

**CAN YOU PROTECT YOUR LIVESTOCK  
FROM PREDATORS?**

Note: Eugene Fytche's book Wild Predators! Not in my Back Yard! Is available for sale at Homestead Organics.

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## CAN YOU PROTECT YOUR LIVESTOCK FROM PREDATORS ?

**Survival of the fittest** is a basic law of Nature. As Ogden Nash said:

*Great fleas have lesser fleas  
Upon their backs to bite them  
And lesser fleas have lesser fleas  
And so ad infinitum!*

We who raise domestic animals and poultry are aware of Nature's law, and make the distinction between "good" animals and predators. "Good" animals are those that we want to raise for affection or profit, and predators are those who prey upon the "good" animals. The problem that all husbandmen face is how to protect the latter from the former while paying attention to the basic requirements of the environment and gaining a measure of profit, either financial or emotional.

With that very basic definition as a starting point, it is necessary to be a little more specific in order to develop any program of protection. Those predators that are most likely to bother the "good" animals in any region must be determined. The "good" animals most in need of protection can then be deduced based on the characteristics of the predators and the nature of their preferred prey.

Every five years the USDA publishes a statement of losses of **sheep** to predators. The latest issue shows in **Table 1** the losses to each of their common predators in 2004:

**TABLE 1**

### Losses of sheep and lambs from predators (2004)

Predator	United States		Pennsylvania	
	Head (000)	% of Total	Head	% of Total
Coyotes	135.6	60.5	1100	61.1
Dogs	29.8	13.3	600	33.3
Mountain Lions	12.7	5.7	0	0
Bears	8.5	3.8	0	0
All others*	37.6	16.9	100	5.6
Total	224.2	100.0	1800	100.0

\* Foxes, Eagles, Bobcats, and others.

(Source: NASS, Agricultural Statistics Board, USDA)

Thus, in USA as a whole, in 2004, coyotes and dogs were responsible for three quarters of the predator losses, while in Pennsylvania, the canines accounted for 94% of the kills.

Are these losses serious? Costed at market prices, USDA estimated that the value of the US losses was \$18.3 million, and in Pennsylvania, the value was \$171,000. There is no way to put a dollar value on the emotional stress affecting producers suffering the losses.

Many factors contribute to the losses through predation, among them predator population (that can be affected by disease, food supply, hunting and trapping) on one hand, and on sheep population and the level of protection given livestock by producers on the other. **Table 2** looks at sheep population and losses reported by USDA statistics, as a crude measure of whether the problem is worsening.

**TABLE 2**

**Losses as % of Sheep Population in 2004, 1999, & 1994**

Year	United States			Pennsylvania		
	Head (Million)	Losses ('000 )	%	Head ('000)	Losses (Head)	%
2004	6.0	224.2	3.7	90	1800	2.0
1999	7.2	273.0	3.8	83	1300	1.6
1994	9.8	368.1	3.8	127	1525	1.2

(Source: NASS, Agricultural Statistics Board, USDA)

Thus, sheep population in the United States is declining, but the predation **rate** has been constant. Pennsylvania's sheep flock decreased over part of the period, but appears to be increasing again, (as is the number of sheep farms) while at the same time the **rate** of losses to predators is increasing.

That is about as far as general statistical information can be taken, and it must be remembered that the numbers are derived from statistical sampling techniques, that in themselves depend on answers provided by producers. It would seem, however, that losses to canines in Pennsylvania are increasing, and while the coyote is the principal offender, the loss to domestic dogs is a significant factor. It is fortunate that the same protective measures are effective against both.

Losses of sheep have been used to illustrate trends in predation, but other common domestic livestock that are vulnerable include cattle, goats and poultry. As might be expected, rate of losses in cattle is lower because of their size, and calves comprise three quarters of cattle losses. Husbandry practices of meat animals and dairy animals differ and so do the rates of predation. These differences in husbandry practices apply to sheep and goats as well as to cattle. Poultry generally are better protected, but ranged poultry are vulnerable to a whole host of predators, including, but with many animals smaller than, coyotes and dogs.

## Risk analysis

How likely is the flock of any individual producer to suffer predator losses? Unfortunately, there is no single answer to this question. A new producer in particular, however, should try to find out whether his flock may be vulnerable. Risk analysis is a sophisticated name for doing what common sense dictates the producer should do: to tap all sources of relevant information about predation before he sets up his operation. He should question neighbouring producers and local sheep clubs, hunters and trappers, government livestock agencies and specialists, and perhaps raise the question in correspondence columns of livestock magazines. From their responses, he can assess whether his potential losses are to be regarded as a **cost of production**, or whether they might be so high that it will be worthwhile to spend time and effort in providing **some level of protection**. Always it must be borne in mind that the coyote and the domestic dog are found everywhere in North America,

## Conventional protective measures

Since non-focussed poisoning of predators was outlawed in the '70's, producers have explored many aspects of non-lethal protection of domestic livestock :

- ! Management inputs
- ! Confinement
- ! Guard animals

A more direct confrontation of the problem involves hunting, trapping and den destruction. Research continues into other methods, such as sound, light, taste aversion, and other attempts to make predation more difficult, but none of these have received general acceptance. Note that protection of large range flocks is a different problem than that of a farm flock.

**Management inputs** are generally least capital intensive, but do require more time inputs by the producer. The simplest way is to provide a light in the barnyard, and as an extension of this, to bring the flock to the barnyard at night. Lambing in a protected area, and keeping young lambs close to the farmhouse is better than leaving them in a remote pasture. This is helpful for cattle as well, planning to calve in the barn and starting the calves and their dams in a nursery pasture. Animals can be trained to return to the barnyard by watering them there and by feeding to a fixed schedule. Carcasses of dead animals should be buried, not dragged to a fence line or into the bush for the predators to clean up. Healthy animals are less subject to predation. It is helpful if neighbours can be convinced to adopt good management practices.

The economics of animal husbandry require that they have access to pasture and **confinement** may be a restriction in the proportion of their food input from this source. While a farm flock may return to the barnyard at night, sheep will tend to graze before sunup when forage is more tender, and this is the preferred hunting time for coyotes. Making the barnyard a safe area by fencing, with a gate so that the producer can regulate the sheep's pasture time, may be helpful, without the drastic approach of locking them in the barn at night. The barnyard safe area is made safer by a predator-proof electric fence.

Electric fencing can be used to enclose large areas and its effectiveness is a function of the care with which it is built and maintained. Conventional page (woven) wire and log fences are not effective barriers for coyotes or dogs, although an outrigger electrified strand may improve the effectiveness of page wire. Fencing with small mesh is more effective, and even more so when supplemented by electrified strands. Many companies now manufacture equipment for electric fencing, and will provide good advice as part of their package. Predator-proof electric fence requires at least 5 strands and depending on the risk, as many as 8.

**Guard animals** have grown in popularity over the past 30 years, and donkeys, llamas and many special breeds of dogs are used protect all species of livestock. Each has its strong characteristics and its weak points. All guard animals are natural products. Some may be born incapable of doing a good job. Others are rendered ineffective by their treatment by owners or by the pasture layout. Others by instinct do a good job.

**Donkeys and llamas** hate canines, and chase foreign creatures from the pasture. They generally operate by line of sight, and are hampered in functioning if the flock is spread out in a pasture interspersed with bush. Donkeys do not work well together, as they tend to consort together rather than tending the flock. Bonding with the flock is imperative.

**Guard dogs** can be the most effective of the guard animals when properly bonded with the flock. They operate by instinct, and overtraining may cloud their good traits. They must live with the flock, and will work with other guard dogs. On the down side, they are big and powerful animals, and can harm their charges, or strangers who wander into the pasture. Their use in built up areas in particular requires supervision.

**Other** animals, horses, highland cattle, farm dogs, etc., sometimes appear to show protective instincts, but this may result from antipathy to the predator rather than deliberate protection. This behaviour should be considered as a bonus rather than something on which the producer can depend.

**Hunting, trapping and den destruction** have their place, primarily to reduce the population of coyotes in a region. The method is non-selective. It is generally accepted that predation is an acquired characteristic. There are “good” coyotes that may coexist with domestic livestock, and there are predating coyotes. Unless the coyote is found attacking livestock, shooting a coyote on spec may free up a range for the immigration of a predating coyote, causing future trouble where there was none before. Trapping is a job for experts, and can be selective. Locating a den is time consuming, and its destruction with pups may create political problems for the producer.

**Other methods**, including those being researched, may be considered if conventional protections don't work. Generally speaking they are more costly, and they tend have a temporary benefit only.

## **Effectiveness**

It may sound like a cop-out, but the measurement of effectiveness of any protection is whether it works in the producer's specific situation. Some studies have attempted to measure effectiveness usually relying on each producer's own evaluation. Generally, these evaluations rated most methods at about 70 % in the "excellent" to "very good" categories. This in itself should tell a new producer that he should not expect unrealistic results, that no protective measure can be expected to be 100% effective. If adoption of some form of protection results in total freedom from kills, the producer is fortunate.

A change in the risk level is a frequent occurrence . A new owner who doesn't subscribe to the same management practices (does not bury his dead animals!) may acquire the adjacent farm and his practices may attract predators. Perhaps a non-predating coyote dies, and its range is taken over by one that likes a bit of lamb. Perhaps the natural food supply fails, and hunger drives a coyote to seek new prey. There are many factors, beyond the control of the producer, that may increase the risk level.

An electric fence, for example, may have been effective for several years, and then losses start to occur although the producer hasn't changed his practices. Frequently such a change may be countered by the addition of a guard animal to drive off the predator that has solved the fencing barrier. The solution may be a matter of trial and error, with the producer seeking the best available advice from fellow producers, government agencies, hunters or trappers, in fact from any potential source of information before instituting changes. It is his responsibility to weigh such advice and select the best for his specific circumstances.

The 2004 Sheep Predation Report of the USDA tabulated data on the protective measures in use by the producers who responded to their survey. These data are shown in **Table 3**, and the variety of ways that producers have acted to solve their specific problem is demonstrated. Some of these measures are applicable to all species of livestock, and it is the responsibility of the producer to make his own choice. For ranged poultry, it is necessary to **adapt** them because of the differences in the nature of the birds, their fragility and the variety of predators.

## **Conclusion**

From my experience it is possible to limit the losses of livestock to predators. To do so the producer must have a knowledge of the habits of the predators, the habits of his livestock, the level of risk, and the conventional measures he may apply to give the appropriate protection. I do not think 100 % protection is always possible, and there are cases where the predator problem may be so extreme that it is inappropriate to pasture livestock. It is the responsibility of the individual producer to make this judgement.

**IT'S WHAT WORKS FOR YOU THAT COUNTS.**

**TABLE 3****NON-LETHAL PROTECTIVE MEASURES**

<b>NON-LETHAL METHOD</b>	<b>USA</b>	<b>PENNSYLVANIA</b>
<b>FENCING</b>	<b>52.5</b>	<b>58.0</b>
<b>GUARD DOGS</b>	<b>31.8</b>	<b>41.7</b>
<b>LLAMAS</b>	<b>14.0</b>	<b>6.7</b>
<b>DONKEYS</b>	<b>9.1</b>	<b>10.2</b>
<b>LAMB SHED</b>	<b>30.8</b>	<b>57.6</b>
<b>HERDING</b>	<b>5.7</b>	<b>22.4</b>
<b>NIGHT PENNING</b>	<b>32.9</b>	<b>41.0</b>
<b>FRIGHT TACTICS</b>	<b>2.2</b>	<b>3.2</b>
<b>REMOVING CARRION</b>	<b>11.7</b>	<b>7.3</b>
<b>CULLING</b>	<b>13.8</b>	<b>21.7</b>
<b>CHANGE BEDDING</b>	<b>8.9</b>	<b>11.6</b>
<b>FREQUENT CHECKS</b>	<b>14.0</b>	<b>19.2</b>
<b>OTHER</b>	<b>3.8</b>	<b>0.8</b>

(Source: NASS, Agricultural Statistics Board, USDA)

The most comprehensive listing of articles on the protection of sheep and goats is available on the Internet at “[www.sheepandgoat.com](http://www.sheepandgoat.com) on the Maryland Small Ruminants Page. There is limited information on the Internet on the protection of poultry. Comprehensive bibliographies are included in the author’s books: “...May Safely Graze” and “Wild Predators? Not in my Backyard!”

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**SHEEP FLOCK PROTECTION STUDY**

Basic information;      How many years have you raised sheep?.....

How many breeding ewes in 2006?.....

Protective measures      Flock in barn at night?.....

Flock in barnyard at night?.....

Lighted barnyard?.....

5 (or more) strand electric fence?.....

Guard donkey?.....years.....effective?\*

Guard llama?.....years.....effective?\*

Guard dog ?.....years.....effective?\*

Other?.....years.....effective?\*

\*Rate on scale of 0 (no good) to 10 (wonderful!)

.Were losses reduced when you installed fence or got guard animal?.....

Have you had problems with guard animals?.....

.....  
.....  
.....

Other comments

Location:

Township.....County.....State.....

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