



COYOTE CONFLICTS AND MANAGEMENT IN THE URBAN LANDSCAPE

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INTRODUCTION

Coyotes (*Canis latrans*) are highly adaptive and intelligent canines that are increasing their range throughout the United States. Historically confined to western and central North America, coyotes now occupy a range extending from Northern Canada to Central America, with a likely expansion into South America occurring in the very near future¹. In the southeastern US, expansion has been the result of the extirpation of eastern (*Canis lupus lycaon*) and red (*Canis rufus*) wolves alongside a large increase of agricultural lands. Moreover, coyotes are even thriving in urban systems where little green space exists. In fact, a recent study reported that coyotes occurred in every urban area consisting of at least 500,000 people surveyed in the United States². In Georgia, it is likely that coyotes are present in every major city in the state. As an urban predator, people are often more aware of their presence due to their real or perceived risk. This has led to increased reports of coyote sightings or encounters raising questions about disease transmission and attacks on pets and people in urban areas. We attempt to address many of these questions and concerns in the following document. It is important to note, however, that as a nonnative species in Georgia, coyotes are primarily managed by private individuals, contracts with nuisance control operators, or USDA APHIS Wildlife Services.

BEHAVIOR AND DESCRIPTION

Coyotes are extremely adaptable to their environment and can be found throughout suburban and urban areas. A coyote resembles a medium-sized dog weighing 25–45 pounds with mottled fur and a bushy tail (Fig 1). They communicate through high-pitched cries, shrieks, barking, and whining or yips that are commonly heard in the evening. Although coyotes commonly live in small family groups, they are primarily solitary hunters that occupy rather large areas. In urban environments, coyotes will maintain a territory of approximately 3 square miles³.

Coyotes are omnivores whose diet depends on food availability. Potential food sources include: small mammals, such as mice and voles, dead animals, and soft and hard mast, such as berries and acorns. Within the urban matrix, these food resources tend to be unevenly distributed which can lead to them also using a wide variety of anthropogenic food sources. This requires coyotes to navigate residential areas to access less developed lands. Given the opportunity, coyotes will forage within natural cover farther from urban development⁴. However, due to their versatility, some coyotes can successfully maintain territories with minimal or no natural areas and high amounts of human activity⁵.



Fig. 1: Coyote in Stone Mountain Park, Georgia.
Photo by John Kelly

Coyote behavior can generally be broken down into three “seasons” which may influence differences in coyote sightings throughout the year. Broadly speaking, the breeding season occurs from January to April. Pups are then reared from May through August. After birth, the pups will remain in the den for approximately six weeks before beginning to travel with the adults. By the end of summer, they will begin to attempt to hunt on their own³. Finally, the pups disperse to establish their own territories between September and December⁵.

COYOTE CONFLICTS

Conflicts between people and coyotes range from casual observations to pet killings, and, in extremely rare cases, attacks on people. In the Atlanta metro-area, over 80% of coyote interactions reported to the Georgia Department of Natural Resources [Urban Wildlife Program](#) were regarding a coyote sighting. In comparison, only 9% of calls reported a coyote threatening either an animal or person. The following sections describes some of these conflicts in more detail (Fig. 2).

Sightings. As coyotes continue to expand their range and live in closer proximity to people, sightings and encounters are becoming more common. Due to their status as the largest urban predator in the Southeast, coyotes capture the attention of the media. These frequent reports reflect and can even amplify concern among the general public⁶. A unique trait of southeastern coyote populations is the occurrence of melanism (i.e., black pelage or coat color). This likely stems from hybridization with either the Eastern wolf (*C. lycaon*) or domestic dogs as the coyote population pushed east. While extremely rare in the west, up to 3% of coyotes in Georgia are melanistic⁷.

Pet Conflicts. A primary concern of urban coyotes involves their dynamic with pets. Coyotes are known to kill domestic and feral cats. Although it is unclear the full impact that coyotes have on cat populations, research suggests that cats are more abundant in urban areas where coyotes are absent, and that cats may change their daily patterns toward more daytime activities in areas of increased coyote presence⁸.

Interactions between coyotes and domestic dogs are much more varied. Coyotes will attack smaller dogs, but attacks on medium and large dogs are rare. In most cases, coyote attacks on dogs occurs in the absence of people, although lethal encounters in the presence of owners have been reported. With larger dogs, interactions can range from aggressive to neutral to playful⁹.

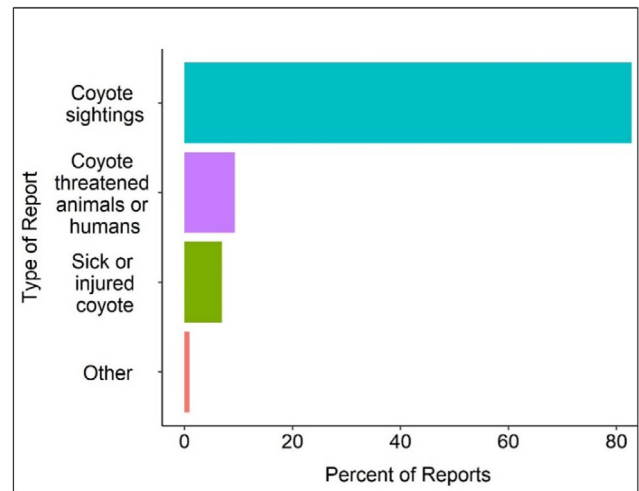


Fig. 2: Classification of coyote reports (n=215) to Georgia Division of Natural Resources Urban Wildlife Program from Aug. 2019-Aug. 2020.

Recommended non-lethal actions that can be used to minimize human-coyote conflicts.



Monitor pets when outside, even within a fenced in yard

Secure food attractants

- E.g., garbage, pet food, bird seed
- Remove food bowls if fed outside



Be alert when walking at dawn or dusk with pets

- Coyotes are crepuscular, meaning they are the most active during this time

Keep pets inside or leashed when outside



Do not feed or approach coyotes

- This will cause the coyote to associate you and your home as a food source

Haze coyotes out of your yard

- Bang pots and pans, yell, or use an air horn



Carry a noise maker/airhorn when walking pets

Close off crawl spaces to prevent denning



If warranted, lethal removal is an option

This has led to a public fear of the notion of crossbreeding and the existence of “coydogs”. While they technically exist, coydogs warrant little concern¹⁰. Coydogs are extremely rare because coyotes are highly seasonal breeders while dogs are not. Unlike male coyotes, male coydogs and domestic dogs do not tend to their litters, which will lead to higher rates of offspring mortality. Additionally, the female coydog estrus cycle is shifted and does not coincide with the coyote reproductive period³.

Despite pet predation serving as a major contributor to human-coyote conflicts, domestic cats and dogs are consistently found in low frequencies in dietary studies¹¹. Domestic cats were found in only 1.3% of scats in a study of urban coyotes in Chicago³. Dog remains are even less prevalent. To mitigate coyote attacks on pets, bring pets in every night and do not let them run loose and unsupervised.

Human Attacks. In many urban areas, the combination of a large carnivore and large numbers of people can elicit strong reactions, including fear of attacks on humans. While coyote attacks on humans do occur, they are extremely rare¹². When they do occur, the number of coyote attacks on adults and children are approximately equal; however, children are at greater risk of serious injury¹². Coyotes that have learned to associate humans with food is the strongest indicator of future coyote behavior¹³. Approximately one third of coyote attacks on humans can be attributed to either intentional or accidental feeding by residents near the attack site⁶. Pet owners should also be conscientious of coyotes as 6% of human attacks occurred when the person was walking with a pet or was near a pet that was being attacked. Most coyote attacks occur from March to August during the breeding and pup-rearing timeframe; however, there is no difference in the likelihood of being attacked during the day or at night¹². It should also be noted that although rabies is often a common concern from the public, the disease does not play a critical role in the occurrence of coyote attacks on humans.

Disease. Coyotes can carry diseases that are transmittable to pets and humans. As mentioned, rabies is often identified as a disease of concern by the public; however, rabid coyotes are likely responsible for less than 10% of coyote attacks on humans⁶. According to the U.S. Center for Disease Control, less than 1.5% of all wildlife rabies cases are associated with coyotes. This is probably because the vast majority of coyotes are not a vector for rabies strains. Aside from a small population in south Texas, coyotes do not serve as vectors for the disease unless bitten by a rabid animal themselves¹⁴ as the coyote strain has been eliminated from the U.S. Common symptoms for a rabid coyote include a lack of coordination, lethargy, paralysis, and aggression. Because rabies can be transmitted to humans and pets through the bite or saliva of an infected animal, any victim that is bit by a coyote should be treated for rabies as a precaution.

Canine Distemper Virus (CDV) is another virus that can be transmitted from coyotes to pets through contact. Common symptoms include sneezing, coughing, nasal discharge, and diarrhea. While it is suspected that CDV takes a higher toll on coyote pups, there have not been any observed long-term impacts on canid populations¹⁵.

Coyotes also harbor a wide range of ectoparasites including ticks, fleas, and mites. The mite *Sarcoptes scabiei* causes mange, a condition that when severe, can cause a near total loss of fur. Severe cases of mange can be fatal; however, this is rare in wild populations. The disease is often highly epizootic (i.e., temporarily prevalent) in the wild, rural coyote populations resulting in temporary periods of high prevalence and widespread distribution followed by a period of limited presence in the population¹⁶. Yet, mange prevalence in urban coyotes may become more stable across time. Because mange-induced hair loss may result in lower body conditions (e.g., body fat), it has been suggested that mange can affect urban coyote behavior leading to increased human-coyote conflict¹⁵.

MANAGING CONFLICT

Due to the social and biological complexity of urban coyote management, it is important to realize that there is no singular technique that will be 100% effective. Education, nonlethal, and lethal control are all foundational components that should be used to complement each other to maximize effectiveness¹⁷.

Nonlethal Management. With the continual increase of the coyotes' range, sightings and encounters with people will continue to increase in frequency. Changes in human attitude and behavior is likely the most effective management action when dealing with urban coyotes¹⁸. In addition, it is critical that educational information that addresses the positive and negative human perceptions of coyotes be incorporated into any urban coyote management plan. For example, education efforts should clearly inform citizens that coyotes do not pose a significant risk to humans and simply seeing a coyote is not a cause for concern. When these education efforts coincide with various nonlethal actions mentioned here and, if required, selected removal programs (below), the beneficial effects can last for years¹⁹.

Direct (Lethal) Management. If non-lethal methods are not working and coyotes continue to cause conflicts, lethal removal is an option. Lethal removal should not encourage coyote extermination from an area but rather a specific focus on problem individuals. In fact, wide-scale removal efforts that aim to reduce population density have low benefit-cost ratios for reducing coyote conflict¹³. Large scale harvest such as killing contests are also unlikely to reduce conflict²⁰. If lethal removal is warranted, you can remove coyotes from your property through hunting or trapping. You should check your local ordinances regarding the discharge of firearms. Regarding trapping, coyotes are a non-native species in Georgia and can be harvested year-round on private property. However, if you are attempting to trap coyotes and capture a non-target species such as a raccoon outside of its specified season, you can be held legally responsible. Consult Georgia DNR's website for trapping regulations. To hire someone to trap and remove coyotes from your property, an interactive map of Nuisance Wildlife Control Operators in your area can be found on Georgia DNR's [website](#).

See the last page of this document for a full-page flyer on “*Urban Coyotes: When to Worry.*”

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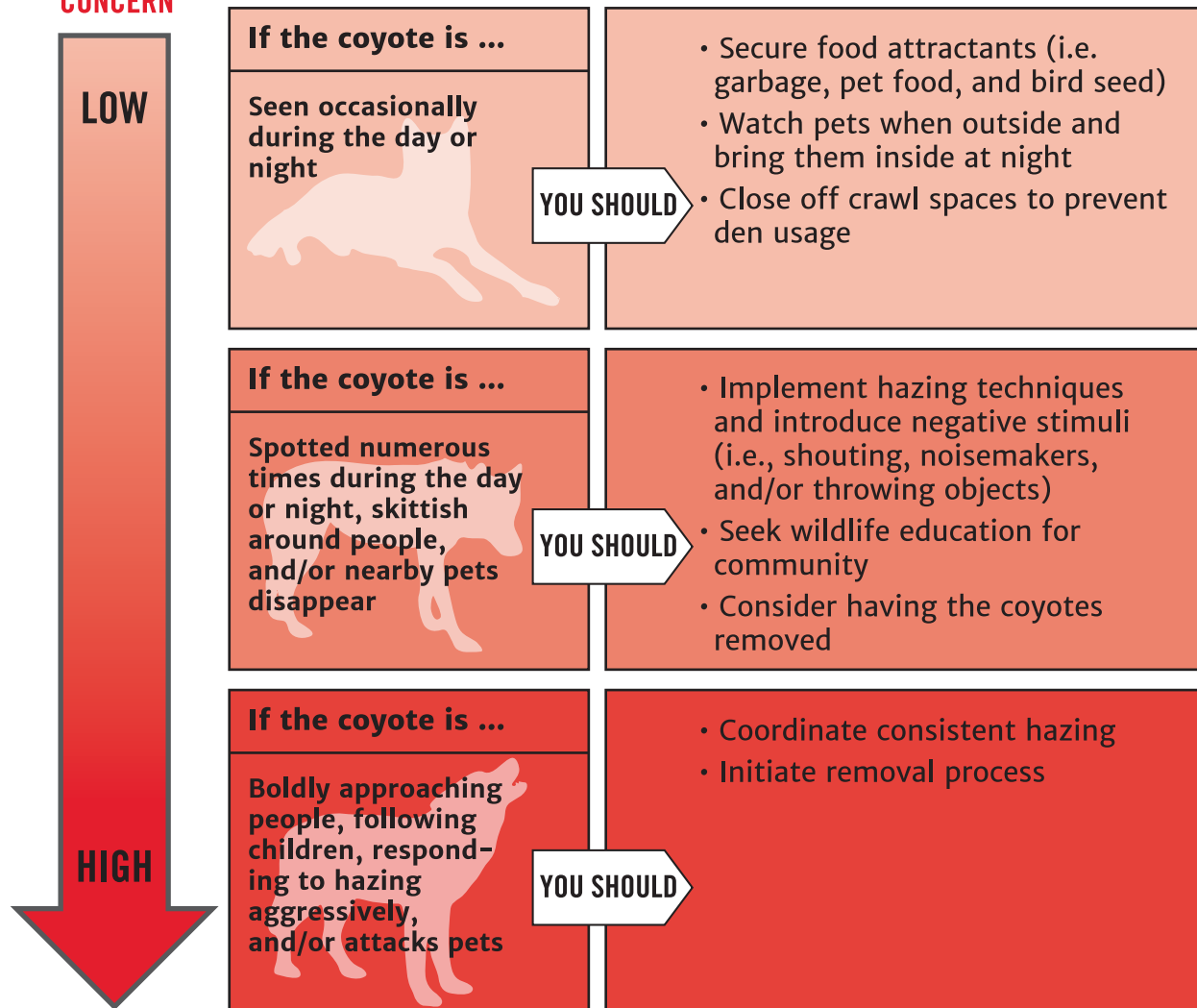
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