

The Current Status of Snow Leopards and Their Prey Status and Conservation of Snow Leopard in Pakistan

Full Text:

The snow leopard (*Uncia uncia*) inhabits comparatively arid alpine regions in northern Pakistan including Chitral, Dir, Swat and Kohistan districts of the North West Frontier Province (NWFP), Gilgit and Baltistan districts of Northern Areas (NA) and Muzaffar Abad district in Azad Jammu and Kashmir (AJK) (Roberts 1977, Ahmad 1994). It is sparsely distributed in northern isolated mountain valleys of Chitral (Schaller 1980) and has been regularly reported from Chitral-Gol National Park since 1989 although it has remained an occasional winter visitor to this valley since long and was observed by George B. Schaller in 1970 (Jackson 1992). At least one pair is now believed to permanently inhabit the National Park, occasionally roaming into the adjoining Kalash valleys. Confirmed sightings have been reported from Goleen-Gol, Booni Gol, Tooshi, Arkari valley and Shah Janali. Snow leopard is known to the people of Pallas valley in Kohistan district. In the Northern Areas, snow leopard is widely distributed throughout Gilgit, Skardu, Baltistan, Hunza and Ghanche district in suitable habitats. Khunjerab National Park, bordering China, is known to support a good population of the species. Snow leopard is also found in the upper Neelum valley of AJK.

Status

Determining the status of snow leopard offers a big challenge to biologists. Highly cryptic colouration, sedentary behaviour, mostly solitary behaviour, and sparse distribution in far flung and generally inaccessible mountain regions make the survey of snow leopard extremely difficult. Green (1982) and Chundawat et al. (1988) also mentioned the same problems confronting the collection of hard facts about the snow leopard. Ahmad (1994) also considered lack of communication between the government officials, NGOs and local communities as a factor hampering collection of information about snow leopard. Most information on the status of this cat is therefore derived from indirect evidence of its presence. This includes recording pug marks, scent markings, scraps, livestock predation reports, occasional sightings and incidental killing of the leopard itself by herdsmen or poachers. Any statement on the status of snow leopard is therefore a crude estimate at best.

Based on rare encounters with hunters, Schaller (1977) concluded that the density of snow leopards in the Himalaya was low even in the beginning of the century. Similar low densities existed in Pakistan in the 1970's. He estimated the total population of snow leopards in Pakistan at less than 250. Compilation of various reports on sightings of snow leopards, livestock kills and other indirect evidence indicated the presence of 76 animals throughout its range in NWFP during 1993 (NWFP Wildlife Department 1994).

The Forest Department in Gilgit estimated the presence of snow leopards at 260 in 1994 in the Northern Areas (Forest Department records). No population estimates are available from Azad Kashmir. Based on the available information, snow leopards in the whole of Pakistan number in the range of 400+/-50. This number nearly equals IUCN estimates for the entire Himalayas in early 1970s (Roberts 1977).

Threats To Snow Leopard

Survival of snow leopards in Pakistan is jeopardised by four main factors: loss of prey populations, killing by herdsmen to protect their livestock, poaching for pride, protection and pelts, and lack of awareness.

Loss of Prey

Loss of prey populations is by far the most important factor threatening the survival of snow leopard. Apart from domestic livestock, the primary prey species for snow leopards include Blue sheep (*Pseudois nayaur*), Marco Polo sheep (*Ovis ammon poli*), Himalayan ibex (*Capra [ibex] sirbirica*), Markhor (*Capra falconeri*), Musk deer (*Moschus moschiferus*), Urial (*Ovis orientalis*), Marmot (*Marmota bobak*, *M. caudata*), Royle's Pika (*Ochotona roylei*), Himalayan snowcock (*Tetraogallus himalayensis*), and other species of mammals and birds found in snow leopard habitat (Schaller 1977, Roberts 1977, Jackson 1979, Fox 1989 and Chandawat and G.S. Rawat 1994).

The habitat of most of the prey species has shrunk due to expansion of human population, as it has been highly degraded due to heavy livestock grazing and timber and fuel collection. As a result, the populations of almost all the prey species have suffered. Poaching of prey species for sport as well as subsistence has also taken a heavy toll. Lack of financial resources and inadequate and ineffective institutional arrangements for wildlife management in the snow leopard range are likely to result in further depletion of prey species populations over time with a consequent increased threat to snow leopard survival.

Livestock Depredation

Local communities in the snow leopard range in Pakistan are primarily dependent upon agriculture and pastoral economy. Livestock rearing is the backbone of their economy. Having been deprived of its natural prey species, at least partially, snow leopards find livestock an easily available food source. Livestock depredation by snow leopard inflicts heavy losses to the livestock owners, which they can seldom bear.

The NWFP Wildlife Department received 59 claims for the loss of 303 livestock heads, mostly sheep and goats, from Swat and Chitral district, on account of snow leopard predation, in 10 years. Although some of the claims may contain exaggerated losses, only a limited number of the claims reach the department due to lack of quick accessibility.

The Government agencies in Pakistan neither have a policy nor a mechanism for payment of compensation for livestock losses due to predation. Such a situation is apt to prompt the herdsmen and livestock owners for killing the snow leopard in defence of their livestock. A few instances of such killings have been reported from Chitral as well as the Northern Areas but understandably most of these killings go unnoticed and very few dead snow leopards are documented by the Wildlife staff. (Ahmad 1994).

The snow leopard will continue facing the hostility of pastoralists as long as a suitable policy to minimize livestock depredation and compensation for losses due to snow leopard predation is not adopted.

Poaching for Pride, Protection, and Pelts

Historically, hunting large predators like lion, tiger and leopards in the Indo-Pak subcontinent was an elite sport and an act of great bravery in which not only the hunter but his descendants could also take pride. Although not as common as in the past, this pride still continues among the communities. Common leopard and the snow leopard, being the only large predators in Pakistan these days, have to bear the brunt of the evil pride.

Fear of large carnivores is inherent in many rural communities in Pakistan. A mere sighting of a leopard in the vicinity of human dwellings rings an alarm among the inhabitants of the potential threat to human lives or their livestock. The community then as a whole takes it as its obligation to get rid of the carnivore at the earliest by any means.

Poaching for pelts is not very common these days. However, incidental takes of snow leopard may lead to sale of skins in the market or to the middleman. High prices for livestock pelts on the international market is sufficient incentive for the traders to bribe the rural poor for the pelts, ultimately leading to the leopard's persecution. Such instances, however, very rarely come to the notice of Wildlife Departments, except for an occasional snow leopard skin found either in transit or in the market. The Wildlife Departments are not in a position to carry out undercover operations to investigate into such trade, due to heavy expenses involved in such operations. Ahmad (1994) reported the availability of snow leopard skins in the markets.

Lack of Awareness

Rural communities in general are ignorant not only of the value of saving the snow leopard but also of the presence of any Wildlife Laws for the taking and trade of the species. They do not see any reason why they should not kill a beast which endangers their own lives as well as kills their livestock. The main reason behind this lack of awareness is the nonexistence of law-enforcing institutions and the lack of conservation education programmes. The snow leopard's survival hinges on creating a conservation ethic among communities.

Conservation Strategy

Pakistan has adopted a promising conservation strategy for the conservation of the snow leopard and its prey species. Major elements of this strategy include legal provisions, establishment of Protected Areas, conservation education programmes and community participation in conservation.

Legal Measures

The snow leopard enjoys complete legal protection in Pakistan. The Government of NWFP, Northern Areas and Azad Kashmir have included the snow leopard in the Third Schedule of their respective Wildlife Acts and have given it a status of Protected Animal (GoNWFP 1975, GoNA 1975 and GoAJK 1975.) By virtue of its protected status, hunting of snow leopard is illegal. Possession of a snow leopard, whether dead or alive, any of its body parts, or the trade thereof, is also illegal. The violation of these provisions of Wildlife Laws is punishable with

imprisonment which may extend to two years or a fine which may extend to one thousand rupees or with both, apart from the confiscation of case property i.e., the snow leopard, its dead body or parts thereof, pelts, other derivations, and the arms and/or equipment used in the commission of the offence.

The Wildlife Laws also provide for killing of snow leopard in defence of one's own life or life of another person as well as in the defence of livestock. Killing, however, is not allowed in case of loss of livestock grazing illegally in a protected area.

Apart from giving the status of a Protected Animal to snow leopards, the Wildlife Laws of respective Governments have also catered for the protection of its prey species. Consequently Marco polo sheep, Blue sheep, Asiatic ibex, Musk deer, Markhor, Urial and Himalayan Snow cock have also been declared Protected Animals.

The Wildlife Laws further provide for establishment of Protected Areas in the form of national parks, wildlife sanctuaries and reserves for the protection and conservation of wildlife species including snow leopard.

Establishment of Protected Areas

Establishment of Protected Areas is an important tool for the wildlife managers and conservationists for preservation and rehabilitation of the endangered wildlife species. A large number of Protected Areas have thus been established in Pakistan, which provide refuge to snow leopard and its prey species as well as protect their habitats. These Protected Areas include 8 national parks, 5 wildlife sanctuaries and 15 game reserves collectively extending over an area of 2.25 million hectares.

Conservation Education

One of the main causes of decline of wildlife populations and degradation of their habitats is lack of conservation awareness among the public. People are largely unaware of the role of wildlife in their lives and therefore cannot appreciate the value of wildlife species and importance of their conservation.

Conservation education programmes have been recently launched in the country. Wildlife Clubs have been organized in the schools both in urban as well as rural areas where students are taught about nature conservation using audio visual aids. The students are occasionally taken to wilderness areas for a first hand experience of natural ecosystem. Films on wildlife and conservation education programmes are telecasted and broadcasted in national as well as regional languages. Occasional articles on wildlife conservation also appear in the regional press. Wildlife conservation societies have been organized in several rural areas including those in snow leopard range.

These conservation education programmes have proven quite useful in making a large segment of public nature friendly and mobilizing public opinion in favour of conservation. The nation now supports wildlife conservation programmes more than ever before; the snow leopard of course attracts maximum attention as prime predator and a key wildlife species.

Community Participation in Conservation

Success of any snow leopard conservation programme lies in mutual coexistence of rural communities and snow leopard on their common ground. It is important that poor pastoralists do not pay heavily for saving the species at the cost of their livestock which is so essential for their subsistence. This can happen only when the communities share the management of species and draw economic benefits from conservation of the species.

Bidding farewell to the unsuccessful policy of mere policing for the law enforcement and keeping communities aloof of conservation programmes, Pakistan has embarked upon a programme of community participation in wildlife conservation. WWF-Pakistan has successfully operated in Bar valley in the Northern Areas where communities were provided incentives in the form of credit for investment in businesses till a time when the population of ibex builds up sufficiently to sustain trophy hunting. Revenues from trophy hunting would be shared by the community and the Government equitably. Just a few years' protection of the wildlife by the community resulted in a big increase in ibex population. The behaviour of the people pleasantly changed in favour of snow leopard and they started tolerating the livestock losses caused by snow leopard predation (Ahmad 1994).

A project "maintaining biodiversity in Pakistan with rural community development" has recently been launched in NWFP and the Northern Areas. This project is funded by UNDP under Global Environmental Facility I and is being implemented by IUCN and NWFP Wildlife Department. The strategy involves a selection of valleys for biodiversity conservation, training of Village Wildlife Guides, conducting natural resource surveys, preparation of village management plans and biodiversity conservation plans by the communities with technical support of the Project management team. The project is still in its early stages of implementation. It is planned to empower the communities with legal powers to manage their biodiversity resources. The revenues accruing from the sale of hunting permits and through sustainable use of other biodiversity resources, will be shared by the Government and the communities on 1:3 ratio. The communities will also set up a Village Conservation Fund with equal contribution by the Project. This fund will be used for payment of honoraria to Village Wildlife Guides, and sponsor such other programmes as the community may deem appropriate including interalia compensation to individuals for extra ordinary loss of livestock due to predators like snow leopard and wolf. The community management of biodiversity under this project is governed by an agreement implying sustainable use of biodiversity resources and complete protection of endangered species according to the provisions of biodiversity conservation plans.

The Government of Pakistan is also negotiating a conservation and development project with the European Community for Pallas valley in Kohistan district of NWFP. This project entitled Pallas Conservation and Development Project (PCDP) aims to conserve the biodiversity through integrated development and community participation.

Another project, entitled "Protected Area Management Project," is also under preparation for assistance under GEF II through the World Bank.

The project is likely to include two Protected Areas in snow leopard range. These Protected Areas will be intensively managed for conservation of their ecosystems through community participation. It is hoped that participation of communities in biodiversity conservation will bring a new lease on life for the endangered snow leopard in Pakistan.

Suggested Improvements in Conservation Strategy

The existing snow leopard conservation strategy can be further improved and its effectiveness can be enhanced by implementing the following:

(1) Improved Law Enforcement

The present institutional arrangements for wildlife law enforcement are highly inadequate. The wildlife departments either have no staff in snow leopard habitat, or it is too thinly distributed to be effective in law enforcement. The available staff is neither adequately trained nor equipped to tackle the issues of snow leopard management and law enforcement efficiently. It is suggested that institutional arrangements for law enforcement be strengthened by augmenting the enforcement staff, training it in the field of Wildlife and Park Management and equipping it appropriately to perform effectively in odd environmental conditions of arduous snow leopard habitat.

(2) Amendment in Wildlife Law

The Wildlife Law provides that it shall not be an offence if:

- a) any person kills any animal by any means in the immediate defence of his own life or that of any other person;
- b) the owner of standing crops or his employee kills any wild animal which is doing material damage to those crops by any means within the bounds of those crops;
- c) the owner of livestock or his employee kills any wild animal that is doing damage to the livestock by any means within a reasonable distance where that livestock is grazing or where it is enclosed for the night.

Undue advantage of the above provisions of law is taken by many people. They are always in search of predatory species in the vast pastures and kill them, considering their mere presence a potential threat to their lives or the lives of their livestock. Any leopard seen in the vicinity of a human dwelling hardly escapes the wrath of the people.

Since the law also provides for using any method for killing the predator, instances of poisoning of snow leopard are often reported. The poisoning is in no case an action of immediate defence but is rather a preplanned attempt to kill the animal. It can also kill several animals instead of the one targeted.

Suitable amendments in wildlife law are needed to safeguard against manipulation of the law for the extermination of species. Killing through poisoning should be made illegal altogether, while chasing the animal for killing it should also be prohibited.

Penalties prescribed in the Wildlife Laws of the country for hunting, possession and trade of snow leopard, its pelts or other body parts are meagre in comparison to the value of the species whether alive or dead. These penalties need to be enhanced to a level deterrent for the offenders. The law should also provide for a certain minimum penalty to limit the discretionary powers of magistrates.

The process of court trial is lengthy and cumbersome. The delay in deciding the offence case usually benefits the offenders. Legal reforms are needed to ensure summary trial of offence cases related to endangered species like snow leopard. Empowering the senior wildlife officers to try the wildlife offence cases will also help in speedy and effective trials of the offenders and will ultimately benefit conservation.

(3) Adequacy of Protected Areas

The Protected Areas for snow leopard are very few and far apart. Most of them are also quite small in size. These Protected Areas among themselves form pieces of fragmented habitat restricting the snow leopard or its prey species to these small isolated islands of habitat. Absence of secure corridors between them also makes the species more vulnerable to poaching through easy access.

It is proposed to increase the number of Protected Areas. These areas should be large and should be interconnected with safe corridors. The on-the-ground protection status of these Protected Areas should also be improved.

Conservation Education

Although good efforts are being made in the field of conservation education in the NWFP, such efforts are lacking in the Northern Areas & AJK. Even in NWFP, the scale of conservation education programmes is much less than required.

Boosting conservation education programmes and carrying them to the communities in snow leopard range should be given top priority. The International Snow Leopard Trust is preparing a slide show programme on snow leopard conservation in Pakistan. The programme, which has been translated into Urdu, will be shown in urban as well as rural areas for public awareness. Availability of funds is however a limiting factor in the extension of the programme to widely dispersed communities. Any amount of investment in promoting school wildlife clubs is fully justified.

Promotion of Community-Based Conservation

Initial success for community participation in conservation calls for a rapid programme of further and speedy promotion of community-based conservation programmes throughout the snow leopard range. Linkages with grazier communities are of vital importance for the survival of snow leopard. Collaboration of these communities will be readily available through a systematic approach whereby these communities are educated and helped in building predator-proof corrals and are compensated for livestock depredation losses.

Conservation of biodiversity through rural community participation is an area where huge investments are required to reach the far flung communities. Amazing success of conservation programmes is anticipated where investment is made in communities.

Control On Trade

Trade in snow leopard cubs, skins and other body parts needs to be controlled effectively. Present enforcement staff in the market places and at customs' ports of exit is neither adequate nor trained in identification of skins and other body parts of snow leopard and other wildlife species. It is essential that more enforcement staff be recruited and they be imparted complete training in identification of wildlife species, their skins and other derivatives. This staff should also be fully familiar with national and international wildlife law, conventions and treaties.

Research and Monitoring

There has not been much research on snow leopard in Pakistan. What ever limited information became available in the past 25-30 years was the result of exploratory work of a few scientists including Schaller (1997, 1972, 1973, 1976, 1977, 1980), Schaller and Mirza (1971), Roberts (1977), Malik (1985), Beg (1975), Jackson (1992), Rasool (1990), and Blomquist (1980).

A ten-day training workshop on Snow Leopard Information Management System (SLIMS) was held in Chitral from 7-16 June 1994. This workshop was organized jointly by the International Snow Leopard Trust (ISLT), World Wide Fund for Nature-Pakistan (WWFP) and NWFP Wildlife Department. The workshop, which was attended by several participants from Provincial Wildlife Departments, aimed to provide training on how to collect the information on snow leopard distribution, its population status, its prey species and the related habitat. A monitoring system was also discussed, and literature was provided to the participants for use during the implementation of SLIMS. NWFP Wildlife Department conducts periodic surveys of snow leopard and other Wildlife species in the province. The SLIMS programme has not yet fully started.

There are big gaps in information regarding snow leopards in the country. A long-term planning for management of snow leopard and its prey species would require authentic data on the following aspects:

- (1) Distribution and status of snow leopard in Pakistan;
- (2) Food habitats, home range and movement patterns of snow leopard;
- (3) Factors endangering snow leopard survival with particular emphasis on illegal trade mechanisms and routes;
- (4) Distribution and status of natural prey species;
- (5) Assessment of livestock depredation and resultant persecution of snow leopard;
- (6) Habitat trends and factors responsible for adverse trends in habitat;
- (7) Snow leopard grazier community interface;
- (8) Regular monitoring of snow leopard populations as well as its prey species at least in Protected Areas to determine population trends;
- (9) Effectiveness of conservation education programmes in changing human behaviour towards snow leopard in its range;

(10) Any other emergent information as a result of migration.