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## A BROAD PERSPECTIVE ON CURRENT AND FUTURE RESEARCH ON URBAN COYOTES

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**Abstract:** A change in wildlife management appears to be occurring. Previous efforts needed to be focused on producing more game species or endangered animals; now, however, tools and training must resolve issues of overabundance and conflict with predators, especially species such as coyotes (*Canis latrans*) in urban areas. Urban conflicts with coyotes may be growing because of urban development of land and human intrusion, but alteration of habitats that attract coyotes is also a likely factor. Research that will describe basic coyote biology in urban areas will be needed, but managers will also need applied research and development of new tools and techniques that can be used where current methods are not appropriate or desirable. Lastly, communication of research results and the objective assessment of the costs and benefits of urban coyotes will be important.

**Key words:** *Canis latrans*, coyote, human-wildlife conflict, nuisance wildlife, urban, wildlife damage management

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### INTRODUCTION

Traditional wildlife management training has involved devising methods, especially by altering habitats and harvests, to increase the quality or quantity of animals. Much of the initial emphasis was on increasing game populations (Leopold 1933). Then, concerns about endangered species in the 1970s altered much of our focus of training not only to improve populations of game species, but also to improve populations of rare and elusive species; predators which had been managed toward a goal of extirpation were changed in status, and research and management focused instead on increasing their numbers.

Today, both strategies of wildlife management have been successful, and many game and predator species have not

only recovered, but have become overabundant in areas where they are not desirable. New challenges will likely result in a shift in wildlife management training to focus on preventing conflicts between humans and overabundant species (Conover 2002). Because conflicts between humans and wildlife occur where both are present, issues of urban conflicts between predators, such as coyotes (*Canis latrans*), and people are likely to grow as human populations and settlements expand.

### WHY ARE URBAN CONFLICTS GROWING?

The population in the United States continues to urbanize, which results in not only a redistribution of people, but also of habitats. An initial reaction to urban sprawl

is that humans are moving “into the coyotes homes,” which may be touted as the root of the problem. One aspect of the problem of human-coyote conflict is that people are moving to where coyotes exist, but another, and probably more important, aspect is that the human population is also creating appropriate conditions for the expansion of coyote populations. Suburban developments are often de facto habitat improvement and management because of plantings and irrigation of vegetation which provides food and cover. Also, coyotes are directly benefited through garbage, discarded foodstuffs, and pets, which provide food resources. In the western United States, deserts have become oases through irrigation and it should be expected that prey species, and then predator species, will follow. Because there are more opportunities for predators and people to live together, there are more opportunities for conflicts.

Simultaneously, public attitudes toward wildlife continue to change (Reiter et al. 1999). The urbanized public appears to enjoy seeing wildlife and prefers the use of nonlethal methods for wildlife management. Thus, some states are losing the use of many of the traditional methods such as hunting, trapping, or toxicants for wildlife management in general. There are also fewer people who have experience with wild animals as agricultural communities dwindle.

### **URBAN COYOTES: WHAT RESEARCH IS NEEDED NOW?**

As urbanization increases and coyotes take advantage of the conditions that will support their survival and reproduction within urban areas, certain questions immediately arise. For example, how does sprawl and new development create new conditions for conflict? Basic understanding of coyote ecology in urbanized conditions is

only just beginning to be described. Future research should identify what coyote densities and numbers are and to what degree they use anthropogenic foods, landscapes, and cover. There are undoubtedly more coyotes in neighborhoods than most humans are aware. It is not only a question of how coyotes come into conflict with humans, but also how they live among us, staying hidden, and not causing conflicts.

Another basic question is what is the magnitude of the problem? Some researchers have begun to document incidents (Timm et al. 2004), but how many house pets do coyotes kill? How many diseases are coyotes vectors or reservoirs for? Basic research that will identify the boundaries of the problem will be useful.

Then, an immediate, applied approach is also required. Wildlife managers have lost many traditional tools, but others, especially lethal tools, may not be safe or appropriate to use in urban environments. New capture devices, frightening devices, or other technologies will be needed and developed as details emerge about the lives and susceptibilities of urban coyotes.

Lastly, from a damage management perspective, it is easy to assume that all interactions between coyotes and people are detrimental. However, because we know so little about the life histories of urban coyotes, we are also blind to any potential benefits that coyotes may provide. In rural areas, they may influence meso-predator populations and in urban areas, their activities may also have positive effects (Crooks and Soulé 1999). How, for example, do coyotes affect populations and behavior of urban deer, urban geese, and the migratory bird-killing behaviors of feral cats?

## **THE LAST STEP: HOW DO WE COMMUNICATE OUR RESULTS?**

Where people and wildlife interact, many problems can be resolved through the actions of people. Simple solutions such as proper waste management and keeping domestic pets indoors can solve many problems. However, as wildlife managers, we must also be willing to be public educators as well. We should consider our responsibility to the public to provide objective, scientific assessments of the actual degree of the problem and to make every effort to provide reasonable solutions for it.

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