



City and County of Broomfield



Coexistence with Wildlife Policy

August 24, 2010

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City and County of Broomfield Coexistence with Wildlife Policy

OVERVIEW OF KEY POINTS IN THE COEXISTENCE WITH WILDLIFE POLICY

City Council requested that Broomfield staff develop a policy that addresses guidelines for wildlife issues and strategic actions to promote safe coexistence with wildlife in the community. The Coexistence with Wildlife Policy (“Coexistence Policy”) addresses coyotes, incorporates the Prairie Dog Policy, and also includes brief summaries of information about other urban wildlife species.

The purpose of the Coexistence Policy is:

- to increase the community’s knowledge and understanding of how to safely live with wildlife;
- to foster an appreciation and enjoyment of local wildlife; and
- to develop guidelines for response to conflicts with wildlife.

The Coexistence Policy reflects the City and County of Broomfield’s responsibility for maintaining public safety as its primary goal. The Coexistence Policy also recognizes the importance and intrinsic value of local wildlife to the native prairie ecosystem and Broomfield’s residents. The Coexistence Policy also seeks to achieve a balance between the importance of public safety and the value of wildlife to Broomfield’s prairie ecosystem and community as a whole.

The Coexistence Policy:

- includes a general biological overview for each particular wildlife species;
- provides recommendations on how citizens can safely coexist with various wildlife species commonly found in Broomfield;
- recommends education and outreach actions that will be implemented to increase citizens’ knowledge about local wildlife and potential causes of conflicts;
- outlines standard operating procedures for responding to conflicts between humans and wildlife; and
- will be adapted to future changes and needs as issues related to other wildlife species arise.

Key pieces of information from the Policy are summarized below.

COLORADO DIVISION OF WILDLIFE (CDOW) GENERAL TIPS FOR COEXISTENCE WITH WILDLIFE

- Do not feed wildlife. Feeding songbirds is fine, but be aware that the fallen birdseed may attract other animals. Place bird feeders where they are not accessible to other wildlife species.
- Cover window wells to prevent wildlife from becoming trapped in the wells. Cover with commercially available grates or bubbles, or make a cover yourself using chicken wire.
- Close holes around and under your foundation so animals will not be tempted to homestead. Bury wire mesh 1 to 2 feet deep in places where animals might gain access by digging under the foundation.
- Store garbage in containers with tight fitting lids and keep the cans in an enclosed garage or shed until pick-up.
- Keep pet food and water bowls inside.
- Keep cats indoors. This practice provides protection for your pet and also protects native birds from predation by cats.
- Attach chicken wire to an existing fence and plant shrubs adjacent to the fence on your lot to minimize visibility of the backyard by wildlife such as prairie dogs to discourage access.
- Screen fireplace chimneys, furnace, attic and dryer vents and keep dampers closed to avoid “drop-in” guests. Chimney tops should be screened from February to September to prevent birds and other animals from nesting inside. To prevent fire and safety hazards, check with a knowledgeable source before attempting this work.
- Seal all cracks and holes larger than one-quarter inch in diameter to keep out rats, mice, bats, and snakes.
- Water provided intentionally or unintentionally can attract wildlife beyond just mosquitoes. Monitor and empty spare tires, flower pots, and other containers in your yard.
- Do not leave piles of wood, junk, or other items in your yard that could inadvertently be providing shelter for wildlife.
- Confirm that these improvements are allowed by your Homeowners Association, if applicable.

CDOW TIPS FOR COEXISTENCE AND AVOIDANCE OF CONFLICTS WITH COYOTES

- Never feed coyotes. It is illegal to feed coyotes in Broomfield based on CDOW Regulations.
- Feed cats and dogs, as well as other pets, indoors.
- Keep garbage and compost in securely closed cans or inside a storage area.
- Keep cats and dogs indoors or in completely enclosed runs, especially at night and do not assume that a fence will keep a coyote out of your backyard. This practice provides protection for your pet and also protects native birds from predation by cats.
- Keep dogs on short leashes while walking and attended outside. CDOW recommends a leash no longer than 6 feet.
- Clean up fruit that falls from trees onto the ground.
- Clean under bird feeders and make certain that feeders are out of reach of coyotes.
- Clean barbeque grills regularly, including the ground around the grill.
- Secure and maintain fences in good working order.
- Use a flashlight or turn on your porch light at night or at dusk/dawn so you can check to make sure that your yard does not have an unexpected wildlife visitor before stepping outside with your pet on a leash.
- Leave noisemakers on hand to scare away coyotes that may enter your yard, such as whistles and horns.
- Don't run away or turn your back on a coyote.
- Turn to face coyotes and look directly at them.
- Do not allow a coyote to get between you and your pet or child.
- Yell, clap hands, blow a whistle and try to make yourself look larger if you encounter a coyote.
- Note where and when you have an encounter with a coyote. Coyotes often follow routines. Avoid this area in the future if the encounter was negative.
- Habituated coyotes are often a neighborhood issue. Work with your neighbors and homeowners association, if applicable, to make sure attractants are removed from yards to minimize negative coyote interactions.

WILDLIFE CONTACT INFORMATION

Contact Information for General Wildlife Questions

For general information about wildlife, please call: Broomfield Wildlife Masters Volunteer Program to access the Wildlife Help Line at 303-464-5554.

For general information or concerns about wildlife, you may also call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency.)

For information about public health questions related to wildlife, please call: Broomfield Public Health and Environment Division at 720-887-2236.

For questions about the Coexistence with Wildlife Policy, please call: Broomfield Open Space and Trails Division at 303-438-6216.

Contact Information for Coyote Questions

For general information or concerns about coyotes, please call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency.)

To report a coyote emergency where there has been an attack on a human, please call: Broomfield Police at 911

To report the loss of a dog, cat, or other type of pet by a coyote, please call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency. If the pet was attacked while on a leash, you may also call Broomfield Police, Animal Control Unit at 303-464-5557.

For additional information about coyotes, please call: Broomfield Wildlife Masters Volunteer Program to access the Wildlife Help Line at 303-464-5554.

COYOTE RESPONSE OPTIONS

The matrix below outlines coyote response guidelines. These responses are not automatic but are intended to serve as a guide for each situation.

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Coexistence with Wildlife Policy
Approved August 24, 2010

COYOTE INTERACTION TYPE	COYOTE RESPONSE OPTIONS										
	Caller reports interaction to Broomfield Police-Animal Control Unit	Caller reports interaction to COOW	Caller reports interaction to Broomfield Police 911	Public Education Materials	Mapping	Signage	Low-Intensity Hazing by Citizen	High-Intensity Hazing by Broomfield Staff	Coyote Public Education Meeting	Site Investigation to Locate Potential Attractants	Lethal Control
Observation	~			X-if requested by caller							
Sighting	~			X-if requested by caller							
Encounter	~			X-if requested by caller		*	X				
Unattended Pet Attack/Loss		~		X	X		X				
Attended Pet Attack/Loss	X	X		X	X	*	X	*	*	*	*
Human Incident	X	X		X	X	X	X	*	*	*	*
Human Attack Reported Later After Attack Occurred	X	X		X	X	X		X	X	X	X
Human Attack In Progress		X	X	X	X	X		X	X	X	X

Response Key:

~ Citizen may call if desired, but it is not necessary

* Response may be used if the situation warrants as described in further detail by the Co-Existence with Coyotes Policy

X Action is warranted

The above chart also refers to these types of hazing:

Low-Intensity Hazing: Hazing techniques include human presence, loud noises, spraying water, bright lights, shouting, pepper spray, and the throwing of objects in a manner not intended to cause harm to the animal. This type of hazing can be conducted by citizens.

High-Intensity Hazing: Hazing techniques can include low-intensity hazing methods and the use of paint or pepper ball guns by City and County of Broomfield Public Works and Open Space staff authorized by the City and County Manager to use these methods. High-intensity hazing would be considered if low-intensity hazing does not appear to instill fear in the coyote(s) and/or public safety concerns warrant more intense hazing when the conflict is escalating and the safety of humans, pets, and/or coyotes is at risk.

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1. INTRODUCTION

1.1 Purpose of the Coexistence with Wildlife Policy

In late 2008 and early 2009, the community experienced several conflicts between humans and coyotes. Two separate coyote bites involving humans occurred in January and February of 2009. In response, City Council requested that Broomfield staff develop a policy that addresses not only coyote conflicts but also guidelines for wildlife issues and strategic actions to promote safe coexistence with wildlife in the community. The Coexistence with Wildlife Policy ("Coexistence Policy") addresses coyotes, incorporates the Prairie Dog Policy, and also includes brief summaries of information about other urban wildlife species.

The purpose of the Coexistence Policy is:

- to increase the community's knowledge and understanding of how to safely live with wildlife;
- to foster an appreciation and enjoyment of local wildlife; and
- to develop guidelines for response to conflicts with wildlife.

The Coexistence Policy reflects the City and County of Broomfield's responsibility for maintaining public safety as its primary goal. The Coexistence Policy also recognizes the importance and intrinsic value of local wildlife to the native prairie ecosystem and Broomfield's residents. The Coexistence Policy also seeks to achieve a balance between the importance of public safety and the value of wildlife to Broomfield's prairie ecosystem and community as a whole.

The Coexistence Policy:

- includes a general biological overview for each particular wildlife species;
- provides recommendations on how citizens can safely coexist with various wildlife species commonly found in Broomfield;
- recommends education and outreach actions that will be implemented to increase citizens' knowledge about local wildlife and potential causes of conflicts;
- outlines standard operating procedures for responding to conflicts between humans and wildlife; and
- will be adapted to future changes and needs as issues related to other wildlife species arise.

1.2 Methodology and Public Process

The Coexistence Policy development was coordinated by the Open Space and Trails Division with participation from the Animal Control Unit within the Police Department, the Health and Human Services Department, the Recreation Services Division, the City and County Manager's Office, and the Colorado Division of Wildlife (CDOW). The Coexistence Policy was reviewed and evaluated by the City and County Attorney's Office and an independent wildlife biologist.

The public process solicited feedback from the community on the Coexistence Policy in several ways. A public open house was held on May 26, 2010. Approximately 12 people attended and had the opportunity to provide their recommendations on comment cards. The Coexistence Policy was also posted on the Broomfield web site so citizens could provide comments via the internet.

The Open Space and Trails Advisory Committee and the Parks and Recreation Advisory Committee reviewed the document and provided direction at the following meetings:

- January 22, 2009 – OSTAC, discussion of concept for creating Policy
- February 26, 2009 – OSTAC, discussion of approach to Policy
- April 2, 2009 – OSTAC, Update on City Council direction in creation of Policy
- April 30, 2009 – OSTAC, Status report on creation of Policy
- June 25, 2009 – OSTAC, Staff presentation of Draft Policy, OSTAC review and discussion
- July 30, 2009 – OSTAC, Review, comment, and discussion on Draft Policy
- August 19, 2009 – PRAC, Review, comment, and discussion on Draft Policy—summary of comments sent out with edits
- August 27, 2009 – OSTAC, Review and comment on Draft Policy; review PRAC comments
- December 3, 2009 – OSTAC, Brief update on Draft Policy
- January 28, 2010 – OSTAC, Handout of Draft Policy to OSTAC
- February 25, 2010 – OSTAC, Review, discussion and recommendation for City Council study session Draft Policy
- April 22, 2010 – OSTAC, Overview of CDOW and role in developing Wildlife Policy
- July 22, 2010 – Joint OSTAC and PRAC review of Final Draft Policy

City Council reviewed the Coexistence Policy at a study session held on April 20, 2010. A wildlife biologist from Walsh Environmental Scientists and Engineers also reviewed the work. The Coexistence Policy has been refined based on these comments.

A bibliography is included at the end of the Policy.

2. WILDLIFE HABITAT AND CONSERVATION

2.1 Review of Broomfield's Wildlife Habitat and Wildlife Species

The City and County of Broomfield currently has 7,809 acres of open lands. "Open lands" is an umbrella term for open space, parks, conservation easements, golf courses, school parks, drainage ways, and other undeveloped land. Of the total of 7,809 acres of open lands, Broomfield currently has 2,381 acres of public open space and another 2,421 acres of jointly held open space with Boulder County for a total of 4,802 acres. Open Space is defined by the 2005 Open Space, Parks, Recreation and Trails Master Plan ("OSPRT Master Plan") as being land intentionally protected from development and set aside for unstructured recreation and the appreciation of natural surroundings. Open Space may contain trailheads and trails, fishing facilities, wildlife viewing areas, and other facilities that support uses compatible with site resources and conditions. Conservation easements that preserve private land from development and agricultural lands also fall within the definition of open space.

Common wildlife species that inhabit Broomfield open lands include coyotes, deer, red fox, prairie dogs, badgers, rabbits, raccoons, skunks, muskrats, snakes, Canada geese,

insects, beaver, and squirrels. Miscellaneous small rodents include the prairie vole, meadow vole, deer mouse and western and plains harvest mouse. Common bird species include ten species of waterfowl, waterbirds, a variety of songbirds including western meadowlarks, horned larks, lark buntings and several species of sparrows. Ferruginous hawks, northern harriers, and short-eared owls can nest on the ground in open grassy areas, while burrowing owls nest in abandoned prairie dog burrows. Swainson's and red-tailed hawks, golden eagles, bald eagles, great horned owls, screech owls and long-eared owls have also been observed using open woodlands and forested areas.

2.2 OSPRT Master Plan and Comprehensive Plan Goals Related to Wildlife

Both the Broomfield Comprehensive Plan and the OSPRT Master Plan commit to a goal of achieving 40% of the "Planning Area" to be designated as Open Lands at build-out. The "Planning Area" is a term used in Broomfield's Comprehensive Plan that refers to land within Broomfield and land adjacent to Broomfield's boundaries. Broomfield continues to pursue land acquisition for open space and the protection and enhancement of wildlife habitat. The OSPRT Master Plan calls for a wildlife/environmental analysis to be carried out as a part of the development review process for all new projects. Other wildlife goals within the OSPRT Master Plan identify the types of habitat that should be sought for preservation and conservation both for acquisition and the public land dedication process for developments. Sites with habitat features such as water and wetlands, riparian corridors, mature trees and vegetation, and contiguous open lands to encourage wildlife corridors are all identified as goals for acquisition and wildlife habitat protection.

2.3 Overview of Open Space Conservation and Wildlife Habitat Improvement Practices and Project Work

The City and County of Broomfield is continuously working to improve and protect the quality of wildlife habitat in the community. The general wildlife goal for the protection of Broomfield's open space is to promote and sustain biodiversity and healthy ecosystems. The protection of native vegetation, soils, and hydrologic function forms the foundation for diversity and sustainability in wildlife, and the City and County of Broomfield will focus management efforts on the health of the overall ecosystem.

In 2003, the City and County of Broomfield formally adopted the Policies for Prairie Dog Conservation and Management ("Prairie Dog Policy"), which addresses management issues associated with prairie dogs. Since 2003, Broomfield has constructed 10 prairie dog barriers spanning approximately 12,000 feet. These barriers help to minimize conflicts with humans and expansion into conflicting land uses. The barriers are constructed as a potential alternative to more intensive management options such as relocation or extermination. Broomfield has also completed 8 prairie dog relocations moving over 850 prairie dogs to open space sites in Broomfield.

Broomfield has carried out several revegetation projects, most recently on The Field Open Space and Broomfield County Commons Open Space where former agricultural

land was reseeded with native prairie grasses. Both sites have begun the transformation to a native short-grass prairie ecosystem.

Broomfield staff has worked with volunteers and the Broomfield Open Space Foundation to complete several projects to enhance habitat for birds and raptors. Two major raptor perches have been installed on key open space sites and dozens of nesting boxes and bird houses have been installed in the open space, most notably at Broomfield County Commons Open Space. Volunteers from local groups such as the Boy Scouts of America, Girl Scouts of America, several local businesses, the Broomfield Open Space Foundation, and the Church of Jesus Christ of Latter-Day Saints Broomfield-Westminster Stake also worked with Broomfield staff on several projects to plant shrubs and trees in riparian corridors and remove garbage and debris from open space areas.

Wildlife issues and habitat protection are also addressed by the Broomfield staff during the development review process. Typically, developers provide an environmental and wildlife analysis with new development projects. The analysis of the site addresses the presence of threatened and endangered species, wetlands, or any other key habitat resources such as mature trees, unique topography, or vegetation. Any development must comply with environmental regulations at the federal, state and local level.

There are several different efforts at the staff level to continue to identify and implement best practices for wildlife management and habitat. Broomfield open space staff participates in regional committees for wildlife management, including the Front Range Local Government Prairie Dog Working Group and Urban Wildlife Working Group (focus on coyotes). Both of these groups meet quarterly and review management plans, best practices, research projects, and wildlife issues.

3. POLICY FOR COEXISTING WITH COYOTES

3.1 Purpose

The purpose of the Coexisting with Coyote Policy ("Coyote Policy") is to provide a public education strategy to promote understanding of the concept of coexistence with coyotes and to outline guidelines for responses to conflicts with coyotes to resolve and reduce human-coyote conflicts in a consistent and responsive manner. Public safety will continue to be the priority for the City and County of Broomfield. Proactive measures to minimize conflicts and encourage the appreciation of wildlife are also key principles that shape the Coyote Policy and support the overarching goal of public safety. The Coyote Policy will employ education and outreach tools as the primary instrument in managing human-coyote conflicts. However, direct action such as hazing which means the immediate use of deterrents to move an animal out of an area or discourage an undesirable behavior or activity may be needed to address habituated coyotes at sites where persistent conflict occurs. (Section 3.5.3 provides a detailed definition of low-intensity hazing and high intensity hazing methods) Broomfield also recognizes that there are situations where immediate lethal control is necessary.

3.2 Overview of Coyote Biology, History, Habitat, and Behavior

3.2.1 Coyote Biology and History

Coyotes are usually about four feet in length and typically weigh between 30 and 40 pounds. The coyote's coat color can be a wide mixture of colors including white, gray, brown, and rust. These colors may change over the course of an animal's lifetime.

Although coyotes live in family groups, they often travel and hunt alone or in loose pairs. In this way they are different from wolves that generally hunt in packs. (Gehrt 2006 p.11) Coyotes are opportunistic hunters as they eat a variety of small rodents, rabbits, prairie dogs, plants, grasses. As omnivores, they also eat a wide variety of foods, including many things that can be found in residential neighborhoods such as garbage, fruit, pet food, bird seed, and domestic animals.

Coyotes are active both day and night but are much more active at night, particularly times around **dawn and dusk**. As the seasons change, coyotes must constantly modify their diets to fit available resources for the time of year. For example, in the winter months, mammals account for much of their diet while plants and fruits make up more of their diet in the summer months. This is due to the low availability of plant material during the cold winter months. Historically, coyotes have been the target of widespread extermination efforts. In an extermination effort from 1915 to 1947, bounties were paid on 1,884,897 coyotes in the United States. Coyotes typically rebound from hunting or disease very quickly and will refill the territory gaps in their habitat. The steep decline in the range and populations of wolves, bears, and mountain lions has allowed coyotes to thrive in many areas as the top predator in the food chain.

Coyotes have few natural predators in Colorado, outside of humans. The control of predators on grazing lands became a federal government responsibility by an act of Congress in 1931, under the Animal Damage Control Program. Through this program, an estimated 70,000 to 85,000 coyotes are killed annually in 13 western states including Colorado (Owen, Chiras, and Reganold). At the state level, conflicts with coyotes on agricultural or grazing lands are overseen by the Colorado Department of Agriculture. Non-agricultural conflict with coyotes is the responsibility of the CDOW. Coyotes are currently managed as both furbearers and small game species in Colorado, and there is a year-round coyote hunting season with a valid license from the CDOW (where firearms are not excluded by local or state regulations). Colorado Revised Statue 33-6-107(9) also allows for year-round take of coyotes on private lands without a CDOW license when the animal is causing damage to agricultural crops, livestock, or real or personal property. In Broomfield, the discharge of a firearm is not allowed except in very limited situations. The details concerning firearm discharge are explained in the Broomfield Municipal Code in Section 9-72-020.

In terms of reproduction, females breed just once annually, in January to March, and produce a litter of about six pups after a gestation period of nine weeks. The expectant female burrows up to 20 feet into a hillside or bank to prepare a nursery den for the young and frequently digs a second burrow in case the litter is disturbed in the first

location. The male brings food to the nursing mother. The young weigh only about nine ounces at birth, but develop rapidly and are weaned at seven weeks. As they mature, pups spend much time and energy in aggressive interactions with littermates that eventually influence their social positions.

3.2.2 Coyote Habitat

Coyotes exist across the United States and can inhabit all areas of Colorado where food sources are available. Their range has expanded greatly over the past half century and they have adapted to live in many urban and suburban areas. In Colorado they can be expected to inhabit a great variety of ecosystems from rural natural areas to developed, populated areas including downtown Denver. Coyotes are intelligent and stealthy predators that can quickly adapt to different environments.

Before wolves were exterminated from much of the United States, wolves and coyotes shared the same habitat and were considered interference competitors. They are interference competitors because both wolves and coyotes use the same habitat and resources. Wolves are more aggressive and limit coyote access to resources which in turn limits their populations. Wolves are also known to purposefully target and kill coyotes even if they are not intruding in a wolf's territory. A likely explanation is that the wolves do this simply because the coyotes represent competition. Without wolves present to limit their populations, coyotes are able to take full advantage of the available habitats and resources.

Habitat fragmentation occurs when development or environmental and landscape changes break natural areas into 'islands' of habitat that typically reduce wildlife populations based on the loss of supporting habitat. The strain on wildlife based on finding adequate habitat, food, cover, and resisting competition and disease is known as environmental resistance. Typically fragmented habitat causes greater environmental resistance, and therefore lower populations for the surrounding wildlife. Coyotes may be an exception to this because of their adaptability to the urban environment and their tolerance to fragmented habitat. Coyotes have learned to find food, water and cover within suburban or developed areas and therefore are not necessarily subject to greater environmental resistance with lower survival rates in fragmented, urban habitats. (Owen, Chiras, and Reganold)

In the case of coyotes on the suburban front range of Colorado, fragmentation can limit the physical space and habitat that coyotes have to roam, but at the same time the environmental resistance is no greater than in larger natural areas because there is readily available food, cover and water. Because of this, coyote populations can survive, and thrive, in areas like Broomfield. For both family groups and transient coyotes, the living area they occupy will be largely determined by habitat type and food abundance. Habitat and food abundance are related because a rich habitat will hold more resources for the coyote to utilize. In areas like Broomfield, there are populations of prairie dogs and small rodents combined with vegetation and non-traditional food sources, such as fruit trees, garbage, pet food, bird seed, and domestic cats and dogs. This combination makes for a rich habitat and a high abundance of available food, and therefore the

coyotes are able to sustain themselves on a smaller living space at a high density, while increasing opportunity for contact with humans and pets.

3.2.3 Coyote Behavior

The first indicator of territoriality for coyotes is demonstrated in their howling, which alerts other coyotes to territory boundaries and sounds a warning. Visual cues such as raised fur, tail shaking, baring of teeth and growling are used by coyotes in direct defense of territory. The last line of defense is to chase or attack a perceived intruder. Submissive behavior in coyotes can be observed as lowering the head towards the ground, flattening the ears back against the head, and tucking the tail beneath the body. The level of aggression that coyotes use to defend their territory can fluctuate throughout the seasons, but coyotes can be expected to be most aggressive in the spring months during breeding season.

During mating, breeding and pup season, it is not uncommon for coyotes to watch humans and humans with dogs from a short distance to protect territory, mates, and pups. A coyote will also some times "escort" walkers and their pets out of an area that the coyote is trying to protect. This "escorting behavior" is often viewed as stalking by humans. A large dog may be seen as an intruder into the coyote's territory. Smaller dogs may be seen as prey. From a human perspective, the coyote's behavior may be unsettling. There are also other reasons that may be causing the behavior such as the coyote is being fed intentionally or unintentionally and sees humans as a source of food handouts. The coyote could also simply be habituated to humans.

A specific dominance hierarchy exists within a coyote family group where an alpha male and female coyote lead the group. Group leaders typically control all social aspects of the group and can control breeding and reproduction within the group to maintain a population that is suitable for survival based on food and habitat. In some cases, fatalities of coyotes within the group, particularly of the alpha male or female, can cause higher reproductive rates within the group because mating may not be restricted to the group's leaders.

Coyotes living together in a family group inhabit and actively defend a territory from other individuals or groups. A family group will use the same territory for many years if there are enough resources to support them and they are not displaced by competing family groups. Coyotes living as transient individuals have home ranges recognized by an undefined area with relatively flexible borders. Transients that keep to home ranges have a tendency to live in the land between or surrounding the outskirts of other coyote territories.

3.2.4. Potential Reasons for Why Coyote Conflicts Have Increased in Recent Times

As the presence of coyotes in the community gains more attention from the public, there are a number of possible contributing factors to consider. The presence of coyotes in and around developed areas is a function of several key factors. One factor is the

availability of food in developed areas. Another contributing factor is the reduction of optimal coyote habitat by encroaching development. If coyotes are not hazed by humans when they are seen in developed areas, a coyote's natural fear of humans may diminish. This situation results in habituated coyotes investigating food sources and shelter in developed areas and may cause an increase in coyote-human conflicts.

The availability of food for coyotes in developed areas is shaped both by environmental conditions and human behavior. Human behavior can directly attract coyotes into neighborhoods due to food sources that are left available to coyotes, such as garden produce and fruit trees, outside pet food, uncovered compost pits, seed on the ground from bird feeders, unsecured trash, and unattended cats and dogs. Although Colorado Wildlife Commission Regulation 021, C and D prohibit placing or failing to remove substances that may lure coyotes, humans sometimes intentionally feed coyotes. Environmental conditions such as drought and the presence of predators can push prey species like rabbits and mice into residential areas that offer more abundant food and water than natural areas and a safe haven from predators. Cyclical increases in prey populations also occur periodically. Naturally, coyotes will follow the prey into residential areas if there is more opportunity for food in the neighborhood than in open space or park areas. Humans can reshape this behavior by removing possible attractants such as pet food and open garbage bins from residential neighborhoods and decrease a coyote's level of comfort around humans by the use of low-level hazing of habituated coyotes. When walking a dog, a coyote may view the dog as a threat to the coyote's territory. The coyote may attempt to defend its territory by chasing the dog. Dog owners can minimize conflicts by keeping the dog close with the use of a short leash. (See Section 3.3 and 3.5.3 for additional information).

Attacks by coyotes on humans are very rare but they do occur. Attacks typically are associated with coyotes attempting to protect a territory or den site, or gain a food source. As of December 2009, there are two known human fatalities due to coyote attacks. A three-year-old was killed in California in the 1980's. Before this attack, the coyote had been intentionally fed by the family and neighbors. In October 2009, a nineteen-year-old woman later died after being attacked by coyotes while hiking along the Skyline Trail in Cape Breton Highlands National Park in Nova Scotia. (Wilkinson 2009).

Reported coyote bites to the CDOW from 2000 to April 2010 include the following numbers. Please recognize that not all coyote bites may be reported to the CDOW.

	Reported Coyote Bites to Human Between 2000 to April 2010					
	Bite to Human with Dog on Leash	Bite to Human while Dog in Yard	Bite to Human with Dog Off Leash	Bite to Human where Feeding Had Previously Occurred	Bite to Human from Rabid Coyote	
Number of Bites	2	1	3	5	1	Total = 12

In a six-year coyote study outside of Chicago in Cook County, Illinois, there were no confirmed reports of coyotes attacking humans, while there were 15,000 domestic dog

bites and 8 people killed by dogs in Chicago during the same period (Gehrt 2006) In 2007, there were three coyote bites on humans in Colorado. Two involved people protecting their cats and dogs, and the third was a sick coyote. While coyote attacks on humans remain very rare, coyotes are wild animals, and caution is appropriate to allow for the enjoyment of seeing these animals and to avoid unsafe, negative experiences.

It is important to underscore that coyotes also provide benefits to the ecosystem including developed areas. In the absence of wolves, mountain lions, and bears, coyotes are the top predator in the urban ecosystem. Coyotes provide regulation and balance of prey populations. Through predation, coyotes help control foxes, skunks, prairie dogs, raccoons, rabbits, mice, rats, pigeons, geese, insects, and snakes.

3.2.5 How to Discern if Coyotes are Present in an Area

The following information is taken from the Chicago Cook County Study and provides insights into how to determine if coyotes are present. (Gehrt 2006).

Howling

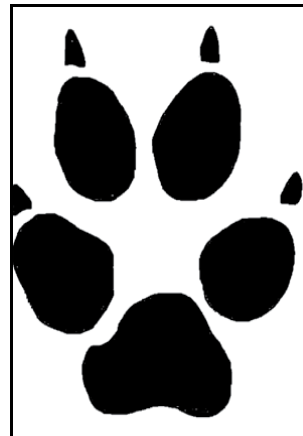
Coyotes emit a range of sounds including howls, barks, and whines. Their howling has resulted in more myth and mystery than perhaps any aspect of their behavior. Indeed, many people consider the howling of coyotes to be the symbol of the West, or at least a vestige of wilderness. Coyotes are some times called “song dogs” because of their distinctive howling.

Tracks

The presence of tracks and scat (feces) are often indicators of coyote presence in parks, open space, trails, or neighborhoods, but at times these signs can be difficult to distinguish from those of dogs. Coyote prints are quite similar to medium-sized dogs, with four toes and a heel pad in an oval shape, approximately 2.5 inches in length. Often, claw marks are only registered for the middle two toes, and not so much for the outer toes (whereas dogs typically have a circular print with claws for all toes usually registered in prints). Coyotes usually travel in a straight line, whereas dogs shift directions constantly. Anyone who has walked a dog can relate to this.



Coyote Print (approx. 2 ½” long)



Domestic Dog Print

Scats

Scats are the feces deposited by coyotes and other wildlife. Coyote scats are ropelike and typically filled with hair and bones, whereas dog scat is soft with dog food. Coyotes use scats for communication and so usually deposit scats in the middle of trails or near the borders of their territories where they are easily seen. The image below shows a typical coyote scat.



3.3. Guidelines on How Citizens Can Coexist with Coyotes

These tips for coexisting with and avoiding conflicts with coyotes have been suggested by the CDOW.

- Never feed coyotes. It is illegal to feed coyotes in Broomfield based on CDOW Regulations.
- Feed cats and dogs, as well as other pets, indoors.
- Keep garbage and compost in securely closed cans or inside a storage area.
- Keep cats and dogs indoors or in completely enclosed runs, especially at night and do not assume that a fence will keep a coyote out of your backyard. This practice provides protection for your pet and also protects native birds from predation by cats.
- Keep dogs on short leashes while walking and attended outside; the CDOW recommends a leash no longer than 6 feet.
- Clean up fruit that falls from trees onto the ground.
- Clean under bird feeders and make certain that feeders are out of reach of coyotes.
- Clean barbeque grills regularly, including the ground around the grill.
- Secure and maintain fences in good working order.
- Use a flashlight or turn on your porch light at night or at dusk/dawn so you can check to make sure that your yard does not have an unexpected wildlife visitor before stepping outside with your pet on a leash.
- Leave noisemakers on hand to scare away coyotes that may enter your yard, such as whistles and horns.
- Don't run away or turn your back on a coyote.

- Turn to face coyotes and look directly at them.
- Do not allow a coyote to get between you and your pet or child.
- Yell, clap hands, blow a whistle and try to make yourself look larger if you encounter a coyote.
- Note where and when you have an encounter with a coyote. Coyotes often follow routines. Avoid this area in the future if the encounter was negative.
- Habituated coyotes are often a neighborhood issue. Work with your neighbors and homeowners association, if applicable, to make sure attractants are removed from yards to minimize negative coyote interactions.

3.4 Relocation and Trapping of Coyotes

Relocation of live wildlife requires approval from the CDOW, which for many reasons will not authorize transplant of coyotes. The CDOW's perspective on relocation of coyotes is based on the following reasoning. Coyote populations in Colorado and surrounding states are robust and therefore not in need of supplementing through translocation. Transplantation of human habituated coyotes would merely move the problem to a new location. Potential disease issues in mammals negate the benefit of translocation unless there are competing reasons to move and release the animal. Potential release sites in Colorado already have territorial coyotes, and the population is probably at carrying capacity. Capture and transport of coyotes does present risk to those handling the animal. Finally it would prove difficult to find a landowner willing to accept a habituated coyote. Trapping questions related to coyotes should be directed to the CDOW. The CDOW will notify Broomfield Open Space Staff about a coyote trapping request.

3.5 Definitions

The following definitions will be used when obtaining information on which to base the decisions to implement various responses under the Coyote Policy.

3.5.1 Human-Coyote Interactions

Observation - The act of noticing or taking note of tracks, scat or vocalizations.

Sighting - A visual observation of a coyote(s). *Note: A sighting can occur any time of the day or night.*

Encounter – An unexpected, direct meeting between a human and a coyote that is without incident.

Human Incident – An interaction between a human and a coyote where a coyote exhibited behavior (e.g. bared teeth, lunging, growling, ears back) creating an unsafe situation for a human.

Human Attack - An interaction where a human is grabbed, bitten, scratched or bodily injured by a coyote.

(Definitions developed by the Urban Wildlife Working Group in coordination with the CDOW)

3.5.2 Dog, Cat, or Other Types of Pet Interactions

Pet-attack: A coyote attacks or injures a domestic pet such as a cat or dog.

Pet-loss: A coyote kills a domestic pet such as a cat or dog.

Attended Dog, Cat or Other Pet: When the pet is off the owner's premises, the attended pet is closely supervised by the owner or owner's authorized agent and is under the direct and competent control of the owner or the owner's authorized agent by means of a hand held leash. When the pet is on the owner's premises, the pet is closely supervised and is under the direct and competent control of the owner or the owner's authorized agent by means of a hand-held leash or the immediate presence of the owner next to the pet.

Unattended Dog, Cat or Other Pet: The human supervision of the pet does not meet the above definition of an attended pet.

3.5.3 Other Definitions

Attractants: Outdoor pet food or water, birdseed or food sources that attract small mammals, accessible/unsecured garbage or compost, fallen fruit or berries from trees or shrubs, shrubs, woodpiles, decks or other structures that can provide cover or be used as a den that attract coyotes into residential areas.

Intentional Feeding: A human is actively and intentionally feeding coyotes, foxes, raccoons, geese, stray cats or other animals on their property or on other land. *Examples include throwing food scraps over a fence into the public open space or leaving raw meat on a private deck.*

Unintentional Feeding: A human or human activity is providing easy access to food inadvertently that could potentially attract coyotes on their property or on other land. *Examples include: messy bird feeders, unsecured or accessible compost bins, unsecured trash, fallen fruit, and access to pet food storage or bowls.*

Hazing: Methods that employ immediate use of deterrents to move an animal out of an area or discourage an undesirable behavior or activity. Hazing can help maintain a coyote's fear of humans and deter them from neighborhood spaces such as backyards and playgrounds. Hazing does not permanently harm the coyote, humans, or property. Under no circumstances should a person approach a coyote or haze a coyote that cannot run away or is sick or injured.

- Low-Intensity Hazing: Hazing techniques include human presence, loud noises, spraying water, bright lights, shouting, pepper spray, and the throwing of objects in a manner not intended to cause harm to the animal. This type of hazing can be conducted by citizens.

- **High-Intensity Hazing:** Hazing techniques can include low-intensity hazing methods and the use of paint or pepper ball guns by City and County of Broomfield Public Works and Open Space staff authorized by the City and County Manager to use these methods. High-intensity hazing would be considered if low-intensity hazing does not appear to instill fear in the coyote(s) and/or public safety concerns warrant more intense hazing when the conflict is escalating and the safety of humans, pets, and/or coyotes is at risk.

Active Coexistence: Humans take an active role in keeping coyotes in their community wild by removing attractants, taking responsibility for pet safety, hazing coyotes in neighborhood or other community spaces; and learning about coyote ecology and behavior.

3.5.4 Behavior

Normal Coyote Behavior: The presence of coyotes in close proximity to homes and passing through developed areas is typically considered to be normal behavior in Broomfield and surrounding Front Range communities. Coyote interactions such as observations, sightings, and some encounters would typically be qualified as normal coyote behavior. However, coyotes should be discouraged from entering developed areas and should be hazed to re-instill a fear of humans.

Habituated Coyote Behavior: A coyote whose behavior exhibits little wariness of the presence of people and the coyote is comfortable passing frequently through developed areas. This category also includes a coyote that frequently preys on unattended cats and dogs or other domesticated animals.

Dangerous Coyote Behavior: A coyote that has attacked a human or exhibits unprovoked aggressive behavior (bared teeth, lunging, nipping at clothing, growling) toward a human(s) and/or poses a significant threat to human safety.

3.6 Guidelines for Response to Coyote Interactions

The four basic methods of response to coyote conflicts in Broomfield are public education, outreach community meetings, hazing, and lethal control as a last resort if there is a dangerous coyote or a public safety risk. (See Section 3.4 for additional information on live relocation and trapping issues).

City and County of Broomfield will respond to each coyote situation based on the particular issues and variables of the situation, and in some cases it may be deemed that no response is necessary beyond taking the citizen call. While these guidelines define coyote behavior and the potential appropriate response, the Coyote Policy is not designed to dictate an automatic response but to help guide the response based on the specific situation. In any case, if a resident requests coyote information from Broomfield staff, materials and web site references will be provided.

3.6.1 Observation

Response:

A response is not necessary for an observation because this interaction falls under *normal coyote behavior*. Observation calls will be directed to the Animal Control Unit in the Police Department. Upon request from the citizen that made the observation, the Animal Control Unit will direct the citizen to coyote educational materials. The Open Space staff will also provide assistance to Animal Control Unit if further communication is needed with the citizen.

3.6.2 Sighting

Response:

A response is not necessary for a sighting because a sighting falls under *normal coyote behavior*. Sighting calls will be directed to the Animal Control Unit in the Police Department. Upon request from the citizen that made the sighting, the Animal Control Unit will direct the citizen to coyote educational materials. The Open Space staff will also provide assistance to the Animal Control Unit if further communication is needed with the citizen.

3.6.3 Encounter

Response:

Depending on the frequency and nature of the encounter, this interaction may be considered *normal coyote behavior* or *habituated behavior*. Typically, a response is not necessary because an encounter falls under *normal coyote behavior*.

If the encounter reflects the behavior of a *habituated coyote*, the following approach will guide the response:

1. If the citizen contacts the City and County of Broomfield, the call will be directed to the Animal Control Unit.
2. The Animal Control Unit will contact the citizen and direct the citizen to coyote educational information.
3. The Animal Control Unit will encourage the citizen to do low-intensity hazing.
4. The Animal Control Unit will inform the Open Space staff about the encounter.
5. Upon request by the Open Space and Trails staff, the Public Works staff may place coyote warning signage in the vicinity of the encounter.
6. The Open Space staff will also provide assistance to the Animal Control Unit if further communication is needed with the citizen.

3.6.4 Dog, Cat or Other Pet Attack or Dog, Cat or Other Pet Loss

This interaction could involve a *normal*, *habituated* or *dangerous coyote* depending on the circumstances.

The interaction should be reported to the CDOW.

If the attacked dog, cat or other type of pet was unattended, the following guidelines apply:

1. The citizen may call the CDOW to report the unattended pet attack/loss.
2. The CDOW will inform the Animal Control Unit of the unattended pet attack/loss.
3. The Animal Control Unit will inform the Open Space and Trails staff of the unattended pet attack/loss.
4. The Animal Control Unit will contact the citizen and direct the citizen to coyote educational information.
5. The Animal Control Unit will encourage the citizen to do low-intensity hazing.
6. The Animal Control Unit will send the Open Space and Trails staff the unattended pet attack/loss report. The Open Space staff will track and map the unattended pet attack/loss based on the information provided to the Animal Control Unit or CDOW.
7. The Open Space staff will also provide assistance to the Animal Control Unit if further communication is needed with the citizen.

If the attacked dog, cat, or other type of pet was attended, the following guidelines apply:

1. The citizen may report the attended pet loss to the CDOW and/or the Animal Control Unit of the Police Department.
2. The Animal Control Unit will inform the Open Space and Trails staff and CDOW staff about the attended pet attack/loss.
3. The Animal Control Unit will contact the citizen and direct the citizen to coyote educational information.
4. The Animal Control Unit will encourage the citizen to do low-intensity hazing.
5. The Open Space staff will also provide assistance to the Animal Control Unit if further communication is needed with the citizen.
6. If determined to be appropriate by the CDOW and Broomfield staff, high-intensity hazing may be conducted.
7. The Animal Control Unit will send the Open Space and Trails staff the attended pet attack/loss report. The Open Space staff will track and map the attended pet attack/loss based on the information provided to the Animal Control Unit or CDOW.
8. Upon request of the Open Space and Trails staff, the Public Works staff will place coyote warning signage in the vicinity of the attended pet attack/loss.
9. The Open Space and Trails staff may schedule a coyote public education meeting if the coyote exhibited dangerous behavior to the human attending the pet.
10. The Open Space and Trails staff, with assistance from the CDOW, may investigate the site of the attended pet attack/loss to determine possible attractants or potential causes of the loss.
11. If the coyote involved in the pet attack/loss exhibited *dangerous behavior* towards the human, CDOW may determine that lethal control should be used.

3.6.5 Human Incident

Response:

This interaction could involve a *habituated coyote* or a *dangerous coyote*.

The following guidelines apply to a human incident:

1. The citizen may report the human incident to the CDOW and the Animal Control Unit of the Police Department.
2. The Animal Control Unit will inform the Open Space and Trails staff about the human incident.
3. The Animal Control Unit will contact the citizen and direct the citizen to coyote educational information.
4. The Animal Control Unit will encourage the citizen to do low-intensity hazing.
5. The Open Space staff will also provide assistance to the Animal Control Unit if further communication is needed with the citizen.
6. If determined to be appropriate by the CDOW and Broomfield staff, high-intensity hazing may be conducted.
7. The Animal Control Unit will send the Open Space and Trails staff the human incident report. The Open Space staff will track and map the human incident based on the information provided to the Animal Control Unit or CDOW.
8. The Open Space and Trails staff will ask the Public Works staff to place coyote warning signage in the vicinity of the human incident.
9. The Open Space and Trails staff may schedule a coyote public education meeting, if numerous human incidents occur within a general area or the coyote exhibited *dangerous behavior*.
10. The Open Space and Trails staff, with assistance from the CDOW, may investigate the site of the human incident to determine possible attractants or potential causes of the human incident.
11. If the coyote involved in the human incident exhibited *dangerous behavior* towards the human, lethal control may be utilized.

3.6.6 Human Attack

Specific Protocol for Human Attack Responses

Any coyote that attacks a human will be considered a *dangerous coyote*. Lethal control will be used to remove the *dangerous coyote(s)* if it is possible to track and locate the *dangerous coyote(s)*. In some instances, it may be necessary to remove more than one coyote given human safety concerns or when the human attack involved more than one coyote.

Tracking Coyotes for the Purpose of Lethal Control

Once CDOW staff has made the decision that lethal control is necessary to remove a dangerous coyote(s), personnel from the Wildlife Services sections of the United States Department of Agriculture ("USDA") and/or Colorado Department of Agriculture ("Assistants") may on request of CDOW assist with the tracking and removal

of the coyote(s). Each situation is unique regarding how the tracking process will be handled. For example, often times the CDOW and Assistants will watch coyote activity in an area where the dangerous coyote behavior occurred. As coyotes often return to areas that they have visited in the past to feed, this travel pattern can be used to focus on the dangerous coyote. When humans are involved in an attack, they may notice unique physical characteristics of the dangerous coyote that can be used by the CDOW and Assistants to identify the animal. A concerted effort will be made to find the dangerous coyote by CDOW and the Assistants. However, in many cases, it is not possible to say definitively that when a coyote is removed using lethal control, this coyote is for certain the dangerous coyote. When addressing dangerous coyotes, public safety will be the paramount consideration.

The Coyote Policy has two types of Human Attack responses as described below:

In-Progress Emergency Human Attack Procedure

1. All coyote attacks should be reported to the Broomfield Police 911 number and the CDOW.
2. During an in-progress coyote attack on a person, Police Officers will be dispatched to the scene and will take appropriate action to prevent any further injury and will eliminate any further immediate threats to the safety of the public.
3. CDOW will be immediately notified by Broomfield Police Communications Center.
4. The City and County Manager's office will be notified immediately following the incident.
5. Steps 5 through 14 below will be implemented.

Coyote Human Attack Response Procedure When the Attack Has Already Occurred

1. A coyote attack that has already occurred should be reported to the Broomfield Police Animal Control Unit at 303-438-6400 and the CDOW.
2. This type of coyote attack is defined as a bite or other type of coyote attack such as a nip, grab, scratch or other bodily injury involving a person that is not in progress and has already occurred.
3. If a coyote incident or attack call is received by the Police Communication Center, Police Officers will be dispatched to the scene and make contact with the CDOW as soon as possible.
4. The CDOW will advise the Police Department of their recommended actions, based on the facts of their investigation.
5. The CDOW has the final decision on what appropriate action to take. CDOW staff will confer with the Police Department.
6. The Police will be in charge of coordinating any action with and communicating with the CDOW.
7. The Police will communicate the status of the incident to the City and County Manager or his designee as soon as time allows. The City and County Manager's Office will also confer with the Open Space and Trails Director or designee.

8. The City and County Manager or his designee will provide a response on the proposed CDOW action to the Police Chief or his designee who will communicate the response to the CDOW. In absence of City and County Manager staff, the final Broomfield response rests with the Police Chief.
9. The City and County Manager's Office will also notify the Public Works Director and Health and Human Services Director about the incident as soon as time allows.
10. The City Manager's Office will also determine if information needs to be passed onto the Mayor and City Council.
11. The Police will handle all media and press releases in coordination with the CDOW and will be responsible for posting this information on the Broomfield web site. The Open Space and Trails Director will be involved in reviewing the press release if at all possible.
12. Calls that are received by the Police will be handled by the Animal Control Unit.
13. Once informed of the attack, the Open Space and Trails Director will respond to resident concerns about the attack that are sent to the Open Space and Trails Division by either the Police Department or City and County Manager's Office.
14. Any web site posting about the attack on the Police web site will be removed after 48 hours. Information about the coyote attack may also be posted on the Open Space web site.
15. The appropriate Police contact for Open Space and Trails staff during business hours is the Administration Division Commander and the On-Duty Commander during non-business hours.

The following guidelines also apply to a human attack:

1. The Police will direct the citizen involved in the attack to coyote educational information and to the City and County of Broomfield Public Health and Environment Division for information on zoonosis, i.e. animal diseases that can be transmitted to humans such as rabies. The Public Health and Environment Division may be contacted at 720-887-2236.
2. The Animal Control Unit will send the Open Space and Trails staff the human attack report. The Open Space staff will track and map the human attack based on the information provided to the Animal Control Unit or CDOW.
3. The Open Space and Trails staff will ask the Public Works staff to place coyote warning signage in the vicinity of the human attack.
4. The Open Space and Trails staff will schedule a coyote public education meeting.
5. The Open Space and Trails staff, with assistance from the CDOW, will investigate the site of the human attack to determine possible attractants or potential causes of the human incident.
6. The Open Space staff will also provide assistance to the Animal Control Unit if further communication is needed with the citizen.

3.7 Matrix of Coyote Responses

The matrix below outlines coyote response guidelines. These responses are not automatic but are intended to serve as a guide for each situation.

COYOTE INTERACTION TYPE	COYOTE RESPONSE OPTIONS										
	Caller reports interaction to Broomfield Police-Animal Control Unit	Caller reports interaction to CDOW	Caller reports interaction to Broomfield Police 911	Public Education Materials	Mapping	Signage	Low-Intensity Hazing by Citizen	High-Intensity Hazing by Broomfield Staff	Coyote Public Education Meeting	Site Investigation to Locate Potential Attractants	Lethal Control
Observation	~		X-if requested by caller								
Sighting	~		X-if requested by caller								
Encounter	~		X-if requested by caller			*	X				
Unattended Pet Attack/Loss		~	X	X			X				
Attended Pet Attack/Loss	X	X	X	X		*	X	*	*	*	*
Human Incident	X	X	X	X	X	X	X	*	*	*	*
Human Attack Reported Later After Attack Occurred	X	X	X	X	X	X			X	X	X
Human Attack In Progress		X	X	X	X	X			X	X	X

Response Key:

~ Citizen may call if desired, but it is not necessary

* Response may be used if the situation warrants as described in further detail by the Co-Existence with Coyotes Policy

X Action is warranted

The above chart also refers to these types of hazing:

Low-Intensity Hazing: Hazing techniques include human presence, loud noises, spraying water, bright lights, shouting, pepper spray, and the throwing of objects in a manner not intended to cause harm to the animal. This type of hazing can be conducted by citizens.

High-Intensity Hazing: Hazing techniques can include low-intensity hazing methods and the use of paint or pepper ball guns by City and County of Broomfield Public Works and Open Space staff authorized by the City and County Manager to use these methods. High-intensity hazing would be considered if low-intensity hazing does not appear to instill fear in the coyote(s) and/or public safety concerns warrant more intense hazing when the conflict is escalating and the safety of humans, pets, and/or coyotes is at risk.

3.8 Summary of Education and Outreach Efforts

Public education is the cornerstone of Broomfield's Coexistence Policy. The summary of public education and outreach efforts includes, but is not limited, to the following:

- provide coyote information on the Broomfield web page;
- provide coyote presentations to the public, homeowners associations and other community groups;
- continue to write articles for city publications on living with coyotes;
- continue to include an article on coexisting with coyotes and other wildlife to new residents in the welcome package of information;
- distribute flyers and information on coyotes through the utility billing mailings or handouts at public events, such as National Trails Day, Broomfield Days, and Neighborhood Watch Meetings, also distribute to pet stores and veterinary offices;
- continue to use Channel 8 to provide coyote information to the community;
- continue to distribute the public education and information materials provided by the CDOW;

- evaluate the pilot Coyote Crew made up of Broomfield citizens with the help of the CDOW to assist with public education about coyotes;
- continue to post signs with coyote information at the entrances to open space areas or areas that have experienced conflicts or frequent coyote presence;
- continue to work with the Broomfield Nature Program to provide presentations on coyotes, particularly to school-aged children and at local open space properties;
- Broomfield open space staff with participation from CDOW, if possible, will provide presentations and coyote information to local schools, particularly if there has been a human attack near the school;
- encourage Broomfield staff to review the coyote information on the Broomfield web site to increase the coyote awareness; and
- continue to work with the Broomfield Wildlife Masters to provide education to citizens about coyotes such as articles in the Broomfield Enterprise.

3.9 Summary of Potential Hazing Efforts

The Open Space Staff has worked with the Police and Public Works staffs to develop a high-intensity hazing program that will allow for the use of paint balls. This type of hazing will be used on a limited, case-by-case basis as determined and authorized by the CDOW and Broomfield staff when the coyote demonstrates a strong fearlessness of humans. The intent of the program is to reshape coyote behavior so that the coyote's natural fear of humans is restored and future conflicts are avoided. Only Broomfield staff trained in this methodology and authorized by the City and County Manager would be permitted to utilize high-intensity hazing. High-intensity hazing would be considered if low-intensity hazing does not appear to instill fear of humans in the coyote(s) and/or the habituated coyote behavior has escalated conflict to a level where public safety could be compromised for the human, pet(s), or coyote.

Broomfield will also encourage residents to practice low-intensity hazing on their own private property to prevent coyote conflicts. Examples of this type of hazing would be banging pots, bright lights, throwing small rocks or sticks, spraying gardens hoses, carrying a ski pole or golf club, or using other noisemakers to scare off coyotes.

3.10 Summary of Tracking Reports and Web Input

Any reports of coyote incidents, attacks or pet attacks/losses called in to the Police Department or CDOW in Broomfield will be recorded and passed on to the Open Space and Trails Division who will work with the GIS Division to map the information.

The Open Space and Trails Division will keep all reports and enter them into a GIS database that can be mapped to show where conflicts are occurring. This map will be evaluated over time to determine if there are specific trouble areas or trends that can be addressed with public education and/or other practices to minimize conflicts. The map will be posted on the Broomfield web site.

3.11 Removal of Attractants and Addressing Contributing Human Behavior

When conflicts arise between coyotes and citizens or a particularly habituated coyote is demonstrating a frequent presence in a developed area, the Open Space staff, with assistance from the CDOW, will attempt to identify attractants that are intentionally or unintentionally luring the coyote into close proximity to humans.

Examples of attractants that can be associated with humans are cats and dogs left outside unattended, pet food left available, accessible bird feeders, open garbage, compost piles, or dumpsters, or other food sources that are left available for coyotes.

Colorado Wildlife Commission Regulation 021, C and D, prohibits placing or failing to remove substances that may lure coyotes in. The CDOW is authorized to enforce this regulation.

The penalty for non-compliance with CDOW wildlife feeding regulations includes a fine if the person is convicted of a violation. Points may also be assessed against his or her hunting and fishing privileges. Hunting and fishing privileges may be suspended for a period of time under certain circumstances if violations persist. Fines are subject to modification by the State. The following Colorado statutes define the applicable fines: C.R.S. Section 33-6-104; C.R.S. Section 24-33.5-415.6; and C.R.S. Section 24-4.2-104.

3.12 Questions for Human-Coyote Conflicts

In an effort to gather consistent and complete information for coyote reports, Broomfield will attempt to gather answers from the following questions:

- Where and when (including time of day) did the conflict or interaction occur?
- Was the interaction a sighting, observation, encounter, incident, or attack?
- If it was an attack on a human, was there any injury to the person?
- Was there a pet involved in the interaction and was the pet attended or unattended?
- If the pet was attended, was there any injury to the human?
- If the pet was in a yard, was the area fenced? What is the type and height of the fence?
- Was the pet on a leash? How long is the length of the leash?
- If injured, what type of injuries did the pet receive?
- Were there any other people present at the time of the conflict?
- Was low-intensity hazing employed?
- Name and contact information for the reporting party
- Was there an attractant involved and/or did human behavior contribute to the incident?

3.13 Coyote Contact Numbers

For general information or concerns about coyotes, please call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency.)

To report a coyote emergency where there has been an attack on a human, please call: Broomfield Police at 911

To report the loss of a dog, cat, or other type of pet by a coyote, please call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency. If the pet was attacked while on a leash, you may also call Broomfield Police, Animal Control Unit at 303-464-5557.

For information about public health questions related to wildlife, please call: Broomfield Public Health and Environment Division at 720-887-2236.

For additional information about coyotes, please call: Broomfield Wildlife Masters Volunteer Program. To access the Wildlife Help Line, please call 303-464-5554.

For questions about the Coexistence with Wildlife Policy, please call: Broomfield Open Space and Trails Division at 303-438-6216.

4. POLICY FOR PRAIRIE DOG CONSERVATION AND MANAGEMENT

4.1 Outline of the City and County of Broomfield's Policy for Prairie Dog Conservation and Management

In the spring of 2003, the City and County of Broomfield formally adopted the Policies for Prairie Dog Conservation and Management ("Prairie Dog Policy"). The adoption of the Prairie Dog Policy was the culmination of a two year process of design, research, and public input.

The primary goal of the Prairie Dog Policy was to strike a balance between widely differing values on prairie dogs and to meet the needs of the community. In addition to public meetings and citizen input, Broomfield staff sought the advice of wildlife biologists, grassland ecologists, and the CDOW to design the Prairie Dog Policy.

The Prairie Dog Policy offers options for prairie dog management to be considered in order of preference. In cases where the conflicts with prairie dogs cannot reasonably be avoided, the Prairie Dog Policy recommends relocation of the prairie dogs to private land followed by relocation to public land. If there are no relocation sites available, the Prairie Dog Policy recommends removing the prairie dogs and donating them to a wildlife recovery program. If all other options are not feasible, extermination is allowed as a last resort.

One unique aspect of Broomfield's Prairie Dog Policy is the creation of an endowment fund for the mitigation of prairie dog conflicts. The fund is accrued through fees applied to private development projects where prairie dogs are removed. In turn, the fund will support projects to protect and enhance prairie dogs in other areas through efforts such as building barriers to limit migration and future conflicts.

The Prairie Dog Policy is also designed to respond quickly to situations where prairie dogs are impacting public or private property in a manner that is creating public health or safety concerns. These types of incidents are addressed in Section 4.7 of the Prairie Dog Policy, titled *Exception for Emergency Responses*. This section allows for pro-forma permits to be issued for prairie dog control, without a waiting period, so that more urgent situations can be responded to promptly. These types of situations include sick or diseased prairie dogs or migration into private property, parks, dam embankments, playgrounds, or areas clearly unsuitable for prairie dogs.

Based on input from the public and recommendations from the Open Space and Trails Advisory Committee, Broomfield staff has also made several administrative modifications to the Prairie Dog Policy including public notice signage to accompany all lethal control projects. Other measures that will be taken by the staff are closures of public areas during lethal control projects, efforts towards long-term prairie dog management and education, and the development of a catalog of citizen complaints and feedback on these issues. To view the Prairie Dog Policy and administrative modifications, please visit the Broomfield open space website at www.broomfield.org/DocumentCenter/View/1383/Administrative-Procedures-and-Policies-for-Prairie-Dog-Management.

4.2 Recommendations for Coexistence

If you live near a prairie dog colony, the following two measures can discourage prairie dogs from entering your property:

- Cover window wells to prevent prairie dogs as well as other wildlife from becoming trapped in the wells—cover with commercially available grates or bubbles, or make a cover yourself using chicken wire.
- Attach chicken wire to an existing fence and plant shrubs adjacent to the fence to prevent visibility of the backyard by prairie dogs to limit access.

If you live in a neighborhood that has a homeowners association, please make sure that the above work complies with HOA rules before implementing these measures.

Please enjoy observing prairie dogs in the open space but do not walk among the burrows and keep your pet on a short leash (no longer than 6 feet) to avoid any public health or safety concerns regarding prairie dogs.

5. POLICY FOR COEXISTENCE WITH OTHER WILDLIFE SPECIES

This chapter of the Coexistence Policy addresses other wildlife species commonly found in Broomfield that may at times have conflicts with humans. This chapter is not intended to provide an in-depth analysis of each species. The information on each species is organized to include a very brief discussion of the species' biology and a review of how humans can take steps to avoid potential conflicts. The intent is to build understanding about the species and to provide information about what humans can do to avoid conflicts. The CDOW, the U.S. Fish & Wildlife Service and the local Broomfield Wildlife Masters are all recommended resources to learn more about the species listed below. This chapter may also be expanded in the future if wildlife/human interactions in the community warrant adding other species to the list or providing more information on a particular species.

Here are some general tips from the CDOW on what citizens can do to avoid conflicts with wildlife:

- Do not feed wildlife. Feeding songbirds is fine, but be aware that the fallen birdseed may attract other animals. Place bird feeders where they are not accessible to other wildlife species.
- Cover window wells to prevent wildlife from becoming trapped in the wells. Cover with commercially available grates or bubbles, or make a cover yourself using chicken wire.
- Close holes around and under your foundation so animals will not be tempted to homestead. Bury wire mesh 1 to 2 feet deep in places where animals might gain access by digging under the foundation.
- Store garbage in containers with tight fitting lids and keep the cans in an enclosed garage or shed until pick-up.
- Keep pet food and water bowls inside.
- Keep cats indoors. This practice provides protection for your pet and also protects native birds from predation by cats.
- Attach chicken wire to an existing fence and plant shrubs adjacent to the fence on your lot to minimize visibility of the backyard by wildlife such as prairie dogs to discourage access.
- Screen fireplace chimneys, furnace, attic and dryer vents and keep dampers closed to avoid "drop-in" guests. Chimney tops should be screened from February to September to prevent birds and other animals from nesting inside. To prevent fire and safety hazards, check with a knowledgeable source before attempting this work.
- Seal all cracks and holes larger than one-quarter inch in diameter to keep out rats, mice, bats, and snakes.
- Water provided intentionally or unintentionally can attract wildlife beyond just mosquitoes. Monitor and empty spare tires, flower pots, and other containers in your yard.
- Do not leave piles of wood, junk, or other items in your yard that could inadvertently be providing shelter for wildlife.
- Confirm that these improvements are allowed by your Homeowners Association, if applicable.

Below is contact information for general wildlife questions:

For general information about wildlife, please call: Broomfield Wildlife Masters Volunteer Program to access the Wildlife Help Line at 303-464-5554.

For general information or concerns about wildlife, you may also call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency.)

For information about public health questions related to wildlife, please call: Broomfield Public Health and Environment Division at 720-887-2236.

For questions about the Coexistence with Wildlife Policy, please call: Broomfield Open Space and Trails Division at 303-438-6216.

5.1 Canada Geese

5.1.1 Biological Snapshot

Canada geese reside year-round throughout most of Colorado and often frequent urban and suburban areas. Flocks migrate in a V-formation and they feed in wetlands, grasslands, or cultivated fields. Canada geese can be identified by the black head and neck marked with a distinctive white band along the chin, stretching from ear to ear.

Canada geese breed in open or forested areas near open water. During the second year of their lives, Canada geese find a mate. They are monogamous, and most couples stay together all of their lives. The female lays 3–8 eggs and both parents protect the nest while the eggs incubate, but the female spends more time at the nest than the male. During this incubation period, the adults lose their flight feathers, so they cannot fly until their eggs hatch after 25–28 days. Typically geese are flightless during the month of June. Geese have a tendency to defend themselves against humans when they feel threatened or perceive their young to be threatened. Threatened geese will typically stand erect, spread their wings and make a hissing sound and possibly charge at the source of the threat. They may bite or attack with their wings.

5.1.2 Recommendations for Coexistence

Canada geese are the most frequent and common species of waterfowl in the Front Range. Some of the potential conflicts with Canada geese include possible aggressiveness towards pets and children and the droppings, which can be unsanitary and, in large quantities, can affect water quality and appearance.

Canada geese are protected by state and federal laws and a written permit from the CDOW is required for any interference with the geese, their eggs or nests. There are several methods to avoid having conflicts with Canada geese on your property.

- Do not feed or allow feeding of geese or other waterfowl on your property.
- Plant trees, bushes, or dense hedges between grassy areas and water sources as geese dislike visual barriers between water and feeding areas.

- Place physical barriers, such as fences and boulders, to prevent geese from entering an area.
- Utilize passive hazing measures, such as noisemakers, scarecrows.
- Do not litter as debris such as plastic wrap can become entwined with a body part of the animal and create a problem.
- Dog silhouettes made from a weatherproof material placed in a yard for example, can be helpful in deterring geese from landing in an area which is not appropriate.

The City and County of Broomfield also has two dogs that are used for hazing geese as needed on public parks and other public outdoor facilities from September to May. The program is managed by the Public Works Parks/Open Space maintenance staff. At this time, the program is planned to continue.

In the case of a conflict, call the Broomfield Wildlife Masters or the CDOW.

5.2 Deer

5.2.1 Biological Snapshot

There are two species of deer in Colorado, mule deer and white-tailed deer. Mule deer have rope-like tails and large ears, while the white-tailed deer have smaller ears and antlers and the distinctive broad white tails. Mule deer are more likely to be encountered in Broomfield.

Both species are four to six feet long and stand at three feet or more in height at the shoulder. Weights can be as large as 300 to 400 pounds for male bucks, while does are typically half that size. Adult males will grow antlers in the spring and then shed them in the fall.

Deer generally breed between October and December and the young are born in the spring or early summer. The litter size is usually two, and the young are spotted for the first several months. At times population pressures will push deer into developed areas in search of food, but fatalities from predation, traffic collisions, and hunting can reduce the population.

5.2.2 Recommendations for Coexistence

Deer can eat and damage trees, shrubs, and ornamental or garden plants and can host ticks carrying possible disease that could be transferred to humans. When deer appear in neighborhoods they should not be approached and should be left alone. Deer can be discouraged from eating shrubs and plants by putting cylinders and fences around the plants, and there are some plants that deer will be less likely to eat, although no plant species is completely deer proof. The Colorado State University Extension Service has found that some plants are less susceptible to deer browsing/grazing. Examples of these species are black-eyed susan, daffodils, larkspur, lavender, Russian sage, yarrow, blue mist spirea, and potentilla. There are also sprays available that claim to deter deer from eating plants.

Because deer can move into suburban neighborhoods, another potential conflict is vehicular accidents or collisions with deer. Drivers should proceed cautiously if there is any sign that deer may be present, and remember that when one deer is sighted there is likely to be another nearby. At times young fawns will be left alone or hidden while the mother searches for food. As such, if a young fawn is found it should not be approached or moved, and the CDOW should be contacted only if the mother has not been seen for over 12 hours.

In the case of a conflict, please call the CDOW for specific recommendations or response. For more recommendations on protecting trees, shrubs and plants, call the Broomfield Wildlife Masters.

5.3 Foxes

5.3.1 Biological Snapshot

The most common foxes in the Front Range area are the red and gray foxes. The red foxes have red or orange fur on top and are white underneath, and have black ears with a white tip on the end of their tail. Gray foxes have a black-tipped tail, reddish ears, and dark gray or brown fur. Foxes can inhabit urban and suburban communities and they feed mostly on rodents, rabbits, and birds. They are very opportunistic hunters though and will also feed on fruit trees, garbage, and domestic pets. Foxes are active in both the day and night and are most likely to hunt at dawn and dusk. Foxes will produce a single litter of offspring per year in the spring, and litter sizes typically average around four young.

5.3.2 Recommendations for Coexistence

Similar to coyotes, the recommendations for avoiding conflicts with foxes include efforts to remove food and attractants from private property that may be luring the animals to the property. Also keeping domestic pets and pet food inside or protected can prevent conflicts with foxes.

Many nuisance fox problems can be addressed by installing an exclusionary fence. These fences should be at least six feet high with an extra foot of fencing buried underground to prevent digging. Use small woven wire mesh and have a 12-inch wide overhanging edge or a roof to prevent climbing. However, foxes have been known to climb fences. Foxes can also be deterred with passive hazing techniques, such as the use of bright lights or noisemakers when foxes are present.

In the case of a conflict, call the CDOW for specific recommendations or response.

5.4 Raccoons

5.4.1 Biological Snapshot

Raccoons live all across Colorado and are very adaptive to urban and suburban environments. They are frequently seen in neighborhoods, backyards, and around dumpsters or trash receptacles, and can present conflicts with humans. They have a ringed, bushy tail and the unique appearance of a black facemask. Adults are about

two to three feet long (one-third of which is tail length) and usually weigh 10 to 24 pounds.

Raccoons are very opportunistic hunters and will eat just about anything including, fruits, plants, rodents, bats, eggs, insects, carrion, garbage, and nesting birds. They often feed near a water source.

Raccoons produce a single litter each year consisting of three or four young, and they are weaned by four or five weeks of age.

Large owls and other predators kill raccoons, but automobiles may be the greatest cause of death today. Maximum life span is over ten years, but two or three years is average. Raccoons in Colorado are managed by the state as furbearers.

5.4.2 Recommendations for Coexistence

Typically raccoons only present a nuisance to people when they are given an opportunity to feed or find shelter on private property. Raccoons can cause conflicts by denning in residential or commercial buildings, damaging gardens or crops, and by potentially transmitting disease.

Recommendations to avoid conflicts with raccoons include:

- Screen chimneys and repair attic holes to prevent entry.
- Remove overhanging branches to cut off easy access. Cylinders or sheet metal 4 feet high can be placed around the trunks of trees to prevent access.
- Garbage and trash containers should be secure with tight fitting lids, as raccoons can tip them over.
- Never feed raccoons or allow feeding on your property.
- Use bright lights or noisemakers to passively haze raccoons on private property.

Raccoons are nocturnal animals. If a raccoon is active during the day, the CDOW should be notified so an officer can investigate the animal to see if it is sick. In the case of a conflict call the Broomfield Wildlife Masters or the CDOW. If the animal appears to be sick, call the CDOW.

5.5 Skunks

5.5.1 Biological Snapshot

Although there are four species of skunks in Colorado, the striped skunk is the largest and most widespread and is typically found in Broomfield. The striped skunk has the well-known white and black markings, is usually 24 to 32 inches long and lives throughout the state and in many different environments.

Skunks are opportunistic feeders and will eat small rodents, carrion, fruit, insects, larvae, and eggs. Skunks are good climbers and utilize a strong sense of smell to locate and track food. Skunks typically breed in the spring and produce one litter of young per year, with four to seven young per litter.

5.5.2 Recommendations for Coexistence

Skunks can cause conflicts by denning in residential or commercial buildings, releasing a strong odor, and by potentially transmitting disease. Placing wire mesh or sheet metal around foundations or access points can prevent access for skunks. If a skunk has taken residence within a house or other structure, placing a nylon stocking with ammonia-soaked towels in the area may discourage them from staying. Skunks are nocturnal animals. If a skunk is active during the day, the CDOW should be notified so an officer can investigate the animal to see if it is sick.

In the case of a conflict, call the Broomfield Wildlife Masters or the CDOW.

5.6 Small Birds

5.6.1 Biological Snapshot

There are many small birds that frequent Broomfield including the western meadowlark, northern flicker, robins, redwing blackbird, magpie, and a variety of sparrows. Some small birds can cause possible conflicts with humans by nesting in houses or other structures or creating unwanted sounds.

The northern flicker and the western meadowlark are both known for making loud and frequent sounds. The western meadowlark is found at all but the highest elevations of Colorado during the summer, and in the eastern and western lowlands year round. The meadowlark sings with a low, explosive chuck sound and has a rattling flight call. The northern flicker is the most abundant species of woodpecker in Colorado, and is known for drumming on house siding, eaves and roof shingles while attempting to attract mates.

5.6.2 Recommendations for Coexistence

There are a number of techniques recommended to discourage these birds from inhabiting a residence and causing conflicts including:

- Providing an alternative drumming site by nailing two boards together at one end (to produce resonance) and hanging them on a secure surface.
- Place lightweight plastic mesh netting at least 3 inches from the affected wood areas
- Nail plywood over an affected area.
- Hang aluminum foil strips, colored plastic streamers, owl silhouettes or mirrors near the affected wood.
- Treat the wood with a sticky repellent.
- Use noisemaking techniques such as loud clapping or banging.
- Spray the birds gently with water from a garden hose.
- Eliminate cracks or ledges on which the bird stands while drumming.
- Do not feed the birds or allow feeding on your property.

Domestic cats can also cause conflicts with birds resulting in the death of the bird. It is recommended that domestic cats be kept inside to avoid conflicts with birds and to protect cats from other animals such as foxes, coyotes, or dogs that prey on cats.

All migratory birds are protected under the federal Migratory Bird Treaty Act. In the case of a conflict or for more information contact the CDOW. If the conflict is severe and persists, special permits can be obtained from the U.S. Fish & Wildlife Service to remove the birds.

There are also specific regulations regarding birds in the Broomfield Municipal Code, Section 6-32-040 (C). The code prohibits the killing, molestation, capturing or injuring of songbirds and insectivorous birds in Broomfield.

In the case of a conflict, call the Broomfield Wildlife Masters or the CDOW.

5.7 Snakes

5.7.1 Biological Snapshot

Nearly all species of snakes in Colorado are harmless to humans, but there are occasional conflicts on the Front Range with the prairie rattlesnake. Other non-poisonous snakes that may be encountered in Broomfield include the garter snake and the bull snake.

The prairie rattlesnake feeds largely on insects and rodents and hunts with acute senses for body heat and movement. They have elliptical pupils and heat-sensing pits on each side of their face and rattles on their tail.

Rattlesnakes are ovoviviparous, meaning that the female retains the eggs in her body, which then hatch as they are laid down or soon afterwards, or they are viviparous, meaning that they give birth to live young. The baby snakes are prepared to depart and fend for themselves as soon as they are hatched or born. There is little to no parental care of the newborn snakes. When startled or frightened, a rattlesnake may or may not shake its rattle whereas a bull snake may hiss or shake its tail in a similar fashion to a rattlesnake.

Snakes are active only from late spring through fall. In Colorado, May and June are usually the best times to see them. Since they must retreat from both cold and hot temperatures, snakes are most active on warm days and evenings. After a heavy summer rain is also a good time to see snakes.

5.7.2 Recommendations for Coexistence

Some recommendations to avoid encounters with a prairie rattlesnake on your property include:

- Do not landscape with expanses of large rocks, especially in open, sunny areas.
- Keep firewood in a covered box.
- Mow weeds and vegetation, and remove rocks, boards and debris.
- Attempt to reduce the rodent population on your property to reduce a major source of food for snakes.
- Seal entrances to crawl spaces and basements.
- If a rattlesnake is encountered, simply back away and leave the snake alone.

In Colorado, rattlesnakes may be legally killed if they pose a threat. All other snakes are classified as nongame wildlife and are protected by law.

5.8 Squirrels

5.8.1 Biological Snapshot

The fox squirrel is the type of squirrel commonly seen in Broomfield. Fox squirrels are up to 20 inches long and two pounds in weight. The fox squirrel builds nests of leaves or needles, depending on habitat. Fox squirrels eat fruit, nuts and buds, and bury nuts for winter. They have two litters of two to five young, one litter in spring, the other in early summer.

5.8.2 Recommendations for Coexistence

Squirrels can get inside houses or other structures and can be difficult to remove. They can become trapped in window wells, chimneys, vents, and within the walls of a home. Squirrels can also gnaw wires in cars creating problems. Several techniques for avoiding conflicts with squirrels include:

- Do not feed squirrels and remove attractants or potential food sources.
- Place bird feeders on a tall pipe so squirrels cannot reach them.
- Screen attic vents on the inside with hardware cloth to keep squirrels out.
- Trim branches hanging over buildings.
- Place sheet metal cylinders 4 feet in height on tree trunks to prevent climbing.

In the case of a conflict, call the Broomfield Wildlife Masters or the CDOW.

5.9 Rabbits

5.9.1 Biological Snapshot

Colorado is home to three different species of cottontail rabbits; 1) the mountain cottontail, 2) the desert cottontail, and 3) the eastern cottontail. They are about 16 inches long and weigh about two pounds. The desert and eastern cottontails can be found in Broomfield. Cottontails are very adaptable to suburban landscapes and residential yards due to the low green vegetation, shrub cover, and water sources. They eat herbaceous and woody vegetation and feed in the early morning and late afternoon throughout the year.

Reproduction takes place throughout the warmer months (April-August), with females giving birth to two to six litters of four to seven young. Coyotes, foxes, raptors, and snakes all prey on the cottontails and can help keep the population from growing too large for the ecosystem.

5.9.2 Recommendations for Coexistence

Cottontails, like many other wild animals, can thrive in suburban and urban areas. These rabbits may do considerable damage to flowers, vegetables, trees and shrubs. Cottontails also gnaw the bark or clip branches of home landscaping, seedlings, and ornamental trees. Cottontails also are capable of gnawing wires in cars. Recommendations for coexistence include:

- Never feed rabbits or allow feeding on your property
- Use bright lights or noisemakers to passively haze rabbits on private property
- Place metal cylinders around small trees and shrubs to prevent chewing and clipping
- Plants such as daffodils, sedum, foxglove, iris, lambs ear, monkshood, oriental poppy, red hot poker, yarrow, yucca, apache plume, and blue mist spirea are considered rabbit resistant to some degree. Note that rabbits have taste preferences and management methods that work in one location may prove ineffective in another. The Broomfield Wildlife Masters can provide helpful tips for plant materials that are well suited to our community.

In the case of a conflict, or for more information, call the Broomfield Wildlife Masters or the CDOW.

5.10 Insects

5.10.1 Biological Snapshot

Insects play an important role in the ecosystem and should in most cases not be disturbed in natural areas. Insects are a key part of the foundation of the food chain and support many different species of wildlife.

Most insects and other arthropods found in the yard and garden do not feed on or harm plants. Many of these insects are just passing through or have innocuous habits. Others feed on and destroy pest species. In many cases, the activities of these beneficial species can completely prevent or greatly limit pest problems. It is important to recognize these beneficial arthropods so they may be appreciated and conserved.

Two arthropods of concern for potential conflicts with humans are mosquitoes and wood ticks. Mosquitoes can be found anywhere in Colorado and are much more densely populated near areas of standing water. The Rocky Mountain wood tick is typically found in forested areas and can also be found in the foothills.

5.10.2 Recommendations for Coexistence

Mosquitoes can transmit disease and, in particular, can carry and pass on the West Nile Virus. The best defense for avoiding mosquito bites is long clothing covering skin and mosquito repellent containing DEET.

Wood ticks can also carry disease and can pass on tick fever and other diseases to humans. Insect repellent, long clothing and frequent checks for a tick on the skin surface are recommended.

For more information contact the Broomfield Wildlife Masters and for information on mosquitoes and West Nile Virus see the City and County of Broomfield Environmental Services Division at: <http://www.broomfield.org/environment/index.shtml>

5.11 Bees/Pollinators

5.11.1 Biological Snapshot

Many plants and crops that are grown in Colorado rely on bees or other pollinators to reproduce. Bees, wasps, butterflies, moths, beetles, bats, and some birds are essential for the growth of many crops, fruits, and native plants in Colorado. Bees feed on nectar and pollen as an energy source and to provide food for larvae. While there are many species of bees and other pollinators, almost all insect stings result from yellowjackets.

5.11.2 Recommendations for Coexistence

Bees can nest and gather in residential areas and on homes or other structures. Bee stings can be very painful and can cause allergic reactions in some humans. Wasps and bees can be a nuisance problem throughout Colorado, particularly late in the summer when certain yellowjacket wasps forage at garbage and outdoor food areas. In overall balance, however, these insects are beneficial in their activities, particularly as predators of pest insects and as pollinators.

To avoid conflicts with bees and wasps, basic steps include:

- Always wear shoes when outside as bees and wasps are often on the ground or on low-lying plants
- Be cautious if you have wood piles or rotting wood in your yard, as bees like these areas
- Avoid bright colored clothing or fragrant scents as these things attract bees
- Bat houses can be placed in open space areas to promote natural insect control, although the design of the bat house must meet particular conditions to be successful.

In Broomfield it is unlawful to keep bees except on properties zoned as agricultural. Please see the Broomfield Municipal Code Section 6-24-050 for the specific regulations.

In the case of a conflict, or for more information, call the Broomfield Wildlife Masters.

5.12 Beaver

5.12.1 Biological Snapshot

Beaver are not typically found in Broomfield because they generally seek wooded riparian areas where they can find adequate dam sites and open water, but there is the potential for beavers to inhabit some areas. Beaver are the largest rodents in North America and can weigh up to 55 pounds and extend over three feet in length.

Beaver will seek out wooded areas with open or moving water to construct dam sites, by felling trees and blocking water flow. Beaver will eat the bark, upper branches, and leaves from the trees. They also feed on grasses and forbs in the summer.

Beaver have a complete family structure within a den site with parents, yearlings and the young (kits). Beaver breed once per year and have an approximately four-month

gestation period with the kits being born in the spring, usually with a litter size of four to five young.

5.12.2 Recommendations for Coexistence

Conflicts with beaver are typically caused by the effects of the dam construction, which can cause flooding in some areas and the blockage and reduction of water flows downstream. They can also effect the surrounding environment by cutting down large trees and thereby changing the landscape.

There are a number of possible methods to avoid these conflicts with beaver, including fencing around trees, barriers, modification of the water flow and the dams, and trapping. The CDOW should be contacted for any conflict with beaver and consulted before any action is taken. The Broomfield Wildlife Masters can also be contacted for solutions to these conflicts.

5.13 Muskrats

5.13.1 Biological Snapshot

Muskrats have dense under-fur and a nearly waterproof "overcoat." Their feet are webbed and fringed with stiff hairs. The ankles are rotated out so the hind feet work as paddles. The tail is flattened side-to-side and serves as a rudder. The animals are dark brown in color, about 26 inches in length (of which the tail comprises nine inches) and weigh about two pounds. Muskrats live statewide in marshes, ponds and slow streams, irrigation ditches, and often in areas dammed by beavers.

Their lodges, made mostly of cattails and other aquatic plants, may be three feet high and six feet across. Muskrats are managed as furbearers in Colorado.

Muskrats eat mostly grasses, cattails, bulrushes and other marsh plants. They occasionally damage cornfields on flood plains, and their burrowing sometimes weakens ditch banks and levees.

Females breed in spring and summer and produce two or three litters of one to ten (average about six) young after a gestation period of about 30 days. The newborn young are blind, naked and vole-like, with round tails. Soon they acquire the muskrat's proper flattened tail, and at two weeks can swim and dive.

5.13.2 Recommendations for Coexistence

Damage caused by muskrats is primarily due to their burrowing activity. One way to observe early burrowing in farm ponds or reservoirs is to walk along the edge of the dam or shore-lines when the water is clear and look for "runs" or trails from just below the normal water surface to as deep as three feet.

Muskrats in some situations can be excluded or prevented from digging into pond dams through stone rip-rapping of the dam. Serious damage often can be prevented, if anticipated, by constructing dams to the following specifications: the inside face of the dam should be built at a 3 to 1 slope; the outer face of the dam at a 2 to 1 slope with a

top width of not less than 8 feet, preferably 10 to 12 feet. The normal water level in the pond should be at least 3 feet below the top of the dam and the spillway should be wide enough that heavy rainfalls will not increase the level of the water for any length of time. These specifications are often referred to as over-building, but they will generally prevent serious damage from burrowing muskrats. Other methods of exclusion can include the use of fencing in certain situations where muskrats may be leaving a pond or lake to cut valuable garden plants or crops.

5.14 Other Wildlife – Moose, Bears, Mountain Lions

On rare occasions, moose, bears, or mountain lions may pass through Broomfield following a greenbelt, drainage or food source into the community. If these species are sighted in Broomfield, the CDOW should be contacted immediately because adequate habitat for these species does not exist in Broomfield and there is a high potential for conflicts with humans and vehicles.

5.15 Diseases

The following information relates to diseases associated with certain types of wildlife. This list is not comprehensive.

5.15.1 Distemper

Canine distemper is a viral disease causing illness in domestic dogs and wild carnivores such as raccoons, coyotes, skunks, foxes, and mink. It is different from, but related to the human measles virus. Feline distemper is an entirely different virus. The signs of distemper in wildlife are often confused with rabies and include: mucous secretions around the eyes and nose, coughing, paralysis, open sores, twitching, shaking or other abnormal behaviors. The virus is transmitted through infected animal's secretions and excretions, especially respiratory excretions. Food and water can become contaminated by airborne secretions. Distemper cannot be transmitted to humans.

5.15.2 Sylvatic Plague

Periodically, prairie dog colonies experience sylvatic plague. Sylvatic plague (bubonic plague in humans) was inadvertently introduced to North America from Asia during the settlement of the New World. The plague bacterium is carried by the oriental rat flea (*Xenopsylla cheopis*), which has found a suitable host in the prairie dog. The fleas may in turn be transferred to dogs or cats that come in contact with an infected colony, and the disease may then be spread to humans. Transmittal to humans may occur through fleabites or by exposure to infected pets. However, the risk of human infection is low. Plague is treatable with antibiotics and readily curable in humans if diagnosed and treated early. To avoid public health or safety issues with prairie dogs, please keep your dog on a leash and avoid prairie dog burrows.

The Prairie Dog Policy calls for the Broomfield Department of Health and Human Services to notify the Colorado Department of Public Health and Environment ("CDPHE") in the event of any prairie dog die-off potentially associated with sylvatic plague and to cooperate with CDPHE in obtaining samples for epidemiological evaluation. If plague is confirmed in a prairie dog colony, the City's Health and Human Services Department, in cooperation with the CDPHE, shall provide public notice

according to CDPHE guidelines and take measures appropriate to protect public health and safety.

5.15.3 Rabies

Rabies is a viral disease transmitted through the bite of an infected animal. It has existed in this country for more than a century. In Colorado, rabies mostly affects bats and rarely affects other wild and domestic animals. Rodents in Colorado have not been infected with rabies. Animals most commonly infected are bats, raccoons, skunks, foxes and coyotes and to a much lesser extent cats, dogs, and cattle.

The rabies virus causes a disease of the brain called encephalopathy (a disease of the brain altering brain function or structure) and eventually death. Symptoms in humans include fever, headache, and general malaise. As the disease progresses symptoms become more specific and may include insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hyper-salivation, difficulty swallowing, and hydrophobia (fear of water), eventually leading to death. Once symptoms appear, it is too late for treatment; however a post exposure vaccine is extremely effective. One should seek medical attention immediately after possible exposure to the rabies virus and definitely if bitten by a wild or domestic animal.

5.15.4 Mange

Mange is a disease caused by an infestation of the skin by parasitic mites that burrow into the skin of a host animal, causing severe irritation and hair loss. Sarcoptic Mange is found in Colorado and is most likely to be seen in foxes and coyotes. It can also affect domestic dogs, cats and other animals, although it can be treated easily in domestic animals.

In the wild, mange can be highly contagious among fox or coyote populations, and is evident by the hair loss and visible irritation on the skin. Mange can cause blindness, hearing loss and sometimes death in foxes, but animals can also make a full recovery over time.

6. RECOMMENDATIONS FOR POTENTIAL FUTURE ORDINANCES AND GUIDELINES

It is recommended that the Zoning Code be updated to include the following:

- 1) a specific submittal requirement in the Broomfield Municipal Code that would require that both public and private projects provide an environmental/wildlife assessment and explanation of how wildlife is accommodated within the proposed project; and
- 2) design review measures to promote the practical layout of amenities and features in new projects to avoid potential conflicts with wildlife. These development review measures should include guidance on the placement of amenities such as playgrounds and dog parks so that these facilities are not immediately adjacent to wildlife areas where conflicts could be a factor.

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Newspaper Articles:

Todd Wilkinson, "Fatal Coyote Attack: How Dangerous Are Coyotes," *The Christian Science Monitor*, posted on 10/30/2009, viewed on 12/15/2009 at:
<http://www.csmonitor.com/USA/2009/1030/p02s01-usgn.html>

Tom Horton, "How Can We Coexist Peacefully with Coyotes," *The Boston Globe*, May 30, 2010.

Web Sites:

United States Fish & Wildlife Service: <http://www.fws.gov>

City and County of Broomfield Open Space and Trails: <http://www.broomfield.org>

City of Fort Collins, CO: <http://www.fcgov.com/naturalareas>

Colorado Division of Wildlife: <http://wildlife.state.co.us>

Colorado Bat Society: <http://www.coloradobats.org>

For general information about wildlife, please call: Broomfield Wildlife Masters Volunteer Program to access the Wildlife Help Line at 303-464-5554.

For general information or concerns about wildlife, you may also call: CDOW at 303-291-7227. (The office is open from 8 a.m. to 5 p.m., Monday through Friday. After hours you will be connected to the State Patrol only if it is an emergency.)

For information about public health questions related to wildlife, please call: Broomfield Public Health and Environment Division at 720-887-2236.

For questions about the Coexistence with Wildlife Policy, please call: Broomfield Open Space and Trails Division at 303-438-6216.