

Co-Existence of Asiatic Lion in Human Vicinity: Sustaining the Roar of Kingdome Outside the Gir Forest

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ABSTRACT

The conflict between the human being and Wildlife is not new; it is coming from last so many years, when Homo sapiens have been on the earth. That time all the people were dependent of Wildlife for their food, some were specialized in hunting big animals like leopard, lion, elephant some are specialized in fishing and so on. So the series of human animal goes way back to primitive times, especially in a country like India, which is having huge human population as well as blessed with a vast range of biodiversity and Wildlife resources. The continuous growing human population is the main reason for creating a resource competitive environment between the Wildlife and human being, which is ending up with human- animal conflicts. With lots of civilization and developmental activities, human settlements have crossed the boundary of the forest area and even threaten the very existence of the Wildlife. Only five per cent (1,71,921 km²) of the geographic area of India is categorized as protected areas which are considered safe haven for animals. India is a unique country with respect to Wildlife conservation and human-animal

friendly relationship. Despite a huge population, we still have most of large wild species. India has 70% of the world's lion billion population and these large animals can't not be restricted to roam inside a few kilometers of protected areas. Had that been done, they would have all died due to inbreeding and lack of connectivity. This review article is focussing on the current need of mitigating strategies for human-lion conflicts outside the Gir forest in the Saurashtra region of Gujarat.

Keywords Asiatic lion, Human-lion conflicts, Wildlife, Conservation, Biodiversity.

Human- lion conflicts

Unexpected human expansion and consequent resource exploitation in the last two centuries have sheared the range and imperiled the survival of biodiversity globally (Ripple *et al.* 2014). Gir forest is the second name of Asiatic lion, which is also famous as a home for Asiatic lion on the earth. The Gujarat forest department has suggested that the Asiatic lion population in Gir National Park has increased by 29% in the past five years from 523 in 2015 to 674 in 2020. The department has also said the distribution area of lions in the Saurashtra region of Gujarat, where Gir is situated, has increased by 36% from 22,000 sq km in 2015 to 30,000 sqkm. The growth in population has direct relationship with area expansion for the Wildlife conservation. The distribution area grew to around 18,500 sq km in 2010 and in 2015 it spread across 22,000 sq km. Presently, the Kingdome of Lion' is found in 30,000 sq km area in nine districts of Saurashtra namely Junagadh, Gir Somnath, Amreli,

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Liliya, Botad, Bhavnagar, Porbandar, Jamnagar and Rajkot. Over the last several years, the lion population as well as the distribution range of lions has also expanded to a large extent in Gujarat. The consistent shift in feeding patterns of lions is mainly due to the improved availability of Wild prey. In two decades, more than 40 % of total number of lions was spotted outside the Gir landscape (Singh 2017). Coincident with this increases, lion shifted their predation preference from a diet composed of 75% livestock to one composed of just 25% livestock (Singh 2011). The proportion of Wild and domestic animals killed by lions varied between seasons: Significantly more Wild ungulates were killed during summer season when preys were concentrated around water holes. Domestic animals were the major prey outside the protected area. Thus, despite high proportion of Wild prey in the diet, lions still considerably depend on livestock (Meena *et al.* 2011). Surprisingly, the number of lions and their dispersion trend continued beyond the expectation of conservationists. Lions had limitations of dispersion in the west due to intensive cultivation and human habitation, but waste-land, forest and presence of grazing ground with live-stock and blue bull attracted the spilled lion population in the east, radiating far away in the eastern landscape in Amreli and Bhavnagar districts (Singh 2017). Lions are dispersing out of the Gir PA and have already occupied about 9,000 km² of agro-pastoral landscape. Lions

outside the PA depend substantially on livestock, thereby increasing the chances of human-lion conflict in the region. In the agro-pastoral landscapes, there are no free economic benefits for the communities. Due to high human densities and demand for land most human free inviolate protected areas in India and elsewhere are too small to hold viable populations of large carnivores for the long-term. Coexistence with humans therefore becomes essential if large carnivores were to be conserved for the long-term. Considering the case of Asiatic lions, only about 10% of the lion population resides in the human-free Gir National Park, 62% of lion population resides in the Gir Sanctuary (with Maldhari settlements) while 22% of the adult lion population resides in the human-dominated agro-pastoral landscape of Saurashtra (Banerjee 2012). The number of villages where lions kill livestock and domestic animals is increasing by about 100 each year. If compensation is not revised regularly and its distribution is not prompt as it is now, pastoral farmers will suffer severe losses and may not be as tolerant of lions anymore (Jhala *et al.* 2019). However, with fast-changing land-use patterns and commercialization of natural resources, such societal constraints are rapidly eroding. Local community's apathy towards lion conservation resulting from livestock depredation by carnivores (lions and leopards) often leads to complacency towards professional lion poachers (Singh 2007, Meena *et al.* 2011).

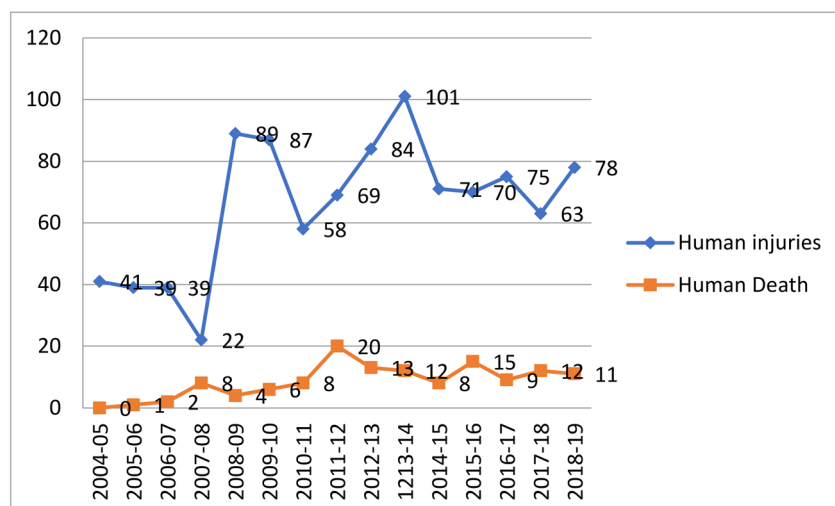


Fig. 1. Human causality by Wildlife in Junagadh and Rajkot area of Asiatic lion.

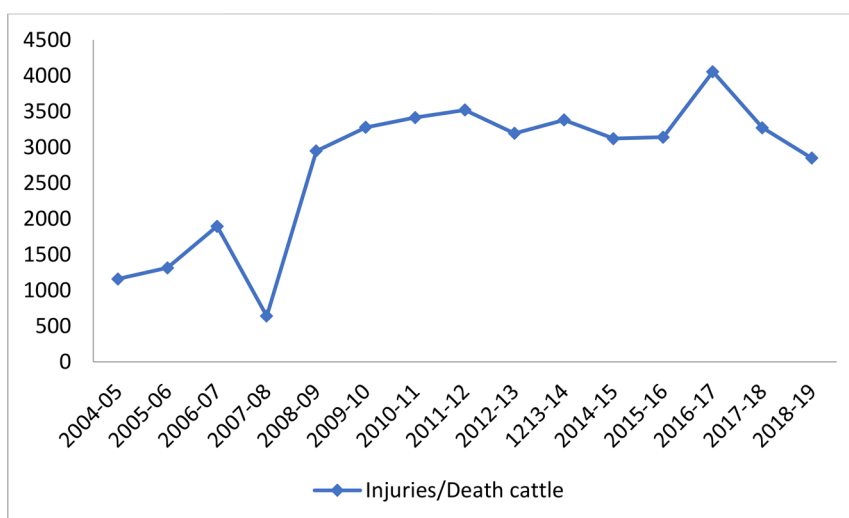


Fig. 2. Cattle injuries/death by Wildlife Junagadh and Rajkot area of Asiatic lion.

Human –lion relationship

The lion population is expanding to areas where they were extirpated hundreds years ago. In these areas, people do not have the cultural tradition of living with large carnivores. The lion density is low in the larger Saurashtra landscape right now, but if this increases, the livestock kills and injuries to and death of humans will increase and people will no longer remain tolerant. Retaliation by humans will eliminate lions from landscape (Jhala *et al.* 2019). It has been noticed that during the period 2004 to 2019, the lion's population has increased substantially so the human causality by Wildlife has been also increasing (Figs.1, 2). Compensation claim records of the forest department also indicated that average livestock loss to predation per month within protected area to be 45 and outside protected area to be 89 (Pathak *et al.* 2002). During the period 1978-1991, an average of 14.8 lion attack and 2.2 lion-caused death occurred annually with 82% incidents outside the protected area (Saberwal *et al.* 1994). During the period 1995-2002, 265 cases of carnivore attacks (lion and leopard) on people have been reported amounting to an average of 34 cases per year with 80% incidents occurring outside protected area (Pathak *et al.* 2002). The numbers of livestock kills in villages outside PA have increased in all Forest Divisions proving that natural dispersal or movement of lions has not been unidirectional but rather radiated in all directions outside the PA. The

average annual livestock predation has shown more than 100% increase except in Gir (Wildlife) Division in the past five years. An average of 30 kills per year could be expected to occur within 1-5 km of PA with the incidence reducing beyond 30 km (Meena and Kumar 2012). Chellam, who has done in-depth research on the Asiatic Lions, indicated that the threats from diseases increase drastically when lions scavenge on livestock carcasses which may have died from disease. Approximately, 15.2 lion death occur per year with greater proportions (70%) of accident occurring outside the PA boundaries based on 71 lion death occurring between 2001 and 2005 (Meena *et al.* 2007, Meena 2008). Majority of the people in the agro-pastoral landscape of Saurashtra have a positive attitude towards lions (Banerjee 2012, Meena *et al.* 2014). This is vital, but a positive attitude by the majority does not necessarily translate into tolerant coexistence, since it is the behavior of the few but resentful people that ultimately determine the dynamics of human-lion interface (Kansky and Knight 2014). Thus, the coexistence of lion in human vicinity and free ranging outside the park boundaries endangers human life and also causes substantial economic loss to local community due to loss of their livestock and domestic animals in predation. Protecting the existing free-ranging lion from disease, accidents and poaching is thus, another important aspect of lion's conservation. Human lion conflict mitigation is one of the most challenging aspects of Gir PA management.

Historically, while the tolerance among livestock owners has fluctuated with time, lions have always preyed on livestock (Joslin 1973). Thus, conservation measures should address the lion's dependency on livestock. Improving husbandry practices may reduce losses at least at an individual herd level. To minimize the human lion conflicts, more research is needed on how conservation measures should better integrate management of the ecosystem without losing the interest of local community who are coexisting with Asiatic lions.

Another key aspect in the conservation of Asiatic lion is their scattering towards agricultural landscape and human habitation, which is going to increase the interaction between the two, which could be unfavorable to conservation efforts. There may be possibility that lion outside the protected areas have learnt behavior towards humans. They can navigate market places at night, find livestock places, find carcasses at *gaushalas* (cow shelters) and can target humans and more, in that case the local community will no longer going to tolerate the losses. In order to mitigate these conflicts, the last resort is the conservation measures that require political commitment and law enforcement to revamp the mess of both the lion and local community who coexist with them.

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