

Search methods that people use to find owners of lost pets

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Objective—To characterize the process by which people who find lost pets search for the owners.

Design—Cross-sectional study.

Sample Population—188 individuals who found a lost pet in Dayton, Ohio, between March 1 and June 30, 2006.

Procedures—Potential participants were identified as a result of contact with a local animal agency or placement of an advertisement in the local newspaper. A telephone survey was conducted to identify methods participants used to find the pets' owners.

Results—156 of 188 (83%) individuals completed the survey. Fifty-nine of the 156 (38%) pets were reunited with their owners; median time to reunification was 2 days (range, 0.5 to 45 days). Only 1 (3%) cat owner was found, compared with 58 (46%) dog owners. Pet owners were found as a result of information provided by an animal agency (25%), placement of a newspaper advertisement (24%), walking the neighborhood (19%), signs in the neighborhood (15%), information on a pet tag (10%), and other methods (7%). Most finders (87%) considered it extremely important to find the owner, yet only 13 (8%) initially surrendered the found pet to an animal agency. The primary reason people did not surrender found pets was fear of euthanasia (57%). Only 97 (62%) individuals were aware they could run a found-pet advertisement in the newspaper at no charge, and only 1 person who was unaware of the no-charge policy placed an advertisement.

Conclusions and Clinical Relevance—Veterinarians and shelters can help educate people who find lost pets about methods to search for the pets' owners. (*J Am Vet Med Assoc* 2007;230:1835–1840)

The human-animal bond is well recognized in the United States, with > 50% of households owning a companion animal.¹ For many people, this human-animal bond compels them to reach out to help animals they do not own but that are in need. The potential risks of injury, starvation, and abuse prompt many individuals to attempt to rescue pets that are perceived to be lost. Although most communities have 1 or more animal agencies to house these lost pets, many people who find a lost pet choose to try to find the owner themselves.

Individuals who find an animal they perceive to be lost have a variety of options available when searching for the owner. Beyond contacting local animal agencies, they can place advertisements in local newspapers, hang signs in or walk through the neighborhood, search lost-and-found Web sites, and contact local veterinarians for assistance. Veterinarians can assist these individuals in locating owners by providing information on search methods, scanning the animals for microchips, and providing owner information if a rabies tag is present.

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However, the process by which individuals who find lost pets look for the pets' owners and their awareness of search methods that are typically available in a community have not been described. The purposes of the study reported here, therefore, were to characterize the process by which individuals search for owners of lost pets and to identify factors that may potentially aid in reunification of lost pets with their owners. The present study was performed as a follow-up to previous studies^{2,3} on search and identification methods owners use to find lost dogs and cats.

Materials and Methods

Location of study—The study was conducted in Montgomery County, Ohio, in 2006. At the time of the study, the county had approximately 550,000 residents,⁴ of which 160,000 resided in the city of Dayton,⁵ and a single major newspaper, the *Dayton Daily News*. In addition, there were 3 major animal care and control agencies supporting the county: a dog warden agency that handled all stray dogs for the county as well as stray cats for some city municipalities and 2 nonprofit humane societies that handled cats and owner-surrendered dogs and received reports on lost dogs. Animal care and control agencies in Ohio have been described previously.^{6,7} At the time of the study, the *Dayton Daily News* allowed individuals who found a lost pet to run an advertisement for free for 10 days.

Study population—The study population consisted of a cohort of individuals who found a pet they perceived to be lost and attempted to find the owner by placing an advertisement in the lost-and-found portion of the classified section in the *Dayton Daily News* or by contacting 1 of the county's 3 animal agencies between March 1, 2006, and June 30, 2006. The primary phone number given by an animal finder was used as a unique identifier to avoid including a found pet that was reported missing through multiple sources more than once in the study.

Each animal agency kept a log of the telephone number and date of contact for any individual who contacted the agency regarding a found pet. Additional information such as date the pet was found, area of town where the pet was found, and signalment (ie, breed and sex) was provided to the agency at the animal finder's option. Information in newspaper advertisements varied but typically included the finder's telephone number, breed of the found pet, date found, and area of town. Advertisements in the newspaper were collected daily during the study, and animal agency logs were collected at the end of each month. All found pets that were described in a newspaper advertisement or were reported as found to one of the animal agencies were eligible to be included in the study.

Study design—A cross-sectional study with a telephone survey was performed. A standardized survey method was used.⁸ Finders were contacted no sooner than 30 days after the date the pet was found. If the date the pet was found was unavailable, the finder was contacted no sooner than 30 days after the date of first contact with the animal agency or the starting date of the newspaper advertisement. This time frame was chosen to give ample time for pet reunification with the owner without excessive risk of recall bias. Finders were contacted 10 times before they were considered a nonresponse. Finders were considered ineligible if they reported never having found a pet, had been mistakenly recorded in the animal agency log as having found a pet (eg, they had contacted the animal agency because they had lost, not found, a pet), were a business with no identifiable person to interview as the finder, or were a duplicate for an already identified residence (eg, telephone number recorded in the animal agency log was for a cellular telephone owned by a finder who was already included under a home telephone number).

Telephone questionnaire—Finders were asked a series of questions related to reunification and pet disposition, characteristics of the pet, awareness of potential search methods, search methods they used to find the owner, and other miscellaneous information.^a Information solicited regarding reunification and pet disposition included how the pet was originally found (ie, in the street or in traffic, in the finder's own yard, in the neighborhood, at a worksite, at a park, or other), how the pet was reunited with its owner (ie, through information obtained from an animal agency, by placing an advertisement in the newspaper, by reading an owner-placed advertisement in the newspaper, by placing signs in the neighborhood, by seeing owner-placed signs in the neighborhood, by walking through the

neighborhood, through information available on a pet tag, or other), distance pet traveled from home (ie, < 1 mile, 1 to 5 miles, or > 5 miles), number of days until the owner was found, and disposition of the animal if the owner was not found (ie, surrendered to animal agency, kept by the finder as a pet, given to another individual, given to a rescue group, or other). Pet characteristics included sex of the animal, whether the animal was purebred (yes or no), neuter status of the animal (neutered, sexually intact, or don't know), whether the pet was wearing a collar (yes or no) and whether the collar had any tags (yes or no), and whether the pet appeared to be well cared for (yes or no). Questions related to awareness of search method included whether the finder was aware of the lost-and-found section in the newspaper (yes or no) or of lost-and-found pet sites on the Internet (yes or no), knew that found-pet advertisements could be placed in the newspaper for free (yes or no), and knew that microchips were used for animal identification (yes or no). Animal finders were asked to identify which potential search methods they had used, including placing a found-pet advertisement in the newspaper (yes or no), reading the newspaper for lost-pet advertisements (yes or no), calling an animal agency (yes or no), surrendering the animal to an animal agency (yes or no), placing signs in the neighborhood (yes or no), searching lost-pet Web sites (yes or no), contacting local veterinary practices (yes or no), having the pet scanned for a microchip (yes or no), and using any other search method (yes or no). They were also asked to indicate the number of days they had actively searched for the owner. Finders who did not surrender the animal to an animal agency were asked why they did not do so (ie, afraid pet would be euthanatized, preferred to find owner themselves, animal agency would not accept pet, preferred to find new home for pet themselves, did not have pet long enough to relinquish to an animal agency, or other). Miscellaneous questions included perceived importance of finding the animal's owner (extremely important, somewhat important, or not very important), whether the finder owned any pets (yes or no), and whether the finder had found any pets in the past (yes or no). All data were tracked with standard database software.^b The survey instrument and methodology were approved by the Ohio State University Institutional Review Board prior to commencement of the study.

Statistical analysis—Medians and ranges were calculated for responses that consisted of continuous data, and proportions were calculated for responses that consisted of categorical data. The χ^2 test was used to determine whether species (ie, dog vs cat) was significantly associated with wearing a collar when found (ie, yes vs no), whether species was significantly associated with reunification of the pet with its owner (ie, yes vs no), whether reunification of the pet with its owner was significantly associated with the perception that the pet was well cared for (ie, yes vs no), whether finder awareness of the no-charge policy for placing a found-pet newspaper advertisement (ie, yes vs no) was significantly associated with placement of a newspaper advertisement (ie, yes vs no), whether the finder's perceived importance of finding the owner (ie, extremely important vs somewhat impor-

tant vs not very important) was significantly associated with the perception that the pet was well cared for, and whether the finder's perceived importance of finding the owner was significantly associated with disposition of the pet (ie, surrendered to animal agency, kept by the finder as a pet, given to another individual, given to a rescue group, or other). The Fisher exact test was used instead of the χ^2 test when the expected value for any cell was < 5 . For each of the reunification methods, a success rate was calculated as the number of owners found by that method divided by the number of finders who used that method. Success rates were not calculated for the general category of other. Standard statistical software was used.^c For all statistical analyses, values of $P \leq 0.05$ were considered significant.

Results

A total of 213 people who, during the study period, found a pet they perceived as lost were identified. Of those, 188 were determined to be eligible for the study and 156 (83%) agreed to complete a telephone interview. Of the 156, 86 were identified as a result of having contacted a county animal agency, 9 were identified as a result of having placed a found-pet advertisement in the newspaper, and 61 were identified through both sources.

Reunification and disposition—Of the 156 people included in the study, 127 (81%) had found a dog and 29 (19%) had found a cat. Twenty-eight (18%) pets reportedly had been found in the street or in traffic, 65 (42%) had been found in the finder's own yard, 45 (29%) had been found in the finder's neighborhood, 11 (7%) had been found at a worksite, 5 (3%) had been found at a park, and 2 (1%) had been found at other locations.

Overall, 59 (38%) of the pets were reunited with their owners. Median time to reunification was 2 days (range, 0.5 to 45 days). Only 1 of the 29 (3%) cats was reunited with its owner, whereas 58 of the 127 (46%) dogs were reunited with their owners; these percentages were significantly ($P < 0.001$) different. Methods used to find owners were summarized (Table 1). For 54 of the 59 pets that were reunited with their owners, the finder could report how far from home the pets

had been found. Thirty-nine (72%) were found < 1 mile from the owner's home, 10 (19%) were found between 1 and 5 miles from the owner's home, and 5 (9%) were found > 5 miles from the owner's home. Disposition of pets that were not reunited with their owners was also summarized (Table 2).

Pet characteristics—Of the 156 pets that were found, 80 (51%) were male and 76 (49%) were female. Finders reported that 76 of the 129 (60%) dogs were purebreds and 51 (40%) were mixed breeds. Finders also reported that 35 (22%) of the pets were neutered and 78 (50%) were sexually intact; neuter status of the remaining 43 (28%) pets, 28 of which were females, was unknown. Only 5 (17%) cats were wearing collars at the time they were found, compared with 57 (45%) dogs; these proportions were significantly ($P = 0.006$) different. However, only 6 (11%) dogs that were wearing collars had any tags on the collar, and none of the cats that were wearing collars had tags on the collar. When asked whether the pet appeared to be well cared for, 126 (81%) finders answered yes and 30 (19%) answered no. The proportion of pets reunited with their owners who were perceived as not being well cared for (2/59 [3%]) was significantly ($P < 0.001$) lower than the proportion of pets not reunited with their owners who were perceived as not being well cared for (28/97 [29%]).

Awareness of search methods—Almost all ($n = 146$ [94%]) finders were aware of the lost-and-found section in the local newspaper; however, only 97 (62%) were aware that a found-pet advertisement could be placed for free. Only 61 (39%) were aware of any lost-and-found pet sites on the Internet, but 147 (94%) were aware that microchips were used for identification of pets.

Search methods—Finders actively searched a median of 7 days (range, 0.5 to 45 days) for pet owners. All 156 participants mentioned that they walked around their own neighborhood in an attempt to locate the pet owner. Seventy (45%) finders placed a found-pet advertisement in the newspaper, and 106 (68%) read the newspaper for lost-pet advertisements. Only 1 of the 59 (2%) finders who were not aware that found-pet advertisements could be placed at no charge contacted the newspaper to have an advertisement run; this was significantly ($P < 0.001$) lower than the proportion of finders who were aware of this policy and placed an advertisement (69/97 [71%]). Only 34 (22%) finders searched for owners on lost-and-found Web sites, and only 34 of the 61 (56%) who were aware of such sites actually used them. Seventy-three of the 147 (50%)

Table 1—Methods by which 59 individuals who found lost pets in Montgomery County, Ohio, between March 1 and June 30, 2006, were able to reunite the pets with their owners.

Recovery method	Time to find owner (d)			Total
	≤ 1	> 1 but < 5	≥ 5	
Information from county animal agency	4 (18)	8 (38)	3 (19)	15 (25)
Newspaper advertisement placed by finder	0 (0)	2 (10)	12 (75)	14 (24)
Neighborhood signs placed by finder	1 (5)	4 (19)	0 (0)	5 (8)
Neighborhood signs placed by owner	1 (5)	2 (10)	1 (6)	4 (7)
Finder walking through neighborhood	8 (36)	3 (14)	0 (0)	11 (19)
Information on pet tag	6 (27)	0 (0)	0 (0)	6 (10)
Other	2 (9)	2 (10)	0 (0)	4 (7)
Total	22 (100)	21 (101)	16 (100)	59 (100)

Values are given as number of owners (%).

Table 2—Disposition of 97 pets found by individuals in Montgomery County, Ohio, between March 1 and June 30, 2006, that were not subsequently reunited with their owners.

Disposition	Dogs	Cats	Total
Given to agency	16 (23)	2 (7)	18 (19)
Kept by finder	27 (39)	19 (68)	46 (47)
Given to another individual	19 (28)	4 (14)	23 (24)
Given to a rescue group	2 (3)	2 (7)	4 (4)
Other	5 (7)	1 (4)	6 (6)
Total	69 (100)	28 (100)	97 (100)

Values are given as number of animals (%).

finders who were aware that microchips were used to identify pets had the pet scanned for a microchip. Forty-six of the 73 (63%) asked a veterinarian to scan for a microchip, and 27 (37%) asked an animal agency to scan for a microchip.

Overall, 147 (94%) finders called 1 or more animal agencies to report that they had found a lost pet, but only 13 (8%) initially surrendered the pet to an animal agency, and all 13 who initially surrendered pets continued to search for the owners. An additional 5 people who kept the pets while searching for the pets' owners eventually surrendered the pets to an animal agency when they were unsuccessful. Reasons for not surrendering found pets to an animal agency were summarized (Table 3). Fifty-three (34%) finders placed signs in their neighborhood to search for pet owners, and 62 (40%) contacted a veterinarian for help in locating the owner. Thirty (19%) used another search method to look for the owner, such as contacting the police, contacting a groomer, or sending e-mail messages to neighbors.

Success rates for the major methods used to locate owners, defined as the number of owners found by that method divided by the number of finders who used that method, were 20% (14/70) for placing a newspaper advertisement, 10% (15/147) for calling an animal agency, 9% (5/53) for posting neighborhood signs, and 7% (11/156) for walking the neighborhood. All of the 6 dogs that had some type of tag when found were reunited with their owners.

Miscellaneous questions—Of the 156 participants, 129 (87%) considered it extremely important to find the owners, 24 (15%) considered it somewhat important, and 3 (2%) considered it not very important. There was a significant ($P = 0.026$) positive association between the finder's perceived importance of finding the owner and the finder's perception that the pet was well cared for. There was also a significant ($P = 0.003$) positive association between the finder's perceived importance of finding the owner and whether the owner was found. However, the finder's perceived importance of finding the owner was not significantly associated with disposition of the pet. The number of search methods used by finders who kept the animals as a pet was not significantly different from the number used by finders who disposed of the animal in another manner. Most ($n =$

139 [89%]) finders reported that they owned pets, and 115 (74%) reported that they had found other pets in the past.

Discussion

Results of the present study suggest that there is a population of people who are willing to help reunite lost pets with their owners but are not willing to surrender those pets to local animal care and control agencies. Participants in the present study were familiar with pets (89% owned pets themselves) and had experience with assisting lost pets (74% had found pets in the past), and most (87%) considered it extremely important to find the owners of pets they found. Forty-six of the 97 (47%) finders who were not able to locate the pet's owner ultimately kept the lost pet themselves, but the search methods they used did not differ from the search methods used by individuals who did not ultimately keep the lost pet. This most likely indicates that a desire to keep the animal did not influence the search methods used by the finders.

Despite finders' willingness to search for owners and previous experience with lost pets, only 58 (46%) dogs and 1 (3%) cat were reunited with their owners. These percentages are lower than recovery rates reported for lost dogs (71%) and lost cats (53%) in 2 previous studies^{2,3} involving the same geographic area. However, these previous studies only included owners actively looking for their lost pets (ie, individuals who contacted an animal agency or placed a lost-pet advertisement) and included pets that were found at an animal agency and pets that returned home on their own. It is possible that reunification rates in the present study were lower because at least some of the animals were unowned or owned by individuals who were not actively searching for them. However, finders reported that 81% of the found pets appeared to have been well cared for, indicating that they were owned and had been given some level of care.

The percentages of dogs and cats in the present study that were reunited with their owners through information on an identification tag were lower than percentages of animals recovered through identification tag information reported in previous studies^{2,3} of lost pets. This may be due in part to the fact that pets that were wearing a tag with owner information when found may have been reunited with their owners without the finder contacting an animal agency or placing an advertisement in the newspaper. Thus, they would not have been included in the present study. In one of those previous studies,² 43% of dogs were wearing some type of tag and 8% had a microchip when lost, and dogs wearing a dog license when lost were recovered faster than those not wearing a tag. In the present study, only 6 dogs were wearing any type of tag when found, and none that were scanned had a microchip. However, all 6 dogs wearing a tag when found were reunited with their owners. In the previous study³ on lost cats, only 14% were wearing any type of tag when lost, and none of the cats in the present study were wearing any type

Table 3—Reasons that individuals who found lost pets in Montgomery County, Ohio, between March 1 and June 30, 2006, did not surrender those animals to local animal care and control agencies.

Reason	Dogs	Cats	Total
Afraid agency would euthanize pet	63 (55)	18 (64)	81 (57)
Wanted to find owner themselves	20 (17)	2 (7)	22 (15)
Agency would not accept animal	1 (1)	3 (11)	4 (3)
Wanted to find pet new home	9 (8)	3 (11)	12 (8)
Found owner prior to considering surrendering pet	20 (17)	0 (0)	20 (14)
Other	2 (2)	2 (7)	4 (3)
Total	115 (100)	28 (100)	143 (100)

Values are given as number of finders (%).

of tag when found. These findings further emphasize the difficulty in locating owners of pets without identification and the importance of visible pet identification in the reunification process. Animal shelters have an opportunity to educate pet owners about identification at the time of adoption and through community education programs. Veterinarians can educate clients about pet identification through front lobby displays, informational handouts, and discussions with owners during regular visits.

Placing an advertisement in the newspaper had the highest success rate among major methods used to locate owners in the present study, with 14 of the 70 (20%) finders who placed a found-pet advertisement having success with this method and 14 of the 59 (24%) pets that were reunited with their owners being reunited through this method. However, only 97 (62%) finders were aware that they could run a found-pet advertisement for free, and only 1 individual who was not aware of this no-charge policy placed an advertisement. Newspaper advertisements are a widely distributed, easily accessible method for owners and finders to communicate about lost and found pets. Through telephone calls to the classified advertisement departments for newspapers in Columbus, Cleveland, Cincinnati, Toledo, Akron, and Youngstown, the primary author (LKL) was able to verify that many other newspapers in major cities in Ohio have a similar policy of running an advertisement for free for 3 to 10 days for people who have found a lost pet. Given the potential success of using newspaper advertisements as a way to reunite lost pets with their owners, it is important to educate people who find pets that they can potentially run an advertisement for free in their community and to educate pet owners about the importance of using newspapers as a resource for finding lost pets. Although placing an advertisement was the most successful method in finding owners in our cohort, we believe it is likely that other methods such as walking the neighborhood and use of an identification tag may be more successful in a more generalized cohort incorporating all finders of lost pets.

In the present study, the largest percentage of owners was found when finders called one of the county animal agencies. In the study community, animal agencies make an attempt to manually compare their lost-and-found logs to determine whether there is a potential match between a lost pet and a found animal. In the present study, 15 of the 59 (25%) pet owners were found through this method. This illustrates the importance of shelters trying to match information and being willing to share it with individuals on the telephone. It also demonstrates the potential need for development of software programs that can automate the matching process. For communities with multiple shelters, development of a central resource that could match lost-and-found reports for all shelters in the community may be required. Further research is needed in this area to determine the best approach for different types of communities.

In the present study, only 8% of the individuals who found a lost pet were initially willing to surrender the animal to an animal agency. The primary reason

given for not surrendering a found animal was the fear the animal would be euthanatized. The euthanasia rate in the study area for 2005 was 12 animals/1,000 people, which is slightly below the average of 14.4/1,000 people reported for the Midwest.⁹ Thus, this attitude may be common in other communities with similar or higher euthanasia rates, and these types of individuals may only be willing to contact the animal shelter system through a telephone call. Although the concern for euthanasia is understandable, it poses a problem for those individuals who have lost a pet and are attempting to find them by visiting an agency. Thus, it is important to educate animal finders both on the various search methods that are available and on the role that shelters can play in reunification. It is also important for shelters to improve their public image and to work with the public on better systems for pet reunification.

There are several limitations associated with the present study. First, it only included individuals who, after finding a pet, contacted a county animal agency or placed a found-pet advertisement in the local newspaper. Thus, individuals who did not use these methods for identifying the owner were excluded, potentially introducing some bias into the study. As with any study that focuses on a particular geographic area, care should be taken in extrapolating results of the present study to the situation in other areas. Also, because data were collected only for 4 months of the year, it is possible that seasonal differences exist both for search and recovery methods. Finally, we were not able to perform any type of multivariable analysis to identify factors possibly associated with reunification, primarily because of the relatively small sample size. Future studies with larger numbers to better identify associations while controlling for confounding are warranted.

Only 59 of the 157 (38%) individuals in the present study who found lost pets were able to reunite those pets with their owners. An opportunity exists for both shelters and veterinarians to educate these people on various search methods and the importance of providing owners every possible means to recover their pet. Further research is needed to better understand the role of community and pet owner education in improving pet reunification rates.

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- a. Copies of the telephone survey are available from the corresponding author on request.
 - b. Microsoft Office Access 2003, Microsoft Corp, Redmond, Wash.
 - c. Stata, version 9.1, StataCorp, College Station, Tex.
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References

1. AVMA. *US pet ownership and demographics sourcebook*. Schaumburg, Ill: AVMA, 2002.
2. Lord LK, Wittum TE, Ferketich AK, et al. Search and identification methods that owners use to find a lost dog. *J Am Vet Med Assoc* 2007;230:211–216.
3. Lord LK, Wittum TE, Ferketich AK, et al. Search and identification methods that owners use to find a lost cat. *J Am Vet Med Assoc* 2007;230:217–220.
4. State and county quick facts. Montgomery County population. US Census Bureau Web site. Available at: quickfacts.census.gov/qfd/states/39/39113.html. Accessed May 13, 2006.

5. Dayton, Ohio, detailed profile Web site. Available at: www.city-data.com/city/Dayton-Ohio.html. Accessed May 13, 2006.
6. Lord LK, Wittum TE, Neer CA, et al. Demographic and needs assessment survey of animal care and control agencies. *J Am Vet Med Assoc* 1998;213:483–487.
7. Lord LK, Wittum TE, Ferketich AK, et al. Demographic trends for animal care and control agencies in Ohio from 1996 to 2004. *J Am Vet Med Assoc* 2006;229:48–54.
8. Dillman DA. *Mail and telephone surveys: the total design method*. New York: John Wiley & Sons Inc, 1978.
9. Clifton M. Gains against shelter killing come hard in the Gulf states, West, & Midwest. *Anim People* 2006;Jul/Aug:18.