



Eric Dresser

# RISE OF THE EASTERN COYOTE

— *Understanding coyote ecology will allow us to coexist*

By Dan Bogan, Ph.D.

*A coyote walked unhurriedly into a field. Pacing slowly, it moved forward, turned, and took two more steps. It focused its attention downward, seemingly seeking something shielded from observation, then moved on. The coyote, a female, squatted and marked a particular tuft of unmown grass with urine. She continued back and forth through the field of green grass tipped with golden seed heads of late summer. Twice the coyote sat and remained relatively motionless, directing her ears, eyes and nose to the ground before moving on. At times she lifted her head, looked around, and seemed unaffected by vehicles motoring along the county route. Drivers failed to notice, too; at least none seemed to brake and watch as the coyote hunted for mice and voles inhabiting the open field along the suburban road.*

*Suddenly, the coyote pounced, arching into the air, reaching out with her front feet extended and striking the ground repeatedly. That mouse or vole got away, but others were not so fortunate. Pinning one to the ground, the coyote bit, then chomped three times before swallowing it whole. After consuming three unidentified rodents in mid afternoon, the coyote moved out of sight, back into the cover of the forest...*



Roy Breslawski

In recent years, coyotes have become more conspicuous; at times they are seen hunting in full view during daytime, or crisscrossing roads and neighborhoods, or observed near people and pets. This is partly due to coyotes' increasing populations during the past few decades, and also because of their ability to adapt to their environment, including areas of human development.

Coyotes are explorers and opportunists. They are also survivors, having overcome decades of persecution at the hands of ranchers, landowners, farmers and government agents. Learning more about the natural history of coyotes can help people understand their ecological role and the likely outcome of encounters with them. But first, it is important to consider how coyotes became New York's "top dog."

## Coyotes in NY

Historically, wolves inhabited the heavily forested lands of New York. However, as increased logging and farming claimed more habitat, and unregulated hunting and trapping took more wolves (bounties were paid for wolves into the early 1800s), wolf numbers dropped until they were no longer found in the Northeast. Such drastic changes to the state's habitat and wildlife community primed the stage for an unexpected animal—the coyote—to fill the niche left vacant by wolves.

Coyotes were once limited to Midwestern prairies and the arid southwest. However, today, they can be found from the boreal forests of North America to nearly the Panama Canal and from coast to coast. Throughout their range, they inhabit numerous biomes (or ecological communities), including deserts, grasslands and forests—no small feat for any animal. This remarkable range expansion is an increase of 40% from their historic range, and is primarily in response to anthropogenic (manmade) changes. No other carnivore has experienced as large a range expansion.

While coyotes are now widespread in New York, they only recently became established here. Interestingly, they did not enter from the west as one might expect, but instead passed through Canada north of the Great Lakes before turning south into northern New York. By the late 1930s and '40s, coyotes were established in Franklin County, and by the 1980s, coyotes were found throughout the state except in New York City and on Long Island (see map).



Eastern coyotes spread throughout most of New York in less than six decades and are now showing up in New York City and on Long Island. (Map reprinted from October 1974 *Conservationist*.)

## Evolving Ecology of Eastern Coyotes

Not long after coyotes appeared in New York, researchers noticed that these arrivals differed slightly from western coyotes in size and appearance. Using genetic analyses, researchers found that eastern coyotes are roughly 64% western coyote, 26% wolf ancestry and 10% domestic dog.

Weighing approximately 24 to 45 lbs., adult eastern coyotes are heavier than western coyotes (20 to 25 lbs.), yet much smaller than wolves (50 to 100 lbs.). Eastern coyotes have long ears and slender bodies. They have broader heads and larger teeth than western coyotes. These factors may contribute to coyotes' success filling the niche formerly occupied by wolves.

Once dominated by rodents, diets of New York coyotes are now dominated by deer. Although people suspect coyotes kill lots of deer, recent research conducted by SUNY College of Environmental Science and Forestry biologists has shown that the majority of adult deer coyotes eat are scavenged. Tracking coyotes with GPS collars, researchers located 62 deer carcasses visited by coyotes. Cause of death was determined in 39 of the carcasses: 36 were scavenged, and only 3 were killed by coyotes.

In fact, less than 10% of adult deer mortalities are caused by coyotes. Further, deer killed by coyotes had previous injuries, perhaps making it easier for coyotes to kill them. Coyotes did kill fawns during spring and summer; around one-third of coyotes' summer diet consists of fawns. However, coyotes in the Adirondacks currently consume more beaver than fawns.

These results are preliminary; researchers are finalizing their study of the impacts of coyote predation on adult white-tailed deer and fawn recruitment.



A Cornell graduate student examines a coyote.

In the 1990s, coyotes continued spreading, quietly back-filling suburban areas passed over during their initial surge. Today, sightings of coyotes make headlines in many cities and suburbs. Coyotes even inhabit the Bronx; the only New York City borough attached to upstate and the mainland. On occasion, these stealthy explorers permeate other island boroughs, and when detected in places such as Central Park or the campus of Columbia University, their presence garners a hail of media and police attention. In 2011, someone photographed a coyote in Queens, and in 2013, black-and-white photographic evidence showed a solitary coyote as far east as Bridgehampton, Long Island. Hustling to keep pace with this elusive canid, biologists are preparing to study the implications of a new carnivore on Long Island: the last frontier for coyotes in New York, and the last large landmass unoccupied by coyotes in the east.

## Coyote Behavior

While coyotes are classified as carnivores, they actually eat omnivorous diets including a wide variety of animal and plant materials. They are also opportunistic, feeding on whatever food sources are abundant and easily consumed (see “Evolving Ecology of Eastern Coyotes” on page 21).

Eastern coyotes mate for life. While they do not form highly organized packs like wolves, adult coyotes display similar behavior by forming family units of closely related individuals. Adult males and females are the core of the family group. Often, the family group will include young of the year, and may occasionally include yearling coyotes from previous litters. Other coyotes live outside of packs as solitary transients and float between resident coyote families, biding their time until a vacant territory opens.

Jim Yates



While coyotes do kill white-tailed deer, as witnessed by this photographer, many of the deer coyotes feed on were killed by other causes or had previous injuries.



Eastern coyotes are medium-size canines that average 24 to 45 pounds in weight.

Coyotes communicate by scent-marking and group-howling. Scat (feces) and urine are deposited in prominent spots along trails to mark territories. When coyotes howl, it often sounds like many individuals, but it is really just a few. Perhaps this is due to echoes off hillsides or the reverberation of the resonant voices through the woods, or simply the hyperactive chorus of yips, yip-howls and yee-haws. It is not uncommon for residents in suburban neighborhoods to awaken to the sound of coyotes howling in a nearby woodlot—a sound formerly associated only with faraway wilderness. For some, this sound is invigorating and a pleasant reminder of nearby wildlife, while others find it eerie and nerve-wracking.

## Coexisting with Coyotes

Coyotes inhabiting residential and suburban areas occasionally slink through backyards and across streets, moving from one natural area to another. Most observations of coyotes are simply sightings, providing the observer an opportunity to watch and enjoy the state’s largest wild dog. However, when coyotes live near people, there is the potential for problems, and occasionally issues do arise. Being aware of nearby coyotes and taking appropriate action can reduce the likelihood of problems (see “Reduce Risks” sidebar).

The best approach to keep people and pets safe from coyotes is to avoid contact and not attract them to an area. If possible, people should avoid areas known to have coyotes, especially at times when coyotes are most active (from dusk until dawn). Do not leave food outside, including pet food and birdseed, and keep compost and trash in secure containers. Fortunately, studies conducted in New York showed that nearly all food items of coyotes in suburban habitats were of natural origins; white-tailed deer, small mammals, plant materials, and cottontail rabbits were among the most common. Few traces of birdseed, trash, or pets were detected.

Catching a glimpse of a coyote can be exciting and memorable. However, beware of coyotes that are reluctant to flee from you, and chase away coyotes if they are near you, particularly in neighborhoods or developed areas. Clap your hands, wave your arms, and make some noise to keep them moving away. This encourages coyotes to avoid people. Also, watch out for coyotes that focus on or follow people or pets, as the coyote may approach or attack.

If you encounter a nuisance coyote that you feel may cause property damage, or is perceived to threaten human health or safety, contact your regional DEC biologist who can provide technical assistance and issue any necessary permits. Coyotes actually observed causing property damage, threatening people or pets can be taken without a permit if done in accordance with local rules or ordinances. In New York, liberal hunting and

trapping seasons provide ample opportunities for sportsmen to go afield and take coyotes when pelts are valued.

It is important that we keep coyotes wild and prevent them from seeking human food sources or becoming accustomed to people. Loved or loathed, this incredibly adaptable animal is here to stay.

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*For further reading:*

*Coyotes: How Close is Too Close?* by Mike Cavanaugh in the April 2005 Conservationist

*A Howling Success: The eastern coyote*, by Robert E. Chambers in the August 2000 Conservationist

## REDUCE RISKS

Bill Banaszewski

People and coyotes can coexist. Conflicts between coyotes and people can occur year round, but are most likely to occur in spring when coyotes are denning, feeding their young, and are exhibiting territorial behavior against other coyotes and domestic dogs. Here are some recommended steps you can take to reduce the likelihood of conflicts from occurring:

- **Don't feed coyotes.** Discourage others from doing so. Unintentional food sources attract coyotes and other wildlife and increase risks to people and pets: don't feed pets outside; make garbage inaccessible; fence or enclose compost piles.
- **Don't feed birds.** Concentrations of birds and rodents that come to feeders can attract coyotes.
- **Don't allow coyotes to approach people or pets.** Teach children to appreciate coyotes from a distance.
- **If you see a coyote, be aggressive.** Stand tall and hold arms out to look large. If a coyote lingers, make loud noises, wave your arms, and throw sticks and stones.
- **Don't allow pets to run free.** Supervise all outdoor pets to keep them safe from coyotes and other wildlife, especially at sunset and at night.
- **Contact your local police department and DEC regional office for assistance** if you notice that coyotes are exhibiting "bold" behavior or have little or no fear of people. (Simple occasional sightings are not necessarily evidence of bold behavior.)

### For more information, see:

Eastern coyote—[www.dec.ny.gov/animals/6971.html](http://www.dec.ny.gov/animals/6971.html)

Tips to eliminate wildlife conflicts—[www.dec.ny.gov/animals/89522.html](http://www.dec.ny.gov/animals/89522.html)

Feeding wildlife: a wrong choice—[www.dec.ny.gov/animals/74763.html](http://www.dec.ny.gov/animals/74763.html)

