

DAIRY VETERINARY NEWSLETTER

March 2011

Loss of Livestock Including Dairy Animals to Predators – Is it Increasing?

On March 18, 2011 a settlement was reached between 10 wildlife advocacy groups and the U.S. Department of Interior that would allow hunting for wolves to resume in Montana and Idaho. The settlement still needs approval from U.S. District Judge Donald Molloy in Missoula, Montana. It would keep wolves under federal protection, for now, in Oregon, Washington, Utah and Wyoming. In that entire 6-state Northern Rockies region there are an estimated 1,651 wolves, a population described as expanding rapidly over the last 10 years.

A driving force in the decision was increased concern over wolf predation of livestock, as well as wolf-human interactions, subjects on which different groups have conflicting opinions. The exact number of wolves in Utah is unknown, but according to several accounts, incidents of wolves killing livestock are increasing in Utah. Nevertheless, as will be addressed below, it is still true that the vast majority of livestock losses - including losses of dairy animals - to predators are caused by feral dogs and coyotes.

An ABC news story from July 2010 quoted Leonard Blackham, Utah Commissioner for Agriculture and Food as saying, "We're very concerned about the wolves coming to Utah - - it's surely a challenge for livestock and livestock producers. They are very aggressive animals. - - "If [a] wolf is in the area [of livestock], the rancher or his employee are legally allowed to take out that animal." The story also mentions a July 2010 incident where "a wolf was taken out in Summit County after killing thousands of dollars worth of livestock".

Feral dogs and coyotes in addition to wolves as livestock predators

Over the past 20 years, including in places that I find people in the Western U.S. often do not think of as having many predators, like New York State where I used to live, losses of U.S. livestock to predators including feral dogs and especially to growing numbers of coyotes have increased. Most of the loss is caused by dogs and coyotes preying upon the sheep industry across the country, resulting in increased popularity and demonstrated effectiveness of donkeys or llamas as guard animals for sheep and goats at pasture or on open range land. However, the losses are not limited to the sheep industry, and the dollar loss estimates are actually higher for the cattle industry. More on this subject follows below.

Recently, there are numerous accounts of wolves killing dairy calves as well as dairy cows as large as 1,500 pounds, and the problem appears to be increasing. Across the U.S., in just the last few years, increased loss of dairy calves, cows, sheep, pet dogs, farmed deer, and even bear hunting hounds to wolves is being reported. A recent incident confirmed by state officials in North Dakota involved 2 large wolves squeezing through a cattle gate with less than a foot between the bars and entering a barn to kill 3 newborn calves. Livestock farmers in many states other than Montana and Idaho are calling for a restoration of the hunting of wolves. In the meantime,

wildlife and game officials increasingly are called in to “remove” wolves; this appears to be the politically necessary way to describe killing them. During the first 5 months of 2010, the Grand Rapids, Minnesota office of wildlife services had to remove 32 wolves.

In a story by Patrick Parkinson, Park City Record, July 23, 2010, wildlife officials confirmed that a wolf killed 2 calves weighing approximately 450 pounds east of Coalville, UT. Summit County Councilman David Ure was quoted as saying, “There [were] probably 5 more wolf attacks on livestock in Utah in the past two weeks.”

One thing that potentially confuses the issue is that there is still no “wolf hunting” allowed in Utah, including by livestock owners or other farmers, but “defensive killing” by livestock farmers or anyone defending their own life from a wolf is allowed.

What does livestock predator loss data say?

The following table of total U.S. predation losses of cattle is from the most recent USDA statistics on livestock predator losses I could find, from the year 2005. If any of our readers know of more recent predation loss data, please let me know.

Losses of Cattle and Calves: Number of Head and Total Value, United States, **2005**

Predator	Number of Head	% of Total Predators	Total Value
	Number	Percent	1,000 Dollars
Coyotes	97,000	51.1	43,911
Dogs	21,900	11.5	10,786
Mountain Lions & Bobcats *	14,700	7.7	7,590
Bears	2,800	1.5	1,453
Wolves	4,400	2.3	2,087
Other Predators	9,300	4.9	5,735
US	190,000	100.0	92,674

Totals may not add due to rounding. Cattle includes all cows, bulls, steers, and heifers weighing over 500 pounds. This includes beef and milk breeds as well as cattle on feed. Calves include beef and milk breed steers, heifers, and bulls weighing less than 500 pounds.

* Includes cougars, pumas, and lynx.

It is evident in the table that in 2005, there were approximately 27 times as many cattle killed by coyotes and dogs as by wolves according to the data available then. However, in 2000, there were 75 times as many cattle killed by coyotes and dogs as by wolves, and from 2000 to 2005, cattle killed by wolves had increased 3-fold during those 5 years.

USDA statistics also show that from 1996 to 2005, total loss of cattle to predators increased from 117,400 to 190,000, a 62% increase during those 9 years.

The following data shows death loss of cattle only from coyotes and dogs, for selected states, again from the most recent USDA statistics available, from the year 2005.

Losses of Cattle and Calves by Coyotes and Dogs, by State and United States, **2005**

State	Coyotes				Dogs			
	Head	% of Total Cattle	Head	% of Total Calves	Head	% of Total Cattle	Head	% of Total Calves
AZ			600	23.1			200	7.7
CA	100	7.1	3,000	58.8	200	14.3	600	11.8
CO	500	71.4	2,300	57.5			200	5.0
ID			600	30.0			100	5.0
IL	100	50.0	1,100	50.0	100	50.0	300	13.6
IN	100	33.3	1,000	83.3			100	8.3
IA			1,100	78.6			100	7.1
KS	400	57.1	2,000	51.3	100	14.3	700	17.9
MO			1,100	27.5	600	42.9	1,500	37.5
MT			1,300	54.2			100	4.2
NE	200	40.0	1,700	77.3			100	4.5
NV	100	50.0	1,000	90.9				
NM	900	40.9	1,900	39.6	100	4.5	200	4.2
NY	100	100.0	700	87.5				
OR	100	25.0	2,200	53.7				
TX	1,700	41.5	21,000	60.0	600	14.6	2,900	8.3
UT			1,600	64.0				
VA	600	42.9	1,700	44.7	200	14.3	1,000	26.3
WA			600	37.5				
WI			2,000	74.1				
WY	100	20.0	2,100	60.0			100	2.9
US	11,000	32.4	86,000	55.1	4,400	12.9	17,500	11.2

Totals may not add due to rounding. Missing data are less than 100 head for the State or not published to avoid disclosure of individual operations.

Western states including Utah are bolded in the table above. Some other states are shown that I thought might be of interest to western readers - Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, New York, Texas, Virginia and Wisconsin. Livestock losses to dogs and coyotes were not trivial in those states either, in many cases with total number killed being higher than in Utah; again this was in 2005. States with markedly increased losses from coyotes and dogs compared to 5 years earlier were New Mexico, Texas and Wisconsin, showing that this problem is not localized to one region of the U.S.

The 2005 data also showed 14,700 cattle killed in the U.S. by mountain lions and bobcats, a 34% increase during the 5 years since 2000, including 300 in Utah.

What can be seen in these and other USDA statistics is that while coyotes, mountain lions and bobcats kill far more animals than wolves, all 4 of these categories of predators are killing more livestock in recent years, and the fastest rate of increase in killing is by wolves, growing exponentially.

Is the cattle industry beginning to lose more financially to predation than the sheep industry?

It is frequently stated by people on all sides of this issue that sheep predation losses are higher than cattle predation losses, and this was historically true. Indeed in animal numbers, more sheep are still killed by predators than cattle, but the gap is narrowing rapidly. Financially, the cattle industry is losing more money to predators than the sheep industry. In the Pennsylvania Annual Statistical Bulletin for 2009, in an article by Adam Pike, the U.S. sheep predation losses for 2004 are stated as 224,200 animals (70% of those were lambs) worth over \$18 million, in contrast to the first table above showing 190,000 cattle worth nearly \$93 million lost to predators in 2005.

What control measures can be taken against coyotes, feral dogs, and wolves killing dairy animals?

I suspect that many of our dairy producer clients have had experience with and have adopted some sort of control measures against predators. However, just like the rest of U.S. society, many producers and employees on dairy farms no longer hunt and may not have even grown up in rural areas. Farm employees' familiarity with coyotes, bobcats, wolves, etc. is often limited. Some producers may not be especially concerned about predation, but it should probably be considered on every dairy farm in Utah. Calves in hutches, post-weaning but pre-breeding age heifers, and dry cows may be housed considerable distances away from the main farmstead or are at least out of sight of the milking, office and treatment facilities and are not seen for extensive periods each day or at night.

In the Pennsylvania Annual Statistical Bulletin for 2009, Pamela Kanagy reports on the most commonly used predator control methods to protect cattle and calves against predators:

Guard Animal 46%
Exclusion Fencing 41%
Frequent Checking 29%

In my experience, it almost cannot be overstated how valuable a guard animal can be to reduce predator losses of sheep or goats. The two best guard animals I have observed are a llama or a donkey. Effectiveness of guard llamas for sheep was researched by Iowa State University from 1990 to 1991. Some reporting of results is anonymous, some by William Franklin and Kelly Powell. 145 sheep ranchers across the country were interviewed by telephone and 29 sheep ranches were visited. Most ranches used only one guard llama, some used as many as 6 (see below regarding possible ineffectiveness of multiple llamas). One llama can guard at least 2100 sheep. Most guard llamas were gelded males, some were intact males; most llamas were used in Montana, Wyoming, Colorado, California and Oregon. The average producer had raised sheep for 17 years and purchased a llama 3 years previous to the study; some llamas had been guarding for as long as 12 years. Mean flock size was 300 sheep maintained in a 300 acre pasture. The study report also mentions guard donkeys but apparently they were not studied. The report includes details of introducing llamas to sheep, etc.

Results were impressive; predation losses were reported to have decreased from 11% before llamas were introduced to 1% afterward. Single guard llamas resulted in 1% predation loss, but multiple guard llamas averaged 7% predation loss. More than half of producers reported zero losses to predators with guard llamas present. 80% of producers rated their guard llama's ability to reduce predation losses as "very effective" or "effective." Most producers used other control measures such as shooting, traps, electric fences or guard dogs in addition, but 94% did not confine sheep at night and 23% used no other control measures besides llamas at all.

Llama behavior (multiple behaviors were observed in most llamas) toward predators observed included:

Walk or run towards the predator 87%
Chase predator 58%
Alarm call 32% (llamas sometimes stand on a high point and watch for predators approaching herd or flock)
Herd the sheep 34%
Kick or paw at predator 21%

Position itself between the flock and predator 8%

In 3 % of the cases the llama walked or ran away from the predator

Ranchers reported their llamas killed intruders including coyotes

It should be noted that some people's opinion is that llamas are more effective against coyotes than any other predator. However, considering the large proportion of predation losses that coyotes still cause, this could still be very useful. I could find no data regarding llamas as protection against wolves. There are many written statements that llamas cannot protect livestock against wolves, mountain lions, bobcats, or bears, but no study results or numerical reports. The above sounds logical to me; probably the most a llama could do against the larger predators is make an alarm call and herd the animals away from the predator.

Donkeys are said to be effective guard animals for sheep, goats or cattle. My experience is that they virtually eliminate predation, including in areas where it has been a problem, on sheep and goats, but I have no experience with them guarding cattle. Even their greatest proponents cite more possible challenges with their aggressive behavior, and they are said to be able to guard only up to approximately 200 sheep or cattle. I have not seen or heard of much aggressiveness problem with them, though, and there are guard donkey breeders who offer guarantees according to some websites. I assume this means an unacceptable donkey can be replaced within some time after purchase. Discussions of occasional donkey aggressiveness usually include behavior toward very young lambs, but not toward cattle.

What about guard llamas or donkeys for dairy cattle?

A second Iowa State study of guard llamas published in 2000 is widely referred to, but I have not been able to find detailed results of this study. The second study is said to have involved 136 additional farms with llamas guarding goats, poultry, and cattle. How many farms had only cattle, and whether any had dairy cattle is unclear. It is stated that no cattle were lost to predators when guard llamas were present, but numbers and details I have not been able to find.

It is recommended that donkeys for guarding cattle be at least 54" (13.5 hands) tall at the shoulder, and be females or gelded males. If multiple donkeys are used, only females are recommended. Donkeys are equines and have some different feed requirements from cattle. Deccox, Rumensin or Bovatec are poisonous to donkeys. Guard donkeys should have their feet trimmed every 3 - 4 months. There are no published studies regarding guard donkey effectiveness, in cattle or other livestock species that I can find.

Varying the routine often keeps predators away

When I was a resident at Michigan State 20 years ago, I often heard producers in northern Michigan who had a high predator population around their farms mention something that is included in many current sources of predator control advice – many predators are deterred by seeing that something is different about the routine or the appearance of a farm where livestock live. Moving fences or paddock spaces such that where animals are or how their housing looks is different, placing unfamiliar objects or moving them, including vehicles, periodic use of noise alarms and/or strobe lights, scarecrows or other dummies (some people use dummies in vehicles that are moved daily), etc. helps keep predators away. Many changes in routine or new alarms or lights are said to last for 3 to 4 months before predators become used to them. USDA APHIS developed the Electronic Guard, a dusk to dawn random siren and light device available at any state APHIS Wildlife Services office, and the main supply is at the Wildlife Services Pocatello Supply Depot, Pocatello, ID. In a study, the Electronic Guard reduced predation of cattle by 89%, if they were housed in fenced pasture.

Wolves and the continuing predator-livestock debate

Adding to the debate about wolves and predator control in general, a new paper in PLoS One, August 4 2010,

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“Effects of Wolves on Elk and Cattle Behaviors: Implications for Livestock Production and Wolf Conservation”, available on PubMed, by I. Laporte, T.B. Muhly, et al., says that presence of wolves has effects on domestic cattle beyond whether they are attacked or killed. They say, “Predation and harassment of livestock by wolves creates conflict and is a significant challenge for wolf conservation. [In domestic cattle, anti-predator] responses might have implications on stress and fitness. [In contrast to wild species such as elk] for example, predation can increase the stress levels of animals and result in reduced reproduction.” This interesting paper reports on a study conducted in Alberta just north of the Montana border.

The issue of livestock versus predators, including the expanding wolf population, is one that will likely continue to affect dairy producers in Utah and throughout the U.S. As always I would be glad to have your feedback regarding your conversations with clients and your own experiences with predator control.

Please let us know your comments and also suggestions for future topics. I can be reached at (435) 760-3731 (Cell), (435) 797-1899 M-W, (435) 797-7120 Th-F or David.Wilson@usu.edu.



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