

Before the five enclosures have been electrified in 1998, there had been lynx kills in three out of them: three, five and seven fallow deer, respectively, had been killed. Since the enclosures have been modified, there have been no more lynx kills so far.

A preventive electrification of all existing deer enclosures in Switzerland does not pay because raids on deer farms are rare. This measure is therefore only applied after repeated attacks on the same enclosure. This system could also be applied to protect enclosures against other big cats.

For more information about the project KORA please contact www.kora.ch.

References:

Angst, Ch., P. Olsson & U. Breitenmoser, 2000: Übergriffe von Luchsen auf Kleinvieh und Gehegetiere in der Schweiz. Teil I: Entwicklung und Verteilung der Schäden. Kora Bericht No 5, Muri, Switzerland: 58 p.

You can find this report on the net on:

www.kora.unibe.ch/main.htm?ge/publics/reports.htm
(pdf-file German, executive summary in English and French)

Man-eating leopards - status and ecology of leopard in Pauri Garhwal, India

by

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The leopard is widely distributed in the world but the least know of all the big cats. Leopards, being solitary, elusive and shy, are difficult to study in the wild. The leopard's ability to feed on a broad spectrum of prey makes it the most successful predator among all big cats in regard to survival. In Asia, the leopard has also an advantaged over the tiger through its ability live in the vicinity of humans. Due to international demand for skins and bones, and due to conflicts with humans, the leopard is subjected to culling for economic and social reasons. Unexpectedly, the leopard-man conflict has recently increased in the Garhwal hills and resulted in a large number of leopards killed either officially as man-eaters or by irate villagers. However, a study would be needed to understand the ecology and biology of all species concerned in Pauri Garhwal Himalayas in order to minimize the leopard-man conflict and preserve the cat from local extinction. The findings could also be useful in other parts of Himalayas.

Any discussion on the relationship between man and leopard would not be complete without understanding the ecological reasons for the increasing leopard-man conflicts. It must be stressed that man-eaters are abnormal, or attacks are provoked under special circumstances. Man-eaters have given the species a bad name as a whole, although exceptional conditions may be responsible for instances of man-eating in some regions. It is important to know why leopards changed their behaviour, why contacts with humans have increased, and why there are conflicts between them.

A leopard study was planned in two phases. Phase I started in December 1999 to study distribution, status and level of leopard-man conflicts in Pauri Garhwal. Maps of regions of conflicts have been generated in order to find the best suited sites to intensively study the ecological reasons for such conflicts. The entire area was classified into low, medium and high conflict zones and incidents of leopard predation on livestock and attacks on humans have been analysed.

Although leopard attacks on human are not new in Garhwal, the frequency has increased surprisingly during the last decade (Negi 1996). Garhwal and Kumaun in Indian Himalaya are prone to attacks by man-eater leopards. Based on the Forest Department records, leopards have killed 158 humans from 1987 to 2000 just in Pauri district. On the other hand, 93 leopards were killed by irate villagers between 1998 and 2000 as supposed man-eaters. It is important to look at the causes behind these incidents. Leopards were not uncommon in the forest of Garhwal. Their food consist of wild prey species such as goral, barking deer, sambar, musk deer, wild boar, jungle fowl and monkeys (Rhesus macaque and common langur). Due to severe human pressure mainly through hunting, cattle grazing, fire wood cathering, forest fire, deforestation, and habitat alteration, most of these prey species became either locally extinct, or their numbers are too low to sustain the existing number of leopards. All these factors have put leopard under pressure to survive. A change in leopard behaviour has been noticed. They became extremely bold and are reported entering big towns even during daytime. An increasing frequency of leopard-man conflicts during the last decade in the hills of Uttarranchal Pradesh may probably be related to accelerated habitat fragmentation, and, as a result of the scarcity of wild prey, the predominant feeding on domestic animals. Consequently, leopards get into closer contact with human settlements and humans themselves.

Phase II of the project is proposed to provide the necessary information on ecological and biological reasons to design a strategy to solve such conflicts in Garhwal Himalayas. It is important to understand the availability of prey species, land use patterns and human dimension aspects. This would allow explaining the changed behaviour of the leopards in hills. In the present study, we envisage examining these aspects for female leopards. During gestation and lactation periods, females need more energy and are more restricted in their movements than males. Female leopards might explore more often settled areas in the absence of wild prey species in their traditional habitat to assure the raising of their cubs. We presume that females come closer to human settlements, predate more on livestock and even sometimes on humans. The sex ratio of leopards killed as man-eaters was not systematically recorded by the Forest Department. Anecdotal data of seven leopards killed as man-eaters during our survey showed that four of them were females. Phase II of the study

aims understanding the ranging patterns and reproductive biology of females. If possible, male leopards will be studied in phase III. The objectives in study-phase II on leopard in Garhwal Himalayas are: To determine land tenure patterns of female leopards in relation to topography, vegetation, prey (wild & domestic) abundance, land uses patterns, human activities and reproductive status;

1. To study the reproductive biology with reference to frequency of pregnancy/extent of lactation;
2. To suggest mitigation measures to minimize leopard-man conflict.

Reference: Negi, A.S. 1996. Man-eating leopard of Garhwal. *Cheetal* 35(1-2): 22-24.

Editor's remark. Although this article does not propose any preventive measures, it emphasise an important aspect: The underlying reasons for conflicts between predators and people are often ecological changes in the carnivore's environment. If, for instance, a predator is forced to switch to livestock prey because the natural prey became rare, effective damage prevention might cut off the carnivore from a crucial food source and hence contribute to the decline of the population (see article by Michiel Hötte & Sergei Benuk on page 6). If carnivore damage prevention should be a integral part of carnivore conservation and lead to co-existence between man and predator, it is indeed fundamental to understand the whole ecological, ethological, and human dimension aspects of the attacks on livestock. Otherwise, prevention is not more than fighting the symptoms.

If somebody has experience in protecting villages against leopards, please let us know.