A LARGE CARNIVORE INITIATIVE FOR EUROPE

Carnivore Damage Prevention News

No 6 / February 2003

Notes from the Editors

Compensation, the reimbursement of domestic animals killed by wild predators, is a disputed instrument for carnivore conservation. One position is that compensation decreases the sense of responsibility of the livestock owners and their readiness to apply preventive measures; the opposing view is that herders will only respect any legal protection of carnivores if they do not suffer any financial losses. The latter position is typical for most European countries. Large mammalian predators and birds of prey are granted strong legal protection in most countries, and almost everywhere, state agencies pay for damages caused by protected wildlife. The situation in Western Europe is particular because in many parts, large carnivores have recently returned to areas where they have long been absent. Herds are grazed freely and without supervision and traditions to protect livestock from predator attacks have been lost. A lot of sheep farmers are part-time farmers. Agricultural subsidies – especially for remote areas – are generally high (Savelli, B.G., Antonelli, F. & Boitani, L.: The impact of livestock support on carnivore conservation. LCIE report, 1998), and government payments for damage caused by predators are widely accepted as part of the system. In practice, livestock owners must report losses, and most often, kills have to be confirmed by an appointed institution in order to be accepted and paid by the governmental agency or an insurance company. Nevertheless, it is not really clear whether paying compensation increases the acceptance of large carnivores, and reduces the risk of retaliation killings. Therefore, compensation is often tied to further conditions, and alternative compensation schemes have been proposed. One condition may be that livestock owners have to implement preventive measures to qualify for compensation. This is a sensible demand wherever wild prey is abundant. In some areas, however, the survival of the predators depends essentially on the availability of livestock. If in such situations, retaliation killing is a considerable threat to the carnivore population, a good working compensation scheme may be the most successful conservation tactic and must be carefully balanced with the prevention of attacks. In this issue of CDP*News*, we present a series of examples of compensation schemes, of their advantages and weaknesses. The success of a compensation system will depend on its acceptance by the local herders, which again depends on the local tradition and culture. Before setting up a compensation scheme, one should therefore study a variety of systems. Furthermore, the examples demonstrate that compensation systems have a potential to improve education, public involvement and monitoring. These aspects should be considered already in the planning and initial stages of a new compensation system.

The Editors

Contents

Compensation and Predator Conservation: Limitations of Compensation

by
Jessica Montag; jmontag@selway.umt.edu

Despite the 'success' of recent attempts to reintroduce predators, addressing social conflicts and increasing social tolerance for predator reintroduction and management remains a significant issue in species restoration and management. One of the most vocal arguments opposing predator restoration and conservation involves concerns over livestock predation. Although most research indicates that livestock depredation does not seriously impact the livestock industry as a whole, the effects of livestock predation can be devastating to individual ranchers and farmers (Balser 1974, Dorrance & Roy 1976, Gee 1979, Robel *et al.* 1981, Fritts 1982, Weaver 1983, Hoffos 1987, Fritts *et al.* 1992, Cozza *et al.* 1996). However, the real number of head lost to depredation may not be as important as how the livestock owners perceive the severity of damage. Actual damage is often lower than the perceived damage, but it is perceived damage that influences public opinion (Fourli 1999).

One method put forth to address livestock predation and increase tolerance of carnivores in livestock producing areas is the use of compensation programs. Some authors suggest that the use of compensation programs may help to mollify the livestock producing community and reduce the animosity towards the agencies that manage carnivores (Fritts *et al.* 1992, Fourli 1999). However, the idea of compensation starts with the assumption that opposition stemming from livestock depredation is an economic issue and that paying for losses to predators will alleviate the problem of living with carnivores. Literature suggests that there are limits to this assumption, and that livestock depredation encompasses much more than just economic loss. While the literature adequately covers the merits of compensation for livestock depredation, no one paper combines the many concerns that have been raised by various authors. This paper attempts to discuss the suggested limitations that are associated with compensation programs that pay for livestock depredation.

While supporters argue that compensation programs for livestock depredation are a good investment of public and private funds, others suggest that there are limitations inherent to compensation programs. The discussion of limitations help to show the complexity of the compensation issue and indicate that limitations impact all compensation types (public authorities may utilize the following methods: direct compensation, insurance, compensation funds; nongovernmental organizations may administer compensation programs; and individual producers may take out insurance (de Klemm 1996)). These limitations can be framed in the following four key realms:

1 unanticipated negative consequences,
2 policy, responsibility, and roles,
3 urban versus rural values, and
4 concerns that compensation doesn't address.

These realms will be the focus of this paper.

Unanticipated negative consequences

Creating compensation programs sets up expectations that need to be actualized by the agencies and organizations involved. Any failure to do so can greatly impact the relationship and establishment of trust between the agencies/organizations and those the program was meant to serve. Moreover, failed expectations may have a detrimental effect on the attitudes and tolerance of livestock producers towards predators targeted by compensation programs.

Compensation programs created to increase tolerance towards a specific species, for example wolves, may actual have the reverse effect and actually create a bias against that animal. This is in part due to the fact that compensation programs often do not address the real problem species (Wagner *et al.* 1997, Fourli 1999). Coyotes and dogs are the most damaging species to livestock in the United States, yet most compensation programs target species that cause much less damage. This can cause bias and animosity towards the target species, which is especially problematic for wolf compensation programs because coyote, dog, and wolf attacks are difficult to distinguish from each other (Fritts 1982, Fritts *et al.* 1992, Cozza *et al.* 1996, Wagner *et al.* 1997, Fourli 1999). Fritts *et al.* (1992) stated that there were several instances in Minnesota where the wolf compensation program being too low, market value being based on time of loss and not the projected value of when it would be heading to market, and having no compensation for missing livestock, even if there are other verified claims can all have a significant impact on the relationship between livestock producer, the agency/organization and the predator in question. However a good payment value is difficult to determine (Fritts *et al.* 1992, Wagner *et al.* 1997, Fourli 1999). Ranchers and farmers often complain that payments are too low (Fritts *et al.* 1992). Therefore,

payments based on recent price lists updated at regular intervals (i.e. monthly) and that add other costs at percentages of market value will be closer to the real cost endured by the recreated a bias towards wolves. In other words, farmers would attribute the damage to wolves even when overwhelming evidence indicated otherwise. Furthermore, Dahier & Lequette (1997) suggest that, in the absence of direct observation, most shepherds will not admit that an attack was caused by a dog. As a result compensation programs that are trying to increase tolerance of wolves by compensating wolf damage, the absence of coyote and dog compensation, in fact, may cause the program to have the opposite effect, i. e. increased animosity towards the wolf. By having a compensation program, livestock producers may become predisposed to blaming the species that are targeted by compensation programs as the depredating animals.

Determining the value of losses to be compensated may have unanticipated adverse consequences as well. Complaints about livestock value limits ranchers and farmers. However, in some programs, payments are high enough that it becomes more profitable to have livestock "eaten" by predators than taken to market (Fourli 1999).

Closely related to the payment value discussion is that variations in payments and timeliness of compensation payments may distort attitudes and treatment of species populations (Fourli 1999). For carnivore populations that inhabit multiple political boundaries, if one region compensates for losses caused by a target species and a neighboring region does not, animosity may arise for that target species due to what is perceived by livestock producers as unfair treatment. In addition, slow payments can cause ill will towards predators (Fourli 1999) and managing agencies/organizations because livestock producers may feel that agencies/organizations do not care about their losses or their conflicts. This, in turn, undermines the relationship that the agency/ organization is trying to build with livestock producers. Furthermore, slow payments may cause livestock producers to practice unacceptable management techniques (Wagner *et al.* 1997).

Another possible limitation and unanticipated negative consequence is that payment for losses (even real cost payments) does not encourage ranchers and farmers to improve animal husbandry or farm management practices (Dorrance 1983, Fritts *et al.* 1992, Wagner *et al.* 1997, Fourli 1999). This is especially true when doubtful or unconfirmed losses are always paid (Fourli 1999). Partial payments designed to provide incentives for better farm management can be frustrating for recipients that may not be able to afford preventive measures. Furthermore, partial payments, for both probable and verified cases, can be frustrating to livestock owners. A full payment can be seen as taking responsibility for the damage, but then a partial payment seems to say that the agency only takes partial responsibility (Wagner *et al.* 1997). How do agencies and organizations alleviate the tension between trying to compensate for real costs (to increase social tolerance of these problematic species) and yet provide incentives for improving animal husbandry practices?

Requiring preventive measures can be uneconomical for some ranchers and farmers, thereby increasing their animosity towards predators (Fritts et al. 1992, de Klemm 1996, Fourli 1999). It may cost not only money, but also time and energy livestock producers don't have. Requiring preventive measures may only contribute to the bias against the target species of the compensation program and not help to reduce the conflicts.

Finally, the financial burden may be too great for compensating authorities (Olsen 1991, Rimbey *et al.* 1991, Wagner *et al.* 1997). Agencies and organizations may become trapped in paying damage claims for an indefinite period or risk failing to meet the expectations that they, themselves, created. Failure to make payments threatens the relationship and the trust the agency has with the livestock producer and ultimately can create animosity towards the agency and the target species because of unfulfilled expectations.

Policy, responsibility & roles

Conflict over compensation programs and livestock depredation is emblematic of much larger social conflicts, such as: legality and liability of wildlife damage, Endangered Species Act legislation, and private property rights. The controversy surrounding predator restoration and management reflects a deeper social and cultural struggle between very different views of the world and human's place in it. To better understand the complexity of compensation and livestock depredations, one needs to better understand the sociopolitical context in which it takes place (Yaffe 1994).

Although several states, provinces, and countries have compensation programs, it is difficult to determine the legal basis for such programs. Wild animals in most European countries are considered *res nullius*, meaning no one owns them, and therefore, no one is liable for the damages they cause (de Klemm

1996, Fourli 1999). Even in the United States, many courts have ruled that the government is not liable for wildlife damage (Musgrave & Stein 1993). Moreover, damage by wildlife has always been considered a natural risk in agricultural production (Dorrance 1983, de Klemm 1996, Fourli 1999), and no one is responsible for such natural risks.

However, acceptance of natural risks is often tempered by support for the right to defend oneself against attacks and depredations by wild animals (de Klemm 1996, Fourli 1999). This changes, though, when wild animals are protected and one cannot defend against attack and damages. Some argue that when species become protected and "self defense measures are not applicable anymore, … the State may be considered to be liable for the adverse consequences of legislation which it adopted itself" (Fourli 1999). Additionally, especially in situations with protected species, the government is the only body that can assume certain responsibilities for human/wildlife conflicts in areas where wildlife is under the stewardship of the people (Dorrance 1983).

To further complicate matters, in the United States, a nationwide study by Czech & Krausman (1999) concluded that the conservation of species is equally as important to property rights and economic growth. Additionally, in that study, 56.5% of the respondents agreed that landowners prevented from developing their property because of endangered species laws should be compensated. This is important because species conservation regulations (ESA regulations in the U.S.) affect landowners' economic plans; thereby creating more tension and long lasting political struggle (Czech & Krausman 1999). Although many people favor compensation, they do not want the Constitution amended to allow compensation (Czech & Krausman 1999).

This then begs the question of who would be responsible for compensation? Although Dorrance (1983) and de Klemm (1996) support State run compensation programs, States are hesitant to start such programs. There is concern that if compensation programs are started for some wildlife damage a 'slippery slope' effect will occur where they then need to fund all wildlife damage (Olsen 1991).

Urban versus rural values

Nonetheless, the debate about the legality of wildlife and who should fund compensation programs still does not address the broader cultural, political conflicts that appear to be the real issue. Primm and Clark (1996) argue that "wrangling over carnivore conservation is also often a "surrogate" for broader cultural conflicts: preservation versus use of resources, recreation-based economies versus extraction-dependent economies, urban versus rural values, and states'-rights versus federalism." Cohn (1990), Thompson (1993), and Wilson (1997) share the view that much of the conflict is around the control of land, government intervention, and private land rights. Supporters and opponents of predator restoration are engaged in a profound social debate involving "differential access to social power, conflicting ideas about private property, and divergent beliefs about humankind's proper relationship with the natural environment" (Wilson 1997).

Partly what is occurring is a shift from a rural social context where meanings and values of wildlife are shared to the current urban social context where "meanings of wildlife have become less understandable in terms of culturally shared utilitarian/instrumental meaning" and become much more individualized (Patterson *et al.* 2002). With an increase in the diversity of values and meanings towards wildlife, and especially towards carnivores, this increases the chance for, and escalates the intensity of social conflicts regarding wildlife management and their resolutions. In the United States, the political momentum and support for carnivore restoration and conservation largely comes from urbanized centers that neither live in the area of carnivores nor shares the livestock producing way of life. This creates a much larger issue in that local rural communities may feel as though they cannot coexist with certain carnivores, such as wolves, but national desire requires them to in order to maintain species populations.

This discussion is important with regards to compensation because carnivore management becomes a power struggle pitting local/state versus national/federal interests (Primm & Clark 1996). Issues about carnivore management and compensation become wrapped up in larger socio-political debates surrounding the split between urban and rural values. This larger social context limits the ability of compensation to reduce human/livestock and wildlife conflicts since it doesn't address these other larger socio-political issues that are actually at the heart of the debate rather than simply attitudes towards wildlife or economic values. Perhaps, it is not compensation and livestock depredation that is the issue, but what carnivore conservation and reintroduction is going to mean for future land uses both on public and private lands. Furthermore, compensation does not address the very real issues of land control, use,

and governmental interference into private land rights and uses. The literature begs the question of whether compensation is ever really going to affect the social tolerance of species, since livestock depredation may not be the real issue.

Concerns compensation doesn't address

Opposition to predator or carnivore restoration and conservation includes issues much larger than just livestock depredation. There are some issues that livestock producers, and the general public as well, have with carnivores that compensation programs do not address. Compensation programs often do not address the human safety concerns that are common concerns with large carnivore restoration/ conservation, such as grizzly bear or wolf conservation. Studies indicate that concern over human safety is a large factor for opposing such conservation (Schoenecker & Shaw 1997, Duda *et al*. 1998, Responsive Management 2001). Popular media and newspaper articles also indicate that human safety concerns factor in on people's perceptions of large carnivores (Montag & Patterson 2001).

Furthermore, compensation programs are limited in doing anything about concerns over game populations. The perceived effect of carnivores, especially wolves, on deer and elk populations contributes to opposition for carnivore conservation efforts (Wolstenholme 1996, Schoenecker & Shaw 1997, Duda *et al*. 1998, Montag & Patterson 2001).

Moreover, the very concept of compensation may conflict with livestock producers' norms of responsibility to their livestock (Montag & Patterson 2001). Livestock producers don't see their livestock as only monetary items, but as animals that they raise and they do not like them to be harassed and killed by predators. They have a sense of responsibility over those animals and feel helpless when predation occurs (Wolstenholme 1996, Hurst 1999, Helena Independent 2001). Compensation is limited in trying to address this issue and come to a resolution that both the livestock producer and agency/organization are happy with.

Summary

Compensation starts with the assumption that livestock depredation is an economic issue and that paying for losses to predators will alleviate the problem of living with carnivores. Moreover, compensation is really only one group's definition of the problem. Ranchers and livestock producers may frame the issues of livestock depredation and predator conservation very differently where it's not simply an economic issue of losing US$ 500/calf. Much of this discussion about compensation has been dominated by well-intentioned conservationists, but we're lagging behind in incorporating and understanding those that compensation is supposed to serve. They may see it, not as an economic issue, but as a federal government issue, as a private rights issue, an equity issue, a public grazing issue, a public land management issue, or even a private land management issue, or frame it as a combination of many issues, specific to their social and political contexts. Primm (1996) has made the case that issues of this nature with respect to carnivore conservation require social solutions tailored to the problem rather than merely regulatory or economic solutions. Compensation may be viewed as a useful tool, but one with limitations and possible unanticipated adverse consequences. Ultimately, whether compensation can contribute to carnivore conservation depends on the nature of and the understanding of the community for which it is to serve.

The author is currently engaged in a project evaluating predator compensation programs in Montana, Wyoming, and Idaho. Further information on that project can be obtained by contacting the author.

References

Balser, D. S., 1974: An overview of predator-livestock problems with emphasis on livestock losses. Transactions of the North American Wildlife and Natural Resources Conference. 39: 292-300.

Cohn, J. P., 1990: Endangered wolf population increases: Planned reintroduction into old range raises controversy. BioScience 40: 628-632.

Cozza, K., R. Fico, M. L. Battistini, & E. Rogers, 1996: The damage-conservation interface illustrated by predation on domestic livestock in central Italy. Biological Conservation 78: 329-336.

Czech, B. & P. R. Krausman, 1999. Public opinion on endangered species conservation and policy. Society and Natural Resources 12: 469-479.

Dahier, T. & B. Lequette, 1997: Le loup Canis lupus dans le massif du Mercantour (France): gestion des dommages occasionnes aux ongulés domestiques. Bulletin de la Société Neuchâteloise des Sciences Naturelles. 120: 19-26.

de Klemm, C., 1996: Compensation for damage caused by wild animals. Nature and Environment Series, 73.

Dorrance, M. J. & L. D. Roy, 1976: Predation losses of domestic sheep in Alberta. Journal of Range Management 29: 457-460.

Dorrance, M. J., 1983: A philosophy of problem wildlife management. Wildlife Society Bulletin 11: 319-324.

Duda, M.D., S. J. Bissel & K.C. Young, 1998: Wildlife and the American Mind: Public Opinion on and Attitudes towards Fish and Wildlife Management. Harrisonburg, VA, Responsive Management.

Fourli M., 1999: Compensation for damage caused by bears and wolves in the European Union. Luxembourg, Office for Official Publications of the European Communities.

Fritts, S. H., 1982: Wolf Depredation on Livestock in Minnesota. Washington, D. C., United States Department of Interior, Fish and Wildlife Service: 11.

Fritts, S. H., W. J. Paul, L. D. Mech & D. P. Scott, 1992; Trends and Management of Wolf-Livestock Conflicts in Minnesota.

Gee, C. K., 1979: Cattle and calf losses to predators--feeder cattle enterprises in the United States. Journal of Range Management 32: 152-154.

Helena Independent. 2001, June 16: Sheep producer says accepting payment for wolf kills is counterproductive. Pp.7A.

Hoffos, R., 1987: Wolf Management in British Columbia: The Public Controversy. Victoria, B. C., Wildlife Branch, Ministry of Environment and Parks.

Hurst, B., 1999: Planting wolves. The American Enterprise 10:68-70.

Montag, J. M. & M. E. Patterson, 2001: Predator Compensation Programs: A State of Knowledge Report. Project report submitted to USDA Forest Service, Rocky Mountain Research Station. 77 pp.

Musgrave, R. S. & M. A. Stein, 1993: State Wildlife Laws Handbook. Gov. Inst., Inc., Rockville, Md. 840 pp.

Olsen, L., 1991: Compensation: Giving a break to ranchers and bears. Western Wildlands 17: 25-29.

Patterson, M. E., J. M. Montag & D. R. Williams, 2002: The Urbanization of Wildlife Management. In Urban Forestry and Urban Greening. Forestry Serving Urbanized Societies. Supplement (2002).

Primm, S. A., 1996: A pragmatic approach to grizzly bear conservation. Conservation Biology 10: 1026-1036.

Primm, S. A. & T. W. Clark, 1996: Making sense of the policy process for carnivore conservation. Conservation Biology 10: 1036-1045.

Responsive Management, 2001: Public attitudes toward grizzly bear management in Wyoming. In Draft Grizzly Bear Management Plan. Wyoming Game and Fish Department.

Robel, R. J., A. D. Dayton, F. R. Henderson, R. L. Meduna & C. W. Spaeth, 1981: Relationship between husbandry methods and sheep losses to canine predators. Journal of Wildlife Management 45(5): 894-911.

Rimbey, N. R., R. L. Gardner & P. E. Patterson, 1991: Wildlife depredation policy development. Rangelands 13: 272-275.

Schoenecker, K. A. & W. W. Shaw, 1997: Attitudes toward a proposed reintroduction of Mexican gray wolves in Arizona. Human Dimensions of Wildlife 2: 42-55.

Thompson, J. G., 1993: Addressing the human dimensions of wolf reintroduction: An example using estimates of livestock depredation and costs of compensation. Society & Natural Resources 6: 165-179.

Wagner, K. K., R. H. Schmidt, & M. R. Conover. 1997: Compensation programs for wildlife damage in North America. Wildlife Society Bulletin 25: 312-319.

Weaver, J., 1983: Of wolves and livestock. Western Wildlands 8: 37-39.

Wilson, M. A., 1997: The wolf in Yellowstone: Science, symbol, or politics? Deconstructing the conflict between environmentalism and wise use. Society & Natural Resources 10: 453-469.

Wolstenholme, R. C., 1996: Attitudes of residents toward wolves in a rural community in Northwestern Montana. Unpublished thesis, University of Montana, Missoula, MT.

Yaffe, S. L., 1994: The northern spotted owl: An indicator of the importance of sociopolitical context. In Endangered Species Recovery: Finding the Lessons, Improving the Process. T. W. Clark, R. P. Reading and A. L. Clark. Washington, D. C.: Island Press: 47-71.

Wolf Damage Compensation Schemes in Spain

by
Juan Carlos Blanco; jc.blanco@eresmas.net

With over 2,000 wolves spread over 120,000 km^2, especially in its north-western quadrant, Spain is the Western European country with the most wolves. Unlike in countries of Central and Northern Europe, Spain's wolves never died out, and stock farmers of many regions regard them as something natural as snow or drought. The fact that wolves have always caused damage to livestock forced stock farmers to improve stock protection measures. The wolf has never been fully protected in Spain, and the wolf populations that cause the most damage have always been controlled by means of hunting or culling.

Nevertheless, wolves are now more numerous than at any other time in the last forty years, their range having increased very considerably. Their appearance in new areas and the better protection by law today throughout their range have led livestock farmers in several parts of Spain to express their unease.

For this reason, most regional governments compensate livestock kills due to wolves. In Spain, the power for wildlife management is falling to the regional governments. They decide if and how compensation is paid.

Generally speaking, three compensation models are applied in Spain:

1 some regions compensate wolf damage only in protected areas;,
2 some provide compensation throughout their territory;,
3 others only reimburse farmers who have taken out private insurance on their stock.

1 Regions that only pay compensation in protected areas

The Galicia region at the north-western end of Spain, which hosts around 700 wolves over about 26'000 km^2, only pays compensation in a hunting reserve that accounts for a tiny part of the wolf range; in the rest of the region, livestock owners must assume the losses themselves. There are no accurate damage statistics for Galicia, but I roughly estimate that it may amount to as much as € 200,000 to 400,000 per year (US$ 200,000 to 400,000). Nevertheless, it does not appear to generate any particularly great social conflict, perhaps because there have always been wolves in Galicia and farmers have never received compensation. Here, the wolf is a game species, and hunting permits are issued when damages are high. Furthermore, as in the rest of Spain, illegal hunting seems to be a common occurrence.

2 Regions that pay compensation for all damage

Policy in the neighbouring region of Asturias is just the opposite to that of Galicia. With about 200 wolves in little more than 5,000 km^2, the Asturian regional administration directly compensates all livestock damage whether it is in Somiedo Natural Park, which is subject to strict regulations, or in the region's less protected areas. In Asturias, the wolf is no game species, but they are culled by regional government rangers when the damage rate is high, and new packs are not allowed to get established in overpopulated areas.

Between 1991 and 1999, the annual number of attacks increased by 22.9% (from 959 to 1'179) and the amount of losses by 51.4% (from € 225,275 to 341,041). Most of the damage occurs between spring and autumn to free-ranging livestock grazing in open countryside. When a farmer discovers that an animal has been killed by wolves, he must inform an official ranger (employed by the regional administration), who checks the remains *in situ* and takes the appropriate steps so that within a few months the farmer is reimbursed to the value of the dead animal.

In many cases it is difficult to decide whether animals were actually killed by wolves or died from other causes and their carcasses subsequently eaten by them; most dubious cases are resolved to the farmers' advantage. However, compensation is not paid for animals that disappear. In the range of the brown bear, rangers are usually more benevolent when assessing wolf damage in order to avoid discontent among farmers as illegal poison put down for wolves is a major cause of mortality in this small population of Cantabrian brown bear.

The system of direct compensation is very time consuming for the rangers. In Asturias, rangers devote about 1,000 days a year (the equivalent of 5 people-year) to assessing wolf damage. This is, however, the method that farmers prefer.

Other autonomous regions with few wolves also compensate all damage although their management objectives are different. For example, on the private estates (ranches) of Sierra Morena in Andalusia, where there is an isolated population of about 5 wolf packs, the policy is also to pay for all damages with

the aim of fostering their recovery as far as possible. On the other hand, in the Basque Country, with only two packs shared with the neighbouring province of Burgos, all damages are paid in spite of the fact that the management aim is to prevent new packs becoming established; in this case, the object of the compensation payments is not to promote wolf recovery, but rather to ease social friction.

It is important to note that in no case the payment of compensation is dependent on how livestock is managed; in other words, farmers who leave their stock unattended in the countryside and visit it once a week have the same right to compensation as those who watch over their stock with dogs by day and shut them in at night.

3 Regions that only compensate owners of insured livestock

This other model is adopted by Castilla y León (the region with the most wolves in Spain - between 1,000 and 1,500 in about 75,000 km^2) and Castilla-La Mancha (with a small population of less than 5 packs in Guadalajara province, but rapidly increasing). In the hunting reserves and the natural parks (for example, in the famous La Culebra Reserve in Zamora) compensation is paid directly, as in Asturias. In the rest of the country, however, i.e., most of the wolf's range, given that the policies, although very cheap, do not cover all financial losses, the administrations pay the difference between the amount covered by insurance taken out by livestock farmers and the real cost of the damage. If the farmers have not insured their livestock, they are not eligible to receive the shortfall amount. Again, compensation payments are made regardless of how livestock is protected.

Besides making shortfall payments, the regional governments occasionally offer livestock farmers other kinds of help. In Zamora province, for example, a technical team visits farmers who wish to put in a damage claim and helps them fill in the insurance claim forms and the administration's shortfall payment forms. This help with the paperwork makes the farmers more aware that the administration is concerned about them, which apparently leads to a considerable improvement in their attitude. The Regional Government of Castilla y León wishes to extend this service to other provinces in the region.

In Guadalajara province in the Castilla-La Mancha region, besides insurance shortfall payments, the administration provides an annual budget to help stock farmers adapt to the presence of the wolf, which has recently reappeared after an absence of almost 50 years. The money is used to fence in traditional pens, which were not built to be wolf-proof, and also to provide farmers with mastiff dogs free-of-charge.

In these regions, farmers whose livestock has been attacked must inform the insurance company representatives, who pay most of the damages, as well as the official (administration) rangers so that they set in motion the payment process.

No qualitative studies have been carried out to ascertain farmers' opinions regarding the different methods of payment, but the farming unions usually prefer direct compensation payment, as in Asturias. This allows them to receive the government payments and the insurance from private companies if their livestock is insured.

Obviously, the greatest discontent amongst livestock farmers occurs in areas where wolves have reappeared after being absent for decades even though the regional government pays for all the damage. The wolf's return requires a complete change in stock raising techniques and far greater dedication to livestock. In such recolonisation areas, many people who combine livestock husbandry with other businesses end giving up the former because it is not profitable.

Stock farmers' unease is growing in areas where neighbours are more generously treated. This commonly occurs on the boundary between autonomous regions operating different compensation schemes or in the environment of nature parks or hunting reserves where substantial aid is offered to livestock owners. For example, farmers living in the part of Castilla y León that comes within the territory of the Cantabrian Mountains look with envy upon their Asturian counterparts, as do Castilian stock farmers living along the boundary with the Basque Country. Likewise, the excessive delay in making the payments also gives rise to a lot of tension.

Colonisation of new regions by wolves often reopens the eternal debate about which is the best way to compensate damage. Should farmers be required to provide their herds with suitable protection in order to be eligible for compensation? Isn't it perhaps more important to regulate the astronomical grants they receive before embarking on wolf-damage compensation?

The complexity of natural environments, the diversity of social and political circumstances, the influence of pressure groups in the different regions – farming unions, environmental groups- and the caprices of public opinion make it very difficult to decide which is the best method in the long term to

compensate damages as theoretical decisions are not always easy to carry out in practice. Many managers make do with applying methods that keep the peace in the countryside in the short term and prevent a climate of hate towards wolves from developing, and they maintain that there is no such thing as a perfect method. They may be right.

Snow Leopards and Local Livelihoods: Managing the Emerging Conflicts through an Insurance Scheme

by
Shafqat Hussain; shafqat.hussain@yale.edu

The global and local contexts

The snow leopard, *Uncia uncia*, is widely but thinly distributed throughout the Central Asian mountains. Globally, the snow leopard is listed as Endangered in the *Red List of Threatened Species* (IUCN 1996) and as Appendix I species in the Convention on International Trade in Endangered Species (CITES) checklist. One of the most severe threats for the snow leopard is the retaliatory killing by local people in response to livestock predation. In this situation the local farmers perceive the snow leopard without economic value, or rather, it is perceived as having a negative value since it threatens their livelihoods (Pearce 1996).

In order to reduce the retaliatory killings of the snow leopards, an innovative project, Project Snow Leopard (PSL) was initiated in 1999 in the community of Skoyo in the Baltistan region of northern Pakistan. The objective of PSL is to resolve the conflict between local farmers and the snow leopard through safeguarding the livelihoods of the farmers and providing them with an incentive to conserve the snow leopard. Since 1999, PSL has successfully tested a community based approach in achieving this objective. The main components of the PSL are a community managed and community run insurance scheme and an ecotourism company based around snow leopards.

Geographical and economic background

Baltistan – a high mountain environment area of significant conservation value – in the Northern Areas of Pakistan spreads over 26,000 km^2 and supports a population of approximately 300,000 people. The region is very poor especially when put in the context of one of the poorest regions in one of the poorest countries in the world. The region harbours some of the world's highest mountain ranges – Western Himalayas, Karakoram and Hindu Kush – with several peaks over 8,000 metres. The flora and fauna of the region are diverse with several globally significant species represented, including the snow leopard *(Uncia uncia)*, markhor *(Capra Falconeri)*, Himalayan ibex *(Capra ibex siberica)*, blue sheep *(Pseudois nayaur)*, musk deer *(Moschus moschiferus)*, and a range of avifauna (Roberts 1997).

Local people extensively use the biological resources in the wild through complex institutional arrangements[1]. Access to markets and other institutions (state or civil society) are minimal. Livestock, therefore, represents a major source of income, and is an essential technology and a vital form of security to the locals[2]. Local farmers often invest surplus income in livestock, which they can sell in times of need. In difficult economic circumstances, local farmers cannot be concerned about the survival of snow leopards, which are seen to be destroying their security base. The PLS bears in mind the livelihood issues of the local people.

The idea behind the insurance scheme – institutions, incentives and collective action

When PSL proposed the idea of an insurance scheme to help to compensate the farmers for their losses of livestock from snow leopard predation, obvious doubts regarding the sustainability and management of the scheme were raised. Several experts pointed towards some of the inherent dangers associated with an insurance, for example, asymmetric information, moral hazard and cheating through fraudulent claims can be overcome. They claimed that in most cases compensation schemes have failed, apparently for lack of an effective mechanism to overcome these problems.

PSL overcame these problems through its emphasis on community participation and innovative financial design. PSL integrates local institutions in the management and operation of the scheme. Farmers pay premium contributions to a fund, Fund 1, per head of livestock. Fund 1 is managed and administered by the community of Skoyo, who also keeps a record of individual premium contributions to Fund 1. A second fund, Fund 2, is established, organised and operated jointly by the community of Skoyo and PSL

[1]Local livelihoods tend to rely on a variety of resources such as agriculture for production of vegetables and grains, fruit trees, forest and livestock products. Recently reliance on migration and credit is also a part of local livelihood strategy.
[2]Draught cattle, in this context of subsistence communities, are a technology that can be substituted for.

staff. Fund 2 generates income from snow leopard based ecotourism activities.

Conceptually, the two components give farmers incentives to change their behaviour and protect the snow leopard population. Compensation removes the perverse incentive to farmers to persecute the snow leopard, while ecotourism income provides farmers with a positive incentive to conserve the snow leopard.

How does the scheme operate

The insurance scheme is meant to be largely self-sustaining and locally managed. A Village Insurance Committee (VIC) has been set up for this purpose. The members of the Committee are from Skoyo village and have been nominated by the villagers. Claimants must formally file applications with the VIC, which verifies the killings and makes recommendations. If the VIC recommends that a claimant should be compensated, the following steps are taken:

1 The claimant receives his/her individual accumulated premium amount from Fund 1 as compensation.
2 If the claimant's accumulated premium amount in Fund 1 is not high enough to cover the full value of the loss incurred, money is taken from Fund 2 to cover the remaining costs (see Figure 1). For example: a farmer has 30 goats. In the first year, he pays 30 × PKR15 = PKR450 into Fund 1 (1US$ = 58 PKR). The same year, a snow leopard kills two of his goats, the value of which is 2 × PKR1,500 = PKR3,000. The VIC verifies that the goats were killed by a snow leopard and approves the claim for compensation. To pay the amount agreed on, the VIC uses the total premium amount paid by the farmer into Fund1 (i.e., PKR450). The remaining amount of PKR2,550 comes out of Fund 2 (See Figure 1).

The VIC is the signatory on checks written from Fund 1. For Fund 2, the VIC and PSL's manager are cosignatories. Premiums are paid annually. The members of the insurance scheme are entitled to interests earned on the total amount, which is paid out annually to them in proportion to their individual accumulated premium amounts. Entitlement to money from Fund 2 is restricted to those members of the community who have paid premiums into Fund 1. In the case used as an example, the farmer exhausts his premiums paid into Fund 1 by receiving compensation. He must therefore make sure that he pays in the premiums on the remaining 28 goats to insure them for the next year. In such a case, the premium rate for this second payment may be higher as a result of his having received compensation the first year.

Conclusion

Since the start of PSL seven claims have been filed. They all were approved and compensation was paid out. Ongoing biological surveys in the area show that the snow leopard population in the area is stable and perhaps increasing. Sighting of snow leopard is reported to be more common since 1999. But this could also be an artefact of rigorous surveys, enthusiasm of the villagers or efforts of other conservation players. Moreover, the knowledge of the core habitat of the snow leopard in the project area is getting better and we pick up presence signs more eas-

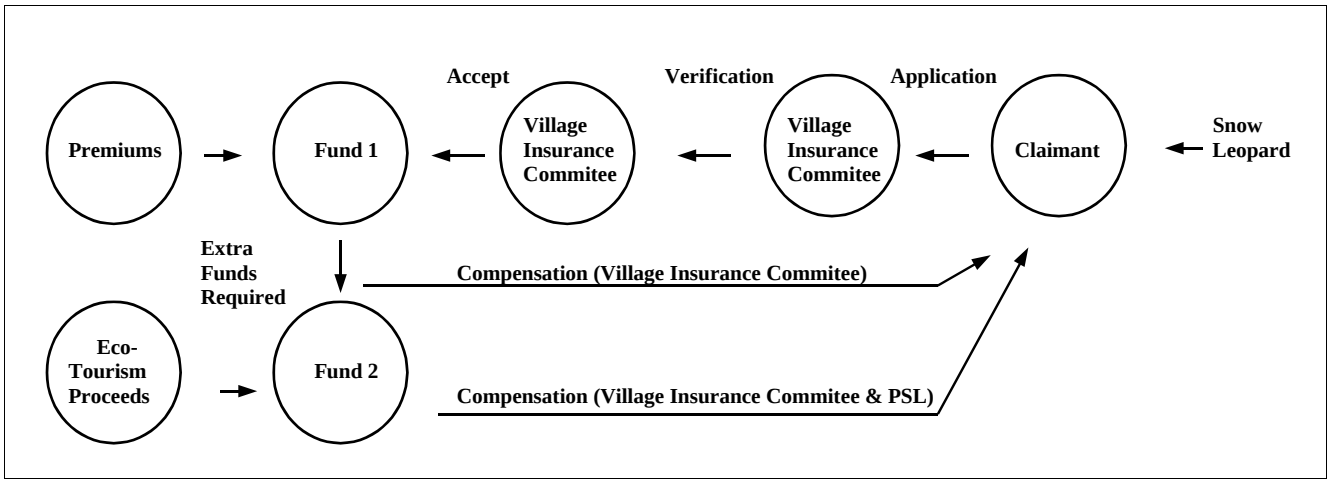

Figure 1: Model demonstrating steps in claiming predation insurance in Baltistan, Pakistan.

ily, resulting in a statistical increase in presence signs.

One major advantage of this two-tier financial scheme is that, unless the entire village colludes and decides to cheat, it is very difficult to abuse the scheme. Indeed, the villagers treat Fund 2 as their collective pool of money generated from *their* common resource – the snow leopard. A false claim by one single individual would mean that he benefits from Fund 2 at the expense of the whole community.

PSL is making an attempt to be self sustaining and does not intent to rely on donor money to run the scheme. This approach however leaves the scheme exposed to potential financial crises. The income from eco-tourism is subject to many uncontrolled factors: Perceived or real security issues in Pakistan could seriously decrease the flow of tourists to the area thus leaving the scheme in risk of going bankrupt. PSL faced this problem after September 11, 2001. All bookings for the year 2002 were cancelled and no income was raised for Fund 2. Fortunately, there is still enough money in Fund 2 from previous years. Therefore, two insurance claims in 2002 could be compensated.

A potential drawback of PSL could be the reliance on an economic incentive approach to conservation. Throughout the world a common feature of community based conservation programs is reliance on economic incentives to induce a pro-conservation behaviour among the people. PSL is also going down the same path. While economic incentive is a quite powerful motive for conservation, however, it is not clear how its propagation is effecting other non-economic incentives for conservation. It may be that other institutional motives based on aesthetic, religious, and cultural aspects are being crowded out because of the heavy emphasis on economic motives alone.

References

IUCN 2002: Red List of Threatened Species. Gland, Switzerland.

Pearce, D. W., 1996: An Economic Overview of Wildlife and Alternative Land Uses. CSERGE Working Paper GEC 97-05

Roberts, T. J., 1997: Mammals of Pakistan. Oxford University Press. Karachi

Compensation for Large Carnivore Depredation of Domestic Sheep 1994-2001

by
John D. C. Linnell; john.linnell@nina.no
Henrik Brøseth; henrik.broseth@nina.no

The development of large predator populations and sheep farming.

Like other European countries, Norway expended considerable resources attempting to eradicate carnivores during the 19th and early 20th centuries. The system of local bounties was consolidated in 1846 in the ”Law on the extermination of predators” which introduced state bounties for a wide range of predatory mammals and birds, including wolves, bears, lynx, wolverines and golden eagles. By the early 20th century, populations were approaching all time lows, and their was discussion among contemporary zoologists about whether the species were faced with national extinction.

In the absence of large predators, the pattern of sheep farming changed, and flocks grew in size and were no longer guarded by shepherds. This pattern of husbandry continued to develop into its present form. Lambing generally occurs in spring (April-May) and indoors under close supervision. As soon as snow has melted and lambs are large enough, the sheep are released onto fields surrounding the farms. However, because <5% of Norway’s area is cultivated land, it is not possible to sustain the number of grazing animals on fields. Instead, sheep farmers are dependent on exploiting the grazing resources provided in the forests (mainly boreal forest) and mountains (alpine tundra above the tree line). In June, the ewes with their attendant lambs are generally released into these wildland habitats, where they disperse into family groups and establish their traditional home ranges. These grazing areas are scattered throughout Norway to such an extent that it is virtually impossible for a large predator’s home range to not overlap with at least one grazing area. The sheep are generally unherded, unguarded and unsupervised, although the owner is required to patrol the area at least once a week. In the absence of large carnivores this pattern of husbandry was successful, and losses of sheep to accidents and disease were minimal. From 1996 to 1999, an average of 2.1 million sheep were released each summer into the wildlands for grazing.

However, from the 1970's official attitudes towards the virtually absent large predators began changing and a sequence of legal changes to their status came into effect, ranging from protection, to limits on hunting seasons and restrictions on the use of certain methods. The response was a slow recovery of all species. During the late 1980's there was a noticeable increase in sheep losses in the wildland pastures which led to the initiation of a series of studies to examine mortality causes of sheep using radio-collars. These studies indicated that most of this increased mortality was due to depredation from large predators. By the late 1990's there was some attempt to adjust husbandry practices to reduce depredation, although these changes have not been adequate and have hardly had any impact on overall losses.

The system of documenting and compensating losses

The sheep owner is responsible for finding sheep killed or injured by large predators. These finds then need to be confirmed by a local representative of the national wildlife management agency's (the Directorate for Nature Management - DN) field division (the State Nature Inspectorate - SNO). A range of criteria from the field-autopsy of the carcasses to signs found associated with the kill-site are used to assign each kill to a particular predator species. However, given the extensive nature of Norwegian sheep husbandry, it is not expected that all predator killed sheep are found and have their cause of death confirmed in order for compensation to be paid. In addition, once several sheep in a grazing area have been confirmed as being killed by a given predator, the personnel may not be able to control all reported carcasses. In fact most losses above the "normal loss" (a long term average of non-predation mortality from each region in the period before large predator recovery) are eligible for compensation provided one or more criteria are fulfilled. These include:

1 some documented losses within a grazing area due to large predators,
2 permanent presence of large predators within the region,
3 age and seasonal specific patterns of losses,
4 a history of chronic depredation losses in the grazing area.

Compensation is designed to cover the slaughter value of the sheep, although some additional compensation for lost production value of ewes, and extra work may also be eligible for compensation. Compensation is paid for losses due to brown bear, Eurasian lynx, wolverine, wolf and golden eagle. It is the county environmental management authority that is responsible for processing claims by individual sheep farmers, and the claims are based on the field documentation by SNO and the information provided by the farmer.

The losses of sheep due to depredation in Norway are far higher than for any other European country when the small size of the large carnivore populations is taken into account. Although only 5-10% of the sheep compensated were actually documented as being killed by carnivores (Table 1), there have been many studies of sheep mortality patterns in Norway using radio-collared sheep that have confirmed the extent of depredation. At present, wolverines and lynx are the worst depredators, largely because they occur in the largest numbers (Table 1). The losses have also been rising during recent years, from 1,301 in 1994 to its peak of 33,109 in 1999. It is interesting to note that sheep do not form a major part of the summer diet of any of the carnivores, so that it appears that much of the livestock killing is "surplus

Table 1: Number of documented losses, losses which were compensated and total amount paid in Norway in 2001. In 2001 a total of NOK 43 Millions (US$ 6.2 Millions) was compensated.

	Documented losses	Losses which were compensated
Bear	434	3,054
Wolf	69	788
Lynx	379	7330
Wolverine	658	13,535
Eagle	109	897
Unspecified large predator	9	4,287
Total	1,658	29,891

killing" motivated just by the fact that wherever the carnivores hunt their natural prey (which are abundant throughout Norway) they cannot fail to encounter sheep. The extreme high losses appear to be a consequence of the extensive nature of the husbandry and the wide dispersal of the sheep.

Compensation has succeeded in preventing most sheep farmers from losing too much money as a result of carnivore depredation, although bear depredation on ewes is hard to compensate as it is often the largest ewes and potentially most useful for breeding that are killed. However, many sheep farmers have simply quit because of the apparent lack of future in the industry or the psychological effect of loosing the lives of so many animals. Furthermore, paying compensation has clearly not stimulated farmers to adopt carnivore compatible husbandry measures, as losses have steadily risen in line with increasing carnivore populations. In fact, there is a good deal of resistance to adopting new husbandry methods, even when financial assistance is provided. A husbandry system that allows around 30,000 sheep to be killed by carnivores each summer can clearly not continue without change, especially when considered from the point of view of animal welfare, even if it is fully compensated. There is therefore a clear need to find a way of moving the emphasis from paying compensation after depredation, to stimulating forms of husbandry that prevent depredation from occurring in the first place. The main problem here is that changes are likely to cost huge amounts of money as radical changes to the husbandry are required. These extra cost will be in addition to the large amounts that are already used to subsidise the industry.

The only useful bi-product of this system is the fact that data useful for monitoring carnivore populations are available. Although it is hard to use these data to say anything about details of carnivore population size, it is possible to use the documented kills to map changes in species specific distribution, and to use losses as a very rough indicator of population trend.

Saving the Central Asian Leopard in Turkmenistan

by
Victor Lukarevsky;
vlukarevski@newmail.ru *or* lukretsiy@dio.ru

With their powerful muscles and long, sharp teeth, big cats often seem terrible and even invincible. This strength is deceptive, however, as these animals depend on populations of other animals – often large ungulates – for food. When anthropogenic pressures such as herding drive down populations of wild ungulates, predators must prey on other animals, and domesticated animals become easy targets. Naturally, conflict arises between the interests of protecting the predators and preserving the local economy, especially in poverty-stricken rural regions where herding is the only means of sustenance. A successful conservation strategy must find a way to mitigate this conflict and interest the local population in conserving the predators.

As recently as the last century, one of such predators, the Central Asian leopard (*Panthera pardus tullianusciscaucasica*), was spread found throughout all of the mountains of Turkmenistan, southern Uzbekistan, and southwestern Tajikistan, as well as parts of the Caucasus. Although the former range of the leopard in these regions stretched for several million hectares, today such habitats are confined to less than 600,000 to 800,000 hectares. Almost all of the leopard's habitat degraded quickly when they were subjected to overgrazing of domestic herds, timbering, fires, hunting, the introduction of agriculture, and in some cases even tourism.

Until the 1940s-1950s when a sharp decline began, the leopard group in the Western Kopetdagh Mountains existed at a relatively stable level. At the present time, however, the population is declining even as its basic sources of prey – urials (*Ovis vignei*), wild goats (*Capra aegagrus*), and wild boars (*Sus scofa*) – are also declining. At this rate, the leopard population will become fragmented and ultimately go extinct, as happened with the Caspian tiger (*Panthera tigris virgata*), which once lived in the tugai forests of Turkmenistan. The tugai were filled with the tiger's favored prey, Bukhara deer (*Cervus elaphus bactrianus*) and wild boars, but when the tugai ecosystems collapsed under anthropogenic stresses, both the deer and boar declined.

The leopard demonstrates a more flexible behavior in response to human activities. Within a relatively brief period of time (from the 1930s to the 1970s) it

has adapted to life with human beings, which meant changing and expanding its food sources. Prey that once was secondary or accidental has become a new basis of the animals' diet. For example, in the Western Kopetdagh, two fundamental species for the leopard – the wild goat and the argali sheepurial– declined under human influence. First the wild boar, then the porcupine (*Hystrix* sp.) began to play an important role in the leopard's diet. Indeed, the cat's ability to survive as a population in less than optimal conditions is one of its defining traits.

But in the case of the leopard, the problem is not just diminishing habitat and food sources, but poaching, especially in retribution for killing livestock. Planning a strategy for protecting animals like the leopard must therefore take into account the life of people whom the animals encounter. The law on endangered species of Turkmenistan clearly states that punishment for killing protected species must be accompanied by an incentive to protect them. Simply declaring the animal a protected species can actually have an opposite and undesired effect, making the cats a target for poaching and a prize on the black market. Moreover, in densely populated regions where leopards regularly attack the very livestock people depend on for their livelihood, legal restrictions are ineffective due to the stronger influence of economic factors. Local communities often try to hide incidents of people killing leopards, and the agencies responsible for punishing such acts do not take serious initiative to investigate the incidents.

Taking these factors into account, an experiment organized with funding from the World Wide Fund for Nature (WWF) has developed a new approach to coexistence between the leopard and local populations. In 1999, I became the leader of a team intended to create a financial compensation plan for people who had lost livestock to leopards. Part of the reason I agreed to take on the project was because I was so impressed by the team WWF had composed, especially the fact that it included members of the local community. For me, the most unexpected aspect of our work was the attitude of local residents, who actively participated in planning a strategy for leopard conservation. Convinced of the importance of changing the status quo, they showed great energy and effectiveness in uniting the team.

We set out to do our work in a rural region of the Sumbar River Basin. It was a challenging location, a place where people truly live side by side with leopards. On the other hand, it was my home, where I felt the support of every mountain, a place where I knew many people, and could recognize every leopard by sight.

After a series of impassioned discussions and debates we agreed upon a strategy. Our plan involved compensating local ranchers with live animals, in essence materially replacing any animal killed by a leopard. As we moved forward with plans to form a flock of sheep for this purpose, we ran into a number of crucial questions: how would the flock be organized? Who would manage it? How would cases of leopard attacks be analyzed? Who would determine the amount of compensation necessary?

Using the money WWF provided, we bought 196 sheep, which subsequently became the property of the Catena Ecoclub. The wisdom of this strategy lay not only in involving local people directly in its planning and realization, but also in the far-sighted use of financial resources. Regardless of the initial generosity of a donor, sooner or later the money will dry up. Ideally a change in the local economy and in people's attitudes would make the need for continued funding unnecessary. But such a change could not be relied on in the brief two to three years our grant was to last. Thus we needed to find a sustainable way to manage the funding. Under proper management, a flock of sheep is capable of reproducing and growing in size virtually on its own. A flock of 650-700 sheep would grow on its own and cover the cost of paying shepherds and veterinarians. Expanding the flock also provides the opportunity to offer the same service to neighboring regions that have similar conflicts between people and nature.

Our next step was to involve the local community in a broader sense. We invited 40 of the most respected and influential ranchers in the region to take part in a seminar, where we explained our idea and asked for help in implementing it. In response, several ranchers voiced their desire to insure their herds against leopard attacks, and a council was elected to manage the newly formed flock for one year. We also decided that eventually the flock – and the responsibilities that accompanied it – would become the property of a soon-to-be-formed Kara-Kala Ranchers' Society.

The council chose two experts to investigate cases of supposed leopard attacks. Ranchers who lost livestock were given a set period of time to register the attack with one of the experts, who would determine not only whether or not it was indeed a leopard who had killed the animal, but also whether the rancher's herd was being properly managed at the time. For example, if the herd had been left unattended for a long period of time, or if it was grazing in a zapov-

ednik (nature reserve), the rancher might not receive compensation. On the basis of the expert's recommendations, the council would decide how many, if any sheep would be given to the rancher.

Within the first four months of the experiment the experts reviewed nine cases of suspected leopard attack; the council subsequently handed over 27 sheep as compensation in six of these cases.

Naturally, this project can have significantly broader success if aimed at a wider audience, involving schoolchildren, border guards, and ultimately all levels of the population. Informational poster displays stand in all of the local councils to educate the community about the progress of the project. Future plans include creating computer classes for schoolchildren to learn to use computers at the same time that they receive instruction in sustainable land use and the importance of preserving the natural heritage of their region. It is our hope that with time, a two-pronged strategy that incorporates both education and economic incentives for leopard protection will support the long-term survival of the species.

South African Cheetah Compensation Fund

by
Deon Cilliers; mailto:ncmp@dewildt.org.za

The National Cheetah Management Program (NCMP) in South Africa is a conservation program aimed at the conservation of the wild cheetah as well as its habitat by means of integrated conservation, education and management plans. The NCMP has various short term objectives that would be utilised to reach the long term objectives of the program.

One of the short term objectives is the establishment and management of a compensation scheme. This is not the traditional type of compensation scheme where land users are compensated for losses. The NCMP believes that this is impractical in the current South African situation and farms are far apart and such a scheme will definitely be abused due to the fact that it would be very difficult to verify actual losses claimed for.

The NCMP has thus gone out from the viewpoint that predation is a natural ecological process and that farmers must accept that they will endure a certain percentage of loses to cattle and game ranching animals due to predation. The NCMP does acknowledge the fact that certain small scale farming activities as well as game ranching with rare and endangered species may not be compatible with the presence of predators such as cheetah.

Land users in South Africa may not at this stage utilise wild cheetah for commercial purposes due to this species uncertain population status. This has had the effect that land users see cheetah as worthless animals, that are a liability to have. They do not tolerate them as part of the natural ecosystem due to the fact that game ranching is a multi million Rand industry. Game Ranchers have had to purchase their game populations on auctions and this has cost them a lot of money. Game Ranches are in most cases relatively small and cannot afford to have too many predators resident.

Domestic stock farmers in SA are legally allowed to destroy cheetah that cause damage to their stock. They may even destroy these cheetah if they are found to be in the vicinity of the domestic stock animals. Once again, due to the fact that cheetah were seen to be worthless, domestic stock farmers simply shot these predators on sight. Other methods are gin trap, poison and shooting from helicopters. It is not known how many cheetah are shot per year. Official records are clearly not accurate as Conservation Authorities only have less than 10 incidents for the past three years on records. Interviews with farmers have indicated that this shootings are much higher, unofficial reports are between 70 and 100 for 2001 and 2001.

The NCMP's Cheetah Compensation Scheme started two years ago and has tried to change this attitude. The NCMP is not against the management of predator populations. At this stage farmers have done this using lethal methods. The NCMP believes that excess cheetah or perceived "problem" cheetah should be banked into protected areas rather than to simply destroy them. The NCMP also believes that land users should be stimulated to see cheetahs as assets and not liabilities.

The Compensation Scheme thus compensates farmers for excess and or perceived "problem" cheetah that have been captured alive using methods approved by the NCMP. This mainly includes the use of trap cages. Cheetahs are only captured legally after permits have been issued by the conservation authorities or with their permission. The landowner gets compensated a fixed donation for the live cheetah. Such compensation only gets paid after the Provincial Conservation Authority has been satisfied that the cheetah was captured legally. Currently an amount of R 10,000 (US$ 1,000) per cheetah is paid to the land owner, which is a lot for South African

farmers. Up to now 41 cheetahs have been caught legally.

These cheetah then get relocated by the NCMP into approved conservation areas in SA. The NCMP requires a minimum donation of R 15,000 per cheetah from the new owner. This donation gets paid directly into the Compensation Fund. Any expenditure such as veterinary expenses, transport expenses etc then gets covered out of this additional R 5,000. Any additional funds remain in the Compensation Fund to keep it self sustaining. The NCMP may also use these additional funds to sponsor cheetah related conservation projects. In this way, "problem" cheetah are paying for themselves to be relocated into approved safe conservation area in SA, the farmers rather capture these cheetah alive due to the "financial" value that the cheetah now has, and additional funds that is generated gets put back into cheetah conservation projects in SA.

The NCMP believes that this is a short term solution and that it is not sustainable over the long term. This gives the NCMP time to investigate and to implement long term solutions that will ensure the survival of the wild cheetah on farmland areas outside of formally protected areas in SA.

A short-lived wolf depredation compensation program in Israel

by
Simon C. Nemtzov;
simon.nemtzov@nature-parks.org.il

Synopsis

A compensation program in Israel ran for only one year, and was discontinued because no sponsor was found to continue to subsidize the compensation payments. Ranchers felt that compensation rates were very low relative to actual losses, but that it was at least better than nothing. Today ranchers receive subsidies to purchase fences and livestock guarding dogs instead.

Background

During the 1970's and 1980's the Golan Heights region in northern Israel experienced a rise in depredation on sheep and calves mainly by golden jackals, *Canis aureus* (Yom-Tov, Ashkenazi & Viner, 1995). During the 1990's there was a marked increase in depredation rates by wolves (*Canis* lupus), too. There was a strict policy in place at that time outlawing any killing of the wolves; the estimated population size was about 50 at that time, but has since grown to about 150 (Reichman 2002).

The conflict reached a peak in July 1998, when in a tragic event, 28 rare griffon vultures (*Gyps fulvus*) died from eating poisoned bait that was set out by disgruntled ranchers trying to kill wolves. After this event, a Ministerial commission was established to investigate the wolf-livestock problem and to suggest methods for its resolution. The commission recommended, among other steps, to compensate ranchers for losses from wolves, at least until alternative protective measures (such as fences and livestock guarding dogs) could be put into place.

The compensation program was viewed as a means to better protect the wolves from the ranchers.

The compensation program

One-quarter of the compensation program was paid for by the federal government, and the rest was covered by Tnuva, a large cooperative for marketing agricultural products, which is owned by the kibbutz and moshav farmers in Israel. The ranchers did not pay a premium to join the compensation program, but there was a deductible required, as mentioned below.

Payment was made to the ranchers once every 6 months for all documented and approved cases of wolf depredation. Each case had to be approved by a government wildlife ranger (from the Israel Nature & Parks Authority), who determined if the animal was killed by a wolf, or if a calf had indeed been taken by a wolf.

Compensation was paid at 100% if the rancher had an electric fence and/or trained guard dogs in place (4 dogs per 250 head), and a dead animal was available for examination. Compensation was paid at 80% if the herd was not fully protected. Approved cases of missing calves were also compensated for at the 80% rate.

The 100% compensation rates were (in US$):

Calves up to 60 days old	
(plus US$2 for each additional day)	200
Pregnant heifer	800
Cow	500
Lamb	100
Sheep	200

Each cattle rancher had a deductible as follows:

herds of up to 200 heads	first animal killed or missing per year
herds of 201-500 heads	first two animals killed or missing per year
herds of 501-800 heads	first four animals killed or missing per year
herds over 800 heads	first five animals killed or missing per year

Each sheep rancher had a deductible as follows:

herds of up to 300 head	first one animal killed or missing per year
herds over 300 head	first two animals killed or missing per year

The program lasted one year (July 1998 – August 1999), and a total of NIS 160,000 (about US$ 48,000) was paid out in compensation.

The program was discontinued after Tnuva withdrew its support, deciding instead, to help subsidize the purchase of fences and guard dogs. Tnuva felt that its money would be better spent on protection rather than compensation. The government subsequently decided to direct its support to these ends too.

The ranchers have since received substantial government subsidies to purchase electric and conventional fences, and trained livestock guarding dogs, and these are in wide use today. They are very effective in reducing wolf depredation on sheep; their efficacy for protecting cattle against wolves is highly variable.

The ranchers' point of view

The ranchers felt that compensation rates were very low compared to the actual losses they incurred, but they felt that the program was better than no compensation at all. The ranchers also were left with the impression that they were not paid for many cases of what they felt was wolf depredation, but which were not approved as such by the wildlife ranger.

LIFE Starter Project about Wildlife-Agriculture Conflicts

The LIFE Starter program funds 10-month projects that aim at gathering the background information needed for preparing LIFE III proposals. The Institute of Applied Ecology (IEA) of Rome has received funds for the project: Wildlife and Agriculture: Minimizing the Conflict through Damage Prevention. The co-ordinators of the project are Annette Mertens and Valeria Salvatori. The aim of the project is to gain insight into the extent and distribution of the major conflicts between wildlife (large carnivores, large herbivores, golden jackal and porcupine) in the European Mediterranean (Portugal, Spain, France, Italy, Croatia and Greece). A second step is the analysis of possible strategies to reduce these conflicts. Our local partners are 1. Luis Pinto de Andrade, University of Castelo Branco, Portugal, 2. Juan Carlos Blanco, Fundacio Oso Pardo, Spain, 3. ONCFS, France, 4. Djuro Huber, University of Zagreb, Croatia and 5. Constantinos Godes, Arcturos, Greece. They will provide data about wildlife-agriculture conflicts in their countries. Together we will then identify special conflict situations in target areas for which to design conflict resolution strategies. A more in-depth research and the implementation of the strategies will be the contents of a LIFE III proposal we will submit in summer 2003. In this proposal each partner organisation will then be responsible for the implementation of the management strategy in the own country, as well as monitoring the status of conflicts. IEA will be responsible for the implementation of the project in Italy and the overall coordination.

As we are still in an initial phase we are looking for input for the project, which can be an exchange of opinions or the participation of additional organisations on the local level. We will be happy about any kind of input you can give!

Many thanks!

Annette Mertens; a.mertens@libero.it
Valeria Salvatori; v.salvatori@ieaitaly.org

Meetings of interest

April 6-9, 2003
10th Wildlife Damage Management Conference.
Location: Clarion Resort on the Lake, Hot Springs, Arkansas, USA
Information:
http://wildlifedamagegroup.unl.edu/10thconf1stcall4paprsl.htm

April 8-10, 2003
4th National Integrated Pest Management Symposium
Location: Indianapolis, USA
Contact and information:
Elaine Wolff
Phone: 217-333-2881
Fax: 217-333-9561
e-mail: ipmsymposium@ad.uiuc
www.conted.uiuc.edu/ipm

May 6-7, 2003
2nd SCALP conference
Location: Amden SG, Switzerland
Contact and information:
Dr. A. Molinari-Jobin
e-mail: JobinMolinari@aol.com
www.kora.unibe.ch/main.htm?fr/proj/scalp/index.html

May 15-17, 2003
The 7th Mountain Lion Workshop
Location: Jackson Hole, Wyoming
Information:
http://gf.state.wy.us/HTML/admin/mtnlionwork.htm

September 9-12, 2003
4th European Vertebrate Pest Management Conference
University of Parma, Italy
Contact and information:
Conference secretariat
Dr. Luis Nieder
Universita di Parma
Dipartimento di Biologia Evolutiva
Viale delle scienze
43100 Parma Italy
fax 0039 0521 905657
e-mail: nieder@biol.unipr.it
www.biol.unipr.it/e4evpmc/inglese/index_en.htm

September 25-28, 2003
World Wolf Congress 2003
Bridging Science and Community
Location: The Banff Centre, Banff, Alberta, Canada
Information: www.worldwolfcongress.ca/

December 1-5, 2003
3rd International Wildlife Management Congress
Location: Christchurch, New Zealand
Contact and information:
3rd IWMC, Conference Office, Centre for Continuing Education, University of Canterbury, Private Bag 4800, Christchurch, New Zealand.
e-mail: wildlife@cont.canterbury.ac.nz
www.conference.canterbury.ac.nz/wildlife2003
Phone + 64 3 364 2915
Fax + 64 3 364 2057

Coming topics

There are probably other compensation programmes out there that have not been presented in the current CDPNews. We are also interested to learn about programmes that are running on a local scale like the one in Pakistan, presented in this issue. Please let us know if you are involved in such programmes and let the other readers share your experience.

The next issue will be opened for any other topics as well. Please contact us on *cdpnews@kora.ch* before writing your article for better coordination.

Thanks

the Editors

Contributions desired

Dear subscribers,
The CDP News will only thrive with your active participation. Articles should be as „down to the earth“ as possible. Please send us any contribution on the following topics:

- Prevention measures
- Prevention measures that did not work
- Statistics on damage
- Compensation systems
- Technical articles
- Problem animal management
- Opinion and forum papers

Marketplace

Fence tester:
An easy way to find faults: **PATKON** Electric Fence Power Probe®:
simple to use - on touch operation
- Leads you quickly to the fault in the fence
- Clearly indicates the direction of the fault
- Digital reading shows the voltage and current
Price: ca. US$ 80.-
www.pakton.com.au/

Smartfix
Pinpoints faults quickly and easily whatever the wire type or energiser used. By simultaneously measuring the current flow and voltage, the Smartfix will follow the current flow to any one of a series of faults. A necessary tool use on a electric fence from single wire to more complex multi-wire installation.
Price: ca. US$ 90.-
www.gallagher.co.nz

For more information on electric fencing and the little things that help you to simplify your work, please contact the manufacturers on the web or the websites mentioned in the articles:

Manufacturers:
www.gallagher.co.nz
You can find the *Power Fence™ Manual* on the website (http://www.gallagher.co.nz/nzl/pf.manual.aspx). There is a lot of helpful information included.

www.kiwifence.com/
www.maxflex.com/
www.kencove.com/add.htm
www.kencove.com
www.electric-fence.net
www.cheetah.ie/

This list does not claim to be complete. Please search the web for further manufacturers.

Information and tips on electric fencing, grounding etc.:
www.kencove.com
www.agric.gov.ab.ca/agdex/600/684-7.html
www.foothill.net/~ringram/groundng.htm
www.sureguard.com.au
www.safefence.com/EF_Theory.htm
www.wvu.edu/~exten/infores/pubs/pest/deer819.pdf
www.ibiblio.org/farming-connection/grazing/features/ground.htm#Poor

As well as the manufacturers list, this list is not complete. Please search the web for further information.

Damage prevention on the Web

Predator FAQ
www.members.home.com/18james/rural/predator.html
Reports on several different prevention measurements

Damage Prevention and Control
www.conservation.state.mo.us/manag/coyotes/control.html

Wildlife Solutions Online
www.wildlifesolutionsonline.com/carnivores.htm
A lot of pdf-files about all sorts of wildlife damage

Wildlife Damage Links
www.aphis.usda.gov/ws/nwrc/wildlife_damage_links.htm

The internet Center for Wildlife Damage Management
http://wildlifedamage.unl.edu
A lot of pdf-files available

The Berryman Institute for Wildlife Damage Management
www.berrymaninstitute.org

Predator defense Institut
www.enviroweb.org/pdi/alternat.htm

Flock & Family Guardian Network
www.flockguard.org
Reports on different breeds of livestock guarding dogs

Working Dog Web
www.workingdogweb.com/wdbreeds.htm
A lot of information on guarding dogs with links to other webpages

Livestock Gurarding Dogs
www.lgd.org

Llamapaedia
www.llamapaedia.com/uses/guard.html
Provides information about Ilamas as guarding animal

Bear Biology
www.bearbiology.com

National Wildlife Research Center
www.aphis.usda.gov/ws/nwrc/

Vertebrate Pest Conference
www.davis.com/~vpc/welcome.html

Conditioned Taste Aversion page
www.conditionedtasteaversion.net/

Carnivore Conservation
www.carnivoreconservation.org/
A huge number of links

How to get Carnivore Damage Prevention News:

There are three ways to receive CDP News:
1. As a paper copy by mail[1)]
2. By e-mail as a pdf-file
3. Download as pdf-file from the LCIE website (www.large-carnivores-lcie.org/) or the KORA website (www.kora.unibe.ch)

Please order CDP News from the editorial office by e-mail: cdpnews@kora.ch

CDP News on the Web

The CDP News can be downloaded as PDF file on:

- LCIE-homepage: www.large-carnivores-lcie.org

- KORA-homepage: www.kora.unibe.ch

CDP News on *www.kora.unibe.ch* offers the following service:
- Download CDP News as pdf-file
- Database with information about CDP-specialists (*If your coordinates on the web are not complete, please send details to cdpnews@kora.*ch)

Impressum

Editorial:
Christof Angst; ch.angst@kora.ch
Jean-Marc Landry; landry@vtx.ch
John Linnell; john.linnell@nina.no
Urs Breitenmoser; Breitenmoser@ivv.unibe.ch

Editorial office:
KORA
Thunstrasse 31
3074 Muri b. Bern
Switzerland
e-mail: cdpnews@kora.ch
Phone: ++41 31 951 70 40
Fax: ++41 31 951 90 40

LCIE card

The Large Carnivore Initiative for Europe aims
"To maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystems and landscapes across Europe".

According to this mission statement, the LCIE defines four important fields of activity:
1. conservation of large carnivore populations and their habitats;
2. integration of large carnivore conservation into local development of rural areas;
3. support for large carnivores through appropriate legislation, policies and economic instruments;
4. the human dimension (information and public awareness with the aim of obtaining the acceptance of large carnivores by all sectors of society).

To solve the conflict arising from the predation of large carnivores on livestock, the prevention of damages is of high priority. For more information on the LCIE please visit the LCIE website (www.large-carnivores-lcie.org) or contact the LCIE co-ordinator Agnieszka Olszanska; olszanska@iop.krakow.pl