



Curious About Coyotes?

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THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

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Urban Coyote Research Project

- 450+ coyotes radio-collared since 2000
- Documented over 100,000 locations
- Largest urban coyote study in the world

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Slides and resources posted here:



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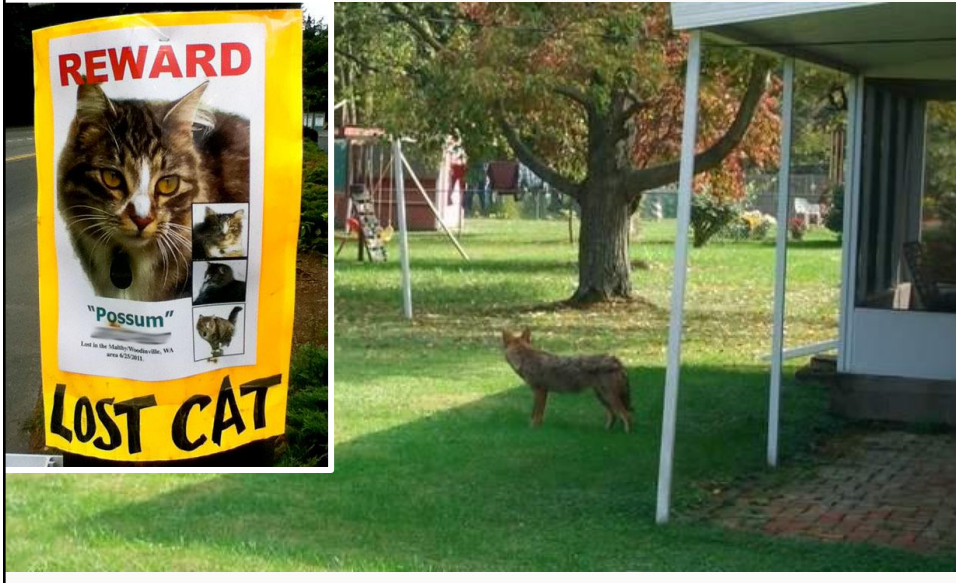
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Living with Coyotes



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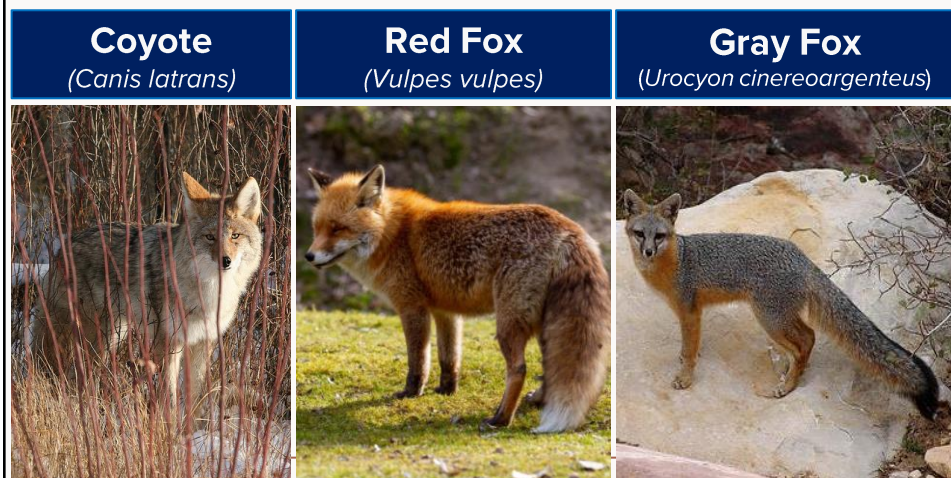
Living with Wild Canids



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The Canid Family

- ▶ 3 species of wild canids in Ohio, Indiana, and Kentucky

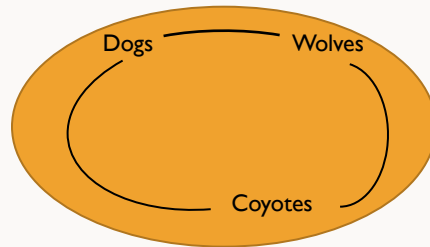


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Coyote Lineage



- ▶ Are coyotes related to our pet dogs?
- ▶ Yes, but very distantly



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Average Size

Gray Wolf



55 - 100
pounds

Coyote



25 - 35
pounds

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Coyotes of a Different Color



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Wily E. Coyote and Road Runner

Wily – skilled at gaining an advantage, especially deceitfully






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Coyote Range: Past to Present

Pre-settlement




Coyotes had to outcompete and outwit larger predators...
and continued to exist despite extreme persecution.


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Coyote Range: Past to Present

Pre-settlement





Current

Expanded range into rural forests, fields, agricultural areas,
pastures, and...
...into urban areas in the 20th century.

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The Urban Coyote

- ▶ Coyotes living in our urban areas
 - ▶ Cities, suburbs, residential areas
 - ▶ Early 1990's – 20 or less
 - ▶ Late 1990's – 350
- ▶ Urban Coyote Research Project
 - ▶ Cook County, Illinois
 - ▶ 2000 – currently
 - ▶ Ecology of coyotes in great Chicago area





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Where Are Urban Coyotes Living?

Green spaces important habitat.
Avoiding humans during the day – more active at night.

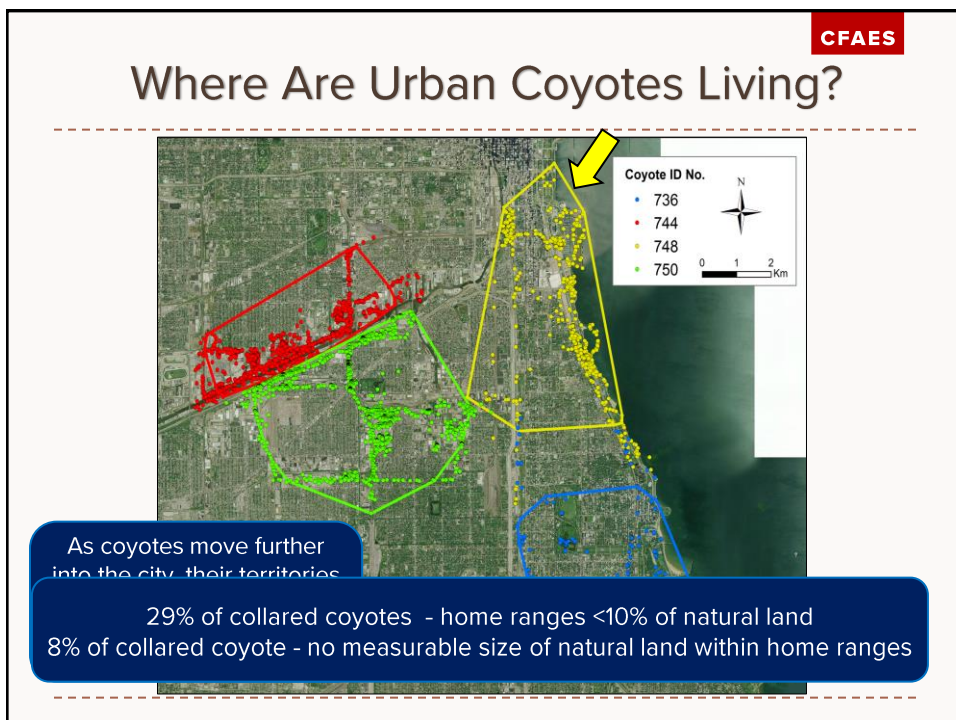


Golf courses used most at night and during the off-season in order to avoid human presence.

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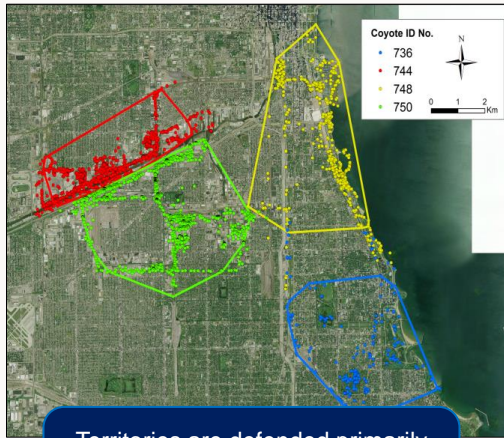
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Where Are Urban Coyotes Living?



Territories are defended primarily through **scent marking** and **howling** and rarely through attack.

- ▶ Every coyote group has a territory
 - ▶ Rural – 5-12 sq. miles
 - ▶ Urban – 2-3 sq. miles
- ▶ **Avg. coyotes/square mile = 0.5**
 - ▶ Midwest urban areas
 - ▶ Other studies report 0.03-2 coyotes/sq. mile
- ▶ Urban coyotes are very successful
 - ▶ Survival rate higher

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Coyote Survival Estimates

- ▶ Ohio annual survival rate is 28%
 - ▶ Pressures from hunting and trapping
- ▶ Outside Chicago
 - ▶ 33% annual survival rate
 - ▶ 0.13% for pups
- ▶ Chicago survival rates 60-70%
 - ▶ 60% for pups
- ▶ “Big Mama”
 - ▶ 11 year old female
 - ▶ Died of natural causes



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The Success of Urban Coyotes



- Carnivores
- Opportunistic
- Flexible

Food is readily available to coyotes in urban areas, both natural and artificial.

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The Success of Urban Coyotes



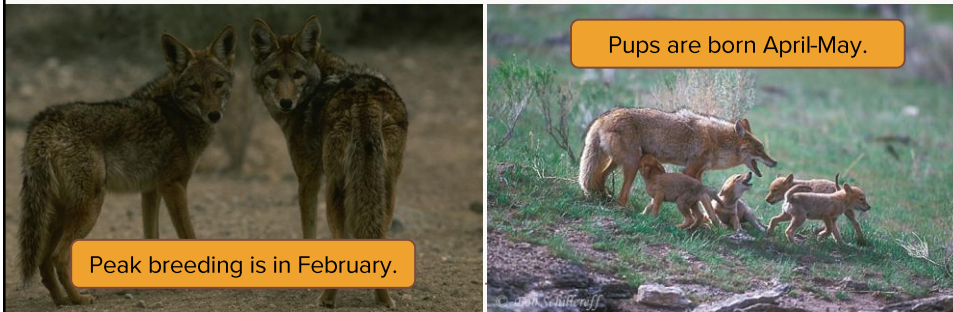
It is also the way coyotes live that makes them successful.

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The Coyote Family Group (Pack)

- ▶ Strongly monogamous mated pair
- ▶ Pack dedicated to survival of the pups (2-8 coyotes)
- ▶ Litter size fluctuates due to availability of resources and their own population densities
 - ▶ 4-7 pups/year/mated pair



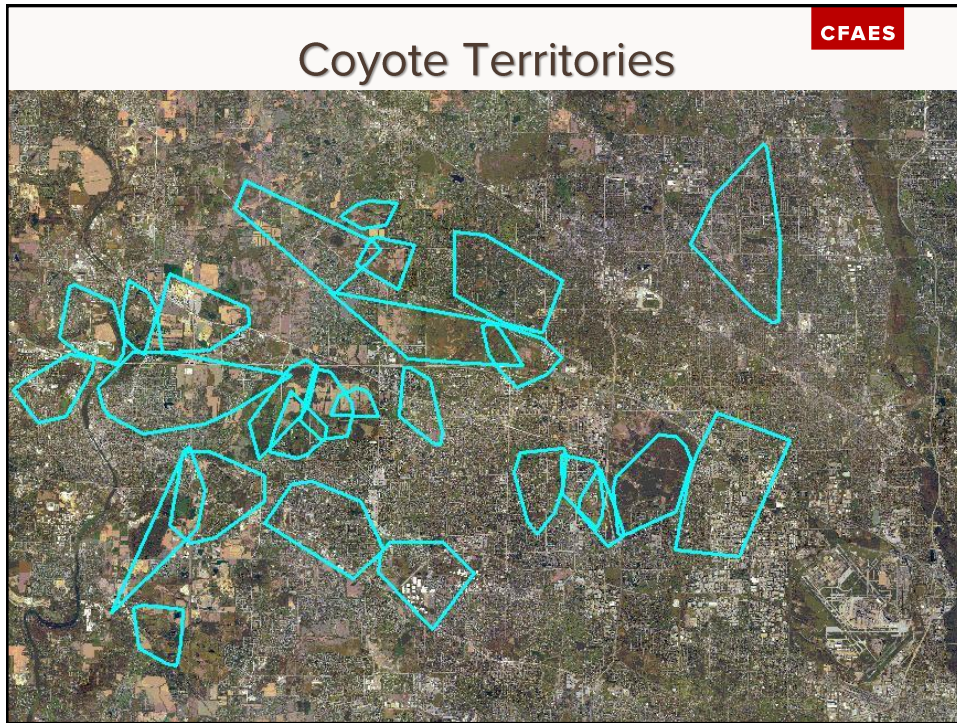
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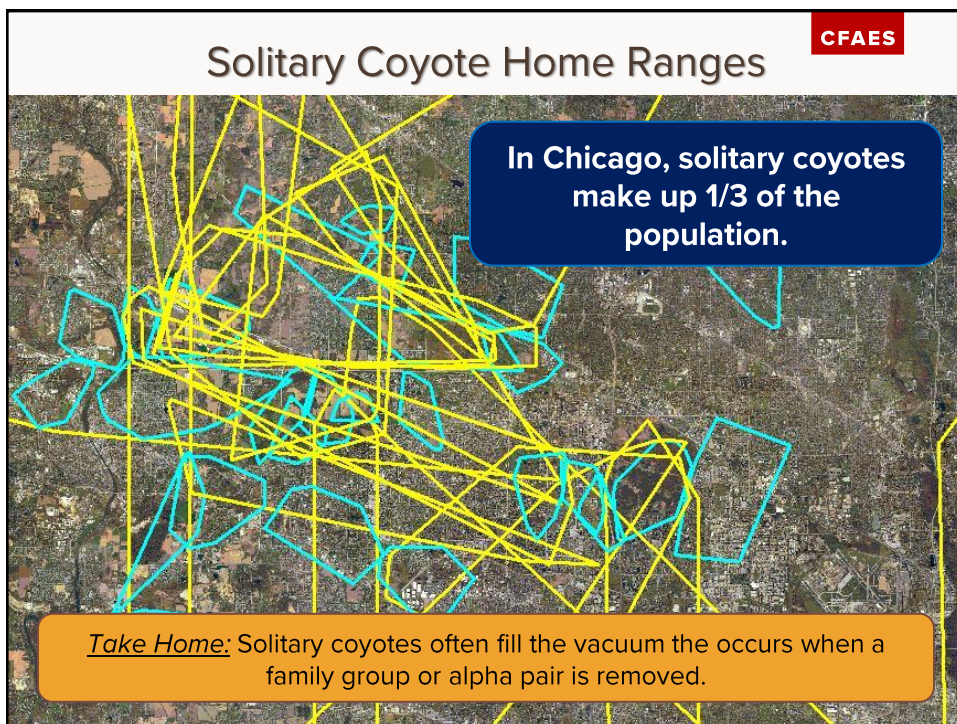
Signs of Wild Canids



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Humans and Coyotes

- ▶ 4% (14 of 446) coyotes reported as nuisance
 - ▶ Largely undetected
 - ▶ What is conflict?
- ▶ Of 700 Chicago coyotes radio collared:
 - ▶ 0 have bitten people
- ▶ Attacks on humans are extremely rare
 - ▶ Most in SW US
 - ▶ Attacks in Midwest remain isolated and rare
- ▶ 2000-3000 dog bites/year in US (including some fatalities)
 - ▶ 2013 – no coyote bites, 3822 bites from domestic pets



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What creates a nuisance coyote?

- ▶ Coyote 434
 - ▶ Lived in urban wooded marsh
 - ▶ Used powerline easement to avoid homes & yards
- ▶ Became nuisance when attracted to food in yard



Future coyote attacks can be reduced or prevented through **modification of human behavior** and **public education** designed to *prevent the habituation of coyotes*.

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Coyote Conflict Prevention

- ▶ Eliminate any food.
 - ▶ Pet food, large fruit from trees, bird feeders that attract rodents, secure compost piles in bins and don't compost meat or fish, secure trash and put out in AM, control rodents
- ▶ Eliminate shelter and cover.
 - ▶ Remove brush, weeds, tall grass, piles of lumber, sheds, barns
- ▶ Make yourself look big.
 - ▶ Harass coyotes with noise, spray, or other deterrents.



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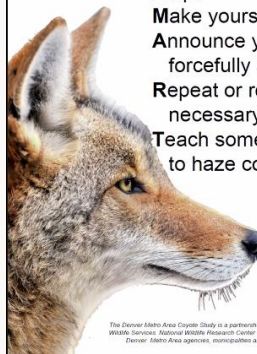
Hazing (Scare) Methods

- ▶ **Yelling and waving arms while approaching the coyotes**
- ▶ **Noisemakers:** whistles, air horns, bells, "shaker" cans full of marbles or pennies, pots/pans banged together
- ▶ **Projectiles:** sticks, small rocks, cans, tennis balls, and/or rubber balls
- ▶ **Other:** hoses, water guns with vinegar water, pepper spray
- ▶ **Be Smart:** Remove earbuds, avoid dens, don't let dogs play with coyotes

Denver Metro Area (DMA) Coyote Study Site

Help Reduce Coyote Conflict in This Area.

Aggressively Haze Coyotes When You See Them.



Stop.
Make yourself look big.
Announce yourself; shout forcefully at the coyote.
Repeat or reinforce, if necessary.
Teach someone else how to haze coyotes.

The Denver Metro Area Coyote Study is a partnership between the USDA Wildlife Services, National Wildlife Research Center (NWRC) and several Denver Metro Area agencies, municipalities and jurisdictions.



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Potential Conflict Drivers:



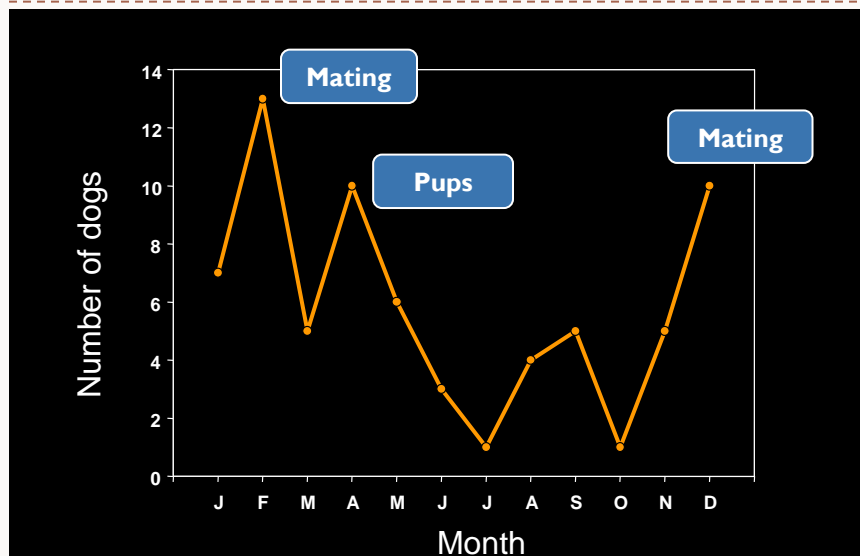
- ▶ Coyote behaviors
 - ▶ Boldness
 - ▶ Proximity tolerance



- ▶ Dogs
 - ▶ Dogs may mute hazing response
 - ▶ Defensive during certain seasons

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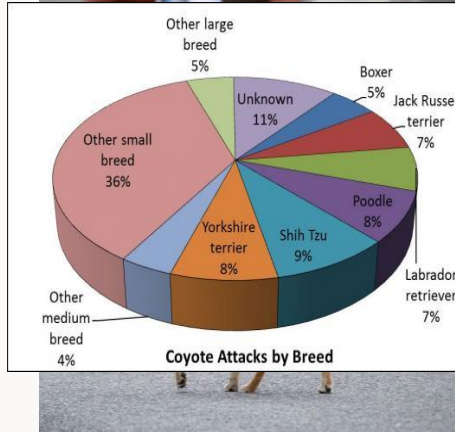
Seasonal Pattern of Coyote Attacks on Dogs



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Pets and Coyotes



Dogs

- ▶ Medium – large dogs
 - ▶ Most conflict during late winter to early spring
 - ▶ Mating (Jan-Feb)
 - ▶ Pup rearing (Mid-April – May)
- ▶ Small dogs
 - ▶ If coyotes are around...
 - ▶ Don't let them off leash
 - ▶ Don't walk them at night
 - ▶ *Most attacks occur at night when the dogs are unattended*

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Pets and Coyotes

Cats

- ▶ Studies of coyote predation on cats in urban areas show...
 - ▶ Reduction in cat numbers
 - ▶ Some have also shown an increase in songbird numbers
- ▶ If coyotes are around...
 - ▶ Keep cats indoors
 - ▶ Outside supervision

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Keeping Poultry Safe

- ▶ Strong, fortified enclosures are the best way to prevent predation.
- ▶ Sturdy fencing, fully enclosed, extending into the ground
- ▶ Overhead protection (from birds of prey)
- ▶ Motion sensor lights and sounds may provide temporary protection until other protective measures are in place
- ▶ Trapping/hunting to eliminate problem coyotes and foxes

go.osu.edu/predators
u.osu.edu/poultry

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Our Actions Influence Coyote Behavior

- ▶ Our actions can change that:
 - ▶ Food
 - ▶ Comfortable environment
- ▶ We need to be diligent about keeping coyotes and foxes scared
- ▶ Look for signs of changed behavior
 - ▶ Be smart about removal of a coyote



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Recognizing Threats and When to Act:

Coyote Behavior/Activity		Responses/Actions
Rarely or occasionally seen at night, more rarely during dusk and dawn	LOW CONCERN	Limit food sources Supervise pets and don't let them run free
Occasionally seen during the day Frequently seen at night Free-ranging pets occasionally disappear		Limit food & supervise/leash pets Use hazing and other negative stimuli (shouting, throwing objects)
Frequently seen during the day Stalking or attacking pets Fleeing from people	HIGH	Consider removal program in conjunction with education Prohibit/limit feeding of wildlife Supervise pets and continue hazing
Approaching people aggressively Growling, barking when hazed Following children Preying on pets in yards		Initiate removal program in conjunction with education Prohibit feeding of wildlife Supervise pets and continue hazing

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Protecting Livestock


- ▶ Smart removal of problem coyotes
 - ▶ OSU Sheep Team Blog - u.osu.edu/sheep
 - ▶ Search 'predator' tab
- ▶ Livestock Predation Prevention/Management:
 - ▶ Fencing
 - ▶ Barn calving/lambing
 - ▶ Guard animals – llamas, dogs
 - ▶ Frightening devices – fladry, bells, lights
 - ▶ Hunting/trapping



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USDA Wildlife Coyote Fact Sheet



Quick Links

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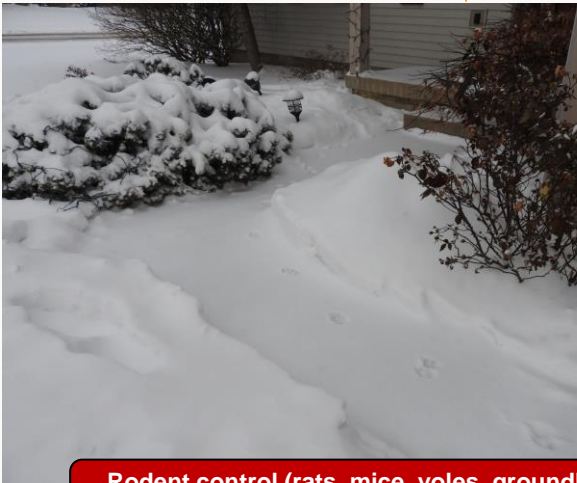

Posted on my blog:

u.osu.edu/wildside

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Impacts of Predation

**Rodent control (rats, mice, voles, groundhogs); Canada geese;
White-tailed deer fawn mortality**

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What Does the Future Hold?

- ▶ Coexisting
- ▶ Coyotes operating as ghosts of the city
- ▶ But they are aware of us, learning from us, and reacting to our actions
- ▶ Still more to learn...

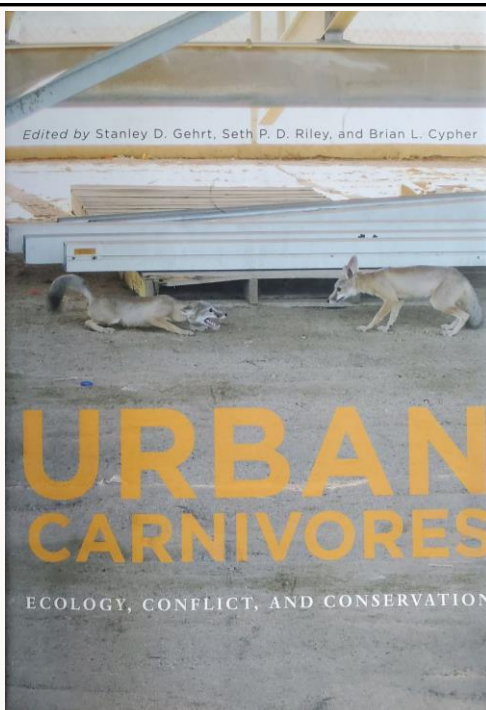
"Urban coyotes are successful in spite of people, not **because** of people."
~Stan Gehrt



www.urbancoyote.com
[research.com](http://www.urbancoyote.com)

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▶ Urban Carnivores

- ▶ Stanley D. Gehrt
- ▶ Seth P. D. Riley
- ▶ Brian L. Cypher

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Urban Coyote Fact Sheets



Urban Coyotes: Conflict & Management

Stanley D. Gehrt
Associate Professor of Wildlife Ecology and
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School of Environment and Natural Resources

Courtney Quirin
Wildlife Research Assistant
Max McGraw Wildlife Foundation

Coyotes have become the top carnivores in most metropolitan areas across North America. Rarely seen and occasionally heard, coyotes generally avoid humans, even when they inhabit largely urban and suburban areas. Consequently, many coyotes live in close proximity to people without ever being noticed.

However, as coyote populations begin to thrive in urban areas, so have reports of conflicts with people. Originally from the open grasslands and deserts of Mexico and central North America, coyotes have expanded their range across North America, and now are found in an increasing number of cities in the United States and Canada.


Despite thriving in urban areas, coyotes tend to avoid humans, shifting a majority of their activity to evening hours and spending most of their time in wooded patches and shrubbery rather than in residential, commercial and industrial areas.

Since coyotes are opportunistic creatures, their behaviors can vary from individual to individual. Consequently, some coyotes are able to thrive in urban areas with elevated human activity and minimal sustenance or human places, like 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 steps toward preventing or reducing conflicts with coyotes. This should be the first step in any urban coyote management plan.

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



Community-Level Strategies for Urban Coyote Management

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Max McGraw Wildlife Foundation

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Extension Wildlife Specialist
School of Environment and Natural Resources

As coyotes expand their range into metropolitan areas across North America, conflicts between coyotes 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, like 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.

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COMMUNITY-LEVEL APPROACHES TO

www.woodlandstewards.osu.edu

Behind the ears and around the face, but coloration can vary from silver-gray to black. Most adults weigh 30-35 pounds (specifically large individuals weigh 40-45 pounds), although their full coats often make them appear larger.

Showing success increases in various places sustained near coyotes. Coyotes may also show white-tailed deer population growth in high-density areas through predation on fawns.

TYPES OF CONFLICTS WITH COYOTES

For more information about this urban issue, see The Ohio State University Extension Fact Sheet—Urban Coyotes: Conflict and Management.

level programs.

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