

Ladakh Corral Improvement Program – The History

Background: Proclaimed in 1981, the 3,350 square kilometer Hemis National Park is located in northwestern India in the Ladakh District of Jammu and Kashmir State. Besides offering excellent snow leopard habitat, it harbors four species of wild sheep and goats—giving this park international biodiversity importance.

Elevations in this stark arid transHimalayan landscape range from 10,800 feet to some 21,000 feet. The Zaskar River cuts a spectacularly deep and rugged gorge through the park. While the canyon is impassable in summer, in winter people can walk along the frozen riverbed. Although the vegetation is sparse, there is a diverse range of large mammals amid varied mountain and riverine habitats. Current biological surveys are needed to obtain reliable wildlife population estimates, but previous rough estimates in the existing park and the potential extension are as follows: up to 100 snow leopards, a few lynx, 25-50 wolf and wild dog. Blue sheep are the most abundant ungulate, with an estimated 3,000. Two ungulate species are endangered: the Ladakh urial (± 300), and the Argali (± 25). Hemis is located at the very edge of Asiatic ibex range, with an estimated ± 50 individuals. An analysis of scats or droppings indicates that blue sheep are the snow leopard's main prey, followed by domestic livestock, marmot, Tibetan hare, pika or mousehare, and such gamebirds as the snowcock and chukor partridge.

About 1,600 people live in the park in 16 small settlements scattered in three valleys – the Rumbak valley (4 villages); the Markha valley (7 villages) and the Shang Valley (5 villages). As agro-pastoralists, the villagers share the park's resources with wildlife. They grow barley and a few vegetables, and own nearly 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 its most popular trekking route, with about 5,000 visitors per year.

A survey of households indicated that over half lost 1-10 % of their herd to predators. The losses totaled 492 or 12% of all the park's animals over the 14-month period from January 1998 to February 1999. The average household lost six animals valued at almost 300 US dollars, for a total economic loss in the park of some \$23,500.

Herders reported that snow leopards were responsible for 55% of the kills, followed by wolf (31%), red fox (5%), wild dog (3%) and lynx (2%). Sheep and goats comprised three-quarters of the animals lost, followed by yak and cattle (13%) and horses (8%). In one incident, 53 sheep and goats were killed after a snow leopard entered a night corral. About 57% of reported losses occurred during the daytime. Nearly 50% of losses are associated with snow leopards entering a poorly constructed night corral and inflicting heavy damage. Dramatically these cases accounted for 29 of the 210 incidents reported. This clearly highlights the economic impact when a predator enters a poorly constructed corral. Over half of all losses occurred in just three settlements: Markha (37%), Rumbak (9%) and Chokdo (8%).

Hemis, like many parks in the Himalaya, has a long history of people-wildlife conflict due to livestock depredation and crop damage. In 1994, the Wildlife Department established a compensation program, but due to high cost and a limited operational budget, claims have taken

up to two years to settle. With an annual budget of some \$26,000, the Ladakh Wildlife Department must allocate as much as 60% of its budget to compensate the herders. Villagers have to walk up to three days to report their loss, and a park ranger then has to visit the site in order to verify the claim before it can be approved for payment. Payments are made at only 20-30% of the true market value of the animal killed. Other constraints include poor communications between the park's HQ and the two ranger posts, limited and poorly trained field staff, and lack of standardized or transparent verification procedures. With only three rangers, the park administration cannot properly patrol this relatively large area.

Not surprisingly, the poor park-people relations continue to deteriorate, thus directly and indirectly threatening the snow leopard and wolf population. There is increasing anger over crop loss inflicted by blue sheep, the primary wild prey for both carnivores. This was the situation we faced when we led a workshop in 1999, sponsored by the International Snow Leopard Trust (ISLT), The Mountain Institute (TMI) and the Ladakh Ecological Development Group, known as LEDeG.

Markha Village Activities:

The 12-day planning and training workshop was held in October 1999 in Markha village, a hamlet of 26 households with the highest depredation losses in Hemis National Park. The objectives of the workshop were to:

- (1) Prepare an *Action Plan* for reducing livestock loss, especially due to snow leopards
- (2) Train non-governmental organization (NGO) representatives, Wildlife Department rangers and villager leaders in APPA techniques for resolving people-wildlife conflict
- (3) Increase awareness for conserving snow leopards, their prey & habitat as the first step toward improving park-people relations and promoting stewardship.

Dr. Nandita Jain and Mr. Renzino Lepcha from the Mountain Institute's Nepal regional office led the APPA training and facilitated the workshop. Workshop participants were trained in each technique, after which villagers participated in the participatory exercises. We gathered the following types of information during the first or *Discovery Phase* of the APPA-based program:

- *Map of depredation hotspots and seasonal pastures
- *Calendar of seasonal livestock movements and daily herding cycle
- *Seasonal calendar of depredation losses
- *Pair-wise matrix ranking of major sources of livestock mortality, indicating significant losses due to early spring snowfall

The *Dreaming Phase* followed during which participants envisioned how they would like their village to be in future. With regard to livestock depredation, they wanted to stop incidents of multiple killing by snow leopard, and to better live in harmony with wildlife. After discussion and clarification, the villagers accepted our proposals for Conditionality and "Best Practices" planning (see How We Work) in coming up with the preferred solution.

During the *Design Phase*, we finished gathering information that we needed for planning effective measures to reduce depredation losses. We conducted semi-structured interviews to assess what causes predation and to characterize its pattern. We learned how summer and winter corrals differed with respect to their design and use of materials, the different kind of traditional livestock guarding methods, and which techniques were most effective at minimizing loss. We also investigated existing and potential sources of income, since we were interested in increasing household incomes as one way of offsetting the economic impact of livestock depredation. These exercises resulted in the following outputs, which were shared among all villagers:

- *A chart ranking the different guarding measures in terms of their effectiveness
- *Village income and livelihood ranking
- *A Venn diagram showing village institutions that affect animal husbandry practices, village livelihoods, and management of Hemis National Park

The participants concluded that the best solution lay in replacing the village's four winter sheep and goat corrals at Phochey pasture with three larger predator-proof structures placed side-by-side so that they could share their inner walls. Villagers would donate their labor and provide all on-site materials such as stones and mud, while ISLT would provide off-site materials like wire mesh, roofing poles, and secure doors. Local technical assistance and financial management would be provided under contract with the Leh Nutrition Project (LNP), a locally active NGO involved in watershed management. Project activities were to be supervised by Rinchen Wangchuk (highlight staff). Since the villagers were busy harvesting and winnowing late-ripening barley, they scheduled the corral construction for the following spring (i.e., March 2000).

During the *Delivery Phase*, we developed and signed an Action Plan that specified the roles, responsibilities and obligations of each partner. The importance of herder education and vigilance in guarding livestock while out on the pastures was duly emphasized. Among the indicators identified by the villagers for assessing the success of the program were:

- *Significantly reduced livestock losses in corrals
- *Level of satisfaction among villagers for project implementation
- *Positive change in attitude toward wildlife, Hemis National Park, and its management authority and staff
- *Less time spent guarding at corrals

We also conducted educational and “dreaming” exercises with the children and committed to work with Markha and other area villages to promote increased tourism benefits for local residents of Hemis National Park.

Results

As we have learned, plans do not always go as they are intended. Two events led to some very unexpected results: First, construction had to be delayed because the ground was still frozen in March and the villagers wanted a good foundation, paramount to a lasting structure. Secondly, the corrals would have to be 15 feet longer than the plans indicated – the villagers had deliberately

underestimated their livestock holdings, due to government tax laws based on livestock numbers! The materials delivered by LNP were based on the smaller design, so that the roof of one structure could not be entirely enclosed during construction in July. Also, for various reasons, our requests to LNP to purchase and transport the additional roofing poles and wire mesh was not immediately acted upon.

Disaster struck on the night of November 20th when a snow leopard jumped into the unfinished corral and killed 27 goats and two sheep belonging to seven families. Given the delay in delivering the extra materials, we felt some responsibility for the loss. However, as the primary stakeholders, the villagers assumed sole responsibility for what had happened. We later learned the reasoning behind this. They felt their loss resulted from an unhappy “Mountain Spirit.” A member of the most affected household had died just before the snow leopard’s visit. And the villagers felt that the cat had taken special care to choose 10 goats from this family (the other six households only lost one or two each)!

However, even though the snow leopard gained entry to the corral, we learned some important lessons of our own:

- Get accurate information on livestock holdings through direct observation (for instance count livestock!)
- Do not rely on other agencies to supervise corral construction
- Ownership and responsibility for the project is best secured through a strongly participatory planning and design process

Currently, we are working on ways in which the villagers can monitor the status of snow leopards based on its sign and the number of blue sheep, its major prey species.

We are now turning our attention to predator-proofing other corrals in the area, at a cost of \$300-600 each depending on their size and distance from a road head. We have held further community-based tourism planning workshops, as we focus on ways of improving local incomes and livelihoods in environmentally friendly and socially-responsible ways. These actions will be part of a long-term SLC commitment to the people living in Hemis National Park.

Our deep appreciation is extended to the organizations sponsoring the workshop (J & K Wildlife Department, Leh; ISLT; LEDeG; and TMI), the residents of Markha, and to Chewang Rinchen, Ladakh Hill Council Member for Markha, Rinchen Wangchuk, and facilitators Nandita Jain and Renzino Lepcha, for their significant individual contributions.