

## A Snow Leopard and Prey Species Survey in Khunjerab National Park, Pakistan

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#### Introduction

In 1994 WWF-Pakistan, ISLT (International Snow Leopard Trust), and the NWFP Wildlife Department sponsored a Snow Leopard Information Management System (SLIMS) Workshop in the Chitral Gol National Park of Chitral District for Pakistani forest officers and biologists. The workshop and field training covered standard survey methodologies and conservation issues. One exercise called upon the twelve trainees to list all the reserves with snow leopard and prioritize them according to the need for field surveys. At the top of the list was Khunjerab National Park (KNP), a protected area established in 1975 as a haven for rare species such as snow leopard (*Uncia uncia*), Marco Polo sheep (*Ovis ammon polii*), blue sheep (*Pseudois nayaur*), brown bear (*Ursus arctos*), and kiang (*Equus kiang*). KNP is bounded in the north by the Chinese border where in the 1980s the Chinese established the Taxkorgan Nature Reserve, also recognizing the importance and trans-boundary ranges of endangered species, especially the Marco Polo sheep.

In anticipation of Pakistan hosting the 8th International Snow Leopard Symposium, WWF-Pakistan and ISLT discussed the idea of a joint survey with China in the Khunjerab-Taxkorgan area. The U.S. Fish and Wildlife Service submitted a joint survey proposal to the Chinese in 1994 under the U.S. Nature Conservation Protocol. The Chinese, however, selected an alternative activity under the Exchange Program, so there were no further discussions with them, and in lieu of the proposed multinational survey, WWF-Pakistan and ISLT agreed to a survey of Khunjerab without Chinese participation. Timing of the survey was such that results could be reported to delegates of the 8th Symposium.

#### Methods and Results

A survey team composed of WWF-Pakistan, ISLT, and U.S. National Biological Service staff reached KNP headquarters in Dhee on the 30th October, 1995. The team spent the next seven days surveying selected ridges and nullahs from the Passu glacier to Zero Point on the KKH (Khunjerab Karakorum Highway) at the top of Khunjerab Pass on the border with China. The most time was spent in Kharchanai nullah, an area known to have snow leopard and noted as a lambing area for Marco Polo sheep. Survey data were collected and logged according to the Snow Leopard Survey and Conservation Handbook (Jackson and Hunter 1995). Six areas were surveyed, including five sites located inside KNP and one site near the town of Gulmit (Passu Glacier). The results of the surveys are as follows:

#### Snow Leopard Sign

Passu Glacier site	10.7 scrapes/km	(1.5 km searched)
KNP sites	3.7 scrapes/km	(6.4 km searched)

#### Prey Species (Ibex) - Number of animals sighted

KKH road edge, near Dhee	9
Kharchanai Nullah	14
KKH at the Top	18
Dhee Nullah	25

Scrapes are perhaps the best indicator of snow leopard presence and abundance. In addition to scrapes, the survey team also noted pugmarks, feces, scent rocks, a recent livestock kill, interviewed herdsmen and local villagers, and surveyed prey species. Fresh pugmarks of a female and subadult snow leopard were tracked for more than four km in the Kharchanai nullah. Interviews suggested that almost all of the nullahs in the area have snow leopards at some time during the year, with the more rolling terrain at the Khunjerab Pass favoring wolf (*Canis lupus*) rather than snow

leopard. A fresh brown bear scat and winter den was noted in the Ologhdour pasture. A total of 66 ibex were noted from Dhee to Zero Point. In total, the data reflect a reasonably healthy population of snow leopard along the KKH corridor section of the park.

>From interviews and past records we learned that Marco Polo are rarely seen after late August, when they migrate to their winter pasturages in China. Searches for Marco Polo were conducted, however, at Zero Point (two days) and at upper Kharchanai Nullah (one day) on the chance some animals might still be on the KNP side. We were told that some 80 Marco Polo were sighted in 1995 in the Kharchanai nullah. Near Zero Point about 3-4 were sighted in 1995 with past years fluctuating between four or zero. Most persons we interviewed agreed that Marco Polo sheep numbers declined dramatically (i) during the construction period of KKH (Karakorum Highway) from 1966-78, and (ii) after the establishment of the Karakorum Security Force (KSF) check posts in KNP in 1986. There are widespread rumors that Marco Polo sheep are heavily hunted on the Chinese side of the border, while local shepherds safeguard animals while they are on the Pakistani side of the border.

### Conclusions and Recommendations

Snow leopard in the KNP appear to be in good condition and under no immediate threat of extirpation. While KNP harbors many other rare wildlife, it is the presence of Marco Polo sheep that sets it apart from other reserves in Pakistan and central Asia. Zero Point is the most accessible place in the world where this rare species can potentially be seen from the KKH, a world famous tourist route in itself. For Pakistan, however, such renowned status and great potential rests tenuously upon a species largely situated in neighboring China. Zero Point and Kharchanai are likely marginal habitat for Marco Polo as observed numbers have fluctuated widely over the years. And it is difficult to know how much sheep numbers are affected by natural cycles versus human disturbance, or both. Clearly, the world-class potential of KNP cannot be realized without the presence of Marco Polo; therefore, the majority of our recommendations are directed at the problems and issues of attaining a viable and visible population of Marco Polo at Zero Point and in Kharchanai Nullah. The KNP management plan prepared by WWF-Pakistan addresses most of the critical issues confronting wildlife of the park, while meeting the needs of legitimate graziers. It is unclear, however, at this stage how the plan will be executed or fully funded. We present our recommendations below:

(a) The Khunjerab Security Force should be installed with a conservation and stewardship role, and the number of guards and posts reduced, especially from the Khunjerab Top or Pass over the long-term. There are local reports that the KSF may treat the park as their private hunting reserve. In addition, their involvement in fuelwood extraction (including juniper trees which are over 500 years old) should be terminated, and this source replaced by more efficient kerosene stoves and heaters.

(b) We fully concur with the Management Plan's proposal for reducing and removing livestock from the Ologhdour pastures and the 12 mile Core Zone (WWF 1995). The Kharchanai pastures are too small and vulnerable to overuse by the 1,000 stock that use this constrained area for two months during the summer. Grazing in Ologhdour likely disturbs lambing ewes, pushing them onto steeper and more marginal areas. Removal of grazing, especially during lambing season, may encourage some animals to winter in Pakistan, rather than returning to China where they appear to be exposed to heavy hunting pressure. It should be possible to compensate Gojal villagers for lost forage by establishing irrigated hay pastures closer to their villages, which could help greatly to alleviate the winter food shortage. A survey of rangeland conditions in and near the KNP is a key prerequisite to developing acceptable alternatives for villagers affected by pasture closure.

(c) Removal of grazing from some areas is not likely to adversely affect the snow leopard since it occurs during the summer when marmots (*Marmota caudata*) are

available and actively hunted. An exception occurs in the Dhee Nullah where livestock are maintained year-round with some falling prey to snow leopards, especially during the winter. Some 100 yak are also maintained at the Khunjerab Pass during the winter. Marmot are a very important supplementary or buffer food for leopards, while ibex are the staple ungulate food item. The analysis of scats collected from different sites during each season would establish the importance of livestock to the Khunjerab snow leopard population.

(d) As recommended in the KNP Management Plan, a Management Committee, headed by the Chief Secretary, Northern Areas, with representation by the KNP administration, organizations like the Police, KSF, Aga Khan Rural Support Programme (AKRSP), WWF and local communities, should be established and empowered as soon as possible to oversee conservation and appropriate development actions in the area.

The KNP Directorate should establish regular contact with the officials of the Taxkorgan reserve in order to better manage Marco Polo sheep and other potential transboundary species like the threatened brown bear. Systematic lambing and herd composition counts need to be conducted annually in Ologhdour and the status of Marco Polo in the Kilik Mintaka area needs to be verified at the earliest opportunity. The status of animals on the Chinese side needs also to be determined. These populations cannot be sustained over the long-term without cooperative, active protection of both lambing and wintering areas. Perhaps a start toward this goal might be attained through a joint Pakistan-China planning workshop, followed by joint field surveys. WWF and ISLT could play an instrumental role in initiating this dialogue and in providing any necessary technical expertise.