephants trek around 8 to 10 kilometers of distance in search of food and water. The deforestation, tall growing trees, weeds and scarcity of water inside the forest, drive the elephants to come out of the forest in search of food and water. Once the elephants enter into the agricultural land they get sufficient food and water in single strike. Therefore elephant entry points are more at the food or cereal crop growing areas than the fallow land region. Thus large numbers of entry points are found at the areas of their favorite crops like, sugar cane, ragi, paddy, maize and cotton. According to the statistics obtained from field survey, 377 entry points are recorded in the paddy, ragi, sugarcane, cotton and maize growing areas and 141 entry points are in the areas of other crops.

• **Entry points with Water sources:**

The elephants require huge water to play and drinking purpose. The shortage of water in the forest areas leads the elephants to enter into the nearby villages in search of water sources. Comparatively the numbers of water sources are more near the villages than the deep forest areas. See the map no 3.6. Out of 518 elephant entry points, 278 are located near the water source, which means 53.66 percentages of the elephant entry points are confined to the areas of water sources. Thus, larger the numbers of water sources more will be the entry points.

Map no: 4.5 Distribution of water bodies



3. CONCLUSION:

The entry point of elephants into agricultural lands are again a matter of ambiguity, because the entire forest boundary is adjoined by agricultural land, but the place of entry is confined to certain places only, from this point of view; identifying and marking the exact points of the elephant trespass into agricultural land and villages is one of the objectives and to know the factors affecting on their entry.

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