

Feral Cat Activist



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Are We Prepared to Pay the Price?

by Frank Hamilton, PhD

In a December 2004 *Journal of the American Veterinary Medical Association (JAVMA)* article, authors Mark C. Andersen, PhD, et al., found by using a matrix population model that euthanasia was more effective than Trap-Neuter-Return for the management of free-roaming cats. Matrix population models are a primary tool used in wildlife management to set annual guidelines on hunting, trapping, and fishing; explore population dynamics; and develop management plans for endangered species.¹

The model used in the *JAVMA* article classifies the animal population either by age- or stage-specific (juvenile, adult) reproduction and survival rates. It allows scientists to project future population levels based on survivability and reproductive rates over different time periods.

The strength of any theoretical model, however, is its ability to explain and predict actual situations in the real world. This theoretical matrix does not take account of the actual numbers of cats or the costs involved. Utilizing the numbers derived from a public agency charged with controlling the cat overpopulation prob-

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lem, it is possible to provide a real-world test of the matrix model hypothesis.

Hillsborough County, Florida

Hillsborough County, located midway along Florida's west coast, is composed of 1,072 square miles. The county's total population² is 1,083,520, including Tampa (321,490), Plant City (31,930), and Temple Terrace (21,790). Hillsborough County, the state's third-largest agricultural county, saw a 15.2% increase in human population between 1990 and 2000. The annualized projected growth rate is 2% for 2000-2004. In 2004 there were 460,700 households.

Hillsborough County Department of Animal Services' (HCAS) mission is to enforce

county and state laws regulating and protecting small companion animals; provide an animal adoption program; rescue and shelter stray, sick, and/or injured animals; provide humane euthanasia; administer a spay/neuter program; issue rabies registration tags, and investigate suspected cases of animal cruelty.³ In fiscal year 2006, the recommended budget and strength for HCAS is \$7.9 million, with 106 personnel.⁴

According to Geoffrey L. Handy,⁵ an effective animal control program will cost from \$4 to \$7 per resident per year. HCAS is budgeted at the upper end of that scale. In 2004, the Florida Animal Control Association recognized HCAS as the Outstanding Agency of the Year.⁶ This makes it an appropriate agency for testing the hypothetical model.

Domestic Cats in Hillsborough County

Hillsborough County's cat population consists of both "owned" and free-roaming (of which feral cats are a subset) cats. There is no firm agreement on how to count all domestic cats, and it is difficult to determine accurate numbers of and the flow between these populations.⁷ In Florida, local governments identify owned cats using the word "harbor," which is defined in Hillsborough County, Florida, Ordinance 00-26 as "Shall mean to perform any acts of providing care, shelter, protection, refuge, food or nourishment in such a manner as to control the animals actions." [p.7].⁸ There is a large gap between "harboring" and licensing, the other legal method used to count owned animals.

The *AVMA Sourcebook*⁹ simply asked respondents to report the number of owned animals in the household and provides a statistical method to approximate the overall population in a given geographical area. Using the *Sourcebook*, in 2005 there are 273,487 owned cats estimated to reside in the county. That number is projected to grow as follows:

Year	Number of Owned Cats in Hillsborough County	Year	Number of Owned Cats in Hillsborough County
2005	273,487	2008	289,197
2006	278,743	2009	294,453
2007	283,999	2010	299,709

We must look to other studies for methods to calculate numbers of unowned cats. Johnson et al. in 1994¹⁰ in Santa Clara, California, included a question about the number of unowned cats that household members fed, but did not own. Responses indicated that 10% of surveyed households fed unowned cats. This study was replicated in 1995 in San Diego County, California,¹¹ and found that 9% of households fed unowned cats. In 1996, during a three-year study in Massachusetts, Luke¹² found that 15% of households fed unowned

cats. Levy et al.¹³ replicated this study in a Florida county in 2003, and found that 12% of county households fed an average of 3.6 unowned cats each. Extrapolating these numbers to Hillsborough County for 2004 translates to 55,284 households feeding more than 199,000 free-roaming cats. How much overlap there is with the owned cat population is not known. What is known from HCAS data is that over the past four years, two-thirds of the cats coming into HCAS have been free-roaming.

Other groups have also attempted to identify the number of free-roaming cats. During the Wisconsin cat-hunting debate the figure of more than 100 cats per square mile in rural Wisconsin was used.¹⁴ Using that number, the free-roaming cats in rural, or unincorporated (900 square miles), Hillsborough County could be estimated at more than 90,000. In addition, free-roaming cats have been estimated at 40% of the owned population of cats.¹⁵ That number would equal 109,394 cats. Applying findings from the 2003 Levy et al. study (conducted in Florida) to Hillsborough County would yield a total of 199,022 cats. We will use these ranges to test the population matrix.

Level	Means of Calculation	Number of Unowned Cats in Hillsborough County
Low	100 cats per square mile of rural Hillsborough County	90,000
Mid	40% of owned cat population	109,394
High	12% of 460,700 households feeding 3.6 unowned cats	199,022

Current Intake, Redemption, and Euthanasia Rates and Costs in Hillsborough County

As stated earlier, two key pieces of information missing from the authors' recommended solution are the total numbers of cats and the cost to taxpayers of the proposed solutions. HCAS has been keeping detailed monthly statistics for more than 20 years. For this article, a detailed analysis of calendar years 2001–2004 is used as a basis for testing the model. As the chart below shows, 92% of the cats going into the shelter are euthanized, about 4.4% are adopted, and 3.5% are redeemed.

	Intake	Euthanized	Adopted	Redeemed
2001	15,679	14,169	701	809
2002	16,262	15,015	675	572
2003	17,709	16,436	766	507
2004	17,921	16,593	842	486
Totals	67,571	62,213	2,984	2,374
PERCENT:		92.0%	4.4%	3.5%

HCAS Fiscal Year Statistical Status Results, Calendar Years 01, 02, 03, 04 (January–December)

From a financial perspective, to effectively evaluate the solution's actual cost, the cost per animal must include both direct and indirect costs that the animal control agency incurs. Handy cites a cost of \$105 to pick up, house, and dispose of an animal in New Hampshire.⁵ A Jacksonville, Florida, community-based panel consisting of animal control, county officials, and concerned citizens used the figure \$120 when developing their low-cost subsidized

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Alley Cat Allies (ACA) is a national, nonprofit organization based in Bethesda, MD. ACA promotes nonlethal population control for feral cats through advocacy; workshops and conferences; print, video, and web-based information; and helping individuals, groups, agencies, and institutions work with feral cats.

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spay/neuter program in 2002. For calculations here, the \$120 per animal cost will be utilized. This cost is more current than that cited by Handy and is Florida-generated.* (see reference)

Testing the Matrix Model

The model predicted that euthanizing 50% or more of the population annually would lead to an approximate decline of 10% of the population per annum. The model will be tested at the three levels established above: Low Level – 90,000 free-roaming cats, Mid-Level – 109,394 free-roaming cats, and High Level – 199,000 free-roaming cats.

Low Level 90,000 Unowned Cats

Euthanizing 50% (45,000) in a year would achieve a 10% reduction in year 1.

As noted above, two-thirds of the cats currently going into HCAS are free-roaming. Assuming that the proportion was maintained in the number euthanized, 11,062 free-roaming cats were destroyed in 2004 (base year). To meet the low-level goal, an additional 34,000 free-roaming cats would have to be caught and euthanized in the first year. This would cost the county an additional **\$4.0 million** in tax money in that year. To reduce the overall number of free-roaming cats by 50% (45,000), removal and euthanization would have to be performed over a period of eight years, killing a total of 237,500 cats and costing the taxpayer **\$28.5 million** over the period.

Mid-Level 109,394 Unowned Cats

Euthanizing 50% (54,697) in a year would achieve a 10% reduction in year 1.

At this level, **an additional 43,635 cats** would have to be caught and euthanized in year one at a cost of **an additional \$5.236 million** for that year. Again, to reach a 50% level of free-roaming cats, it would take an eight-year period of euthanizing **285,350 cats** at a cost to the taxpayers of **\$34.242 million**.

High Level

199,000 Unowned Cats

Euthanizing 50% (99,500) in a year would achieve a 10% per annum reduction.

This equates to **an additional 88,438 cats** to be caught and euthanized at a cost of **\$10.612 million** in year one. The total number of euthanizations over a seven-year period is **471,767 cats** at a cost of **\$56.612 million** to taxpayers.

Discussion

The matrix model paper predicts "...rapid, exponential population growth" (p.1871). No one has ever actually observed exponential growth in cat populations. However, this issue is beyond the scope of this article. The sound management that the authors of the matrix model called for from a public policy perspective must include two items not factored into this model: **cost and public opinion**.

No municipality can bear the costs of any of the levels noted above without seriously depleting other tax-supported programs. Animal control agencies do not and will never have taxpayer funding to effectively control free-roaming cats. In addition, the public outcry against euthanizing so many cats would cause political repercussions that would force public officials to find alternative solutions. As noted by Ed Boks in *Newsweek*,¹⁵ euthanasia is most communities' "dirty little secret." Euthanizing so many cats would bring the entire process into the open and force change.

Two other factors are not included in the model. A complete population ecology model includes human immigration rates and emigration rates. The authors of the matrix model specifically excluded both, but stated that they "might be a substantial factor"¹ (p.1875). Counties in Florida are open environments, with up to 577 people a

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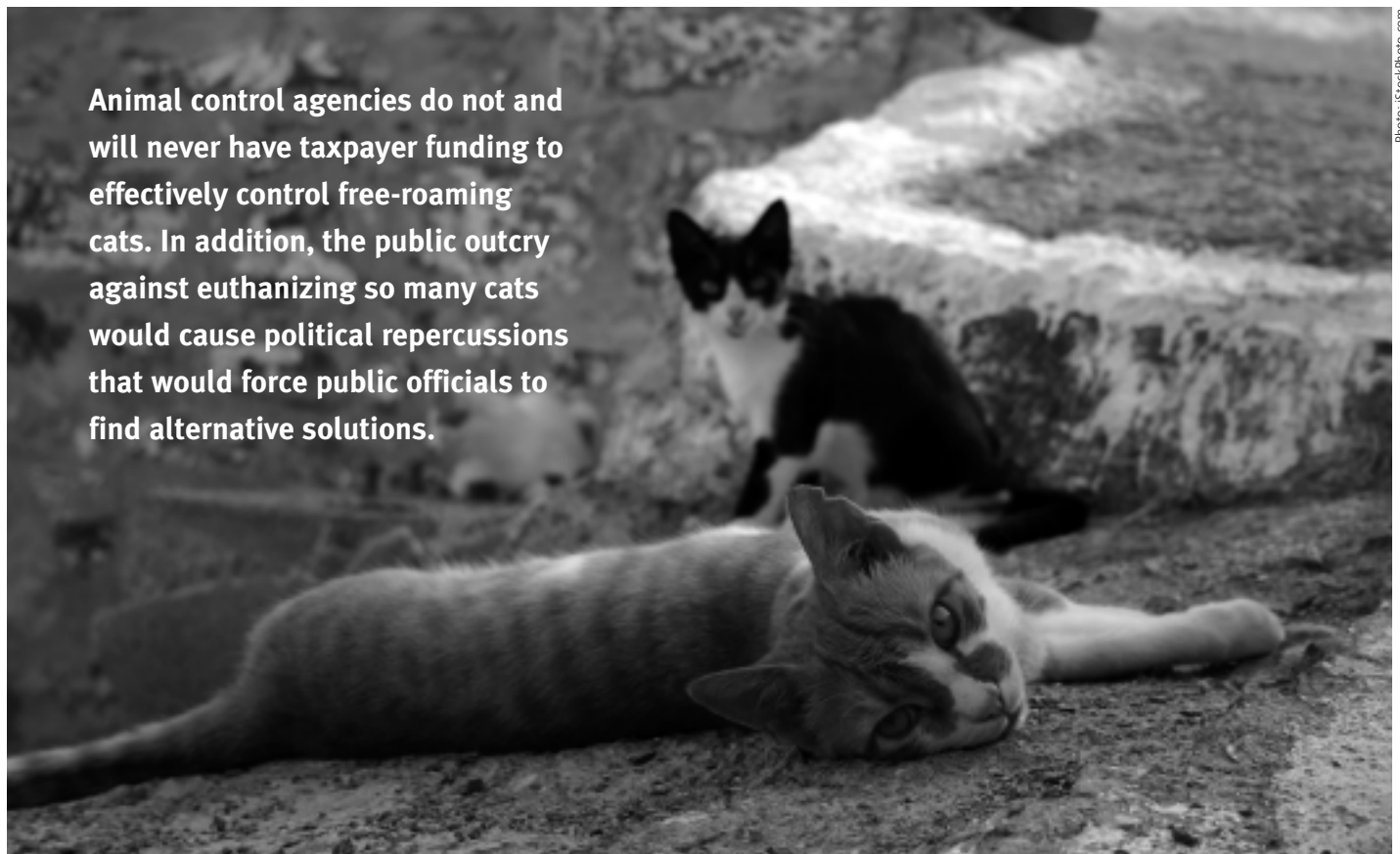


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week moving into Hillsborough County alone, many of them bringing animals with them. In addition, as Patronek⁷ pointed out, there is substantial movement among the various parts of the cat population. Currently, there is no good estimate of how many of these animals are abandoned or change status each year.

The matrix model paper was the first that found euthanasia more effective than other methods of control in an open ecological system. Previously, only closed systems (e.g., islands) had been successful at using euthanasia to control populations of free-roaming cats. The simple fact that not all factors were considered may have caused this conclusion. Until such time as all factors that occur in a large area with a mixture of urban and rural settings are taken into account, stating that euthanasia is more effective than other methods is very problematic.

As noted in the table above, euthanasia has been practiced as a means of population control in Hillsborough County for many years. It has not solved or even controlled cat overpopulation. Euthanasia is a one-dimensional approach that does not address low-cost spay/neuter, motivating and supporting volunteer efforts, and humane education. It is time for the entire community to come together to focus on a long-term solution. It will take an entire community working together to meet the challenge. Until that time, are we ready to pay the price of continued short-term solutions to a long-term challenge? ■

Reference

*As noted in the matrix article, sterilization and euthanasia both remove cats from the breeding cycle. A question often raised is how the cost of sterilization compares to the cost of euthanasia. Hillsborough County funds an Indigent Citizen's Spay and Neuter Program. The program currently pays private veterinarians \$50 for a feline neuter and \$60 for a feline spay. This includes a rabies shot and a county tag. At a cost of \$120 to catch, house, and euthanize an animal, it costs the county twice as much to catch and euthanize as it does to spay and neuter. From a government funding perspective, it may be less expensive to the taxpayer to sterilize than to euthanize.

Endnotes

¹Anderson, M, Martin, B, Roemer, G. Use of matrix population models to estimate the efficacy of euthanasia versus trap-neuter-return for management of free-roaming cats. *J Am Vet Med Assoc* 2004; 225: 1871-1876.

²Hillsborough County FL Planning Commission 2003 estimate.

³HCAS Executive Summary Briefing, 2003.

⁴Downloaded from Hillsborough County Management and Budget Homepage, www.hillsboroughcounty.org/managementbudget/budgets/recommended/fy0607, on June 5, 2005.

⁵Handy, G. *Animal Control Management*. Washington: ICMA, 2001.

⁶Florida Animal Control Association Newsletter, *FACA TRAX*, 1st Quarter 2005, downloaded from <http://floridaanimalcontrol.org> on June 15, 2005.

⁷Patronek, G. Free roaming and feral cats-their impact on wildlife and human beings. *J Am Vet Med Assoc* 1998; 212 (2), pp. 218-226.

⁸Hillsborough County FL Animal Ordinance 00-26, 2004.

⁹American Veterinary Medical Association's (AVMA) *US Pet Ownership & Demographic Sourcebook*. Schaumburg, Ill.: AVMA 2002.

¹⁰Johnson, K, Lewellen, L, Lewellen J. National Pet Alliance survey report on Santa Clara County's pet population. *Cat Fanciers' Almanac* 1994: Jan., pp. 71-77.

¹¹Johnson, K, Lewellen L. San Diego County: survey and analysis of the pet population. San Diego, Calif. San Diego Cat Fanciers, Inc. 1995, pp. 1-29.

¹²Luke, C. Animal Shelter Issues. *J Am Vet Med Assoc* 2008: pp. 524-527, 1996.

¹³Levy, J, Woods, J, Turick, S, & Etheridge, D. Number of free-roaming cats in a college community in the southern United States and characteristics of community residents who feed them. *J Am Vet Med Assoc* 2003; 223(2): pp. 202-205

¹⁴Editorial. *The Capital Times*. Madison, Wis. April 12, 2005.

¹⁵Boks, Ed. My Turn. *Newsweek*, June 27, 2005.



Become a Feral Friend

We can't do it without you!

Since its inception in 1991, the Alley Cat Allies (ACA) Feral Friends Network has been at the core of how ACA is able to help feral cat advocates and caregivers throughout the world. Each year, thousands of people contact us for help with feral and stray cats. They want to do the right thing for the cats but need help. Through our factsheets and other resources we can give them much of the information they need, but we can't provide that crucial local support. Perhaps they need to know where they can borrow humane traps in their area or which local veterinarians will spay/neuter feral cats. That's where the Feral Friends Network comes into action.

ACA Feral Friends are individual caregivers, organizations, veterinarians, animal control agencies, spay/neuter clinics, shelters, and advocates who believe in our mission of nonlethal control of outdoor cats and are willing to help others with advice, advocacy assistance, practical assistance, equipment loan, or just moral support. Becoming a Feral Friend doesn't commit you to any particular action. You choose the type and amount of help you can give. But no matter how you can help, **we need you, your neighbors need you, and the cats need you!**

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If you know other advocates who would make excellent Feral Friends, please give a copy of this to them. If you are already a Feral Friend, please keep your information updated. You can do this at the website above, by e-mail at alleycat@alleycat.org, by fax at 240-482-1990, or by letter to 7920 Norfolk Avenue, Suite 600, Bethesda, MD 20814-2525.