Electric fencing of fallow deer enclosures in Switzerland – a predator proof method

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Almost a century after extinction, lynx was reintroduced in Switzerland 30 years ago. Today some 100 adult lynx are living in two separated regions in Switzerland – in the Jura mountains and in the western Swiss Alps. The lynx face an increasing stock of 450,000 sheep, mainly aestivated unguarded on mountain pastures. Raids on livestock occur in periodically: Years with few lynx kills are followed by periods of increased numbers of kills, depending on lynx and roe deer abundance. When many predators face few wild prey, lynx tend to kill sheep. In winter, there are hardly any lynx kills. The sheep are then in the plain, away from the lynx habitat. Since 1971 a total of 1433 domestic animals have been found to be killed by lynx: 1261 sheep, 132 goats and 40 fallow deer. However, even in peak years, the losses of sheep due to lynx predation never exceeded 0.2-0.4% of the local stock (Angst et al. 2000).

By the end of the seventies, a national project was launched to assess whether breeding fallow deer could be profitable on otherwise unprofitable areas. In 1978, the first test breeds were started, increasing to 479 deer farms with a total of 7,500 deer in 1998. The fallow deer is not an indigenous species in Switzerland. There has to be at least a 2 m high enclosure, to prevent the deer from escaping. The first lynx attacks on deer in farms occurred already in 1981 in the canton of Lucern. Since then, a total of 40 fallow deer have been killed by lynx in Switzerland. Killed deer in farms are compensated by the cantons and the government with US$ 300.- to 600.- per animal. Nevertheless, killing of fallow deer has ever been a marginal problem.

In 1997, in a period of high lynx abundance and a high number of killed livestock in the Northwestern part of the Alps, the first fallow deer have been killed in this region, although the lynx has been present for about 20 years here. A total of 18 deer have fallen prey to lynx in six different enclosures; 15 alone in three enclosures during 10 attacks. As the attacks occurred always in the same farms, protective measures had to be taken to protect the deer farms because incidents as in 1998, where 7 deer have been killed within two nights in the same enclosure, led to an enormous disgruntlement in the local people.

In zoos, lynx are kept in escape-proof electrified enclosures. This inspired us to reverse these enclosures for the deer farms. On the already existing stakes we installed a steel girder of about 50 cm length in an angle of 45º on the **outside**. This steel girder bears two electrified wires (Fig. 1). The voltage in the wires should be at least 5000 V, so it is important to get a unit (aggregate) that has a strong enough capacity (today most device on the market bring this without problems). A good unit is able to provide enough energy for a fence of 10-20 km that covers an area of about 500-2000 ha. The unit should preferably be mains-operated, this is both economically and practically beneficial. If the fences are mounted far from electricity, batteries or solar cells can be used.

Fig. 1. Fallow deer enclosure after electrification on the **outside**

So far, five enclosures have been electrified in the north-western Alps. On average, the adaptation costs about US$ 1600.-. An estimated cost covering both wires, stakes, aggregate, etc. is US$ 2.80 to 4.60 per meter. The costs for the material were payed by the cantons. The labour had to be done by the owners themselves. One owner spent about 75 hours to electrify an enclosure of 0.5 ha with a fence of 330 meters.

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:

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

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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.