

## Livestock Guarding Dogs in the Western Part of the Polish Carpathians

by

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### Introduction

Livestock damage caused by large carnivores represents one of the most important issues in their conservation everywhere these species occur. From an economic point of view it is not a severe problem in Poland as the amount of compensation paid is quite small. It is paid by the administration of every province and reaches on average €uro 50,000 per year for the whole country. However, predation on livestock provokes negative attitudes among farmers and makes this issue interesting for the media. The result is numerous sensational press and TV reports which influence social attitudes towards large carnivores. Additionally hunters use this as an argument for including wolves, which are protected in Poland, on the game list again.

In Poland there are two projects which are attempting to resolve large carnivore/farmer conflicts by the introduction of Livestock Guarding Dogs (LGDs) into livestock flocks. The first one is conducted in the *Bieszczady* Mountains (eastern range of the Polish Carpathians) by the Institute of Nature Conservation, Polish Academy of Sciences (Śmietana 2002). The second, with which this paper is concerned, has been initiated by the Association for Nature WOLF in the Western *Beskidy* Mountains (Nowak and Mysłajek 2002, 2003).

### Project Area

We conduct our project in the western-most range of the Polish *Carpathians* (49°23'–49°53'N, 18°45'–19°48'E), near the border with Slovakia and the Czech Republic. The region includes the *Silesian Beskidy* Mts.

(SBM) and *Żywiecki Beskidy* Mts. (ZBM) (total area 745 km<sup>2</sup>), both of which are protected as landscape parks. The altitude ranges from 300 to 1,557 m a.s.l. Most of the area is covered with exploited forests, mainly spruce *Picea abies* with an admixture of beech *Fagus sylvatica* and fir *Abies alba*. Within the forests large meadows are present, some of them still used as pastures for livestock grazing. The region is densely inhabited by humans, with an average of 150 persons per km<sup>2</sup>. Numerous towns and villages are located mostly within river valleys and on lower, deforested slopes (up to 600 m a.s.l.). There is some agriculture and livestock farming, where small flocks of sheep, cows and goats are frequent (Figure 1). There are also a large number of weekend cabins and recreation centres along forest peripheries, as well as many ski lifts, ski routes, and tourist paths in the forest. Human activity in the forest is especially intense during weekends and holidays.

### Large carnivores and livestock in the region

The guild of large predators in this region includes the wolf *Canis lupus*, the lynx *Lynx lynx* and the brown bear *Ursus arctos*, all of which are protected in Poland. There are differences in the situation of their populations in the ZBM and SBM. In the ZBM, there are approximately 4 brown bear individuals, about 10 lynxes and three wolf packs (about 12 individuals), while the SBM is inhabited by two wolf packs (about 10 individuals), and brown bear and



Figure 1. Landscape of the *Beskidy* Mountains. Sheep flocks and cattle graze on meadows among and adjacent to forests. (Photo: Robert W. Mysłajek)

lynx appear only sporadically (Pierużek-Nowak 2002, Jakubiec 2001, Jędrzejewski et al. 2002).

### Damage

All large predators, including dogs, cause damage. However, the wolf seems to be the most important. A detailed study of wolf ecology in this region showed that wolves prey mainly on wild ungulates (95% of food biomass), while livestock constituted only 3% of wolf food biomass (Pierużek-Nowak 2002). In 1997–2001, we collected data from farmers on 172 domestic animals killed by wolves in 35 attacks. Amongst livestock, sheep are the most common prey of wolves (88%), followed by goats, cows and dogs. Annually from 15 to 48 livestock were killed, on average 34 animals. Wolf attacks occurred from May to November, with the highest intensities recorded in August (44% of attacks) and September (26%). It was only possible to obtain complete information on depredation for wolves in the SBM, due to wolf packs in the ZBM having parts of their home ranges in Slovakia, which makes gathering information difficult. Based on data from farmers and local communities we estimated the number of livestock within wolf range in the SBM to be about 360 animals (varied from 320–420). During the grazing season wolves in this area killed about 26 domestic animals annually, which made up about 7% of the total number.

### Husbandry methods

Sheep farming in the area of the SBM and ZBM is focussed on meat and milk, while wool usage is very limited. The scale of damage caused by wolves is strictly correlated with methods of livestock protection. Three types of local sheep farming have been identified.

Firstly there are owners of just a few sheep, who give them every year to professional shepherds for the grazing season. At present, only two groups of such professional shepherds work within the study area. All collected sheep then form a large flock of several hundred animals, and graze under the regular supervision of several shepherds and *Tatra Mountains Shepherd Dogs* during the whole summer. Cases of successful wolf attacks were rare in such flocks. In autumn, after the pasturage, sheep are returned to owners and if weather permits they are grazed further. Towards the end of the grazing season breeders keep several unguarded sheep on meadows adjacent to forests during the whole day

(or even by night). It was during this period when the most successful wolf attacks occurred on these farms.

The second type applies to bigger farms (40–100 sheep each), where owners graze sheep on their own, for the whole season. Livestock stay on pastures throughout the night in a wooden pen without human supervision, but with dogs – mongrels or *German Shepherd Dogs*. These dogs are tethered to prevent escape from pastures or aggressiveness towards passing people. On these farms damage occurred throughout the whole season.

The third type involves owners of several animals who never pass their livestock to professional shepherds, but graze them for the whole season on pastures adjacent to their houses. The farms may be sporadically fenced or the sheep are collected in wooden pens at night, sometimes guarded by a tethered dog. If the farm is located near the forest, damage has been shown to occur all through the season.

Before the beginning of our project almost none of the farms in the Western *Carpathian Mts.*, which suffered wolf attacks were protected by *Tatra Mountains Shepherd Dogs*.

### Structure of the project

The model programme of wolf conservation in the Western Carpathians began in 1996 and includes several complementary components:

1. A research project including: monitoring numbers and distribution of wolf populations; estimation of breeding success and death rate; research into diet and pressure of wolf predation on both natural prey and livestock, as well as a regional landscape analysis and prediction of favourable wolf habitat (Pierużek-Nowak 2002).
2. Resolving human/wolf conflicts through promotion of different methods of livestock protection against wolf attacks: providing training to livestock owners (lectures, presentations on farms); development and distribution of professional publications (Nowak and Jędrzejewski 1998, Nowak and Mysłajek 1999); introduction of Livestock Guarding Dogs and mobile fences, called “fladry”.
3. Education of local communities about the natural history, ecology and behaviour of the wolf, by organising lectures and workshops for school pupils, students, foresters and staff of landscape and national parks and by producing a number of publications (books, leaflets, posters, stickers etc.).

4. Wildlife tourism focused on areas where predators occur, by organising Wolf Seminars, as well as practical work experience for students from abroad (Nowak and Mysłajek 2002).

### **Introduction and training of livestock guarding dogs**

During the years 2002–2004 we introduced twelve *Tatra Mountains Shepherd Dogs* (Figure 2) into ten farms, four dogs each year. The *Tatra Mountains Shepherd Dog* is the only native breed of LGD in Poland, bred by local highlanders several centuries ago in the area of the *Tatra Mountains* (part of the Polish *Carpathians*) and traditionally used for protection of sheep flocks against large carnivore attacks, mostly in this region. As an adult, it is a massive, completely white dog – its weight can reach about 60–70 kilos, height at the shoulders 85 cm – possessing a suite of extremely useful features such as attentiveness, vigilance, intelligence and exposing a defensive posture, with high raised and wagging tail while barking (Nowak and Mysłajek 1999). Shepherds whom we selected as receivers of LGDs were those which had both the biggest flocks in the region and damage from wolves in the last five years. In 2002 and 2004 only male LGDs were passed on, but in 2003 we gave two females to farmers, to have pups for further extension of the project. Dogs were introduced from March to July as 6–8 week-old pups. Pups were purchased from recommended dog breeders (local sheep farmers and veterinarians) in the *Tatra Mountains* region, and they originated from parents positively assessed for breeding. All pups were vaccinated against rabies and other illnesses. The cost of one pup was € 120–140. The dogs were donated to farmers free of charge, but they were obligated to feed them properly and provide further veterinary assistance. Dogs were introduced on eight farms to protect sheep, and on two farms to protect cows

and horses. Each livestock owner received only one dog, with the exception of the biggest farm (about 500 sheep) where 3 pups (two males and one female, from different litters) were introduced, first two males and the following season a female. At the same time shepherds received a guidebook entitled “Protection of livestock against wolf attacks” (Nowak and Mysłajek 1999), describing how to raise and train a LGD pup. The basic rule is to keep pups with the flock at night from the very beginning (in a pen located within or next to the flock enclosure) to facilitate habituation to each other, and to avoid unnecessary contact between pups and other people not directly involved in breeding. During the day pups are kept in a pen near the farmhouse. The real work of a young dog starts when it reaches an age of six months and becomes tough enough to walk with the grazing flock through mountainous terrain, accompanying shepherds. From this moment dogs stay with livestock day and night on meadows away from the farms, even if the owner or shepherds leave a flock for a night. In two cases adult dogs protected flocks mostly at night staying outside a pen and not tethered, while during the day they were tied up on a pasture or walked on a leash with the shepherd. However, in the biggest flocks dogs were working with livestock all day long. The male LDG introduced to a herd of several cows, calves and horses displayed a similar attentiveness towards these livestock as those dogs staying with



Figure 2. Three years old *Tatra Mountains Shepherd Dog* on a pasture. (Photo: Sabina. Nowak)

sheep flocks. As a pup it was kept in a pen near cows in a stable and then on pasture. As an adult it regularly made rounds of cattle and horses grazing in different parts of the meadow, and tried to prevent dispersion and fights between them. The livestock accepted the dog and did not display aggression towards it.

## Problems

### *LGDs*

During the project we have recorded only a few problems with LDGs. One male LGD (1 year old) regularly abandoned its flock and visited female dogs in the nearest village for a while, but then returned and stayed with the flock. Secondly one was infected by mange, which caused some problems with its appetite and then its growth. After veterinarian treatment its condition improved. We also noticed a conflict between one LGD (1 year old) and another male dog working with flock maintenance, which caused a number of fights and injuries and forced the owner to keep the LGD on a chain during the day. Fortunately it stopped after half a year, and now the dogs live in harmony.

### *Humans*

There were many more problems with sheep owners and shepherds who are, due to the poor profitability of this activity, mostly very old or poorly educated people, and sometimes very conservative. In several cases they made mistakes during training or took poor care of their dogs. During the first year of the project we lost one dog, because the shepherd gave it to an unknown person without notifying us. Secondly, one had to have a change of owner because of very poor care, and now it stays in the next farm. To avoid such situations, the following year we prepared a clear agreement to be signed, which described the responsibilities of new owners and our rights to be informed about the situation of the dog. On one farm, the shepherd has not obeyed the training procedure and allowed children to play with the LGD pup. In consequence the adult female prefers to stay with people, and does not like to be alone with livestock.

Thus, from twelve LGDs that we gave to farmers in 2002–2004, five adult dogs work permanently with flocks, two dogs stay mostly at farm houses and do not work constantly with livestock on pastures, one dog left the area of the project (but according to the former owner it is still involved in sheep husbandry), and the last four pups are still undergoing

training. The large size of an adult *Tatra Mountains Shepherd Dog* and its defensive posture during barking can evoke fear in people. However, during the whole period we have not recorded any cases of an LGD attack on tourists, local people or other dogs.

## Efficiency of LGDs

At present we can assess the efficiency of five dogs on four farms. It is hard to receive direct proof that LGDs deter wolves from a flock, due to the lack of direct observation, but we can support this by several facts. All farmers which received LGDs, have had previous damage caused by wolves, which varied from 1 to more than 20 individuals killed per year. After maturation of the introduced LGDs damage abruptly stopped, while during extensive surveys we still noticed the presence of wolves (scats, tracks, howling) in the adjacent area and attacks occurred on neighbouring farms. However, one owner of a LGD also used “fladry” that he received from us before LGD introduction, to surround a pen with a flock at night, which might have aided the young dog with protection of the sheep. He stopped the use of fladry this year and left the whole burden of sheep protection on the LGD. In three other farms shepherds stayed with flocks at night, but slept in wooden cabins. So the absence of depredation could be a combination of all these factors: presence of people, “fladry” and the impact of LGDs.

## Conclusions

Based on experiences of shepherds from the *Tatra Mountains* and results of our and Dr. Śmietana’s projects (see article on page 10 from Śmietana), we can conclude that the *Tatra Mountains Shepherd Dog* can be successfully used as a method of livestock protection against wolf attacks, both for sheep and cattle.

The most common mistakes made by farmers in the care and training process (poor care leading to diseases and allowing the dog to play with children) have the biggest impact on the failures in the use of LGDs.

## Acknowledgements

The project was supported financially by: European Natural Heritage Fund EURONATUR, Provincial Fund of the Environment Conservation and Water Management in Katowice, Wolf Society of Great Britain, Bank of the Environment Conservation,



International Fund for Animal Welfare. Scientific study on the wolf population was partly financed by the Polish National Committee for Scientific Research (KBN 6 PO4F 01420). We are thankful to Toby Reynolds for English checking.

## References

- Jakubiec, Z. 2001. The brown bear *Ursus arctos* L. in the Polish part of Carpathians. *Studia Naturae* 47:1–108 [in Polish with English abstract].
- Jędrzejewski, W., S. Nowak, K. Schmidt, and B. Jędrzejewska. 2002. The wolf and lynx in Poland – results of a census conducted in 2001. *Kosmos* 51:491–499. [in Polish with English abstract].
- Nowak, S., and W. Jędrzejewski. 1998. Wilki a zwierzęta gospodarskie [Wolves and Livestock]. Stowarzyszenie dla Natury WILK, Godziszka [leaflet, in Polish].
- Nowak, S., and R.W. Mysłajek. 1999. Ochrona zwierząt hodowlanych przed wilkami [Protection of livestock against wolf attacks]. Stowarzyszenie dla Natury WILK, Godziszka:1–40 [in Polish].
- Nowak, S., and R.W. Mysłajek. 2002. Wolfsschutz in Polen. Aktivitäten des Naturschutzverbands WOLF. Der Naturschutzverband WOLF, Godziszka:1–24.
- Nowak, S., and R.W. Mysłajek. 2003. Problemy ochrony wilka *Canis lupus* w parkach krajobrazowych Beskidów Zachodnich [Conservation problems of wolf *Canis lupus* in landscape parks of Western Beskidy Mountains]. In: Broda M., Mastaj J. (ed.). Wybrane gatunki zagrożonych zwierząt na terenie parków krajobrazowych w Beskidach. Zespół Parków Krajobrazowych Województwa Śląskiego, Będzin:14–19. [in Polish].
- Pierużek-Nowak, S. 2002. Dynamika populacji, ekologia i problemy ochrony wilka *Canis lupus* w Beskidzie Śląskim i Żywieckim [Population dynamic, ecology and conservation problem of wolf *Canis lupus* in the Śląski and Żywiecki Beskid Mountains]. Unpubl. PhD Thesis. Mammal Research Institute PAS, Associationa for Nature WOLF, Institute of Nature Conservation PAS, Białowieża-Godziszka-Kraków [in Polish].
- Śmietana, W. 2002. Game and livestock management in relation to wolf and lynx conservation. *Roczniki Bieszczadzkie* 10:129–144. [in Polish with English abstract].

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## Livestock Depredation and Livestock Guarding Dogs in Slovakia

by  
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### Introduction

Slovakia lies not only geographically but in many ways also culturally and politically between western and eastern Europe. Its native large carnivores were never completely eradicated and had already recovered from excessive sport hunting and persecution by the 1980s. Nevertheless the impacts of the recovery are still being felt and debates continue to rage as to whether legal protection for large carnivores should be strengthened or if they are now “over-populated”. Being a young and little-known country, whose carnivore populations are not as substantial as those in Romania, not as threatened as some of those in the Iberian peninsula, not as controversial as those in Norway nor in the process of recovery such as those in the Alps, Slovakia has received much less attention in the action plans, case studies, model projects and other international initiatives of recent years. The inward flow of new techniques and results from abroad has been slow due to political, financial and lingual barriers and as a result modern research on large carnivores is still largely missing. However, much can be learned from the situation here, such as how economic development might affect carnivore-livestock conflicts in eastern Europe or how long the process of psychological adjustment to the reality of recovered carnivore populations might take in central Europe.

In 2001–2003 I studied carnivore-livestock conflicts in Slovakia for a Masters degree at the