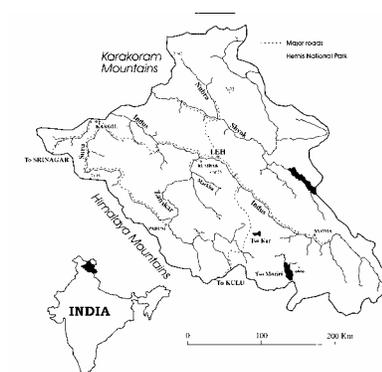


Snow Leopard Conservation and Related Developments In Ladakh, India

By Joseph L. Fox

This past summer I visited parts *of* Ladakh *or* "Little Tibet" in the Transhimalayan region *of* far northwest India. This was *one of* the major sites *of* the Indo-U. S. Snow Leopard Survey Project supported in part by the International Snow Leopard Trust (ISLT) during the mid 1980's. It is also the site *of* the Hemis National Park, *one of* three key snow leopard reserves targeted by the ISLT for conservation assistance through its "Nurture a Nature Reserve" program. Through such visits and exchanges with wildlife researchers from India (e.g., also Dr. R. S. Chundawat's visit to Seattle this *year*), the ISLT maintains communication and cooperation with wildlife management and research organizations and individuals in the region.

Although the western portion *of* the Indian state *of* Jammu and Kashmir around Srinagar remains unsettled due to political unrest, direct flights from



The Markha Valley is located in the northern part of Hemis National Park in India.

The author saw a constant stream of tourists following this trekking route.

New Delhi and vehicle access via the recently opened road from the Kulu Valley in the south to wildlife management authorities in Ladakh.

maintain a steady flow of tourists to the region of Ladakh during summer. Both state and central governments are currently promoting expanded tourism in Ladakh by opening more areas near the Chinese Tibet border, partly as a response to lowered military inputs to Ladakh's economy as tensions with China ease. Whereas the decrease in military presence has improved circumstances for many wildlife species, (i.e., those not completely decimated by overhunting), the potential effects of rapid tourism-based development on Ladakh's natu

Mr. P. P. Sharma, the current Chief Wildlife Warden of Jammu and Kashmir, was this past summer (July and August) the first such high level wildlife management official to visit Ladakh in approximately 8 years, providing a clear indication of the increased importance with which the state views conservation in the region. There is also a new Wildlife Warden for the Leh District. Mr. Nasier Kitchloo, whose jurisdiction encompasses the Hemis National Park and other reserves in eastern Ladakh.

Mr. Kitchloo has received some of his training in conservation science through a Smithsonian Institution course near Washington D. C. and at Colorado State University, and has experience as warden of the Kisthwar National Park on the southern side of the Himalaya in Jammu and Kashmir.

Hemis National Park:

Probably the most popular tourist trekking area in Ladakh (no visitation records are kept) is the Markha Valley circuit through the northern part of Hemis National Park (see map). Observing several miles of trails along this circuit from a nearby ridgeline, I was surprised to see the extent of the constant stream of tourists daily following this trekking route. It is clear that national park authorities need to monitor better the effects of such visitation on natural resource use as well as on local human attitudes and economic changes within the park. Furthermore, there is currently a new road under construction along the south side of the Indus valley which enters the Hemis National Park along this trekking route on its approach to the Rumbak gorge, with plans to continue it up to the village of Rumbak inside the park. Parts of the road under construction last summer, near the Rumbak river confluence with the Indus, pass directly through some of the best habitat in the region for an endangered species of wild sheep (and a prey species of the snow leopard), the Ladakh urial. Disturbance of these animals and possible illegal hunting by road workers or others with increased access along the new road, needs to be closely monitored by national park authorities. The Rumbak valley itself contains prime snow leopard habitat and has been the site of ecological studies of snow leopard and their prey by Dr. Raghunandan S. Chundawat of the Wildlife Institute of India. Such studies enhance the basis for conservation management and should continue; Dr. Chundawat hopes to be able to continue such work with support from ISLT.

According to the Wildlife Warden, Mr. Kitchloo, compensation of approximately 90,000 Indian rupees (approx. US \$2,000) was dispersed last year to livestock owners in Leh District, including Hemis National Park, for losses due to predators, primarily snow leopard. Although the ramifications and future potential of such a policy has not as yet been thoroughly assessed, it indicates the willingness of

wildlife management authorities to tackle important issues associated with snow leopard conservation in the region. The encouragement of research such as that being planned by Dr. Chundawat and his colleagues, and its incorporation in the development of effective management actions is thus one of the areas in which ISLT can effectively encourage fulfillment of its objectives for snow leopard conservation.

Eastern Ladakh:

While in Ladakh I was invited by Chief Wildlife Warden P.P. Sharma to accompany him and Mr. Kitchloo on an inspection tour of areas newly opened to tourists in the high eastern plains of Ladakh. Our itinerary included parts of the upper Indus valley as far as Nyamo, which is some 100 miles east of the main town in Ladakh (Leh), as well as up to the second largest lake in Ladakh (45 sq mi), Tso Moriri, which is located at an elevation of 15,300 ft near the border with both China and the Indian state of Himachal Pradesh. We saw kiang, or Tibetan wild ass, along the road in a couple of sites and passed mountain ranges that are known to support wild sheep species such as Tibetan argali and blue sheep. This area is at the edge of prime snow leopard habitat in Ladakh. The flat open plains of the east are not conducive to the stalking predatory behavior of leopards; rather they are more appropriate habitat of the wolf. However, the wolf and many of the wild ungulates

P.P. Sharma, J. L. Fox and N. Kitchloo
(Photo by J. L. Fox)

of these plains and rolling hills, such as Tibetan antelope, Tibetan gazelle, Tibetanargali, kiang, and wild yak, have been decimated by hunting primarily associated with military activities, over the past 35 years. With the decrease in military presence associated with easing of tensions with China, the opportunity arises to permit more civil management in the region and the question of conservation, including establishment of protected areas, has become of greater interest-and was a primary reason for Mr. Sharma's inspection of this area.

I was surprised to find the "highest wind-surfing contest in the world," sponsored by the Indian army, under way upon our arrival at the large lake Tso Moriri, with the organizers incongruously utilizing delicate lakeside habitats for the construction of reviewing stands. Such activities clearly point up the environmental conflicts that India today must contend with in its efforts to develop a system of well-managed protected areas as demands for tourism-based economic inputs increase. Tso Moriri lies within the Changtang Wildlife Reserve, a designation that would seemingly preclude the type of activity we observed on its shores. With the opening this past year of the Tso Moriri area to tourists, without any lead-time for management authorities to prepare for such influx, the natural qualities which currently lure visitors to the area may be quickly placed in jeopardy. It is also clear that with snow leopards inhabiting the mountains surrounding the lake, such tourism development may eventually lessen local demands on high elevation pasture resources, may act to deter illegal hunting, and in the long-run can be seen as a potential benefit for the conservation of snow leopards and their prey.

The crux of the matter, however, is that these issues need to be much better understood by all concerned, with management decisions and actions developed on the basis of this knowledge. The international interaction and communication associated with ISLT involvement and cooperation with authorities in the region can thus be of significant help in making some of these issues more apparent within Ladakh and more widely known outside the region. It is hoped, for example, that the results and expertise derived from research in the region as mentioned above can be utilized by Jammu and Kashmir authorities in developing proper manage

ment plans for several of Ladakh's protected areas.

On the return from Tso Moriri our jeeps almost became completely mired in the mud along the Tso Kar, a shallow salt lake surrounded by lush grasslands and marshes that is clearly one of the most productive wildlife areas in Ladakh. Here we saw kiang, a part of herds that are apparently resident in the area. Endangered black-necked cranes, as well as many other bird species, nest along its shores, and some of its salt-encrusted shores have provided this needed commodity to the local seminomadic peoples for centuries. I hope Tso Kar and its surroundings will receive the official conservation status it deserves within Ladakh's protected area system.

Conservation Education Center:

The International Snow Leopard Trust is currently supporting the development of educational materials to be displayed at an information center located in Ladakh. In the summer of 1994, the government of Jammu and Kashmir approved, with central government support, the plans for construction of a conservation education visitor center along the Indus River about 10 miles outside of Leh. We look forward to seeing this endeavor come into fruition with ISLT's contribution being put to use in the preparation of display materials for the center and trust that local advice to maintain the integrity of traditional architectural styles in the building's construction will be honored. We also extend our best wishes to Mr. Sharma in his new position as Chief Wildlife Warden and look forward to continued cooperation in the future.

Mr. Chering Nurbu- Memorial to a snow leopard Conservationist:

Nearing the publication date for this article, we received the very sad news of the death of Ladakh's best known and most respected wildlife conservationist, Mr. Chering Nurbu. As previous Wildlife Warden, and more recently the chief District Forest Officer for the Leh District, Chering Nurbu has been the most active government official in the cause of wildlife and nature conservation in Ladakh. His heart clearly belonged to the natural world in Ladakh: and his love of being out in the wilds of Ladakh, his untiring defense of conservation issues, and his

establishment of a rapport with local villagers in the process of promoting conservation were some of his great strengths. He was an inspiration to those working to conserve Ladakh's diverse wildlife and natural resources, and will be deeply missed by all those in the conservation community. We therefore sincerely hope that as a legacy of Chering Nurbu, we will continue to see steady progress in the conservation of snow leopard and its ecosystem in Ladakh, and that we see more young local Ladakhis coming through the educational and government system to follow in his footsteps.