Chapter 13
Predator Control

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In Oklahoma, goat producers are blessed with climatic conditions conducive to viable goat production. However, they also are burdened with the eastward expansion of predator populations that constantly are increasing. Predator control within a goat herd is probably one of the single most important factors in maintaining profitable returns from a goat operation. In 2004, U.S. losses of goats and kids to predators totaled more than 155,000 head at a value of $18.3 million. Figure 13-1 shows the percentage of sheep and goats lost to various predators in the U.S. during 2005. Comparing these figures to a death loss of 260,200 head with a value of $33.3 million for all other causes (respiratory, viral diseases, weather, age, theft and other causes), shows what a heavy toll predators can take on a goat operation (United States Department of Agriculture, 2005).

What are predators? Many animals qualify as predators with respect to a goat herd. However, coyotes, feral or pet dogs and to a lesser extent bobcats top the list in goat depredation studies (Figure 13-2). Occasionally, foxes, eagles, mountain lions and bears also can cause losses of goats and kids. The day may come where goat losses to these latter species may become more frequent in the forested areas of Oklahoma.

Figure 13-2 shows the percentage loss of sheep and goats by predator species in Oklahoma in 2005 compared with other causes of death. As expected, coyotes are Oklahoma's top predator. It is also apparent from the graph that Oklahoma has a larger problem with goat predation due to dogs than the U.S. as a whole (27 versus 12 percent). This could be contributed to a higher human population density, therefore, dog density when compared to other goat-producing areas in the U.S.

So how do producers deal with predators? Most responses focus on a lethal method of control. Most producers often overlook the easiest and sometimes most efficient methods of minimizing predation, which are management practices keeping the predators away from the prey.

Integrated Predator Management

Most producers are familiar with the concept of IPM (Integrated Pest Management). However, producers should consider the concept of Integrated Predator Management (IPM) for their goat herds. IPM is just that, an integrated approach strategy for reducing and controlling predation within the goat

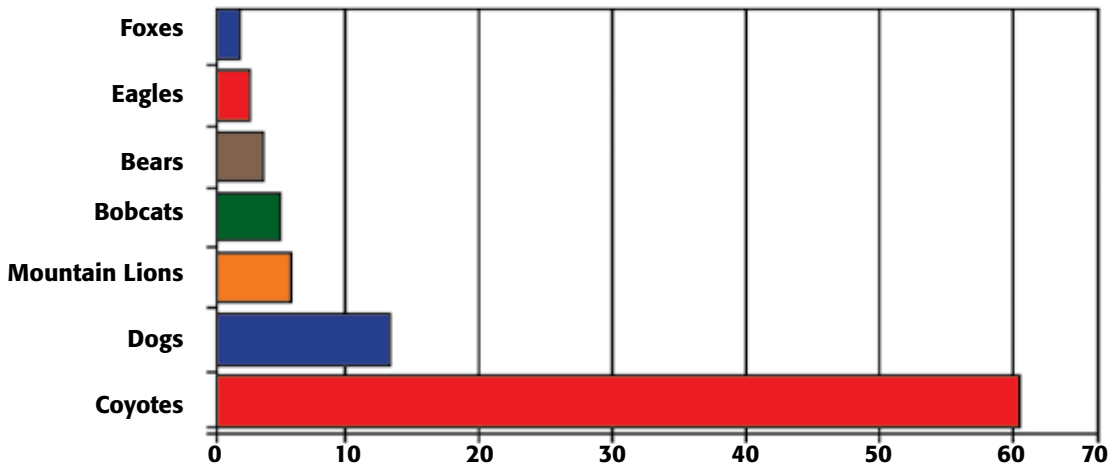

Figure 13-1. The percentage loss of sheep and goats by predator species across the U.S. (USDA, 2005). Note: Data was not available for goat losses only.

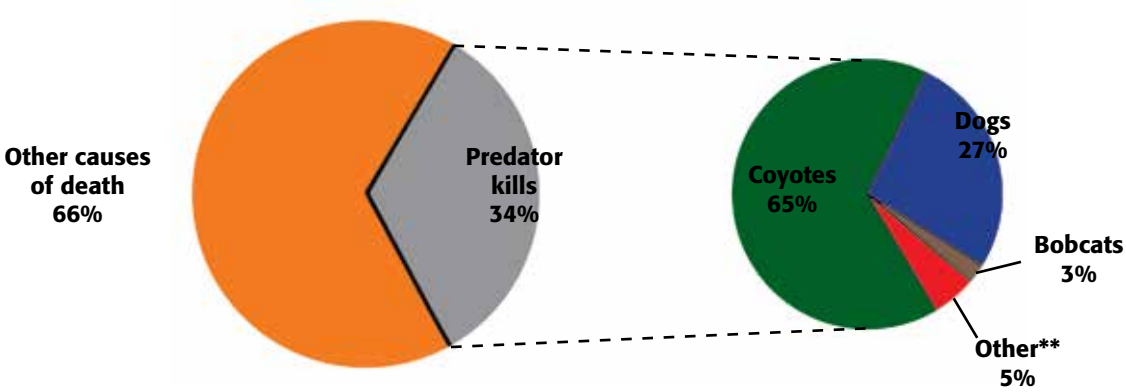

Figure 13-2. The percentage loss of sheep and goats by predator species in Oklahoma (USDA, 2005). Note: Data was not available for goat losses only. ** Other refers to losses from foxes, vultures, eagles, and other small predators.

herd. Many methods are available for predator control, ranging from a very passive control effort to lethal control practices. Each producer has a choice of method to employ. However, no one method of control will completely reduce depredation of the goat herd. Therefore, a number of these methods should be used together to address the prevention and control of predation events.

From an economical standpoint, producers need to prevent predatory losses, rather than control the problem once it has occurred. The method of only greasing the squeaky wheel is the wrong approach for predator control. With predators, the wheel should be constantly serviced to prevent the dreaded failure. Once any predator has killed, that predator will return again to claim another meal. Preventing that first meal is where this chapter will focus its attention.

Basics of Integrated Predator Management

The following methods are examples of nonlethal predator management:

- physical separation (fencing, night penning and sheds)
- cultural practices (herding, carrion disposal, herd checks, culling and habitat management)
- predator determent (fright tactics and guard dogs)

Lethal control predator management would include:

- predator thinning by trapping
- hunting
- using toxicants

Nonlethal Methods of Predator Control (Passive Control)

Nonlethal predator control is the most widely used and trusted method for reducing goat losses. These methods are usually viewed by the public as management practices imposed by the producer and not predator control in the traditional sense. These passive techniques work well because the emphasis is on keeping the goats in a safe, healthy environment before problems arise. Once again, an ounce of prevention is worth a pound of cure.

These methods do not directly address eliminating predators from the area, but dealing with isolating the goat herd from predators. Passive methods used for predator control include: fencing, kidding sheds, day herding, night penning, fright tactics, carrion removal, culling weak animals, frequent herd checks and habitat management. Another popular method used widely across the U.S. is the presence of a guardian animal such as a dog, llama or donkey.

Fencing

A well-constructed fence of woven or high-tensile electric wire can sometimes repel the majority of predators. Coyotes prefer crawling under fences, and they are inclined to dig under an impassible woven-wire fence. An apron fence prevents digging, but is costly. Apron fences should be buried perpendicular to the existing fence and be approximately 2 feet wide. If cost prohibits using an apron fence on a large scale, it is a great option for corrals.

Electric fencing also is a highly feasible option for most goat operations. To adequately deter coyotes and dogs, a 5- to 6-foot fence with top wires no more than 8 inches apart and four bottom strands with a 4-inch spacing should be installed. This con-

figuration will practically eliminate predators from crossing onto the property. An additional electric wire can be added 8 to 10 inches out from the bottom of an existing electric or net wire fence, spaced 6 to 8 inches off the ground to discourage digging or crawling under the fence. Fencing options are discussed in greater detail in Chapter 11.

Kidding Sheds

Kidding sheds are a simple, but effective method of removing goats and their kids from high-risk predation areas. Kidding sheds are structures for use during the kidding season, and they provide not only relief from inclement weather, but also reduce predation. The sheds are usually located in highly visible areas, close to a barn or house. These sheds do not necessarily deter predators from entering, but they do remove doe goats from secluded areas of the pasture during kidding. Kidding sheds are discussed in more detail in Chapter 12.

Day Herding

Day herding is another technique used to reduce predation on the goat herd. There are two forms of day herding, herding by the producer (common in other regions of the world) and herding by a guardian animal. This is a very labor-intensive process if left up to the producer, which requires close supervision of the herd during daylight hours. With many U.S. producers holding down another job during the day, day herding may best be accomplished by a trained guardian animal. This method seems to be the most widely used form of day herding in the U.S., and it can drastically reduce predation during daylight hours. Trained guard dogs will be discussed starting later in this chapter.

However, even with constant supervision during daylight hours, a goat herd is likely to receive the most pressure from predators at night. This minimizes some of the effectiveness of day herding without the use of a full-time guardian animal.

Night Penning

An effective method in both research studies and on goat operations is night penning. As previously stated, predators are most active during dawn, dusk and nighttime. By removing the goat herd from distant and secluded areas (brushy areas) during these times, the contact between the predator and prey can be effectively limited.

The pen must be constructed of impassible wire that neither the goat nor the predator can breech (see Chapter 11). The pens usually are constructed close to the barn or the producer's house for convenience and safety. Again, this method requires intensive labor inputs, but the rewards justify the additional work. The goats must be gathered in the evenings and driven into the pen. In the morning, they can be let out into the pasture on their own accord. This method can be extremely effective with the help of a guard animal, who will learn the penning routine along with the goats and can be the sole protector during daylight hours. Obviously, the size of the herd, grazing distance from the pen, and a producer's penning facilities will dictate whether this is a viable method of protection.

Fright Tactics

Fright tactics also have been tested and used for quite some time. According to some research, fright tactics are only marginally effective for predators. The tactics that work well do not work for very long. Predators are predators for a reason; they learn through experience what is a meal, an enemy or a dangerous situation. What might frighten them for the first few days becomes second nature after a few weeks, and they go back to their predatory ways.

Some tactics have included loud bursts of sound, moving and flapping objects, perimeter lights with motion sensors and even scarecrows. Some research shows that for noise-making devices to be effective, they must be discharged within close proximity of the predator's ear (within 1 to 2 feet). This is very difficult to accomplish, and eventually the predator becomes conditioned to the sound stimulus and learns that it is no real danger.

Other research studies have indicated (Linhart et al., 1984) that timed devices, set to activate at predetermined time intervals were less effective because the predators habituated themselves to the stimuli. A tested device that was triggered every eight minutes during darkness was effective for 91 nights before coyotes returned to predation, indicating that using animal-activated devices (not timed), and devices with varying sounds and movement can delay or even eliminate predator habituation.

However, other studies have shown a very significant decrease in depredation with the use of two frightening devices (Vercauteren et al., 2003): an acoustic device and an acoustic scarecrow device with a strobe light, that when triggered by motion sensors, initiates a moving scarecrow. The study was conducted on 4,500 ewes. After 288,000 sheep/nights (number of sheep times the number

of nights) 240 sheep were killed in the unprotected herds, while no sheep were killed with the use of either device after 12,685 sheep/nights.

Objects that move and flap with the wind or are motorized can have some positive results. However, repetition once again shows the predator these objects are not harmful. On the other hand, one of the main attractants of bobcats is something that flaps and moves with the wind, much like a ball of string or a feather floating on the air is to a house cat. Therefore, producers must use their own judgment when it comes to moving objects. Attracting a highly efficient goat killer onto the property is not desirable.

Some producers hang dead coyotes on their fences in an effort to deter other predators from returning. However, producers must be conscience of how the nonagricultural public sometimes perceives this as blatantly showing disregard for wildlife. No available research shows a reduction in predation when using the dead animal method, although it is often repeated by some producers.

Removing Carrion

Any carcasses, afterbirth and other materials should be disposed of properly and in a timely manner. Predators have excellent noses and once a carcass has ripened a few days, they can smell it from a great distance (Figure 13-3). By disposing of these carcasses by burial, incineration or composting, producers can reduce the odors that attract predators onto the property. Similarly, carcass dumps are excellent places for predators to get a taste of what is on the farm. As soon as does kid, any remaining afterbirth should be transported away from the farm or buried in a location predators are not likely to find it. The goal is for all nearby predators to never acquire a taste for goat meat.

Culling Weak Animals

Weak animals are probably one of the greatest attractions for predators besides carrion. A weak goat in the herd is attractive for every passing predator. Because the animals are weak, it becomes a part of natural selection that only the strong survive. Predators are constantly on the lookout for the easiest meal possible, and will notice these weak members of the herd. These goats should also be culled to increase the herd performance level. A weak or chronically sick goat requires more care and supervision; therefore, increasing costs and labor. Producers need to maintain a healthy, strong herd to reduce its attractiveness to predators.

Figure 13-3. Carrion should be disposed of as soon after detection as possible.

Frequent Herd Checks

Another vital management tool producers can implement to reduce depredation of the goat herd is simply to conduct frequent herd checks. No other management tool can replace actually viewing the animals on at least a daily basis. By observing the herd on a regular schedule, producers can start to recognize problems before they start. If a predator kills two goats a day, producers should realize this the next day and try to remedy the situation as soon as possible. For every day the problem is left unresolved, more goats could be lost. For livestock of any kind, herd observation is crucial to the efficiency and production of the herd.

Habitat Management

Controlling the growth of habitat surrounding the operation and at least around the barns and pens should be of utmost importance. Coyotes rely on ambush tactics to catch and kill larger prey. Brushy areas are excellent habitat for coyotes because it offers them everything they need. They have shelter from weather, other food sources and a means to more easily stalk and ambush goats.

Brush piles and briar thickets also are not a good idea around a goat operation. Rabbits tend to prefer these areas and can reproduce at an alarming rate. Rabbits are a preferred food source for almost every predator, and they are attractive enough to cause predators to linger in the area.

Using goats for habitat management presents a dilemma: how to use goats to control brushy habitat growth that predators love and not lose any goats to the predators. Whether using goats for weed or brush control or just grazing the goats in wooded areas, producers should keep in mind that goats are very vulnerable to predators during these grazing

forays. If possible, the goat's movements should be restricted to only those areas being cleaned, which allows the goats to flash graze the habitat in a short amount of time. The longer they are in this dense habitat, the greater chance a predation event might occur. When the habitat is thick and impenetrable, intensively graze these areas to thin them as quickly as possible, use a guard animal and remove the goats during the night.

Guardian Animals

When choosing a guardian animal for the herd, the options vary widely. Guardian animals are not considered a necessity for a goat herd, although they can be of benefit. Every situation is different for each operation. Guardian animals drastically reduce predation in most research studies. However, some producers have had little or no luck with guardian animals and have had problems such as guard dogs killing goats or never staying with the herd.

For some producers who have implemented many of the passive methods described in this chapter, a guardian animal could be an unnecessary expense. Again, each producer must honestly assess the individual situation and determine what combination of methods will work best for them. However, a well-trained guard dog or other guardian animal kept in a goat herd that is accessible to predators will decrease predation events.

Guard Dogs

The most common guardian animal is the dog. Various breeds of guard dogs are available, yet they all have similar features in common. They should be loyal to their owner, attentive to the herd and fearless when faced by a predator. Some say that a guard dog instinctively protects goats, others say training them is a must. It actually takes some of both. Most breeders agree that by familiarizing the pup with the producer and breaking them to lead and tie, problems are avoided down the road. Most of what a dog uses to deter predators is instinctual, but a dog's friendliness to the goats and the producer hinges on early training.

By breaking dogs to lead and tie, goat herds can more easily be relocated along with their protectors. It is also a necessity if cable snares are used for coyote control. A dog caught in a snare will associate this with being tied, and generally lay down until help arrives. A dog's training should be productive and short. Too much time spent with the pup will build the bond between the producer and the dog, not the desired interaction between the goats and the dog. At a young age, pups should be introduced to the herd, as shown in Figure 13-4, with human supervision at the beginning. If all signs are positive, the dog can be left in a corral with the goats to continue the bonding process.

Although guard dog options are varied, the cheapest pups in the local newspaper are usually not the best option. Most experts agree that contacting a reputable breeder, with known bloodlines, to find dogs compassionate to goats and have the guarding instinct well-bred into their bloodline is a better choice.

Another option is to buy proven adult dogs such as those shown in Figure 13-2, which typically costs more money, but they can be trusted with the herd and used to train future pups. Most proven adult dogs cost from $300 to $500. However, being assured the goat herd is safe from predators and the dog itself is repayment enough.

Unfortunately, the investment does not only consist of the purchase price. Most breeds of guard dogs are of large stature and require an equal proportion of dog food. An adult dog can require about $150 to $250 of annual maintenance costs (such as feed and health care), which can make one of these dogs a sizeable investment.

This investment probably cannot be recovered with a small herd (10 to 15 head), because of the possibility that very little predation would occur on a per head basis. However, if you depreciate the dogs purchase price over five years and add annual maintenance costs ($100 + $200), it takes just $300 worth of goats each year to pay for one dog. At 2007 prices of roughly $1.00 per pound for a 70-pound kid, a competent guard dog need only save four kids to pay for itself (assuming the high range of

Figure 13-4. A puppy should be introduced to the goat herd while still young.

Figure 13-5. Proven adult dogs can usually be trusted with the goat herd.

dog maintenance costs.) Understandably, most experts agree that trying to reduce the yearly maintenance costs is not wise. Hungry guard dogs are more likely to roam away from the herd in search of food, and in some cases malnourished dogs have turned on the goats themselves.

Different breeds are available for guarding a goat herd, yet no available research shows a propensity for one breed over another. However, some of the following breeds are more people friendly than others, and in populated areas, this should be taken into account. In essence, the choice comes down to personal preference and availability of a breed/breeder in the area.

Great Pyrenees

The Great Pyrenees, shown in Figure 13-6, is one of the most popular guard breeds in the U.S. Originally from France, they are a good natured, trainable dog, mildly athletic and attentive to the herd. Problems with hip dysplasia have been evident in the past, more so in this breed than others, which could be due to their popularity and the higher numbers of dogs in the U.S. Great Pyrenees are large white dogs that stand 25 to 32 inches at the shoulder. Their mature weight is from 85 to 140 pounds.

Anatolian Shepherd

Originally from Turkey, Anatolians, shown in Figure 13-7, have immense speed and agility and are fierce in battle. They are trainable and kind to the herd, but can be stubborn. These brown colored dogs stand 27 to 30 inches at the shoulder and weigh from 80 to 150 pounds, appropriate to size and structure. They are very muscular, athletic-looking dogs, with heavier weights evident in the males.

Figure 13-6. Great Pyrenees.

Figure 13-7. Anatolian Shepherd.

Akbash

Originally from Turkey, the Akbash, which means white head, is shown in Figure 13-8. These dogs are calm natured and attentive to the herd. They carry a keen protective instinct for not only the herd, but also property (territory). Adult dogs stand 27 to 31 inches at the shoulder, weighing from 75 to 130 pounds, with males being the heaviest.

Maremma

Another popular guard dog breed, the Maremma (Figure 13-9), is originally from Italy. They are intelligent thinkers, courageous and pos-

Figure 13-8. Akbash.

Figure 13-9. Maremma.

sess a strong distrust of strangers. They have been used successfully for protecting herds and families. However, this tendency against unknown humans should be considered for safety reasons. They are athletic, very active and in constant need of a job to keep them busy. Maremmas are white, mature at a height of 24 to 28 inches at the shoulder and a weigh of 65 to 100 pounds. Maremmas are one of the smaller-sized breeds of guardians, and therefore might be useful for smaller operations not wanting the maintenance costs of the largest breeds.

Komondor

Originally from Hungary, Komondors, shown in Figure 13-10, are the picture seen in many people's minds upon hearing the words sheep dog.

Figure 13-10. Komondor.

Long chord-like hair covering the body characterizes this breed. They have been used successfully to fend off coyotes and bobcats in the western U.S. Komondors are hardy in foul weather, big statured and muscular, although they are not as heavy as they appear. Mature shoulder heights are 27 to 31 inches, with a mature weight of 80 to 100 pounds. Consideration should also be given to the use of this breed in a warm climate, as its hair would likely increase heat stress in these dogs. (Breed information from the Purdue University website, 2006).

Guard Dog Choice

These dogs are not the only breeds available to be used as guard dogs; but these are some of the more popular breeds in the U.S. For further information on different breeds of guard dogs contact the local Extension educator. Breed choices are strictly up to the producer, and recommendations cannot be made as to what breed is the best for any given situation. A study in Colorado showed no difference in success rates for preventing predation between the breeds mentioned above. The study also showed no difference in protection abilities between males, females or neutered males. However, their research did indicate that neutered males were less likely to wander away from the herd than intact males.

Llamas and Donkeys

Llamas, shown in Figure 13-11, and donkeys are another option for use as guardian animals. Some producers have used them successfully to reduce

Figure 13-11. A llama with a goat herd.

predation. The following characteristics are some of the benefits of using these species:

- They are less likely to be affected by traps and snares.
- They are less likely to injure or kill goats in the herd (reported by some producers).
- They eat the same forage available to the goats, thereby reducing labor and costs (any forage consumed by these species is actually a hidden inputs cost).

However, these two species have not shown the same level of protection as the dog in research studies.

Llamas and donkeys do have some drawbacks:

- They will not stand their ground against mountain lions or bears.
- They must be carefully introduced to the herd in the beginning.
- Both llamas and donkeys must be gelded (castrated) to be effective.
- One donkey per pasture/herd is all that is recommended. Any more than one, and the donkeys will bond with each other and ignore the herd.

Again, many options are available for guardian animals that must be assessed by the individual producer. Goat producers who have had a good guardian llama or donkey say they will never own anything but that species. Others have had nothing but headaches from these two species. Producers must use their own judgment and make a selection that will meet their management goals.

Multiple Methods Most Effective

So which one of these methods is the right one for a goat operation? The deciding factor is how intensive is the producer willing to make the management inputs. In reality, using as many of these methods as possible will increase the success of controlling predator losses. The sum of combined methods offers greater protection than the value of each individual method. For example, a well constructed fence, a guard dog, night penning, culling all weak animals and frequent herd checks will result in less predation than if only one method from this list is removed.

Lethal Methods of Predator Control (Active Control)

When passive efforts have been exhausted and goat predation is still occurring, increasing predator control efforts and stepping up to an active control method may become necessary. As the name implies, active control methods usually result in the reduction of predator numbers within close proximity of the goat operation.

However, producers unsure about lethal control practices should not be concerned with totally eradicating the predator, especially the coyote (Figure 13-12). Despite extensive harvest of predators such as coyotes, they continue to increase their populations yearly at an alarming rate. The same adaptation that allows them to live in suburbs, wilderness areas, deserts, and extremely cold regions also allows them to be adept goat killers that are quick to realize human patterns and avoid danger. This self-preservation instinct also is what makes an educated goat killer a very big problem for producers

Figure 13-12. A coyote.

and drastically reduces the methods available for successful control.

First, producers must develop a control plan. They should remember that a coyote is a territorial animal, which means that every individual coyote establishes a home range or territory in which it hunts for food, mates and dens. It must determine its own social rank in the pecking order of other surrounding coyotes. Therefore, every coyote home range is a sign of rank, or status, within a family pack. When one animal dies or is driven away, another animal will claim this territory, either an animal from the family unit, or perhaps a new transient coyote. This is where the problems with eliminating all coyotes on sight begin.

Many research studies have shown that by eliminating local coyotes which no propensity to prey on livestock, the door is being opened for other potential goat killers to take up residence. Therefore, producers must first assess if they are truly surrounded by goat killers. If not, it may be in the best interest of the herd to reevaluate a few of the passive techniques and improve the perimeter barriers.

If producers are interested in active control, it should be because they do have a predation problem already occurring. If this is the case, it might surprise some producers that the bulk of goat kills can be blamed on one or two animals. A 14-year study conducted by UC Berkeley and USDA indicated two very important points to remember when approaching active control methods. The most intriguing find was that sheep losses due to predators were not correlated with predator removal numbers. This result means that by harvesting more predators, producers will not necessarily see a reduction in predation.

However, they also found the dominant alpha coyote was responsible for 89 percent of the 74 dead lambs during a two-year portion of the study. The subordinate betas were responsible for no lamb kills. This indicates that by targeting the alpha leader producers can drastically reduce goat depredation. Regrettably, alpha coyotes are the most difficult to capture because of their survival habits.

Cable Restraints

The use of cable restraints and foothold traps are both excepted methods for capturing wary predators. Cable restraints (also known as snares) are a very effective tool for coyote control because of their ease of use, light weight, the travel patterns of coyote and the willingness of a coyote to enter a restraint. The 3/32-inch aircraft cable is the accepted size for use on coyote restraints; 5/64-inch and even 1/16-inch cables can be used for bobcats and fox. Cable restraints are useful for bobcats if used correctly. However, cats tend to shy away from snares unless the set is perfect.

Crawl-unders are locations where predators have exacavated the soil from beneath the fence creating a crossing. These crawl-unders are an ideal position to hang a restraint, as the coyote is habituated to the crossing location as well as the sight of cable or wire at the set (Figure 13-13). Restraints set in these locations should be supported from the fence, have a 7- to 10-inch loop diameter, and must be 2 inches off the ground. When crawling under a fence, a coyote scoots its front feet on the ground to ease its shoulders under the fence. A restraint loop touching the ground will invariably be tripped and become ineffective.

If the producer wants to capture an animal alive (in case it is a neighbors' pet or guard dog), it is important to stake the end of the restraint away from the fence and nearby brush to prevent entanglement. Some caught coyotes have been known to attempt jumping the fence, and will hang themselves if allowed enough slack. The preferred way to prevent the animal from expiring is to install a snarelock. This device prevents the snare from closing far enough to cause asphyxiation of the restrained animal. Other useful set locations are on a coyote trail leading to carcass disposal locations, near stream crossings and in trails in tall grass.

NOTE: Check local game laws before setting any trap or cable restraint in trails or near exposed bait or carcasses. For more information on setting cable restraints for predators, check with the local

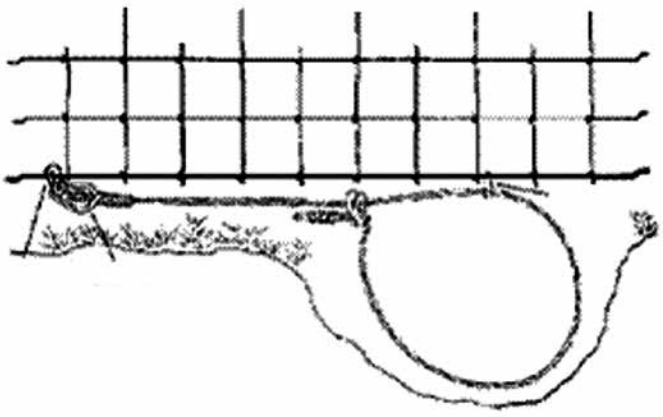

Figure 13-13. A crawl-under cable restraint.

county Extension educator for books and articles published by research universities.

Trapping

Steel Foot-Hold Traps

Steel foot-hold traps have come a long way in the past few decades, and the publics' perception of broken legged animals chewing their foot off could not be further from the truth. Traps are modified with wide jaws to increase surface area and reduce pinpoint pressure and skin abrasion. In-line springs are installed to reduce the force of a predator's movements and eliminate shoulder injury to the animal. Most animals are caught across the pad of their foot, never up on the leg, and very little damage is done.

These trap modifications are in an effort to release all nontarget animals, and in fact incidental catches of guard dogs or pets can be released with little injury. After one capture of a guard dog, it becomes aware of what the traps are and avoids them in the future. However, coyotes can learn the same response from a sprung trap and repeatedly dig up set after set, so caution must be used to catch the predator the first time around.

Live Traps or Cages

Unfortunately, coyotes are almost impossible to trap in live traps or cages. It is against their nature to enter a tightly confined area. However, bobcats can be captured very successfully in just these situations. Some wildlife agencies offer services to producers who need problem predators removed. The local game warden also may be able to introduce producers to a local private trapper who can help with the predator problem. A valid point to remember is that a trap in an inexperienced person's hands can alert local predators to the control efforts. The professionals then have much more difficulty completing the job efficiently once called to the scene.

Denning

Denning is a method of coyote control used throughout the spring when females have their pups in dens. The den is located through observation of the adult female, and the pups are removed from the area. Usually, the female also will leave the area. This method is useful for reducing the number of coyotes in the area. However, it does require a rather large investment of time to find the denning sites of numerous coyotes.

Predator Calling (hunting)

Another method of predator removal is using wildlife callers to effectively hunt these predators (Figure 13-14). Coyotes, bobcats and foxes are lured within gun range by the sound of a dying rabbit (or in some cases, a bawling kid goat for the predators that know what this sound is). A competent hunter in coyote country can be very effective in removing some of the bolder coyotes looking for a meal. As long as hunters understand where they can and cannot hunt and shoot and knows the rules, they should follow on any property, a beneficial partnership can develop for little or no money to the goat producer with very good results.

M-44 (Sodium Cyanide) and Livestock Protection Collars (LPC)

Toxicants, such as M-44 (sodium cyanide) and livestock protection collars (LPC), are illegal to use in Oklahoma and some other states for all parties except wildlife control agencies. The main concern with the use of laced bait and gas discharge toxicants by anyone untrained in their use is the indis-

Figure 13-14. A producer holds a bobcat that was threatening his herd.

criminate death of any animal that comes into contact with these devices. Therefore, if all other methods of control fail and this is the next logical step, please contact the nearest wildlife control agency or Oklahoma chief game warden. The local county Extension educator will also be happy to assist producers in making the initial contact.

Summary

As more and more goats make their way onto Oklahoma farms and ranches, the need for effective predator control increases. Coyote and bobcat populations are on a steady rise, and the occurrence of mountain lion and black bear sightings in southern Oklahoma has increased drastically in the past 10 years. Goat producers will face a predator problem at some point in time.

Again, the key to reducing goat predation to acceptable levels begins with the idea of IPM (Integrated Predator Management.) Producers must realize that any one method will not eliminate predation of their goat herds. A combination of passive methods and active control, when necessary, can result in greatly reduced pressure on the goat herds, without trying to eradicate the predator. Regardless of the producers' decisions, they also must remember that even predators serve a function in the grand scheme of things, and they can be very beneficial for keeping vermin numbers in check. Ideally, the producer should be responsible for controlling the goat herd population, not the local predators.

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