University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Great Plains Wildlife Damage Control Workshop Proceedings | Wildlife Damage Management, Internet Center for

2-12-1989

Management Problems Encountered with Livestock Guarding Dogs on the University of California, Hopland Field Station

Robert M. Timm

Robert H. Schmidtz

Follow this and additional works at: http://digitalcommons.unl.edu/gpwdcwp

Part of the Environmental Health and Protection Commons

Timm, Robert M. and Schmidtz, Robert H., "Management Problems Encountered with Livestock Guarding Dogs on the University of California, Hopland Field Station" (1989). *Great Plains Wildlife Damage Control Workshop Proceedings.* Paper 411.
http://digitalcommons.unl.edu/gpwdcwp/411

This Article is brought to you for free and open access by the Wildlife Damage Management, Internet Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Great Plains Wildlife Damage Control Workshop Proceedings by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Management Problems Encountered with Livestock Guarding Dogs on the University of California, Hopland Field Station'

Robert M. Timm and Robert H. Schmidtz

Abstract.--Guard dogs are being promoted and utilized as effective predator damage control tools under a variety of livestock management conditions. We report our experience over 1 1/2 years with 5 dogs, primarily Anatolian shepherd and Akbash dog breeds. We discuss a number of behavioral and management problems we have encountered, some of which have not previously been reported in the literature. These include chasing vehicles and wildlife, predation on deer (Odocoileus hemionus columbianus), and incompatibility of dogs with other predator damage control methods.

INTRODUCTION

Since the early 1970s, guard dogs to prevent or reduce predation on sheep have received increasing attention in North America (Coppinger et al. 1983; Green et al. 1984; Linhart et al. 1979). Most early reports dealt with use of guard dogs in fenced pastures, but later investigations showed potenial for guard dogs on open rangeland as well (Green and Woodruff 1983a). This report describes our attempts to use 5 guard dogs at the University of California's Hopland Field Station from November 1987 through March 1989.

The Hopland Field Station, in the North Coast region of California, is comprised of 2,168 ha containing grassland, oak woodland, and chaparral. Elevation ranges from approximately 150 to 915 m. The station is divided into 32 fenced pastures ranging from 6 to 263 ha in size. Most of the pastures are grazed by sheep annually. the location typically has mild, rainy winters and hot dry summers. Annual rainfall averages 90 cm/yr and occurs primarily between October and April. A detailed description of the site was provided by Murphy and Heady (1983).

Most of the sheep maintained by the station are Targhee. The flock usually contains approximately **1200 breeding ewes** and 100 rams that are used primarily for research purposes. Studies completed or in progress at this location include such topics as sheep genetics, reproductive behavior, food **habits, and** response to various management strategies. Shed lambing in the main barn at the station headquarters begins in October and ends in January in most years. Lambs are held with ewes in the barn for a minimum of 48 hours before being turned out onto native annual range. Each animal is individually numbered at birth. Ewes and their lambs are also paint-branded to facilitiate documentation of loss. The station employs two full-time shepherds, who inspect all pastures containing young lambs daily.

Shearing is done in April, and surplus lambs usually are marketed in late spring. Because most sheep are used in one or more research projects, their actual value is substantially greater than market value for commercial Targhee sheep.

PREDATION LOSS

From 1973 through 1983, an average of 10.42 of the station's lambs and 3.82 of the ewes were killed annually by predators. A significant increase in the number of coyote (Canis latrans) kills occurred during this study period (Scrivner et al. 1985). Since 1983, coyote predation has become even more serious, and mountain lions (Felis concolor) have been responsible for additional losses. Domestic dogs (Canis familiaris) kill sheep periodically, and occasional kills by bear (Ursus americanus), bobcat (Lynx rufus), gray. fox (Urocyon cinereoargenteus), and golden eagle (Aguila chrvsaetos) occur as well.

Some probable reasons for the increasing predation are changes in management by surrounding landowners and an apparent increase in predator numbers. Adjacent ranches on three sides of the field station previously grazed **sheep and conducted** predator damage control, but no longer do so. Coyotes and, more recently, mountain lions appear to be more numerous in the area, based on visual sightings by field station staff and ranchers.

This level of predation loss has been experienced despite predator damage control efforts by federal or county Animal Damage Control personnel and field station staff. For controlling coyote

depredation, trapping and snaring are the tools primarily used, but denning, calling and shooting, and sodium cyanide ejector devices (M-44s) have also been employed. Improvement of fences has reduced predation by domestic dogs in pastures closest to human habitations. Sound- and lighk-emitting devices have been employed for short periods of time to deter predation, but without substantial success.

GUARD DOG

We began acquiring guard dogs in November 1987 in an attempt to determine their potential effectiveness at the field station. A brief history of our experience with each of 5 adult guard dogs is as follows.

Dog 1 - "Rex"

A reproductively intact, 2-year-old male Akbash dog was purchased from a breeder in November 1987. The dog was a proven, working dog that had previously protected herded sheep on rangelands in Colorado, under the supervision of shepherds who remained with the flock. Following an initial orientation period of several weeks during which the dog was penned in the headquarters area, the dog was placed in an 85-ha pasture (Watershed II) containing sheep. Despite several attempts to train the dog to stay within this pasture (including periodic chaining of the dog to a sheep shelter and provision of a source of dog food and water at the site), the dog preferred to roam throughout the entire lower-elevation portion of the field station (approximately 700 ha). He was capable of jumping the typical livestock fences dividing station pastures and was consistently found with or near sheep, or traveling between pastures containing sheep. He was frequently seen at or near recent predator kill sites and would remain at such locations for several days before moving on. We speculate that this behavior may have prevented predation from recurring occurring at these locations, but this dog did not signficantly reduce total losses. Of 220 ewes and lambs grazed (November 19, 1987 through February 11, 1988) in the pasture where the dog's feeder had been placed, 10 lambs were known to have been killed by coyotes and 40 more were missing when sheep were removed from that pasture. Thiq represents a total loss of 22.7 percent, most of which we attributed to predation. It became apparent that we either needed dogs that would remain within fenced pastures or with particular groups of sheep, or else we needed many more dogs to protect the area being grazed.

An additional concern developed almost immediately with Dog #1. He chased vehicles and wildlife. He routinely chased cars and trucks traveling along the county road that bisects the lower third of the field station (and provides the only access route to a neighboring ranch). Bicyclists have reported being chased. While our main concern was that the dog might be hit by a vehicle coming in the opposite direction during such a chase, the neighboring rancher and visitors expressed concern about the dog's aggressiveness, particularly when a vehicle contained a pet dog. The **guard dog was** also observed chasing Columbian blacktailed deer (Odocoileus hemionus columbianus) and jackrabbits (Lepus californicus), and was seen feeding on their remains. It became apparent that he was capable of catching and killing fawns, at least, after running them into a fence. Further, sightings of wild turkeys (Meleagris gallopavo) on the station, which had formerly been common, became rare. We suspect that the dog's activities influenced turkey distribution.

In early summer 1988, Dog #1 became incapacitated as a result of tick-bite paralysis. Following veterinary treatment, his conditions soon improved to normal. He was found to be infested with a large number of ticks, and after this episode more intensive efforts were taken to control ectoparasites on all of the guard dogs.

Dog #2 - "Whistler"

This 23-month-old intact female Anatolian shepherd was obtained in June 1988. Although she had apparently worked satisfactorily with livestock previous to our obtaining her, she was too young to be regarded as a proven guard dog. Upon receipt, we found her to be lethargic and suffering from an infection. Following veterinary treatment, her health improved steadily but she was extremely shy of people to the point that when released into a small pasture, she could not be approached or caught. She did not attempt to cross fence, but she showed little or no inclination to stay with sheep. Her behavior did not improve for several months, except for slight progress in allowing humans to approach.

Upon coming into estrus, she was bred by Dog 111 and had a litter of nine pups in late November 1988. During the last stages of pregnancy and during 6 weeks of nursing pups, she was caged in the headquarters area. During this time, the station was experiencing sheep loss because of coyote attack, but this dog was not available for guarding use because she was nursing pups.

After her pups were weaned, Dog #2 was placed in a 25-ha pasture (Watershed I) with 115 ewes and 225 young lambs, where she remained from December 1988 through March 1989. It appeared that her behavior had changed following whelping, inasmuch as she was more often observed with or near sheep than she had been before. During her time in this pasture, regular (usually daily) checks of this pasture revealed 14 confirmed lamb kills by predators (10 by coyotes, 4 by eagles). Several coyotekilled lambs were not fed upon, perhaps indicating that the dog disturbed the predator before feeding was initiated. One ewe died from causes not related to predation. When the flock was removed from this pasture in mid-March, 21 additional lambs were missing. This represents a total loss of 15.5% of the lambs, most of which we attributed to predation.

Dog #2 was subsequently moved into a series of smaller pastures where a rotational grazing exper-

invent was in progress. Here, the dog began to harass and chase sheep. On one night, she stampeded the sheep, causing them to tear down a fence and gain access to an experimental pasture. The next day, one ewe was killed apparently by being run to the point of exhaustion, and approximately 20 more sheep had wool pulled from their bodies. **Dog #2 was immediately removed from** the **pasture and isolated in a pen** at the headquarters area.

Dog #3 - "Misty"

This 2-year-old female Akbash dog was obtained as a proven, working range dog in mid-September **1988 from** the same breeder as Dog #1. She had recently borne her first litter of pups. Upon release, she began traveling with Dog #1 throughout the field station, jumping fence without difficulty. The pair began ranging more widely than did Dog #1 alone. On several instances, they were observed on properties adjoining the field station. Once they were apprehended approximately 1.5 kilometers outside the station's boundary, where they were captured by a landowner and returned to the station headquarters.

Dogs #1 and #3 occasionally appeared to patrol alone, but both often were observed at the site of a recent predation event, and both would stay at the location for several days. As with Dog #1 alone, the presence of this pair seemed to prevent subsequent predation at that location.

During the fall of 1988, Dogs #1 and #3 were observed together chasing, killing, and consuming deer fawns. During November and December, they were seen to kill at least one fawn per week. Their behavior and demeanor following verbal reprimands and scolding indicated that the dogs knew they should not chase deer, yet this behavior persisted when the dogs were not closely supervised. After mid-winter, fewer fawns were killed. We think this was due to the fawns having attained sufficient size that they could jump fences more easily- and in general avoid the dogs more effectively.

Dog #3 came into heat in early winter and was penned at headquarters to avoid pregnancy. During this time, Dog #1 stayed near the pen for the duration of her estrus cycle and thus became less effective in preventing predation during this time.

Dog #4 "Brutus"

This neutered 2-year-old male Anatolian shepherd was donated to the field station by a private party. He had regularly killed poultry, geese, skunks, domestic cats, etc. on the small acreage where he was penned with goats. In addition, his persistent barking during the night had generated complaints.

Dog #4 was released into a fenced, irrigated 10-ha pasture containing yearling rams. On occasion, he was observed to display rough play behavior toward the sheep. In three known incidents, he prevented dog attacks on this group of sheep. He has shown excellent attentiveness to sheep, and has been aggressive to strangers. We attribute his success not only to his individual behavior, but also to his placement in this relatively.small, flat pasture that is topographically atypical of the station's rangelands.

Dog #5 - "Snow"

This female 2-year-old Great Pyrenees was purchased from a Nevada sheep ranch that uses approximately 30 guard dogs with herded bands. She was pregnant when received, and was housed at headquarters until her pups were weaned. Upon release into the field, she was intimidated by Dog I/3 and therefore proved somewhat ineffectual. She would not remain with sheep, but returned repeatedly to headquarters where she spent considerable time. Her long coat may be inappropriate for California annual grasslands because it invites chronic problems with weed seeds including foxtailE and other stickers.

SUMMARY OF PROBLEMS ENCOUNTERED

Jumping Fences/Straying Off Property

Green and Woodruff (1983a) report that it may be desirable for dogs to jump fences in order to protect sheep in contiguous pastures. In our situation we believe this behavior is disadvantageous. We think our dogs should stay with one band of sheep, or at least within one large pasture, as their effectiveness seems to be diluted when they travel considerable distances between dispersed groups of sheep. In such situations, coootes or other predators readily adapt to attacking at times and places when the dogs are absent. Further, excessive amounts of time and energy can be expended in attempts to locate and check on the dogs when their whereabouts are now known. We equipped several of our dogs with radio transmitter collars, but we still expended considerable effort to find individual dogs and check on their well-being. Roaming is undesirable from an additional standpoint: dogs that stray beyond property boundaries are much more likely to be shot or hit by cars. Previous authors have noted the high mortality rate of guard dogs. Three of our five adult dogs roam at will throughout the field station. Currently, we have two of them caged because we believe they are in imminent danger of being shot if they cross onto a neighbor's ranch.

Chasing Cars and Cyclists

Green and Woodruff (1983D) report that 22 percent of guard dog deaths have been caused Dy collision with vehicles. Undoubtedly, some dogs have the inclination to chase vehicles, and we have not yet found a way to extinguish this behavior. Because two of our dogs (ill and #3> have chased a neighboring rancher's grandchildren while on their motorscooters, they have been perceived as a safety threat and several complaints have been received about their behavior. As mentioned above, we caged them to prevent their being shot, should they again stray onto the neighbor's property. Although it is

theoretically possible to re-condition adult dogs (by means of shock collars and continuous human observation) to not chase vehicles or deer, in reality we have neither the time nor other resources to expend on such a training effort. Others who have worked with guard dogs have suggested that we would have fewer serious behavioral problems if we had begun by raising guard dog pups rather than attemting to adapt adult dogs to our situation. This also would involve a considerable commitment of time and energy, as well as a lag time of perhaps 18 months or more before the desired level of protection could be achieved. The only long-term solution apparent to us is to sell the adult dogs that display undesirable behaviors to a willing buyer.

Chasing and Killing Wildlife

While there are several reports that guard dogs may chase wildlife such as deer, antelope, hares, etc. (Black 1981, Black and Green 1985, Green et al. 1984), we have found no reports of **typical guard dog breeds having killed wildlife.** Our observations of Dogs #1 and #3 regularly killing fawns, as well as our suspicions about their harassment of wild turkeys, lead us to suggest that the impact of guard dogs on wildlife needs further study.

Some inviduals have suggested that our dogs' tendency to roam and to chase vehicles and wildlife is in part due to our providing them excess food. Apparently in some instances, guard dogs kept less well-fed have less energy and thus exhibit fewer such behavioral problems. We do not believe this is a solution, for several reasons. First, we monitor the nutritional condition of our dogs closely and, particularly in the warm months of the year, have had a concern that they were not eating enough to maintain their physical condition. Also, we believe that several of our dogs would, if fed less dog food, simply kill and eat more wildlife.

Behavioral Changes During Reproductive Cycles

Male guard dogs are sometimes castrated to reduce their tendency to wander and to follow estrous females (Black and Green 1985, Green et al. 1984). However, it is not generally appreciated that intact guard dogs will periodically be ineffectual because of reproductive activities, as we have observed. Further, because of behavioral and physiological similarities between coyotes and dogs, we speculate that an estrous guard dog might attract coyotes, or that conversely an estrous coyote might interfere with the desired guarding behavior of a male guard clog.

Changes in Sheep Behavior Toward Dogs

Green and Woodruff (1983a) indicate that sheep learn to respond to individual dogs, and thus the use of guard dogs appears not to create behavioral problems among sheep. Yet, our station's shepherds observed that sheep became more complacent in the presence of herding dogs following their adaptation to the guard dogs's presence. Although this problem appears not to be widespread or serious, it can result in increased time and effort being needed to gather and move sheep that no longer responded as easily to herding dogs.

Incompatibility with Other ADC Tools

Surprisingly little has been written about the incompatability of guard dogs and other common predator damage control measures such as traps, snares, and M44 cyanide ejectors. While in theory it might be possible to train guard dogs to avoid scented M44s, not many ranchers would be willing to risk losing a guard dog as a result of using these devices in the vicinity. While it might also be possible to train guard dogs to avoid traps or snares, the potential for catching the dogs remains wherever these tools are placed. Unless the rancher knows the location of all traps and snares, and also has the time to check these whenever a guard dog is unaccounted for, a potential risk remains. This problem is further compounded when guard dogs cross fences and do not remain in predictable areas, but roam widely. Thus, the choice to employ guard dogs might also be a choice not to employ traps, snares, or toxicants, at least not in the immediate vicinity of the dog.

SUMMARY

Green and Woodruff (1983b) noted that some limitations on effective guard dog use include arid climates, widely-scattered livestock, rough terrain and heavy vegetative cover, and abundant predators providing severe pressure. While this description is appropros to the Hopland Field Station, it also is quite descriptive of most of the rangelands in the North Coast of California, traditionally one of the country's most important sheep-producing regions.

It is our experience, after working with a total of 5 guard dogs during these past 1 1/2 years, that they have limited effectiveness. Only one of our dogs is doing the type of job with which we are uniformly pleased; this, despite the fact that most of the dogs were proven working adults at the time we obtained them. From November 1987 through "larch 1989, we have expended approximately 500 personhours of station labor (valued at $10.07/hr), in addition to expenditures totalling some $2500 for purchase and shipping of dogs. This :foes not include expenses for veterinary care, licenses, food, and other items necessary to the maintenance of the dogs. Unfortunately, the extent of problems we have encountered, especially- considering our use of more and better-skilled labor than the average ranch, indicates to us that guard dogs are not a viable solution (either practically or economically) except in limited instances in our geographic area. We wonder whether our predator losses would have been more effectively reduced had we spent our time and funds on conventional control tools apd methods.

We would like to see further evaluation of the problems outlined above, and we intend to continue research on guard dogs in order to find means to solve some of these difficulties. A better un;ler-standing of the situations in which guard (logs will work effectively, and a fuller appreciation of some of the problems they create, will allow ranchers to make better decisions when planning a predator control strategy.

ACKNOWLEDGMENTS

We thank Guy E. Connolly and .Jeffrey S. Green, who reviewed an earlier draft of this paper and provided many helpful comments. John Hays, Gil Dow, Fran Lile, and Ken Whittaker of the Hopland Field Station have cared for and managed the guard dogs and have provided many useful observations on their behavior.

LITERATURE CITED

Black, H. L. 1981. Navajo sheep and goat guarding dogs: a new world solution to the coyote problem. Rangelands 3(6):235-237.

Black, H.L. and J.S. Green. 198' ..... Navajo use of mixed-breed dogs for management of predators. J. Range Manage. 38(11:11-15.

Coppinger, R., J. Lorenz, and L. Coppinger. 1983. Introducing livestock guarding dogs to ***sheep*** and goat producers. Proc. Eastern Wildl. Damage Conf. 1:129-132.

Green, J.S. and R.A. Woodruff. 1983a. Guarding dogs protect sheep from predators. Agricultural Information Bulletin No. 455, Agricultural Research Service and Extension Service, U.S. Dept. of Agriculture, Washington, D.C. 27 pp.

Green, J.S. and R.A. Woodruff. 1983b. The use of Eurasian dogs to protect sheep from predators in North America: a summarv of research at the U.S. Sheep Experiment Station. Proc. Eastern Wildl. Damage Conf. 1:119-124.

Green, J.S., R.A. Woodruff, and T.T. Tueller. 1984. Livestock-guarding dogs for predator control: costs, benefits, and practicality. Wildl. Soc. Bull. 12(11:44-50.

Linhart, S.B., R.T. Sterner, T.C. Carrigan, and D.R. Henne. 1979. Komondor guard dogs reduce sheep losses to coyotes: a preliminary evaluation. J. Range Manage. 32(3):238-241.

Murphy, A.H. and H.F. Heady. 1983. Vascular plants at the Hopland Field Station, Mendocino County, California. The Wasmann J. of Biol. 41:53-96.

Scrivner, J.H., W.E. Howard, A.H. Murphy, and J.R. Hays. 1985. Sheep losses to predators on a California range, 1973-1983. J. Range Manage. 38(5):418-421.