

Review Of Research



MAN ANIMAL CONFLICT IN KARNATAKA STATE

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Abstract

Human-wildlife conflicts have occurred from man's prehistoric period to present. An early form of human-wildlife conflict is the predation of the ancestors of prehistoric man by a number of predators of the Miocene. Even fossil remains of early hominids a *Thung Child* show evidences of predation like a the skull of a young *Australopithecus Africanus* was killed by an eagle from the distinct marks on its skull and the fossil having been found amongst egg shells and remains of small animals. The Neolithic Revolution where the advent of farming and animal husbandry has increased the scope of conflict between humans and animals. The expansion of human population into wild animal habitats where the natural wildlife territory is displaced that made them in seeking alternate sources for their natural prey and food. The conflicts occurs with various negative results such as injury and loss of

life of humans and wildlife, crop damage, livestock depredation, predation of managed wildlife stock, property loss, trophic cascades, destruction of habitats and even reduction of wildlife populations and reduction of their geographic ranges. In this regard forest management techniques should be well adopted to protect them.

Keywords: Wildlife, Human, Forest, Conflict, Karnataka, Habitat .

INTRODUCTION:

Human-wildlife conflict is a fast becoming a critical threat to both man and animals. It refers to the interaction between wild animals and people and the result will be impact on people or their resources, or wild animals or their habitat. This happens only when growing human populations overlap with established wildlife territory, creating reduction of resources or life to some people and/or wild animals. This process involves in loss of life or injury to both humans as well as animals either wild or domesticated to competition for scarce

resources to loss and degradation of habitat. The conflict is fast becoming a critical threat to the survival of many endangered species and it will ultimately affect to environmental impacts on ecosystem equilibrium and biodiversity conservation. In our law of universe both man and animals are placed equally. Since man-made laws are always treated as first importance and rights of wild animals are to be of secondary importance. But human rights approach to environmental protection in case of conflict is often based on anthropocentricityⁱ. Conflict arises by animals encroach human territories but vice-versa. As man thinks otherwise and his thinking is rooted in anthropocentrism. It has been noted that expansion of agricultural fields leads to fragmentation of forests all around the world along with increasing human population and their developmental activities like hydel projects, irrigation canals, coffee estates, road and railway network and even urbanisation has made animals in a very big trouble. Loss of tropical forests coupled with destruction which ultimately leads to decrease in ecosystem services of great value to humanity such as storage in biomass and soils, watersheds regulation and rainfall activities, it also modulates to climate and river flows, spread of infectious diseases and also reduction of feeding ground of many species. In the regard most of the animals look for alternative sources towards human habitats and finally results in human wildlife conflicts.

In India human-wildlife conflict has given rise to many problems. This can be reduced by providing sufficient habitat to those animals and by maintenance of barriers, guarding of crops and providing immediate compensation to affected families. People development is always welcomed but not at the cost of ecological aspect in the ecosystem. Privacy of wildlife which is always been disturbed by humans can cause serious problems. India is considered as one of the fast developing countries in consideration with population. In this matter environmental justice could be achieved only if drift away from the principle like sustainable development; polluter pays principle, precautionary principles which are based in the interest of humans and environmentⁱⁱ. India's Central Government, the State Governments and the Union Territories should evolve better preservation strategies so that conflicts can be avoided to larger extent. Even participation of people who are staying in the Community Reserves is also of given extreme importance. By improving animal habitat, training programs to officials and local people, regular awareness programmes, providing technical and financial support, by constructing boundary walls, eco-development activities and also encouraging research and academic programs towards issues can solve issues relating to man-animal conflicts. In India laws relating to forest and wild life are subject matters which are listed in the constitution. Both Central and State governments were responsible for all framing and implementation of policies relating to wild life conservation and forest protection. Areas of sufficient ecological, faunal, floral, geo-morphological, natural or zoological significance have been declared as a National Parks, Wildlife Sanctuaries, Conservation Reserve Forests or Community Reserve Forests for protecting, propagation or developing wildlife or their habitats. Expanding human habitations and the burgeoning population have resulted in shrinking of the forest base for animals. Also, there is tremendous pressure on forests by communities dependent on them for firewoodⁱⁱⁱ.

KARNATAKA FOREST AND CONSERVATION

The state of Karnataka is blessed with abundant natural resources with magnificent forests endowed with different types of forests. It has spread across a geographical area of 191,791 sq km. where in the recorded forest area is 43,356.47 sq.km. i.e., 23% as per annual report of Karnataka State Forest Department. The forest area is again classified in to Reserved Forests (68.48%), Protected Forests (8.17%), Unclassified Forests (23.12%), Village Forests (0.11%) and Private Forests (0.12%). The abundant rainfall has promoted the growth of luxuriant tropical forests in Karnataka which covers almost 17% of the state. While looking at the physiographical map of Karnataka it forms part of two well defined macro-regions of India: the Deccan Plateau and the coastal plains and islands. The state has four physiographic regions they are 1) Northern Karnataka Plateau, 2) Central Karnataka Plateau, 3) Southern Karnataka Plateau: and 4) Karnataka Coastal Region. Looking at the socio-economic profile of the state across most of Karnataka's Western Ghats, which are not favourable for sheep and where cattle are of poor breed, many communities have had traditional associations with hunting and fishing for subsistence. Pre-colonial Uttara Kannada, for instance, was a haven for wildlife. Karnataka has a population of 52.85 million and is predominantly rural and agrarian. About 66% of its population lives in rural areas, about 60% were engaged in agricultural and allied activities. The districts in the Western Ghats have been renowned since ancient times for spice gardens in which betel nut, pepper, cardamom, ginger and banana are grown. Rice, coconut, sugarcane, groundnut, vegetables, mango, cashew nut, tuber crops, ginger, etc. are other important crops. Karnataka accounts for 59% of the country's coffee production and 47% of its *ragi* production. Karnataka has a diverse tribal population, comprising about 6.6%

of the total population of the state. The state has a coastline of about 320 km, providing one of the best fisheries along the west coast. Tides that enter the estuaries flood a good part of the coast. The estuaries are highly productive, but of late, enormous human pressures and interference with the natural ecology have reduced their productivity drastically. Agricultural systems practiced in the shallow portions of these estuaries date back hundreds of centuries. About 12,000 ha area of the state is under such cultivation. The state is rich in mineral resources, especially granite, along with gold and high-grade iron.

There are also different types of forests in Karnataka they are evergreen and semi-evergreen forest, moist deciduous forest, dry deciduous forest, scrub and thorny forest, and un-wooded forest. Some of the forest in Karnataka are Bhagavati Reserved Forest, Bhadra Reserved Forest, Bannerghatta National Park, Kudremukh National Park, Nagarhole National Park, Bandipur National Park, Anashi National Park, Bhimgad Wildlife Sanctuary, Biligiri Rangaswamy Temple (B.R.T.) Wildlife Sanctuary, Brahmagiri Wildlife Sanctuary, Dandeli Wildlife Sanctuary, Daroji Bear Wildlife Sanctuary, Nugu Wildlife Sanctuary, Pushpagiri Wildlife Sanctuary, Shettihalli Wildlife Sanctuary, Someshwara Wildlife Sanctuary, Talakaveri Wildlife Sanctuary, Tyavarekoppa Lion and Tiger Reserve, Attiveri Bird Sanctuary, Sharavathi Wildlife Sanctuary. It's a challenge for entire country including the state of Karnataka in conserving the flora and fauna. Forest is considered as one of the major natural landscape and it is considered as integral part of the ecosystem. Encroachment of forestland is on the rise due to ever-increasing population and consequent landlessness. The threat to forest resources is due to unchecked exploitation and fragmentation and honeycombing of forest areas are causing the loss of corridor for movement of wild animals. Most of the patches of forests in Karnataka require protection, smuggling of timber and poaching of wild animals are posing serious threats to forest and its resources. In this regard adequate measures should be taken in order to halt the decline of forest resources and in this regard there must be a conscious effort on part of the government and the citizens to conserve the forest resources in Karnataka.

By increase of human population wildlife-human conflicts are becoming serious obstacle for conservation of forests as well as livelihoods of people worldwide and as development expands and global climate changes and other human and environmental factors put people and wildlife in greater direct competition for shrinking resource base.

METHOD

The present study is based on the secondary data which is collected from the Department of Forests, Karnataka State of five years from 2010-11, 2011-12, 2012-13, 2014-15 and 2016-17. Data for this article were also obtained from field studies aimed at a broader survey of wildlife in general in different areas of Karnataka State. These studies examined the presence, distribution, and status of different species of wildlife. The fieldwork also recorded conflicts between humans and animals through focus group discussion and in-depth interviews. Effort are also made to interview the villagers, forest staff, and hunters, poachers that had experienced conflicts with animals. The data related to loss of human and domestic life along with loss to crop and property and permanent disability or injuries and total compensation paid to them or to those families were been incorporated by the data provided by the Department of Forests, Karnataka State, Bangalore

RESULTS

Results of the data are converted to amount in lakhs as the forest departmental data shows both in lakhs and in rupees. Information about financial year 2013-14 and 2015-16 are not available with the state forest department. After correcting the data the below table of ex-gratia for death of human, compensation for crop and cattle damages by wildlife havoc is constructed.

Table 1: Payment of ex-gratia for death of human, compensation for Crop and Cattle damages by Wildlife havoc.

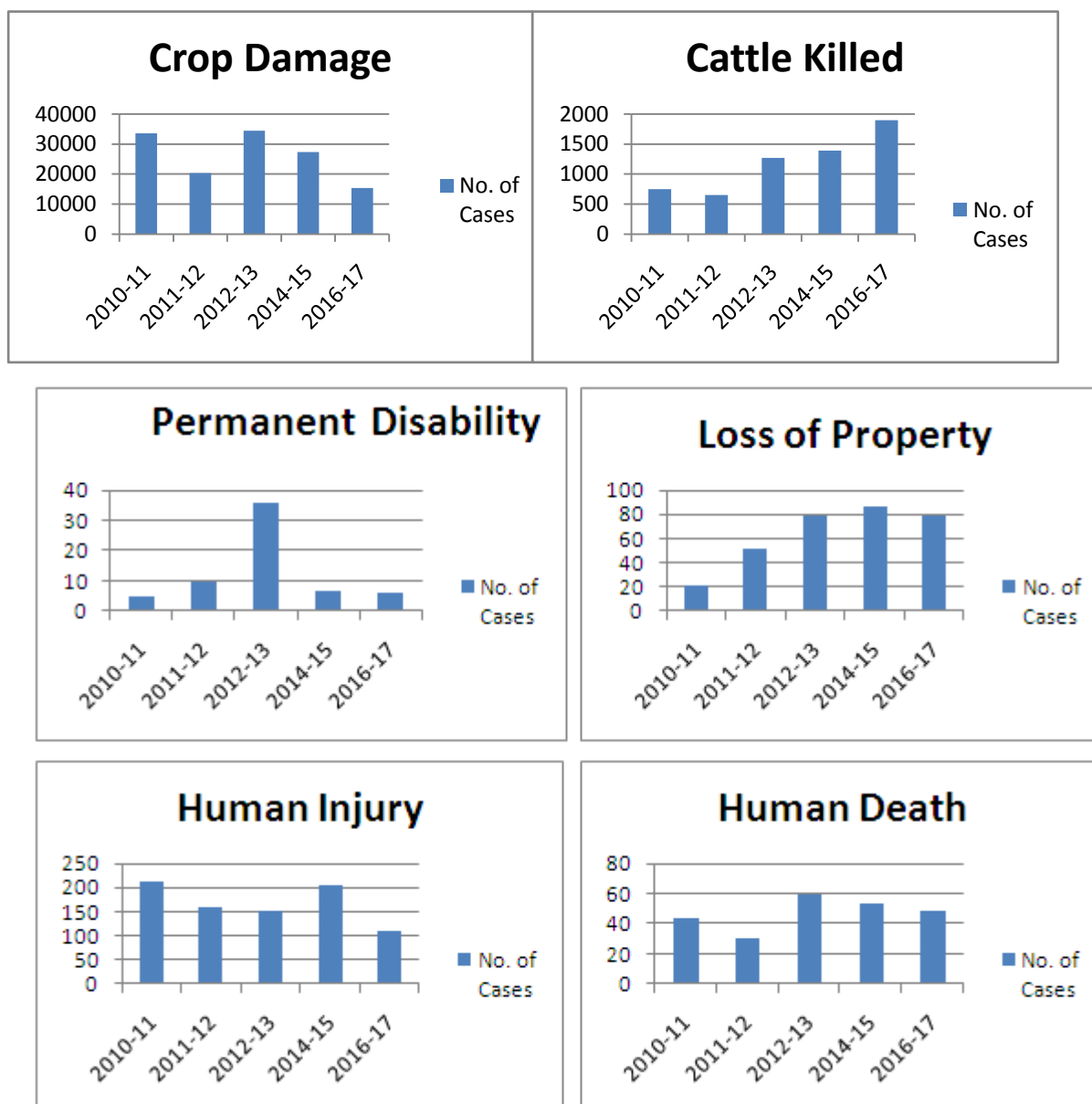
Year		2010-11	2011-12	2012-13	2014-15	2016-17	Total
Crop damage	Cases	33555	20312	34496	27327	15401	131091
	Amount Paid	827.10	541.23	958.95	890.59	631.53	3849.39
Cattle Killed	Cases	751	653	1269	1390	1896	5959
	Amount	23.83	21.34	42.97	61.73	136.73	286.60

	Paid						
Human death	Cases	44	30	59	53	48	234
	Amount Paid	72.55	94.20	276.67	253.50	228.83	925.75
Permanent Disability	Cases	5	10	36	7	6	64
	Amount Paid	1.95	5.11	8.79	3.30	4.24	23.38
Human Injury	Cases	211	158	151	204	108	832
	Amount Paid	22.22	13.39	18.93	27.05	23.27	104.87
Loss of property	Cases	22	53	80	86	80	321
	Amount Paid	1.15	1.42	2.53	3.21	3.91	12.22
Total	Cases	34588	21216	36091	29067	17539	138501
	Amount Paid	948.80	676.68	1308.84	1239.38	1028.51	5202.21

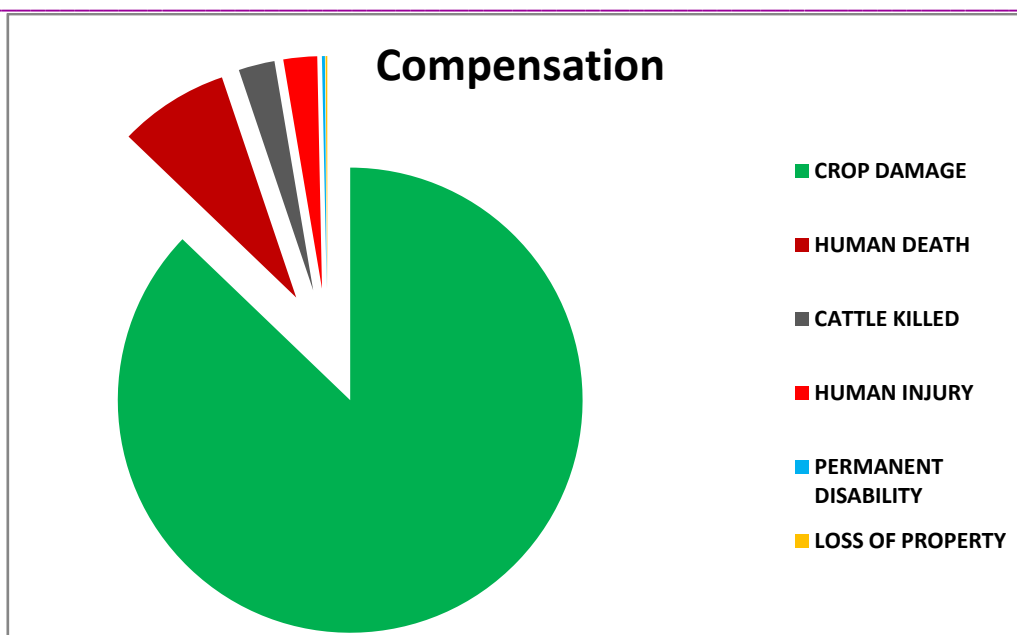
The above table show the compensation regarding the cases of crop damage is recorded highest number of cases as well as the compensation is also huge. Wild animals species namely Asian elephant (*Elephas maximus*), wild pig or wild boars (*Sus scrofa*), Indian crested porcupine (*Hystrix indica*), Malabar gaint squirrel (*Ratufa indica*), Indian peafowl (*Pavo cristatus*), bonnet macaque (*Macaca radita*) and sambar (*Rusa unicolor*) are main animals damaging main crops like coconut, Arecanut, rubber, banana, pady, colocasia, tapioca, elephant yam, plantain and so on. These wild animals, mainly in peripheral areas of national parks and wild life sanctuaries, increasingly pose a risk to farmers around those regions. Farmers are inflicted with crop losses and other damages when herds of such animals occasionally stray from their habitats and enter farm lands, destroying the fields and plantations^{iv}. Due to the loss of animal habitat, more and more species of fauna have started to venture into human habitation causing a conflict between humans and fauna. A typical species affected by this is the elephant which ventures out of the forest into human cultivations thereby eating or destroying the crops. In some cases, the elephants have also caused human deaths like an incident that happened in Hassan district where a villager was trampled to death^v. Precautionary measures (sometimes illegally) taken up by humans to prevent such mishaps like electric fencing have also led to disastrous consequences like electrocution of fauna^{vi}. Five years crop damage is estimated as 3849.39 lakhs.

Most of the villagers graze their livestock in forests which ultimately leads to death of livestock such as carnivores which are attracted towards the easy prey and became direct enemies of livestock and livestock graziers. This type of grazing in forest areas are considered as a threat to wildlife habitats as well as forest resources. The most noticeable effect is the decline of wild herbivore populations as they have to compete with livestock for their food source. As more cattle graze and nibble the natural vegetation there is less palatable biomass for wild herbivores. As livestock eliminate palatable native plant species often unpalatable species of plants invade the area. Some of the scientific studies have shown how wild ungulates decline in areas where grazing pressures is considered as high. The intricate relationship between various species of flora and fauna is yet to be understood and many a time the actual implications of grazing might even go unnoticed by many. Plant species composition skews as foraging by domestic animals increases. Livestock voraciously graze on young saplings directly affecting the recruitment rate and regeneration of tree and plant species. Livestock Grazers are also one of the important links in human-wildlife conflict, as they often dismantle physical barriers (elephant proof trench, solar fence) meant to prevent wild animals entering crop fields so that they can take livestock into the forests. Very importantly livestock grazing aids in spread of communicable diseases from domestic to wild animals many times causing death of wild ungulates. Heavy grazing increases soil erosion in forest areas. Livestock grazing in forests become easy prey for wild carnivores, causing conflict and leading to retaliatory killing of large carnivores. This can directly affect their numbers. Livestock not only affects the forage but also water availability especially during dry seasons. Livestock compete with wild animals for scarce water in the forests.

The increasing human population has also led to an increase in their requirements. Many settlements have started expanding in urban and rural parts to meet the pace of growing populations. Many settlements have come up near the peripheries of protected areas, encroaching the forest areas and using it for their own benefit this has caused human conflicts with wild animals leading to death of animal or human. Apart from human death permanent disability of a person and human injuries are also happened. Apart from these loss of property like destruction of their houses and huts and vehicle damages moveable and immoveable damages also happened.



Above charts shows that crop damage and human deaths are in reducing while cattle killed and loss of property are recorded in increasing order. Permanent disability and human injuries are in fluctuating indicators year by year.



While looking through the total compensation paid was crop damage was estimated as highest with 3849.39 lakhs followed by human death 925.75 lakhs, cattle killed 286.60 lakhs, human injury 104.87 lakhs, permanent disability 23.38 lakhs and loss of property is recorded as 12.22 lakhs.

SUGGESTIONS

Development activities cause more interference in forest and also the privacy of wildlife and these ultimately cause conflict with wildlife. Man-animal conflict often takes place when wild animals cause damage to agricultural crop and property, killing of livestock and human beings. Human population growth, land use transformation, species loss of habitat, eco-tourism, too much access to reserves, increase in livestock population bordering the forest, depletion of natural prey base etc., often stated to be reasons for such conflict. Central Government the State Government, and the Union Territories should evolve better preservation strategies, in consultation with Wildlife Boards so that such conflicts can be avoided to a large extent. Participation of people who are staying in the Community Reserves is also given extreme importance. Environmental justice could be achieved only if we drift away from the principle like sustainable development; polluter pays principle, precautionary principles which are based in the interest of humans and environment. In recent years the environment ministry has allowed Himachal Pradesh to kill monkeys and Bihar, nilgai and wild boar, where they were in conflict with humans. Killing “too many animals” can affect the food chain, since carnivores prey on nilgai and wild boar. If prey decline, carnivores could turn their attention to farm animals and humans, suggesting that culling be done “under proper supervision and monitoring”.

It is recommended that the government needs to maintain an updated database of wildlife movement. Incentivising farmers to grow non-cash crops around the Protected Areas and providing of crop insurance may be taken up. Maintenance of Elephant Proof Trenches, solar fences, special structures and adequate use of Elephant Depredation Camps may be ensured to reduce Human Wildlife Conflicts and Speedy action may be initiated to work on strengthening of corridors by purchasing private land within a time frame. The government may consider the implementation of the recommendations brought out in Reports like “The Right of Passage” (2005)^{vii}, Gajah (2010)^{viii}, Conservation plan for securing selected Elephant Corridors in South Western Ghats” (2011)^{ix} and “Report of the Karnataka Elephant Task Force Report” submitted to High Court of Karnataka in September 2012^x.

Development of people is always welcome but not at the cost of negative ecological aspect in the ecosystem.

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^{iv} <https://www.thehindubusinessline.com/economy/agri-business/farmers-demand-cover-for-crop-damage-by-wild-animals/article8124325.ece>

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