

Himalayan black bear-human conflict, conservation and management strategies in Kashmir valley: A review

Nasir Rashid Wani*

* Faculty of Forestry, Sher-e-Kashmir University Of Agricultural Sciences and Technology Of Kashmir, Shalimar (J & K), India

E-mail : nasirwani2012@gmail.com

Submitted : 01.12.2013

Accepted : 30.12.2013

Contact No : +91-9906793627

Published : 31.04.2014

Abstract

Conflicts between humans and wild animals are a serious problem in many parts of the world and Himalayan Black bear-Human conflict is a major concern through the western Himalayas and particularly in Kashmir valley of Jammu and Kashmir state. Due to increasing human population and changing land use practices, much of the wildlife habitats have been lost to human habitations, expansion of agriculture/horticulture lands and developmental activities. The damage and destruction caused by black bear to human property and sometimes to human life is a real and significant danger to many human communities. And with the bear often killed, captured or otherwise harmed in retaliation, these conflicts are one of the main threats to the continued survival of many species. Himalayan black bear numbers are decreasing in many areas due to large scale habitat degradation, poaching of gall bladder and skins and control to reduce crop depredation. In order to strengthen the bear conflict management activities of the Department of Wildlife Protection, J & K State, a fully equipped well trained and motivated conflict management team comprising of wildlife staff, veterinarians, staff of related departments or institutions, and wildlife NGO's should be formed at the wildlife division level to respond to conflict situations, including bear rescue, translocation and monitoring. The long term conservation of Himalayan black bear depends on adequately protecting the species and their habitats, reducing habitat degradation, strictly controlling poaching and illegal trade of gall bladder and skin and in reducing bear-human conflicts.

Key words : Black bear, Human conflict, Kashmir Valley, Management Issues, Poaching

INTRODUCTION

As human populations expand and animals natural habitats shrink, people and animals are increasingly coming into conflict over living space and food. The impacts are often huge. People lose their crops, livestock, property, and sometimes their lives. The animals, many of which are already threatened or endangered, are often killed in retaliation or to prevent future conflicts. Human-wildlife conflict is one of the main threats to the continued survival of many species, in many parts of the world, and is also a significant threat to many local human populations. Wildlife conservation in South Asia is a challenging task as there is a need for a balanced approach between natural resource conservation and meeting the growing needs of human population and development. Wildlife biologists, managers and policy makers have to evolve strategies for conservation of endangered species and their habitats on one hand and dealing with wildlife-human conflicts on the other. Himalayan black bear (*Ursus thibetanus*)-human conflict is not a local, small phenomenon but an issue that spans a diverse array of geographic and human demographic contexts. The increase in number of black bear-human conflict cases is due to competition for resources at different levels, fear as a threat to local people, and trade of body parts of animals for bear bile or skin^[1]. Although humans and carnivores have co-existed for a long time but the frequency of conflicts have increased in recent decades as a result of increased human activities in wildlife areas or on natural habitats^[2]. People generally get rid of these kinds of unusual conflict problem by killing the problematic animals. Bear populations usually require large areas of land to survive. They typically compete directly with people for resources such as space, food, security and cover. Almost all bear species kill or injure livestock, damage agricultural or horticulture crops, or otherwise directly compete with people^[3]. Therefore, if legally protected species damage livestock, property or agricultural

fields, people think that they are at a disadvantage against these species, and since the species is legally protected, they prefer illegal ways of dealing with this problem.

Himalayan black bear (*Ursus thibetanus*) is one of the four bear species found in India. It has been recorded from 18 countries throughout southern and eastern Asia^[4]. This carnivore is known to inhabit tropical, subtropical, temperate broadleaved and conifer forests. Altitudinal range of Himalayan black bears may extend up to 4300 m and on rare occasions they may venture into alpine meadows, beyond the tree line. Individual bears, however are known to change their habitats and altitude seasonally^{[5][6][4]}. In India, it is found in Jammu and Kashmir (except Ladakh), Himachal Pradesh, Uttar Pradesh, Sikkim, Arunachal Pradesh and other north-eastern states and in the foothills of West Bengal^[7]. Himalayan black bear has been recorded from 83 Protected Areas in India. Over the years different range countries have proposed tentative estimates on population and density for Himalayan black bears. For India, the tentative population estimate for the species is 7000-9000 individuals^{[8][4]} and the tentative density estimate, only for Dachigam National Park is about 1.3 to 1.8 bear/km²^[7]. However, Himalayan black bears face considerable stress in the wild from constant loss of habitat and also from regular poaching to fulfill the demand for its body parts for use in traditional medicinal practices^{[9][10][7][11]}. Considering this, it may be assumed that the population and density estimates proposed for different countries need a proper review^[4]. But in spite of this constraint, it is evident that global population of Himalayan black bears is showing signs of decline over the years and this has led IUCN to include this species under the globally vulnerable species category^[4]. The Himalayan black bear is listed in Schedule II of J & K Wildlife Protection Act 1978. Though this species is highly threatened globally and also in India, very few studies on its population status and threats have been undertaken and they are mostly restricted to western Himalayas^{[8][12][13]}. The incidents of

human-black bear conflict usually increase towards the end of autumn, which incidentally coincides with the pre-hibernation fattening season of the bears. During this season the bears are highly active and tend to travel long distances in search of food. However, if there is a shortage of wild fruits, especially 'Oak'^[14], they may walk into nearby human settlements looking for food leading to conflict. Here, it may be stated that Himalayan black bears feed on succulent vegetation during spring, insects and a variety of tree and shrub-borne fruits in summer and favour nuts and acorns in autumn. At times, their diet may contain a good proportion of meat (which they either kill or scavenge)^{[15][16][17][18][14]}.

Conflict Types

➤ Damage to agricultural crops and orchards

The croplands and orchards are unintentionally providing high quality food for bears. Black bear has excellent memory that helps it to locate seasonally available cultivated crops around its habitats. Individuals that have once tasted good quality and high energy food come out regularly to raid the crops and orchards near their natural habitats. As bears become habituated to cultivated crops, growing such kinds of crops near bear habitats actually lead to human-bear conflicts in the immediate area and the broader community. Knowledge of bear ecology and behaviour can provide a basis for solutions to prevent human-bear conflicts. Most conflict cases arise when bears have been using human food sources such as garbage, livestock foods, orchards, and or when natural foods are in low abundance in their habitat^{[19][20]}.

➤ Livestock killing

Killing of livestock (sheep, goat, and cow) by black bears is not uncommon and may become a serious problem. Black bear do occasionally kill livestock when there is no food available in wild for their animal protein requirements. There are instances when grazing domestic animals are predated by bear in their habitats and some cases of livestock killing in night shelters. During late autumn and early winter when food availability in bear habitats is low and due to late snowfall some bears go in for late hibernation and during such period kill livestock.

➤ Human attacks and killing by black bear

Increased human population in and around protected areas, forest encroachment and increased dependence on forests by humans have led to increased frequency of bear-human encounters. Black bear compete directly with people for resources such as space, food, security and cover. Black bear-human encounters can be classified into two categories: Predatory and defensive. Black bear generally do not attack people unless and until: (1) it feels threatened, (2) if it is a sudden encounter, or (3) a female black bear with cubs or with food^[21].

Reasons of conflict

✓ Habitat destruction

Demographic and social changes place people in direct contact with wildlife as human population grows; settlements expand into and around the protected areas as well as in urban and sub-urban areas. Species habitat loss, degradation and fragmentation are also connected to population growth. All these factors result in the conflict. In the last five years illegal cutting, timber smuggling and increased fruit plantation replacing forests has resulted in a drastic decline of forest cover. This resulted in an increase of human-bear encounters.

✓ Misconceptions about the behaviour of bears

Misconception regarding the behaviour of the black bear among the locals resulted in an increased intolerance towards the bears. Whenever a bear is sighted in the area, instead of giving safe passage to the bear and allowing it to reach the forests the local people make a huge mob surround it and try to kill the bear. Because of this, Wildlife officials are not able to rescue the animal. Sometimes being unable to reach the animal in time and sometimes not being able to disperse the mob determined to kill the animal, has led to the loss of the animal.

✓ No proper demarcation between fruit orchards and forest areas

There is no buffer area between the fruit orchards and the forested areas. Because of this, bears easily get into fruit orchards and have begun to eat habitually from them.

✓ Mismanagement of the waste generated by army and local people

If bears are allowed to access human food and garbage, they quickly learn to associate it with people and become what is called food-conditioned. These bears lose their fear of humans and become habituated to people. Habituated and food-conditioned bears are more difficult to drive away than wild bears. If a bear develops a taste for human food, it usually keeps coming back for more. Wild bears can become permanently food conditioned after only one encounter with non-natural food. Food-conditioned bears learn to expect human food and are more likely to approach people than wild bears^[22]. These bears can damage property and they are a potential risk to people. In most cases, however, when a bear comes into conflict with people, it's the bear that loses.

Conservation problems

• Population threats

Respondents reported that Himalayan black bear populations in India are largely threatened due to poaching for gall bladder and skins. While the former is believed to be of medicinal value, the latter is for trophy or ornamental purposes. Many Chinese medicine texts recommend Himalayan black bear as a source for medicinal bile. Although bears are protected in India, it has usually been difficult to prosecute the accused in poaching cases because of lack of prima facie evidence in the courts. Moreover, poaching and subsequent illegal trade across international borders is thought to be widespread. India has long boundaries with Pakistan, China, Nepal, Bhutan, Bangladesh, and Myanmar, much in remote, rugged mountainous terrain. Thus, it is difficult to police the borders to control cross-border trade. Growing demand for bear products in Asia have led to serious impacts on bear populations in India.

• Human-Black bear interactions

One of the serious limiting factors for black bear conservation in India is the response of people to human-black bear conflicts. Reports of livestock killing by black bear and attacks on humans to the Forest and Wildlife Department are common, largely in the north western and western Himalayan region. Reasons for the increased incidence of reported cattle killing and attacks on humans by black bear may be: (1) shrinking black bear habitat due to extension of agricultural lands, human encroachment and habitat degradation, leading to increased use of agricultural lands by bears (2) increasing human population in and around Protected

areas and forested areas and increasing dependency on forests for human needs, leading to increased frequency of bear-human encounters and (3) increasing awareness among local people regarding compensation paid by the government for damages to humans and livestock by wildlife, leading to an increase in the proportion of incidents. Any increase in black bear populations in the recent past is very unlikely, with the exception of a very few undisturbed areas.

• **Habitat threats**

The potential black bear habitat in India is estimated to be about 14,500 km² and 4,300 km², respectively, of which, in both cases, <5% is protected under the existing Protected areas. Throughout India, there are major threats to black bear habitats. In Jammu and Kashmir, the political unrest and associated activity prevent effective habitat protection.

Management issues

The Himalayan black bear is listed as vulnerable in the Red Data Book (International union for Conservation of Nature and Natural Resources^[23]) but not listed as threatened in the 1996 Red List of Threatened Animals^[24]. The National Wildlife Action Plan^[25] was launched in 1983 to establish and manage a network of protected areas and to restore habitat and protect wildlife in multiple-use areas. The number of protected areas in India has risen from 131 in 1975 to 566 as of 1 January 2000, and there are proposals for new and modified protected areas, which would raise the number of protected areas to 858. In total, this would protect and manage 187,192 km², which is 5.7% of India's area^[26].

Recommendations

❖ **Human-Bear conflict study**

In the absence of good information, the scale and nature of human-wildlife conflict becomes a matter of personal opinion. Conflict with wildlife is an emotional issue and as a result reports and opinions can be biased, creating a false impression of the size of the problem. The systematic and objective gathering of information allows the managers to understand the problem and to develop management policies to reduce the conflict. So the human-bear conflict has to be studied properly throughout the state, and with a specific focus on local conditions.

❖ **Training**

The department of Jammu and Kashmir is lacking infrastructure and proper training. Regular training workshops should be organized for wildlife crimes in general and, specifically about the rescue and tranquillization of bears in conflict situations. Besides this, the workshop should also train police officials to handle mobs in such situations.

❖ **Rapid action teams**

Local trained rescue teams should be started at village level in all highly conflict prone areas to tackle the problem in a more effective manner.

❖ **Awareness**

Education and training activities at different levels would have the objective of disseminating innovative techniques, building local capacity in conflict resolution and increasing public understanding of Human-wildlife Conflict. Educating rural villagers in practical skills would help them to deal with dangerous wild animal species and to acquire and develop new tools for defending their crops and livestock. In long term these

awareness program will promote commitment towards conservation.

❖ **Rescue centre and orphanage**

Some sort of transit facility should be started to accommodate the rescued bears (only in cases when release is not possible). This facility can also accommodate the abandoned Himalayan black bear cubs. The release of captured bears should be undertaken with care to avoid fresh conflict in release areas and to ensure adequate food sources for the bears.

❖ **Training of veterinary doctors**

J & K Wildlife Protection Department is lacking trained wildlife veterinarians. Some sort of special training program should be organized for the vets.

❖ **Physical barriers**

As fruits orchards are the main attraction for the bears, fencing can be constructed along the edge of the fruit orchards using solar power fences.

❖ **Waste management system that restricts wildlife access to human refuse**

Good standards of waste management are important to avoid attracting bears to human settlements and to prevent wild population being augmented and artificially sustained by human-induced food availability. Each stage of waste handling should be addressed, from collection to transportation to disposal.

❖ **Disseminating wildlife awareness to reduce Human-Black bear conflict**

Wildlife awareness is a high priority activity which needs to take place in the state. Conservation education is totally lacking in the state. Therefore, there is an urgent need to start a wildlife awareness program.

The program should focus on the following issues

- (1) Changing the attitude of the locals towards wildlife
- (2) Increasing awareness towards the importance of wildlife
- (3) Precautions to avoid close encounters with the black bears and avoidance techniques.
- (4) To train locals to handle the situation, when the black bears come into their settlements without harming or resorting to killing the animal.

Scope of conservation education

Jammu & Kashmir needs an immediate powerful conservation education program that will benefit both the wildlife and local people. There are a few examples of conservation education programs which could help a lot in minimizing the human-wildlife conflict such as Namdapha Tiger Reserve, Arunachal Pradesh^[27]. It is important that the conservation education program should concentrate on the benefits to locals. This will help to get support from the locals. The immediate need is to train locals about the precautions to take in order to avoid the encounters with black bears. The education program should be on a long term basis, and all local administration should be involved in such awareness programs. The local media should also be included so as to help raise support.

▪ **Role of media**

The media usually gives more attention to animal attacks than

necessary. This makes the people's attitude more negative towards wildlife as well as towards the enforcement authorities.

The media should report such cases sensibly. The media can be used as one source to create awareness among the locals. This can be done by publishing awareness articles in newspapers and telecasting awareness programs on local TV Channels.

▪ Role of administration

Most often, the poor communication system is responsible for making the locals attitude negative towards wildlife and wildlife managers. In Jammu & Kashmir, the wildlife authorities' usually only reach the site when either the bear has been killed by the locals or it has been surrounded by a crowd of up to 2000-3000 people. The communities are unaware of the measures to take to avoid conflict so the local administration should create rapid action teams at the village level through locals. This rapid action team can handle the conflict situation till the wildlife authorities come. This team will also be helpful to the local police department in crowd control. Good communication plays a vital role in the mitigation of conflict. The administration should make the people aware about wildlife. This can be done with the help of local radio channels and with posters and leaflets. Administration needs an increased infrastructure through vehicles, tranquilizing equipments, and cages. These need to be based region-wise for quick availability, especially near problem areas.

▪ Role of army

In the case of Jammu & Kashmir the army can play a vital role in creating awareness among locals. In almost all the conflict prone areas there are army bases. Administration should organize a training workshop for Army personnel so that in the case of bears coming to human settlements, the army can help the villagers handle the situation.

▪ Role of local & national NGO's

National and local NGOs can help administration financially as well as technically to mitigate the Human-Black bear conflict. NGOs can provide rescue equipment such as tranquilization guns, blowpipes, tranquilization chemicals and rescue vehicles to help Wildlife Protection Department. NGOs can also help the administration train volunteers who can visit the conflict prone areas to spread awareness about the measures to avoid conflict.

CONCLUSION

There is a need to develop a management plan for the mitigation of Human-black bear conflict. The fruit orchards should be properly fenced near the protected areas so that bears do not come in search of food. The creation of mobile rescue teams, training of wildlife staff in handling, tranquilizing and transporting wild bears and proper waste management in the villages around the forests could also mitigate the conflict. Other long term solutions include avoiding making fruit plantations near the forest areas and creating a transit facility for the rescued adult bears as well as abandoned black bear cubs.

REFERENCES

1. Mills JA, Chan S, Ishihara A. The bear facts: The East Asian market for bear gall bladder. TRAFFIC International Cambridge, United Kingdom, 1995
2. Graham K, Beckerman AP, Thirgood S. Human-predator-prey conflicts: ecological correlates, prey losses and patterns of management. Biological Conservation. 2005;122: 159-171.
3. Chauhan NPS. Human casualties and livestock depredation by black and brown bears in the Indian Himalayas, Ursus. 2003;14(1):84-87.
4. Garshelis DL, Steinmetz R. *Ursus thibetanus*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. www.iucnredlist.org, 2008
5. Izumiyama S, Shiraishi T. Seasonal changes in elevation and habitat use of the Asiatic black bear (*Ursus thibetanus*) in the Northern Japan Alps. Mammal Studies. 2004; 29: 1-18.
6. Sathyakumar S. Status and Management of Asiatic Black Bear and Himalayan Brown Bear in India. Ursus. 2001: 12:21-30.
7. Sathyakumar S. Status and management of the Asiatic black bear in India. In: Servheen C, Herrero S, Peyton B. (eds.) Bears: Status Survey and Conservation Action Plan. IUCN, Gland, Switzerland, and Cambridge, UK, 1998. P.202-207.
8. Sathyakumar, S. Status of Asiatic Black Bear in India (IN) *Asian Bears for their Future Asian Issues in Conservation and Management*. Chapter 2. Proceedings of Special Workshop to be held during the 17th International Conference on Bear Research and Management, Japan, 2006
9. Mills J, Servheen C. 1994. The Asian Trade in Bears and Bear Parts: Impacts and Conservation Recommendations. Bears: Their Biology and Management. A Selection of Papers from the Ninth International Conference on Bear Research and Management, Missoula, Montana, February 23-28, 1992. Vol. 9(1). International Association for Bear Research and Management, 1994. p. 161-167.
10. Yiqing M, Xiaomin L. 1998. Status and management of the Asiatic black bear in China. In: Servheen, C., Herrero, S. and Peyton, B. (eds.) Bears: Status Survey and Conservation Action Plan. IUCN, Gland, Switzerland, and Cambridge, UK, 1998. p. 202-207.
11. Shepherd C. Bear Trade in Southeast Asia: The Status of Protection for Southeast Asia's Bears. In: Williamson, D. F. (eds.) Proceedings of the Fourth International Symposium on Trade of Bear Parts, 4 October, 2006, Nagano, Japan. TRAFFIC East Asia. Japan, Tokyo, 2006. P.22-26.
12. Sathyakumar S, Viswanath S. Observations on food habits of Asiatic black bear in Kedarnath Wildlife Sanctuary, India: Preliminary evidence on their role in seed germination and dispersal. Ursus. 2003; 14(1): 103-108.
13. Sathyakumar S, Choudhury A. Distribution and Status of Asiatic black bear in India, 2005. J. Bombay Nat. Hist. Soc. 2008;104(3): 316-323.
14. Hwang MH, Garshelis DL, Wu YH, Wang Y. Home ranges of Asiatic black bears in the Central Mountains of Taiwan: Gauging whether a reserve is big enough. Ursus. 2010; 21(1):8196.
15. Bromlei FG. Bears of the South Far-eastern USSR. Indian National Scientific Documentation Centre, New Delhi, 1965
16. Reid D, Jiang M, Teng I, Qin Z, Hu J. Ecology of the Asiatic black bear (*Ursus thibetanus*) in Sichuan, China. *Mammalia*. 1991: 55:221-237.
17. Hwang MH, Garshelis DL, Wang Y. Diets of Asiatic black bears in Taiwan, with methodological and geographical comparisons. Ursus. 2002; 13: 111-125.

18. Huygens OC, Miyashita T, Dahle B, Carr M, Izumiyama S, Sugawara T, Hayashi H. Diet and feeding habits of Asiatic black bears in the Northern Japanese Alps. *Ursus*. 2003;14: 236-245.
19. Craighead L. Bears of the World, Voyageur Press, Inc.U.S.A, 2000. p.132
20. Davis H, Wellwood D, Ciarniello L. Bear Smart Community Program: background Report, 2002. p.101
21. Centre for Wildlife Information. Be Bear Aware- Bear Encounters: <http://www.centerforwildlifeinformation.org>, 2005
22. Woods J. *Creating Bear Aware Community*, Summaries of presentation, Columbia Mountain Institute of Applied Ecology, Columbia, 2005
23. IUCN. International Union for Conservation of Nature and Natural Resources, Red data book: Mammalia, Morges, Switzerland, 1974
24. IUCN. Red list of threatened animals. International Union for Conservation of Nature and Natural Resources, Gland, Switzerland, 1996
25. MOEF. Ministry of Environment and Forests. Indian Wildlife (Protection) Act. Government of India, New Delhi. Natraj Publishers, Dehradun, India, 1983
26. Rodgers WA, Panwar HS, Mathur VB. Planning a Wildlife Protected Area network in India. *Wildlife Institute of India, Dehradun, 2000*
27. Mishra C, Datta A, Madhusudan MD. *The high altitude wildlife of Western Arunachal Pradesh: a survey report*. CERC Technical Report No. 8. Mysore, India: Nature Conservation Foundation, International Snow Leopard Trust, and Wildlife Conservation Society (India Program), 2004.