



Chapter 2

Animal Care and Control Agencies

Upon first impression, it may seem that a municipal animal care and control agency can play only a reactive role while protecting citizens in its community and providing shelter to stray and lost animals. After all, the agency must respond the best it can to problems created by irresponsible pet owners, and the extent to which citizens in the community act responsibly seems far beyond its control.

But it's not. To a great extent, the agency can provide greater protection for citizens and reduce the population of lost and homeless pets through a set of proactive policies and procedures.

Multnomah County, Oregon
Incident bite rate
(per 1,000 licensed dogs)
6/30/02—7/1/03

Intact male	55.1
Neutered male	7.7
Intact female	31.1
Spayed female	3.0

Shuler CM, DeBess EE, Lapidus JA, & Hedberg K (2008). Canine and human factors related to dog bite injuries. *J. Am. Vet. Med. Ass'n.* **232**: (4), 544.

These programs begin with recognizing that sexually intact dogs and cats cause a disproportionate share of injury in the communities where they live. The frequency of dog bites in Multnomah County, Oregon is shown in a sidebar on the previous page.

Intact cats and dogs are also responsible for a disproportionate share of a community’s animal sheltering expenses. Intact dogs are more likely to stray from home.^{113,114} Intact dogs are twice as likely to be relinquished to an animal shelter as sterilized dogs; intact household cats are 3.3 times more likely to be relinquished to an animal shelter than

“An effective animal control program not only saves cities and counties on present costs—by protecting citizens from dangerous dogs, for example—but it also helps reduce the cost of animal control in the future. A city that impounds and euthanizes 4,000 animals in 2001—at a cost of \$50 to \$90 per animal—but does not promote spaying and neutering will probably still euthanize 4,000 animals a year in 2010. A city that euthanizes 4,000 animals a year in 2001 and institutes differential licensing, funds a subsidized spay/neuter program, and has an educational program for both adults and children will likely euthanize significantly fewer animals in 2010 and save on a host of other animal-related costs as well.”

Handy G (2001). Animal Control Management: A Guide for Local Governments. Washington, D.C.: International City/County Management Association, 18.

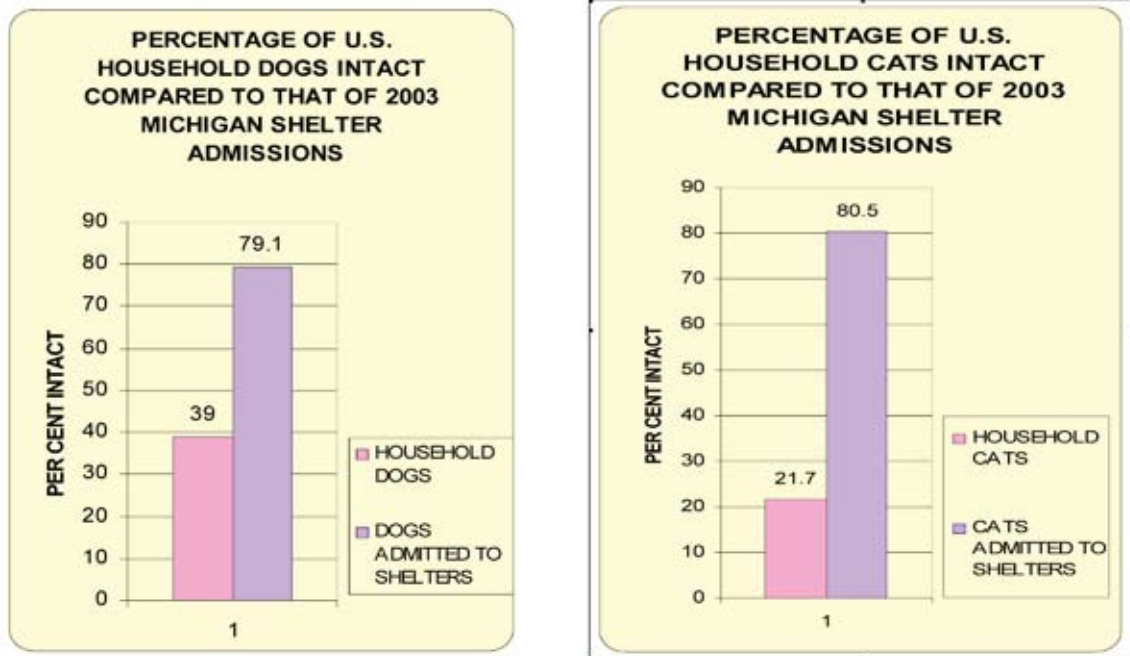


Figure 7.

their sterilized counterparts.¹¹⁵ Feral cats make up a substantial share of the homeless animals admitted to shelters and more than 97% of them are sexually intact.¹¹⁶ As a result, shelter intake rates and the resulting expenses are largely determined by a community's pet sterilization rate. While only about one-fifth of American household cats and less than two-fifths of dogs remain sexually intact,¹¹⁷ intact cats and dogs accounted for almost four-fifths of the adult cats and dogs admitted to Michigan animal shelters in 2003¹¹⁸ (See Figure 7 on the previous page).

Programs that increase a community's pet sterilization rate are the foundation of any effective animal control program.¹¹⁹ And many of the most effective ways to accomplish this are uniquely within the control of animal care and control agencies.

I. Sterilization at Adoption of Intact Cats and Dogs Adopted from Animal Shelters

Pet sterilization rates have increased to the point that there are only about 22 million intact dogs in America and about 15 million intact household cats.¹²⁰ As mentioned above, intact dogs and cats made up about four-fifths of all the cats and dogs admitted to Michigan animal shelters in 2003. If this holds true throughout the rest of the country, one-seventh of all the intact dogs in the country and perhaps the same proportion of intact household cats enter animal shelters every year.¹²¹ While the admission of intact cats and dogs places a disproportionate burden on the sheltering system, it also provides an excellent opportunity to increase a community's pet sterilization rate if the impounded animals are sterilized and returned to the community.

As set forth in the introductory section (Figure 6 on Page 13), after California passed a sterilization-at-adoption law, shelter intakes at animal care and control shelters in the six largest counties with complete data dropped by 10% in the first five

A study of cats and dogs adopted from a Louisiana animal care and control agency from 1988-1990 found that only 41% of owners complied with their agreement to have an intact adopted animal sterilized even though all had paid a \$25 fee that entitled them to have the cat or dog sterilized at a private veterinary hospital.

Alexander SA & Shane SM (1994). Characteristics of animals adopted from an animal control center whose owners complied with a spaying/neutering program. *J. Am. Vet Med Ass'n.* **205**(3): 474.

years. During the five-year period before that, state law had only required adopters to post a neutering deposit when adopting an intact pet and total dog and cat intakes at animal control shelters in these counties grew by 8.6%, roughly matching the growth of the counties' human population.¹²²

Adopting a pre-release sterilization policy is the prerogative of any animal care and control agency. Much—if not all—of the cost can be recovered through adoption fees. In some cases, the cost of sterilization turns out to be no greater than the sterilization deposit that had been taken previously. Whatever the case, pre-release sterilization programs are an essential component of a proactive program to reduce the population of stray and homeless animals.

II. Adoption of Sterilized Shelter Animals Through Transfers to Humane Societies and Rescue Groups

The benefits of a sterilization-at-adoption program are compounded when animal control agencies increase the number of animals they sterilize and place back in a community through collaborative programs with humane societies and animal rescue groups. Two recent trends have significantly increased the number of pets that can be placed through transfers to non-governmental humane organizations: the rapid proliferation of animal rescue groups and the increasing use of the Internet as a tool to facilitate the placement of homeless pets.

For every one of the 3,000 municipal animal care and control agencies in the country, there are two non-profit humane organizations that work to place homeless pets; half of these are non-sheltered rescue groups with foster care programs.¹²³ Many of these groups use the Internet to promote the re-homing of cats and dogs, often with remarkable success. The most popular pet adoption website, Petfinder, estimates that it helps facilitate 1,500,000 adoptions every year.¹²⁴

Humane societies and rescue groups have the potential to place a significant share of the animals that enter shelters. For instance, in 2005, municipal animal control agencies accounted for only 39.7%¹²⁵ of all the cats and dogs adopted from animal shelters in Utah, with humane societies accounting for 21.2% of the adoptions and rescue groups 39.1%. Shelter adoptions in the state had increased by half over a six-year period, from 18,150 in 1999 to 27,229 in 2005.¹²⁶ Utah's statewide pet adoption rate in 2005 was 10.5 Pets Per Thousand People (PPTP), almost 40% above the national average of 7.7 PPTP.¹²⁷ Most of the increase came from transfers of animals

from animal care and control agencies to rescue groups. To make certain that these placements will not add to a community's pet population, however, it is necessary that all intact animals placed through humane societies and rescue groups be sterilized prior to placement, too.

III. Sterilization of Dogs and Cats Reclaimed From Shelters

About 13% of all dogs who enter U.S. animal shelters are reclaimed by their owners, as are 3% of cats.¹²⁸ Among the redeemed animals are about 400,000 intact dogs and 100,000 intact cats.¹²⁹ Like other intact animals that have been impounded, these animals provide an excellent opportunity for an animal control agency to increase the local pet sterilization rate.

The same public benefits that accrue from the pre-release sterilization of intact stray and relinquished animals also flow from the sterilization of reclaimed dogs and cats. Since 2000, sterilization has been required for all intact animals released from municipal shelters in New York City, whether the animals are being placed with new owners or returned to their original owner. By FY 2007, intakes at New York City Animal Care & Control had dropped to 4.7 Pets Per Thousand People,¹³⁰ the lowest shelter intake rate of any city in the country.

A similar policy has been adopted in St. Louis, Missouri. All intact animals picked up by animal control officers there are sterilized and microchipped before being returned to their owners.

Other jurisdictions bundle sterilization incentives for owners redeeming intact animals with incentives for them to comply with local animal control and public health laws. For instance, the Hillsborough County (Florida) Department of Animal Services charges a \$50 redemption fee for an impounded animal but waives the fee entirely if the animal is sterilized and the owner has complied with local licensing and rabies immunization laws.

In some jurisdictions, agencies ratchet up sterilization incentives or require the sterilization of redeemed animals only after a subsequent violation of local animal control laws. For instance, Utah law requires the owner of a redeemed intact animal to post a sterilization deposit, but only when a second impoundment has occurred during a 12-month period.¹³¹ And the City of Sacramento, California requires that intact animals be sterilized before being returned to their owners if the animal has been impounded twice within a three-year period.

IV. Differential License Fees

Municipal animal control agencies are not limited to policies and programs that reach only those animals that have been impounded; some of the most effective programs lead to the sterilization of animals before they are impounded. Because they help prevent these animals from entering shelters in the first place, these programs are very cost-effective.

Communities that have adopted differential license fees—in which owners of unsterilized pets pay a higher fee to license their pet—tend to have lower shelter intake rates than those that have not. A 1985 study compared 61 jurisdictions that had differential licensing programs with 86 that had none and found that shelters in jurisdictions with differential licensing enjoyed a 12.3% reduction in shelter intakes over a five-year period, while shelters in areas without differential licensing saw a small increase in admissions.¹³²

Recent experience with differential licensing surcharge programs has been similar. In the first 13 years after a \$45 surcharge was imposed on licenses for intact pets in King County, Washington in 1993, the number of cats and dogs admitted to King County Animal Services shelters dropped by 14.6%¹³³ despite a 21.1% increase in the county's population during this period.

Differential license fees are not only effective in reducing shelter intakes, they are also fair. Pets kept by irresponsible citizens cause a disproportionate share of an animal control agency's expenses, so allocating a greater share of licensing costs to them is sensible public policy.¹³⁴ Perhaps for this reason, more than 80% of cities and counties in the United States impose a differential license surcharge.¹³⁵

A national licensing survey completed 12 years ago found the average differential for licensing an intact dog to be \$10.39 and \$11.87 for an intact cat.¹³⁶ By now, though, intact dogs cause greater public expense than that through increased impoundment expenses alone:

“Because of evidence linking unsterilized dogs to biting behavior—intact dogs account for 95 percent of all fatal maulings—programs and incentives such as differential licensing that promote spaying and neutering also help reduce the incidence of dog bites.”

Handy G (2001). Animal Control Management: A Guide for Local Governments. Washington, D.C.: International City/County Management Association, 7.

	Total Population ^{137, 138}	Annual Impoundment Cost ¹³⁹	Annual Impoundment Cost Per Animal
INTACT DOGS	21,900,000	\$574,056,000	\$26.21
STERILIZED DOGS	51,100,000	\$139,944,000	<u>\$ 2.74</u>
			\$23.47
Difference in Average Impoundment Expense Per Intact Dog = \$23.47			

Figure 8.

A differential licensing fee of \$20 per intact dog is justified on the basis of increased impoundment expense alone and would generate approximately \$.60 a year in revenue for every person residing in the jurisdiction, if reasonable steps are taken to increase compliance with dog licensing laws, as shown below:

TOTAL DOG POPULATION PER 1,000 RESIDENTS ¹⁴⁰		255
PERCENT OF DOGS INTACT ¹⁴¹	x	.29
INTACT DOGS PER 1,000 RESIDENTS		<u>74</u>
PERCENT OF ALL DOGS LICENSED ¹⁴²	x	.40
LICENSED DOGS PER 1,000 RESIDENTS		<u>30</u>
AMOUNT OF DIFFERENTIAL	x	\$20
		<u> </u>
Annual Revenue Per 1,000 Residents Generated by \$20 Differential		\$600.00

Figure 9.

A fair differential licensing surcharge would not only provide a disincentive for pet owners to maintain intact pets, it also could provide sufficient revenue for programs to increase sterilization rates and reduce future intakes, such as a low-income pet sterilization subsidy program.

V. Low-Income Neutering Assistance Programs

As mentioned above, a differential license fee is an ideal source of revenue for a subsidy program to bring pet sterilization within the reach of indigent pet owners. Those who will not have their pets sterilized at least help those who cannot. It is critical, however, that the revenue from differential license fees be used to fund pet sterilization subsidy programs for low-income pet owners. Otherwise, the imposition of a licensing surcharge can be counterproductive. Any gains through increased sterilization can be lost through the abandonment or relinquishment of pets by those who cannot afford either to have their pets sterilized or pay the licensing surcharge.

The estimated cost of operating a subsidized pet sterilization program for low-income pet owners can be derived from a program operated in Alabama in 2000-2003. Over a twenty-four month period, 36,046 surgeries were performed through the program—an annual volume of about four surgeries per resident—at a cost of \$2,384,414, about 27 cents a year per resident.

http://maddiesfund.org/Funded_Projects/Targeted_SpayNeuter/Completed.html#Maddies%20Big%20Fix%20for%20Alabama.

Targeted low-income neutering subsidy programs benefit the entire community. The establishment of a low-income neutering assistance program in New Hampshire in 1994 was accompanied by a drop in shelter intakes of more than a third during its first six years:

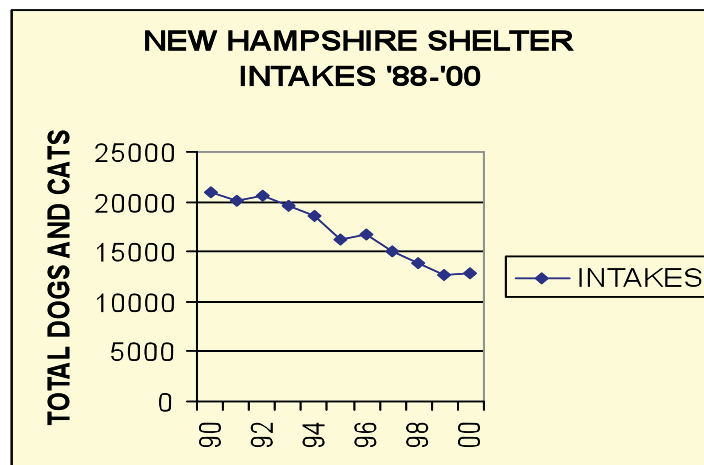


Figure 10.¹⁴³

During the program’s first six years, impoundment expenses dropped by \$3.2 million, while only \$1 million was spent on the sterilization subsidy program.¹⁴⁴ Targeted sterilization subsidies have proven to be a core component of any effective animal care and control program.¹⁴⁵

VI. Increasing the Rate at Which Lost Pets are Returned to Their Owners

Animal control agencies can use pet sterilization-related policies and programs to reduce shelter intake rates. Other programs and policies are available to them, too. Returning lost pets promptly to their owners can reduce sheltering expenses and increase the sheltering system’s capacity to care for other animals that subsequently become homeless. One way to do this is to increase the rate at which owners provide their pets with identification.

Increasing compliance with dog licensing laws is central to efforts to raise the rate at which lost pets have been provided with identification and are successfully returned home. It is also critical to the enforcement of laws that require owners to have their pets immunized against rabies. A 1996 survey found that the average rate of compliance with pet licensing laws in the United States was 34% for dog owners and 14% for cat owners.¹⁴⁶ These findings are consistent with those of a 2002 North Carolina survey, which found that only 25% of owners living in jurisdictions that had a licensing law complied with the law.¹⁴⁷ In addition, only 48% of owned cats and dogs in these jurisdictions had been immunized against rabies.¹⁴⁸ The lack of compliance with pet licensing laws was associated with a lack of compliance with the state law requiring the owners of cats and dogs to have them immunized against rabies; as shown on Figure 11 on the next page, the jurisdictions in North Carolina with higher pet licensing rates tended to have higher rabies immunization rates, too:¹⁴⁹

CALGARY (ALBERTA) 2007 ANIMAL SERVICES DOG IMPOUNDMENT DATA	
Dogs Impounded	4,746
Dogs Returned to Owner	4,062 (85.6%)
---Picked up at Shelter	2,692
---Driven Directly Home	1,370
Dog Licensure Compliance Rate (estimated)	90%
City of Calgary Animal and Bylaw Services, 2007 Shelter Statistics	

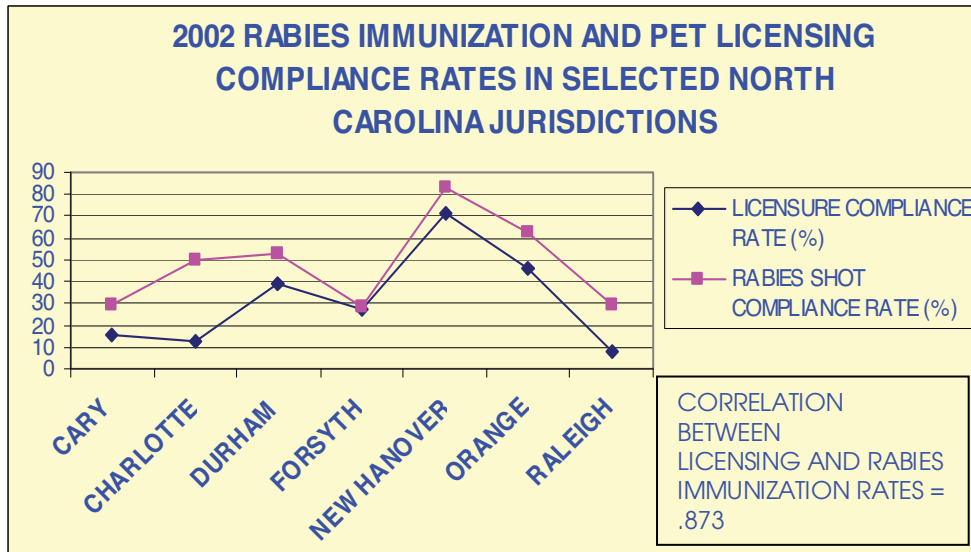


Figure 11.

Compliance with licensing laws can be increased in several ways:

- ◆ Making licensing easier by allowing owners to license pets through the mail, on the Internet, at animal shelters, and at veterinary clinics;
- ◆ Mailing renewal applications automatically to pet owners;
- ◆ Allowing multi-year licensing with the use of three-year rabies vaccines;
- ◆ Requiring all major sources of pets, including shelters, pet shops, and professional breeders to report the transfer of ownership of pets to licensing officials.¹⁵⁰

Requiring veterinarians to report rabies immunization information to licensing officials and linking rabies and licensure records in a single database can also be used to build an effective licensing program.¹⁵¹ In the first five years after the passage of a law requiring veterinarians in New Hampshire to send copies of rabies immunization certificates to local licensing officials, the number of dogs licensed in the state jumped by 90%.¹⁵²

VII. Evidence-Based Impoundment and Shelter Admission Policies

The central mission of a municipal animal control agency is to protect the health and welfare of citizens by minimizing the frequency with which animals damage property, threaten or injure people, cause automobile accidents, disturb the peace, or spread disease.¹⁵³ Pursuit of this mission often requires the impoundment of homeless animals. Each impoundment results in public expense, however, and the cost of each impoundment must be weighed against the public benefit.

Many of a municipal animal control agency's impoundment and shelter admission policies are set by local laws and ordinances, such as impounding animals that have been victims of cruelty or neglect and those who pose an obvious risk to citizens, including dangerous dogs and animals that show signs of having contracted rabies. In other cases, however, the agency has some latitude in determining which animals to impound or admit to its sheltering system. For example, some agencies routinely impound free-roaming cats in response to complaints, others do not. Some accept pets that citizens seek to relinquish, others do not.

“There is evidence that sterilizing very specific, at-risk subpopulations such as feral cats can contribute to reductions in overpopulation.”

ASPCA Position Statement on Mandatory Spay/Neuter Laws.

In setting its impoundment and admission policies, an agency necessarily weighs the cost of handling an animal against the benefit to citizens, generally in the form of reduced risk of injury or disease. In addition to the fiscal expense that necessarily results from sheltering an animal, the agency should also consider the humane costs as well, in terms of its ability to provide safe and sanitary conditions for all the animals it decides to impound. Admission policies that foster overcrowding almost always result in more disease, animal deaths, and ultimately more euthanasias.¹⁵⁴

Applying these principles to impoundment and admission policies for feral and free-roaming cats, from a public health perspective there does not appear to be any current justification for impounding them absent specific evidence of risk. There has not been a case of human infection associated with exposure to a rabid cat in the United States for more than 30 years.¹⁵⁵ With respect to non-zoonotic infectious diseases, large epidemiologic studies found that the infection rates of feline leukemia virus and feline immunodeficiency virus in feral cats are not substantially different from those of pet cats.¹⁵⁶

Given the large population of free-roaming cats—which may approach the number of pet cats¹⁵⁷—the cost of any wide-scale impoundment of free-roaming cats can be enormous. For instance, the cost of reducing the population of free-roaming cats by 50% through impoundment and euthanasia over an eight-year period in a Florida county with slightly more than a million residents was estimated to be between \$28.5 and \$56.6 million dollars.¹⁵⁸

Because the impoundment of feral cats usually leads to their being euthanized, blanket impoundment or admission policies raise humane considerations, too. It would be a mistake to underestimate the growing societal resistance to the use of population control euthanasia as a means of regulating companion animal populations.¹⁵⁹ If substantial public health risks arise in the future, this resistance may be reduced, but recent data suggest that a large majority of citizens appear to prefer non-lethal strategies to manage free-roaming cat populations, such as trap/neuter/vaccinate/release (TNVR) programs (See Figure 12). Failing to control the migration of household cats to free-roaming colonies, though, can substantially limit the

**Results of 2007 survey of Ohio residents
regarding management of feral cat populations**

	Agree or Strongly Agree	Neutral	Disagree or Strongly Disagree	Don't Know
Trap-neuter-return programs are a good way to manage free-roaming cats	538 (76.5)	78 (11.0)	70 (10.0)	17 (2.4)
I support using tax dollars to support low-cost spay/neuter programs for cats	334 (47.5)	101 (14.4)	258 (36.7)	10 (1.4)

Lord LK (2008). Attitudes toward and perceptions of free-roaming cats among individuals living in Ohio. *J. Am. Vet. Med. Ass'n.* **232**(8): 1165.

Figure 12, success of TNVR programs.¹⁶⁰ Less than 3% of all free-roaming cats have been previously sterilized,¹⁶¹ suggesting that sterilized household cats tend not to migrate to free-roaming status. As a result, programs to promote the sterilization of household

cats—such as the low-income pet sterilization subsidy programs described above—are critical to prevent migration.

Applying these principles to owned pets, the optimal allocation of resources requires that an agency prioritize the impoundment and admission of those animals that pose the greatest risk to citizens. Animals that have already become homeless, such as stray and lost dogs, plainly present heightened risks. If an agency does not have sufficient resources to adequately shelter all the pets its citizens seek to surrender, however, it may want to leave that mission to nongovernmental humane organizations. It may choose to prioritize the strict enforcement of laws against pet abandonment instead.

In summary, to effectively allocate its resources and achieve its mission, an animal control agency's programs and policies—like those of any other agency charged with protecting the citizens in its community and funded by taxpayers—should be driven by the best available current data.

The cost of operating a large-scale feral cat sterilization subsidy program can be estimated from one operated in California in 1999-2002. Over a 33 month period, 170,334 feral cats were altered—an annual volume of about two cats per resident—at a cost of \$9,479,099 or about ten cents a year per resident.

http://maddiesfund.org/Funded_Projects/Targeted_SpayNeuter/Completed.html#The%20California%20Veterinary%20Medical%20Association's%20Feral%20Cat%20Altering%20Program.

¹¹³ Neilson JC, Eckstein RA, & Hart BL (1997). Effects of castration on problem behaviors in male dogs with reference to age and duration of behavior. *J. Am. Vet. Med. Assoc.* **211** (2): 182.

¹¹⁴ Maarschalkerweerd RJ, Edenburg N & Kirpenstein J (1997). Influence of orchietomy on canine behavior. *Vet. Rec.* **140**: 617-619.

¹¹⁵ New JC Jr., Salman, MD, King M, Scarlett JM, Kass PH, & Hutchinson, JM (2000). Characteristics of shelter-relinquished animals and their owners compared with animals and their owners in U.S pet-owning households, *J. Appl. Animal Welfare Sci.* **3**(3): 185.

¹¹⁶ Wallace JL & Levy JK (2006). Population characteristics of feral cats admitted to seven trap-neuter-return programs in the United States. *J. Fel. Med. & Surgery* **8**: 280.

- ¹¹⁷ New, Jr. et al., Characteristics of shelter-relinquished animals, 185.
- ¹¹⁸ Bartlett P, Bartlett A, Walshaw S, & Halstead S (2005). Rates of euthanasia and adoption for dogs and cats in Michigan animal shelters., *J. Appl. Animal Welfare Sci.* **8** (2): 100.
- ¹¹⁹ Handy G (2002) Animal Control Management: A Guide for Local Governments. Washington, D.C.: International City/County Management Association, 33.
- ¹²⁰ 2005-2006 National Pet Owners Survey. Greenwich, CT: American Pet Products Manufacturers Association (APPMA); New, Jr. et al., Characteristics of shelter- relinquished animals, 185.
- ¹²¹ In the absence of national data that break down shelter intakes between household cats and free-roaming cats, it is not possible to calculate the total percentage of intact household cats who enter U.S. shelters in a year with complete accuracy, however, in jurisdictions where free-roaming cats make up a quarter of all shelter admissions in any year, as they did at the Sacramento County Department of Animal Control in 1994-1995 [Lepper M, Kass PH & Hart LA (2002). Prediction of adoption versus euthanasia among dogs and cats in a California animal shelter. *J. Appl. Animal Welfare Sci.* **5** (1): 31], one-fifth of all intact household cats will have entered area shelters during that year.
- ¹²² California Department of Health Services, Annual Reports of Local Rabies Control Activities, 1995; 2000.
- ¹²³ Maddie's Fund, Shelter management: Petfinder--An equal opportunity lifesaver <http://www.maddiesfund.org/organizations/petfinder.html> at 1.
- ¹²⁴ Maddie's Fund, Petfinder at 3.
- ¹²⁵ No More Homeless Pets in Utah, 2005 Utah shelter statistics (unpublished).
- ¹²⁶ No More Homeless Pets in Utah, 1999-2005 Utah shelter statistics (unpublished).
- ¹²⁷ Wenstrup J & Dowidchuk A (1999). Pet overpopulation: data and measurement issues in shelters, *J. Appl. Animal Welfare Sci.* **2** (4): 310; Clifton M (2006) First regions with low-cost dog & cat sterilization still making fastest progress, *Animal People* **Jul/Aug** 2006: 18.
- ¹²⁸ Wenstrup & Dowidchuk, Pet overpopulation: data and measurement issues, 310.
- ¹²⁹ Bartlett P et al., Rates of adoption and euthanasia, 100; Wenstrup & Dowidchuk, Pet overpopulation: data and measurement issues, 310.
- ¹³⁰ Animal Care & Control N.Y., N.Y. 2007 Intake and Outcome Totals of Cats and Dogs.
- ¹³¹ Utah Code Title 18 § 10-17-105.5.

- ¹³² Rowan A & Williams J (1987). The success of companion animal management programs: A review. *Anthrozoos* **1** (2): 118.
- ¹³³ King County Animal Shelter and Euthanasia Rates 1993-2006, King County Animal Services.
- ¹³⁴ Handy, *Animal Control Management*, 17-18.
- ¹³⁵ *Ibid.*, 24.
- ¹³⁶ License Survey Results (1996). Vacaville, CA: The Fund for Animals. *Spay/Neuter Legislation Bulletin*, **July 1996**: 4.
- ¹³⁷ 2005-2006 National Pet Owners Survey (APPMA).
- ¹³⁸ New, Jr. et al., Characteristics of shelter-relinquished animals, 185.
- ¹³⁹ Wenstrup & Dowidchuk, Pet overpopulation: data and measurement issues, 306, 311.
- ¹⁴⁰ 2005-2006 National Pet Owners Survey (APPMA).
- ¹⁴¹ *Ibid.*
- ¹⁴² A 1995 national licensing survey found that the average rate for dog licensure compliance was 34%, License Survey Results, *Spay/Neuter Legislation Bulletin*, **4**.
- ¹⁴³ Handy, *Animal Control Management*, 38.
- ¹⁴⁴ *Ibid.*, 37.
- ¹⁴⁵ *Ibid.*, 39.
- ¹⁴⁶ License Survey Results, *Spay/Neuter Legislation Bulletin*, **4**.
- ¹⁴⁷ Clark CM (2002). The truth about cats and dogs: Vaccinations, licenses, service, revenue. *Popular Government* **67**: 41.
- ¹⁴⁸ *Ibid.*
- ¹⁴⁹ Clark, The truth about cats and dogs, 41-42.
- ¹⁵⁰ Handy, *Animal Control Management*. 24-25.
- ¹⁵¹ Clark, The truth about cats and dogs, 42.

- ¹⁵² Records of New Hampshire Department of Agriculture, Markets & Food, 1995-2000.
- ¹⁵³ Moulton C, Wright P, & Rindy K (1991). The role of animal shelters in controlling pet overpopulation. *J. Am. Vet. Med. Assoc.* **198** (7): 1172.
- ¹⁵⁴ Miller L (2004). Dog and cat care in the animal shelter. Shelter Medicine for Veterinarians and Staff, Miller L. and Zawistowski S. (eds). Ames, Iowa: Blackwell Publishing, 104.
- ¹⁵⁵ Texas Department of State Health Services, <http://www.dshs.state.tx.us/idcu/disease/rabies/cases/statistics/reports/us.pdf>
- ¹⁵⁶ Lee IT, Levy JK, Gorman SP, Crawford PC, & Slater MR (2002). Prevalence of feline leukemia virus infection and evidence of antibodies against feline immunodeficiency virus in unowned free-roaming cats. *J. Am. Vet. Med. Assoc.* **220** (5): 622.
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- ¹⁵⁸ Hamilton F (2006) Are we prepared to pay the price? *Feral Cat Activist* **5** (1): 3. <http://www.tricountytnr.org/prepared%20to%20pay%20price.pdf>.
- ¹⁵⁹ Patronek GJ (1998). Free-roaming and feral cats—their impact on wildlife and human beings. *J. Am. Vet. Med. Assoc.* **212** (2): 225.
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- ¹⁶¹ Wallace & Levy, Population characteristics of feral cats, 280.