

# AN INCENTIVE SCHEME FOR WILDLIFE CONSERVATION IN THE INDIAN TRANS-HIMALAYA

By

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## Abstract

The habitat of the snow leopard *Uncia uncia* across South and Central Asia is subject to extensive pastoral use. Levels of livestock depredation by the snow leopard and other carnivores in the region are high, and often provokes retaliatory killing by the herders. This direct threat to large carnivores is further aggravated by a depletion of wild prey due to poaching and out-competition by livestock. In this paper, we describe a pilot project in the Indian Trans-Himalaya, which uses an incentive scheme to create areas free from livestock grazing on community-owned land, thereby fostering conservation commitment among local pastoralists, as well as contributing directly to an enhancement of wild prey density.

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## Introduction

The snow leopard (*Uncia uncia*) occurs in the high mountains of South and Central Asia, spanning over 12 countries. It is widely but sparsely distributed in the mountains of China and Tibet, in the Himalaya of Bhutan, India, and Nepal, in the Karakorum of India and Pakistan, in the Hindu Kush of Pakistan and Afghanistan, in the Pamirs of Afghanistan and Tajikistan, in the Tien Shan of Kyrgyzstan, Kazakhstan, and China, and in the Altai Range of Mongolia and Russia. Despite its wide geographical distribution of over 2.3 million square kilometres (Fox 1994), the species continues to be highly threatened; it is categorized as endangered in the Red Data Book of the IUCN, and is listed in Appendix I of the CITES. In this article, we highlight some of the important reasons for the precarious conservation status of the snow leopard in India, and describe the role of incentive schemes in its conservation.

The snow leopard is associated with cold arid and semi-arid scrubland, grassland, or 'barren' habitats (Jackson 1996), areas that have seen little industrial development. Its range generally coincides with areas where pastoralism and agro-pastoralism continue to be the predominant forms of land use. Although the human population density in snow leopard habitat is relatively low (e.g. < 1 person per sq. km in Spiti Valley, Indian Trans-Himalaya), many of the regions have a growing human population, a substantial proportion of which is involved in agro-pastoral activities.

Across the snow leopard's range, traditional and extensive livestock production systems are an important form of land use and source of livelihood. At the same time, these areas are also home to three other sympatric large carnivores besides the snow leopard: the wolf (*Canis lupus*), wild dog (*Cuon alpinus*), and lynx (*Felis lynx*). The levels of livestock depredation by these large carnivores are believed to be rather high. In the few studies that have attempted to

quantify the seriousness of the problem, actual or perceived livestock losses to these predators are estimated to range from an average of about two to nearly five heads of livestock per family per year (Mishra 1997, Jackson and Wangchuk 2001, Spearing 2001). In economic terms, these losses are very significant, particularly considering that these are regions with underdeveloped economies. Thus, retaliatory killing is widespread, and constitutes a serious direct threat to the snow leopard (Jackson 1996, McCarthy 2000, Spearing 2000). Further, the depletion of prey populations due to hunting for meat, and suspected out-competition by livestock, has long been recognized as a widespread and serious indirect threat to the snow leopard and other sympatric large carnivores (Schaller et al. 1988). On the other hand, threats emanating from the poaching of snow leopards for their pelt and bones, though important, are perhaps more of a localized nature. Thus, the curtailment of retaliatory killings, and restoration of prey populations are perhaps the most important current conservation needs of the snow leopard in India today.

### **Protecting with people: a conservation initiative in India**

The initiative described in this section began with a research project that investigated the relationships between pastoralism and wildlife conservation in the high altitudes of the Spiti Valley, Indian Trans-Himalaya. As mentioned earlier, across the range of the snow leopard, livestock grazing has been seen as an important conservation concern. In one of the first research projects of its kind in India, we investigated seriousness of this conservation issue by evaluating human wildlife conflicts and forage relations between livestock and wild herbivores. Our studies established that a majority of the rangelands in the 12,000 km<sup>2</sup> Spiti Valley were overstocked (with livestock; Mishra et al. 2001), which resulted in the out-competition of the snow leopard's principal wild prey, the bharal *Pseudois nayaur* (Mishra 2001). Analyses further pointed to the possible competitive exclusion of many wild herbivore species historically due to intensive and pervasive livestock grazing in the region (Mishra et al. 2002). Impoverishment of wild prey populations, together with escalation of livestock holdings, were identified as the main factors responsible for the high levels of livestock predation by the snow leopard and wolf, and their retaliatory persecution by the pastoralists (Mishra 1997). Owing perhaps to the Buddhist values of the local villagers, the persecution of carnivores seemed only occasional, but there remained a deep sense of resentment amongst the villagers against large carnivores, and against wildlife managers.

Research clearly indicated that the impoverishment of wild prey populations due to overstocking was perhaps the biggest threat to wild carnivore conservation in the area, and that the recovery of wild prey populations required a reduction in stocking densities and/or the creation of grazing-free areas. Our research program placed emphasis on combining ecological studies with a systematic understanding of the local socio-economic and political contexts within which these human-wildlife relationships were embedded, and within which conservation initiatives would have to be designed and implemented. We investigated the causes of overstocking, and found that the community ownership of grazing land and individual ownership of livestock was the most important factor underlying the rampant overstocking in the region. Although at the level of the individual family, the livestock holdings are not very high, overstocking becomes apparent at the rangeland level. We also observed that livestock provided many goods and services within the local community, ranging from milk, meat, wool, and religious symbolism, to draught power and manure. Therefore, the immediate reduction of current stocking densities did not appear a workable option, while the creation of grazing-free areas did seem a feasible proposition.

Our studies revealed that, in reality, the 'traditional' agro-pastoral system was highly dynamic, and characterized by continuous experimentation and innovation (Mishra 2001). We also found that the economy is currently in a state of radical flux; what was, until a mere two decades ago, a chiefly barter-based subsistence economy is quickly integrating with mainstream markets and is rapidly transforming into a cash-based economy (Mishra 2000). Despite these swift changes, the people do retain many aspects of the traditional Buddhist agro-pastoral lifestyle (Mishra 2001). Most importantly, the traditional social institution for collective decision-making and implementation - the village council - remains very robust. The council is an apolitical entity, with members drawn on rotation from the local community. Within its structure, it is decentralised, functions democratically, and remains responsible for village administration. The village council facilitates all collective decision-making in the village, and more importantly, commands the ability to enforce these decisions and draw compliance from individuals to the collective decisions thus made. These decisions typically pertain to collective labour, dispute-resolution, uniform access of families to common resources, and equitable distribution of responsibilities among them. Interestingly, we also found that many village councils in the region have traditionally been making decisions to lease out parts of their distant grazing land to nomadic graziers from other parts of the Himalaya (Mishra 2001).

Recognizing the ability of the village councils to arrive at and implement collective decisions, and the precedence of leasing out grazing land, we initiated efforts in 1999 to free an area from livestock grazing and other extractive human-use at an experimental scale. Under this incentive scheme, an agreement was arrived at between the village council of Kibber, and the Nature Conservation Foundation, whereby, the village council agreed to free a pasture of c.500 hectares from all livestock grazing and human use for a period of five years in return for a monetary compensation (to the village council) to cover the costs of implementation and as compensation for lost grazing. With a grant from the Van Tienhoven Foundation in the Netherlands, an annual lease amount of Rs 20,000 (c. US\$ 425, a figure decided through negotiations between the village council and NCF) is paid to the village council, and is currently being used in collective work and village development schemes. Besides the monetary compensation, three villagers are employed as guards to prevent free-ranging animals from entering the grazing-exclusion zone, while the village council itself ensures that herded livestock are pastured there.

Today, for the third year in succession, the village council has honoured its commitment to the project by ensuring a complete cessation of all grazing and extractive uses within the 'reserve', while the conservationists, for their part, have ensured a timely disbursement of the annual lease amount to the council. Quite positively, there are already some signs of wildlife recovery, with an indication of increased use of the grazing-free area by bharal over these three years (Mishra 2001).

But, an important question remains before any attempt can be made to extend this model to other ecologically and culturally similar regions of the Indian Trans-Himalaya: how can an incentive scheme like this be sustained without external subsidies?

To this end, the International Snow Leopard Trust and the Nature Conservation Foundation are now working with the villagers to develop programmes that aim to generate the subsidy for conservation locally. Initial surveys for handicraft development schemes have been undertaken, and a plan is being finalized to generate the subsidy for the grazing-free reserve from a better marketing of the local handicrafts. Currently, as a prelude to locally managed

schemes of wildlife tourism, some of the village youth are being provided with a course in conversational English. A scheme of self-managed livestock insurance is being attempted to foster a greater tolerance among villagers towards carnivores by offsetting economic losses imposed by large carnivores. Such a scheme will go hand in hand with agreements from villagers to end all retaliatory killing of carnivores and adopt improved practises of anti-predatory livestock management. The work is currently in a decisive stage, and proceeds with a thrust on mobilising a local constituency for the snow leopard and other wildlife, and catalysing a long-term local commitment to their conservation.

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