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Watching Out for Human Wildlife Conflicts and Vertebrate Pests in Southern California: The Wildlife Watch Program

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ABSTRACT: Understanding residents' perceptions and expectations surrounding wildlife species that some may consider "vertebrate pests" is an important element in developing socially acceptable, yet ecologically appropriate and scientifically sound, management strategies. Coyotes are a native wildlife species that are sometimes viewed as vertebrate pests. Human-coyote conflicts in southern California illustrate the importance of incorporating the social sciences, particularly knowledge of human behavior, communication and education, in a coyote management strategy. The California Department of Fish and Wildlife has developed Wildlife Watch as a community-based approach to coyote management across eight cities in Los Angeles and Orange Counties. Wildlife Watch (based on the Neighborhood Watch national crime prevention program) uses conservation-oriented principles to empower local communities, agencies, and residents to remove wildlife attractants and to exclude or deter coyotes from neighborhoods. Here, we outline the main components of Wildlife Watch and use case studies of successful programs to identify three common components: 1) multiple methods for residents to report human-coyote encounters and/or sightings (e.g., online, phone), 2) a clearly written policy that all incident reports receive an acknowledgement or response from the city, and 3) strong support from the city's police department. An adaptive community-based program, like Wildlife Watch, offers a valuable toolkit to managers for navigating the diverse array of human perceptions, values, and attitudes regarding vertebrate pest species and human-wildlife conflicts.

KEY WORDS: *Canis latrans*, co-existence, coyote, education, human-wildlife conflict, socio-economic studies, vertebrate pest, Wildlife Watch

INTRODUCTION

Urban human-wildlife conflict, particularly involving coyotes (*Canis latrans*), is a major wildlife conservation and management issue in southern California (Baker and Timm 1998, Baker 2007). Human-wildlife conflict has a large social component (Madden and Mcquinn 2020, Manfredo 2008). One of the largest challenges in managing coyotes is understanding and addressing human emotion and behavior as it relates to human-coyote interactions.

Much of this emotion surrounds the potential or actual risk coyotes may pose to pets and other domestic animals. Losing a pet to a coyote is an emotional and traumatic experience. People can also have strong attachments to unowned domestic animals, such as feral cats (Wald and Peterson 2020). That being said, the majority of southern Californians oppose lethal control of coyotes. Less than 30% of Los Angeles, Orange, and San Diego residents are estimated to support lethal control of coyotes that injure or kill pets or domestic animals (Dietsch et al. 2018). In order to lessen the loss of domestic animals and to avoid lethal control of coyotes, community outreach, education, and communication about how to avoid conflict are an important component of any coyote management plan (Baker 2007, Sponarski et al. 2016).

An example of one such outreach program in southern California is Wildlife Watch (CDFW 2020). Wildlife Watch is a program model operated by the California Department of Fish and Wildlife (CDFW) that partners with cities and neighborhoods. It is based on the crime prevention program, Neighborhood Watch. Research has indicated that, as a community program, Neighborhood Watch has been effective at reducing crime (Bennett et al. 2008, NNW 2020). Wildlife Watch attempts to replicate this success by engaging and empowering residents to address and prevent coyote conflicts in their neighborhoods. Using the concepts of Servant Leadership (Greenleaf 1977), Wildlife Watch volunteers, known as Conservation Coaches, teach their communities about removing coyote attractants (food, water, shelter) and also how to haze a coyote that has become habituated to humans. Conservation Coaches also attend and present at townhall and community meetings. They can also assist community leaders and agency partners to develop regional wildlife management plans.

No one "one size fits all" program can address the diverse needs of different cities. Each jurisdiction has different laws and policies regarding wildlife management, and these diverse communities have their own perspective on the best approach to responding to coyote conflict. Wildlife Watch offers a flexible template for developing a wildlife management approach that is best suited to the specific needs of individual communities. Here, we examine Wildlife Watch as a case study for an awareness

and outreach program to reduce human-wildlife conflict.

METHODS

We use a qualitative approach blending case study and ethnographic methodology (Marshall and Rossman 2016). City websites from Los Angeles and Orange Counties were evaluated to estimate how many cities have a coyote management website or city management plan. Information about Wildlife Watch was based on the authors' experiences developing Wildlife Watch programs, conducting community meetings, and partnering with city governments and agency partners to develop wildlife outreach and awareness efforts.

RESULTS

A search of 88 cities in Los Angeles County, and 34 cities in Orange County, revealed over two-thirds (n = 84) of cities that had some form of coyote awareness, education, or outreach website (Table 1). One third of cities (n = 43) had some form of a coyote management plan. In Los Angeles County, 10 cities had developed a Wildlife Watch program. In Orange County, six cities had developed a Wildlife Watch program. These 16 cities have a population of just under 1.6 million residents. While Los Angeles County has more cities involved in Wildlife Watch, Orange County has a greater proportion of cities involved in the program. The Orange County cities involved in Wildlife Watch tended to have larger populations, but the difference is not statistically significant (t = -1.19; p-value = 0.28).

Based on the authors' experience with Wildlife Watch, three factors are crucial to the success of a Wildlife Watch program. First, there must be multiple ways for the residents to access information and participate in the program. These methods can include online resources, a call number or reporting hotline, door-to-door visits in the community, and a presence at events and town-hall meetings. A variety of digital and in-person contacts makes it more likely that residents have the opportunity to become engaged and stay involved.

Second, it is important that cities and Conservation Coaches acknowledge every citizen call or contacts. When residents call (or go online) to report a concern with a coyote, or to report a sighting of a coyote, it is important that they receive acknowledgement. Without positive reinforcement, it is likely that people will lose interest with the program and stop participating or making reports.

Finally, we have found it is crucial to have the support of paid permanent city staff. Volunteers are the heart of Wildlife Watch. However, without the engagement and leadership of a city employee or partner agency, it is difficult for local programs to be successful. City police departments animal services divisions are often ideal institutions to establish and support a Wildlife Watch Program.

DISCUSSION

An adaptive community-based program, like Wildlife Watch, offers a valuable toolkit to managers for navigating the diverse array of human perceptions, values, and attitudes regarding wildlife species thought of as "vertebrate pests" and human-wildlife conflicts. In Los Angeles and Orange Counties, many cities currently have some form of coyote management plan or a website for awareness and outreach with information about coyotes. A large number of residents live in cities that already have implemented some form of a Wildlife Watch program.

Past experiences with the Wildlife Watch program indicate successful programs have 1) multiple methods for residents to report human-coyote encounters and/or sightings, 2) a clearly-written policy that all incident reports receive an acknowledgement or response from the city, and 3) strong support from the city's police department or other form of "official" supervision from a city agency.

Wildlife Watch is still in its infancy. This description is intended to serve as an introduction to the program, not as an evaluation of the program model. It is difficult to evaluate the effects of a program like Wildlife Watch. Unsuccessful programs are unlikely to survive to a stage to be evaluated. Communities with talented and passionate pools of volunteers are likely to be more successful in developing and implementing any sort of wildlife management plan compared to communities without a robust population of volunteers. While these factors make it difficult to evaluate Wildlife Watch, further research can examine the effectiveness of the messaging and outreach materials used by Wildlife Watch.

Despite being in its early stages, we believe Wildlife Watch serves as a valuable resource that cities can draw upon when managing conflict with coyotes. Through the principles of Conservation Coaching and Servant Leadership, Wildlife Watch engages and empowers communities to take responsibility for preventing human-wildlife conflict. To conclude with the words of a Wildlife Watch Conservation Coach in Orange County's City of Irvine: "My neighbors and I now feel empowered rather than helpless and have clear direction on how to cohesively move forward in a positive direction."

Table 1. Summary of coyote management websites, plans, and Wildlife Watch programs in Los Angeles and Orange Counties, California.

	Los Angeles County		Orange County	
	n	%	n	%
Cities included in search	88	–	34	–
Cities with a coyote awareness website	56	64%	28	82%
Cities with a coyote management plan	28	32%	15	44%
Cities with a Wildlife Watch program	10	11%	6	18%
Residents who live in a city with a coyote management plan	1.9 million	21%	1.9 million	64%
Residents who live in a city with a Wildlife Watch program	742,000	8%	849,000	28%

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