

Animal Damage Management

Department of Entomology

COYOTES

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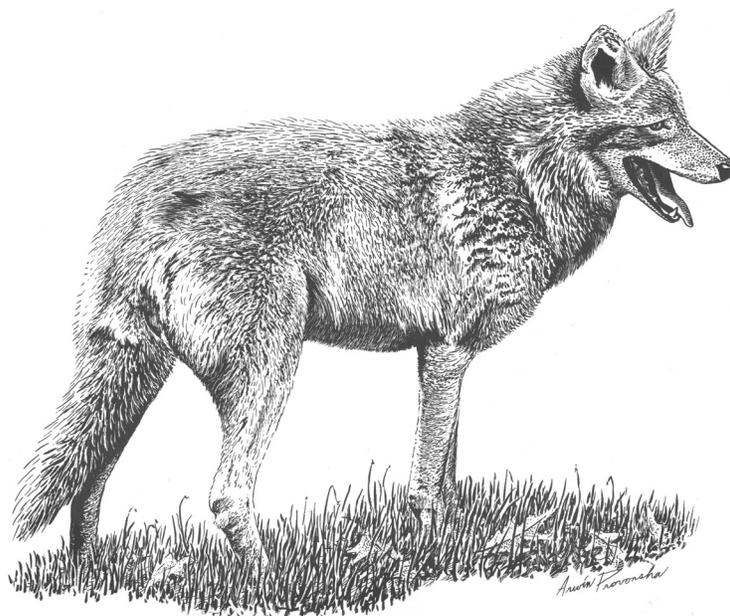
Coyotes (*Canis latrans*), once considered rare or uncommon east of the Mississippi River, today are found virtually throughout North America, and there is every indication that they will continue to increase both their range and numbers. In Indiana, the majority of the coyote populations occur along the Ohio and Wabash Rivers, with smaller numbers throughout the rest of the state.

Despite common misconceptions, not all coyotes are stock killers. Generally only one or two in an area find livestock a favorite food source; thus controlling a few renegade coyotes is sufficient to solve most damage problems. In fact, coyotes do perform a vital role in helping to control pests such as field rodents that, left unchecked, could cause major economic losses. For these reasons, wholesale removal is not a recommended goal.

IDENTIFICATION

The coyote resembles a small German shepherd dog in size and general build, but it carries its tail below the level of its back instead of curved upward. The upper body is a grizzled gray or buff, with a reddish brown or gray muzzle, and the lower body is white, cream colored, or reddish yellow. Coyotes have bushy tails, long slender snouts, pointed ears, and comparatively long legs. Their weight ranges from 20 to 50 lbs, with 30 lbs as the average in Indiana, and they measure from 40 to 50 inches in length from nose to tail tip.

Coyotes will crossbreed with domestic and feral dogs. Any coyote-like animal weighing more than 50 lbs is probably a coyote-X-dog hybrid, or coydog. These animals, sometimes mistakenly called wolves, have the innate cunning of a wild animal, and the sophistication of a domestic animal; as a result they are much more difficult to control than either dogs or coyotes.



BIOLOGY AND BEHAVIOR

Coyotes normally live on the open prairie, open woodlands, or brushy or boulder-strewn areas, but they can and will live almost anywhere and will eat almost anything.

The mainstay of a coyote's diet is rabbits, field mice, birds, woodchucks, insects, carrion, and wild fruits. However, poultry, livestock, and cultivated fruits and vegetables can also find their way into the coyote's diet.

Coyotes often pair up for life. They mate in February; after a gestation period of 60 to 63 days a litter of pups ranging from five to ten is born in a den during April or early May.

The pups are weaned at about eight weeks of age and then are fed by both parents. They begin playing at the entrance to their den at about three or four weeks of age and by ten weeks may leave the den completely. By fall, the pups are nearly full grown and ready to begin life on their own.

Coyotes have lived for more than 18 years in captivity, but in the wild the average lifespan is probably closer to two or three years.

LEGAL STATUS

In Indiana, the coyote is classed as a fur-bearer and protected by state law. Under normal conditions, coyotes may only be taken during the legal trapping or hunting season, but if a coyote is caught in the act of damaging property, the owner or tenant of the property may take the coyote. Such killing or capturing is considered unlawful, however, unless it is reported within 72 hours to a conservation officer or the Director of the Indiana Department of Natural Resources, Division of Fish and Wildlife.

Where it is not possible to catch a coyote in the act, a special permit issued by IDNR must be obtained before any coyote may be taken out of season. The first step in obtaining such a permit is to contact the local conservation officer or the IDNR District Biologist. The name and phone number of the local conservation officer can be obtained from the county sheriff's office. The name and phone number of the district biologist can be obtained from either the local conservation officer or from IDNR, Division of Wildlife, 607 State Office Building, Indianapolis, Indiana 46204.

Before any special permit is issued, a field inspection of the problem will be conducted by the district biologist or other predator control specialist.

IDENTIFYING COYOTE DEPREDATION

The first step in solving a stock loss problem is to determine the cause of death. Animals can die from causes other than predation. The fact that coyotes are known to be in an area or coyotes are seen feeding on a dead sheep does not prove that coyotes are responsible for the kill. Coyotes will feed on carrion and have often been blamed for killing stock when in fact the actual killing was done by dogs. As a result, it is often necessary to distinguish between dog and coyote kills.

Coyotes kill large sheep, goats, and small calves by seizing the throat just behind the jaw and ear. Death usually results from suffocation and shock; blood loss is usually a secondary cause of death. Small animals such as young lambs, pigs, and kids are killed by biting the head, neck, or back and causing massive bone and tissue damage.

In a typical coyote kill there will be blood on, and puncture wounds to the head and throat. With some animals, such as heavily fleeced sheep, it may be necessary to remove the hide from the neck and head in order to check for these wounds.

Coyotes normally begin feeding on the flanks or just behind the ribs, but there are exceptions. Some seem to choose the viscera first, and with unweaned prey, the milk-filled stomach is a preferred item. Young, inexperienced coyotes are more apt to kill and feed in an atypical manner. Also, some adult coyotes always kill and feed in an atypical fashion. Multiple coyote kills are frequent in some areas, and many of the kills are not fed upon.

In contrast, animals attacked or killed by dogs will generally exhibit indiscriminate mutilation, with damage occurring to several parts of the body. Dogs do not normally feed on animals they have killed. Also, multiple kills are more common in cases of dog attacks.

Tracks around the kill offer further aid in determining the predator's identity. When examining tracks to determine if they were made by coyotes or dogs, there are two main features that need to be considered: the shape of the track and the prominence of nail marks.

Coyote tracks are oval in shape, with the front track larger than the hind track. The front tracks of an adult coyote are 2-1/4 to 2-3/4 inches long by 1-3/4 to 2-3/8 inches wide. The hind tracks are 2 to 2-3/8 inches long by 1-1/2 to 1-7/8 inches wide. A dog of the same size and weight would leave tracks that are larger and more nearly round than a coyote's.

Additionally, because dogs often travel and kill in packs, canine tracks around a kill showing a wide range of size would strongly suggest dogs rather than coyotes.

The nail marks in a coyote's track tend to be much less prominent than a dog's. Generally only the middle two nails show, whereas in a dog's track all four nails usually show.

CONTROL

One of the best ways of solving any animal damage problem is by not allowing the pest animal access to whatever it is damaging, i.e., preventing the damage from occurring. For coyote/stock problems, this means one or more of the following methods: improved animal husbandry, fencing, guard dogs, and/or repellents.

Improved Animal Husbandry

Pigging, lambing, or calving “on the back 40” is an open invitation to coyotes. Animals raised in buildings are seldom bothered by the predators, and some classes of livestock (hogs, poultry) can be efficiently and economically raised in total confinement. Where total confinement is not possible, confinement during and immediately after birth will protect both mother and young when they are most vulnerable.

Fencing

Ideally, all perimeter and cross section fencing should be of a coyoteresistant design. At the very least, the maternity pasture should be enclosed with this type of fencing because it will provide maximum protection when the stock is most vulnerable.

One of the most coyote-resistant fences is a seven-wire electrified fence (see Figure 2). With this type of fence, wire spacing and charging configuration is critical. The bottom wire must be no more than six inches off the ground, with six to eight inch spacing for all other wires up to a height of 4-1/2 to 5 feet. The wires should be 12 1/2 gallon hi-tensile steel Class III galvanized wire. The power source should be a high-voltage, low impedance bi-polar fence energizer such as the Speed-rite, Gallagher, Techfence-144 or Waicotta.

These energizers produce 5,000 to 7,000 volts for about 3/10,000 of a second and cycle about once a second, enough to repel but not enough to hurt. With bi-polar energizers, every other wire has a positive charge of electricity and the others a negative charge. All wires are not. If the animal is well grounded, touching any wire will result in a repelling shock or about 3,000 V. Touching any two wires will result in a repelling shock of about 7,000 V.

Seven-Wire Electric Fence

Although maintenance on this type of fence is minimal, the wires must be checked regularly and the weeds controlled. Most energizers will carry some weeds without loss of power, but one of the reasons this type works is that the coyote thinks he can go through it. If there is a wall of weeds, the fence becomes a barrier and the coyote will try to jump over.

The cost of this type of fencing is about half the cost of standard woven wire sheep fencing, and it can be installed with about half the labor.

Although a standard woven-wire sheep fence will not stop a coyote, it can be modified to make it coyote resistant. To stop coyotes from digging under the fence, a charged trip wire should be installed about one foot out from the existing fence and about six inches above the ground. Next, at least three extension wires six to eight inches apart should be added above the existing fence. A total height of at least 5-1/2 feet is needed to prevent jumping. The trip wire and the first and third extension wires must be hot. The fence and second extension wire must be grounded.

Modified Sheep Fence

Electric fences must be charged at all times because coyotes seem to be able to sense whether or not an electric fence is working. They will readily cross electric fencing when the power is off, but will not go near when the power is on.

Guard Dogs

Guard dogs (Great Pyrenees and Komondor) have been successfully used under western open range and pasture conditions to protect sheep from coyotes. Even though guard dogs have not been fully tested under Indiana conditions, their use should be considered.

Repellants

Nearly any uncommon object placed in a pasture will, at least temporarily, affect coyote habits. Examples of devices used include bells, vehicles, scarecrows, electric lights, radios and propane exploders. While the effective life of such repellents is limited, if varied and moved regularly, the devices may provide enough time to allow installation or application of other, more permanent control measures.

REMOVAL

Even with the best of husbandry practices and fencing, it still may be necessary to eliminate the occasional coyote that simply will not be deterred by any other method.

There are no toxicants or toxicant delivery devices registered for coyote control in Indiana.

Where legal, coyotes may be taken by calling and shooting, trapping or snaring. State hunting and trapping regulations should be consulted before attempting any control. Their violation may result in arrest. When trying to take coyotes or any animal:

Know the habits, behavior and distribution of the target animal.

- Know the area to be worked better than the target animal knows it.
- Put control devices in places the target animal will encounter them.
- Have the proper equipment in good working order and be skillful in its use.

CALLING

Coyotes can be successfully called in by properly placed hunters using either pre-recorded or hunter-blown predator calls, available at most sporting goods stores. A cottontail rabbit distress call generally works best. Calling is more successful if done in the early morning or late evening hours.

TRAPPING

Proper equipment is mandatory for effective trapping. Traps smaller than a No. 3 off-set-jaw, double long spring, are not recommended for taking coyotes. In addition to traps, there are other basic tools that a trapper must have if he is to do a good job. The minimum tools include:

- Digging tools (hatchet, garden trowel, 16 oz framing hammer)
- Kneeling cloth (3 ft x 3 ft piece of canvas)
- Trap pads (5 in x 7 in piece of canvas, plastic sandwich bags)
- Sifter (8 in x 10 in wood frame covered with 1/4 in hardware cloth)
- Scent (coyote urine, homemade or commercial)
- Gloves
- Trap stakes and drag hooks
- Back pack or canvas carrying bag

Trap Sets

Steel traps are often set in pairs fastened together with a chain attached to a stake or drag hooks. Drag hooks should be used in brushy or wooded areas; stakes should be used in open grasslands. The stakes should be 18 inches to 24 inches long and driven into solid soil. The trap chains should be as short as possible.

Traps and chains should be bedded solidly so that they will not move if a coyote steps on anything besides the trigger. The trap should be covered with no more than 1/8 inch to 1/4 inch of fine, dry soil or other material. Where scents are used, there should be a 15 inch to 18 inch space between the center of the trap and the scent. This is about the distance between a coyote's nose and his front feet. Care must be taken to prevent human scent from contaminating any trap set.

On open range, traps should be set around coyotes' "scent posts", places where they urinate. These scent posts are usually established along their runways on stubble, brush, range grass clumps, or old, bleached-out carcasses, and can be detected from toenail scratches in the ground. Coyotes will often return several times to feed on a fresh kill, so traps should be set around any fresh kills found. Trail-log sets can also be made along trails leading to the kill, although scent should not be used in this situation.

READ AND FOLLOW ALL LABEL INSTRUCTIONS. THIS INCLUDES DIRECTIONS FOR USE, PRECAUTIONARY STATEMENTS (HAZARDS TO HUMANS, DOMESTIC ANIMALS, AND ENDANGERED SPECIES), ENVIRONMENTAL HAZARDS, RATES OF APPLICATION, NUMBER OF APPLICATIONS, REENTRY INTERVALS, HARVEST RESTRICTIONS, STORAGE AND DISPOSAL, AND ANY SPECIFIC WARNINGS AND/OR PRECAUTIONS FOR SAFE HANDLING OF THE PESTICIDES.

Trail-log sets in brushy or wooded areas are made by placing traps on either side of a log that lies across the trail where the coyotes travel. The log should be small, four inches to six inches in diameter, so that the coyote will step over it rather than on it. Scent is not needed in this set.

At fence lines, traps should be set on both sides of the fence about 10 inches out from the fence. This type of set and the trail-log set should be used with great care, because non-target animals may blunder into them.

In open or grassy areas, two traps should be centered in the trail about 30 inches to 36 inches apart, and a six inch to eight inch knot or grass clump scented with 10 to 20 drops of coyote urine should be placed between the traps.

When making bait sets, the bait should be placed so that it has a southern exposure. This will allow the sun to keep the bait warm and smelly. Traps should be placed about 18 inches downwind from the bait.

Coyotes tend to be attracted to a bed of ashes. Straw ashes are useful in getting rid of human scent at bait sets, and traps can be set in ashes when the ground is frozen. After bedding the traps, about three gallons of ash should be used to cover the traps and immediate vicinity. The bait should not be covered.

Snaring

Snares have an advantage over traps in that when properly set, they are much more selective. They can be set almost anywhere coyotes are known to be moving, but they are especially effective along fencelines where coyotes are going through or under a fence and along trails where brush or other natural obstacles restrict animal movement.

In Indiana, snares may not be set on the land of another without the written permission of the landowner.

Additional information on trapping and snaring can be obtained from local fur buyers or any member of the Fur Takers of America. Further assistance with coyote depredation problems is available from the U.S. Fish and Wildlife Service.

Revised 2/2010

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