

## **Abstract**

The Asiatic black bear (*Ursus theibetanus*) is threatened species according to the IUCN Red list Data book. Once it was widely distributed throughout the country but now it is only confined to moist temperate forests of the Himalayan Mountains of the Hazara forest division and the Azad Jammu Kashmir. Population was estimated up to 234 Black Bears in 1992-3 according to the reports of Wildlife Department survey N.W.F.P. Study result showing that in Kohistan there were 98 Black Bears recorded according to the survey reports of wildlife department Kohistan in 1998. The population of the species was estimated from the local's interviews and there were no scientific method used. So There is an urgent need is required to monitor the black bear population, assessment of human-bear conflict in its habitat in the area on pure scientific methods. Habitat loss, black bear invasion to cropland increased the human-bear conflict. After the review of reports of WWF, Wildlife Department and other organizations it was concluded that the District kohistan and Mansehra are the potential sites for the long term research study on the species.

## CHAPTER.1 INTRODUCTION

### 1.1 Bear families

The bear family “Ursidae” contains 08 species of bears worldwide. These includes the: (a) American black bear (*Ursus americanus*); found in Alaska, Canada, forested areas of the lower United States, and Northern Mexico. (b) Brown Bear (*Ursus arctos*) (the grizzly and Alaskan brown bears are usually considered to be sub specie of the brown bear), found in northwestern north America, north Eurasia and scattered areas of southern Eurasia from the Alps west to Himalayas.(c) Polar Bear (*Ursus maritimus*), found in arctic and sub arctic areas of Canada, Alaska, Russia, and Greenland. (d) Asiatic Black Bear (*Ursus thibetanus*), found from Iran east through India to Vietnam and north through china to Japan. (e) Sun Bear (*Helarctos malayanus*), found in Indonesia and mainland Southeast Asia.(f) Sloth Bear (*Melursus ursinus*) in Nepal, India and Sri Lanka. (g) Spectacled Bear (*Tremarctos ornatus*) in the Andes Mountains from Venezuela to Bolivia. (h) The Giant Panda (*Ailuropoda melanoleuca*), in central and western china. Although some books classify the giant panda with the raccoons, or in its own family, the best evidence now indicates that it is very specialized bear. Ref; <sup>[1]</sup>

### 1.2 Black bear(*Ursus thibetanus*)

(*Ursus thibetanus* or *Selenarctos thibetanus*), also known as the Asiatic Black Bear, Tibetan black bear, and the Himalayan black bear, with a distinctive white or cream "V" marking on its chest. It is a close relative of the American black bear, with which it is thought to share a European common ancestor. Ref; <sup>[2]</sup>

#### 1.2.1 Physical characteristics

The Asian black bear is intermediate in size between the sloth bear and the sun bear. It grows to approximately 130 to 190 cm (4¼ to 6¼ ft) in length. Males weigh between 100 and 218 kg (220 to 480 lb) and females weigh between 50 to 125 kg (110 to 275 lb).<sup>[4]</sup> The tail is 4.4 inches long.<sup>[3]</sup> Its neck is remarkably thick and its ears large for its size. The claws however are comparatively weak.<sup>[5]</sup>

### **1.2.2 Range and habitat**

The Asian Black Bear has a wide distribution range spanning from the east to west of the Asian continent. This bear can be found in the forests of hilly and mountainous areas in East Asia and South Asia, including South Korea, North Korea, and Iran. Afghanistan, Pakistan, Bangladesh, Northern India, Nepal, Bhutan, Myanmar, Thailand, Vietnam, Laos, southern Siberia in Russia, northeastern China, Taiwan, and Japan. It can be found in areas with elevations as high as 4,700 m (13,776 ft), but in lower lands as well. In some parts of its range, the Asian Black Bear shares its habitat with the larger and stronger Brown Bear (*Ursus arctos*). However, the smaller black bear has an advantage over its competitor: its climbing skills which help it reach for fruit and nuts in the trees. Asian Black Bears share Giant Panda habitat in China's Wolong Reserve, where they feed occasionally, among other things, on bamboo, which is their more specialized relatives' favorite food. The subspecies of the Asian Black Bear that is found in Taiwan is the Formosan Black Bear (*U. theibetanus formosanus*).

### **1.2.3 Diet**

The Asian Black Bear is an omnivore, opportunistic and seasonal in diet. In fall, they feed on acorns, chestnuts, walnuts, and other fat-rich resources. In the spring, new plant growth of bamboo, raspberry, hydrangea, and other plants help them in getting new variety of food. Other plants offer food in summer, including raspberries, cherries, and grasses. Insect food, especially ants, augments the summer diet. Asian Black Bears eat carrion, and sometimes attack livestock also. Vertebrates, mostly small, are taken when available, including fish, birds, rodents and other mammals.<sup>[3]</sup>

### **1.2.4 Behavior**

This Himalayan black bear are more aggressive towards human beings as compare to other bear species. Numerous records and evidences of bear attacks and killings have been recorded in Pakistan and India. This is probably mainly because, the Asian Black Bear is more likely to come into contact with people, and will often attack if startled.<sup>[6]</sup> Black bears are not preyed upon by tigers as frequently as brown bears, due to their ability to escape danger by rapidly climbing trees.<sup>[7]</sup>

### **1.2.5 Status**

Black bear listed as vulnerable in the red list data book of the threatened animal species of the IUCN. The important habitats of the black bear increasingly reduce in last three decades because of the increasing population of the various continents. Similarly the rate of deforestation in these areas also increased with the resource utilization and population burden. And that cause conversion of forest areas into the agricultural lands and into the housing colonies. With the agricultural development farmers killed the remaining population of the species to protect their farm lands and also killed them as retaliatory killing.

### **1.2.6 Bears as medicine:**

Bear gall bladders have medicinal value and is being used to stimulate sexual potency, bear bile is not prescribed as an aphrodisiac in the classic tenets of TCM (Traditional Chinese Medicine). Medical applications include treatment of life eating cancers, burns, pain and redness of eyes, asthma, sinusitis, and pain in general. Bear gall bladder is also used to treat serious liver ailments and as a tonic to prevent liver damage from over consumption of alcohol.

### **1.2.7 Black bear skin products:**

Black bear also provides different types of products like Fur coats, jackets, shawls, stoles, head bands, ear muffs, hand bags, purses, gloves, hats, blankets, rugs, carpets which are very much demandable in the fashion industries in last few decades.

### 1.3 Introduction of Pakistan

Pakistan is situated between the latitudes 23° and 36° North and between the longitudes of 61° and 75° East. It has an area of 796,095 square kilometers (kms). India is on its eastern border, the People's Republic of China lies to the north east. Afghanistan is situated on its northwestern boundary line while Iran shares border with Pakistan in the southwest. In north only a 24 km long Wah khan border of Afghanistan separates it from the Tajikistan. Jammu and Kashmir is a disputed territory located between Pakistan and India. Pakistan controls a portion of the territory as Azad (Free) Kashmir and the Federally Administered Northern Areas (FANA), while India controls a portion as the state of Jammu and Kashmir.



Map of Pakistan

Pakistan extends some 1,700 kilometres northward to the origins of the Indus among the mountains of the Himalayas, Hindu Kush and Karakoram. Many of their peaks exceed 8,000 meters including K-2, at 8,611 meters, the second highest in the world. Pakistan has a coastline of about 1,046 kilometers with 22,820 square kilometers of territorial waters and an Exclusive Economic Zone of about 196,600 square kilometers in the Arabian Sea.

## 1.4 Wildlife of Pakistan

The mountainous areas embracing the Himalayan, Karakorum and Hindukush Ranges of Pakistan are rich in fauna and flora. These areas provide an excellent habitat for wildlife in the form of alpine grazing lands, sub-alpine scrub and temperate forests. These habitats support a variety of wild animals. The areas are difficult for human beings to access; hence, most wildlife is present in reasonable numbers though some are endangered for other reasons. Some of the main wildlife species are the snow leopard, the black and the brown bears, otter, wolf, lynx, Himalayan ibex, markhor, bharal, Marco Polo's sheep, shapu, musk deer, marmots, tragopan and monal pheasants. The snow partridge and snow cock reside at higher elevations. The Rhesus monkey, common langur, red fox, black bear, common leopard, a variety of cats, musk deer (over a limited area), goral, several species of flying squirrels, chakor, partridge and pheasants (koklass, kaleej and cheer) live in the lower elevations. Amongst these the snow leopard, musk deer, Marco Polo's sheep, and the brown bear are endangered. The Tibetan wild ass and the blue sheep populations have been reduced drastically. The cheer pheasant is reported to be extinct from within Pakistan's boundaries, and is included in the IUCN Red Data Book. The western horned tragopan was reported to have disappeared from within Pakistani territory, but has now been relocated to Indus Kohistan, although its numbers are low.

The Himalayan foothills and the Potohar region, including the Salt Range and Kala Chitta Range, are covered with scrub forests, which have been reduced to scanty growth in most places. Medium-sized animals like the Punjab urial, barking deer, goral, chinkara, partridges (grey and black), seese and chakor are supported in these habitats. A variety of songbird fauna also occurs in these areas.

The Thar Desert supports a fair population of the Chinkara gazelle. Peacocks are only found in the wild, mainly because of the protection they enjoy in Hindu communities. The wild ass migrates from the Indian part of the Rann of Kutch to the Pakistani part in search of food.

The Houbara bustard is a regular winter visitor to the desert. Visiting diplomats have hunted and reduced their numbers. The great Indian bustard is sporadically sighted. The

imperial sandgrouse is another migrant visiting these areas. Grey partridges are frequently sighted. The python is also threatened with extinction.

The Sulaiman and Kirthar Ranges present habitats manifesting unique characteristics. The former supports the straight-horned markhor, chinkara and urial, whereas Sindh ibex, urial, chinkara and common leopard occupy the latter. The straight-horned markhor, which is almost extinct from within settled boundaries of Pakistan, occurs in somewhat fair numbers in the Tribal Areas. The chakor, seese and grey partridge are birds commonly found in the tracts.

The animals found in the south-western mountains of Balochistan are: Sindh ibex, Chiltan markhor, straight horned markhor, wild sheep, leopard, marbled pole cat, Blandford's fox, chinkara, goitered gazelle and the marsh crocodile. The cheetah, is believed to be extinct and the Makran (Baluchistan) bear critically endangered. The Houbara bustard (migratory), sandgrouse, black and grey partridges, and the chakor and see see partridges are also found here.

The striped hyena and the wolf are widely distributed in the sparsely populated parts of the country. However, information about them is scanty. Information about carnivores in general is difficult to obtain because of their nocturnal mode of life and high mobility. The black bear and brown bear populations are also not understood completely.

Birds of prey like the peregrine, cherrug or saker falcons, tawny eagle, imperial and greater spotted eagles, osprey, shikra, and the black-winged kite occur throughout Pakistan but their population statuses are unknown.

Pakistan's coastline of 1,050 km consists of a variety of habitat types, supporting a wide range of animals, of which over 1000 are fish species. Pakistan's marine flora and fauna have not been studied properly. Hence, detailed information on these species is deficient. Along the shores, there are four species of marine turtles: the ridley, green, leather back and hawksbill turtle, which are of high economic importance. Due to loss of habitat and human disturbances, their population is also decreasing.

(Detail introduction of wildlife of study area is given in Annexure 3, 4, 5)

## Biodiversity in Pakistan

Flora/Fauna	Number of Species		
	In World	In Pakistan	Endemic
Plants	25,000 to 75,000 species	6,000 species (5,000 wild)	372 species
Mammals	18 orders	10 orders	Indus Dolphin. Chiltan Markhor.  Pakistan Sand Cat. Sule`iman Markhor. Punjab Urial. Baluchistan Bear.
	4,100 species	188 species of which:  63 rodents 39 carnivores 38 bats 25 hoofed animals 11 insectivores 9 aquatic animals,  3 primates,  1 pholidota	
Birds	8,600 species	666 migratory & resident species	
Reptiles	6,500 species	174 species of which :  88 lizards 72 snakes 10 turtles (2 marine, 8 freshwater)  2 tortoises 1 crocodile 1 Gavial	
Amphibians		16 species	
Fishes	2,600 species	525 species of which:  400 marine fish 125 freshwater species	
Insects/ Invertebrates	750,000 species	20,000 species (700 marine)	

## **1.5 Bear families in Pakistan**

Out of eight species there are two species found in Pakistan. Himalayan Brown Bear (*Ursus arctos*) common names are brown bear, red bear or snow bear, other one is Asiatic Black Bear (*Selenarctos thibetanus*), Balochistan Black Bear sub species *Selenarctos thibetanus gedrosianus*.

### **Objectives of the study:**

The present study was designed to achieve the following objectives;

- Review the available literature about the species in the Pakistan
- Identify the potential study area for the species conservation in the Himalayan eco region (Hazara) of the Pakistan
- Identify the potential threats associated to the species, and necessary conservation actions that could help the species to survive in its historic habitat in Himalayan eco region
- And design a proposal for to study the black bear status and conservation in the potential study area

### **Justification of the study:**

The Asiatic black bear is a threatened species according to the Red list Data Book of the IUCN. In Pakistan Information about the species is available only in the form of articles in the daily newspapers, monthly field reports of the wildlife watchers with the wildlife departments, and various events courage (bear baiting, dancing and fighting events) by media and other relevant organizations. In Servheen's (1990) review of the status and conservation of the bears of the world, he found very limited information on the Asiatic black bears in Pakistan. Even basic information doesn't exist for many areas in the distributional ranges of this species in Pakistan. So realizing the need and importance of comprehensive review about the species in the Pakistan the present study is designed. This study will help the individual's researchers and relevant organization to plan and implement the necessary actions for the conservation of the species in Pakistan.

## **Chapter.2 Methods of study**

To achieve the study objectives the following two methods were used;

**A-Secondary data** was collected from the libraries of Pakistan Forest Institute-Peshawar, University of Peshawar, Zoological Survey of Pakistan-Islamabad, Himalayan Wildlife Foundation-Pakistan, World Society for the Protection of Animals-Islamabad/Kund, WWF-Pakistan Lahore, and Nathiagali office, and wildlife department of North West Frontier Province-Pakistan. Internet was also used as tool to collect the information besides the news papers articles and events coverage. Various journals, articles, reports and books were reviewed during the visits to all the above sources (libraries and Departments).

**B-Primary data** about the species presence, status and associated threats in the Himalayan eco-region was collected mainly from the NWFP Wildlife department field staff monthly reports. Threats to the species survival and future conservation action related information was collected from the senior staff members of the World Wide Fund *-for living planet*, during the meetings.

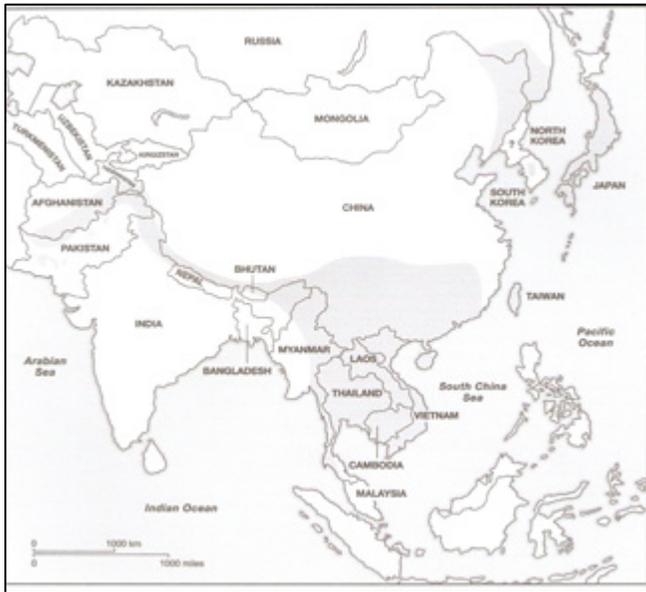
**C- Analysis of data** was done after reviewing the available material and information was presented in the form of text. A detailed study proposal was designed and in the result of the study and presented at the end of the study as annexure.

## Chapter.3 Results and discussion

There are eight species of bears in the world (Waits et.al.). These species are living in more than 65 countries of the four continents of the world. They are a diverse group of mammals living in a variety of habitats from tropical rain forests to arctic ice. Bears are the umbrella species in most of the ecosystems they inhabit. Biologically, bears are large bodied members of mammalian order Carnivora, family Ursidae. They evolved from smaller, tree-climbing, predatory ancestors (Miocids) about 25million years ago. Today, only the polar bear (*Ursus maritimus*) is primarily carnivorous and predatory. the Asiatic black bear is included in the most modern bears are dietary generalists, ingesting a variety of concentrated energy sources such as fruits, nuts, insects, fish, carrion, and mammals.

### 3.1 Distribution of Black Bear (*Ursus theibetanus*):

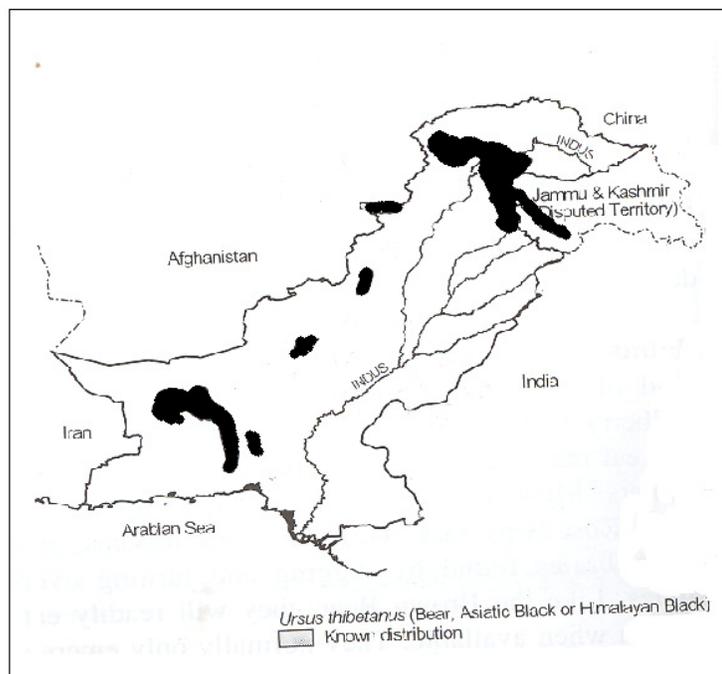
In Servheen's (1990) review of the status and conservation of the bears of the world, he found scant information on Asiatic black bear (*Ursus theibetanus*) in Indian sub continent. The Asiatic black bear (*Ursus theibetanus*) has been reported to be continuously distributed through southern and eastern Asia from westward through Pakistan and Afghanistan to Baluchistan province and adjacent boundary to the Iran.; east to indo-china through much of china, Korea and Japan with an isolated population in Taiwan (Cowan 1970, Servheen 1990, Mallon 1991). Schaller (1977) reported a wide distribution for Asiatic black bear (*Ursus theibetanus*)



World wide distribution of Black Bear (*Ursus theibetanus*) from Russia and Korea to Indo-china and from the forest of the Himalayas below an altitude of 3,750m west as far as Afghanistan and Iran. The Himalayan region and the hills of northeastern India cover 591,800km<sup>2</sup> (18%) of India (G.B.Pant Institute for

Himalayan Environment and Development 1993) and probably support one of the largest populations of Asiatic black bear.

**3.1.a Black Bear Distribution in Pakistan:** Of the 08 species of bears in the world, 02 occur in Pakistan; the Asiatic Black bear (*Ursus theibetanus*) and the Himalayan brown bear (*Ursus arctos*). The Asiatic black bear (*Ursus theibetanus*) is threatened to endangered species according to the IUCN Red list Data book. Asiatic black bear (*Ursus theibetanus*) is also listed in Apendix-1 of the CITES. In Pakistan this species was commonly found in different parts 20-30years ago, but now only confined to the Himalayan moist temperate forests of the northern Pakistan and AJ&K. While reviewing “the Mammals of Pakistan” (Robert. T.J., 1977), it was found that at one time it appears to have had a continuous distribution through the dry mountain steppe forests to the west of the Indus extending through the NWFP and Baluchistan. The author also mentioned that it is also occurs in the Neelum valley of the Azad Jammu & Kashmir, lower part of the Kaghan valley in Hazara District including Sari, and Shograhan forests reserves, in Dir, Chitral Goal, Chilas, Indus kohistan, Astor and Gabriel forest of the swat valley. Author also mentioned about the presence of the species in the Murree Hills in the 1945.



**Source: Field manual “Mammals of Pakistan”, T.J. Robert**

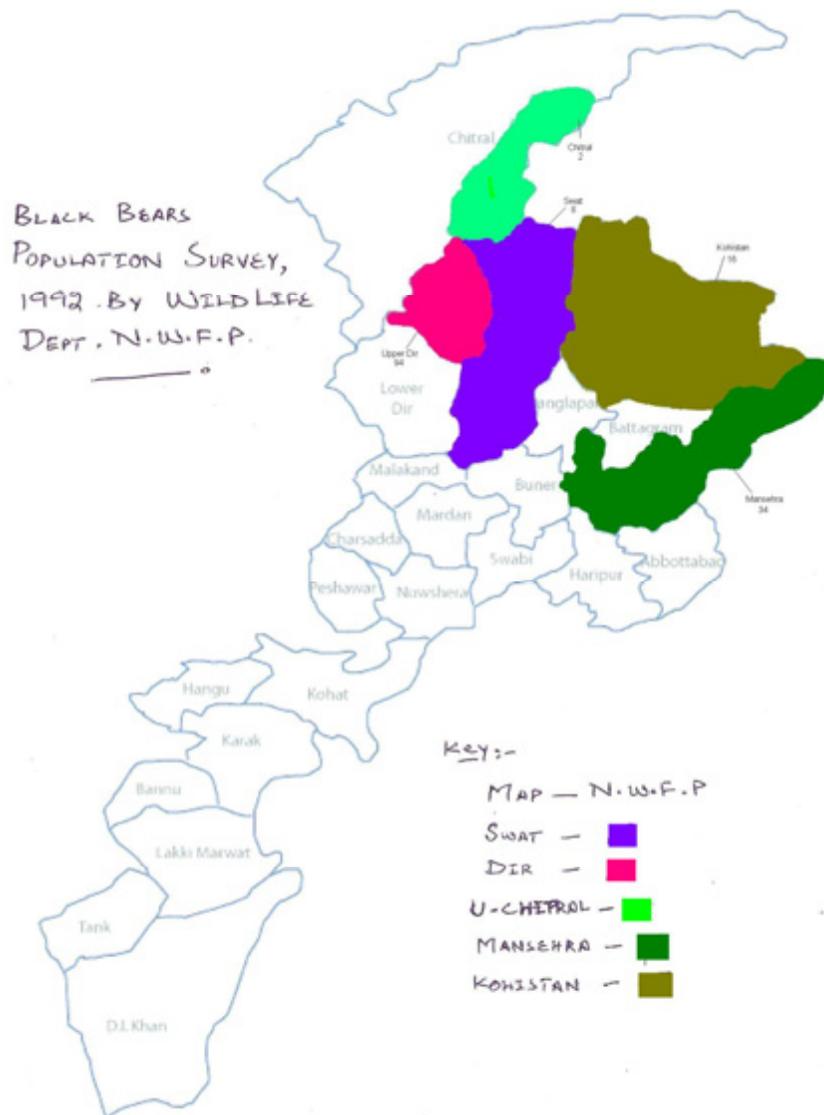
(Comparison map between the T.T. Robert and present condition is given at the end of the report in annexure-2)

After T.J. Roberts (1977), information about the Asiatic Black bear was not collected or reviewed scientifically in the country. But organizations like WWF and WASPA conducted a survey related to the bear fighting events throughout the country. Major findings of those surveys/events are given below;

WWF-Pakistan and WASPA jointly collected some information about the bears population participated in the bear fighting events from the organizers in 1992-93; around 80 significant bear fighting events were held in Pakistan in 1992-93. It was estimated that there were 2400 bears baiting fights in these 80 events (Farooq Chaudhary, 1993). It also revealed that there were at least 1800 Himalayan brown bear (*Ursus arctos linnaeus*) and Asiatic black bear (*Ursus thibetanus G.cuvier*) in captivity in Pakistan. These animals were mostly used as dancing bear; only around 300 were believed to be regular fighters. In spring and summer 1992, the hunters in North West Frontier Province (N.W.F.P) in northern areas (NA) captured 100 cubs and sold them to the local middle man. The middle man sold the cubs to the dealers in Peshawar, Gilgit, Lahore and Karachi. "Qalanders" purchased the cubs either directly from the dealers or mostly through the middle man in the Indus plains. These gypsies trained the cubs to dance and to be obedient to their masters. Lahore was found to be an important centre for the training of bears. Some cubs were also trained to fight dogs. The price of cubs during 1992 was rupees 3000 (us dollar 100) but a trained bear fetched up to rupees 150,000 (US \$ 5000). (The actual position however is that capturing of bear cubs is prohibited under section 8(ii) of north west frontier province wildlife (protection, preservation, conservation and management act 1974, Sindh wildlife protection act 1974. bear baiting is banned under prevention of cruelty to animals act (1980).

Information about the black bear population was collected from the Baluchistan in 1993 by the Forest department. The survey was carried out in "Kinju Ka Rakh" district khuzdar, of Baluchistan 1993. Twenty years ago, the Balochistan black bear (locally known as Mum) was in abundance in the hilly areas of Kinju, Hazarbuji, Pirmuthi and Harri. Due to increase in hunting, this animal is now endangered throughout its natural range of khuzdar district (personal communication with Sardar Yousaf Sasoli, senator). The total population of "Mum" is estimated at four to six animals in "Kinju Ka Rakh" district Khuzdar.

Survey of Black Bear in NWFP was conducted by the wildlife wing of provincial forest department in 1992. They collected the information from sighting of the animal, scats and reports provided by reliable graziers. According to their report “distribution and status of wildlife in N.W.F.P.” there are 08 bears in swat district, 94 bear in Dir district, two bears in Chitral district, 34 bears in Mansehra district and 16 bears in Kohistan district. Thus the total population of black bear in N.W.F.P was estimated at 234 in 1992.



**Source: Map was produced from the wildlife survey record of the NWFP, Wildlife Department, 1992**

### **3.2 Potential site for the Black bear Research Project in Himalayan Moist Temperate Forests of Hazara Forests Circle of NWFP**

Asiatic Black Bear survey conducted by NWFP wildlife department in 1992 provided information about the species population in two districts of the Hazara forests circle of the Himalayan moist temperate forests that were 34 bears in District Mansehra and 16 bears in District Kohistan. It was also observed that the northern Pakistan and azad Kashmir are the two areas where the population of the bears only growing.

So both the districts (the Mansehra and the Kohistan) were selected as potential site for the future research conservation related activities for the species. Personal visit was arranged to visit to identify the status and presence of the species in the site, some basic information about the black bear population was collected. Wildlife staffs of the districts and some villagers were interviewed during the field visit. The information about the species potential sites/locations in both the districts was collected and documented. The information about the future study area (Western Himalayas Moist Temperate Forests of the District Mansehra and Kohistan) is given below;

**3.2. a Introduction to the Study Area:** District Mansehra and Kohistan lies in the Hazara Forest Circle, of the NWFP forest Department. District Mansehra is located at 34°.19'.60N, 73°.12'.0E and covering an area of 4,579 km<sup>2</sup> (1131491 acres). Total forest cover of the district Mansehra is 507281 acres. While district kohistan is located at 34°.40 to 30°.35 N, 75°.30 to 50°.72 E and spread over an area of 7492Km<sup>2</sup>. The forests cover an area of 863693 acres in the district Kohistan. Two types of forests are located in both the districts; **(a) the Himalayan moist temperate forests;** is the evergreen forests of conifers, locally with some admixture of oak and deciduous broad-leaved trees are present in these forests. Their undergrowth is rarely dense, and consists of both evergreen and deciduous species. This forest type occurs between 1500 m and 3000 m elevation. These forests receives rainfall fall below 1000 mm in the inner ranges, especially in the extreme north-west. Conifers and/or oaks are the dominant species of these forests. In the lower zone, *Cedrus deodara* (Deodar, diar), *Pinus wallichiana*, *Picea smithiana* and *Abies pindrow* (Partal) are the main conifer species in order of increasing altitude, with *Quercus incana* (rin, rinj) at lower altitudes and *Q. dilatata* above 2130 m. In the upper

zone *Abies pindrow* and *Q. semecarpifolia* are the dominant tree species. There are also some pockets of deciduous broad-leaved trees, mainly edaphically conditioned, in both the zones. **And (b) and the sub tropical pine forests;** these are open inflammable pine forests sometimes with, but often without, a dry evergreen shrub layer and little or no under wood. This type consists of Chir pine (*Pinus roxburghii*) forests found between 900 m and 1700 m elevation in the Western Himalayas within the range of the south-west summer monsoon. It is the only pine of these forests though there is a small overlap with *Pinus wallichiana* (Kail, Biar) at the upper limit.

**Biodiversity;** The floral and faunal diversity of both the district is highly rich that is; 560 plant species, 160 bird species, 29 mammal species, at least 3 species of amphibians and 6 species reptiles are confirmed so far. The common leopard, Black bear, the western tragopan, monal and koklas pheasants are growing very well in the palas valley of the district kohistan.

### 3.2. b Survey results;

During the information gathering survey about the black bear presence from the District Mansehra, the following places were visited Methal, Panjool forest, Kund forest, Garang nala, Nikki mohri, Bandhodhar, Khilarian, Bari Baik-nikka pur, Malband forest near the Malkandi forests compartment. The villagers of these areas provided very useful information about the species presence in their areas and also showed their sighting information. The geographical coordinates of those sighting places were taken with the help of GPS also. The places are given below

S. No	Location Name	GPS		Sign/sighting	Month/Year
		N	E		
1.	Panjool forest	34.35.06	73.16.49	Sighting	July/2004
2.	Garang Village	34.35.30	73.17.81	Crops damaging	Oct/2004
3.	Bandhodhar and Khilarian	34.35.35	73.17.19	Sighting	May/2005
4.	Bandhodhar and Khilarian	34.35.35	73.18.19	Signs were recorded by the wildlife watcher	May/2005
5.	Methal	34.36.38	73.17.49	Signs were recorded by the forest guard	Aug/2008
6.	Hafizabad	34.35.49	73.17.51	Sighting by a villager	May/2009

- In Moza Fateh Bandi in the May, 2005 human-bear conflict was raised when a bear assault on crops of villagers and killed one old man (father of Molvi Abdur Rehman) and also injured 3 school going children. As a reaction the locals killed the bear skin was handed over to the wildlife department.
- In the year 2008 wild life caught two cubs from Punja, Faredabad, Kaghan valley and was handed over to WSPA (World Society for the Protection of Animals) for caring the animals.
- Every year in the month of July-August, Black Bears move towards the villages for the fruit plants. If villagers encounter them they usually kill it. It was observed that most of the locals are feeling this enemy for them.

During the field visit to the District Kohistan, the two offices were visited; the DFO, wildlife department office and the WWF-Pakistan field office. The DFO, wildlife department, District Kohistan shared very useful information about the population census of the bear. He told that in 1998, the department staff collected information about the Asiatic black bear population from the following potential valleys; Pattan, Dubair, Keyal, Palas, Kolai, Jalkot, Kaigah, Kandian and Harban. The collected information was mainly based on the observations of the local people. Local inhabitants have, since long ago, adopted a life which triggers their seasonal mobility to summer pastures and back to their winter settlements during fall. Such trans human migration and movements enable them to have more authentic observations of wildlife species incidentally. Black bear occurrence in restricted niches is also confirmed through indirect evidences, such as damage to agriculture crops, fruit orchards and livestock. The survey was conducted in autumn. During the survey a total of 9 Black Bears were recorded in Dobair valley, 14 in Pattan, 9 in Keyal, 21 in Palas, 7 in Kolai, 16 in Kandian, 12 in Jalkot, 6 in Kaigah and 4 Bears were recorded in Harban valley.

While the WWF staff members also shared that; the black bear population is good in the area but still so far no scientific research related to the population estimation or behavior is conducted by any one in the area. WWF-Pakistan staff shared a story of Mr. Shandia, he was a veteran hunter living in village Mukchaki, a small village situated in the heart of

the forest in upper Palas valley near Dombela. The forest harbors many wildlife species including wolf, fox, musk deer, koklass, monal and the endangered western tragopan. All these animals live in his ‘neighborhood’ and he rarely misses any opportunity to kill any animal or bird, which he comes across in the forest. He spends all of his time in the Valley as he cannot come out of the valley due to enmities which potentially make him more harmful to local wildlife populations. He has the skin of wolf, fox and black bear displayed in his Hujra and has sold skins of monal and tragopan pheasants.

WWF staff held dialogue with him and other inhabitants of his village and trying to aware them about the important ecological role of the forests for the human beings. He was quite right in putting forward the basic problems of the villagers to the project that provides an opportunity to develop a partnership between Shandia and his villagers and the project. This partnership and precautions of the project brought up a positive change in his attitude towards wildlife. Though bringing such a change in kohistan is a challenging task only through persistent and sincere efforts can make many things possible and can change the killer to keeper like Mr. Shandia.



**Picture.1:** Mr.Shandia with his gun and skins of animals killed by him

### **3.3 Threats associated to the species in the District Mansehra and Kohistan**

The potential threats to the animal exist in both the districts, as was enquired from the people during the survey is that, the animal is regarded with negative feeling by the local because of its depredation to crops and this leads to its ruthless hunting. The animal is also hunted in retaliation when it attacks on the live stock or pose threat to human population. Destruction of the habitat due to legal and illegal forest cuttings is another threat to the specie. Apart from the shooting of adult, young cubs are captured when they come to feed in ripening maize crops. These cubs are then sold through a middle man to certain nomadic gypsy tribes who train them to stimulate dancing and wrestling and there by earn a living. Big size animals probably males are also hunted for its fat value these animals are particularly fat and heavy in autumn. The fat extracted from black bear is used locally for the massage on bones, joints for the relief of pain and sold to the outside dealers. During survey it was carefully investigated to get a crude idea regarding the number of animals, may have been shoot or captured during the past 2 years, but the people were reluctant to tell frankly and they hesitated to answered through indirect investigation it was learnt that on limited scale the capture of black bear cubs and shooting the animals for various reasons is happening in district Kohistan. However, such poaching take place very infrequently and despite their related poverty, local showed little interest in the use of the specie. the small scale unorganized/irregular use regime of black bear has not encouraged the locals to attach a nominal market value to the species it was also learnt information gathered outside district Kohistan that the trade of bear cubs by the casual poachers fetch reasonable price. Capturing of cubs in Kohistan is not organized and it is fairly circumstantial. the in frequent poaching of the bear gives us a rough idea regarding threats to its population if ecological conditions remain constant to bear population will maintain its present level of occurrence in district Kohistan.

### **3.4 Proposal for the Scientific Committee, WWF-Pakistan**

A proposal was drafted as assignment under the WWF internship program and is available as Annexure-1 at the end of the report.

## **Chapter.4 Conclusion & Recommendations**

### **Conclusion**

The Asiatic black bear (*Ursus theibetanus*) is threatened to endangered species according to the IUCN Red list Data book. Once it was widely distributed throughout the country but now it is only confined to moist temperate forests of the Himalayan mountains of the Hazara forest division and the Azad Jammu Kashmir. There is no Scientific research is available on the species population census, monitoring and ecological behavior in the wild. There is an urgent need is required to monitor the black bear population, assessment of human-bear conflict in its habitat. After the review of reports of WWF, Wildlife Department and other organizations it was concluded that the District kohistan and Mansehra are the potential sites for the long term research study on the species.

### **Recommendations**

- Status survey should be conducted for the Asiatic black bear in most parts of both the districts
- Monitoring of the black bear population based on the direct and indirect evidences must be initiated as soon as possible.
- Scientific research on the ecology of Asiatic black bear is basic , as information on the food and feeding habits, habitat utilization, and ranging patterns are imperative for the long term conservation and management of the species
- Rescue center is need to be established for the species conservation with in its habitats
- Department should conduct assessment studies to know the Human-bear conflict in the area
- Conservation education related efforts should be started in its habitat. Awareness program for the police, army, and general public are needed to be launched
- The mitigating measures should be developed and provided to the communities to protect their themselves and their property from the damages
- Damage Compensation schemes should be launched in the area to control the retaliatory killings of the species

- A Protected area should be establishment with in the area for the conservation of the black bear
- To control poaching and smuggling requires additional well trained wildlife staff to protect and manage the PA
- The government should regulate all developmental activities, such as dam and road construction by ensuring completion of environmental impact assessment prior to project approval.
- A comprehensive conservation action plan is required to develop for the species conservation in its historic habitat

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Proposal will be posted here.

**World Wide Fund for Nature – PAKISTAN**

**SCIENTIFIC COMMITTEE PROJECT PROPOSAL FORM**

**1. Project Title & Location**

Status and Conservation of Asiatic Black Bear (*Ursus theibetanus*) in District Mansehra and Kohistan

**2. Project Developer/Executant and Affiliation**

Asfandyar khan

**3. Project Duration**

12 Months

**4. Project Summary**

Of the 08 species of the bears in the world, 02 occur in Pakistan; the Asiatic/Himalayan Black bear and Brown bear. According to the T.J. Roberts In Pakistan the Asiatic Black bear mainly confined to the Himalayan moist temperate forests of Pakistan and Aj&K. In servheen's (1990) review of the status and conservation of the bears of the world, he found very limited information on the Asiatic black bears in Pakistan. Even basic information doesn't exist for many areas in the distributional ranges of this species in Pakistan. So in that context the applicant design the said study to collect the basic information on the scientific lines about the species distribution and status in the District Mansehra and Kohistan particularly and in Pakistan generally. Applicant will also try to build monitoring mechanism in the selected study areas where its population currently grows well with the collaboration of wildlife staff and local communities.

## 5. **Project Aims and Objectives**

Project aim is to; collect the basic information about the Asiatic black bear distribution and status, identify threats associated to the species and propose long term needful conservation actions in its existing habitat.

### **Objectives:**

- To determine the distribution, population density of the black bear in the study area
- To determine the economic loss due to black bear attacks on crop, human, livestock
- Identify the suitable mechanism to reduce the human-black bear conflict
- To develop a long term conservation action plan

## 6. **Main Focus of the Project**

Species and Environmental education

## 7. **Background and Justification**

Of the 08 species of the bears in the world, 02 occur in Pakistan; the Asiatic/Himalayan Black bear and Brown bear. According to the T.J. Roberts In Pakistan the Asiatic Black bear mainly confined to the Himalayan moist temperate forests of Pakistan and Aj&K. In Pakistan it is mostly present in the lower part of the Kaghan valley including sari and shogran and Hazara Kohistan. Also present in the deodar forests of northern Dir and lower Chitral. In Gilgit; occurs in Chilas, and extending southwards into the Indus kohistan as per the T.J.Roberts. NWFP wildlife department collected the black bear sighting information and interviewed the pastoral communities in 1992 to collect some information about the black bear population. According to that information there were 88 bears in swat district, 94 bears in Dir district, 2 bears in Chitral district, 34 bears in Mansehra district and 16 bears in Kohistan district. Thus the total population of black bear in N.W.F.P was estimated at 234 in 1992

The major threats to the species in its historic habitats are; habitat loss, killing by farmers due to the threat they pose to livestock, and they are also unpopular for

**Status and Conservation of Black Bear (*Selenarctos thibetanus*) in District Mansehra and Kohistan, NWFP- 24 Pakistan**

their habit of stripping bark from valuable timber trees, the capturing of bears from the wild for using them for dancing and baiting bears. The Asiatic bear is also known to be quite aggressive towards human beings and there are many incidents of bear attacks and killings are found in its habitat ranges. In some other parts of the world it is also threatened by hunting, especially for their gall bladders to obtain bile, which is used in traditional Chinese medicines (due to lack of information, In Pakistan we don't have any information about that).

While realizing the importance of the conservation of the species in its historic habitat the applicant interviewed and visits various organizations and local communities in the district Mansehra and Kohistan of Hazara. Collected information is presented below;

#### **Presence of Black Bear in Kohistan**

The presence of black bear was recorded by the Kohistan wildlife department in 1998. The survey was conducted during autumn by the wildlife staff and the Himalayan jungle project to assess the status, occurrence and distribution of black bear in Pattan, Dubair, Keyal, Palas, Kolai, Jalkot, Kaigah, Kandian and Harban valleys of district Kohistan. As per the survey result a total of 9 Black Bear were recorded in Dubair valley, 14 Black Bear in Pattan, 9 Black Bear in Keyal, 21 Black Bear in Palas, 7 Black Bear in Kolai, 16 Black Bear in Kandian, 12 Black Bear in Jalkot , 6 Black Bear in Kaigah and 4 Black Bear were recorded in Harban valley. The collected information was mainly based on the observations of the local people. Black bear occurrence in restricted niches was also confirmed through indirect evidences, such as damage to agriculture crops, fruit orchards and livestock. Survey results showed that the animal is regarded with negative feeling by the local because of its depredation to crops and this leads to its ruthless hunting. The animal is also hunted in retaliation when its attacks on the livestock or pose threat to human population.

Apart from the shooting of adult, young cubs are captured when they come to feed in ripening maize crops. These cubs are then sold through a middle man to

certain nomadic gypsy tribes who train them to stimulate dancing and baiting and there by earn a living.

Big size animals probably males are also hunted for its fat value these animals are particularly fat and heavy in autumn. The fat extracted from black bear is used locally for the massage on bones, joints for the relief of pain and sold to the outside dealers. During survey it was carefully investigated to get a crude idea regarding the number of animals, may have been killed or captured during the past 2 years. It was learnt that on limited scale the capturing of black bear cubs and shooting of the animals for various reasons is reported in district Kohistan. However, such poaching take place infrequently despite of their poverty, local showed little interest in the use of the species parts. The small scale unorganized/irregular use regime of black bear has not encouraged the locals to attach a nominal market value to the species. It was also learnt that outside the district Kohistan the trade of bear cubs by the casual poachers fetch reasonable price. Capturing of cubs in Kohistan is not organized and it is fairly circumstantial. The in frequent poaching of the bear gives us a rough idea regarding threats to its population.

### **Presence of Black Bear in Mansehra**

According to the HASHAAR development organization the black bear presence was reported in Methal, Panjool forest, Kund forest, Garang nala, Nikki mohri, Bandhodhar, Khilarian, Bari Baik-nikka pur

Few GPS locations were noted where black bear was sighted in 2004 in the district Mansehra. Panjool and Kund forest, that are adjacent to Methal village (73.17.810 N 34.35.302 E). Similarly pug marks of black bear were seen at Garang nala near Garang village (73.18.155 N 34.35.302 E) and at Bandhodhar and Khilarian (73.18.155 N 34.35.302 E).

People sold cubs of black bear and performed pilgrimage, an example is of Hajji Qalandar khan, and he sold two cubs in 1997 at bar Palas, Kohistan. In the month

of July and August black bear moves towards a fruit plant Guch (*Vibearnum nervsokus*) and Ukroon (local name) near villages.

In 2005 a black bear attacked and killed a villager at Moza Fateh Bandi, Mansehra district and the same black bear also attacked three school going children badly injured them. After a few days it was killed by the villagers. (NWFP Wildlife department compensate villagers).

### **Conclusion;**

The Asiatic black bear is a threatened species according to the Redlist Data Book of the IUCN. The present issues related to the species decline were not scientifically assessed so far. While realizing the issues and threats to the species in its historic habitat of the Hazra district the present research is designed and presented to the SC for the financial support to collect some basic information for designing a long term conservation action for the species. Potential sites in District Mansehra and Kohistan will be studied in detailed under the project with the collaboration of wildlife department and local communities.

### **8. Describe three main points that you feel make your Project special**

- It will provide data about the estimated population of the species
- It will be the first work on human-black bear conflict management in Kohistan
- The project will also raise awareness about the ecological significance of the species amongst the local communities
- Moreover, this project will help to generate useful information by which people could take mitigating measures to reduce the human-black bear conflict

### **9. Detailed Project Activities**

- Collection of sighting records through GPS
- Develop GIS based maps with the help of WWF-Pakistan's GIS Lab.

- Conduct pugmark survey for the population estimation and build the capacity of the wildlife staff
- Analyze the collected information for the population estimation
- Assess the extent of the damages to livestock and crops in selected villages in the study area
- Identify the root causes of the human-black bear conflict
- Identify the prey base of the species in the selected area
- Document the results and publish in different forums

**10. Expected Achievements/Results/Outputs**

- Population estimates will be available
- GIS maps available showing the following;
  - Distribution
  - Concentration and marginal occurrence zones
- Extent and reasons of damages because of black bear known
- Mechanism available for the community to minimize the economic impacts
- A detailed long term conservation action plan will be developed

**11. Evaluation**

The project process and progress shall be regularly evaluated through established process and procedures.

**12. Dissemination of Results**

Findings and results will be shared at local, national and international level through print and electronic material.

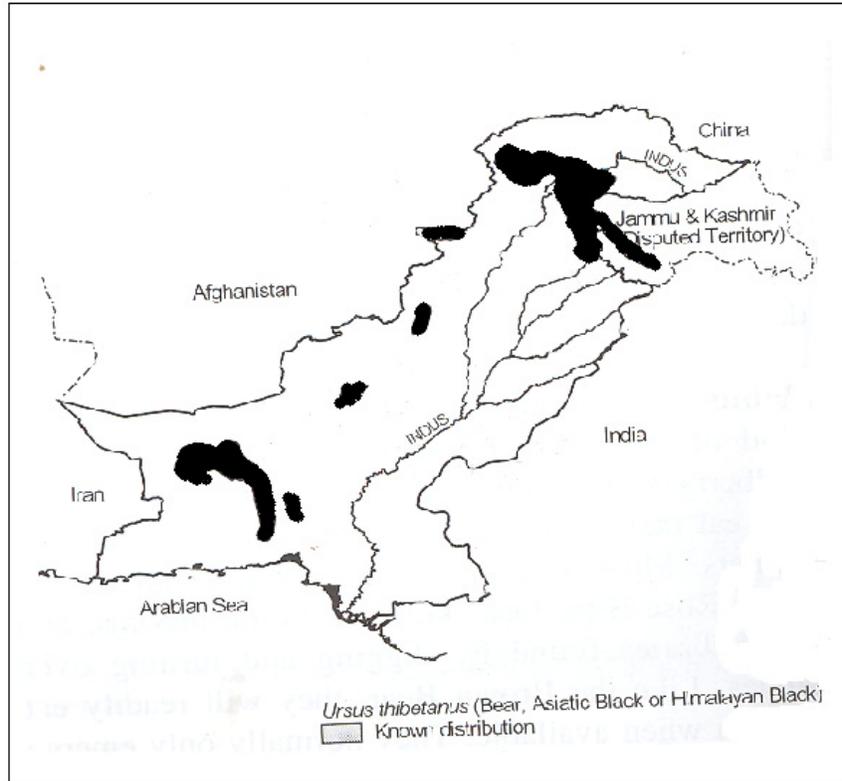
**13. Names & Addresses of Two Referees who are familiar with the work of the Project**

**Project Executants**

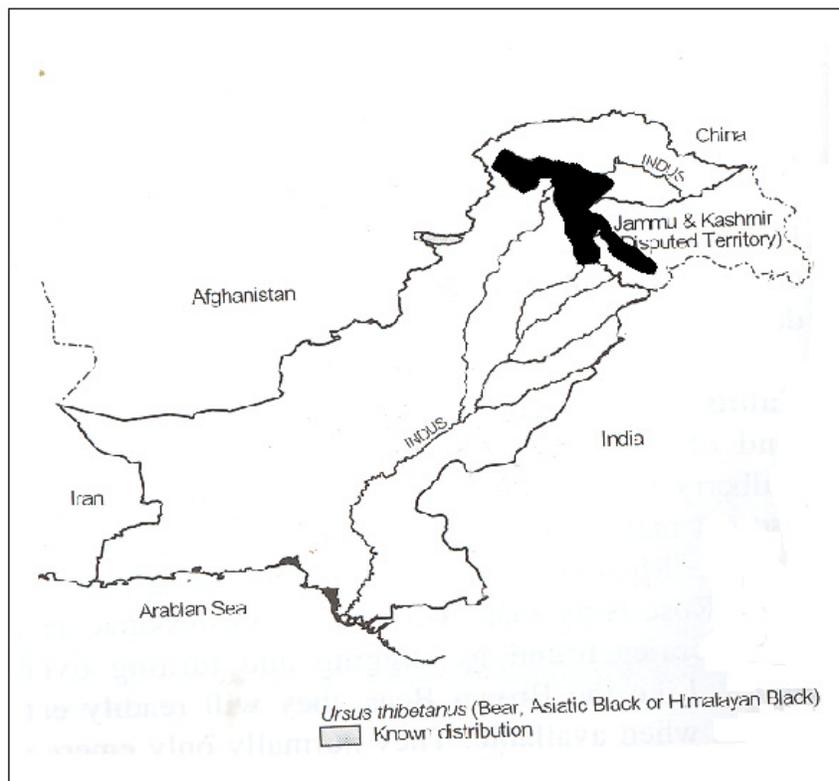
Mr. Ali Hassan Habib, Director General, WWF-Pakistan

Mr. Muhammad Ibrahim Khan, Manager Conservation, NWFP, WWF-Pakistan

Mr. Ashiq Ahmad Khan, Member Scientific Committee, WWF-Pakistan



**Distribution of Asiatic Black Bear in Pakistan, Mammals of Pakistan, T.J Robbert**



**Distribution of Asiatic Black Bear in Pakistan limited to Kohistan and Mansehra.**

**LIST OF MAMMAL SPECIES RECORDED IN PALAS VALLEY**

- 1 Himalayan Rhesus Macaque *Macacca villosa*
- 2 Grey Languor *Presbytis entellus*
- 3 Himalayan Black Bear *Selanarctois thibetanus*
- 4 Small Kashmir Flying Squirrel
- 5 Giant-red Flying-squirrel *Petaurisa petaurisa*
- 6 Royle's Pika *Ochotona roylei*
- 7 Red Fox *Vulpes vulpes*
- 8 Jackal *Canis Aurea*
- 9 Common leopard *Panthera pardus*
- 10 Leopard Cat *Felis bengalensis*
- 11 Jungle Cat *Felix chaus*
- 12 Yellow-throated Pine-marten *Martes flavigula*
- 13 Stone Marten *Martes foina*
- 14 Musk Deer *Moschus crysogaster*
- 15 Grey Goral *Naemorhedus goral*
- 16 Stoat *Mustela erminea*
- 17 White-footed weasel *Altai Hylopetes*
- 18 Weasel *Mustea altaica*
- 19 Black Rat *Ratus ratus*
- 20 Indian crested porcupine *Hystrix indica*
- 21 Turkestan Rat *Rattus turkestanicus*
- 22 House Mouse *Mus musculus*
- 23 Wood Mouse *Apodemus sylvaticus*
- 24 Birch Mouse *Sicita concolor*
- 25 Burrowing Vole *Hyperacrius fertilis*
- 26 Shrew *Crocidura guldenstadtii*
- 27 Vole *Alticola roylei*
- 28 Long-tailed marmot *Marmota caudate*
- 29 2 Pipistrelle species *Pipistrellus sp*

**List of Bird Species Recorded in Palas Valley, Kohistan District.****Anasiformes**

- 1-Common Teal** *Anas crecca* (Observed once in 1994 in the valley)  
**2-Mallard** *Anas plantrhynchos* (Observed in 1995 flying along the Musha'ga River)

**Accipitridae**

- 3-Bearded Vulture** *Gypaetus barbatus* (Common in the valley, descending to lower altitudes in winter)  
**4-Himalayan Griffon** *Gyps himalayensis* (Probably the most common vulture species in the valley. Observed through out the Palas valley)  
**5-Eurasian Griffon** *Gyps fulvus* (Observed once in 1995, thought to be an occasional visitor)  
**6- Northern Goshawk** *Accipiter gentilis* (Occasionally observed and known as a winter visitor to Pakistan.)  
**7-Eurasian Sparrowhawk** *Accipiter nisus* (Commonly observed in the valley)  
**8-Indian Sparrowhawk** *Accipiter badius* (Commonly observed in the valley)  
**9-Long-legged Buzzard** *Buteo rufinus* (Commonly observed in the valley and during most bird surveys)  
**10-Booted Eagle** *Hieraaetus pennatus* (Frequently observed throughout the valley)  
**11-Golden Eagle** *Aquila chrysaetos* (Quite a common eagle, perhaps the most common eagle species observed during winter surveys.)

**FALCONIDAE**

- 12-Peregrine falcon** *Falco perireinus* (Observed once during a pheasant survey, flying over Karoser village and once in January 1996. Winter visitor to Pakistan.)  
**13-Eurasian Kestrel** *Falco tinnunculus* (Commonly observed through out the valley)  
**14-Merlin** *Falco columbarius* (Occasionally observed in the valley, only once recorded during a winter survey.)  
**15-Northern Hobby** (*Falco subbuteo* Occasionally observed in the Palas valley)

**PHASIANDAE**

- 16-Himalayan Snowcock** *Tetraogallus himalayensis* (Quite a common bird though not frequently observed. )  
**17-Chukar** *Alectoris chukar* (Frequently observed and often recorded in large number in winter)  
**18-Western Tragopan** *Tragopan melanocephalus* (Western Himalayan Endemic and the largest population is thought to be found in Palas (refer to relevant chapter))  
**19-Himalayan Monal** *Lophophorus impejanus* (A Common galliforme in the valley, found near the tree line in summer and in mixed flocks with other pheasant species in winter. Though classified as rare in Pakistan (Roberts), it is common in Palas valley. )  
**20-Koklas pheasant** *Pucrasia macrolopha* (Probably the most common game bird in the valley though Monal are also found in large numbers)

## RECURVIROSTRIDAE

**21-Black-winged Stilt** *Himantopus himantopus* (Very occasionally observed on Musha'ga River)

## SCOLOPACINAE

**22-Eurasian Woodcock** *Scolopax rusticola* (Recorded in summer, presumed to be breeding and often males have been observed roding in adjoining areas. No winter observation. Thought to be rare in Pakistan (Roberts))

**23-Common Sandpiper** *Actitis hypoleucis* (Occasionally observed during surveys)

## COLUMBIDAE

**24-Snow Pigeon** *Columba leuconota* (Observed in summer and winter though not particularly common. Probably more frequently found at higher elevations.)

**25-Wood Pigeon** *Columba palumbus* (Observed in large flocks during winter, occasionally observed in summer.)

**26-Speckled Wood-pigeon** *Columba hodgsonii* (Occasional observed and perhaps a breeding bird on the valley. Classified as a rare visitor and perhaps on the limit of its distribution in Palas.)

**27-Oriental Turtle-Dove** *Streptopelia orientalis* (Commonly observed during summer at forested areas)

**28-Spotted Dove** *Streptopelia chinensis* (Occasionally observed in summer)

## PSITTACIDAE

**29-Slaty-headed Parakeet** *Psittacula himalayana* (Commonly recorded at lower elevations of the valley, probably a breeding bird in the valley. Absent in winter)

## CUCULIDAE

**30-Common Cuckoo** *Cuculus canorus* (Heard and observed frequently, breeding in summer. Common up to the tree-line)

**31-Himalayan Cuckoo** *Cuculus saturatus* (Less common than *C. canorus* but regularly recorded in summer. Breeding in Palas.)

**32-Small Cuckoo** *Cuculus poliocephalus* (Commonly recorded in Palas in summer)

## STRIGIDAE

**33-Collared Pygmy Owl** *Glaucidium brodiei* (Occasionally recorded in wooded areas in summer. Status unknown in winter).

**34-Asian Barred Owlet** *Glaucidium cuculoides* (Status uncertain)

**35-Tawny Owl** *Strix aluco* (Summer and winter resident of the valley. Various morphs noticed within the valley).

**36-Eurasian Scops Owl** (Recorded very rarely during the surveys)

**37-Long Eared Owl** *Asio otus* (Occasional recorded during bird surveys, especially at higher elevation in summer)

**38-Northern Eagle Owl** *Bubo bubo* (Once recorded near Karat in 1996 at night)

## APODIDAE

**39-White-throated Needletail** *Hirundapus caudacutus* (Observed during summer only,  
Status and Conservation of Black Bear (*Selenarctos thibetanus*) in District Mansehra and Kohistan, NWFP- 32  
Pakistan

usually at high altitudes or on the road into Bar Palas).

**40-Little Swift** *Apus affinis* (Commonly observed in summer).

**41-Common Swift** *Apus apus* (Commonly observed in summer)

**42-Alpine Swift** *Apus affinis* (Commonly observed in summer)

#### ALCEDINIDAE

**43-Common Kingfisher** *Alcedo atthis* (Occasionally recorded in the valley)

**44-Crested Kingfisher** *Megaceryle lugubris* (Occasionally observed on the Musha'ga River)

#### CORACIIDAE

**45-Roller species** *Coracias sp* (Usually observed on the road into Bar Palas only in summer).

#### UPUPIDAE

**46-Hoopoe** *Upupa epops* (Observed outside winter season and usually at lower elevation, often near cultivated lands).

#### PICIDAE

**47-Wryneck** *Jynx torquilla* (Frequently observed in the valley, probably a breeding resident)

**48-Speckled Piculet** *Picumnus innominatus* (Rarely recorded during surveys but observed breeding in the valley)

**49-Himalayan Pied Woodpecker** *Dendrocopos himalayensis* (The most common woodpecker in Palas)

**50-Brown-fronted Woodpecker** *Dendrocopos auriceps* (Uncommon, recorded occasionally only).

**51-Slaty-bellied Woodpecker** *Picus squaamatus* (Frequently recorded, winter and summer resident in the valley).

#### HIRUNDINDAE

**52-Sand Martin** *Riparia riparia* (Occasionally recorded during summer. Uncommon).

**53-Eurasian Crag Martin** *Hirundo rupestris* (Mainly a summer visitor but rarely encountered).

**54-Asian House Martin** *Delichon dasypus* (Summer visitor and common throughout the valley).

**55-Northern House Martin** *Delichon urbical* (Summer visitors though not supposed to be breeding (Roberts))

#### MOTACILLIDAE

**56-Rosy Pipit** *Anthus roseatus* (Frequently recorded in summer, usually above the tree-line and on pasture areas).

**57-Tree Pipit** *Anthus trivialis* (Not as common as *A.roseatus* but regularly recorded during surveys).

**58-Citrine Wagtail** *Motacilla citerea* (Fairly common in summer).

**59-Grey Wagtail** *Motacilla cinerea* (Commonly recorded during summer up to high altitudes, occasionally observed in winter also).

**60-White Wagtail** *Motacilla alba* (Recorded regularly in summer at lower altitudes (along the Musha'ga)).

## CAMPEPHAIDAE

**61-Long-tailed Minivet** *Pericrocotus ethologus* (Commonly observed as a summer visitor, presumed breeding).

## PYCNONOTIDAE

**62-Himalayan Bulbul** *Pycnonotus leucoenys* (Regularly encountered throughout the year in lower reached of Palas).

**63-Black Bulbul** *Hypsipetes leucocephalus* (Quite common throughout the year).

## CINCLIDAE

**64-Brown Dipper** *Cinclus pallasii* (Commonly observed, especially in winter. Observed in summer at higher altitudes).

## TROGLODYTIDAE

**65-Northern Wren** *Troglodytes troglodytes* (Commonly observed. Winter and summer resident)

## PRUNELLIDAE

**66-Rufous-breasted Accentor** *Prunella strophliata* (Commonly observed in summer only)

**67-Rufous-streaked Accentor** *Prunella himalaya* (Observed usually only in winter though could possible be a summer breeder)

**68-Alpine Accentor** *Prunella collaris* (Quite common as a summer visitor).

**69-Black-throated Accentor** *Prunella atrogularis* (Rarely recorded in Palas valley, the only recording taken from Kot).

## TURDINAE

**70-White-tailed Rubythroat** *Luscinia pectoralis* (Occasionally recorded, usually at higher altitudes. Not common but regularly recorded none the less).

**71-Indian Blue Robin** *Erithacus brunneus* (Commonly recorded during the summer, its conspicuous call heard daily during summer).

**72-Orange-flanked Bush-robin** *Tarsiger cyanurus* (Commonly recorded during summer and occasionally during winter. Breeding resident).

**73-Eversmann's Redstart** *Phoenicurus erythronoya* (One recode from Kot in 1996. Winter visitor to Pakistan (Roberts))

**74-Blue-capped Redstart** *Phoenicurus caeruleocephalus* (Commonly recorded breeding resident).

**75-Blue-fronted Redstart** *Phoenicurus frontalis* (Summer visitor and presumed to be a breeding bird).

**76-Plumbeous Redstart** *Phoenicurus fuliginosus* (A common to abundant breeding bird. Resident throughout the year though found at much lower elevations in winter and in lower densities).

**77-White-bellied Redstart** *Hodsonius phoenicuroides* (Very occasionally observed during surveys. Classified as rare in Pakistan (Roberts))

**78-White-capped Redstart** *Chaimarroornis leucocephalus* (Common along water bodies, also resident in winter but at lower densities).

**79-Siberian Stonechat** *Saxicola maura* (Fairly common during summer. Often observed nesting around habitations and in pasture areas).

**80-Pied Bush-chat** *Saxicola caprata* (Commonly observed in summer in most areas on Palas).

**81-Dark-grey bush-chat** *Saxicola ferrea* (Commonly observed in summer, usually above 2000mASL)

**82-Scaly Thrush** *Zoothera dauma* (Not common but regularly observed during summer

surveys in Palas).

**83-Blue-capped Rock Thrush** *Monticola cinclorhyncha* (Recorded regularly and summer breeder in Palas)

**84-Chestnut-bellied Rock Thrush** *Monticola rufiventris* (Unconfirmed but expected)

**85-Blue Rock Thrush** *Monticola solitarius* (Common summer resident of Palas).

**86-Blue Whistling Thrush** *Myiophoneus caeruleus* (Regularly recorded during all surveys)

**87-Grey-winged Blackbird** *Turdus bouboul* (Unconfirmed but expected)

**88-Chestnut Thrush** *Turdus rubrocanus* (Resident breeder, recorded frequently in most of the surveys)

**89-Dark-throated Thrush** *Turdus ruficollis* (Observed in winter only. Possible summer breeder)

**90-Himalayan Blackbird** *Turdus merula maximus* (Occasionally observed at higher altitudes in forest such as Kubkot and Diwan. Uncommon but resident)

**91-Mistle Thrush** *Turdus visivorus* (Fairly common in spring at high altitudes).

#### ENICURINAE

**92-Little Forktail** *Enicurus scouleri* (Seems to be more common than *E. maculatus* and quite common in summer and commonly recorded along the Musha'ga in winter).

**93-Spotted Forktail** *Enicurus maculatus* (Observed very occasionally in summer).

#### SYLVIIDAE

**94-Brown-flanked Bush Warbler** *Cettia fortipes* (Summer visitor and commonly recorded during all summer surveys)

**95-Lesser Whitethroat** *Sylvia curruca* (Observed at lower elevations)

**96-Grey-headed Flycatcher-warbler** *Seicercus xanthoschistos* (Resident and quite common at lower reached of the valley especially in *Quercus* habitat).

**97-Western-crowned warbler** *Phylloscopus occipitalis* (Common and resident)

**98-Tytler's Leaf Warbler** *Phylloscopus tyleri* (One of the eight endemic birds to western Himalayas. Recorded frequently during most summer surveys though reasonably habitat specific)

**99-Greenish Warbler** *Phylloscopus trochiloides* (Fairly common in Palas though its' breeding status is unclear).

**100-Lemon-rumped Warbler** *Phyllosopus chloronatus* (Commonly observed during summer. Breeding resident).

**101-Inornate Leaf Warbler** *Phyllosopus inornatus* (Summer visitor)

**102-Brooks Leaf Warbler** *Phyllosopus subviridis* (Endemic. Fairly common though restricted to certain areas)

**103-Tickell's Leaf Warbler** *Phylloscopus affinis* (Summer visitor. Only occasionally observed in the valley)

**104-Large-billed Leaf Warbler** *Phylloscopus magnirostris* (Summer visitor and quite common along side tributaries of Palas)

**105-Goldcrest** *Regulus regulus* (Common resident in the valley)

#### MUSCICAPIDAE

**106-Beautiful Niltava** *Niltava sundara* (Uncommon. Recorded in 1992 and 2002. thought to be the most western distribution of this species).

**107-Verditer Flycatcher** *Muscicapa thalassina* (Frequently observed in the valley, presumed breeding)

**108-Rufous-tailed Flycatcher** *Muscicapa ruficauda* (Summer visitor to the valley and fairly common)

**109-Dark-sided Flycatcher** *Muscicapa sibirica* (Summer visitor. Commonly recorded at

high altitudes)

**110-Spotted Flycatcher** *Muscicapa striata* (Occasionally observed in summer only)

**111-Slaty Blue Flycatcher** *Ficedula tricolor* (Summer visitor and commonly observed during most of the spring surveys)

**112-Ultramarine Flycatcher** *Ficedula superciliaris* (Summer visitor, frequently recorded).

**113-Grey-headed Flycatcher** *Culicicapa ceylonensis* (Summer visitor and quite common)

#### MONARCHIDAE

**114-Asian Paradise Flycatcher** *Terpsiphone paradisi* (Often recorded along the valley bottom in summer. Presumably breeding. Not common but frequently observed).

#### TIMALIIDAE

**115-Variegated Laughing-thrush** *Garrulax variegatus* (Common and resident. Can be observed at lower elevations during winter)

**116-Streaked Laughing Thrush** *Garrulax lineatus* (Resident and common in the valley).

**117-Green Shrike-Babbler** *Pteruthius xantholchlorus* (Observed only one in the valley)

**118-Oriental Skylark** *Alauda gulgula*

#### AEGITHALIDAE

**119-White throated Tit** *Aegithalos niveoularis* (Endemic. Resident but not as common as *A. leucogenys*)

**120-White-cheeked Tit** *Aegithalos leucogenys* (Endemic. Resident and fairly common in the valley)

**121-Black-throated Tit** *Aegithalos concinnus* (Occasionally observed and its status is uncertain)

#### PARIDAE

**122-Black Crested Tit** *Parus rufonuchalis* (Resident and common)

**123-Spot-winged Black Tit** *Parus melanolophus* (Resident and common)

**124-Grey Tit** *Parus* (major Resident and frequently observed during surveys)

**125-Green-backed Tit** *Parus monticolus* (Resident. Regularly recorded on all surveys)

#### SITTIDAE

**126-White-cheeked Nuthatch** *Sitta leucopsis* (Probably the most common nuthatch found in the valley. Breeding resident).

**127-Kashmir Nuthatch** *Sitta europaea cashmirensis* (One of the eight endemics found in Palas. Commonly observed in summer and winter).

#### TICHODROMADIDAE

**128-Wallcreeper** *Tichodroma muraria* (Commonly observed at lower elevation in winter. Not thought to be resident during summer).

#### CERTHIIDAE

**129-Himalayan Tree Creeper** *Certhia himalayana* (Commonly observed during summer and winter).

**130-Eurasian Tree-creeper** *Certhia familiaris* (Uncommon)

#### REMIZIDAE

**131-Fire-capped Tit** *Cephalopyrus flammiceps* (Summer visitor but observed frequently in the valley during spring and summer surveys)

#### ORIOOLIDAE

**132-Golden Oriole** *Oriolus oriolus* (Summer visitor. Regularly recorded during spring surveys)

#### LANIIDAE

**133-Long-tailed Shrike** *Lanius schach* (Summer visitor. Small numbers recorded during most spring surveys)

#### **DICRURIDAE**

**134-Ashy Drongo** *Dicrurus leucophaeus* (Summer visitor to the valley)

#### **CORVIDAE**

**135-Lanceolated Jay** *Garrulus lanceolatus* (Commonly recorded at lower elevations. Both winter and summer resident)

**136-Yellow-billed Blue Magpie** *Urocissa flavirostris* (Breeding in the valley though probably migrate to lower regions in winter)

**137-Spotted Nutcracker** *Nucifraga caryocatactes* (Resident in the valley).

**138-Yellow-billed Chough** *Pyrrhocorax graculus* (Resident in the valley).

**139-Red-billed Chough** *Pyrrhocorax pyrrhocorax* (Occasionally recorded in the valley)

**140-Large-billed Crow** *Corvus macrorhynchos* (Common to abundant in the valley throughout winter and summer).

**141-Common Raven** *Corvus corax* (Very occasional visitor to Palas)

#### **STURNIDAE**

**142-Common Myna** *Acridotheres tristis* (Records of this bird are increasing and this species seems to be migrating to areas such as the watershed of Sherakot and Bar Paro).

**143-Brahminy Myna** *Sturnus pagodarum* (Recorded from Badakot and also observed breeding at Pattan town)

**144-Common Startling** *Sturnus vulgaris* (One bird recorded in 1996).

#### **PASSERIDAE**

**145-House Sparrow** *Passer domesticus* (Observed in Kuz Palas, usually on the road entering Bar Palas)

**146-Russet Sparrow** *Passer rutilans* (Quite common though only recorded during summer).

#### **ESTRILDIDAE**

**147-Red Adavat** *Amandava amandava* (Very occasional visitor to Palas)

**148-Scaly-breasted Munia** *Lonchura punctulata* (Very occasional visitor to Palas)

#### **CARDUELINAE**

**149-Spectacled Rosefinch** *Callacanthis burtoni* (Endemic and quite frequently recorded in summer, especially on the borders of sub-alpine areas).

**150-Himalayan Greenfinch** *Carduelis spinoides* (Commonly observed in summer where it is a breeding resident, becoming abundant in areas).

**151-Eurasian Goldfinch** *Carduelis carduelis* (Occasionally recorded as a summer visitor and presumed breeding bird in the valley)

**152-Plain Mountain Finch** *Leucosticte nemoricola* (Resident and quite commonly observed through out the year. Observed at high altitudes during spring and summer)

**153-Common Rosefinch** *Carpodacus erythrinus* (Fairly common resident in the valley)

**154-Pink-browed Rosefinch** *Carpodacus rhodochros* (Resident and breeding in the valley)

**155-White-browed Rosefinch** *Carpodacus thura* (Resident in Pakistan but only winter visitor to Palas Valley)

**156-Black and Yellow Grosbeak** *Mycerobas icteroides* (The most common Grosbeak recorded in the valley, occasionally observed as a winter resident as well as breeding in

the valley).

**157-White-winged Grosbeak** *Mycerobas carnipes* (Occasionally observed, usually near high altitude hamlets)

**158-Orange Bullfinch** *Pyrrhula aurantiaca* (Endemic to western Himalayas. Breeding resident).

**159-Fire-fronted** *Serinus pusillus* (Observed once in the valley)

#### **EMBERIZIDAE**

**160-Rock Bunting** *Emberiza cia* (Common resident)

**Reptiles and Invertebrates**

Though the Himalayan herpetofauna is not particularly rich, and the Pakistan amphibian fauna is relatively impoverished, however, Palas appears to contain most if not all expected species of reptiles and amphibians.

At least 3 species of amphibian and 6 of reptile are so far confirmed. No work has yet been done of the fish of Palas; a mixture of South-Asian and Central-Asian 25 species and a number of species endemic to the High Asian sub-region can be expected.

Work on the Invertebrate fauna of Palas has barely begun, but a high diversity of Insects, spiders and mites, molluscs, annelid worms, etc. can also be expected. Work on butterflies (Lepidoptera) and dragonflies (Odonota) has so far confirmed at least 20 species of the former and 8 of the latter (7 Anisopterans and a Coenagruidae Zygopteran).