

# Linking Snow Leopard Conservation and People-Wildlife Conflict Resolution: Grassroots Measures to Protect the Endangered Snow Leopard from Herder Retribution

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### Abstract

*Livestock depredation has become a significant problem across the snow leopard's (Panthera uncia) range in Central Asia, being most severe in and near protected areas. Such predation, especially incidents of "surplus killing," in which five to 100 or more sheep and goats are lost in a single night, almost inevitably leads herders to retaliate by killing rare or endangered carnivores like snow leopard, wolf, and lynx. Ironically, such loss can be avoided by making the night-time enclosures predator-proof, improving animal husbandry techniques, educating herders on wildlife conservation and the importance of protecting the natural prey base, and by providing economic incentives like handicrafts skills training and marketing, along with carefully planned ecotourism trekking and guiding. The author explores innovative conservation initiatives in the Himalaya (Ladakh and Tibet) and Mongolia, which also build local capacity, self-reliance, and stewardship for nature using Appreciative Participatory Planning and Action, or APPA, techniques. The most sound conservation investments are those contingent upon establishing direct linkages with biodiversity protection, ensuring co-financing and reciprocal responsibility for project activities, encouraging the full participation of all stakeholders, and assuring regular monitoring and evaluation of the village-based agreements (embodied in Action Plans).*

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### Introduction

Wildlife damage is a major source for conflict between local communities and protected areas managers in the Himalaya (Kharel 1997; Jackson et al. 1996; Oli et al. 1994). In India's Kibber Wildlife Sanctuary, Mishra (1997) noted that 18% of livestock holdings were killed by snow leopard (*Uncia uncia*) and wolf (*Canis lupus*) for an estimated total value of US \$128 per household per annum—a very significant economic impact given per annual cash incomes of \$200 to \$400. Villagers claimed predation rates increased after sanctuary establishment, while surveys indicated dramatic increases in livestock numbers accompanying changes in animal husbandry systems (Mishra 2000).

A similar situation in Hemis National Park, Ladakh, Jammu and Kashmir State, led to the establishment of a compensation scheme, but within two years the sponsoring Ladakh Wildlife Department found itself committing 60% of its annual \$26,000 budget to the program. Payment takes up to two years, with claimants being paid only 10 to 30% of their animal's market value. Understandably relations between local people and the park have deteriorated, with retaliatory killing constituting a major threat to both snow leopard and wolf. Because local livelihoods are intimately bound with long-standing patterns of agro-pastoralism, relocation of people or the exclusion of livestock is not a feasible solution. Rather, local people's willing-

ness to co-exist with predators hinges upon reducing depredation to an acceptable level while improving incomes to help offset unavoidable losses of livestock.

This field note describes grassroots initiatives being undertaken in Hemis National Park to alleviate livestock loss to predation and to encourage herders to become effective stewards of the snow leopard, its prey and its habitat.

### Community-based conflict alleviation initiatives in Hemis National Park

Established in 1981, this park covers 3,350 square kilometers in the TransHimalayan Range (Fox and Nurbu 1990). Besides offering excellent snow leopard habitat, the park's four species of wild sheep

and goats give it international biodiversity importance. About 1,600 people live in 16 small settlements scattered in three valleys. They grow barley and a few vegetables, and own more than 4,000 head of livestock, of which 81% are sheep and goats, and 11% are yaks, cattle and crossbreeds. Tourism provides an important source of supplementary income. Ladakh was opened to tourism in 1974, and the Markha Valley circuit through Hemis National Park remains the most popular trekking route, with about 5,000 visitors per year.

We surveyed 79 households living within or immediately adjacent to the park to determine livestock ownership patterns, document depredation losses and map the depredation-prone areas or "hotspots" (Bhatnagar et al. 1999). Over half the households interviewed lost one to 15% or more of their domestic stock to predators, or 492 animals valued at USD \$23,500 over a 14-month period. Snow leopard and wolf were associated with 55% and 31% of the presumed depredation incidents respectively, with sheep and goats constituting 75% of the stock lost, followed by yak-cattle (13%) and horses (8%). Three settlements incurred 54% of the depredation. Losses incurred from snow leopards entering poorly constructed corrals accounted for 14% of all incidents (N=210), but nearly 50% of all livestock lost—understandably arousing considerable anger among the livestock owners.

Along with poorly constructed livestock pens, investigations into the root causes of depredation implicated lax daytime livestock guarding practices. Stock was allowed to forage in areas with well-broken terrain and cliffs, prime habitat for snow leopard (Jackson et al. 1996). The fact that domestic livestock now substantially out-

numbers natural prey and biomass only invites loss to wild predators. Historically there has been better emphasis on daytime guarding, and problem predators were controlled through trapping and other traditional control methods. With more children going to school and youths reticent to assume this hard livelihood, even highly vulnerable small-bodied livestock are left to graze unattended. While baseline documentation is lacking, predator numbers appear to have increased due to park regulations prohibiting hunting and patrolling by park guards. As Figure 1 suggests, depredation rates vary with locality, presumably reflecting differences

in predator densities, habitat suitability and herding patterns.

The household survey was followed by a workshop held in Markha village in association with the Ladakh Wildlife Department, national and international non-governmental agencies (NGOs). The primary objectives were to (1) identify cost-effective and ecologically compatible measures for reducing livestock losses; (2) Train park staff, NGOs and villagers in wildlife damage alleviation techniques; and (3) Promote community-based wildlife stewardship and enhance awareness of the opportunities to conserve even "problem" species.

Using a highly participatory



Snow leopard (*Uncia uncia*). Photograph by M. Elsbeth McPhee

process known as Appreciative Participatory Planning and Action (APPA), workshop participants and villagers examined root causes of depredation and identified a series of measures aimed at reducing depredation loss, improving household incomes and promoting wildlife conservation. APPA combines concepts from Appreciative Inquiry (used in business leadership training) and Participatory Learning and Action (PLA, Pretty et al. 1995), in a collective inquiry and planning process aimed at fostering effective group action. It operates under two complimentary premises: (1) What you seek is what you find—"if you look for problems, then you will find more problems" or conversely, "if you look for successes, you will find more successes;" and (2) What you believe is what matters most—"if you have faith in your vision or ideas for the future, and if these are believable, you can achieve success without waiting for government or outside agents to take you there."

APPA is practiced through an iterative process that seeks to (1) *discover* the community's strengths and its valued resources; (2) *envision* short-term and long-term futures if resources were mobilized and the community acted in concert; (3) *design* a basic action plan for guiding development and nature protection in ways that substantially limit long-term dependency upon outside financial sources or technical "know-how;" and (4) motivate participants to initiate community-improvement actions *immediately*, and largely on their own.

Outside donor support was only offered if the following provisions were met:

**1) Conservation**—Biodiversity conservation is the primary motivation behind external investment, and therefore all project activities must be implicitly linked with clearly de-



Figure 1. Depredation hotspots

fining conservation objectives.

**2) Participation**—the active and equitable involvement of each stakeholder group is promoted throughout the project to ensure all affected households will be benefited and to encourage participation irrespective of gender, age or economic status.

**3) Reciprocity**—All stakeholders, whether outside donor, local NGO, government, or villagers are expected to make a reciprocal contribution within their means (e.g., cash, materials, labor, or in-kind service).

**4) Responsibility**—The beneficiary community must be willing to assume responsibility for meeting the conservation objectives and for maintaining any infrastructural development. There should be clear penalties for infringement by any of the participants.

**5) Monitoring**—Stakeholders should employ simple but realistic indicators for monitoring project impact and performance, described in the Action Plan prepared jointly and signed by the key parties.

External expertise is blended with local knowledge in designing

remedial actions that were environmentally responsible (i.e., compliant with park regulations and species/habitat management requirements); economically sustainable within the local context; socially responsible (e.g. building upon proven traditions and cultural values which protect nature); and which are implemented under a mutually agreed-to (and signed) work-plan that sets forth the responsibilities, contributions and obligations of each partner.

Markha villagers concluded that their best option lay in replacing the existing four winter corrals with three larger predator-proof structures placed side-by-side and sharing inner walls. They donated their labor and provided on-site materials (stones and mud), while external donors provided off-site materials (wire mesh, roofing poles, and secure doors). Construction was scheduled for spring, but was delayed due to frozen ground. Also, corrals had to be 15 feet longer than the plans indicated because the villagers deliberately underestimated their livestock holdings, fearing they would be taxed more by the



government for reporting actual herd sizes. Unfortunately, they used the corral before it was fully predator-proofed, and lost 29 animals to a snow leopard. The outside donors felt some responsibility for the loss and called a community meeting. The villagers, however, assumed full responsibility for what had happened. Their reasoning was as follows: there had been a death in one of the families, just before the depredation. As the other six affected households had only lost one or two animals, they all agreed that a traditional Mountain Spirit had been responsible for the snow leopard's visit. We believe that by predator-proofing a village's corrals we are removing as many as five to 10 snow leopards from risk of retaliatory killing.

### Conclusions

At the broader level, the future of these protected areas hinges on the degree to which the basic concerns, needs and aspirations of the local people are addressed. Over the long-term, the most cost-effective approach for cash-strapped developing countries may lie in promoting a set of carefully designed and monitored community-based stewardship initiatives in which local people benefit from the presence of wildlife, including predators. While our initial effort focused on reducing loss of livestock to predators, we are now concentrating on measures aimed at helping local people capture more benefits from tourism. For example, women are

being offered skills training to enhance their summer tea-house operations by improving menus, ensuring hygienic conditions, and building campground facilities. A key next-step will be to use the "parachute cafes" or tea-houses as focal points for providing tourists and local communities with wildlife conservation education.

We believe this approach is highly effective in mobilizing rural communities toward greater self-reliance and thus a more harmonious long-term relationship with the National Park in which they live, and on whose resources they depend so heavily. APPA builds pride by highlighting positive community attributes and building upon traditional values and successes. NGOs are the most obvious vehicle for facilitating community-based integration of conservation and development; however, the sponsoring agency must be willing to make a long-term commitment to their rural stakeholders (Sanjayan et al. 1997).

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