Use of *Tatra Mountains Shepherd Dog* in the *Bieszczady* Mountains and the *Bieszczady* Foothills, Poland

by
Wojciech Śmietana

Introduction

Livestock guarding dogs (LGDs) are traditionally used in Poland only by *Tatra* mountain shepherds. The *Tatra* Mountains are a mountain range within the Carpathians arc. To defend flocks of sheep from large carnivores they use a breed called *Tatra Mountains Shepherd Dog*. Some *Tatra* sheep breeders successfully use *Tatra Mountains Shepherd Dog* crossbreed with *St. Bernard Dog* or *Caucasian Shepherd Dog* or *Central Asiatic Shepherd Dog*. My project is situated in another range of *Carpathians*, in the *Bieszczady* Mountains and its surroundings, about 200 km east from the *Tatra* Mountains. The *Bieszczady* Mountains and the *Bieszczady* Foothills (total 2,100 km^2) are inhabited by about 40–80 wolves *Canis lupus*, 40–60 lynxes *Lynx lynx* and 30-50 brown bears *Ursus arctos* (Śmietana 2000*a*, Śmietana et al. 2000, Śmietana upubl., Jakubiec unpubl.); all fully protected - although poaching of wolves is common. Analyses of wolf, lynx and brown bear scats (Frąckowiak and Gula 1992, Śmietana and Klimek 1993, Śmietana 2002, and Śmietana unpubl.) indicate that livestock is a negligible portion of their diet. Human density is about 6 ind./km^2 in *Bieszczady* Mountains and about 30 ind./km^2 in *Bieszczady* Foothills. About 80% of the *Bieszczady* Mountains and about 65% of *Bieszczady* Foothills are covered by forest. The red deer *Cervus elaphus* is the most common ungulate species, followed by roe deer *Capreolus capreolus*, wild boar *Sus scrofa* and bison *Bison bonasus*. Some individuals of moose were also noted in the area. The *Bieszczady* Mountains were almost completely depopulated after the Second World War. Human recolonisation started in the 1950's. Settling people came from all over Poland and brought along different livestock grazing practices. About 3,000–4,000 thousand sheep and 2,000 cattle, 500 horses and 500 goats are grazing on pastures in the region. There are a small number of sheep breeders who originated from the *Tatra* Mountains region who traditionally use *Tatra Mountains Shepherd Dogs* (Figure 1) for protecting sheep. These farmers use remote and open mountain pastures for sheep grazing during the summer period. Traditionally used livestock guarding dogs accompany shepherds who watch flocks. The second group of sheep breeders, originating from the Polish lowlands and inhabiting mostly the *Bieszczady* Foothills (Figure 2), use pastures, usually surrounded by about 1.2 m high wire-netting or wooden fences, next to the farm buildings for sheep and goat grazing. They usually do not guard their flocks. My interviews with local sheep breeders in the early 1990's indicated that shepherds who use *Tatra Mountains Shepherd Dogs* to guard livestock on remote pastures, where potentially wolves can cause severe damages, lose annually one third the number of sheep that sheep breeders who keep animals close to the farm buildings would lose, even though these areas are usually avoided by wolves (Śmietana 2000*b*). Wolves kill about 110 sheep per year in the region; about 2% of the total sheep number in the area. Other livestock is killed very rarely. Most losses occur in the *Bieszczady* Foothills. Wolves attack sheep mostly in May and September-October (Śmietana 2002). Damages cause by wolves, brown bears and lynx are compensated by the State. About 100–150 sheep and about 10–20 individuals of other livestock species, killed mostly by wolves, are reported from the area. For predator killed livestock farmers receive a compensation which equals to the market value of the

Figure 1. *Tatra Mountains Shepherd Dog.* (Photo: Wojciech Śmietana)

Figure 2. *Tatra Mountains Shepherd Dog* guarding a flock of sheep in the *Bieszczady* Foothils. The picture shows a typical sheep farm at the *Bieszady* Foothills. (Photo: Wojciech Śmietana)

lost animal from the *Podkarpacie* Province Administration.

Project

The goal of the project has been to reduce losses from wolf predation, identifying problems associated with rearing and training dogs and promoting the use of livestock guarding dogs among breeders who never used such dogs. Rearing and training dogs generally followed the instructions by Green and Woodruff (1983) and by Lorenz and Coppinger (1986). Between 1995 and 2001 13 *Tatra Mountains Shepherd Dog* pups (without pedigree) were introduced to 11 sheep or sheep-goat farms. Any farmer who had at least 50 sheep-mothers (goats) could take part in the project. In nine cases 1 pup and in two cases two pups were introduced. Flocks of sheep (plus goats in two cases) number from 50–250 individuals and are grazed on pastures close to villages in summer. Introduced dogs (5 females and 8 males) were aged from 46–82 days. Eleven pups were purchased (€uros 45–70 per pup) from *Tatra* sheep breeders (pups were born in vicinity of sheep) and two pups originated from an experimental farm organised by myself in 1998 (these pups were born among goats). Parents of all pups were used to guard sheep or goats. Pups were introduced to new farms from early March to late November. The project supplied vaccinations and food for 10 pups during the first year of their life. Afterwards dogs became the property of the farmers who covered all the costs of their maintenance. Socialising pups with sheep/goats during the summer was much more difficult to organise properly. Changing sheep in the dog's pen and providing food for them was too laborious and time consuming for some breeders, in effect some pups introduced in summer were socialised only to a few sheep from the flock. It turned out that it is much easier for breeders to start working with a new pup during late fall/ winter period, when sheep stay inside and breeders can spend more time to organise proper socialising of pups, and there are usually no strange persons (tourists, visitors) who can interact with the dog.

Problems

Despite these problems socialisation with sheep/goat was successful in all but one case. This dog was socialised with only two lambs and the rest of the flock never accepted the dog. The problem was related to the breeder and his sheep, which were generally very afraid. It was much more difficult to get the dog to remain with the flock on pastures. Relatively small pastures (30–80 ha, often divided into several sections) situated close to the villages, presence of humans (tourists, neighbours and children who sometimes offered stroking and snacks to pups) and non-working dogs in the neighbourhood caused these difficulties. The problem of a dog's wandering around could be solved by adding an electrically charged wire at the top of existing fences, what also provides additional protection from carnivores. On my experimental farm, where numerous hikers pass nearby during summer, a 3-strand (80 cm high) electric fence is successfully used to keep goats and dogs on pasture. Other problems with the proper rearing and training of pups were related to breeders beliefs. Some of them deeply believed, despite my repeated explanations, that *Tatra Mountains Shepherd Dog*, once mature, will be successful livestock guardian without any special rearing and that guarding dogs can work also as herding dogs. Another common believe was that these dogs are very aggressive.

Chasing lambs, play-biting of wool and chewing

of ears was observed. But only in one case was this behaviour developed to an unacceptable degree. This case occurred in the flock where two pups (sisters) were introduced at the same time. When pups aged about six month they exhibited typical "pack behaviour" and the dominant dog first injured several lambs during play and later on started to kill them. But both dogs still remained submissive to adult sheep. Surprisingly, after removal of the dominant dog the second one became an excellent guardian. Regardless of these problems 3 dogs became excellent livestock guardians, they stay permanently with the flock and are aggressive towards non-human intruders, 6 others guard flocks only by night inside corrals and/or together with shepherds on more remote pastures, two dogs moved away with the owner, and two others changed owners.

Dogs involved in the project display investigative behaviour when people approach the flock, but no serious problems of aggression towards people were noted, except one dog. This dog became aggressive towards people after one hiker hit him with a stick. Some farmers even complain that the dogs should be more aggressive towards humans.

Cost and effectiveness

The annual cost of a *Tatra Mountains Shepherd Dog* is rather high (about € 200 for food, which is about 3–5% of the annual income of an average sheep farm in the region) and there is no guarantee that the acquired pup will become a successful livestock guardian. Nevertheless, I recommend this method to these breeders who like to work with dogs, and even when the dog will be not a fully effective guardian, it can be used to assist the shepherd, guard the sheep in corrals at night or supplement electric fencing. To improve protection of sheep on 5 cooperating farms, corrals made from 2 m high wire-netting were constructed. Corrals from 0.01 to 0.5 ha are used to keep sheep and dogs inside at night. A combination of these fences and LGDs solved the problem of night attacks on sheep. Only once a sheep was killed by a wolf inside such a corral, but it was not eaten. Attacked by two dogs – *Tatra Mountains Shepherd Dog* and a *Scottish collie* – the wolf escaped. There was no repeated attack. The combination of 1–2 LGDs, depending on the flock size, with 2 m high wire-netting corrals is quite expensive (1 m of fence costs about € 2; including materials and labour) but it is the most accepted method by local breeders and probably the most successful one to protect sheep from large carnivore depredation at night under local conditions. I do not have enough detailed data to evaluate the effectiveness of the dogs but it seems that their introduction led to reduced losses. Firstly, no multiple kills happened after adult dogs were integrated into the flocks (previously up to 11 were killed during one wolf attack), and only one sheep was killed inside the corral where a dog was also present.

There is a lot of interest among local livestock breeders to introduce non-lethal methods of carnivore damage control but they need financial support to do so. Unfortunately, such a system is still not provided by the State. Compensation of damages caused by wolves and other large carnivores alone does not solve the problem.

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Contact

Wojciech Śmietana
Institute of Nature Conservation, Polish Academy of Sciences
Mickiewicza 33, 31-120 Cracow, POLAN
e-mail: wojsmietana@go2.pl