

## Behavioral Reasons for Relinquishment of Dogs and Cats to 12 Shelters

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The Regional Shelter Relinquishment Study sponsored by the National Council on Pet Population Study and Policy (NCPSP) is a national research project designed to explore the characteristics of relinquished dogs and cats, their owners, and the reasons for relinquishment. The NCPSP Regional Shelter Study found that behavioral problems, including aggression toward people or nonhuman animals, were the most frequently given reasons for canine relinquishment and the second most frequently given reasons for feline relinquishment. No association was found between category

of relinquishment (behavioral, mixed, nonbehavioral) and gender, number of times mated (males), number of litters (females), purebred status, declaw status, and number of visits to the veterinarian within the past year, for either dogs or cats. Associations were found between category of relinquishment and number of pets in the household, number of pets added to the household, neuter status of female dogs and cats, neuter status of male dogs, training level, age of pet relinquished, length of ownership, and pets acquired from shelters. Associations also were found between the state in which the pet was relinquished and income level of owner.

The Regional Shelter Relinquishment Study sponsored by the National Council on Pet Population Study and Policy (NCPSP) is a national research project designed to explore the characteristics of relinquished dogs and cats, their owners (caretakers), and the reasons for relinquishment. The NCPSP Regional Shelter Study found that behavioral problems, including aggression toward people or companion animals, were the most frequently given reasons for canine relinquishment and the second most frequently given reasons for feline relinquishment (Salman et al., 1998). The magnitude of this problem illuminates the need for further understanding of behavioral problems as they associate with relinquishment. The purpose of this study, therefore, is to examine the relation among behavioral, nonbehavioral, and a combination of behavioral and nonbehavioral reasons for relinquishment of dogs and cats with owner demographics, owner knowledge, and household factors.

## MATERIALS AND METHODS

### Study Design

The study design and overall results of the Regional Shelter Study have been described in full by Salman et al. (1998). In summary, the study was conducted between February 1995 and April 1996. Trained interviewers administered a questionnaire to persons relinquishing dogs, cats, or both at 12 shelters in four regions of the United States. The questions asked pertained to reasons for relinquishment, characteristics of the relinquished pet (species, age, length of ownership, gender, neuter status and reproductive history, breed, number of other dogs and cats in household, movement of dogs and cats into and out of the household in the preceding year, source of pet, cost, frequency of veterinary visits, housing, training history, and frequency of selected behaviors exhibited in the past), and demographic characteristics of the person who relinquished the animal (age, gender, ethnicity, household income, highest educational level reached, and general knowledge concerning dog and cat husbandry).

People who surrendered an animal could report up to 5 principal reasons for relinquishment. Of the 71 reasons for relinquishment recorded in the study (Salman et al., 1998), 24 were classified as behavioral (Table 1).

TABLE 1  
Behavioral Reasons Given for Dog and Cat Relinquishments to 12 Shelters (1995–1996)

Aggression toward people	Afraid of various things	Chases cars	Destructive in house
Aggression toward animals	Animal wants/needs too much attention	Chases people	Destructive outside house
Bites	Too active	Coprophagy (eats feces)	Soils house
Has killed another animal	Competes with other people or animals	Euthanasia request due to behavior problems	Problems between new pet and other pets
Chases animals	Not friendly	Escapes	Jumps up on people
Wants to go outside	Vocalizes too much	Disobedient	Pica

*Note.* Pica is defined as a depraved appetite and refers to the ingestion of inappropriate objects.

### Data Description and Analysis

Data were stratified by species. Relinquishments of found animals of unknown ownership or for euthanasia due to old age or illness are not considered as surrenders due to the breakdown of the human–animal bond and were, therefore, not included within this data set. Interview data records were grouped in three categories according to types of relinquishment reasons listed: (a) behavioral reasons only, (b) mixed behavioral and nonbehavioral reasons, and (c) nonbehavioral reasons only. Descriptive statistics were calculated based on these three categories. Proportions were compared using chi-square tests (Fleiss, 1981) on  $3 \times n$  contingency tables. Relinquishments with no information for a variable were excluded from the analysis for that variable. If statistical significance was detected in tables with more than two rows, each level of the variable concerned was tested against the remainder of the table to determine the specific level of differences. Due to the multiple comparisons made, statistical significance was accepted at  $p < .01$ .

## RESULTS

The original data set consisted of information from 2,230 canine records and 1,579 feline records. Application of the exclusion criteria resulted in the retention of 1,984 canine and 1,286 feline relinquishments.

A range of one to five reasons ( $Mdn = 2$  for both species) was provided for relinquishment. At least one behavioral reason was recorded for 40% of the dogs and 28% of the cats relinquished. Behavioral reasons accounted for 27% of the single-reason canine relinquishments and 19% of the single-reason feline relinquishments.

Of the top 10 reasons for behavioral relinquishment, 8 reasons given for dogs (Table 2) and 7 reasons given for cats (Table 3) were common to both behavioral

TABLE 2  
Top 10 Behavioral Reasons for Behavioral and Mixed Categories of Relinquishments of  
1,984 Dogs to 12 U.S. Animal Shelters<sup>a</sup>

<i>Behavioral</i> <sup>b</sup>	%	<i>Mixed</i> <sup>c</sup>	%
Bites	22.2	Soils house	18.5
Aggressive toward people	17.4	Destructive outside	12.6
Escapes	16.4	Aggressive toward people	12.1
Destructive inside	15.3	Escapes	11.6
Destructive outside	15.3	Too active	11.4
Disobedient	13.5	Needs too much attention	10.9
Problems between new pet and other pets	12.9	Vocalizes too much	10.7
Aggressive toward animals	11.3	Bites	9.7
Soils house	9.5	Destructive inside	9.7
Vocalizes too much	7.7	Disobedient	9.0

<sup>a</sup>Presented as reason and percentage of relinquishments in that category in which reason was listed. <sup>b</sup>*n* = 379. <sup>c</sup>*n* = 422.

TABLE 3  
Top 10 Behavioral Reasons for Behavioral and Mixed Categories of Relinquishment  
of 1,286 Cats to 12 U.S. Animal Shelters<sup>a</sup>

<i>Behavioral</i> <sup>b</sup>	%	<i>Mixed</i> <sup>c</sup>	%
Soils house	43.2	Soils house	37.7
Problems between new pet and other pets	18.9	Destructive inside	11.4
Aggressive toward people	14.6	Aggressive toward people	10.9
Destructive inside	12.4	Problems between new pet and other pets	8.0
Aggressive toward animals	12.4	Bites	8.0
Bites	9.2	Needs too much attention	6.9
Disobedient	5.9	Unfriendly	6.9
Euthanasia for behavioral reasons	5.4	Destructive outside	5.1
Unfriendly	5.4	Euthanasia for behavioral reasons	4.6
Afraid	3.8	Too active	4.6

<sup>a</sup>Presented as reason and percentage of relinquishments in that category in which reason was listed. <sup>b</sup>*n* = 185. <sup>c</sup>*n* = 175.

and mixed relinquishment categories. House soiling was the most frequently listed behavioral reason for relinquishment of both dogs and cats when mixed reasons were provided for relinquishment. It was also the most frequently listed reason when behavioral reasons alone were provided for relinquishment of cats. However, for dogs, aggressive and destructive behaviors were more frequently recorded than house soiling when behavioral reasons only were listed.

### Household Characteristics

A significant association was observed between the presence of other pets in the household and relinquishment category for both dogs (Table 4) and cats (Table 5). For respondents whose households included dogs, the relative proportion of behavioral relinquishments was lowest when no other companion animals—dogs or cats—lived in the household and highest when at least one other dog or cat was present. Similarly, the presence of at least one other pet in the household appeared to be strikingly associated with an increase in feline relinquishments for behavioral reasons (71% behavioral, 51% mixed, 45% nonbehavioral).

TABLE 4  
Summary of Pet Inventories and Changes (Percentage of Column) in Households of 1,984 Dogs Relinquished to 12 U.S. Animal Shelters, Stratified by Relinquishment Category

	<i>Behavioral<sup>a</sup></i>	<i>Mixed<sup>b</sup></i>	<i>Nonbehavioral<sup>c</sup></i>
Other pets in household <sup>d</sup>			
No other dogs or cats	40.4	51.9	55.4
At least one other dog or cat	58.3	47.6	43.3
No answer	1.3	0.5	1.3
Additions of dogs or cats to household during preceding year <sup>d</sup>			
Neither dogs nor cats added <sup>e</sup>	41.4	45.3	51.5
At least one dog added <sup>e</sup>	51.2	46.9	42.1
At least one cat added	3.7	2.6	2.4
At least one of each species added	2.6	4.0	2.3
No answer	1.1	1.2	1.8
Removal of dogs or cats from household during preceding year			
Neither dogs nor cats left	78.9	79.1	80.9
At least one dog left	12.1	13.3	11.6
At least one cat left	5.8	5.7	4.3
At least one dog and one cat left	0.8	0.7	0.8
Insufficient information	2.4	1.2	2.5

<sup>a</sup>*n* = 379. <sup>b</sup>*n* = 422. <sup>c</sup>*n* = 1,183. <sup>d</sup>The 3 × *n* contingency table was statistically significant. <sup>e</sup>This row was compared with the rest of its table (excluding those cases with no answer), and the proportions differed significantly (*p* < .01).

TABLE 5  
 Summary of Pet Inventories and Changes (Percentage of Column) in Households of 1,286  
 Cats Relinquished to 12 U.S. Animal Shelters, Stratified by Relinquishment Category

	<i>Behavioral<sup>a</sup></i>	<i>Mixed<sup>b</sup></i>	<i>Nonbehavioral<sup>c</sup></i>
Other pets in household <sup>d</sup>			
No other dogs or cats	28.6	48.0	54.2
At least one other dog or cat	71.4	51.4	44.8
No answer	0.0	0.6	1.0
Additions of dogs or cats to household during preceding year <sup>d</sup>			
Neither dogs nor cats added	49.7	46.9	50.1
At least one dog added <sup>e</sup>	6.5	4.6	2.6
At least one cat added	39.5	36.6	42.7
At least one of each species added <sup>e</sup>	3.8	10.3	3.5
No answer	0.5	1.7	1.2
Removal of dogs or cats from household during preceding year			
Neither dogs nor cats left	75.7	73.1	75.1
At least one dog left	3.8	9.7	3.9
At least one cat left	20.0	12.0	17.2
At least one dog and one cat left		3.4	2.3
Insufficient information	0.5	1.7	1.6

<sup>a</sup> $n = 185$ . <sup>b</sup> $n = 175$ . <sup>c</sup> $n = 926$ . <sup>d</sup>The  $3 \times n$  contingency table was statistically significant. <sup>e</sup>This row was compared with the rest of its table (excluding those cases with no answer), and the proportions differed significantly ( $p < .01$ ).

The addition of a dog or cat to the household in the year preceding the study was also significantly associated with relinquishment category for both dogs and cats (Tables 4 and 5). More respondents relinquishing dogs for nonbehavioral reasons (52%) had not added a dog or cat to the household compared to those relinquishing for behavioral reasons (41%). The percentage of respondents relinquishing dogs and reporting the addition of at least one dog to the household differed between relinquishment categories (51% behavioral, 47% mixed, and 42% nonbehavioral).

People who relinquished felines and reported the addition of at least one dog to the household were more likely relinquishing for behavioral reasons (7% behavioral, 5% mixed, 3% nonbehavioral). The proportion of relinquishments in which at least one of each species was added to the household varied for feline relinquishments (4% behavioral, 10% mixed, and 4% nonbehavioral). Category of relinquishment was not associated with the loss or departure of dogs or cats from the household in the preceding year.

### Animal Source

Of those owners who reported adding a dog or cat to the household during the year preceding relinquishment of a dog, acquisition of a dog (but not a cat) from

a shelter was significantly associated with category of relinquishment (Table 6). Owners relinquishing a dog for behavioral reasons only were more likely to report having acquired a dog from a shelter (50%) than were those relinquishing a dog for mixed (25%) or nonbehavioral (19%) reasons. Similarly, for feline relinquishments, owners relinquishing a cat for behavioral reasons only were more likely to report having acquired a cat from a shelter (25%) than were those relinquishing a cat for mixed (12%) or nonbehavioral (9%) reasons. Relinquishment to a shelter of a previously owned animal in the year preceding the current relinquishment was not associated with the category of the current relinquishment for either dogs or cats.

The most frequently reported source of acquisition for dogs relinquished for a behavioral reason was a shelter (39%). Dogs relinquished for mixed reasons and nonbehavioral reasons only were usually acquired from friends (32% and 33%, respectively). The association of source of pet acquisition with relinquishment category was statistically significant for canine but not feline relinquishments, where the source most often reported for all categories was a friend (33%, 39%, and 32% for behavioral, mixed, and nonbehavioral categories of relinquishment, respectively).

### Animal Characteristics

Examination of demographic characteristics of the relinquished dogs and cats demonstrated no association between category of relinquishment reasons and gender, number of times mated (males), number of litters (females), purebred status, declaw status, and number of visits to the veterinarian within the past year for either dogs or cats. The neuter status of females was associated with category of relinquishment for both dogs and cats, with the highest proportion of neutered females being in the behavioral category for both species. The neuter status of males was associated with category of relinquishment for dogs only, with the proportion of neutered males being highest in the behavioral (56%) category and lowest in the nonbehavioral (33%) category. The purchase cost of dogs, but not of cats, was associated with category of relinquishment—the proportion of dogs who were free being lowest in the behavioral (45%) category and highest in the nonbehavioral (61%) category.

Examination of age at relinquishment and relinquishment category showed an increase in relinquishments for behavioral and mixed categories in dogs between 9 months and 6 years of age. Such a trend was not readily apparent for feline relinquishments. The mode age category for relinquishment was from 1 to less than 2 years for both species. The mode length of ownership category was less than 3 months for canine relinquishments in contrast to 1 to less than 2 years for feline relinquishments. The proportion of dogs who were relinquished for one or more behavioral reasons decreased as length of ownership increased beyond the 4-to-less-than-5-year category. No such trend was apparent for feline relinquishments.

TABLE 6  
 Frequency of Acquisition From and Relinquishment to a Shelter of Dogs, Cats, or Both in  
 the Preceding Year by Households that Relinquished Dogs, Cats, or Both to 12 U.S.  
 Animal Shelters, Stratified by Relinquishment Category

	<i>Behavioral (%)</i>	<i>Mixed (%)</i>	<i>Nonbehavioral (%)</i>
<b>Households relinquishing dogs</b>			
Acquired a dog from a shelter during the preceding year (of those who reported acquiring a dog) <sup>a</sup>			
No	49.5	74.4	79.4
Yes	49.5	25.1	19.0
No answer	1.0	0.5	1.5
Total	204	215	525
Relinquished a dog to a shelter during the preceding year (of those who reported another dog leaving the household)			
No	81.6	84.7	91.8
Yes	18.4	15.3	8.2
Total	49	59	146
Acquired a cat from a shelter during the preceding year (of those who reported acquiring a cat)			
No	87.5	82.1	90.9
Yes	12.5	17.9	9.1
Total	24	28	55
Relinquished a cat to a shelter during the preceding year (of those who reported a cat leaving the household)			
No	96.0	92.6	95.0
Yes	4.0	7.4	5.0
Total	25	27	60
<b>Households relinquishing cats</b>			
Acquired a dog from a shelter during the preceding year (of those who reported acquiring a dog)			
No	84.2	92.3	89.3
Yes	15.8	7.7	10.7
Total	19	26	56
Relinquished a dog to a shelter during the preceding year (of those who reported a dog leaving the household)			
No	71.4	69.6	78.9
Yes	28.6	30.4	21.1
Total	7	23	57

*(Continued)*



TABLE 6 (Continued)

	<i>Behavioral (%)</i>	<i>Mixed (%)</i>	<i>Nonbehavioral (%)</i>
Acquired a cat from a shelter during the preceding year (of those who reported acquiring a cat)			
No	75.0	86.6	90.4
Yes	25.0	12.2	8.7
No answer	0.0	1.2	0.9
Total	80	82	427
Relinquished a cat to a shelter during the preceding year (of those who reported a cat leaving the household)			
No	83.8	77.8	83.3
Yes	16.2	22.2	16.7
Total	37	27	180

<sup>a</sup>The 3 × 2 contingency table was statistically significant.

Questions were asked concerning patterns of behavior that the pet exhibited, and the response options were (a) always or almost always, (b) most of the time, (c) some of the time, and (d) rarely or never. For dogs and cats, statistically significant associations were detected between category of relinquishment and pattern of responses to all questions asked concerning the relinquished pets' behaviors preceding the relinquishment, with the exception of questions concerning house soiling (dogs) and exhibition of fear (both species). The pattern of responses to the behavioral questions indicated that the proportions of pets rarely or never exhibiting the selected behaviors were lowest in the behavioral category and highest in the nonbehavioral category. For dogs in particular, the relative frequency of selected behaviors that the pet reportedly exhibited was greatest in the behavioral category, followed by the mixed category.

The category of relinquishment reasons was not associated with whether the owner or another family member took a relinquished dog to obedience classes (no, 90%; yes, 4%; no answer, 6%), whether a professional dog trainer trained the dog for the owner (no, 93.1%; yes, 1%; no answer, 6%), whether the owner or another family member had individual obedience instruction (no, 93%; yes, 2%; no answer, 6%), or whether the dog had been taught basic commands at all (no, 71%; yes, 23%; no answer, 5%). However, the proportion of dogs reported to have been taught some basic commands by owners or other family members differed among relinquishment categories—with the smallest proportion in the behavioral category, followed by mixed and then nonbehavioral relinquishment reasons. Evaluation of the dogs who reportedly knew some basic commands when acquired revealed that the largest proportion was in the behavioral category and the smallest in the nonbehavioral category of relinquishment reasons (Table 7).

TABLE 7  
 Frequency and Proportion of Type of Training of Dogs Relinquished to 12 U.S. Animal Shelters, Stratified by Relinquishment Category

	<i>Behavioral<sup>a</sup></i>		<i>Mixed<sup>b</sup></i>		<i>Nonbehavioral<sup>c</sup></i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
I or another family member taught the dog some basic commands. <sup>d</sup>						
No	140	36.9	158	37.4	345	29.2
Yes	216	57.0	255	60.4	765	64.7
No answer	23	6.1	9	2.1	73	6.2
The dog already knew some basic commands when I got it. <sup>d</sup>						
No	287	75.7	356	84.4	971	82.1
Yes	69	18.2	54	12.8	136	11.5
No answer	23	6.1	12	2.8	76	6.4
I or another family member took the dog to obedience classes.						
No	334	88.1	390	92.4	1,065	90.0
Yes	22	5.8	20	4.7	42	3.6
No answer	23	6.1	12	2.8	76	6.4
A professional trainer trained the dog for me.						
No	348	91.8	406	96.2	1,093	92.4
Yes	8	2.1	3	0.7	14	1.2
No answer	23	6.1	13	3.1	76	6.4
I or another family member had individual obedience instruction.						
No	346	91.3	401	95.0	1,096	92.6
Yes	10	2.6	8	1.9	11	0.9
No answer	23	6.1	13	3.1	76	6.4
Dog has not been taught basic commands.						
No	264	69.7	293	69.4	855	72.3
Yes	92	24.3	117	27.7	255	21.6
No answer	23	6.1	12	2.8	73	6.2

<sup>a</sup>*n* = 379. <sup>b</sup>*n* = 422. <sup>c</sup>*n* = 1,183. <sup>d</sup>The 3 × 2 contingency table was statistically significant.

## Owner Knowledge

Evaluation of owners' general knowledge of pet husbandry and behavior revealed only one significant association with the relinquishment category of the pet. The response to the question of whether a female dog or cat will be better off if she has one litter before being "fixed" was significantly associated with category of relinquishment for those relinquishing dogs; the lowest proportion of

owners who believed this to be true were those who relinquished a dog for behavioral reasons (behavioral, 15%; mixed, 23%; nonbehavioral, 23%).

### Owner Demographics

Owner demographic information was summarized. Gender, level of education, and cultural or ethnic identity was not associated with category of relinquishment. The state in which the pet was relinquished differed among relinquishment categories for both dogs and cats. For dogs, relinquishments in the behavioral category appeared overrepresented in California (behavioral, 38%; mixed, 30%; nonbehavioral, 33%) and underrepresented in New York (behavioral, 8%; mixed, 14%; nonbehavioral, 17%), whereas mixed relinquishments appeared overrepresented in Kentucky (behavioral, 18%; mixed, 23%; nonbehavioral, 15%). For cats, relinquishments for behavioral reasons appeared to be overrepresented in Colorado (behavioral, 17%; mixed, 6%; nonbehavioral, 7%).

Level of annual household income differed only for dogs, with behavioral relinquishments appearing to be underrepresented at the lower income levels and mixed reasons underrepresented at the higher income levels. Owner age was not associated with relinquishment category, did not differ between species, and was similar to that reported for the complete data set of which this study is part.

## DISCUSSION

Animal behavior problems often have detrimental effects on the relationships between pets and their owners and, consequently, function as important determinants in relinquishment decisions (Arkow & Dow, 1984; Nassar, Mosier, & Williams, 1984; Seksel, 1997.) The behaviors associated with the decision to relinquish a canine or feline include aggression (Houpt, 1983; Jagoe & Serpell, 1996; Mugford, 1981; Reisner, 1997), separation-related behavior (Wright & Nesselrote, 1987), house soiling, fearful behavior, destructiveness, vocalization, disobedience, digging, and chewing (Salman et al., 1998; Voith, Wright, & Danneman, 1992). The results of the NCPPSP Regional Shelter Relinquishment Study support previous findings pertaining to animal behavior problems and owners' decisions to relinquish their pets.

Although an increased amount of attention has been placed on behavioral problems and their effects on animal-human relationships and, subsequently, relinquishment, there remains a paucity of available data pertaining to the subject. Unwanted adult pets now outnumber puppies and kittens (DiGiacomo, Arluke, & Patronek, 1998; Salman et al., 1998), with many euthanized animals exhibiting po-

tentially resolvable behavior problems. Spencer (1993) noted that 50–70% of all dog and cat euthanasia is the result of behavior problems.

This study is an extension of previously published studies (New et al., 1999; Salman et al., 1998; Scarlett, Salman, New, & Kass, 1999). All of the limitations mentioned in those three studies are applied to the findings from this study. This study focuses on the relative comparison of dogs and cats relinquished for behavior reasons with those relinquished for other reasons. Several of the findings from this study can be used in intervention strategies. The comparisons, however, are limited to dogs and cats who are relinquished to shelters. No comparisons were made with the U.S. dog and cat populations; thus, inferences are made only to shelter populations. We have recognized the complexity of reasons for relinquishment that may include behavioral and nonbehavioral reasons. Therefore, a third group of comparisons were used.

## CONCLUSIONS

The following points summarize conclusions drawn from this study:

- It seems that owning a single animal in a household reduces the chances for relinquishing a pet for behavioral reasons.
- Owners should be aware that adding a new pet will change the social hierarchy within the household and potentially change behaviors exhibited by the pets. These behaviors may be normal interspecies behavior but are perceived as a problem by the owner (Juarbe-Diaz, 1997).
- Neutered female dogs and cats and neutered male dogs were more frequent in the behavioral category of relinquishment. Behavioral categories included in the survey did not include the reason for behaviors. For example, “aggression to other animals” could be used to describe inappropriate sexual behavior as well as dominance or possessiveness, which are observed in any age group or gender (Reisner, 1997). Owners were not asked at what age the surrendered animal was neutered. Veterinarians often suggest neutering when male dogs develop behavioral problems. Those relinquished for behavioral reasons may have been neutered at an older age when the potential behavior modification benefits are decreased or absent.
- There is a strong association between the addition of a dog from a shelter and the relinquishment of a dog to a shelter for behavioral reasons. Therefore, an intervention strategy for educating owners and training dogs in a shelter environment may contribute to the reduction of relinquishment.
- Owners of problem-behavior dogs own these animals less than 3 months prior to relinquishment. Thus, there is a window of opportunity that provides guidance and help, but it is a very narrow window. For cats, the opportunity to provide help is longer as cats are owned for 1–2 years before being relinquished. Cat owners need to be made aware that modifying cat behaviors is possible.

- It is apparent that problem-behavior dogs have received some training yet exhibit problems in spite of the training. Several explanations come to mind. Owner expectations for “trained” dogs might be higher than for “untrained” dogs, especially if the owner expects the dog to be trained at acquisition. Owners of dogs with behavioral problems more likely may seek training as a solution to the problems. Dogs relinquished for behavioral reasons appear older in age and, thus, have had more opportunity to be trained, but this would be difficult to assess from the available data. In addition, no evaluations of the surrendered dogs’ behavior or training level were made during this study.
- Regional differences and income level may influence relinquishment category.

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