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COYOTE DENNING AS A METHOD OF DAMAGE CONTROL

by

Walden C. Lemm[1/]

The coyote denning operation is a useful method in coyote control, both to control populations and to eliminate problem animals, but a thorough knowledge of coyote behavior prior to and during the denning season is essential for productive results.

Coyotes do not dig their own dens, but enlarge existing holes dug by other animals, often those dug by badgers. Coyote den holes are not difficult to distinguish from holes dug by smaller animals. Being long-legged animals, their den entrances are elongated vertically instead of being round like those of badgers and other short-legged animals.

Den Hunting Equipment

All equipment needed to work a den should be transported in the den-hunting vehicle. This would include the following items: gun, traps, stakes or drags, den stakes (if used), shovel, wire, and fumigants. Many dens disturbed by den hunters have been moved while the hunters were forced to leave to secure necessary equipment.

Coyote Behavior Before Pups are Born

Several weeks before the pups are born, parent coyotes migrate to the denning area of choice. This migration may be as far as ten miles, depending on terrain, availability of holes and other factors that make up a good denning area. Established pairs return to the same denning area each year.

After this move to the denning area, the pregnant female does not travel with the male as a hunting companion. Much of her time is spent cleaning out existing holes to prepare the original den site and to provide additional space required by growth of the pups or an alternate location in the event the den is disturbed by humans.

Coyote Behavior After Pups are Born

During the first few days after pups are born, the female remains in the den almost constantly, leaving for only short intervals to obtain food. To my knowledge, the female is not fed by the male during her convalescence. In 45 years of work with coyotes, I have seen only two cases where the male coyote entered the den with the female.

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Many females have been taken with baited traps placed in the hunting area surrounding the den site. These catches, made during her first trips away from the den, indicate hunger.

The pups first emerge from the den opening two to three weeks after birth. They are then nursed outside the den twice daily, usually between 7:00 and 8:30 a.m. and again near sundown. After the fourth week, they are introduced to solid food (meat) through regurgitation by the adults. Gradually, the pups learn to feed on whole carcasses of rodents, rabbits, and birds. As requirements for food increase, the adults often turn to killing the young of game and domestic animals such as antelope and deer, or cattle, sheep and hogs. Adult sheep may also be killed.

Coyote Kills and Feeding Behavior

Feeding habits aid in determining if a den is involved where livestock losses occur and much can be learned at the site of a fresh kill. A normal feeding by an adult coyote is usually not more than two to three pounds. Evidence of greater feeding than this or of parts of the carcass missing indicate that the coyote may have a den. A single coyote often will not kill more than one animal at a time and if several animals, such as young lambs, are killed, or perhaps with an additional lamb missing, this too would indicate the possibility of a den.

Den Hunting Techniques on the Ground

Den Locations. Dens are located in such a manner that they can be approached or departed under cover. This may be a drainage or fence line, trees, brush or other available cover. Early in the denning season, dens will be a single hole with one opening located to receive full benefit of sunshine. Later in the season, the den sites may be a series of holes or washouts which may have several entrances; but they will be found in sunny location even in brushy areas. With these factors in mind, it is often possible to survey an area and determine probable den sites.

Unless it is found accidentally, one or more of the following methods will aid in locating the den.

Repeated Sightings of Coyotes.

When coyotes stay in a specific area during the denning season, some time should be spent to determine the reason. It may be a hunting, feeding, or denning area and usually provides good cover. Adults with a den are reluctant to leave when disturbed. Even after leaving, they will reappear on the skyline or other vantage points to watch and will move about in a nervous manner. Many times they will come in quite close if a dog is present near the den and in some cases will attack a dog if it shows fear and runs.

Tracking Index. A male coyote's forepaws are somewhat larger and rounder than the female's. The hind feet are similar in both sexes except for the difference in size, with the female's being smaller. Naturally, there are many tracks near a den site, but also there are many tracks in hunting areas. An experienced den hunter can distinguish the meandering hunting tracks from those

with a definite source such as those leading into a den site. Coyotes that have completed their hunt will take the most direct route back to the den; therefore, these are the tracks to follow when attempting to locate the den. In my experience, tracking is the fastest and most foolproof method to locate a den from the ground. One trip through any given area where tracks can be seen will determine if a den is present.

Often, there are rainy periods during the early part of the denning season. Tracks made on wet ground remain for extended periods; therefore, tracks of different ages, from old to fresh, will be found in the denning area. Different-aged tracks provide evidence of travel over an extended time and are characteristic of denning areas.

Within a radius of 50 to 75 yards of the den site, the male and female have their own respective routes going to and from the den. Discovery of these two-way travel routes indicates that the den is nearby and is the final step in locating the den itself.

Clean-Out Holes. There will be several of these clean-out holes in the area of the den site, usually within a radius of one mile. The presence of these holes, prior to or during denning season, indicates that there is or will be a den in the area. A word of caution should be added here -- some lone males and barren females also dig out holes during the denning season. However, these holes are not as extensive as those dug by parent females. Usually only one is present and it will not be occupied. Tracks of varying age will distinguish the holes cleaned out by pregnant females, since they recheck such holes periodically.

Methods to Verify Active Dens

Unless the pups are seen, other methods must be used to determine if a den is occupied. Very young pups can be heard whimpering if the den is approached quietly and carefully. When pups are older, one must rely on the evidence of activity outside the den, such as pup tracks, fresh feces, and wet spots made by urination. Pups old enough to emerge from the den leave a good deal of tell-tale sign; vegetation near the den will be worn, and dirt from the mound will be scattered. This sign becomes more noticeable as the pups grow and become more active.

Dogs can be trained to recognize and verify active dens. Trail hounds that will work with coyotes are usually best, but individuals of other breeds that have an interest in hunting are also effective.

Handling of Active Dens

The hunter has a choice of several methods to dispose of the pups. The original den hole is usually quite shallow and can be dug out by hand. Older pups can be trapped in the den, if confined over a period of time with traps set inside the tunnel. Two strands of barbed wire twisted together can be inserted and twisted in the den to wind up in their fur and allow them to be pulled out. Carbon monoxide from an automobile can be piped into the den if the hole can be reached with a hose from the exhaust. Other fumigants are often used to bring the pups to the surface or to kill them in the den. The den must be sealed to prevent escape of fumes and to dispose of the occupants.

Methods of Capturing Adults at Den Site

The two most reliable methods of taking adult coyotes at or near the den site are shooting and trapping. Adults respond well to calling from the vicinity of the den and can often be called up to close gun range. As in calling other predators, the caller must reach a place of concealment within calling distance of the den site without being seen or otherwise disturbing the adults. Incidentally, the pups associate the sound of the call with danger and will dash head-long into the den in a manner often described humorously as "a string of weiners".

The presence of a dog close to the den will often arouse adult coyotes to the point that they will come in close enough to be shot. It is best to use a dog that will nose around and cause some disturbance, not one of the hound type, but one that will return to the hunter when the coyotes appear.

Trapping methods are most effective if pups are locked in the den. Denning stakes can be driven through the hole, or in areas where rocks or tree limbs are available, the den can be plugged to a depth of three feet or more to prevent their escape for several days.

When three to four-foot denning stakes are driven through the hole and extended beyond the sides, very little digging is done by young pups. A two-inch spacing between the stakes provides light and they seem more content than with other blocking methods. Regardless of which blocking method is used, pups beyond six weeks of age are very difficult to contain in a hole for any length of time.

The scent and sound of the pups will attract adults to the den, especially during the night. Adults will circle and move about with less caution in an effort to reach the pups and are much easier to trap.

Individual coyotes are unpredicatable in behavior and some may not be readily trapped by certain sets. Well-concealed blind trap sets are effective when placed in a radius of 50 to 100 yards of the den in the adult travel routes, livestock trails, and at vantage points from which the adults can see the den entrance. As a safeguard, one set of traps (2 traps) should be placed about two feet in front of the den entrance to capture adults that attempt to dig into the den.

Other good locations are on high ground overlooking the den. Natural scent placed on a low bush or weed in such locations makes an effective trap set.

It is quite common for hunters to dispose of the pups first and then attempt to capture the adults. With this approach, success in trapping or shooting the adults is considerably less. With the pups gone, the adults become wary and soon lose interest in the den site. They then travel over a large area and are much more difficult to remove. In addition, disposing of the pups doesn't always stop depredation by problem animals. They may continue to kill and the loss of livestock may cover a much larger area for a longer period of time, often all summer or until the next denning season.

Aerial Den Hunting

Aerial den hunting is not as widely used as the ground methods explained earlier. However, with experienced personnel and the right type of aircraft, it is by far the most rapid and thorough method in all types of terrain, except for heavily-wooded areas.

With good light conditions, one hour in the air is equivalent to an entire day or more of den-hunting by ground methods. The pilot must have a thorough knowledge of coyote behavior and habitat during the denning season and must be experienced in reading coyote sign from the air. With this ability, potential denning areas can be located without searching the entire area for coyote den sign.

It is ideal for the pilot to have an observer in the aircraft who is also experienced in aerial hunting. An experienced pilot and observer can survey potential denning areas much more rapidly and efficiently than the pilot alone.

Den hunters experienced in ground methods should recognize coyote and den sign after several hours in the air. The difference is in seeing sign from a different angle -- a bird's eye view.

The 150 h.p. Piper Super Cub is an excellent aircraft for such work. Its tandem seating provides a view of the ground for both the pilot and observer and it handles well at slow flying speeds necessary for observing animals and reading sign.

There are other definite advantages in den hunting by aircraft. Coyotes and other animals can be kept in constant sight in open areas by flying at an altitude of approximately 300 feet, with some variation according to light conditions. During morning hours, coyotes traveling to the den site can be followed. This is a distinct advantage should the den be partially hidden in brush, shelter belts, or other concealment.

The best time to hunt animals is during the morning and evening hours when the sunlight reaches the ground at a lower angle. Moving animals do not blend in with cover nearly as well under these conditions as they do with the light overhead. In addition, light from a low angle reflects on the coyote and creates a contrast to the surrounding vegetation and soil.

The opposite is true in hunting den sites and den sign. Both are easier to see during the middle of the day when light comes from overhead. The ground reflects any den activity and many dens are located without any animals in sight. For this reason, it is very important for the hunters to recognize den sign as seen from above. However, dens can best be worked during morning hours when the adult coyotes are present.

When problem animals cause livestock losses, the adults and the pups can usually be handled in one operation if aerial shooting of coyotes is allowed. In most types of terrain, landings can usually be made within walking distance of the den site, thus eliminating the need for an additional crew on the ground.

The advantages of aerial den hunting are unsurpassed as an immediate control method when livestock losses are severe. Aerial hunting and shooting of adults is also an excellent control method during any season when problem animals kill domestic prey and the need for control is urgent.

Summary

Den hunting from the ground has been used as a coyote damage control measure for many years throughout the western United States. Aerial den hunting and shooting of problem animals has been used in South Dakota for the past 30 years. These methods have been highly successful in alleviating coyote damage to domestic livestock operations.

I feel that such methods can be applied in nearly any locality and serve as a basis for control, especially in dealing with problem animals.

It is my sincere hope that I have contributed information which will be of value in future predator management problems.