

## **Project Update: March 2006**

The Tibetan gazelle, *Procapra picticaudata*, is a species that was widely distributed in Ladakh until the recent past. Our earlier surveys during 2000 to 2003 have established that it is presently on the verge of local extinction, being restricted to two to four small populations totaling c. 50 animals in entire Ladakh. We estimated that its range declined from c. 20,000 km<sup>2</sup> in the early 1900's to c. 1000 km<sup>2</sup> in the late 1980's and is now restricted to a range of merely c. 100 km<sup>2</sup>. Known gazelle populations in the Tso Kar basin and Dungti have gone extinct in the past decade. This precarious status of the gazelle has presumably been brought about by a range of causative factors, notably (a) excessive hunting till two decades back, (b) competition from a growing livestock population, and (c) occasional mass deaths due to starvation following long and severe winters. It is clear that unless urgent conservation efforts focusing on the Tibetan gazelle are undertaken, the species will be lost from Ladakh in the near future. A nearly non-existent understanding of the ecology of the species makes this task of averting the gazelle's extinction from Ladakh even more formidable.

In this project we proposed to develop a conservation program for the Tibetan gazelle that aims to avert this imminent extinction by (a) getting a better estimate of the surviving population in Ladakh, (b) developing an ecological understanding of the species in terms of its habitat and forage requirements, (c) evaluating its forage relations with livestock, (d) developing an understanding of the nomadic society and livestock grazing practices in gazelle areas, and (e) outlining necessary conservation measures which could ensure the gazelle's continued survival. We proposed a one-year pilot project, realizing fully that this may only be the first in a series of steps required to ensure the Tibetan gazelle's continued survival in Ladakh.

Our subsequent detailed assessments during summer and spring seasons (2003-2005) also confirm that the gazelle do not number more than 30 in the Kalak Tar Tar area of Hanle, the 'best' surviving population in Ladakh. The small existing patches with gazelle in Ladakh have a higher plant cover and are richer in proportion of non-graminoids than adjacent areas where gazelle were absent. While diet analysis using fecal pellets of gazelle is pending, we have evidence that gazelle primarily forage on forb species such as *Saussurea glanduligera* and *Salsola* sp., which occur in higher proportion in the 'gazelle' areas.

To determine the spatial relationship of gazelle with other wild and domestic ungulates, we used a null model to test for non-random association of gazelle with other sympatric ungulates based on the co-occurrence of their faecal pellets in 5X10m plots. There was an inverse relationship between the spatial distribution of faecal pellet groups of gazelle and those of domestic sheep/goats, thereby suggesting a behavioural avoidance and/or competition between them. Gazelle on the other hand tended to co-occur with kiang *Equus kiang* and domestic yak *Bos grunniens*, suggesting tolerance or less competition with these large-bodied, bulk foragers.

We have further documented the usage of pastures by the nomads through the year and areas that are used more intensively. The existing 'gazelle area' clearly comes out as an area with lower intensity of grazing, which c. 1,600 sheep-goats use barely for 15-30 days. We

have further documented socioeconomic transformations and landuse changes in the region with the decline in barter trade of wool, increased governmental support to encourage higher Pashmina production, provisioning of grain and health services to the people and supplemental winter feed to the livestock. This is viewed in the backdrop of increased number of households due to breakdown of polyandry and the influx of the Tibetan Refugees during the 1960's.

Based on our studies, we have identified clear short-term and some long-term objectives for conserving this population of gazelle that is limited to less than 50 in c. 40km<sup>2</sup> of the Hanle valley. In the short-term the present range and some adjacent areas need to be freed from livestock grazing so that the gazelle have a larger range to expand. It is also important to take up some habitat improvement in the existing range. Once we are able to secure the present gazelle population and reverse its decline, we can look at more initiatives such as identifying suitable areas from their past range (eg. Dungti and Tso Kar) where they may be reintroduced.

There was very poor awareness about the precarious status of the species even in the agencies implementing conservation until our project brought up the findings. With support from the Rufford and Whitley Awards, on 24th Aug 05, we organized a day-long workshop in Leh attended by the Regional Wildlife Warden, Wildlife Warden and the range officers of Ladakh to present all our research findings and formulate a strategy for gazelle recovery in Ladakh. We generated strong interest in the Department to take up the program seriously and we immediately left for the first consultation with the local community in Hanle. Most important village leaders were present for this half-day meeting where they agreed about the declining gazelle population and need for some sacrifices by them for the species' recovery. We agreed to develop an incentive based program to ensure gazelle survival in Hanle. Detailed minutes were prepared from both these meetings and activities are ongoing according to this understanding.

The results of the study and the follow up conservation action have been very satisfactory so far. The gazelle was clearly the species that required concerted conservation action, but the process of a focused research study substantiating the causes of decline, ways to mitigate them; leading to partnership between various implementing agencies and the community sets a good example to follow in the future. We hope to replicate this model for other endangered species such as Ladakh urial and Tibetan argali in the near future.

One additional issue that emerged during the study was that most people living in the area, especially the Government officers and the large numbers of defence forces were completely unaware of the precarious situation in which this species exists at present. While some don't even know how the gazelle looks, others do hunt them, maybe many a times ignorant of the rarity of the species. The Army has a fast turnover rate of 3-6 month postings at these border areas and we need a constant means of making them aware of the precarious status of the gazelle. We have thus devised a small and attractive table-top display panel on the gazelle that is being distributed to these officials periodically. We considered many media for spreading awareness, but decided upon this media that informs about how this rare animal looks as well as key information about it, which can be displayed on the table. We hope that this will be a source of reminder to not only the officers, but to

all visitors. The panel is about 5X8 inches and is mounted in an acrylic holder with printed matter on both sides. (Please see the attached pictures that show the product.)