

Marian's Dream: Philanthropy for Animal Advocates

Beat the Heat Campaign: Resources & Additional Information



Beat the Heat is funded by
a generous grant from the
Petco Foundation

Spaying Prior to First Heat

Thank you for responding to **Marian's Dream** mailing and completing the survey on spay practices.

According to the ASPCA, "the only method of population control that has demonstrated long-term efficacy in significantly reducing the number of animals entering animal shelters is the voluntary sterilization of owned pets."

The problem is, we've been waiting until after the first heat to spay.

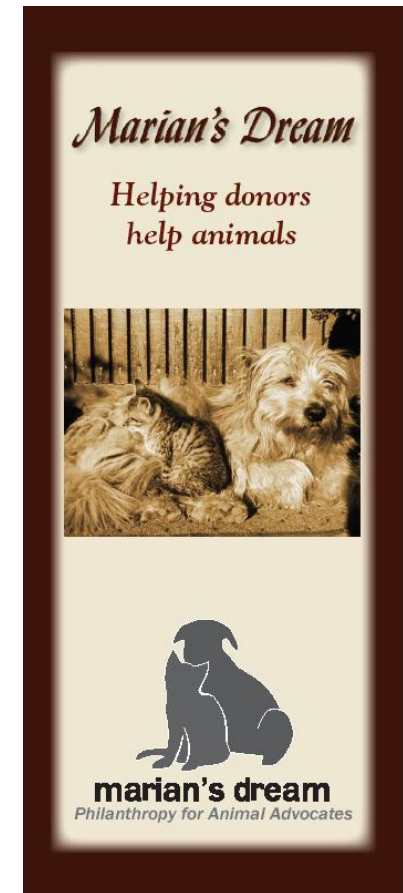
75% of the pet owners don't know when to spay.

One month can make a difference in the number of unwanted animals.

That's why we are looking to you, the veterinarian, to educate your clients and join a movement to address a major cause of pet overpopulation.

We truly appreciate your dedication to your clients and to the animals under your care.

Esther Mechler
President



For more than 30 years, **Marian's Dream** has been supporting local grass-roots organizations in their efforts to promote and provide spay / neuter services. With the help of a grant from Petco Foundation, we are looking to you, the veterinarian, to give us some information and to ask you to join in our campaign.

Spaying Prior to First Heat

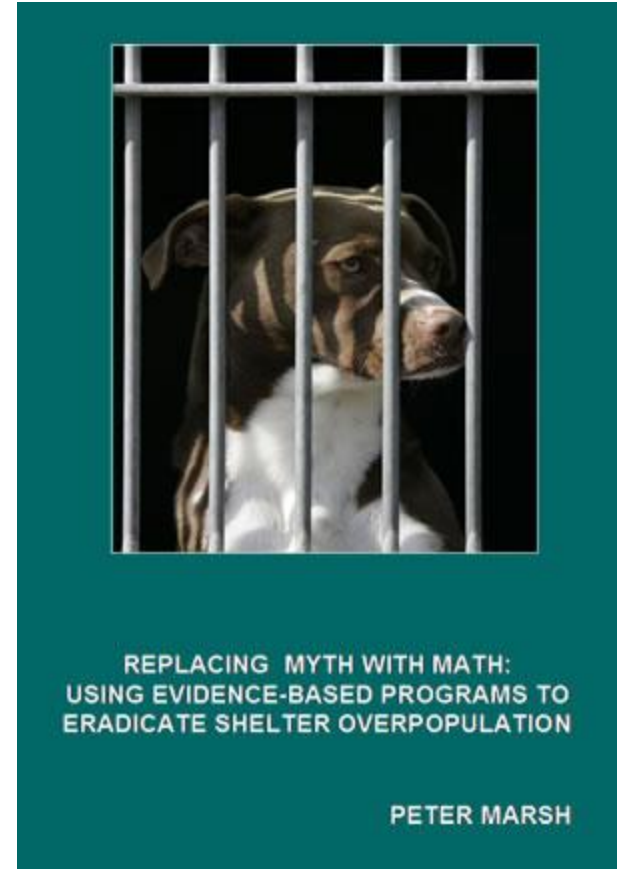
In his book, **Replacing Myth With Math**, Peter Marsh explores the role that “spay delay” plays in creating the huge surplus of cats and dogs in the U.S.

At this time at least five million dogs and cats are euthanized annually. Aggressive spay campaigns and programs have reduced the number from 12 million annually twelve years ago, but we have been at a plateau now at approximately five million for the past five years. To lower that number, we can reduce the age of spaying/neutering by four to six weeks, thus eliminating the unwanted, unplanned litters filling the shelters.

One of the corollary benefits of spay before the first heat is the reported reduction of mammary gland tumors. In fact, cats spayed before first estrous have only 9 – 10 % of the risk of developing mammary gland cancer as intact cats.

In chapters One and Five of the book, the problem of the surplus and the problem of mammary gland tumor incidence - as both relate to spay delay - are discussed and documented. Mammary gland tumors are footnotes 77 to 81 of Chapter One.

A section of Chapter One is reprinted on pages 4-6.



To see the entire book online go to www.shelteroverpopulation.org

For veterinarians who plan to become active in the Beat the Heat Campaign veterinary corps we have a supply of free copies available.

Excerpts: Replacing Myth with Math

Based on the age-specific birth and survival rates of pet cats in a Kansas town, population ecologists estimated that when 76-88% of the females had been sterilized— depending on the percentage of the remaining intact animals that reproduced— the population would reach a state of zero population growth.⁶⁷

Using a similar methodology, they calculated that the sterilization of 66% of the female dogs in the population would result in reproduction at the replacement rate or less.⁶⁸

About 87% of all owned cats and 75% of all owned dogs are now sterilized⁶⁹ - exceeding the level at which zero population growth should have been achieved in populations with the same birth and death rates as those of the Kansas studies—but more than 4 million cats and dogs are still euthanized in American shelters each year⁷⁰ and in recent years the household cat and dog populations have continued to grow at the rate of about one million dogs and two million cats per year.⁷¹ The likely explanation for this discrepancy lies in an assumption upon which the estimates in the Kansas studies were made: Those estimates were based on an assumption that all the sterilized female pets had not reproduced before having been sterilized.⁷²

**Age at Sterilization of All Dogs and Cats
Sterilized at Spay Shuttle Program (Knoxville, Tennessee) 7/07-5/09**

AGE AT STERILIZATION	DOGS	CATS
6 WEEKS—12 WEEKS	292 (5.7)	201 (3.6)
3 MONTHS—6 MONTHS	624 (12.2)	1399 (25.1)
6 MONTHS—1 YEAR	1190 (23.3)	1708 (30.6)
1 YEAR—3 YEARS	1904 (37.3)	1844 (33.0)
3 YEARS--5 YEARS	662 (13.0)	324 (5.8)
5 YEARS--7 YEARS	310 (6.0)	81 (1.5)
7 YEARS--10 YEARS	113 (2.2)	23 (.4)
OVER 10 YEARS	12 (.2)	0
TOTAL	5,107	5,580

**Numbers of Pre-Sterilization Litters of Female Dogs and Cats
Sterilized at Spay Shuttle Program (Knoxville, Tennessee) 7/07-5/09**

NUMBER OF LITTERS BEFORE STERILIZATION	NUMBER OF FEMALE CATS (% OF TOTAL)	NUMBER OF FEMALE DOGS (% OF TOTAL)
NONE	2426 (75.3)	2100 (77.7)
ONE	469 (14.6)	346 (12.8)
TWO	198 (6.1)	154 (5.7)
THREE	63 (2.0)	66 (2.4)
FOUR	35 (1.0)	27 (1.0)
FIVE	8 (.2)	2 (.1)
SIX	7 (.2)	3 (.1)
MORE THAN SIX	16 (.5)	6 (.2)
	3,222	2,704

Excerpts: Replacing Myth with Math

Not only is it common in the United States for pets to have litters of kittens or puppies before sterilization, the number of these litters is substantial. (*emphasis added*)

A study of household pet populations in four Massachusetts towns found that female cats and dogs that had been sterilized were almost as productive before their sterilization (.313 litters per female) as those females that remained intact (.4 litters each), a difference that was not statistically significant.⁷³

This is consistent with other surveys, which found that 17% of intact female dogs had given birth, as had 16% of intact female cats,⁷⁴ a rate comparable to the pre-sterilization reproductivity of spayed dogs (21%) and cats (20%).⁷⁵

Because female pets that have been sterilized now far outnumber their intact counterparts and their lifetime litter productivity approaches that of those that remain intact, they make a substantial contribution to the reproductive rate of the entire population. In the four towns included in the Massachusetts survey, female cats and dogs that had been sterilized after having had at least one litter accounted for 87% of all the litters of kittens and puppies born.⁷⁶

Allowing pets to have a litter before being sterilized ignores the clinical evidence that the optimal age to sterilize female cats and dogs is before their first estrus.⁷⁷ (*emphasis added*)

Compared with its incidence in sexually intact dogs, those spayed before their first estrus have .5% of the risk of developing mammary gland cancer.⁷⁸ Cats spayed before their first estrus have 9% of the risk of developing mammary gland cancer of intact cats.⁷⁹ But the protective benefit of sterilization from mammary gland neoplasms dissipates quickly with delay: Cats spayed later than 24 months of age and dogs spayed after 30 months of age have the same or greater risk of developing mammary gland cancer as if they had remained intact.^{80, 81}

Statement: A female dog/ cat will be better off if she has one litter before being fixed.

	Don't Know		True		False	
	#	%	#	%	#	%
Dog Owners	528	15.5	1230	35.8	1656	48.2
Cat owners	444	12.8	1265	36.5	1742	50.3

Excerpts: Replacing Myth with Math

The widespread delay in having female pets sterilized may arise in part from a **significant knowledge deficit of cat and dog owners.** (*emphasis added*) Surveys consistently find that more than half of all dog and cat owners either do not know whether a pet would be better off by having a litter before being spayed or mistakenly believe that she would.^{82, 83} The extent of this knowledge deficit was almost identical among owners who had visited a veterinarian within the past year and those who had not.⁸⁴

The mistaken belief that a female cat would benefit from having a litter before being sterilized is so widespread that it was the most common reason given by respondents in a 2007 national survey for not having had an intact cat sterilized.⁸⁵

Reducing the age at which cats and dogs in a population are sterilized can have a substantial impact on its reproductive rate. Population modeling of the age-specific birth, death, and reproductive rates of owned dogs in an Italian province found that a sterilization rate of 55% of the female dogs would be necessary to reach the replacement fertility rate if the average age at which dogs were sterilized was three years old, but that it could be reduced to as low as 26% if the average age of spaying was reduced to one year or less.⁸⁶

Another population modeling study found that 71% of the females of reproductive age would have to be sterilized to halt the growth of a feral cat population but that if no females younger than a year old were sterilized, it would be necessary to sterilize 91% of those older than that to maintain a stable population.⁸⁷

When we examine the responses to general knowledge questions, it is disturbing to see that significantly more people relinquishing dogs and cats felt that the female animal would be better off if she had one litter before being spayed and that significantly fewer people relinquishing animals knew this was false. (*emphasis added*)

Furthermore approximately half of the owners in the Household Survey (51.2% of the dog owners and 49.3% of the cat owners) wrongly felt this was a true statement or did not know the answer. Although scientific evidence does not support this belief, it might explain some of the difficulty experienced by many individuals and groups who try to encourage the spaying of family pets and documents a clear need for educational efforts aimed at this myth.

Footnotes

- 67 Nassar R & Mosier JE (1982). Feline population dynamics: A study of the Manhattan, Kansas feline population. *Am. J. Vet. Res.* **43** (1), 169.
- 68 Nassar R Mosier JE (1980). Canine population dynamics: A study of the Manhattan, Kansas canine population. *Am. J. Vet. Res.* **41** (11): 1800.
- 69 2007-2008 National Pet Owners Survey (APPMA).
- 70 Clifton M (2008). U.S. shelters killed 2.3 million cats and 1.9 million dogs last year. *Animal People*, Jul/Aug 2008: 8.
- 71 2001/2002 National Pet Owners Survey (APPMA); 2007/2008 National Pet Owner's Survey (APPMA); 2002 U.S. Pet Ownership and Demographics Sourcebook (AVMA); 2007 U.S. Pet Ownership and Demographics Sourcebook (AVMA).
- 72 Manning MM & Rowan AN (1992). Companion animal demographics and sterilization status: Results from a survey in four Massachusetts towns. *Anthrozoos* **5** (3): 197.
- 73 Ibid.
- 74 Nassar R, Mosier JE, & Williams LW (1984). Study of the feline and canine populations in the greater Las Vegas area. *Am. J. Vet. Res.* **45** (2): 286.
- 75 Dorr Research Corporation (1991). Massachusetts Public Opinion Study on Spaying and Neutering of Pets Summary, 2.
- 76 Manning & Rowan, Companion animal demographics, 200.
- 77 Kustritz, MVR (2007). Determining the optimal age for gonadectomy of dogs and cats. *J. Am. Vet. Med. Assoc.* **231**(11): 1665.
- 78 Schneider R, Dorn CR, & Taylor DON (1969). Factors influencing canine mammary gland cancer development and post-surgical survival. *J. Nat'l Cancer Inst.* **43**, 1255.
- 79 Overly B, Shofer FS, Goldschmidt DS & Sorenino KU (2005). Association between ovariohysterectomy and feline mammary carcinoma. *J. Vet. Internal Med.* **19**: 561.
- 80 Schneider et al., Factors influencing canine mammary gland cancer development, 1256.
- 81 Overly et al., Association between ovariohysterectomy and feline mammary carcinoma, 562.
- 82 New, Jr. et al. Characteristics of shelter relinquished animals, 193. *Replacing Myth with Math: Using Evidence-Based Programs to Eradicate Shelter Overpopulation* 25
- 83 Salman et al. Human and animal factors related to the relinquishment of cats and dogs, 220.
- 84 Scarlett JM, Salman MD, New, Jr. JC, & Kass PH (2002). The role of veterinary practitioners in reducing dog and cat relinquishments and euthanasias. *J. Am. Vet. Med. Assoc.* **220** (3):309.
- 85 Chu et al., Population characteristics and neuter status of cats, 1026.
- 86 DiNardo A, Candelaro L, Budke CM, & Slater MR (2007). Modeling the effect of sterilization rate on owned dog population size in central Italy. *Prev. Vet. Med.* **82**: 311-312.
- 87 Budke CM & Slater MR (2009). Utilization of matrix population models to assess a 3-year single treatment nonsurgical contraception program versus surgical sterilization in feral cat populations. *Appl. Animal Welfare Sci.* **12** (4): 272-292.

Reference Materials



Population Trends

Nassar R & Mosier JE (1982). Feline population dynamics: A study of the Manhattan, Kansas feline population. *Am. J. Vet. Res.* **43** (1), 169.

Nassar R Mosier JE (1980). Canine population dynamics: A study of the Manhattan, Kansas canine population. *Am. J. Vet. Res.* **41** (11): 1800

Manning MM & Rowan AN (1992). Companion animal demographics and sterilization status: Results from a survey in four Massachusetts towns. *Anthrozoos* **5** (3): 197

Nassar R, Mosier JE, & Williams LW (1984). Study of the feline and canine populations in the greater Las Vegas area. *Am. J. Vet. Res.* **45** (2): 286

DiNardo A, Candelaro L, Budke CM, & Slater MR (2007). Modeling the effect of sterilization rate on owned dog population size in central Italy. *Prev.Vet. Med.* **82**: 311-312

Budke CM & Slater MR (2009). Utilization of matrix population models to assess a 3-year single treatment nonsurgical contraception program versus surgical sterilization in feral cat populations. *Appl. Animal Welfare Sci.* **12** (4): 272-292.

Shelter Statistics

Clifton M (2008). U.S. shelters killed 2.3 million cats and 1.9 million dogs last year. *Animal People*, Jul/Aug 2008: 8

New, Jr. et al. Characteristics of shelter relinquished animals, 193. *Replacing Myth with Math: Using Evidence-Based Programs to Eradicate Shelter Overpopulation* 25

Mammary Gland Tumors

Schneider R, Dorn CR, & Taylor DON (1969). Factors influencing canine mammary gland cancer development and post-surgical survival. *J. Nat'l Cancer Inst.* **43**, 1255.

Veterinary Practice

Kustritz, MVR (2007). Determining the optimal age for gonadectomy of dogs and cats. *J. Am. Vet. Med. Assoc.* **231**(11): 1665

Overly B, Shofer FS, Goldschmidt DS & Sorenino KU (2005). Association between ovariohysterectomy and feline mammary carcinoma. *J. Vet. Internal Med.* **19**: 561

Scarlett JM, Salman MD, New, Jr. JC, & Kass PH (2002). The role of veterinary practitioners in reducing dog and cat relinquishments and euthanasias. *J. Am. Vet. Med. Assoc.* **220** (3):309

Kustritz, Margaret V DVM, PhD, DACT (2007). Determining the optimal age for gonadectomy of dogs and cats. *JVMA*, **231** (11) 1665

Pet Owner Trends

2007-2008 National Pet Owners Survey (APPMA)

2001/2002 National Pet Owners Survey (APPMA);
2007/2008 National Pet Owner's Survey(APPMA);

2002 U.S. Pet Ownership and Demographics Sourcebook (AVMA); 2007 U.S.Pet Ownership and Demographics Sourcebook (AVMA)

Dorr Research Corporation (1991). Massachusetts Public Opinion Study on Spaying and Neutering of Pets Summary, 2.

PetSmart Charities Study: A & U Barriers
http://www.petsmartcharities.org/resources/resources-documents/PetSmartCharities_Research_AUBarriers.pdf

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Thank you for taking the time to review this additional information.

Your dedication to your clients and to their companion animals may sometimes go unrecognized.

Marian's Dream wants to take this opportunity to acknowledge you, your work in your community, and your interest in the welfare of your clients.

Please join us in the **Beat the Heat** campaign.

Please share your ideas and feedback.

Spay and neuter pets at 5 months,
prior to their first heat cycle
and encourage others to do so as well.

For more information, please contact us:

www.mariansdream.org

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Marian's Dream

*Helping donors
help animals*



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