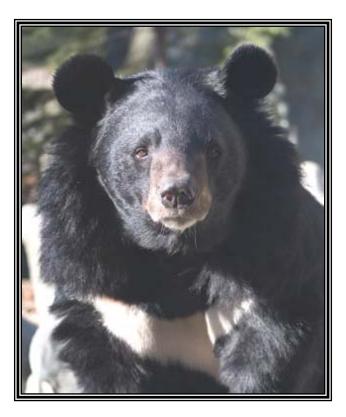
ASIATIC BLACK BEAR CONFLICT AND IT'S MANAGEMENT IN JAMMU & KASHMIR



A Preliminary Survey Report

Rohit Singh
Wildlife SOS
Working to save Wildlife
www.wildlifesos.org





Wildlife SOS

Wildlife SOS came into existence in 1995. Since then Wildlife SOS, a non-profit charitable conservation organization has been working to highlight and address conservation issues with specific emphasis to displaced wildlife and addressing conflict situations. It was established with the purpose of protecting and conserving India's wildlife.

Wildlife SOS started addressing the brutal practice of Dancing Bears in India in 1995. Working in collaboration with the Uttar Pradesh Forest Department India's biggest Bear Rescue Centre, "The Centre for the Conservation and Rehabilitation of Bears", also known as the Agra Bear Rescue Facility, was created in the year 1999.

Wildlife SOS also operates a wildlife rescue and distress cell in Delhi and responds to calls from the Police, Fire Department and members of the public who report displaced wild animals or wildlife in distress. Of special significance is the exclusive snake rescue unit which rescues snakes from snake charmers; and from residential areas that these reptiles have accidentally strayed into. This also functions as a rehabilitation opportunity to employ snake charmers who have been convinced by Wildlife SOS to give up their cruel practice of defanging snakes and using them for entertainment.

Wildlife SOS also conducts education programmes for school children under which children are taught how to identify various animals and birds, and what the importance of each species in the ecosystem is. The organization also holds workshops for creating awareness among the enforcement authorities, police personnel, forest staff & wildlife officers about wildlife crimes and prevention methods. The Tribal Rehabilitation Programme of Wildlife SOS is geared towards rehabilitating the bear dancing Kalandar tribal in an alternative source of employment. Under this programme, Wildlife SOS also funds education fees, books and uniforms to encourage children of the Qalandar tribe to attend school. A carpet weaving unit several tailoring schools, leather cutting co-operatives and individual self employment schemes have been funded. Training and funding have been provided to allow them to operate their own auto rickshaws and cycle rickshaws.

'Forest watch' is our undercover team, dedicated to the purpose of stopping the poaching and trafficking of wildlife in India. The team works closely with the forest department and the police in eight states across the country. It has successfully brought-to-book many interstate rings of poachers and traders in the past years and also rescued wild animals, birds, reptiles from traders and people who kept them in illegal custody. Our legal cell ensures that prosecution of the offenders is carried out.

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BLACK BEAR CONFLICT AND MANAGEMENT JAMMU AND KASHMIR



An Investigative Report by: Rohit Singh Wildlife SOS

In collaboration with

J & K Wildlife Protection Department

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PREFACE

Conservation has no messiahs today. Saving a species from dying out seems to be a massive struggle because the government is faced with a complex of issues all of which seem beyond quick resolution, beginning with the encroachments on protected and reserved forests; the pressures of the human population, the economic needs and the competing demands on forest resources of man and animal to the changing climate, air and water pollution, and depletion of the forests themselves. Undoubtedly animals are losing at the moment and perhaps the entire effort of conservation seems to now concentrate on the saving of individuals of the species where possible.

Our current study on the conflict of man and the Himalayan black bear is again a complex issue and the solutions might turn out to be the problems of tomorrow as in the case of the leopards of Maharashtra where trapping the so called "man eaters" and releasing them elsewhere created as many problems as it seemingly solved. Keeping them in cages and zoos is not the answer as both conservationists and animal welfare activists will agree; creating a large, close to natural rescue centre is an option, but a limited one, as at some point space and funds do stop.

The alternative that *might* work, and which we have to cling to in the hope it will certainly work, is the solution that depends on making the community the protectors of wildlife. We have to approach with the optimistic view that, education and awareness can, to a large degree awaken a respect in people for the wildlife they are still lucky enough to possess. A certain pride has to be aroused in the beauty of nature and wildlife, a certain value system has to be taught to the villages and villagers who live at the margins of the forests, that preserving wildlife and co-existing with it is something their previous generations have done successfully and hence the current intolerance for wildlife has to be tempered by commonsense practical resolutions. Our study has suggested some on – the - ground solutions and with the support of the government, the J.and K. Wildlife Protection Department would perhaps succeed in easing the conflict situation between wildlife and humans.

We thank the J and K Wildlife Protection Department for their cooperation and for so kindly giving us an opportunity to hold this workshop. We hope this can be the beginning of greater collaborative ventures between Wildlife SOS and the J and K Wildlife Protection Department.

Kartick Satyanarayan Chairman Wildlife SOS.

ACKNOWLEDGEMENT

This work would have been impossible without the financial help provided by our international partners International Animal Rescue, UK and One Voice, France.

It was really a pleasure for me to work under the supervision of Mr. Kartick Satayanarayan, Founder Chairman Wildlife SOS and Ms. Geeta Seshamani, Secretary, Wildlife SOS and the help I received from them is inexpressible in words.

I offer my sincere thanks to J & K Wildlife Protection Department for their support and guidance. The project would have been impossible without the help rendered through many Wildlife officers of the department. My Special thanks to PCCF Wildlife, Mr. A. K. Shrivastav, Regional Wildlife Warden Kashmir, Mr. F. A. Gillani, Wildlife Wardens Mr. Sohail Intsar & Mr. Rashid Nakkash. The list of names of the field officers who assisted us is too long to mention here but I am grateful for their help and interest.

I gratefully acknowledge the help and support provided by my friend Mr. Nasser Nazir. I would also like to thank Mr. Nazir, Forester Dachigam National Park for sharing his working experience with me.

Rohit Singh

EXECUTIVE SUMMARY

This report deals with the findings of the preliminary survey conducted by the author in the state of Jammu and Kashmir. The objectives of the survey are as follows:

- To find out the rough number of bear attacks that have occurred in the Kashmir valley in the last six months.
- 2. To find out the number of bears and the number of humans killed or injured during the attacks.
- To find out the main reasons for human-bear conflict in the Kashmir valley (according to the locals as well as our observations).
- To give some practical recommendations to minimize the conflict.

On the basis of the findings of the survey we recommend the following measures to reduce the Human-Himalayan Black Bear conflict in the state:

- 1. First of all, the problem (conflict) has to be studied scientifically to understand the root cause of the problem and then give some viable solutions.
- 2. A training workshop should be organized to train the wildlife staff for the rescue of bears. The workshop should also include the tranquilization and handling of the bears.
- 3. A campaign should be organized in the villages to create awareness among the villagers about the role of bears in the maintenance of ecosystem as well as what precautions they can take to avoid encounters with the bears.

- 4. Some sort of transit facility should be started to accommodate the bears after rescuing. This transit facility can also work as a home for abandoned Himalayan Black bear cubs.
- 5. Mobile rescue teams should be started to attend all rescue calls in their respective areas. Each team should be properly equipped and should be headed by a trained person.
- 6. All fruit orchards near to the Reserve Forests should be fenced so that bears can't enter these areas of proximity to human inhabited areas in search of fruits.

1. 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.

The Himalayan Black Bear is listed in Schedule II of J & K Wildlife Protection Act 1978. It is classified as 'Vulnerable' because of the poaching for bear bile and gall bladders prevailing in several areas.

In December 2006, a moon bear (*Ursus selenarctos*) was brutally stoned and then burned alive by an angry mob in Pulwama, India. Wildlife SOS (WSOS), an organization dedicated to saving India's wildlife, investigated this heartbreaking incident. The conclusion was that this situation wasn't uncommon but represented a growing trend in India to resolve human/bear conflicts with cruelty.

WSOS is determined to do something about this problem so that other moon bears do not undergo the same fate. WSOS is proposing the creation of the Moon Bear Conservation Project in order to address this growing problem.

We did a preliminary survey, to understand the problem of human-bear conflict in the Kashmir valley. In this small period it was not possible to survey the whole Kashmir valley. We tried our best to collect the information related to bear attacks in the last 6 months in a specific area.

2. PROJECT AREA:

Jammu & Kashmir is located between N 34.08" and E 74.83" with an area of 222236 sq. km. Jammu and Kashmir can be divided into four major geographical regions: the Shivalik range, the Kashmir valley and the surrounding Himalayas , the Pir Panjal range and the Indus river basin comprising of Leh and Kargil . The survey was conducted in the Pir Panjal range. The mountains, foothills and plains house a zoogeographic diversity ranging from Oriental to Palearctic flora and fauna.

The animals that are to be protected range from the snow leopard (Panthera uncia), the common leopard (Panthera pardus), brown bear (Ursus arctos), the Himalayan black bear (Selenarctos thibetanus), the hangul (Cervus elaphus hanglu), red fox (Vulpes vulpes), markhor (Capra falconeri), musk deer (Moschus moschiferus), yellow-throated marten (Martes flavigula) to the shapu (Ovis orientalis).

The area is home to golden eagles (Aquila chrysaetos hodgsoni), lammergeiers (Gypaetus barbatus), black eagles (Ictinaetus malayenis), kestrels (Falco tinnunculus), hobbys (Falco subbuteo centralasiea) and griffon vultures (Gyps himalayensis) among many more. The flora in the higher slopes consists of deodar (Cedrus deodara) and blue pine (Pinus wallichiana), white oak (Quercus dilatates), walnut (Juglans regia), and mulberry (Morus alba). Alpine meadows are filled with wild flowers and herbs which provide sustenance to a myriad of insect forms which in turn feed the birds, amphibians and reptiles.

Table 1: List of settlements visited during the survey

Arigam	Mundoora	Midoora
Rathsoona	Koil	Shikargah
Noorpura	Tral town	Zakhora
Lal bazaar	Safapura tral	

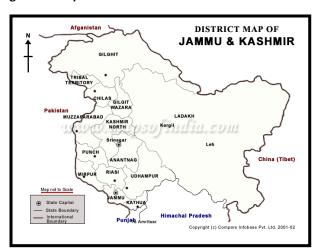


Figure 1: Map of Jammu and Kashmir

3. METHODOLOGY:

questionnaire survey method was used to collect information about the human-bear encounters in the surveyed area. The questionnaires were administered face to face using the native language Kashmiri and Hindi with



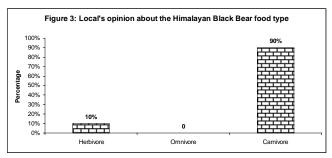
adequate Urdu words to put the interviewee at ease. More than 10 villages where the incidences of human-bear conflict were very high during the last six months were visited and more than hundred villagers were interviewed to collect information about the conflicts. Investigators also interviewed army personnel, police officials and forest officials to get their views about human-bear conflict in the

4. FINDINGS:

4.1 LOCAL'S OPINION ABOUT THE HIMALAYAN BLACK BEARS:

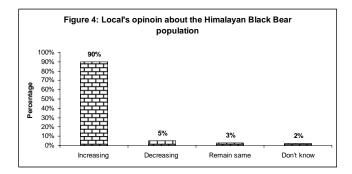
It is common to assess the nature of the conflict and attitudes of people by using interviews (Kaczensky 2004, Andersone & Ozolins 2004, Roshaft *et al.* 2003, Ermala 2003). The use of open ended questions in such interviews gives more chance to understand people's ideas, but it also leads to more difficulty when analyzing raw data. Open ended questions have a distinct advantage over closed format questions when the primary goal is to learn behavior and attitudes of respondents (White *et al.* 2005).

4.1.1 About the food type: More than hundred people were interviewed with open ended questions to get their opinion about the food type of bears. 90% of the people said that the bear is an carnivore and 10% of the interviewees said that the Himalayan Black bear is an herbivore (Figure 3). The attitude of the locals to the bear is that it is a carnivore, therefore more prone to attack them. This indicates that giving them correct information about bear food habits should be an important part of any awareness campaign.

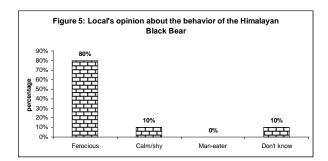


4.1.2 About the population: 90% of the interviewees said that the Himalayan black Bear population is increasing in the valley and only 5% of the locals said that the population is decreasing. 3% of the locals claimed that the population has remained the same over the last few years while 2% of the people said they didn't know about the

trend in bear population (Figure 4). This indicates that the attitude of the villagers was again focused on the increasing problem which they correlated to an increasing population of bears. But the real fact is habitat loss, search of food, shelter etc has led the bears to move closer to the human habitation hence their greater visibility.

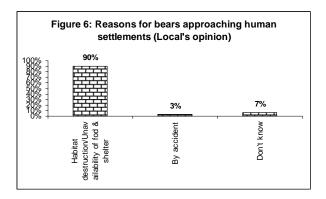


4.1.3 About the behavior: 80% of the interviewees had the misconception that the bear is a ferocious animal while 10% of the interviewees said that the bear is a shy/calm animal. 10% of the interviewees didn't know about the behavior of Himalayan Black Bear. It is important to note that no one claimed that bears can be maneaters (Figure 5) but yet hostility towards the animal was already established.

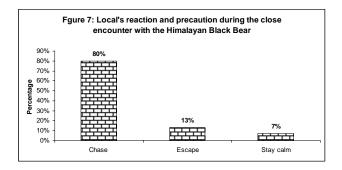


4.2 LOCAL'S OPINION ABOUT THE HUMAN-BEAR CONFLICT:

4.2.1 About the reasons of human-bear conflict: The most common opinion of the locals about the reason of human-bear conflict is habitat destruction/unavailability of food and lack of shelter in the forests (90%). 3% of the people were of the opinion that the bears come accidentally towards the human settlement, while 7% of the interviewees didn't know about the reason for the conflict (Figure 6).

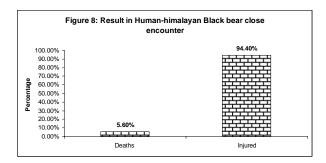


4.2.2 About their reactions and the precautions taken during a close encounter: A total of 80% of the interviewees told us that during their close encounter the bear was actually being chased by people. In 13% of the cases people tried to escape from the area, while in 7% of the cases the people tried to stay calm to avoid the encounter (Figure 7). Very few could directly claim aggressive behavior directly from the bear.



4.3 FINDINGS OF THE HUMAN-BEAR CONFLICT IN THE AREA OVER FEW MONTHS:

4.3.1 Results of the encounters: Through interviews 53 Human-Himalayan black bear encounters were recorded in last six months, out of which 5.60% of the cases resulted in deaths, while in 94.40% of the cases the victim survived with injuries. Out of the total of 53 human-Himalayan black bear encounters, 4 bears were killed by the locals, and in the rest of the cases the bears were rescued and released into the forest by the Wildlife authorities or given a safe passage towards the forest. It is important to note that only in village Rathsona, a single bear attacked three persons one after the other in a day, but this was an isolated case. In many cases, livestock belonging to the locals were injured or killed by the bears (Figure 8). Such encounters happen because of the habit of villagers to store harvested honey & fruits in their cattle shed. Chasing the bear away leads to the injuries usually.



4.3.2 Time of attack: The survey revealed that there was no specific trend in the time of attacks, as bear attacks were observed to take place throughout the day. For example in the case of village Zakhora, a bear attack occurred in the afternoon at 3:00 PM while in the case of village Rathsona, the attack occurred in the morning at 10:30 AM. In the case of village Koil, the attack occurred during the night at 9:30 PM while the attack in village Mundora occurred at 12:30 PM.

A crucial finding is that Black Bears seem to have delayed hibernation periods. Moreover just before hibernation the foraging is more intense and availability of food in this period is closer to the villages and villagers than in the degraded jungles. This information has to figure in any awareness campaign.

Table 2: Details of persons injured or killed due to Bear attacks (2004- Jan2007)					
Year	Person killed	Person injured			
2004	1	1			
2005	2	1			
2006	11	12			
2007	3	-			



Figure 9: Victim of Himalayan Black bear attack



Figure 10: Cow injured by Himalayan Black bear

4.4 REASONS OF CONFLICT:

- 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 (IUCN World Park Congress 2003). 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 behavior of bears: Misconception regarding the behavior 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: During the survey it was observed that 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 (Woods 2005). 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.

5. RECOMMENDATIONS:

5.1 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.

- **5.2 Training:** Our discussion with Wildlife Officials revealed that the department 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. Beside this, the workshop should also train police officials to handle mobs in such situations.
- **5.3 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.
- **5.4 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.
- **5.5 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.
- **5.6 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.

5.7 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.

5.8 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.

6. Disseminating Wildlife Awareness to reduce Human Himalayan Black Bear conflict:

The preliminary survey was conducted on human-black bear (*Selenarctos thibetanus*) conflict in the state of Jammu and Kashmir. The questionnaire survey method was used to collect this information. The attitude of the local people towards black bears was also assessed and the possible solutions to the problem were also discussed with the local villagers, Wildlife officials and the army personnel. The attitude of the locals was extremely negative towards the behavior of black bears. The possible reasons of the conflict were also discussed with the locals. The survey provides a set of recommendations to reduce the conflict.

It was found that 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 in to their settlements without harming or resorting to killing the animal.

As human populations expand and natural habitats shrink, people and animals are increasingly coming into conflict over living space and food. The impacts are often huge on both man and animal. People lose their crops, livestock, property, and sometimes their lives in these encounters. 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. Regions where there has been a history of human-animal conflict, for instance with sloth bears (Melursus ursinus) in Madhya Pradesh, Chattisgarh, Jharkhand, Bihar and Karnataka, will benefit with conservation education programmes combined effective communication techniques are designed and implemented.

This chapter discusses a case study of Human-Himalayan black bear conflict in the state. The case study involves the local community whose negative attitude towards the Himalayan black bears is threatening its existence. This chapter also discusses the long term solutions to the problem and suggests means by which education and awareness can be used to reduce the conflict.

a) 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 (Mishra et.al.2004).

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 b lack 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.

b) 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.

c) 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 regionwise for quick availability, especially near problem areas.

d) 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.

e) 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.

f) Conclusion-

Along with the conservation education program the conflict has to be studied properly to develop a management plan for the mitigation of Human-black bear conflict. Another measure that was recommended by the earlier study done by the author is the fencing of fruit orchards. The creation of mobile rescue teams, training of wildlife staff in handling, tranquilizing and transporting wild bears: proper waste management (Singh, 2007) in the villages around the forests. 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.

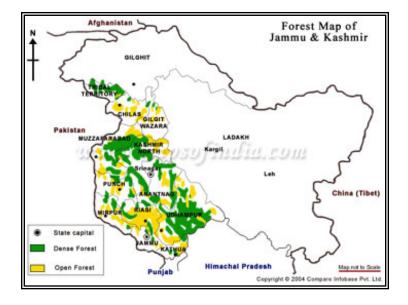
REFERENCES

- Ambrali, H. (2006). "Analysis of Human-Bear conflict in Yusufeli, Artvin, Turkey" MSc Thesis, Graduate School of Natural and Applied, Sciences
- Andersone, Z., Ozolins, J. 2004. Public perception of large carnivores in Latvia. Ursus 15(2):181–187
- Ermala, A. 2003. A survey of large predators in Finland during the 19th
 -20th Centuries. Acta Zoologica Lituanica. 13(1): 15-20
- Kaczensky, P., Blazic, M., Gossow, H., 2004. Public attitudes towards brown bears (Ursus arctos) in Slovenia. Biological Conservation 118: pp. 661–674
- Mishra, C., A. Datta, and M. D. Madhusudan. 2004. 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)
- Røskaft, E., Bjerke, T., Kaltenborn, B., Linnell, J.D.C., Andersen, R.
 2003 Patterns of self-reported fear towards large carnivores among the Norwegian public. Evolution and Human Behavior. 24: 184-198.
- White, P. C. L., Jennings, N. V., Renwick, A. R., Barker, N. H. L. 2005.
 Questionnaires in ecology: a review of past use and recommendations for best practice. Journal of Applied Ecology. 42: 421-430.
- Woods, J. (2005). "Creating Bear Aware Community", Summaries of presentation, Columbia Mountain Institute of Applied Ecology, Columbia
- WWF's Human-Wildlife Conflict Manual (2005).WWF- Wildlife Management Series

WPC Recommendation 20-Preventing and Mitigating Human-Wildlife Conflicts IUCN-World Park Congress 2003 [www document] Available at:

http://www.iucn.org/themes/wcpa/wpc2003/pdfs/outputs/recommendations/approved/english/pdf/r20.pdf

APPENDIX I FOREST MAP OF JAMMU AND KASHMIR



APPENDIX II

QUESTIONNAIRE SURVEY DATASHEET

A.NAME OF THE RESPONDENT:					
1. Name of respondent:	2. Age of the respondent:				
3. Occupation of respondent:	4. Area:				
5. Date of the interview://_	_				
B. ABOUT THE HUMAN-BEAR ENCO	DUNTER:				
Date of attack:	Name of the person attacked:				
Sex of person attacked: M/F	Age of person:				
	Attacked:years				
Village/Place:	Number of witness:				
Time of attack:	GPS location:				
Morning/afternoon/evening/night	N				
	E				
Activity of the victim before attac	k:				
Type of reaction human-bear clos	<i>e encounter:</i> Nobody				
harmed/Human harmed/ Bear harme	d				
People's reaction and precaution in a close encounter:					
	Escape/shoot to				
scare/stay calm/don't know/other					
Victim:					
Killed during attack Survived	Survived but died later Taken to				
hospital					
Body recovered Survived	Survived with injury				
Lost body parts:					
Extent of injuries:					
Bear sighting (Number):					
Fate of the sighted Bear:					
Killed/ tranquilized & rescued/run away to forest					
Action after attack:					
Incident reported to:					
Headman/Forest Dept./Police Dept./District					
Administration/Health/Mission/Wildlife Authorities					

Measures used to prevent more attacks:								
Livestock killed:								
Туре	Dog	Goat	Sheep	Cattle	Other			
Number								
Period								
Value								
C. PEOPLE'S OPINION ABOUT THE BEARS:								
1.	Bear's food:		Omnivore/Herbivore/Carnivore/Don't					
	know							
2.	Behavior of bear's:		Ferocious/calm/man-eater/Don't know					
3.	Bear pop	ulation:	Increasir	Increasing/decreasing/remain				
	same/Don	't know						
4.	Why bears are coming to human settlements?							
	Food/shelter/accident/other							

Name of investigator Signature

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