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# Community-Level Strategies for Urban Coyote Management

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As coyotes expand their range into metropolitan areas across North America, conflicts between them and people are on the rise.

In urban settings, most conflicts with coyotes result from disease or from people feeding wildlife. Feeding coyotes, accidentally or intentionally, can cause coyotes to **habituate** and lose fear of people or become **food-conditioned**, in which they associate humans or human places such as backyards with positive food rewards. Consequently, some coyotes develop nuisance behaviors that lead to conflicts with pets, increased daytime activity in residential areas, and more rarely, aggressive behavior towards people.

Because human behaviors and attitudes are usually at the root of human-coyote conflicts, strategies for modifying individual human behavior are critical in preventing and reducing conflicts with coyotes. Modifying individual human behavior should also be the first step in any urban coyote management plan.

## What Does a Coyote Look Like?

The coyote is a medium-sized member of the dog family, which includes wolves and foxes. With its pointed ears, slender muzzle, and drooping bushy tail, it often resembles a German shepherd or collie. Coyotes are usually grayish brown with reddish tinges behind the ears and around the face, but coloration can vary from silver-gray to black. Most adults weigh 30–35 pounds (particularly large individuals weigh 40–45 pounds), although their full coats often make them appear larger.

## Causes of Human-Coyote Conflicts

### *Feeding Coyotes: Intentional and Accidental*

Leaving food outside in areas of high human activity may lure coyotes into human settlements, teaching them to associate humans or human areas with easy meals and possibly leading to their habituation.

Habituated coyotes often become nuisances, as they may become bolder and more aggressive towards people, often in search of food.

### *Disease: Rabies and Mange*

Rabid coyote attacks on humans account for less than 8% of total reported cases, and most pet attacks are caused by healthy, non-diseased, habituated coyotes. Coyote-strain rabies is restricted to southern Texas, but coyotes are sometimes infected with rabies from other species.

Struggling to maintain a sufficient body temperature and seeking warmth and refuge near people's homes, mange-infected coyotes become more active during the day. Mange does not cause coyotes to act aggressively; rather, it increases their daytime activity and public sightings, which often raises alarm.

## Preventing Conflicts with Coyotes: Individual Approaches

Below are steps an individual can take to prevent conflicts with coyotes.

- Do not feed coyotes.
- Supervise children when outside.
- Do not let pets run loose.
- Do not run from a coyote.
- Try repellents or fencing.
- Report aggressive, fearless coyotes immediately.

Remember, individual actions to prevent conflicts will be most effective when coordinated across a community. For more information about individual actions, see the Ohio State University Extension fact sheet *Urban Coyotes: Conflict and Management.*

However, individual action will only be effective if it is coordinated across a community. Individual actions may be undermined if a neighbor continually engages in activities that habituate coyotes; therefore, a comprehensive management plan is one that prevents conflicts at both the individual and community level.

## Community-Level Approaches to Preventing Human-Coyote Conflicts

Community-level coyote management programs are often coordinated by municipalities, local and state government agencies, animal control, neighborhood associations, and/or local wildlife or public safety-related organizations. Below are common components of community-level programs.

### *Education Programs*

Management programs should begin with public education and should separate facts from myths. Many education programs focus on teaching community members to identify signs of coyote presence and to distinguish between true threats and co-existence. Programs equip participants with the knowledge and tools to prevent conflicts at their source. Participants are also taught how best to respond when faced with a potentially threatening encounter.

Education programs are often collaborative endeavors carried out by city departments of parks and recreation and animal control, state wildlife organizations, and local branches of national non-government organizations. Most programs provide a combination of informational brochures, response kits, mapping of coyote sightings, community presentations or workshops, and school programs. For examples of education programs, see Toolbox 1.

### *No-Feed Ordinances*

Many city councils are now drafting ordinances that prohibit the intentional feeding of coyotes, issuing a fine if violated. No-feed ordinances aim to eliminate opportunities for coyotes to become food-conditioned or habituated.

### *Leash Laws*

Some parks and natural areas may have dog leash laws as a way to reduce the risk of conflicts with wildlife and/or protect sensitive species. Sometimes dogs

## Toolbox 1: What Does a Coyote Education Program Look Like?

### *Informational Brochures*

These provide general information on coyote ecology, coyote signs and indicators of threat, and appropriate reactions aimed to minimize conflicts with coyotes.

### *Coyote Response Kits*

These provide community members with a better understanding of urban coyote populations, and advice on how to limit conflict between people and coyotes. Kits may contain information on coyote deterrents, answers to common coyote questions, and advice on how to react during an encounter with a coyote.

### *Coyote Hotlines and Mapping*

Many education programs provide a community reporting service so that local residents can report coyote sightings via a coyote hotline. Some programs such as the Stanley Park Ecology Society's Co-Existing with Coyotes (**http://stanleyparkecology.ca/conservation/co-existing-with-coyotes/**) and the City of Calgary's Living with Coyotes (**http://www.rockies.ca/coyotes/**) map all witnessed coyote accounts occurring within city neighborhoods.

### *Coyote Presentations*

Presentations may take the form of lectures and/or question-and-answer sessions led by leading coyote experts. Interactive workshops, interpretive walks, and community events may also be designed to illustrate coyote life history, how and why coyotes use urban green spaces, and how to co-exist with them.

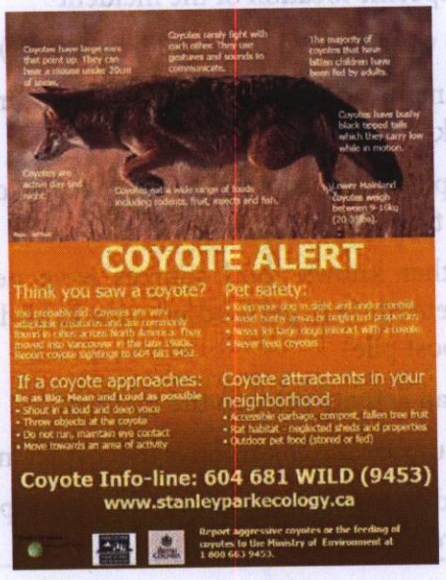
### *School Programs*

School programs are often conducted as auditorium presentations. Slide shows, demonstrations, and skits are used to teach students about coyote identification, behavior, attractants found in cities and backyards, and appropriate and inappropriate behavior around coyotes.

### *No-Feeding Programs*

Using slogans such as "A fed coyote is a dead coyote," no-feeding programs aim to raise awareness of the negative effects of feeding coyotes.


Poster (and other no-feeding campaign information) available from the California Department of Fish and Game at **http://www.dfg.ca.gov/keepmewild/coyote.html**




Poster (and other information on co-existing with coyotes) available from the Stanley Park Ecology Society at **http://stanleyparkecology.ca/conservation/co-existing-with-coyotes/how-to-co-exist-with-coyotes/**

running off-trail will follow wildlife scent, potentially leading to a surprise encounter with a coyote, which may provoke an attack on your pet. Therefore, it is important to enforce and obey leash laws, especially in areas where coyotes are known to live.

### *Coyote-Incident Reporting System and Database*

Implementing a standardized reporting system and database to track coyote-related incidents may help communities monitor trends in coyote conflicts such as who is involved and where conflicts are occurring. As a result, management can better identify and reduce sources of conflict .

Prior to implementing a reporting system, terms referring to specific coyote behaviors and types of incidents need to be defined. For examples of standardized reporting systems and definitions, see Toolbox 2 and Additional Sources.

**Toolbox 2: Reporting Incidents with Coyotes**

Reporting systems should include all of the following:

- The date and time of the incident
- The specific location of the incident
- Who was involved (e.g., children, adults)
- The nature of the incident (e.g., observation, attack)
- If applicable, a description of the pet involved (e.g., type/breed, sex, weight)
- Whether known food sources were near the incident site (e.g., pet food left outside, bird feeder, compost pile)
- Human activity prior to the incident
- The number and condition of the coyotes involved

See Additional Resources for examples of standardized reporting systems.

### *Hazing*

Recently, some communities, such as Denver, CO, Los Angeles, and Vancouver, BC, have implemented hazing programs. Hazing consists of a series of activities that attempts to re-instill fear of humans back into bold coyotes. It involves using deterrents and repellents to move a coyote out of an area and discourage undesirable behavior. Hazing does not do damage to animals, humans, or property, and should be done within reason to avoid injury or intensifying conflict by cornering a coyote that simply wants to escape. See Toolbox 3 for proper hazing methods.

**Toolbox 3: Hazing Methods**

It is recommended that a combination of the following tools be used to haze coyotes:

- Yelling/waving arms while approaching the coyotes
- Noisemakers: voice, whistles, air horns, bells, "shaker" cans full of marbles or pennies, pots, lids, and/or pie pans banged together
- Projectiles: sticks, small rocks, cans, tennis balls, and/or rubber balls
- Other: hoses, water guns with vinegar water, pepper spray, and/or bear repellent

Hazing is a strategy recently applied to coyotes; therefore, few studies have empirically measured its efficacy for coyote management. For example, since habituation widely varies among individuals, it is unknown at what level of habituation hazing will no longer be effective. Habituation itself is a difficult state to measure, as it may develop throughout a coyote's entire life. Consequently, measuring habituation and evaluating hazing requires knowledge of a coyote's history of interactions with people, which is rarely if ever available. As with all management measures, the outcomes of hazing may vary from coyote to coyote and from year to year.

#### When to Haze

Hazing should be implemented when coyotes appear to be habituated (i.e., when coyotes no longer run away when approached or charged by humans). Coyotes in open spaces and out late at night when few people are present are generally exhibiting acceptable behavior and should not be hazed. In such cases, best management action includes educating the public about personal safety and coyote ecology. See Toolbox 4 to learn more best management practices.

## Toolbox 4: Recognizing Threats

Below are signs of increasing threats posed by coyotes. It is important to recognize that coyotes are highly variable in their behavior; therefore, this sequence may not always be predictive.

- Coyotes are rarely or occasionally seen at night and more rarely seen during dusk and dawn. Howling is heard occasionally.

  **RESPONSE:** Seek public education. Prohibit/limit wildlife feeding.
- Coyotes are occasionally seen during the day and frequently seen at night. A house cat disappears occasionally.
  **RESPONSE:** Seek public education. Prohibit/limit wildlife feeding. Be aware that free-ranging pets are at risk. Use negative stimuli, repellents, or hazing.
- Coyotes are frequently seen during the day. They appear in yards on an increasing basis but flee when approached by people. Pets in yards are attacked.
  **RESPONSE:** Seek public education. Prohibit/limit wildlife feeding. Consider removal. Supervise pets. Use negative stimuli, repellents, or hazing.
- Coyotes are fearless or aggressive. They take pets from yards, approach people without fear, follow children, or act aggressively (growling, barking) when subjected to negative stimuli.
  **RESPONSE:**Seek a removal program and public education. Prohibit/limit wildlife feeding. Supervise pets. Use negative stimuli, repellents, or hazing.

### How to Haze

Hazing can be as simple as making yourself loud (by yelling or using homemade noisemakers) and large (by standing tall and waving your arms) when approaching a coyote. However, it is critical that a variety of hazing tools are used. If hazing devices and actions are not rotated frequently, a coyote can quickly learn that hazing poses no threat to its safety; consequently, hazing will no longer work.

Hazing also requires persistence; hazing produces a conditioned, or learned, response. Therefore, it is common for coyotes that have never been hazed to not initially respond. If this happens, increase the intensity of your actions, making them more aggressive and exaggerated.

Continue hazing until the coyote changes its behavior. It may take several episodes of hazing the same coyote until it leaves for good. Without persistent hazing, the coyote will not learn to associate the area in which it is hazed (e.g., your backyard) with fear.

### *Lethal Removal*

Lethal removal is often warranted when a coyote is an immediate threat to people, especially to children and pets. When a coyote bites someone, does not respond to hazing, or becomes increasingly aggressive, it is an immediarte threat. A coyote is also an immediate threat if it is the cause of multiple attacks on dogs. Beyond these immediate threats, behaviors that justify removal are less clear and less agreed upon by communities and municipalities.

Lethal removal is accomplished either through trapping and euthanasia or sharpshooting. Footholds and cable restraints are the most common devices used to capture coyotes. Because coyotes are difficult to trap or shoot, these actions should be undertaken by professionals, especially in urban areas. Sharpshooting should only be employed under extremely controlled conditions. All removal efforts should observe state and municipal codes.

In some places, removal is also used as a preventative measure, employed in response to coyote presence rather than a particular behavior. However, the most effective removal programs target specific nuisance coyotes rather than the general coyote population. Even when aggressively controlled by lethal removal, coyote populations can quickly recover by breeding at an earlier age and having larger litters. Fortunately, because of habituation, nuisance coyotes are often easier to capture than non-habituated individuals.

Removal, especially lethal removal, is often controversial. Trapping devices such as foothold traps and cable restraints can cause injuries and may also catch non-target wildlife and pets. Removal programs can also be expensive, either for residents or municipalities. For these reasons, as well as ethical ones, coyote removal is best employed only after education and hazing has been attempted, or if there is an immediate and obvious threat to human safety.

### *Relocation*

Relocation involves trapping a coyote and then relocating it to a distant site. It is sometimes used as a compromise to lethal removal; however, it is rarely effective for any species, including coyotes. Coyotes have been found to travel many miles back to their capture site following relocation.

Relocation does not reduce the population because, like removal, a new coyote will quickly replace the relocated one. Relocation is also stressful on animals, as they must fight for new territories and seek out new sources of food, shelter, and safe places to breed. Many relocated coyotes die within a few days of release, and none of them stay where they are released. Relocation can also facilitate the spread of disease.

Despite these drawbacks and because relocation is more palatable to the general public than euthanasia, many removal programs still relocate coyotes with the understanding that relocation will likely result in the death of that individual.

## Final Points

- Individual actions to prevent conflicts with coyotes are most effective when coordinated by an entire community.
- Management programs should begin with public education and should separate facts from myths.
- Hazing is a tool that should not be used indiscriminately; hazing should only be implemented on coyotes that appear to be habituated. Coyotes exhibiting acceptable behavior should be left alone.
- Coyote behavior can vary widely among individuals and from year to year. Individual coyotes may respond differently to management measures. Employing a variety of deterrent techniques is key.
- Most conflicts are related to feeding coyotes, either intentionally or inadvertently. Any type of coyote feeding should be discouraged. Remove from residential areas all easy food sources such as pet food left outside and large bird feeders that attract multiple wildlife species.

## Additional Sources

For more information, see the Ohio State University Extension fact sheet *Urban Coyotes: Conflict and Management*. Also, below are examples of several community-level management programs that include information on hazing protocol, standardized reporting systems, and definitions of incident-related terms.

- Broomfield, Colorado, Coyote Management Plan (**http://www.broomfield.org/openspace/coyotes.shtml**)
- Calabasas Coyote Management Plan (**http://www.cityofcalabasas.com/environmental/pdf/Coyote-Management-Plan.pdf**)
- Stanley Park Co-Existing with Coyotes Program (**http://www.stanleyparkecology.ca/programs/conservation/urbanWildlife/coyotes/**)
- The Cook County, Illinois, Coyote Project (**http://urbancoyoteresearch.com**)