

Eastern coyote (*Canis latrans* var.)

Size:

30–45 pounds. 4–5 ft. long (including tail).



Signs of their presence:

- Coyotes run with their tails down, while wolves and dogs hold their tails straight out. The tails of domestic dogs often curl; coyotes have straight tails, with a black tip.
- Sounds: May yip, yelp, howl, growl, bark, or woof. Family units (the adult pair and their pups of that year) often yip-howl when they reunite.
- Tracks: More compact, linear, and forward-directed than the dogs' often splayed, sloppy-looking track.
- Scats: are twisted, often containing hair or berries. Often found on rocks, logs, or at trail intersections. Their scat has a mild, musky odor, unlike that of the domestic dog.
- Large carcasses: Coyotes tend to eat the organs first. They'll pick bones clean, unlike dogs. Dogs start at the rear of a larger carcass and eat their way towards the head.

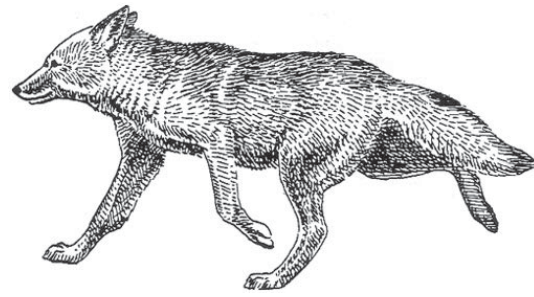


Diet:

Opportunist. About 80% of their diet consists of small rodents and rabbits. Coyotes will also eat insects (especially grasshoppers); fruits (berries, watermelon); fish and crayfish; frogs; snakes; bird eggs; larger mammals, such as raccoons, opossums, muskrats, and deer; garbage; carrion; dog or cat food; bird seed, and even doughnuts. They can kill housecats and dogs. Some individual coyotes will kill livestock, especially chicken, ducks, and lambs.

Typical activity patterns:

Social style: Most often, will see mated pairs (usually, life-long mates) but coyotes may live in family groups or alone, and may switch from one lifestyle to the other. Sometimes, “teenaged” coyotes form a loose group, often much larger than the family group, perhaps as with many as 15 individuals. Such groups may behave more aggressively towards people and dogs. The sub-adult group is probably just a temporary arrangement. *Daily activity:* They're usually nocturnal, especially during hot weather. Coyotes may be active throughout the day when they're rearing their pups, and in areas where they're left alone by people. In suburban areas, coyotes may alter their activity patterns, especially if there are daytime food sources available, such as dog food that's left outdoors.



Hibernator? No.

Migrates? No.

Where found:

Distribution in NY and the Northeast: Rural and suburban areas (in New York, they are not yet found on Long Island).

Habitat: They prefer forested areas, shrubby fields, and marshy areas but are highly adaptable and will live in areas with a lot of people.

Territory and home range: Home ranges covers 5–25 square miles. Coyotes will scent-mark their territory. Home ranges may overlap with other coyote groups, especially when they're not raising their pups.

Breeding habits:

Pair bonding style: Usually monogamous. Coyotes are thought to mate for life. Both parents cooperate in rearing the young, sometimes with the help of an older pup. Sometimes, a male may mate with several females and they may share the den, raising more than one litter there.

Dens: Coyotes seek sheltered areas for rest or protection from severe weather, but use dens to raise their young. Coyotes commonly move their pups from one den to another. Most often, coyotes will renovate a burrow that was built and then abandoned by another animal, such as a woodchuck, but they can dig their own dens. Their dens are often found on rocky ledges, or steep or brush-covered slopes. In urban areas, they may den in storm drains, under sheds, or in holes in parks, golf courses, and vacant lots. Coyotes may re-use dens from year to year.

Breeding dates: February. Females are only receptive for a few days. Gestation takes about nine weeks.

Litter size: 5–7. The better the food supply, the larger the litter.

Birth period: late April.

Weaning dates: Pups begin exploring when they're three weeks old and are usually weaned by six weeks old.

Amount of time young remain with parents beyond weaning date: Pups are usually driven out of their parents' territory between September and March.

Common nuisance situations:

Time of year: Peaks in late winter (Feb.–March) when the coyotes are establishing their territories, then again in early spring and summer, when they need more food to raise their pups. During the winter peak, coyotes aggressively defend the area around their den site. This is when they often come into conflict with dogs (March–April), who they view as a threat to their pups. This is especially true if the coyotes are trying to move into the dog's turf (a yard).

In the early spring and summer, coyotes seek easy prey to keep up with the food demands of their pups. "Easy prey" may include cats and dogs in suburban areas, and young livestock (lambs, chicks) in rural areas. There may also be complaints during the fall, as young coyotes try to establish their own territories, because that can be a noisy process. But they're fussing among themselves, and tend not to wrangle with dogs then.

What are they doing?

- Their yipping and howling may disturb some people.
- Their mere presence may frighten some people. Many people aren't used to seeing coyotes and may fear them.
- They can kill housecats or small dogs. Large and medium-sized dogs (over 35 pounds) are rarely physically threatened, because the coyote recognizes that it's outmatched. They'll usually work out the territorial dispute (loudly) without either being hurt. Small dogs are at risk. The coyote expects to be dominant and will discipline the dog until it offers the correct submissive behavior. If the dog doesn't submit easily, it could be badly injured or killed. Very small dogs and cats are seen as easy prey. Free-roaming pets should be brought inside to keep them safe from cars, pesticides, as well as predators.
- Some coyotes kill livestock (in New York, mostly free-ranging chickens and ducks, and sheep).
- They'll eat some vegetables and fruits, especially melons.
- Coyotes (and foxes) will chew holes in irrigation pipes in fields and orchards.
- Nationwide, a few people have been attacked. Most coyotes don't bother people. Some coyotes become bold and aggressive. If you see individuals showing these behaviors, take action. The potential does exist

for coyote attacks in New York. People and coyotes can usually coexist if the coyotes maintain their natural fear of people (more on this later).

- They may travel along an airport's runways, causing delays and hazards to aviation.
- Disease risks: Distemper, hepatitis, parvo virus, rabies, mange, and tularemia.

De-bunking myths about coyotes:

- Coyotes are often mistaken for "coydogs." A cross between a coyote and dog is possible but highly unlikely because of differences in their breeding habits. There are enough coyotes; they can easily find mates.
- A coyote that's active during the day is not necessarily rabid. Most likely, it's a healthy animal that's feeding more often than usual, because of the demands of their young.

Legal status in New York:

Protected. Game species with set season. From ECL 11-0523:

"6. Raccoons, coyotes or fox injuring private property may be taken by the owner, occupant or lessee thereof, or an employee or family member of such owner, occupant or lessee, at any time in any manner."

From ECL 11-0521:

"1. The department may direct any environmental conservation officer, or issue a permit to any person, to take any wildlife at any time whenever it becomes a nuisance, destructive to public or private property or a threat to public health or welfare, provided, however, that where such wildlife is a bear, no such permit shall be issued except upon proof of damage to such property or threat to public health or safety presented to the department....Wildlife so taken shall be disposed of as the department may direct."

Best practices

Remove artificial food sources (garbage, compost, pet food, pets):

- If anyone is feeding the coyotes, persuade them to stop.
- "Coyote-proof" garbage cans or dumpsters with a tight-fitting lid. Secure garbage can with heavy-duty straps or bungee cords, or attach it to a post, or keep it out of reach in the garage (close garage doors at night), or place the can in a covered and secure bin.
- Enclose compost piles in a framed box using hardware cloth; in a sturdy container, such as a 55-gallon drum; in a commercial composter.

Coyote

- Feed pets indoors. Any food left outdoors should be removed at night. Bring pet food dishes inside, too.
- Keep the area around bird-feeders clean, because coyotes will eat spilled seed. They'll also eat animals that are attracted to the bird feeder, such as birds, mice, and squirrels, so in some cases, you may want to remove the feeder.
- Do not allow pets to roam freely.

Protect children and pets and keep coyotes out of yards:

Some coyotes in suburbia have lost their fear of people. A coyote who does not fear people should be considered dangerous. The foods they find in residential areas (garbage, pet food, pets) are full of human odors, so these coyotes quickly learn to associate people with food. That's bad. Many people become frightened when they see coyotes, and run into their homes. That's even worse. To a coyote, that person has just behaved like prey (running triggers their attack response). In short, food smells like people and people behave like prey. Add to the mix people intentionally feeding coyotes, and the potential for a coyote attack becomes very real.

Certain changes in coyote behavior seem to indicate a growing risk that coyotes will become aggressive toward people (based on studies of coyote-human conflicts in California). The signs are shown in the order they usually happen.

1. During the night, coyotes kill more pets than they did before
2. During the night, coyotes are seen on streets and in yards more often than before
3. Coyotes are now seen in those areas during the day, especially early morning and late afternoon
4. During the day, coyotes chase or kill pets (previously, only a night-time activity)
5. During the day, coyotes kill pets that are on leash (previously, they only took free-roaming pets), or chase joggers and bikers
6. At midday, coyotes are seen near children's play areas

Coyotes are generally nocturnal, so increasing daytime activity is often a sign that those animals have become used to people. Such boldness should be taken seriously. The California study suggests that if the situation is addressed before pet attacks are common, further problems can probably be avoided.

What can you do?

- Act tough. Be very aggressive. Yell, make loud noises, wave your arms, spray the coyote with water from a hose, and throw sticks or stones near the coyote.
- Teach children that coyotes are not dogs and they are not pets. Watch coyotes from a distance.
- Small children are most vulnerable, so don't leave kids in the yard unattended.
- Don't let pets roam freely. And don't feed them outdoors!
- Keep the yard clean and well-mowed to remove cover for the coyotes (trim shrubs at ground level). Remove brush and junk piles that attract rabbits and other prey that might entice coyotes into the yard.
- Hunting and trapping helps to keep coyotes from losing their fear of people.
- Fences will help a great deal, but coyotes can climb over, burrow under, or squeeze through fences. So build them right and keep fences well-maintained.
- Construct net wire fences (using 4" mesh) that are 5 1/2 ft. high. To prevent coyotes from digging under the fence, either add barbed wire at ground level or bury the fence 6" deep and bend a foot-wide section outward into a "L" shape. To discourage coyotes from climbing over the fence, add an electric wire at the top or create an overhang of regular wires.
- Electric fences: a fence of thirteen strands of high-tensile electric wire is proven to protect sheep from coyotes. Other designs using fewer wires may work in some areas.
- Combination net wire and electric wire fence: If there's an existing net wire fence, add an electric strand that's placed 6-8" above ground and 8-10" outside the fence, using an offset bracket. If the coyotes are climbing over the fence, add a top wire that's also outside the fence.
- Invisible fences may be an attractive solution for keeping pets within an area but they will not keep wildlife *out*. To protect pets from predators, switch to a traditional fence design.
- Ask neighbors to follow these same steps.

Scare them away:

In some cases, you may be able to successfully scare off coyotes and solve the problem. This is most likely to work when you have access to the coyotes' den. It's reasonably easy to harass a coyote (or fox) enough to convince them to move their pups. These ideas haven't been well-studied, but we believe they're worth trying.

- Act tough, as described previously.

- Use slingshots, an air rifle, or a shotgun loaded with rubber buckshot to frighten a coyote that's further away (30 ft). You don't have to hit it to scare it off, but if you can, that will more effectively train the coyote to stay away (this refers to the use of the less lethal projectiles mentioned above).
- Experiment with noisemakers, such as bangers and screamers.
- One scare device, the Critter Gitter[®], combines a siren and flashing lights. It's triggered by a motion detector. The device switches patterns, so it should be effective longer than a scare device that doesn't vary.
- As with many scare tactics, some of the ideas above are labor-intensive. You might have to sit and wait a long time before the coyote shows up. (That may not concern some customers).
- In some situations, such as when the customer really doesn't want the coyote killed, you may be able to train the coyote to become wary of the capture location. Some biologists believe that if a coyote is trapped and released, it will avoid the area in which it was caught. If the customer's property is large enough, and you don't think the coyote will move on to trouble a neighbor, you may want to trap it and release it on site. This is a riskier technique because if it doesn't work, your job has just become much harder. Consider this a last-resort technique.

Protect vulnerable livestock (poultry, sheep):

- It is much easier to prevent a problem than it is to stop it once it starts.
- Close and tightly fasten the doors to poultry houses.
- Fence areas (see previous section). Another fencing option is to create a temporary pen for confining livestock at night. Portable electric fences can be installed quickly and easily. They're usually made of thin electric wires running through polyethylene twine or ribbon, called "polywire" or "polytape."
- Herd livestock into pens and corrals at night, and during foggy or rainy days, when coyotes are more likely to hunt. Also, bring livestock into sheds or paddocks when they're ready to have young. If a particular pasture seems to be more enticing to predators, move the livestock into a less vulnerable area.
- Keep pastures open. Clear away brush and weeds that provide cover for the coyotes. Remove brush and junk piles that attract rabbits and other prey that might entice coyotes into the pasture.

- Sheep or goats kept near cattle are less likely to be preyed on by coyotes.
- Keep herds and flocks healthy. Coyotes often prey on smaller, weaker lambs and calves.
- If possible, change to a fall lambing and calving season. This doesn't coincide with the period when coyotes are raising their pups (late spring through September), which is when they are most likely to prey on young livestock.
- Concentrate the lambing and calving period (using synchronized or group breeding) to reduce the amount of time that young, vulnerable animals are present in the herd or flock.
- Well-trained guard dogs (usually of these breeds: Great Pyrenees, Komondor, Anatolian Shepherd, Akbash) and donkeys and llamas help prevent predation on sheep. This technique works even better if you keep the livestock and guard animals within proper fences.
- Add lights to corrals. Strobe lights may work best to discourage coyotes.
- Propane exploders and sirens may give temporary relief.
- The USDA's Denver Wildlife Research Center developed a device for protecting sheep in fenced pastures. The "Electronic Guard" combines a strobe light and siren. (Or try the Critter Gitter[®], described in the scare tactics section).
- Parking a car or truck in a pasture may frighten away coyotes for a short time. If the coyotes are hunting during the day, put a dummy in the car.
- Remove and properly dispose of livestock carcasses. Do not allow coyotes to develop a taste for livestock, live or dead! Carrion will attract coyotes to an area.
- Contact your regional DEC Wildlife staff or USDA APHIS-Wildlife Services for more information.

Trapping strategies:

The International Association of Fish and Wildlife Agencies has published *Best Management Practices for Trapping Coyotes in the Eastern United States* (see: www.furbearermgmt.org/03ecbmp.pdf)

- It takes experience and skill to trap coyotes effectively. Don't wing it! Get help before you start. Coyotes easily become trap-shy, so a botched trapping attempt will leave the customer with a worse problem. There are excellent courses, videos, and books that explain how to trap coyotes.
- Good trap locations: Look for coyote tracks and scat! Favorite spots include high hills; near isolated land features or isolated bales of hay (which they may

use as scent posts); trail and stream crossings; fences; roads through pastures; deer trails; dry or shallow creek beds; near the border of fields, or tree groves, or pond dams; and near brush piles.

- Set traps to one side of the trail, not directly in the trail. Look for a place where coyotes would naturally stop, such as near a gate, on a hilltop, or where the cover changes.
- Place traps in an open, flat area, upwind of the path, to carry the scent of the bait (or lure, or both) across the coyote's normal trail. Bury the traps.
- In the fall and winter, a dirt-hole set may work best. Flat sets and urine post sets are generally more effective during the summer.
- The trap should be clean and not smell of people. Minimize human scent around the trap, too. Wear clean gloves and rubber footwear.
- Traps should be dyed and waxed, or cold-dipped in a commercial product.
- Coyote urine is a good lure for year-round use.
- Use baits and lures that have mild scents during the warmer months, because a strong-smelling bait or lure might prompt the coyote to roll on the trap. The trap might fire without capturing the coyote, who might become trap-shy as a result.
- Coyotes are powerful. Use strong, well-anchored, and well-balanced traps. But don't overpower your traps, because that could cause injuries.
- Options for anchoring traps: two stakes, inserted crosswise, and disposable earth anchors with aircraft cable. "In-line" shock springs on the anchors will help prevent the coyote from lunging and pulling out of the trap.
- Many trap manufacturers and suppliers now offer versions of traps with the modifications suggested below, or will modify their models upon request. Or you may choose to modify your own traps.
- Nuisance coyotes should not be relocated, especially if the problem concerned a threat to human safety. They might cause a problem in the new location. Once caught, the coyote is extremely likely to be trap-shy.

Live traps that meet the BMP performance criteria:

- # 1 1/2 padded coil spring trap: four-coiled.
- # 1 3/4 coil spring trap: standard model; one with offset, laminated jaws; or one with wider, offset jaws.
- # 2 coil spring: standard model; or a 4-coiled model with offset, laminated jaws.
- # 3 coil spring: padded coil spring, 4 coils; or an offset double laminated coil spring, 4-coils.

Lethal techniques:

- Hunting coyotes with a pack of trained dogs (usually larger breeds, such as greyhounds and some of the larger fox hounds). This is a more specialized and costly technique.
- Shooting, with a shotgun or accurate rifle, depending on conditions. May use light at night. The shooter(s) will need effective cover (camouflage, blinds) and must stay as still and quiet as possible. Two approaches: 1. If the coyote's keeping to a regular schedule, sit and wait. (If it's not, you could wait and wait ...) 2. Attract the coyote within shooting range using a predator call (howls or distress calls). Call when you're downwind of the coyote.
 - Howls, barks, and yips: you can try to mimic these sounds yourself, but they're harder to master than distress calls. There are recordings and commercial mouth-blown devices that will do the trick. Once you know what they mean, you may be able to use these sounds (perhaps in combination with a distress call) to locate the coyote or its den, or to draw a coyote into shooting range.
 - Distress calls (usually of prey, but some people use distress calls of competing predators or coyote pups): Most people use recordings or commercial mouth-blown devices. Coyotes respond because they hear an injured animal. They're coming in to eat it (coyotes are nearly always hungry).

Preferred killing methods:

- Shooting, using a shotgun with BB-sized shot or larger, or a .22 caliber rifle, or a center fire rifle (target the head, if no rabies testing is required, or the heart/lungs)
- Lethal injection of barbiturate, if possible

Acceptable killing methods:

- Stunning and CO₂ chamber (you can probably fit a coyote into a cooler-sized chamber. The animal must be restrained or unconscious.)
- Stunning and shooting
- Stunning and exsanguination (take care to reduce your exposure to body fluids)

Control strategies that don't work particularly well, or aren't legal in New York:

- Bells placed on sheep, and radios blaring in pastures, don't work that well.

- Many repellents have been tested to keep coyotes from preying on sheep and cattle, but none have worked well. Coyotes rely on visual cues when hunting. Taste and smell are not as important, so even when the repellent offended the coyotes, it didn't keep them from killing the animals—just from eating what they'd killed.
- Train the coyotes to avoid eating sheep by offering a bad-tasting bait that would sicken, but not kill, the coyote. The theory was that coyotes are territorial, so if you could train “your” coyote that livestock taste bad, it wouldn't kill any more livestock and would also keep other coyotes away. Great idea, inconclusive results.
- In New York, it's not legal to fumigate a coyote den with carbon monoxide bombs (also called “smoke bombs,” “gas cartridges,” and “smoke cartridges”).
- Cable restraints are not legal for coyotes in New York.
- There are two poisons that you may read about, M-44[®], and Compound 1080—they're not legal in New York, but they are legal in some states, primarily out west.

For more information:

DEC publication: *Preventing and resolving coyote conflicts*: <http://www.dec.state.ny.us/website/dfwmr/wildlife/wildgame/coyconfl.htm>

International Association of Fish and Wildlife Agencies publication: *Best management practices for trapping coyotes in the Eastern United States*: www.furbearermgmt.org/03ecbmp.pdf

Baker, R. O. and Timm, R. M. 1998. Management of conflicts between urban coyotes and humans in Southern California, pages 299—312 in Proceedings, 18th Vertebrate Pest Conference (R. O. Baker and A. C. Crab, eds.). U. California at Davis.