
Monitoring Human-Elephant Conflict Through Remotely Located Stations

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HUMAN-ELEPHANT CONFLICT IN THE MASAI MARA ECOSYSTEM

The Masai Mara ecosystem is world famous for its rich wildlife resources. It consists of the 1,510 km² Masai Mara National Reserve and the sprawling 2,610 km² group-owned ranches. To the south is the Serengeti National Park in Tanzania. There are usually more animals outside the reserve than inside for most of the year.

However, trends in human activities within the last three decades are threatening the integrity of the ecosystem. The human population has risen drastically from 125,000 in 1969 to 210,000 in 1979 and to 420,000 in 1989. Increasing population pressure leads to habitat fragmentation, destruction of critical resources such as forests, migratory routes, swamps, etc.

To control human encroachment into the designated wildlife dispersal areas, a huge metal fence was erected in 1970 but farmlands were established on both sides of the fence even before it was completed. In 1975, the farms were approximately 52 km away from the Reserve boundary. This distance was reduced to 40 km by 1991 and to 17 km by 1996. Land sub-division was decreed in 1997 worsening the situation. Human-wildlife conflict has increased within the last ten years and has become a major challenge to elephant conservation. The need to monitor these conflicts is critical for both humans and elephants.

MONITORING ELEPHANTS THROUGH OUTPOSTS

Temporary stations, popularly called outposts, have been established to monitor and respond to the needs of elephants or people. These outposts are located in the areas outside the Reserve and are usually manned by a few rangers who are equipped with the necessary tools and maintain constant ra-

dio contact with the regional headquarters for logistical and administrative reasons.

The Mara ecosystem has about 16 such outposts. Some are temporary, established to respond to specific needs that may occur intermittently or seasonally within the ecosystem. Those in more susceptible areas are permanent and may be established in one place for a long period.

Reports of significant events within an area are covered by the respective outpost and are recorded in the occurrence books. Such information includes habitat encroachment, crop damage, livestock depredation, human deaths and injuries, poaching activities, animals killed on control, banditry, disease outbreaks, sightings of endangered species, and any form of wildlife-related illegal activities. Such information can be analysed for different aspects of elephant conservation.

SELECTED DATA MAINTAINED IN THE OUTPOSTS

The following summarizes some of the data collected during ten years (1987-96) in the outposts within the Mara ecosystem. The data provide useful information that can be used to assess the need for conservation action. Though perhaps not living up to scientific standards, this information can be used for conservation decisions because it authentically expresses the practical management issues on the ground.

The data in Table 1 show the number of people killed or injured by wildlife as reported by the outposts. The problem persisted throughout the ten-year period, indicating the need to reassess the conflict management strategies being undertaken. It also shows that elephants were responsible for nearly a quarter of all deaths reported. This figure

Killed by	Year					Total
	87/88	89/90	91/92	93/94	95/96	
Elephant	2	9	17	19	13	60
Predators	31	15	12	22	20	100
Herbivores	17	14	19	34	7	91
Total	50	38	48	75	40	251

	Year					Total
	87/88	89/90	91/92	93/94	95/96	
Elephant	5	11	17	37	18	88
Predator	22	13	6	18	22	81
Herbivores	629	614	811	457	360	2871
Primates	208	182	121	146	81	738
Total	845	820	955	628	481	3778

is high considering that over 30 species were recorded to have caused death or injury to humans.

The number of elephants killed by people under conflict-related situations (Table 2) are few compared to those of other animals, particularly considering that they kill more people than any other species. Only about two per cent of the animals killed were elephants. However, one has to take into account that incidents involving elephants are more likely to be reported than those involving other animals. The percentage could be expected to be even lower had all conflict reports involving other animals been reported with the same fury and determination as those involving elephants.

Reports show that a pride of lions may kill one or two cows in a herd of 200. The impact of this depredation to the owner is much lower compared to that caused by a herd of elephants invading farmland and destroying the season's crop. According to the records in the outposts, control methods by local people are very limited when dealing with elephants, unlike with other species. Traditional Masai lifestyle does not provide for elephant man-

agement measures, as the two coexist peacefully. Conflict is usually minimised by temporal and spatial partitioning of vital resources such as foraging and watering areas. With land increasingly moving from traditional jurisdictions to modern settlements and crop farming, conflict has intensified, while the methods to minimise them have not changed significantly.

RELIABILITY OF OUTPOST DATA

Table 3 shows the number of compensation claims for human deaths and injuries for the period reported. Comparing Table 1 and 3 is like overlaying one table on the another. Compensation was sought for 251 out of the 252 deserving cases.

Reading through the records, it becomes clear that one of the greatest frustrations of the rangers who manage the outposts is that they have to keep appeasing families of the victims of wildlife attacks, even without any hope that the compensation claims will ever be paid. The process of processing claims is painfully slow, and when completed, it usually takes several years before payments are made. By

Table 3. Number of compensation claims for human deaths and injuries in Masai Mara between 1987 and 1996.

	Year					Total
	87/88	89/90	91/92	93/94	95/96	
Elephant	2	9	17	19	13	60
Predators	31	16	12	23	20	102
Herbivores	18	14	19	33	6	90
Total	51	39	48	75	39	252

this time, the victim has made several trips to the city and spent more than half the worth of the claim. Five hundred dollars is the highest value tagged on a person killed by wildlife. No other compensation is paid.

CONCLUSION

Considering the importance of the Masai Mara ecosystem in conserving wildlife, the data show that there is need to reduce the number of ani-

mals killed by people and people killed by animals. This calls for a more sustainable conflict management strategy.

Outposts exist in all parts of the country where wildlife faces substantial threat. A wealth of information exists that has not been analysed. This data can be used to establish the general wildlife trends in the country, particularly in areas where scientific data is unavailable. It can also be used to determine localised conservation priorities.