LARGE CARNIVORE DAMAGE PREVENTION AND CONSERVATION: LIVESTOCK GUARDING DOGS IN FINLAND AND ESTONIA

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Introduction

Livestock guarding dogs work by staying with the livestock and driving away intruders, with rarely any need for physical conflict. They have been used for millennia to protect domestic animals from large carnivores. Research was initiated during the late 1970s. In general, LGDs were capable of reducing predation in a variety of management systems. The return of carnivores to their original habitats has caused conflicts of interests between different stakeholder groups. The developing of damage preventive methods and resources, the production and distribution of reliable information can be addressed as the keywords for obtaining consensus. In the long term, the management policy procedures can have both educational and eco-tourist importance and will have to be integrated in the local communities well-being. At its best, the welfare of livestock, LGDs and wolves decreases the citizens' or farmers' concerns on their livelihood and security.

The aim of this study was to explore the special conditions in Finland and Estonia for Livestock guarding dogs and their suitability as working dogs in the area where they traditionally are not used.

Methods

The study included semi-structured interviews, in-site-visits to Finnish and Estonian farms, as well as the analysis on comparing large carnivore damage prevention practices. The themes were the following: 1. The rule frames of large carnivore conservation, 2. Livestock guarding dogs, 3. Human well-being and acceptance by local people, 4. The large carnivore damage prevention – The use of compensation and economic incentive systems to alleviate and 5. Different large carnivore damage compensation schemes in Finland and Estonia.

Results

In summary, the themes or factors that emerged from this study were: the welfare of guarded animals and LGDs in their guarding job; people at and outside the farms; public opinion on questions related to nature; cost-effectiveness; cultural, socio-economic and stakeholder relations in general. Both discussions and contacts with new LGD owners are together demonstrating the LGDs being a resourceful way to solve problems on farms caused by large carnivores. As Marker et al. (2005a) concludes 'the perceptions of the people involved were just as important as any objective calculation of performance;' therefore, based on these subjective responses, the livestock guarding dogs proved to be successful this far in Finland and in the early development stage in Estonia. However, the institutional framework seemed to be targeted to challenging development expectations in both countries.

In Finland, the damage compensation system has been valid longer; in Estonia, first compensations were paid in 2009. The emphasis is on the preventive measure development. Estonia differs from Finland also because of the large and severe damage on crops caused by wild boar. Damages caused by wild boar are not, however, on the list of compensation.

Discussion

The significance of further comparisons and research to pay greater attention to the possibilities, limitations and the cost-effectiveness schemes of large carnivore management in different demographic structures of predator populations, landscapes and cultural surroundings is urgent. In other words, there is still a need for more comprehensive research of the positive and negative factors dealing with large carnivore damage prevention among different contexts and among different stakeholders confronting the phenomena. Large carnivores are protected by several international agreements and EU regulations. Large carnivores are often perceived as a threat to human safety. An understanding of the values, beliefs and the fears of those who are involved or affected is an important aspect of preventing carnivore damages.

References

Black, H.L. and Green, J.S.: Navajo use of mixed-breed dogs for management of predators. J. Range Manage. 38: 11-15, 1985.

Bisi J., Kurki S., Svensberg M. & Liukkonen T.. Human dimensions of wolf (Canis lupus) conflicts in Finland. Eur J Wildl Res (2007) 53:304–314.

Boitani L.: Action plan for the conservation of wolves in Europe (Canis lupus). Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), Nature and Environment No.113, Council of Europe Publishing, Strasbourg, 2000.

Breitenmoser, U. .Large predators in the Alps: the fall and rise of mans competitors. Biological Conservation 83:279-289, 1998.

Coppinger, L.: Sheepdog environments in the Old World. Dog Log. Livestock Guard Dog Association 2: 12-14, 1992.

Coppinger, R., Lorenz, J. and Coppinger, L.: *Introducing livestock guarding dogs to sheep and goat producers*, p. 129-132. In: D.J. Decker (ed.), Proc. first eastern wildl. damage control conf., Cornell Univ., Ithaca, N.Y., 1983.

Dawydiak, O. and Sims, D.: Livestock Protection Dogs - Selection, Care and Training. Second Edition. Alpine Blue Ribbon Books, Loveland Colorado, 2004.

Green, J.S. and Woodruff, R.A.: *The use of Eurasian dogs to protect sheep from predators in North America: a summary of research at the U.S. Sheep Experiment Station*, p. 119-124. In: D.J. Decker (ed.), Proc. first eastern wildl. damage control conf., Cornell, Univ., Ithaca, N.Y., 1983a.

Green, J.S. and Woodruff, R.A.: *The use of three breeds of dog to protect rangeland sheep from predators.* Appl. An. Ethol. 11: 141-161, 1983b.

Hansen, I.: Use of Livestock Guarding Dogs in Norway – a Review of the Effectiveness of Different Methods. Carnivore Damage Prevention News, 8: 02-08. 2005.

Hansen, J. and Smith, M-E.: Livestock Guarding dogs in Norway part II: different working regimes. J. Range Manage. 52 (4): 312-316, 1999.

Levin, M.: Livestock Guarding Dogs in Sweden: a Preliminary Report. Carnivore Damage Prevention News 8/2005.

Linhart, S.B., Sterner, R.T., Carrigan, T.C.and Henne, D.R.: Kommondor guard dogs reduce sheep losses to coyotes: a preliminary evaluation. J. Range Manage. 35: 238-241, 1979.

Mattson, D. J., Byrd K. L., Rutherford M. B., Brown S. R., and Clark T. W.: Finding common ground in large carnivore conservation: mapping contending perspectives. Environmental Science & Policy 9:392-405, 2006.

McGrew, J.C. and Blakesley, C.S.: *How Komondor dogs reduce sheep losses to coyotes*. J. Range Manage. 35: 693-696, 1982.

Naughton-Treves, L., Grossberg R. and Treves A.: Paying for tolerance: rural citizens attitudes toward wolf depredation and compensation. Conservation Biology 17: 1500-1511, 2003.

Ogada, M. O., Woodroffe R., Oguge N. O. & Frank L. G.:. *Limiting depredation by African carnivores: the role of livestock husbandry*. Conservation Biology 17: 1521-1530, 2003.

Rigg, R.: The extent of predation on livestock by large carnivores in Slovakia and mitigating carnivore-human conflict using livestock guarding dogs. MSc. Thesis, University of Aberdeen, 2004.

Schwerdtner K., Gruber B. A conceptual framework for damage compensation schemes. Biological Conservation, Volume 134, Issue 3, January 2007, Pages 354-360

Sterner T. (2003): Policy Instruments for Environmental and Natural Resource Management Journal of Forest Economics, Volume 9, Issue 1, 2003, Pages 65-66

Bostedt G. & Lundgren T. Accounting for cultural heritage — A theoretical and empirical exploration with focus on Swedish reindeer husbandry. Ecological Economics, Volume 69, Issue 3, 15 January 2010, Pages 651-657

Linnell JDC, Smith ME, Odden J, Kaczensky P, Swenson SE (1996) Strategies for the reduction of carnivore-livestock conflicts: a review. Norwegian Institute for Nature Research. Oppdragsmelding, vol 443, pp 1–118.

Linnell JDC, Odden J, Smith ME, Aanes R, Swenson SE (1999) Large carnivores that kill livestock: do"problem individuals" really exist? Wildl Soc Bull 27:698–705.

Linnell JDC, Swenson SE, Anderson R (2001) Predators and people: conservation of large carnivores is possible at high human densities if management policy is favourable. Anim Conserv 4: 345–349.

Kojola I, Huitu O, Toppinen K, Heikura K, Heikkinen S, Ronkainen S (2004) Predation on European wild forest reindeer (Rangifer tarandus) by wolves (Canis lupus) in Finland. J Zool (Lond) 263: 229–235.

Bangs E, Shivik J (2001) Managing wolf conflict with livestock in the northwestern United States. Carniv Damage Prev News 3: 2–5.

Berger KM (2006) Carnivore-livestock conflicts: effects of subsidized predator control and economic correlates on the sheep industry. Conserv Biol 20: 751–761.

Boitani L (2000) Action plan for the conservation of wolves in Europe (Canis lupus). Nature and Environment No. 113. Council of Europe, Strasbourg.

Boitani L (2003) Wolf conservation and recovery. In: Mech LD, Boitani L (eds) Wolves behavior, ecology and conservation. The University of Chicago Press, Chicago, pp 317–340.

Mech LD, Harper EK, Meier TJ, Paul WJ (2000) Assessing factors that may predispose Minnesota farms to wolf depredation on cattle. Wildl Soc Bull 28: 623–629.

Musiani M, Mamo C, Boitani L, Callaghan C, Gates CC, Mattei L, Vislaberghi E, Breck S, Volpi G (2003) Wolf depredation trends and the use of fladry barriers to protect livestock in western North America. Conserv Biol 17:1538–1547.

Otstavel, T., Vuori, K., Vainio, O., Valros, A., Sims, D. E., Saloniemi, H.. The First Experience of Livestock Guarding Dogs (LGD) Preventing Large Carnivore Damages in Finland. Estonian Journal of Ecology, 2009, 58, 3, 216–224.

Stahl P, Vandel JM, Herrenschmidt V, Migot P (2001) Predation on livestock by an expanding reintroduced lynx population: long-term trend and spatial variability. J Appl Ecol 38: 674–687

Treves A, Karanth KU (2003) Human carnivore conflict and perspectives on carnivore management worldwide. Conserv Biol 17: 1491–1499. Treves A, Naughton-Treves L, Harper EK, Mladenoff DJ, Rose RA, Sickley TA, Wydeven AP (2004) Predicting human-carnivore conflict: a spatial model derived from 25 years of data on wolf predation on livestock. Conserv Biol 18: 114–125.

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