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# A preliminary assessment of the attitudes of people towards Cooper's hawks nesting in an urban environment

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## Abstract

We asked residents of Tucson, Arizona, on or near whose property Cooper's hawks (*Accipiter cooperii*) had nested in 1997 or 1998 ( $n = 25$ ), whether they were aware of the hawks, whether they generally liked or disliked having the hawks nearby, and what they particularly liked and disliked about them. We also asked the residents if they intentionally provided food or water to birds, and whether it bothered them that Cooper's hawks in Tucson generally kill and eat doves. For purposes of comparison, we repeated the interview with residents at randomly selected houses ( $n = 30$ ). We tested for independence of responses between residents at random locations (i.e., random residents) and residents with Cooper's hawks on or near their property (i.e., nest residents) with chi-square ( $X^2$ ) contingency tables. The majority of nest residents (80%) liked having the hawks nearby, 16% were indifferent to the presence of the hawks, and 4% disliked them. The most common reason given for liking the hawks was that they were interesting to watch. Most nest residents (60%) reported that there was nothing they disliked about the hawks, although 16% noted that they disliked the mess that the hawks made in the yard (e.g., fecal matter, prey remains). The majority of both nest residents (82%) and random residents (67%) responded positively about the diet of Cooper's hawks. Residents from both groups commonly reported either that the hawks killing and eating doves did not bother them, or that the activities of the hawks were "part of nature." The proportions of the two groups that responded positively, negatively, or indifferently were not different ( $X^2 = 2.34$ ,  $P = 0.31$ ). Because a high percentage of both nest residents (80%) and random residents (77%) intentionally provided either food or water to birds, it was difficult to test for differences between the attitudes of residents who provided food and water to birds and those who did not. However, the majority of both groups (no food/water, 83.3%; food/water, 72%) were positive about the idea that Cooper's hawks kill and eat doves. Our preliminary analyses suggest that residents of Tucson generally accept the presence of nesting Cooper's hawks around human dwellings.

## INTRODUCTION

People in the United States are keenly interested in the wild animals that live around them. In 1996, nearly 61 million Americans, or 30% of the entire population in the United States, reported that within 1 mile of their homes they observe, feed, or photograph wild animals (U. S. Department of the Interior and Department of Commerce 1997). However, the interest that people show in wild animals, and their attitudes about them, is not uniform among species

(VanDruff et al. 1994). Songbirds are almost universally accepted as "neighbors" in residential areas (e.g., Ruther 1987), and many people encourage their presence by providing them with food and water (U.S. Department of the Interior and Department of Commerce 1997).

In contrast, the attitudes of people about mammalian predators that live in urban settings are mixed. Coyotes (*Canis latrans*), for example, inhabit many

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towns and cities throughout North America (e.g., Shargo 1988, Atkinson and Shackleton 1991), but people react toward them in different ways. On one hand, Shaw et al. (1992) reported that 11% of the households within 1 mile of Saguaro National Monument, Tucson, Arizona deliberately provided food near their homes to attract coyotes (despite concerted efforts by wildlife managers to discourage this practice). But in other areas of Tucson, homeowners have complained to wildlife managers about the presence of coyotes in residential areas. G. Frederick (Arizona Game and Fish Department, unpublished report) surveyed residents of 2 neighborhoods in Tucson, where people had filed complaints about coyotes, and found that 40% of respondents did not enjoy seeing coyotes close to human dwellings. Even people who enjoy seeing wildlife in urban settings often prefer to see coyotes in undeveloped rather than developed areas (Ruther 1987). Similarly, Harrison (1998) found that 8-16% of people in 3 communities in central New Mexico disliked the idea of having bobcats (*Lynx rufus*) living in residential areas. Reasons given by people for disliking coyotes and bobcats were that they feared for their personal safety, or for the safety of their children and pets (G. Frederick, Arizona Game and Fish Department, unpublished report; Harrison 1998).

Birds of prey, especially hawks, falcons, and owls, are not uncommon in towns and cities (Adams 1994). Most predatory birds pose little, if any threat to human safety, but they could be perceived by people as threats to their pets, or to animals (e.g., songbirds) that people intentionally attract to their yards. Attitudes of people about birds of prey living near them may, therefore, be similar to their attitudes about mammalian predators. Little information exists, however, on how people feel about having predatory birds living close to human dwellings.

About 50 pairs of Cooper's hawks (*Accipiter cooperii*) live in Tucson (Boal and Mannan 1999), and nearly half of their nests are situated in the front or back yards of private residences (Boal and Mannan 1998). We interviewed people, on or near whose property Cooper's hawks nested, to assess how they felt about having a predatory bird living near them. For comparative purposes we also interviewed a random selection of people from the general areas of Tucson where nesting Cooper's hawks were known to occur.

## STUDY AREA

The greater Tucson metropolitan area (32° 12'N, 110° 57'W) is located in southeastern Arizona. The area encompasses about 70,000 ha and supports about 800,000 people. Tucson is situated in the

Sonoran Desert. Vegetative communities common in the area prior to development were lower and upper Sonoran vegetation types and riparian corridors (Brown et al. 1979). Remnants of these communities are still found within Tucson, particularly in the suburban developments, but much of the native vegetation has been removed and replaced with exotic species.

## METHODS

We asked residents, on or near whose property Cooper's hawks had nested in 1997 or 1998, whether they were aware of the hawks, whether they generally liked or disliked having the hawks nearby, and what they particularly liked and disliked about them. We also asked if residents intentionally provided food or water to birds, and if they knew what Cooper's hawks generally eat. If the residents were unaware of the diet of Cooper's hawks, we informed them that Cooper's hawks in Tucson generally kill and eat doves (Boal 1997), and then asked if this aspect of Cooper's hawks bothered them.

We also interviewed residents at randomly selected houses. We initiated the selection process by randomly choosing an address from the telephone book of the greater Tucson metropolitan area, excluding addresses from incorporated towns where we had not located Cooper's hawks. We interviewed residents at homes, which were 3 houses to the right of the randomly selected addresses to account for houses with unlisted telephone numbers. If no one responded at the selected house, we systematically knocked on every door to the right of the selected house until we found a willing respondent. We first asked the residents at selected houses if they were aware that hawks nested in their neighborhoods. If they were unaware, we skipped the questions about what they liked and disliked about Cooper's hawks. We then proceeded with the question about whether they intentionally provided food or water to birds, and completed the interview as described above. We tested for independence among classes of responses (i.e., positive, negative, or indifferent) between residents at random locations and residents living close to nests of Cooper's hawks with chi-square ( $X^2$ ) contingency tables (Sokal and Rohlf 1995).

Residents at random locations were surveyed in person during daylight hours, whereas residents with hawks nesting on or near their property were surveyed in person or over the telephone. If a nest was situated in an apartment complex, or if the randomly selected site was an apartment complex, we interviewed the manager of the complex. All interviews were completed in December 1998 and January 1999.

## RESULTS

We interviewed 25 residents on or near whose property Cooper's hawks had nested (hereafter called "nest residents"), and 30 residents at randomly located houses (hereafter called "random residents"). All of the nest residents were aware that Cooper's hawks were nesting on or near their property, but only about half (44%) had learned about the hawks on their own. Remaining nest residents had learned about the hawks from the biologists who were studying them (40%), from neighbors (12%), or from a previous owner/manager (4%). Only 3 random residents (10%) were aware that hawks nested in their neighborhoods, and of these only 1 suspected that the hawks were Cooper's hawks.

The majority of nest residents (80%,  $n=20$ ) liked having the Cooper's hawks in their yards, 16% ( $n=4$ ) were indifferent to the presence of the hawks, and 4% ( $n=1$ ) disliked them. The most common reason given for liking the hawks was that they were interesting to watch (Table 1). Other nest residents felt that the hawks were educational or provided them with a chance to "experience nature" (Table 1). Most nest residents reported that there was nothing they disliked about the hawks, although 16% noted that they disliked the mess that the hawks made in their yards (e.g., fecal matter, prey remains), and others were concerned about being wakened by their calls in the morning (Table 1). Two nest residents were concerned about the safety of their pets (Table 1).

The majority of both nest residents (82%) and random residents (67%) responded positively about the diet of Cooper's hawks (Table 2). Residents of both groups commonly said that they were not bothered by the hawks killing and eating doves, or that the activities of the hawks were "part of nature" (Table 2). The proportions of the 2 groups that responded positively, negatively, or indifferently were not different ( $X^2 = 2.34$ ,  $P = 0.31$ ).

A high percentage of both nest residents (80%) and random residents (77%) intentionally provided either food or water to birds. This pattern, combined with our relatively small sample size, made it difficult to test for differences between the attitudes of residents who provided food and water to birds and those who did not. Among all residents who did not intentionally provide food or water to birds ( $n = 12$ ), most (83.3%) were positive about the idea that Cooper's hawks kill and eat doves; one found the idea "distasteful," and another was indifferent. Similarly, among all residents who did provide food and water to birds ( $n = 43$ ), most (72%) were positive about the diet of Cooper's hawks, 16% disliked the idea, and 12% were indifferent. The proportions of the 2 groups that responded positively, negatively, or indifferently were not different ( $X^2 = 0.72$ ,  $P = 0.70$ ).

## DISCUSSION

There is growing interest in the potential for wildlife conservation and management in urban environments (Soule 1991; Shaw 1996). Many communities (including Tucson) are actively developing land use plans that will preserve or create interconnected systems of natural open space and wildlife habitats within the urban matrix (Pima County 1998). Benefits touted for promoting wildlife conservation in cities and suburbs include conservation of biodiversity, aesthetics, recreational opportunities, inherent affinities between people and wildlife (Kellert and Wilson 1993), and the potential for environmental education. But, cities are not wildlife refuges and it is appropriate to ask whether interactions between people and some kinds of wildlife should be encouraged in urban areas. This study addressed the perceptions and attitudes of people towards a species of hawk that regularly preys upon birds that people enjoy viewing, and several of our findings may provide useful insights for urban wildlife managers.

A relatively small percentage of people we interviewed disliked having Cooper's hawks near human dwellings, and some of the reasons they gave for their feelings were similar to those given by other people for disliking mammalian predators in urban settings (e.g., Harrison 1998). Education may ameliorate some of the concerns about the hawks, but not all of them. Concern for the safety of pets (i.e., cats and dogs), for example, was identified by 2 residents as a reason for disliking the hawks. These concerns likely stem from incidents where Cooper's hawks swoop down on dogs and cats in an effort to drive them away from the nest tree (not eat them). Physical contact in these interactions is unusual, and Cooper's hawks are not known to prey upon dogs and cats. Boal and Mannan (1999) found that most people tolerate these "attacks," even when directed at humans, once they understand that the hawks are simply trying to protect their young, and that physical contact is rare. Changing a person's view on predation, however, may be more difficult. Some people find acts of predation distasteful, despite understanding that the act is necessary for the predator.

The most significant finding of our survey, in our view, is that most people who lived near nesting Cooper's hawks were positive about sharing their home sites with these animals. Eighty percent of the people with nests near their homes liked having these hawks in their yards and only 4% disliked them. This finding is particularly interesting considering that 80% of these households put out food or water for the purpose of attracting birds to their yards, some of which were preyed upon by the

hawks. Our preliminary conclusion is that despite their predatory lifestyle, Cooper's hawks generally are appreciated by their human co-habitants. We also conclude that there appear to be few significant conflicts between humans and Cooper's hawks.

Of interest is that only 10% of the people who did not have active nests in their yards were aware that Cooper's hawks commonly nested in Tucson neighborhoods. When these people were informed about the presence of Cooper's hawks and about their predatory lifestyle, they generally were positive. We, therefore, view the presence of birds of prey in urban settings as potential opportunities for educating the general public about predatory animals. Cooper's hawks in Tucson are relatively habituated to humans (Boal and Mannan 1999) and are potentially useful for educational programs. For example, nests of Cooper's hawk situated near school yards could serve as the focus of class projects on animal behavior.

When we were developing the questions for our survey, we speculated that residents who lived close to nesting Cooper's hawks might be more positive about the presence of the hawks than residents at random locations. Our speculation was based on casual conversations with home owners, many of whom were enthusiastic about having the hawks nearby. We also speculated that those residents who intentionally provided food or water to birds might be less enthusiastic about the presence of the hawks than residents who were not as interested in viewing songbirds. Our data hint that the first speculation might have validity, but the pattern was not statistically significant. A larger sample of interviews, especially of residents at random locations, is likely needed to fully assess both ideas.

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Table 1. Reasons why residents of Tucson, Arizona on or near whose property Cooper's hawks nested (n =25), liked and disliked having the hawks nearby, 1998-1999.

	<i>n</i>	%
<i>Reasons for liking hawks</i>		
Interesting to watch	14	56
No reason given	4	16
Educational	2	8
Experience nature	2	8
Their calls	1	4
Eat doves	1	4
Their tameness	1	4
<i>Reasons for disliking hawks</i>		
No reason given	15	60
Mess created	4	16
Concern for pets	2	8
Eat doves	2	8
Noise	2	8

**Table 2. Attitudes of residents of Tucson, Arizona, USA, on or near whose property Cooper's hawks nested ( $n = 25$ ), and attitudes of residents at randomly selected houses in Tucson ( $n = 30$ ), about the idea that Cooper's hawks kill other birds (mostly doves) as a way to survive, 1998-1999.**

Attitude	Random Residents		Nest Residents	
	<i>n</i>	%	<i>n</i>	%
<i>Positive</i>				
Does not bother or likes	6	20	18	72
Part of nature	14	47	3	12
<i>Negative</i>				
Part of nature, but does not like	3	10	1	4
Does not like	3	10	1	4
<i>Indifferent</i>	4	13	2	8