



Study Of Human-Wildlife Conflict With A Few Specific Species In The Jammu And Kashmir

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Abstract: Despite Jammu & Kashmir's beautiful scenery, there have been incidents of violence between people and local animals. Local people and wildlife such as snow leopards, Asiatic black bears, and red deer have intricate relationships that are explored in this research. These animals are representative of the region's biodiversity, yet they often compete with humans for food, shelter, and other resources. The research draws on ecological and anthropological theories to investigate what causes these conflicts and how they could be prevented.

Keywords: humans, wildlife, species, local communities, Jammu and Kashmir

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INTRODUCTION

There has always been a complex relationship between people and the natural environment. Human-animal conflict has emerged as a major problem due to the growing complexity of relationships between humans and wildlife as a result of human expansion around the globe.[1] When human populations' demands and actions come into conflict with the habits and environments of diverse animal species, a complex problem arises that may have negative effects on both groups. Among the many species that have contributed to this struggle, a select number have come to symbolise the difficulties that people have encountered while attempting to coexist with the natural world.[2]

The range of possible contexts for human-wildlife conflict is enormous, extending from rural to urban areas and even across continents. Economic losses, material damage, and even human casualties may come from interactions between humans and animals. Alternatively, these interactions may disturb ecosystems and jeopardise rare species, reducing the availability of essential biodiversity and ecological services.[3-4]

The complexities of human-wildlife interaction are best shown by looking at a few representative species. The African elephant (*Loxodonta africana*) is one example. These gentle giants are respected for their brilliance and charm, yet their relationships with human societies have often been fraught.[5-6] Elephants' ability to roam freely and safely has been severely hampered by the demand for land for agricultural and urban development. Because of this, elephants can wander into human communities in quest of food, wreaking havoc on crops and even presenting a threat to human safety. Protected areas and wildlife corridors have been established to let elephants roam around more freely and to lessen the likelihood of conflict between different species.[7]

Predatory creatures, such as the beautiful big cats, provide a unique perspective to the story of human-wildlife conflict. Predation on livestock is a major source of conflict between people and predators like

lions (*Panthera leo*) and tigers (*Panthera tigris*). Predators' bad reputations tend to grow when they cause substantial economic losses to local populations due to livestock depredation. The number of these majestic animals is further threatened by retaliatory murders after such losses. Community-based conservation and compensation systems are two examples of conservationists' attempts to strike a balance between human and predator needs.[8]

Conflicts with top marine predators like sharks provide yet another prominent example of human-wildlife tensions in the natural world. Although shark attacks on people are uncommon, they nonetheless get a lot of media attention and have the potential to strike dread into the hearts of many. Sharks are an important part of the marine ecosystem, yet they are often killed needlessly out of ignorance and fear. Researchers and conservationists are working to correct misconceptions about shark behaviour and promote safe fishing methods to lessen the number of sharks killed by mistake.[9-10]

Human-wildlife conflict is complex and calls for a diversified solution. Restoring habitat and managing protected areas are two examples of what can be done. Sensor-based deterrents and early warning systems are two examples of what can be done technologically. Equally crucial are community participation and education projects, which attempt to increase people's knowledge and enjoyment of the diverse animal species on Earth.[11]

Finally, the complex interaction between humans and other forms of life is a defining tale of our time, revealing both the difficulties and the rewards of living in harmony with other species. The numerous forms that human-wildlife conflict may take are a powerful reminder of the need of conservation efforts and responsible land use practises. The complexities of the fight for peaceful coexistence are revealed when we learn more about individual situations involving animals like African elephants, predatory large cats, and marine apex predators. We may work towards a future in which people and other forms of life coexist and prosper by adopting creative strategies, scientific understanding, and community solidarity.[12]

METHODOLOGY

This research was a partnership between the orthopaedics and plastic surgery departments of the Government Medical Sciences College in Rajouri, Jammu and Kashmir, India.

Our goal in conducting this research was to better understand the current state of wild-animal injury cases, the difficulties associated with treating these patients due to the lack of tertiary care facilities in our region, and the patterns of injury seen among the various types of wild-animal injuries. From 2011 January through 2022 December, researchers gathered data.

The emergency room took in everyone who needed help. When dealing with multiple injuries, the ATLS protocol was implemented. The necessary inquiries have been made. All patients received prophylaxis against ant rabies and antitetanus. Patients were administered antibiotics effective against gram-positive, gram-negative, and anaerobic bacteria simultaneously. Both the wounds and surrounding area were thoroughly debrided and lavaged. Patients were transferred to their appropriate units when they had been stabilised. Multidisciplinary care was required for the vast majority of patients.

RESULTS

There were 1067 reports of injuries by wild animals, with 811 (76%) coming from bear mauling, 67 (6%) from leopard attacks, 22 (2%) from red foxes, and 14 (1.5%) from monkeys. In 153 (14%) cases, the patient had no idea what kind of animal it was. 77% of the victims were men, while 20% were females. 15% of the victims were kids younger than 10. The average patient's age was 40.

Table 1: Deaths and injuries from human-wildlife conflicts broken down by year.

Year	No. Of deaths	No. Of injured
2011-2012	3	79
2012-2013	2	113
2013-2014	2	139
2014-2015	4	145
2015-2016	3	157
2016-2017	3	186
2017-2018	17	215
2018-2019	8	252
2019-2020	12	138
2020-2021	20	300
2021-2022	22	317

Table 2 shows that the black Asiatic bear is the most prevalent animal responsible for assaults on humans, reflecting Table 1's trend indicating an upward trajectory in human-wildlife conflict over the last decade. Because red foxes and monkeys are less aggressive and smaller in size, they cause less serious injuries. No patient suffered any permanent disfigurement or impairment as a result.

Table 2: Caseload, fatalities, injury types, and responsible wildlife.

Wild animal	Black bear	Leopard	Red fox	Monkey	Unknown
Total number of patients	811	67	23	17	60
Total deaths	21	49	0	0	7
Most common injury	Scalp and facial injury	Injuries around neck	Injuries below waist	Back and lower limb injuries	Mixed pattern

Bear maul injuries

There were 811 documented bear mauling injuries. Bear mauls were responsible for the deaths of 21 persons over this time period. Seven of them didn't make it to the hospital in time, and another 14 died in the emergency room from shock. Most accidents that happened when people were gathering firewood in the woods were caused by unexpected contacts. Second most prevalent were attacks by mothers protecting their young. Having a bear attacked because it was being pursued by a crowd ranked third most often. Less than one percent of bear assaults were aggressive, meaning the bear entered a populated area and began attacking humans there. Of all the assaults, 99 percent happened at the base of a hill. All the patients had head and facial wounds.

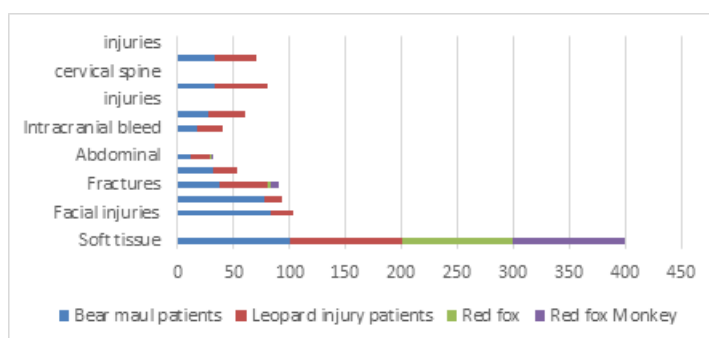


Figure 1: Injury distribution among predator species.

These injuries ranged from minor scrapes and bruises to severe fractures and dislocations of the face. Due to the severity of their injuries, most of our patients required extensive treatment across many surgical specialties.

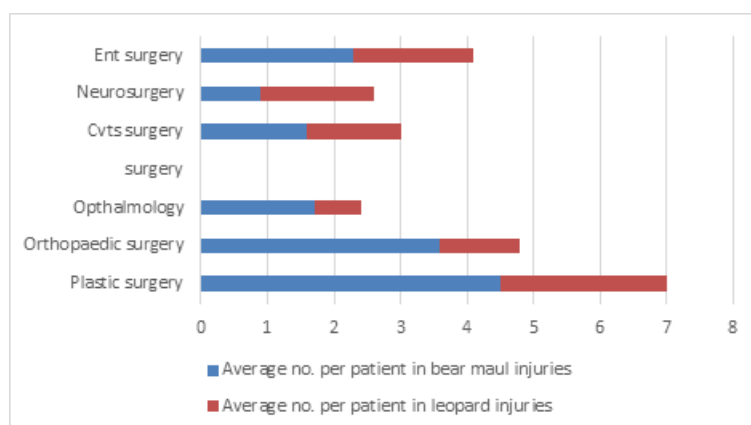


Figure 2: Injuries from bears and leopards result in an average of 3.3 surgical procedures per patient.

Postoperative problems were more common in individuals who had been injured by humans than by other animals. Seventy-five percent of these individuals had a disfiguring scar on their head or face. In 47 cases, enucleation was required due to irreversible eye injury.

There were 556 cases of broken face bones. 33 people bled within their skull. Musculoskeletal injuries were the second most often reported kind of injury. Musculoskeletal injuries affected 474 persons. Eighty-seven percent had injuries to the upper extremities. Fractures of the lower extremities occurred in 13%. Only 4% of patients (less than 1%) had spine fractures. Less than 10% of patients had abdominal visceral injuries. Patients were followed up on for an extended period of time, and data revealed that 32% developed a mental disorder, most often sadness and PTSD. There was a persistent scarring of the face or scalp in 42% of the individuals. Facial deformity occurred in 12% of patients and was permanent in 2%. One in sixteen cases had permanent impairment. Patients at 9% who are either totally or partially blind. Patients stayed in the hospital for an average of 18.5 days.

Leopard injuries

During this time span, our hospital received 67 reports of leopard-related injuries; 49 of those patients did not survive. Most of the damage was done to the cervical region, namely the cervical spine, the oesophagus, the pharynx, and the blood vessels. 49 individuals out of a total of 67 did not survive. The majority of these patients required numerous surgeries due to the severity of their injuries.

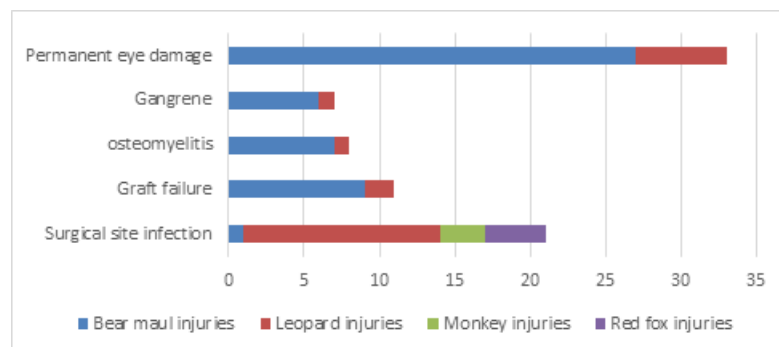


Figure 3: Problems that arise right after surgery.

Due to the decreased risk and smaller size of red foxes and monkeys, injuries sustained by humans were less severe and resulted in no fatalities. No one required more than one operation, and no one had any lasting deformity or handicap.

DISCUSSION

In Jammu and Kashmir, India, tensions between humans and animals are rising rapidly. Although some research has been published on the topic of injuries in both wild and domestic animals, the actual prevalence and pattern of injuries in wild species, as well as treatment advice, remain elusive.² This is

one of the first and most comprehensive series on conflicts between humans and other animals.

Our research found that bear maul injuries accounted for 76% of all injuries. Of them, 6% were leopard attacks. Red foxes caused 2% of injuries, whereas monkeys caused 1% of assaults. The animal's species could not be determined in 14% of the instances. The majority of the participants in this research were young guys, with a median age of 39. The majority of wild animal assaults on man are maulings, and Nabi et al. confirmed this finding. Tigers and wolves were the other test subjects.

Most bear maul victims were young guys (73%) who were working in rice fields or apple orchards. It's possible that men's growing interest in outdoor activities explains the disproportionate number of male casualties. Our research shows that most assaults happen near foothills around harvest time (July–September).

The majority of assaults occurred during the day, and more specifically, in the early morning hours. Other research have shown the same trend. In recent years, however, there have been several reports of bears breaking into homes and attacking their occupants. As a result of the population boom, individuals have moved into the woods and turned previously used rice fields into orchards for growing apples.

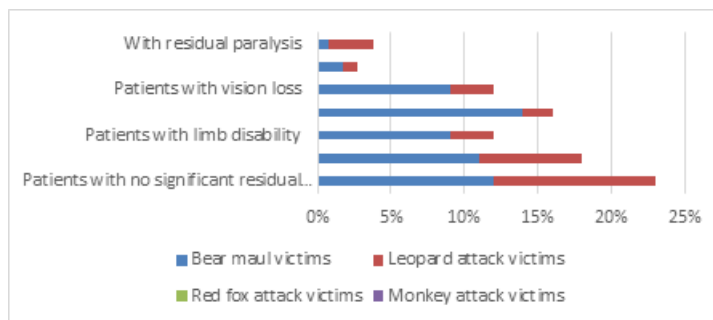


Figure 4: Outcome in the end

Bears, which are rather tall animals, attack with their paws and claws, focusing on the upper torso, particularly the head and neck. Fascial/scalp lacerations, facial/skull bone fractures, cerebral haemorrhage, eye/ear injuries, and other head/neck injuries were documented in 100% of patients. The majority of bear maul victims were attacked in unexpected encounters. Most fights had no defensive measures. Only a tiny fraction of bear maul assaults (less than 1%) were really malicious. The leopards mostly attacked offensively.

Grizzly and polar bear attacks have been demonstrated to have a higher mortality rate in several investigations.[13] Women who went into the bush to gather firewood were disproportionately affected by leopard assaults. Almost every patient experienced some kind of damage to a structure in their neck, whether it a major artery, a vertebra in their cervical spine, their oesophagus, or their throat. [14]

Offence was the primary mode of assault. Because of leopard attacks, 73% of the patients perished. Similar findings were found by Nabi et al. in their research on leopard injuries. There was a 50% fatality rate due to leopard attacks 3,4. A higher percentage of leopard attacks occurred near or inside human settlements than bear mauling incidents. The building just outside our hospital doors has been the site of the most recent confirmed leopard assault. It's possible that tigers are moving into human settlements

because they can no longer get enough of their basic diet in the wild.[15]

CONCLUSION

The study of human-wildlife conflict in the beautiful Jammu and Kashmir reveals a unique tale that reflects the complex interaction between nature and mankind. Natural wonders abound in this area, and with them come a wide variety of animal species that have coexisted here for aeons. The ever-changing interplay between human actions and the habits of animals has its own unique set of difficulties, however, and has prompted the need for in-depth investigation into this topic. There is a decline in both death and morbidity from red fox and monkey assaults. This might be because these creatures are smaller and less violent than bears and tigers.

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