The Urban Wildlife We Don't Want: Coyote Management Planning and Regulatory Control Measures

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Introduction

Coyotes have been viewed as pests and a threat to livestock since American settlers first encountered them, and this hostility supported early government policies that usually focused on eradication.² But despite decades of hunting, poisoning, and trapping programs, *Canis latrans* has proliferated and expanded its range, both geographically and ecologically. While once confined primarily to the plains and prairies of the West and Southwest, coyotes now inhabit urban, suburban and rural habitats throughout Alaska and the lower 48 states, as well as much of Canada and Mexico.³ In rural areas where larger predators such as wolves have been more successfully eradicated, coyotes have taken their place as apex predators, and in developed areas their intelligence and adaptability has allowed them to create new ecological niches in the urban and suburban landscape.⁴



Urban coyotes are secretive and mostly escape human notice. They play an important predator role in developed areas, culling populations of other nuisance animals like geese and rodents, and many people are happy to coexist with them.⁶ But they can also prey on house pets, and while coyote attacks on people are still far less common than dog bites,⁷ problems with aggressive coyotes are becoming more frequent in many areas.⁸ Public concern about coyotes has grown as well, fueled by unfamiliarity and negative media accounts,⁹ leading to increased calls for local governments to address the issue.



Fig. 2: Coyote hunting for rodents under snow cover.¹⁰

Designing effective coyote control programs requires local governments to understand and influence both coyote and human behavior, and it often involves cooperation with state and federal wildlife agencies, neighboring municipalities, and community stakeholders. Coyote management may be a daunting task for lawmakers that have no experience with predator control issues, but appropriate coyote policies will only become more important as their populations increase. Coyote management planning can also help municipalities to protect themselves from possible tort claims,¹¹ and it can contribute to broader government strategies for emerging urban wildlife management issues.

The goal of this article is to provide a review of existing wildlife laws affecting coyotes as well as the types of regulations and strategies being used to manage covotes in urban and suburban

settings. It will cover federal and state policies that were created to address hunting and ranching issues, as well as the novel (and not-so-novel) programs that local governments have developed to deal with the unique challenges of urban coyote management.

I. Federal Statutes Affecting Coyote Management

Coyotes are not protected wildlife under federal law,¹² but a variety of federal statutes affect coyote management and private hunting activities. Under the general requirements of the National Environmental Policy Act, federal agencies may be required to evaluate the environmental impacts of coyote management actions.¹³ The Endangered Species Act prohibits wildlife actions that result in the taking of protected species or damage critical habitats, which can include both federal and state hunting and trapping regulations.¹⁴ Additionally, a variety of limitations on hunting, trapping and wildlife management activities are imposed federal lands.¹⁵

Coyotes are more directly impacted by the Animal Damage Control Act of 1931, which authorized the eradication of a variety of predator species.¹⁶ The Animal Damage Control program continues today under the administration of the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services ("Wildlife Services"). The agency's mandate has evolved over the years along with its understanding of biodiversity and the ecological impacts of wildlife management, and it no longer focuses on completely exterminating predator species.¹⁷ In 1997, the USDA summarized the program's guiding principles as follows:

Wildlife has either positive or negative values, depending on varying human perspectives and circumstances . . . Wildlife is generally regarded as providing economic, recreational and aesthetic benefits . . . and the mere knowledge that wildlife exists is a positive benefit to many people. However . . . the activities of some wildlife may result in economic losses to agriculture and damage to property . . . Sensitivity to varying perspectives and value is required to manage the balance between human and wildlife needs. In addressing conflicts, wildlife managers must consider not only the needs of those directly affected by wildlife damage but a range of environmental, sociocultural and economic considerations as well.¹⁸

Coyote control was a priority when the Animal Damage Control program was enacted,¹⁹ and it remains so today. In 2009, more than 80,000 coyotes were intentionally killed by Wildlife Services; the only animals to be taken in larger numbers were blackbirds, cowbirds, grackles, pigeons, and starlings. No other mammals rivaled coyotes; the next highest intentional kill numbers were for feral swine (about 34,000), beavers (about 27,000), squirrels (about 22,000), skunks (about 15,000), raccoons (about 12,000), prairie dogs (about 12,000), and rabbits (about 7,000).²⁰

Lethal management techniques used by the USDA to control coyotes include "devices such as snares and leg-hold traps, calling and shooting, and ... approved registered toxicants (i.e., sodium cyanide in M-44 ejectors, sodium monofluoroacetate in Livestock Protection Collars (LPC), and gas cartridges)."²¹ The agency uses a variety of other nonlethal approaches to prevent wildlife damage as well, including public education, technical assistance, habitat manipulation and behavior modification.²² As the agency has explained, "[p]reference [is] given to non-lethal methods when they are deemed practical and effective.... However, non-lethal methods may not always be applied.... The most appropriate initial response to a coyote damage problem could be

a combination of non-lethal and lethal methods, or, the use of lethal methods only."²³ Regardless of whether lethal or nonlethal techniques are used, the agency has recognized humaneness as a factor to be taken into account, and strives "to use the most humane methods available to them, recognizing the constraints of current technology, workforce, funding and social concerns."²⁴

The USDA's Animal Damage Control program has been criticized for its massive scale, nonselectivity, detrimental impacts on biodiversity, general ineffectiveness, excessive cost, and inadequate oversight.²⁵ Judicial review, however, is difficult to obtain. So long as appropriate findings are made, predator control actions qualify for categorical exclusion from review under the National Environmental Policy Act,²⁶ and very little evidence of coyote damage is necessary to justify control measures. As one federal court explained, as long as there is evidence of some predation, concerns regarding the necessity and effectiveness of extermination efforts will not affect an agency's decision to undertake a control program.²⁷

Although the USDA's coyote management activities are primarily intended to prevent livestock and agricultural losses, Wildlife Services also conducts research and provides technical assistance for urban and suburban coyote problems.²⁸ Additionally, existing animal damage control plans often cover large geographic areas that include both agricultural and developed areas.²⁹ In at least one instance, Wildlife Services has also entered into an agreement providing enhanced coyote management specifically for urban and suburban coyotes.³⁰

II. State Common Law and Statutes Affecting Coyote Management

The early common law, as famously described in *Pierson v. Post*, applied the rule of capture to the ownership of wild animals and awarded ownership to the first taker.³¹ But the right to take and capture was not unlimited, and a variety of regulations dating from the colonies established closed seasons, set bag limits, and restricted certain hunting techniques.³² Despite these early game laws, poor enforcement and widespread poaching³³ led to overexploitation and the decimation of various species by the late nineteenth century. The states, in response, enacted comprehensive game management laws and created fish and wildlife agencies to provide enforcement resources.³⁴

Restrictive hunting regulations were justified on the basis of a state "ownership" interest in wildlife, which can be understood as an analog to the public trust doctrine.³⁵ Under this theory, wildlife is considered to be owned by the states and held in trust for the benefit of all, subject, of course, to constitutional limits and federal preemption.³⁶ In the twentieth century, broad judicial acceptance of the states' police powers provided another basis for wildlife and hunting regulations.³⁷

Throughout the nineteenth and twentieth centuries, hunting regulations focused on the conservation of commercially valuable game species, not on predator animals such as coyotes.³⁸ In many states, the taking of unprotected predators was not only unregulated, but was incentivized through state bounty programs, which often dated back to colonial times.³⁹ Despite their administrative burdens, opportunities for fraud, and general lack of success,⁴⁰ bounties remained popular well into the latter part of the twentieth century, and some still remain on the books today.⁴¹



Fig. 3: A male heath-hen, photographed in 1909 prior to extinction of the species due to hunting.

Although most states have now abandoned the bounty system, coyotes and other predators are often still subject to more permissive hunting and trapping regulations than game animals and other species. Property owners, for example, are commonly allowed to kill coyotes on their land without a hunting permit,⁴² and many statutes provide exceptions allowing hunting techniques not available for other game, such as night hunting,⁴³ poisoning and trapping devices,⁴⁴ the use of two-way radios to locate coyotes,⁴⁵ and shooting from aircraft, snowmobiles, or other vehicles.⁴⁶ In some states, such as Minnesota, coyotes may be taken at anytime, in any legal manner, and without a permit.⁴⁷

Although coyotes thus remain basically unprotected in most states, restrictions on hunting and trapping techniques have been enacted in some jurisdictions. Hunting is prohibited altogether in some protected state parks and ecological reserves,⁴⁸ and outside of these areas, limited seasons for coyote hunting are fairly common.⁴⁹ Poisons and baits have also been banned in many states because of their impacts on other species and human health.⁵⁰ Certain types of body-gripping traps and snares have similarly been banned or restricted in many states based on concerns about humane treatment as well as potential injuries to domestic animals and children.⁵¹ While some of these prohibitions include exceptions for nuisance and predator animals such as coyotes,⁵² others apply equally to all animals.⁵³ It has been held, however, that such hunting and trapping restrictions are preempted to the extent that they prevent federal agencies from carrying out their duties under the Endangered Species Act.⁵⁴

Because private sport hunting is dispersed and uncoordinated,⁵⁵ many states have established more direct programs intended to provide long-term coyote management, or have authorized state agencies to work cooperatively with the USDA under the Animal Damage Control program.⁵⁶ State law may also provide specific requirements for the creation of local animal control agencies.⁵⁷ In Connecticut, for example, the state agriculture commissioner is responsible for appointing state and regional animal control officers,⁵⁸ and municipalities with more than 25,000 residents are required to appoint their own local animal control officers.⁵⁹ Additional regulations outline the authority that these officers have to impound and kill dangerous animals.⁶⁰ A Florida statute authorizes local governments to enact animal control ordinances. It requires animal control officers to meet certain training and continuing education requirements, and specifies that they may not bear arms, but may carry a device to tranquilize or subdue animals.⁶¹

In addition to hunting and trapping regulations, many states prohibit or require special permits for the keeping of coyotes and coyote-dog hybrids.⁶² Less common statutory provisions affecting coyote populations include somewhat antiquated laws providing reimbursement for coyote-caused livestock damages,⁶³ and more modern, often controversial, laws relating coyote penning.⁶⁴

III. Local coyote management planning and regulations

Local governments attempting to control coyotes in developed areas must be aware of federal and state wildlife regulations, which may limit municipal coyote control activities. In New York, for example, local governments must receive permits from the state Department of Environmental Conservation for trapping and killing.⁶⁵ State law may also limit the authority of local animal management officials. Municipalities should also be aware of the opportunities for cooperation with state and federal animal control agencies, since these programs can provide significant funding.⁶⁶

While state and federal wildlife agencies can offer assistance, controlling nuisance coyotes in cities and suburban areas raises a variety of concerns that are not contemplated under most state and federal predator control programs.⁶⁷ Local governments often prohibit hunting, trapping and poisoning, for example, and even where they do not, urban and suburban residents tend to oppose the use of lethal capture techniques.⁶⁸ The economic motivations of farmers, ranchers, and game hunters that underlie most state and federal coyote management policies simply do not translate well to the urban context, where more value is placed on safety, humaneness and coexistence.

1. Local government hunting and shooting regulations

Although local governments may choose not to restrict private coyote takings beyond the limits imposed by state hunting regulations,⁶⁹ city ordinances prohibiting the use of firearms⁷⁰ and traps are common, especially in urban and suburban communities.⁷¹ To deal with coyote problems and other nuisance animals in these areas, local codes can provide exceptions to hunting and trapping prohibitions for licensed animal control professionals and animal control agencies.⁷² A variety of other local laws may affect local coyote management efforts, including bounties (which are not recommended)⁷³ and restrictions on wildlife relocation.⁷⁴



Fig. 4: A pair of coyotes in a Littleton, Colorado, subdivision.⁷⁵

Although increasing concerns regarding coyote attacks have recently led some cities to consider exemptions from firearms and trapping restrictions, ceding authority for coyote control to private residents and community members may not be the best approach.⁷⁶ In Overland Park, Kansas, an ordinance passed in 2009 requires any resident seeking coyote removal to file a request with the city and pay a \$250 fee to help cover trapping costs.⁷⁷ Although an earlier version of the ordinance would have allowed residents to bypass the city and hire licensed trappers directly, the city ultimately decided that allowing private citizens to control coyote management would result in excessive and unnecessary trapping. Instead, the ordinance limits removal and euthanization to cases where coyotes are deemed to be dangerous and imposes the trapping fee in an effort to provide "some accountability on those who want the animal trapped[.]"⁷⁸

2. Tracking and record keeping

The emergence of urban and suburban coyote populations is a relevantly recent phenomenon, and only a few studies have looked at the different ecological and behavioral attributes that coyotes develop when living among humans.⁷⁹ What research has been done has revealed that coyotes are extremely adaptable to different urban habitats, and that most coyotes pose few threats to humans.⁸⁰ A number of studies have agreed that the largest factor contributing to coyote problems as human feeding, whether from people who intentionally feed wildlife or from sources such as unsecured garbage cans, outdoor pet food, bird feeders, and gardens.⁸¹



Fig. 5: GPS maps showing the radio-locations of two different alpha female coyotes in Cook County. The coyote in the top image, depicted in pink, stayed within the forest preserve more than 90% of the time, while the coyote in the lower image, depicted in yellow, lived in a downtown area and used small patches of habitat (the pink locations in the bottom map are a third coyote).⁸²

GPS tracking in Chicago was used to map coyote territories,⁸³ and on the Narragansett Bay islands in Rhode Island, tracking data has been used to pinpoint individual houses regularly visited by coyotes—and likely feeding sources.⁸⁴ Although extensive data is not always necessary to deal with individual problem coyotes, it can help inform broader, longterm strategies for coyote management, making it worthwhile for cities to maintain records on coyote attacks and other incidents, even if resources are unavailable for tracking studies.⁸⁵ Local governments can establish an online reporting system or 311 service to collect this type of data,⁸⁶ which should include the incident location, time of day, and type of incident (e.g., coyote sighting, coyote attack on pet/human, observation of neighborhood feeding). After being compiled, reporting data can be used to estimate coyote population sizes and to identify high-activity areas,⁸⁷ as well as to assess the effectiveness of various control strategies.⁸⁸

2. Public education

Because of the relatively low numbers of problem coyotes in most urban areas, public education is often the most effective response to concerns about coyotes.⁸⁹ And while coyote problems may be exaggerated by media reports, public interest in coyotes offers a valuable opportunity to educate community members about appropriate mitigation, prevention, and response behaviors that can decrease the risk of habituation and coyote nuisances.

Public education campaigns have focused in part on bringing public concerns into line with actual risks by providing information about coyote behavior and by comparing coyote problems to much more common attacks by domesticated dogs.⁹⁰ Wildlife education programs have also emphasized the need to prevent intentional and unintentional feeding (e.g., unsecured trash, pet food left outside),⁹¹ as well as the importance of coyote "hazing," which encompasses a variety of behavior modification techniques intended to instill a fear of humans in coyotes that have become habituated to urban and suburban development.⁹²

In addition to feeding and hazing, public education campaigns have focused on child and pet safety measures,⁹³ livestock protection techniques,⁹⁴ and property management issues.⁹⁵ Information has been distributed in a variety of ways, including training sessions, public meetings, school presentations, public hotlines, brochures and websites, and multimedia.⁹⁶

3. Coyote management plans and response protocols

Coordinating public outreach and animal control strategies in discrete coyote management plans can help wildlife managers to prepare for aggressive coyote incidents and set longterm management goals. These plans have been enacted by cities across the country, in varying levels of detail,⁹⁷ as well as by at least one state agency.⁹⁸ Although they have often been enacted in response to coyote attacks, local governments should consider using coyote management plans as a proactive, preventative tool. In addition to aiding in coordination among the various local, state, and federal agencies that may be involved in animal control actions, having specific procedures in place prior to discrete incidents can help limit public opposition to control measures.

Typically, coyote management plans include an overview of coyote behavior and their history in the community, strategies for public education and technical assistance, information about

behavior modification and hazing techniques, definitions and response protocols for different types of incidents, and monitoring provisions.⁹⁹ Other issues that have been included in some coyote management plans include provisions for inter-municipal cooperation, the disposal of road kill and livestock carcasses, and strategies to reduce populations of deer, feral cats, and other prey species.¹⁰⁰

A key component of any coyote management plan involves the procedures that should be followed in response to coyote attacks and other unacceptable aggressive behavior. Most wildlife researchers have agreed that widespread trapping and extermination programs will rarely be effective control techniques, given the difficulties involved in trapping and shooting animals in an urban environment and the tendency of new coyotes to move into the territories left open by removal programs.¹⁰¹ However, when specific nuisance coyotes pose a threat to people that cannot be resolved through hazing and other behavior modification techniques, many coyote management plans call for targeted, lethal removal. Although there may be public opposition to lethal control methods, relocation is generally disfavored because relocated coyotes can cause problems at their release sites and are likely to return to their original territories.¹⁰² Public opposition can be limited where preexisting coyote management plans explain the need for lethal control measures and limit their use to situations where nonlethal solutions would be ineffective.

The coyote management plan established in Denver, Colorado, provides a good example for other municipalities. The definitions included in the plan are clear and create a common foundation for describing coyote-conflicts and providing appropriate responses. They include:

Active coexistence: Humans and coyotes exist together. Communities decide on community space, such as open spaces, where coyotes are appropriate and do not haze, feed, or interact with them in these areas. 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 community spaces (except for predetermined coyote appropriate areas); and learning about coyote ecology and behavior.

Attack: An aggressive action that involves physical contact with a human and/or a human is injured by a coyote.

<u>Provoked</u> - A human provoked attack or incident where the human involved encourages the coyote to engage....

<u>Unprovoked</u> - An unprovoked attack or incident where the human involved does not encourage the coyote to engage.

Attended animal loss or injury: When a person is within 6' of the pet, this may or may not be an indication of a potential threat to human safety....

Domestic animal loss or injury: A coyote injures or kills a pet animal. Also includes "depredation" - predation on domestic pets or livestock. Unattended animal loss or injury is normal behavior for a coyote.

Encounter: An unexpected, direct meeting between a human and a coyote, without incident.

Feeding

Intentional feeding - A resident or business actively and intentionally feeds coyotes

including intentionally providing food for animals in the coyote food chain.

<u>Unintentional feeding</u> - A resident or business is unintentionally providing access to food. Examples such as accessible compost, fallen fruit from trees, left open sheds and doors, pet food left outdoors, among others....

Hazing: Training method that employs immediate use of deterrents to move an animal out of an area or discourage an undesirable behavior or activity....

Incident: A conflict between a human and a coyote where the coyote exhibits the following behavior: Coyote approaches a human and growls, bares teeth, or lunges; injures or kills an escorted/on-leash pet. This includes attended pet loss, but not human injury.

Levels of animal contact

Level 1: A coyote that has been involved in an investigated and documented unprovoked attack on a human....

<u>Level 2</u>: A coyote that has been involved in an investigated and documented provoked attack on a human with no pet involved....

Level 3: A coyote is involved in an incident(s) and/or an attended domestic animal loss....

<u>Level 4</u>: A coyote appears to frequently associate with humans or human related food sources, and exhibits little wariness of people [sic] presence, including unattended domestic animal loss....

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

Sighting: A visual observation of a coyote(s); may occur at any time - day or night.

Unsecured Trash - Trash that is accessible to wildlife, e.g. individual garbage cans, bags or uncovered or open dumpsters or trash cans over-flowing or where scattered trash is outside the receptacle.¹⁰³

After a coyote issue has been reported, the Denver plan lays out specific protocols regarding the appropriate response and which state or local officials should be involved. Management responses range from distributing educational materials and performing yard audits to lethal removal actions, but the plan limits trapping and killing measures to carefully defined situations. As it explains:

Only specific animals will be targeted.... Trapping will not extend beyond one month. While the use of live traps are legal and do not require a permit exemption, they are proven to be ineffective at capturing a targeted coyote and generally will not be considered. Leg hold traps or snares will be used only as a last resort.... If trapping is necessary, Denver will use [USDA Wildlife Services] as the professional management division. If there is immediate danger that requires shooting, Denver will support and coordinate with [Colorado Division of Wildlife] enforcement officers...¹⁰⁴



agency, and P&R refers to Parks and Recreation.

Some coyote management plans have eschewed lethal control measures. Marin County, California, established the viability of this approach in 2000 when it discontinued its affiliation with the USDA's Animal Control Program due to the agency's use of poisons and other lethal control methods. Although the county did not go so far as to prohibit property owners from killing coyotes on their own land, it redirected predator management funds to nonlethal control strategies such as the use of livestock guard dogs, improved fencing, and broad-based public education.105

4. Anti-feeding ordinances

As researchers in Rhode Island have explained, "[c]oyotes respond to more food by increasing their numbers and to less food by decreasing their numbers. It follows that we can passively manage coyotes—get them to reduce their own numbers—if we aggressively manage ourselves and decrease the food subsidies we are providing them."¹⁰⁶ Unfortunately, the preventative measures suggested in public education campaigns are only effective if employed by the entire community, and a single resident who leaves food out for coyotes can habituate them and contribute to nuisance problems.¹⁰⁷ In these cases, aggressive management may require laws prohibiting the feeding of wild animals.

Anti-feeding ordinances typically prohibit the intentional feeding of wild animals, as well as the failure to secure outdoor trash, pet food, and similar food sources,¹⁰⁸ and similar prohibitions may exist at the state level.¹⁰⁹ A typical example is the wildlife feeding prohibition enacted in Morris Township, New Jersey, which states that:

A. No person shall purposely or knowingly...feed, bait, or in any manner provide access to food to any wild animal or waterfowl in said township, on lands either publicly or privately owned. This section shall not apply to the feeding of farm animals.

B. No person shall purposely or knowingly leave or store any refuse, garbage, food product, pet food, forage product or supplement, salt, seed or birdseed, fruit, grain in a manner that would constitute an attractant to any wild animal or waterfowl.

C. No person shall fail to take remedial action to avoid contact or conflict with wild animals... after being advised by the Township to undertake such remedial action...¹¹⁰

The ordinance provides an exception for bird feeders, so long as seed does not become an attractant for other animals, and failure to comply with any of the wildlife feeding restrictions can result in daily fines of \$50 to \$500.¹¹¹

Although anti-feeding laws can be difficult to enforce,¹¹² simple "knowledge of their existence can be an effective motivator in residential areas, such as when homeowner associations or residents of neighborhoods use collective peer pressure to stop one resident or household from continuing intentional feeding of nuisance wildlife."¹¹³

5. Property management and weed control ordinances

Coyotes can adapt to environments with various levels of urban development and natural land cover.¹¹⁴ However, dense landscaping and garden areas that attract prey animals such as rabbits and rodents are especially likely to attract coyotes, as are irrigated areas that provide a water source in otherwise arid areas.¹¹⁵ To minimize these attractants, local governments can enact and enforce property management and weed control ordinances that require properties to meet minimum landscaping requirements.¹¹⁶ These regulations have already been adopted in many municipalities, and they have received general approval from the courts.¹¹⁷

6. Land use planning for wildlife habitat conservation

Just as site-specific landscape practices can act as an attractant or deterrent to coyote activity, larger-scale land use plans and development patterns can affect coyote populations and their interactions with people. As the Texas Parks and Wildlife Department has acknowledged, "[u]rban and suburban coyotes . . . are symptoms of a broader issue. People continue to expand . . . into what used to be open range wildlife habitat, especially on the expanding fringes of large metropolitan areas. This is increasing the potential for encounters and conflicts between people and wildlife."¹¹⁸ A report produced by Cornell University has similarly noted that "[i]n suburban landscapes, land-use patterns often necessitate coyote movement between patches of natural habitat interspersed in developed or residential areas. This type of situation… may create impacts that become management issues for parks and natural areas as well as local communities and the state wildlife agency."¹¹⁹

To gain a better understanding of urban wildlife resources and development impacts, local governments can include an assessment of habitat areas and corridors in their comprehensive plans or related documents.¹²⁰ Although wildlife corridor planning usually focuses on protecting valued species, ensuring the availability of contiguous habitat also allows nuisance species such as coyotes to avoid people. In developing a habitat corridor plan, the Arizona Game and Fish Department reccommends that municipalities begin by identifying affected wildlife species and determining where crucial habitats exist. After this information has been collected, the municipality can delineate wildlife blocks and corridors, and these determinations can then be used to guide transportation, development, and conservation decisions.¹²¹



Fig. 7: Gaps in urban open space in Seattle, with the west sector on the left and the east sector on the right. The dark green areas are city parks and the hatched green areas represent private open space.¹²²

Wildlife corridor maps included in park management or comprehensive plans are often advisory in nature, but some local governments have taken additional steps to conserve contigious habitat areas. In Shrewsbury, Vermont, for example, wildlife corridors are designated through a zoning overlay and "[1]and development immediately adjacent to a Wildlife Corridor . . . shall be designed, sited, and undertaken in a manner compatible with the continued viability of the Wildlife Corridor." For properties located within a Wildlife Corridor overlay zone, development will only be permitted if wildlife impacts are minimized, the development is clustered in a group arrangement rather than a linear design, and the development is located as far from the Wildlife Corridor as possible.¹²³

General development and site plan review requirements can also be modified to recognize the importance of preserving habitat and preventing potential conflicts with wildlife. The City of Broomfield, Colorado, for example, has acknowledged that a "contributing factor [in coyote problems] is the reduction of optimal coyote habitat by encroaching development." It has recommended that code revisions be made to:

1) establish a specific submittal requirement...that would require that both public and private projects provide an environmental and wildlife assessment...; and

2) design development review measures to promote 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.¹²⁴

Many local governments already require this type of wildlife assessment, although its primary purpose may be to protect wildlife rather than prevent wildlife conflicts. An example of this type of regulation is provided by Marin County, California, where permit applications for coastal projects must include "detailed site plans indicating...natural features and other probable wildlife habitat areas. Development shall be sited to avoid such wildlife habitat areas and to provide buffers for such habitat areas."¹²⁵ In Bainbridge Island, Washington, developers must obtain a vegetation management permit prior to removing trees and vegetation. The procedure is intended, in part, to prevent the "[i]ndiscriminate removal of vegetation [which] may cause loss of wildlife and fish habitatt, increased soil erosion, water and air quality degradation as well as loss of aesthetic value."¹²⁶

As with any land use restrictions, ordinances restricting development in wildlife areas or requiring development mitigations must contain adequate standards. The Vermont Supreme Court struck down a local wildlife protection requirement in a 2008 case. As the court explained, "[t]he language of the regulations offers no guidance as to what degree of preservation short of destruction is acceptable under the statute. From a regulatory standpoint, therefore, [it] provides no guidance as to what may be fairly expected from landowners who own a parcel containing wildlife habitat . . . and who wish to develop their property[.]"¹²⁷

Conclusions

Coyotes and other problematic urban wildlife are likely to become more common as human development continues to expand into natural habitat and open areas. Research and experience shows that urban and suburban communities must learn to coexist with these animals, rather than

attempt to exterminate them completely, and local governments have an important role to play in providing education and assistance, coordinating with state and federal agencies, planning response protocols for coyote incidents and attacks, and incorporating wildlife concerns into ordinances and comprehensive plans. Where appropriate steps have been taken, human-coyote conflicts can be minimized and, hopefully, communities can learn to appreciate the aesthetic and ecological benefits that coyotes can bring to developed areas.

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² See, e.g., The Thief of the Prairie, N.Y. Times, Jan. 31, 1887; Hope Ryden, Shearing the Public, and the Clamor to Poison the Coyote, N.Y. Times, Jul. 29, 1978; Debra L. Donahue, *Trampling the Public Trust*, 37 B.C. Envtl. Aff. L. Rev. 257, 270 (2010).

Native Americans have traditionally viewed the coyote in a very different manner. The coyote is one of the most common figures in Native American folklore, often appearing as a trickster, but in some stories playing the creator, the messenger, the hero, or the fool. *See generally* Tamara Kazakova, *Native American Mythology, Coyote*, Encyclopedia Mythica; Alisa Opar, *Ghost Dogs*, Audubon Magazine.

³ See generally Robert M. Timm, <u>Coyotes Nipping At Our Heels: A New Suburban Dilemma</u>, University of Nebraska, Lincoln, 11th Triennial National Wildlife & Fisheries Extension Specialists Conference (2006); Lynsey A. White and Stanley D. Gehrt, <u>Coyote Attacks on Humans in the United States and Canada</u>, 14 Human Dimensions of Wildlife 419, 420 (2009).

⁴ See generally Stanley D. Gehrt, <u>Ecology of Coyotes in Urban Landscapes</u>, at 303, Proceedings of the 12th Wildlife Damage Management Conference (2007); Opar, *supra* note --.

⁵ Stanley D. Gehrt, <u>Urban Coyote Ecology and Management: The Cook County, Illinois, Coyote Project</u>, at 7 [hereinafter Cook County Coyote Project].

⁶ See, e.g., id. at 19-21.

⁷ See, e.g., John Earl, <u>News Flash: Dog bites man, man gets pissed at coyote</u>, Surf City Voice, Apr. 20, 2010, (comparing statistics on dog and coyote bites).

⁸ See, e.g., Timm, supra note --; Cook County Coyote Project, supra note --, at 7; U.S. Dept. of Agriculture, Animal and Plant Health Inspection Service (APHIS) Wildlife Services, Environmental Assessment: Reduction of Coyote Damage to Livestock and Other Resources in Louisiana, at § 1.0 [hereinafter USDA Louisiana Coyote Management EA]; Christopher D. Carillo et al., Management of Urban Coyotes and Attacks in Green Valley, Pima County,

<u>Arizona</u>, University of Nebraska, Lincoln, Wildlife Damage Management Conference Proceedings (2007); Rhode Island Dept. of Environmental Management, <u>Management & Response Protocols for Incidents Involving Coyotes</u>, Mar. 13, 2006 [hereinafter Rhode Island Coyote Response Protocols].

⁹ Gehrt, *Ecology of Coyotes in Urban Landscapes*, *supra* note --, at 303. *See also* White and Gehrt, *supra* note --, at 420.

¹⁰ Cook County Coyote Project, supra note --.

¹¹ There is no strict liability for wild animal attacks. *See, e.g.,* Estate of Hilston v. State, 2007 MT 124 (finding no state liability for grizzly bear attack in state-owned wildlife management area); Palumbo v. State Game and Fresh Water Fish Commission, 487 So. 2d 352 (Fla.App. 1986) (state not liable for alligator attack in state park); Arroyo v. California, 34 Cal.App.4th 755 (1995) (state not liable for mountain lion mauling in state park). However, claims of negligence may still be won if the property owner should have anticipated and protected against dangerous wild animals. *See, e.g.,* Nicholson v. Smith, 986 S.W.2d 54 (Tex. App. 1999) (finding no liability for injuries causes by fire ants but citing cases and explaining that "[w]e do not say a landowner can never be negligent with regard to the indigenous wild animals found on its property. A premises owner could be negligent with regard to wild animals found in artificial structures or places where they are not normally found..., if the landowner knows or should know of the unreasonable risk of harm posed by an animal on its premises, and cannot expect patrons to realize the danger or guard against it."); Booth v. State, 207 Ariz. 61 (Ariz.App. 2004) (holding state liable for damages caused by foreseeable elk collision on highway where it failed to make reasonable preventative measures); Landings Association v. Williams, 2011 Ga. App. LEXIS 278 (Mar. 25, 2011) (homeowners association liable for alligator attack when it was aware of alligators' presence on the property).

¹² Coyotes are listed as a species of concern in Alaska Region 7, but the description does not entail any protection. *See* U.S. Fish & Wildlife Service, <u>Species Profile: coyote (canis latrans)</u>.

¹³ 42 U.S.C. §§ 4321 et seq. *See infra* note -- and accompanying text (discussing the USDA's position regarding categorical exclusions for coyote management plans).

¹⁴ 16 U.S.C. § 1538(a)(1)(B); *see also* Animal Protection Institute v. Holsten, 541 F.Supp.2d 1073 (D.Minn. 2008) (finding that state trapping regulations violated the ESA by failing to limit or prevent the incidental taking of protected lynxes); Defenders of Wildlife v. EPA, 882 F.2d 1294 (8th Cir. 1989) (holding that EPA regulations permitting the use of certain rodent poisons resulted in impermissible takings under the ESA); National Audubon Society v. Davis, 307 F.3d 835, 852 (9th Cir. 2002) (holding that state trapping restrictions were preempted by the ESA to the extent that they prevented federal agencies from carrying on their duties under the ESA).

¹⁵ In national parks, all takings of wildlife are prohibited, except where specifically allowed by Congress. 36 C.F.R. 2.2; *see* Michigan United Conservation Clubs v. Lujan, 949 F.2d 202 (6th Cir. 1991). In national forests, hunting and trapping are permitted in accordance with state law and any additional regulations enacted by the Secretary of the Interior. 43 U.S.C. § 1732(b); *see* Defenders of Wildlife v. Andrus, 627 F.2d 1238 (D.C. Cir. 1980). National wildlife refuges are placed under the full control of the Secretary of the Interior, and hunting and wildlife controls may be permitted when deemed compatible with the purposes of the national wildlife refuge system. 16 U.S.C. § 668dd(d)(1)(A). Grazing lands administered by the Bureau of Land Management are generally managed for their "highest use," but the Secretary of the Interior must provide for cooperation with state wildlife agencies. 43 U.S.C. §§ 315, 315h.

Another federal law affecting coyote management is the Airborne Hunting Act, 16 U.S.C. § 742j-1, which generally prohibits aerial hunting, but allows the states to permit it practice for the protection of livestock.

¹⁶ Pub. L. 71-776, 46 Stat. 1468, *codified at* 7 U.S.C. §§ 426-426c. *See also* June C. Edvenson, *Predator Control and Regulated Killing: A Biodiversity Analysis*, 13 UCLA J. Envtl. L. & Pol'y 31, 44-46 (1994/1995). Some federal assistance for predator control had been provided since 1907. Debra L. Donahue, *Trampling the Public Trust*, 37 B.C. Envtl. Aff. L. Rev. 257, 270-271 (2010).

¹⁷ The act's language was been amended in 2000 and no longer includes language authorizing the "eradication, suppression, or bringing under control" of various specified predators, including coyotes. P.L. 106-387, § 1(a), 114 Stat. 1549. *See also* Edvenson, *supra* note --, at 44 (discussing the act's original language).

¹⁸ USDA Louisiana Coyote Management EA, *supra* note --, at § 1.0 (quoting the Animal Damage Control Programmatic Final Environmental Impact Statement (EIS) (U.S. Department of Agriculture 1997)).

¹⁹ Wolves had largely been eradicated by the 1920s, which led to greatly expanded coyote populations and an emphasis on their removal. *See* Julie S. Thrower, *Ranching With Wolves: Reducing Conflicts Between Livestock and Wolves Through Integrated Grazing and Wolf Management Plans*, 29 J. Land Resources & Envtl. L. 319, 336 (2009).

²⁰ USDA, APHIS WS, <u>Table G. Animals Taken by Wildlife Services – FY 2009</u>, at 3.

Similarly large numbers of targeted coyote kills were reported in 2008. USDA APHIS WS, <u>Table G. Animals Taken</u> by Component/Method Type and Fate by the Wildlife Services Program – FY 2008. See also Donahue, supra note --, at 271-272 (noting that carnivore killings increased 40% from 2007 to 2008, "despite the small numbers of livestock lost to predators and a lack of correlation between numbers of predators killed and stock lost."); Thrower, supra note --, at 337 ("Trapping is indiscriminate, with coyotes suffering the brunt of the killing.").

²¹ USDA Louisiana Coyote Management EA, *supra* note --, at i.

²² Id. at § 1.3.

²³ Id. at i.

²⁴ Id. at § 2.3.1.

²⁵ See, e.g., Edvenson, supra note --, at 47-48; Michael J. Bodenchuk et al., <u>Economics of Predation Management in Relation to Agriculture, Wildlife, and Human Health and Safety</u>, Human Conflicts with Wildlife: Economic Considerations; Humane Society, <u>Why Killing Coyotes Doesn't Work</u>, Mar. 23, 2011; <u>Non-lethal predator control program could provide assistance to Lassen County ranchers</u>, Lassen Times, Mar. 3, 2009.

²⁶ 7 C.F.R. 372.5(c). *See* Comm. for Idaho's High Desert v. Collinge, 148 F. Supp. 2d 1097 (S.D.Idaho 2001) (finding no categorical exclusion for predator control because necessary findings were not made); *see also* USDA Louisiana Coyote Management EA, *supra* note --, at 2 (explaining that the USDA prepares an environmental assessment to facilitate planning, interagency coordination, and evaluate potentially significant or cumulative environmental impacts, but normally considers individual wildlife damage management actions to be categorically excluded from further NEPA analysis).

²⁷ Southern Utah Wilderness Alliance v. Thompson, 811 F. Supp. 635 (D.Utah 1993) (deferring to agency's decision to target coyotes and rejecting plaintiffs' arguments that the Animal Damage Control program was both unnecessary and ineffective).

²⁸ See, e.g., USDA APHIS WS, <u>Factsheet: Urban and Suburban Coyotes</u> (Apr. 2002); USDA APHIS WS National Wildlife Research Center, <u>Reducing Urban Wildlife Conflicts</u> (Aug. 2010).

²⁹ See, e.g., Dennis L. Orthmeyer et al., <u>Operational Challenges of Solving Urban Coyote Problems in Southern</u> <u>California</u>, University of Nebraska, Lincoln, Wildlife Damage Management Conference Proceedings (2007), at Figure 2 (showing coyotes taken by Wildlife Services in both urban and rural habitats in Southern California); USDA Louisiana Coyote Management EA, *supra* note --, at § 2.1 ("The area of the proposed action includes all private and public lands in Louisiana where coyote damage is occurring or could occur. The proposed action could be conducted on urban sites or rural sites when a request is received.); USDA APHIS WS, <u>Environmental Assessment: Integrated Wildlife Damage Management of Coyotes and Feral Dogs in Pennsylvania</u> (Mar. 2005), at 30 ("The proposed action may include any property owner or manager who has suffered human health and safety risks or threats of such risks from coyotes or feral dogs; or has suffered damage or loss or threats of such damage or loss of livestock, poultry, and pets from coyotes and feral dogs within Pennsylvania.") [hereinafter USDA Pennsylvania Coyote Management EA].

The USDA also routinely removes problem coyotes from airports. *See, e.g.*, USDA Pennsylvania Coyote Management EA, *supra* note --, at 20; Wildlife Services, <u>State Report: Texas</u> (2008) [hereinafter Texas Wildlife Services Report].

³⁰ Texas Wildlife Services Report, *supra* note --.

³¹ Pierson v. Post, 3 Cai. R. 175 (N.Y. Sup. Ct. Judicature 1805). For further discussion of the rule of capture and its role in wildlife regulation, *see* Steven M. Wise, *The Legal Thinghood of Nonhuman Animals*, 23 B.C. Envtl. Aff. L. Rev. 471 (1996).

³² See Thomas A. Lund, Early American Wildlife Law, 51 N.Y.U. L. Rev. 703, 719-720, 726 (1976).

³⁴ See Thomas Lund, Nineteenth Century Wildlife Law: A Case Study of Elite Influence, 33 Ariz. St. L.J. 935, 977-981 (2001).

³⁵ See id. at 981-984; see also State v. Butler, 587 So.2d 1391 (Fla. App. 1991) ("It is a long-standing common-law principle that title to wildlife is vested in the State, as trustee for all citizens, and that the State has both the authority and the right to regulate and protect wildlife resources."); Betchart v. Dep't of Fish & Game, 158 Cal.App.3d 1104 (1984) ("California wildlife is publicly owned and is not held by owners of private land where wildlife is present."); State ex rel. Visser v. State Fish & Game Commission, 150 Mont. 525 (1968) ("The ownership of wild animals is in the state, and these animals are not subject to private ownership except insofar as the State shall choose to make them so. So long as constitutional limitations are not infringed, the Legislature may impose such terms and conditions as it sees fit on the acquiring of ownership of these wild animals.").

³⁶ The Supreme Court initially upheld the concept of state ownership of wildlife in *Geer v. Connecticut*, 161 U.S. 519 (1896), but later weakened the decision in cases imposing constitutional limits on state wildlife regulations. *See*, *e.g.*, Missouri v. Holland, 252 U.S. 416 (1920) (holding that the Migratory Bird Treaty Act took precedence over state wildlife laws by virtue of the Supremacy Clause); Hunt v. United States, 278 U.S. 96 (1928) (upholding the federal government's authority to remove deer from a national forest over the contention that this violated state law); Kleppe v. New Mexico, 426 U.S. 529 (1976) ("We hold today that the Property Clause also gives Congress the power to protect wildlife on the public lands, state law notwithstanding."). In 1979, the Court overruled *Geer* and disavowed the state ownership doctrine as a legal fiction, but it emphasized that its decision, which was based on the Commerce Clause, did "not leave the States powerless to protect and conserve wild animals within their borders." Hughes v. Oklahoma, 441 U.S. 322 (1979). Despite the Supreme Court's seemingly clear holding that there is no state ownership interest in wildlife, it has been explained that "[f]airly read, the thrust of *Hughes* was simply that the state may not exercise its ownership of wildlife in a manner that conflicts with federal prerogatives protected by the Constitution." Michael C. Blumm and Lucus Ritchie, *The Pioneer Spirit and the Public Trust: The American Rule of Capture and State Ownership of Wildlife*, 35 Envtl. L. 673, 706-707 (2005).

³⁷ Blumm and Ritchie, *supra* note --, at 713. *See also* New York ex rel. Silz v. Hesterberg, 211 U.S. 31 (1908) (upholding dealer's arrest for having an imported grouse during closed hunting season for the bird, because the state's game laws were lawful police power enactments).

³⁸ Edvenson, *supra* note --, at 39. One of the earliest state game protection laws was enacted in New York in 1791 to protect the heath-hen, which would later become extinct. N.Y. Laws 1791, ch. 9.

³⁹ See, e.g., Ingram v. Colgan, 106 Cal. 113 (1895); Bickerdike v. State, 144 Cal. 681 (1904).

⁴⁰ See Edvenson, supra note --, at 37; Lund, Early American Wildlife Law, supra note 35, at 727-729 (discussing early bounty laws and difficulties with fraud and manipulation); Frederick A. Servello, University of Kentucky Dept. of Forestry, <u>Managing Coyote Problems in Kentucky</u> ("The bounty system has been used in the United States for more than 300 years with little success. Experience has shown that bounty payments are ineffective in controlling predation on livestock."). In 1961, the New Hampshire Legislature added "timber wolves" and "prairie wolves" to its bounty law in an effort to include coyotes as well as unidentified coyote-dog hybrids. However, "[p]eople began to shoot their neighbors' dogs and to present the bodies for money. As a result the law was again amended in 1965 to exempt the timber wolf and the prairie wolf." Hope Ryden, *The mysterious animal at our back door*, N.Y. Times, Feb. 24, 1974. The Montana bounty statute contains a variety a safeguards to prevent fraud. *See* Mont. Code Anno. §§ 81-7-104 et seq.

⁴¹ See, e.g., Minn. Stat. § 97B.671 (at least \$25 per coyote); Mont. Code Anno. §§ 81-7-104 et seq.; S.D. Cod. L. § 40-36-15; Tex. Health & Saf. Code § 825.033; Utah Code Ann. § 4-23-5; Va. Code Ann. § 15.2-926.1; Wyo. Stat. § 11-6-206. Colorado's \$1 bounty for coyotes and wolves was repealed in 2006. <u>S.B. 33</u>, § 31. In North Dakota, a proposed bounty for coyotes was voted down in early 2011, based on testimony from the Game and Fish Department that bounties are not effective. <u>Coyote bounty defeated</u>, KXMBTV Bismark, Feb. 8, 2011. Although Maine's coyote bounty was repealed in 1989, Laws 1989 c. 277, a modified coyote bounty was proposed in 2011. It would grant complimentary deer hunting permits to persons who kill at least 10 coyotes within a year. <u>HP 470, LD 640</u>.

⁴² See, e.g., C.R.S. § 33-6-107(9) (no license required for property owner to kill coyotes causing damage to crops, property, or livestock); Ind. Code Ann. § 14-22-6-12 (property owner or designee may take coyotes at any time);

³³ See id. at 722-725.

Md. Natural Res. Code Ann. § 10-406(6) (property owners permitted to hunt or trap coyotes that are damaging personal or real property); Miss. Code Ann. § 49-7-31.5 (property owners can take nuisance animals and predators year round); R.R.S. Neb. § 37-559 (farmers and ranchers permitted to destroy animals preying on livestock or causing other agricultural depredation); N.Y. E.C.L. § 11-0523 (owner may take and destroy coyotes injuring private property at any time and in any manner); N.Y. E.C.L. § 11-0707 (owner may trap coyotes without license); Tex. Health & Saf. Code § 822.013 (owner of livestock or pets attacked by coyote can kill it).

In the absence of any statutory exemption, killing a coyote without a permit may still be justified or excused as self defense or the defense of property. *See, e.g.*, Jordan v. State, 681 P.2d 346 (Alaska 1984).

⁴³ See, e.g., 12 M.R.S. § 11160 (coyote night hunting); N.Y. E.C.L. § 11-0909 (coyote may be taken at any time of day or night); 34 Pa.C.S. § 2303 (coyote hunting permitted on Sundays); S.C. Code Ann. § 50-11-701 (coyote night hunting); Utah Code Ann. § 23-13-17 (authorizing counties to enact ordinances for spotlighting of coyote, red fox, skunk, and raccoon); Wis. Stat. § 29.314 (coyote hunting with artificial lights after 10 p.m. permitted).

⁴⁴ See, e.g., R.R.S. Neb. § 37-561 (allowing certain poison devices to control predators); RSA 207:10-a (director of fish and game permitted to use prohibited devices when removing nuisance animals); N.D. Cent. Code § 20.1-01-05 (snares permitted for coyotes); 29 Okl. St. § 5-301 (permits for poisons, cyanide coyote getters, and similar devices to kill predators); 34 Pa.C.S. § 2308(b) (baits and mechanical devices permitted for coyote hunting and trapping); R.C.W. § 9.41.185 (coyote getters and similar spring-triggered devices permitted when authorized by the state department of agriculture or the department of fish and game for the purpose of eliminating coyotes harmful to livestock and game animals).

⁴⁵ See, e.g., Iowa Code § 481A.24 (exception for coyote hunting for the use of one or two-way radios); Miss. Code Ann. § 49-7-31.5 (nuisance animals can be taken with any type of weapon, after legal hunting hours, and with electronic calls).

⁴⁶ See, e.g., A.R.S. § 28-8281 (state and federal employees authorized to hunt coyotes, but no other birds or animals, from aircraft); C.R.S. § 33-14-117(2) (permits available to control coyotes and other predators from snowmobiles, for purposes of livestock or other wildlife protection); Mont. Code Anno. §§ 81-7-501 et seq. (aerial hunting of predator animals); Nev. Rev. Stat. § 503.005 (aerial hunting of coyotes, bobcats and ravens); O.R.C. Ann. § 2923.16(F)(2) (property owners can shoot coyotes from motor vehicles); 29 Okl. St. § 4-107.2 (permits for aerial hunting of predator animals); S.D. Cod. L. § 41-8-39.1 (permits for aerial hunting of coyotes and foxes to protect livestock or property, but not for sport); Tex. Parks & Wild. Code §§ 43.103 et seq. (permits for aerial hunting of predator animals).

⁴⁷ See Minnesota Dept. of Natural Resources, <u>Urban Coyotes</u>; see also Servello, supra note -- ("Coyotes are not protected in Kentucky and may be taken year-round by hunting or with traps or non-locking snares during the furbearer trapping season.").

⁴⁸ See, e.g., 14 C.C.R. 630(33) ("Hunting of coyotes and ground squirrels is prohibited on the North and South Chimineas Units.").

⁴⁹ See, e.g., 520 ILCS 5/2.30 (shortened trapping, but not hunting, season for coyotes); N.J.A.C. § 7:25-5.19 (shortened hunting season for coyote, limits on hunting methods); Rhode Island Coyote Response Protocols, *supra* note -- ("Coyotes are classified as a protected furbearer under RIGL section 20-16-1.... Seasons and bag limits are established with the goal of sustaining furbearer populations for their ecological, recreational, and economic importance while balancing the needs of the public. DEM regulations allow coyotes to be taken at any time of year by legal means.").

⁵⁰ See, e.g., 14 C.C.R. 475 (prohibiting the use of poisons); 10A V.S.A. § 44(4.3) (providing that coyotes may not be taken "from holes or dens by cutting, digging, smoking, trapping, snaring, or by the use of chemicals, or any mechanical device.").

⁵¹ See generally Dena M. Jones and Sheila Hughes Rodriguez, *Restricting the Use of Animal Traps in the United States: An Overview of Laws and Strategy*, 9 Animal L. 135 (2003); Alan A. Huot and David L. Bergman, *Suitable and Effective Coyote Control Tools for The Urban/Suburban Setting*, University of Nebraska, Lincoln, Wildlife Damage Management Conference Proceedings (2007) (explaining that coyote management programs "have been hindered by the public's desire (and political action) to restrict or eliminate traditional coyote management tools,

such as foothold traps and snares. These restrictions have been ostensibly motivated by concern for the humane treatment of coyotes, as well as fear over potential injuries to pets and children.") (internal citations removed).

⁵² See, e.g., R.I. Gen. Laws § 20-16-8 (permits available for steel jaw traps for nuisance animals); 12 M.R.S. § 12252 (prohibiting snares, except when authorized by the commissioner pursuant to 12 M.R.S. § 10105, or for trapping beaver pursuant to 12 M.R.S. § 12259); Cal. Fish & Game Code § 3003.1 (prohibiting the use of body-gripping traps except where authorized by the state Department of Fish and Game or the USDA Wildlife Services Division and no other method is available to protect human health or safety).

⁵³ See, e.g., N.J. Stat. § 23:4-22.2 ("No person shall take or attempt to take any animal by means of a trap of the steel-jaw leghold type."); Conn. Gen. Stat. § 26-72 (prohibiting snares); 10 V.S.A. § 4706 (prohibiting snares).

⁵⁴ National Audubon Society v. Davis, 307 F.3d 835, 852 (9th Cir. 2002).

⁵⁵ See USDA Louisiana Coyote Management EA, supra note --, at § 2.3.7.

⁵⁶ See, e.g., Cal. Fish & Game Code § 4154 (authorizing cooperative agreements with the U.S. Fish & Wildlife Service and state expenditures for the eradication of nongame mammals); Cal. Food & Agr. Code § 11221 (authorizing the director to employ hunters and trappers to eradicate coyotes and other predatory animals that are damaging livestock, crops, or timber); C.R.S. § 35-40-101 (powers and duties of the commissioner of agriculture relative to the control of depredating animals); 12 M.R.S. § 10108(11) (coyote control program); R.R.S. Neb. § 23-358 (authorizing counties to cooperate with federal and state agencies, private associations, and individuals for controlling coyotes and other nuisance animals); R.R.S. Neb. § 81-2,236 (authorizing Director of Agriculture to cooperate with the USDA for the management and control of coyotes and animals); N.D. Cent. Code § 20.1-02-05(24) (authorizing coyote depredation prevention program); S.C. Code Ann. § 50-11-1080 (authorizing counties to declare open season on coyotes where it appears that they are destroying livestock or other property or there is an epidemic of rabies); S.C. Code Ann. § 50-11-1150 (authorizing department to trap predatory animals); S.D. Cod. L. § 40-36-1 (Department of Game, Fish and Parks authorized to cooperate with federal agencies to control coyotes and other problematic animals); 10 V.S.A. § 4833 (coyote control program); W. Va. Code § 7-7-6e (livestock tax to be used to expand coyote control program in cooperation with USDA); Wyo. Stat. §§ 11-6-303 et seq. (animal damage management board); Arizona Game and Fish Department, <u>Predator Management Policy</u>.

⁵⁷ See, e.g., A.R.S. § 9-499.04 (authorizing cities and towns to appoint animal control officers and limiting officers' use of firearms); C.R.S. § 35-42-106 (rules and regulations for animal control officers to be promulgated by the agriculture commissioner); K.R.S. § 258.195 (requiring counties to have animal control officers, authorizing cities to do the same, and describing the authority of such animal control officers); 7 M.R.S. § 3906-B (training and certification for animal control officers to be controlled by the agriculture commissioner); 7 M.R.S. § 3947 (requiring municipalities to have animal control officers); M.C.L. § 287.289b (minimum employment standards for county animal control officers); N.J. Stat. § 4:19-15.16a (rules and regulations concerning the training and educational requirements for animal control officers); Tex. Health & Saf. Code §§ 829.001 et seq. (animal control officer training).

⁵⁸ Conn. Gen. Stat. § 22-328.

⁵⁹ Conn. Gen. Stat. § 22-331.

⁶⁰ Conn. Gen. Stat. § 22-358.

⁶¹ Fla. Stat. § 828.27.

⁶² See, e.g., 6 N.Y.C.R.R. § 180.1 (permit required); Conn. Gen. Stat. § 26-40a (providing exceptions for zoos, nature centers, museums, research facilities, etc.); F.A.C. §§ 68A-6.0011 et seq. (regulations governing captive wildlife); Iowa Code §§ 717F.1 et seq.; Utah Code Ann. § 4-23-11; W.A.C. § 246-100-191(2); Minn. Stat. § 97A.501.

⁶³ See, e.g., 3 P.S. § 459-706. Similar legislation in Montana applies only to wolf predation, Mont. Code Ann. §§ 2-15-3110 et seq., and a reimbursement provision in West Virginia has been held to be limited to domestic dogs. W. Va. Code § 19-20-10; Op. Att'y Gen., June 25, 1970. See also Jeffrey E. Thompson, *Note: Damage Caused by Reintroduced Wildlife: Should the Government be Held Accountable?*, 1992 U. Ill. L. Rev. 1183, 1199-1200 (suggesting livestock predation reimbursements could offset takings claims related to predator species reintroductions). ⁶⁴ See, e.g., Miss. Code Ann. § 49-7-34 ("The Commission on Wildlife, Fisheries and Parks shall not prohibit the operation of a hunting enclosure for hunting or pursuing rabbit, fox or coyote, but the commission may prescribe regulations and require a permit for the operation of such hunting enclosures."); N.C. Gen. Stat. § 113-273(g) ; S.C. Code Ann. §§ 50-11-2600 et seq. *See also* Nick McGurk, *Coyote penning up for debate in Indiana*, WNDU.com, May 11, 2011; Humane Society, *Fla. Fish and Wildlife Votes to Prohibit Fox and Coyote Pens*, Jun. 23, 2010.

⁶⁵ NY CLS ECL § 11-0521; *see also* Andrew Klappholz, *Coyote-trapping permits denied for Rye, Rye Brook*, LoHud.com, Apr. 28, 2011 (reporting on DEC's refusal to issue trapping permits to the City of Rye, where several coyote attacks took place in 2010).

⁶⁶ See generally Bodenchuk et al., *supra* note --, at 85 (providing information on federal expenditures for livestock protection in comparison to matching state and private expenditures).

⁶⁷ See Oleyar, supra note --, at 373 ("Most current rules, regs and statutes are written from one or more of the following mind-sets: 1) Recreational fur harvest (i.e., traditional fur trapping); 2) "Fair chase" (i.e., a sporting or sportsmanship perspective); 3) Agricultural damage control (i.e., rural applications); 4) Domestic animal (i.e., pets)/veterinary medicine (i.e., clinical situations)").

⁶⁸ See, e.g., Robyn E. Worcester, <u>The Co-existing with Coyotes Program in Vancouver, B.C.</u>, University of Nebraska, Lincoln, Wildlife Damage Management Conference Proceedings (2007) at 394 (discussing survey results from Vancouver, BC); Ralph Zahorik and Robert Channick, <u>You may not see them, but there's no end in sight to coyote 'explosion</u>', Chicago Tribune, Feb. 2, 2011 ("Public outcry — and reported death threats directed at [the animal control contractor] — curtailed the program and convinced officials to take a different approach.").

⁶⁹ See, e.g., Paula Quam, <u>Coyotes go after pets in rural DL area</u>, Northland Outdoors, Feb. 28, 2011 (noting that Detroit Lakes, Minnesota, does not prohibit residents from shooting coyotes within city limits).

⁷⁰ Although the U.S. Supreme Court has held that the Second Amendment prohibits local governments from banning the possession of firearms, the Court has emphasized that this constitutional protection "is not a right to keep and carry any weapon whatsoever in any manner whatsoever and for whatever purpose" and that it "does not imperil every law regulating firearms." McDonald v. City of Chicago, 130 S.Ct. 3020 (2010) (internal citations omitted). The Supreme Court, however, has not clarified the standard of review that should be applied to gun control laws, leaving the constitutionality of these municipal restrictions on firing (but not possessing) guns somewhat unclear. *See generally* Lawrence Rosenthal & Joyce Lee Malcolm, McDonald v. Chicago: *Which Standard of Scrutiny Should Apply to Gun-Control Laws*?, 105 Nw. U. L. Rev. Colloquy 85 (2010).

⁷¹ See, e.g., City of Edina, Minnesota, <u>Animal Control</u>; see generally Huot and Bergman, supra note --, at 313 (explaining that "many of the techniques suitable for dealing with livestock depredation are impractical, unsuitable, or illegal for use in control of coyote conflicts in urban and suburban areas.").

⁷² See, e.g., Lubbock, Texas, <u>Animal Ordinance</u>, § 4-39 (allowing the city to set traps; residents permitted to set humane cage traps after notifying city animal services).

⁷³ See supra, section II. For recent examples of coyote bounties, see, e.g., <u>Augusta County Passes Coyote Bounty</u> <u>Ordinance</u>, WHSV.com, Sep. 9, 2009 (\$50 bounty in Augusta County, Virginia); Sarwat S. Ahmad, <u>Bounty</u> <u>hunting? Grundy is paying \$15 per slain coyote</u>, Herald News (\$15 bounty in Grundy County, Illinois).

⁷⁴ See, e.g., Bao Ong, <u>Coyote Bound for Undisclosed Location</u>, N.Y. Times City Room Blog, Mar. 26, 2010 (explaining that "[b]y law, coyotes captured in the city must be released within the five boroughs.").

⁷⁵ AP Photo/Colorado Division of Wildlife.

⁷⁶ See, e.g., Susan Davies, <u>Ordinance to allow shooting coyotes in Colorado Springs dies</u>, NewsFirst5.com, Jun. 22, 2009.

⁷⁷ Grace Hobson, *Overland Park approves coyote ordinance*, Kansas City Star, Feb. 3, 2009.

⁷⁸ Grace Hobson, <u>*OP committee endorses coyote ordinance*</u>, Kansas City Star, Jan. 15, 2009.

⁷⁹ See, e.g., USDA Louisiana Coyote Management EA, *supra* note --, at 3-4 (discussing lack of data in Louisiana); Gehrt, *Ecology of Coyotes in Urban Landscapes, supra* note --, at 303-304; Denver Parks & Recreation, <u>Denver</u> <u>Coyote Management Plan</u> (Oct. 2009) at 8 (noting need for research in Denver).

Detailed research has been conducted in a few areas, including Southern California and Chicago. *See* Stanley D. Gehrt, Chris Anchor & Lynsey A. White, *Home Range and Landscape Use of Coyotes in a Metropolitan*

Landscape: Conflict or Coexistence?, 90(5) Journal of Mammology 1045 (2009) (analyzing tracking data from Chicago); Timm, *supra* note -- (analyzing data from Southern California).

⁸⁰ See, e.g., Heather Wieczorek Hudenko et al., Cornell Dept. of Natural Resources, <u>Living with Coyotes in</u> <u>Suburban Areas: Insights from Two New York State Counties</u> (Dec. 2008) at 19; Cook County Coyote Project, *supra* note --, at 23.

⁸¹ See, e.g., Timm, supra note --, at 140; Cook County Coyote Project, supra note --, at 23; Numi Mitchell, Ph.D., The Conservation Agency, <u>Best Management Practices for Coexistence with Coyotes on Aquidneck and Conanicut Islands</u> (Jan. 2010) at 1; White and Gehrt, supra note --, at 429.

⁸² Cook County Coyote Project, *supra* note --, at 18.

⁸³ Cook County Coyote Project, supra note --.

⁸⁴ Brian Handwerk, <u>Coyote-Tracking Web Site Exposes Canine, Human Troublemakers</u>, National Geographic News, Feb. 7, 2007.

⁸⁵ See, e.g., Rhode Island Coyote Response Protocols, *supra* note -- at 1, 5 (noting that "DEM lacks the resources to undertake large-scale, targeted research projects involving coyotes, or to provide funding to outside entities for such purposes.... [But] DEM will continue to record all complaints regarding coyotes. Data will be compiled and maintained by Fish and Wildlife."); Cherry Hills Village, Colorado, <u>2011 Amended Coyote Management Plan</u> at 3 ("It is imperative that the City has efficient and consistent reporting of human-coyote interactions."); City of Yorba Linda, California, <u>Coyote Management Plan</u> (Jul. 2010) at 8; White and Ghert, *supra* note --, at 430 (suggesting the development of a national standardized reporting system for coyote attacks).

⁸⁶ See, e.g., Denver Coyote Management Plan, *supra* note --, at 8; Westminster, Colorado, <u>Coyote Report Form</u>; City of Louisville, Colorado, <u>Coyote Report Form</u>; City of Wheaton, Illinois, <u>Report a Coyote Incident</u>.

⁸⁷ See, e.g., City of Westminster, Colorado, <u>Coyote Management Plan</u> (Jul. 2009) at 5 ("The purpose of the monitoring program is to document where coyotes are frequently seen, how many coyotes are within the City of Westminster, identifying dangerous coyotes, and to give staff an understanding of where the City needs to focus the management plan."); Denver Coyote Management Plan, *supra* note --, at 8.

⁸⁸ See, e.g., Texas Agrilife Extension Service – Wildlife Services, <u>Coyote Management Report – 4th Quarter 2010</u> <u>City of Austin and Travis County</u> (using reporting data to determine trends in coyote incidents); Village of Corrales, <u>Integrated Coyote Management Plan</u>, at 2 ("In order to maintain accountability, a review will be conducted yearly on all procedures concerning coyote management in Corrales.... The yearly review on reports will include individualized documentation on each call received.").

⁸⁹ See, e.g., Rhode Island Coyote Response Protocols, *supra* note --, at 2.

⁹⁰ See, e.g., New York Dept. of Environmental Conservation, <u>Coyote Conflicts</u>; Tennessee Wildlife Resources Agency, <u>Urban Coyotes</u>; Washington Dept. of Fish & Wildlife, <u>Living with Wildlife: Coyotes</u>.

⁹¹ See infra note --.

⁹² See, e.g., Denver Coyote Management Plan, *supra* note --, at 9; Washington Dept. of Fish & Wildlife, Living with Wildlife: Coyotes, *supra* note --; Village of Rye Brook, New York, <u>Coyote Hazing Program</u> (Aug. 2010).

⁹³ See, e.g., City of Rockville, Maryland, <u>Co-Existing With Coyotes</u>; City of Paradise Valley, Arizona, <u>Coyotes</u>.

⁹⁴ See, e.g., Servello, *supra* note --; Washington Dept. of Fish & Wildlife, Living with Wildlife: Coyotes, *supra* note --; USDA Louisiana Coyote Management EA, *supra* note --, at Appendix C.

⁹⁵ See, e.g., New York Dept. of Environmental Conservation, Coyote Conflicts, *supra* note --; Washington Dept. of Fish & Wildlife, Living with Wildlife: Coyotes, *supra* note --; Denver Coyote Management Plan, *supra* note --, at 8.

⁹⁶ See, e.g., Denver Coyote Management Plan, *supra* note --, at 17-21 (hazing training program for public officials and the public); City of Westminster, Colorado, Coyote Management Plan, *supra* note --, at 4 (examples of education outreach); Washington Dept. of Fish & Wildlife, <u>Coyotes – Living with Wildlife Video</u>.

⁹⁷ See, e.g., Denver Coyote Management Plan, *supra* note --; City of Westminster, Colorado, Coyote Management Plan, *supra* note --; Village of Corrales, Integrated Coyote Management Plan, *supra* note --; Village of Rye Brook, New York, Coyote Hazing Program, *supra* note --; Yorba Linda, California, Coyote Management Plan, *supra* note --; City of Oshkosh, Wisconsin, <u>Wildlife Management Program</u>.

⁹⁸ See, e.g., Rhode Island Coyote Response Protocols, supra note ---.

⁹⁹ See generally supra note --.

¹⁰⁰ See The Conservation Agency, Best Management Practices for Coexistence with Coyotes, *supra* note --; Intermunicipal cooperation is especially important, and can be aided by regional or joint coyote management plans; as noted in Rhode Island, "[i]n order for the [plan] to be successful, the three Aquidneck Island municipalities need to work as a unit, because there is no such thing as Portsmouth coyotes or Newport coyotes." Id. at 1.

¹⁰¹ See, e.g., Cook County Coyote Project, *supra* note --; USDA Louisiana Coyote Management EA, *supra* note --, at § 2.3.5.

¹⁰² See, e.g., Cook County Coyote Project, *supra* note --, at 28; Rhode Island Coyote Response Protocols, *supra* note --, at 4; USDA Louisiana Coyote Management EA, *supra* note --, at § 2.3.9.

¹⁰³ Denver Coyote Management Plan, *supra* note --, at Appendix A.

¹⁰⁴ Id. at 11.

¹⁰⁵ See Camilla H. Fox, <u>Coyotes and Humans: Can We Coexist?</u>, at 290-291.

¹⁰⁶ The Conservation Agency, Best Management Practices for Coexistence with Coyotes, *supra* note --, at 1. *See also* Timm, *supra* note --, at 140; Cook County Coyote Project, *supra* note --, at 23.

¹⁰⁷ See, e.g., Rhode Island Coyote Response Protocols, *supra* note --, at 4 ("entire communities must employ such avoidance protocols to render them effective.").

¹⁰⁸ See, e.g., Pinellas County, Florida, <u>Animal Law/Codes</u>, Ch. 90, Sec. 6; City of Ocean Shores, Washington, <u>An</u> <u>Ordinance Prohibiting the Feeding of Certain Wild Animals</u>; City of Arvada, Colorado, <u>Feeding Wildlife Prohibited</u>; Riverside, California, <u>Municipal Code</u> § 8.17.

¹⁰⁹ See, e.g., A.R.S. § 13-2927; F.A.C. § 68A-4.001 (prohibiting feeding black bears, foxes and raccoons, but not specifically coyotes).

¹¹⁰ Township of Morris, New Jersey, <u>Dept. of Health: Prohibiting the Feeding of Wild Animals and Waterfowl</u>. ¹¹¹ Id.

¹¹² See Robyn E. Worcester and Robert Boelens, *supra* note --, at 397 (explaining that "it is logistically difficult to enforce this bylaw, as the people doing the feeding are discreet and difficult to identify.").

¹¹³ Huot and Bergman, *supra* note --, at 314.

¹¹⁴ See, e.g., Gehrt et al., *Home Range and Landscape Use of Coyotes in a Metropolitan Landscape, supra* note --, at 1056 ("Our results can be summarized into 3 primary observations. First, in a landscape dominated by human development, natural habitat was used heavily by coyotes. Second, despite the importance of natural habitat for coyotes, some individuals are capable of maintaining territories in portions of the landscape with minimal or no natural areas and elevated human activity. Third, coyotes consistently demonstrated avoidance of areas associated with humans, regardless of their sex, social status (resident or transient), the activity period, or the amount of urban development within their home ranges. Our interpretation of coyotes avoiding human-related areas also is supported by a shift in activity to nocturnal periods and a lack of human-related foods in the diet.").

¹¹⁵ See, e.g., Timm, supra note --, at 143-144; R.M. Timm et al., <u>Pest Notes: Coyote</u>, U.C. ANR Publication 74135 (Mar. 2007) (providing a list of landscape plants often preferred by coyotes); Denver Coyote Management Plan, supra note --, at 6-7; Huot and Bergman, supra note --, at 314 ("Residential and other suburban areas that have lush landscaping provide abundant food, water, and shelter for coyotes, resulting in a carrying capacity that exceeds most areas of wild or natural vegetation and prey base.").

¹¹⁶ See, e.g., Huot and Bergman, *supra* note --, at 314 ("Clearing or thinning vegetation and removing brush and dense weeds from the landscape deprives coyotes and their prey of shelter and cover. Landscape plants that produce fruits and seeds should be discouraged, and fruit should be picked from trees before it falls to the ground to avoid attracting coyotes."); Worcester and Boelens, *supra* note --, at 396 (noting that the City of Vancouver, Canada, quickly responds to complaints about coyotes attracted to rat habitats by enforcing its Untidy Premises Bylaw).

¹¹⁷ See generally James Charles Smith, The Law of Yards, 33 Ecology L.Q. 203, 216-223 (2006).

¹¹⁸ Texas Parks and Wildlife, <u>Urban Coyotes</u>.

¹¹⁹ Living with Coyotes in Suburban Areas: Insights from Two New York State Counties, *supra* note --, at 19.

¹²⁰ See, e.g., City of North Bend, Washington, <u>Comprehensive Plan, Ch. 8: Parks, Recreation, Wildlife Habitat and Openspace Element</u>, at 20-22; Douglas County 2020 Comprehensive Master Plan (May 2001), <u>Sec. 11: Wildlife</u>, <u>Wildlife Habitat</u>, and <u>Movement Corridors</u>; City of Littleton, <u>South Platte Park Management Plan</u> (updated 2009) (discussing park management strategies to protect various species, including coyotes); Town of Exeter, New Hampshire, <u>Draft Master Plan</u>, at CP-12 – CP-14 (Jun. 2002) (recognizing coyotes as one species of wildlife to be affected by wildlife and habitat protection); Seattle Dept. of Parks and Recreation, <u>Urban Wildlife and Habitat</u> <u>Management Plan 2000 Update</u>.

¹²¹ Arizona Game and Fish Department, <u>Wildlife Friendly Guidelines for Community and Project Planning</u> (Feb. 2009).

¹²² Seattle Parks and Recreation, <u>2011 Draft Development Plan</u>.

¹²³ Shrewsbury, Vermont, Code <u>Section 208: Special Features Overlay Zones</u>. *See also* Smart Growth Vermont, Community Planning Toolbox, <u>Shrewsbury Wildlife Corridor Overlay Zone</u>.

¹²⁴ City and County of Broomfield, <u>Draft Coexistence with Wildlife Policy</u> (Apr. 2010), at 10.

¹²⁵ Marin County, Cal., Code § 22.56.130I(I)(2).

¹²⁶ City of Bainbridge Island, Washington, Code <u>Ch. 16.22 Vegetation Management</u>.

¹²⁷ In re Appeal of JAM Golf, LLC, 2008 VT 110.