

# **Preliminary Assessment of the Effects of Recent Spay/Neuter Legislation in Buncombe County, NC**

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## **Abstract**

It is estimated that over 4 million companion animals are euthanized every year in the United States. Despite proactive spay/neuter and education programs and strict animal control ordinances, animal shelters and humane groups continue to euthanize thousands of unwanted animals each year. In an effort to curb this endemic problem, city and county government agencies have imposed intact animal fees (a larger registration fee for intact animals versus a much smaller registration fee for altered animals), which are intended to reduce the euthanasia of un-owned and unwanted dogs and cats in shelters nationwide. Another option for county governments is legislation mandating spaying and neutering of pets. This study evaluated the efficacy of spay/neuter legislation by examining the annual statistics of animal shelters and humane alliances in one county in North Carolina where a strict spay/neuter law was recently enacted in February 2004. Data on euthanasia and spay/neuter rates, population dynamics, as well as information on animal control enforcement methods and current spay/neuter programs were collected and analyzed, both before and after the law, in an effort to document the impact of such legislation. While a dramatic shift in euthanasia rates was not seen, there is evidence that the policy is having the intended impact.

## **Introduction**

Solving the problem of pet overpopulation is no simple task, as it has become increasingly difficult to identify the contributing factors. (1, 4) In an attempt to respond to a problem with a variety of etiologies, many shelters and humane groups have employed a multimodal approach to combat overpopulation, incorporating spay/neuter programs, educational outreach programs, and stricter county ordinances. (4) Of particular interest, and the subject of much debate, are laws governing the sterilization of animals. There seems to be promising evidence that spay/neuter incentive legislation is decreasing euthanasia rates in places such as King County, Washington, Denver, Colorado, and San Mateo, California.(10) To date, however, there has not been a scientific study concerning the direct effects of sterilization laws on a pet population over time.

In 2004, commissioners in Buncombe County, NC, passed a strict spay/neuter law requiring that any animal over the age of 6 months be spayed or neutered or the owners must purchase a one-time unaltered animal permit per animal for \$100. (9) Owners must be caught in violation of a different animal control ordinance in order to be cited for the spay/neuter violation. Once cited, the \$100 fee can be waived if the animal is altered within 30 days. (9) The City of Asheville, within Buncombe County, passed a similar ordinance in July of 2005 based on the County ordinance. The fine for violation within the city proper is \$200.

The subjective assessment of the ordinance by veterinarians and the animal welfare community has been favorable. That is, the ordinance is seen as reducing the unwanted pet population entering the Asheville Humane Society, and therefore lowering euthanasia rates. However, no in-depth analysis of this type of legislation has been performed. Therefore, the overall objective of this project is to provide a preliminary assessment of the effectiveness of the Buncombe County legislation. If the legislation is effective, it could serve as a potential model for addressing pet overpopulation in other North Carolina counties. Areas of inquiry include: euthanasia data, animal intake data, enforcement of the spay/neuter ordinance, spay/neuter data, potential differences in data related to dogs vs. cats, concurrent programs promoting pet depopulation, and the economic impact on the animal control budget and enforcement.

It is our hypothesis that this form of public policy has a significant impact on actual spay and neuter rates within shelter and low income clinic companion animal populations and that subsequently, euthanasia rates of unwanted pets are reduced. This impact should increase over time, as awareness of

the policy grows, more animals are spayed and neutered, and the unwanted pet population decline is reinforced over generations.

### **Materials and Methods**

The Humane Alliance is an animal clinic in Asheville, NC, which offers reduced-cost spays and neuters for dogs and cats in Buncombe and surrounding counties. It also serves as the primary provider of spay and neuter surgeries for the Asheville Humane Society. We focused our analysis on this organization because of its primary service provider role and the organization's large amount of reliable, valid and accessible data. Trends in these data should reflect changes in overall spay and neuter rates in Buncombe County and in the City of Asheville. Information was gathered from the Humane Alliance's monthly and yearly reports prior to and after the passing of the ordinance. Data were analyzed by calculating the percent increase in number of spay and neuter surgeries from year to year, beginning in 2001 and finishing in 2006. The total number of sterilizations performed before and after the ordinance was put into effect was also analyzed.

The Asheville Humane Society is a non-profit, 501(c) (3) organization that receives a portion of its budget from the city of Asheville and from Buncombe County to provide shelter services as well as animal control services for both Asheville and the county. The directors of the shelter, Shelly Moore and Troy Salisbury, provided access to shelter reports as well as animal control reports for Buncombe County. Brenda Sears, Director of Animal Control City of Asheville's Police Department, provided access to animal control and budget reports for the City of Asheville. David Long, the director of Animal Control for Buncombe County, provided access to animal control and budget reports for Buncombe County (exclusive of the city of Asheville).

All animal data were collected from County and City monthly and yearly reports between the dates of January 1, 2001 and June 30, 2006 which covers roughly 3 years prior to and 2 years post passing of the ordinance. Organization and reporting of shelter and animal control data were based on the "Animal Statistics Table" found in the Asilomar Accords, a standardized, uniform method of collecting shelter data. (8) Data were further categorized based on species and animal origin, dog or cat, Buncombe County or City of Asheville.

Data were graphed to show the average intake and euthanasia of dogs and cats per month for years 2001-2006 in Asheville, Buncombe County, and both combined. Simple OLS linear regression analysis was performed to explore the impact of the policy on both intake and euthanasia rates controlling for area population growth. Numbers of citations for violation of the ordinance, fees collected and cost of enforcement were also tabulated.

Informal interviews were conducted with staff from the Asheville Humane Society, Buncombe County Animal Control, City of Asheville Police Department, The Humane Alliance, Tom Sobol (former County Chair), and Ellen Frost (Mimi Page Foundation) in order to gain perspective on the ordinance and its efficacy as well as the steps that were necessary to pass it. Other areas of inquiry included issues of enforcement, concurrent educational programs, and other modes of pet depopulation that may be contributing to an overall decline in animals euthanized at the shelter.

### **Results from Statistical Analysis**

Information gathered from the Humane Alliance show the total number of dogs and cats spayed and neutered for the years of 2001-2006. As seen in Table 1, there is a significant upward trend in these numbers from 2001-2004, but in the last two years of the study period, the numbers start declining slightly.

Table 1: Total Spays and Neuters, Humane Alliance, 2001-2006.

Year	S/N Total	% Increase from previous year	% Increase from end of 2003
2001	12812	--	--
2002	13703	7%	--
2003	16382	20%	--
2004	21226	30%	30%
2005	20323	-4%	24%
2006	19202	-6%	17%

In contrast, Figures 1-4 show the overall pattern in intake and euthanasia over the same time period. As hoped for, intake and euthanasia rates dropped dramatically. However, while the image of spay/neuter rates going up and intake/euthanasia rates going down is encouraging, several caveats are in order. The picture is more complicated.

As seen in Figures 1-2, Buncombe County was experiencing declines in intake and euthanasia rates before the intact policy was approved in 2004. This does not necessarily mean the policy had no impact. The policy was discussed extensively in the local media long for at least 12 months before it was officially enacted. So the impact might be seen earlier than expected if the public started to change behavior in anticipation of the coming legislation.

In addition, the policy may be reinforcing the downward trend. For both dogs and cats, the rate of decline in intake/euthanasia rates increases after 2004. That is, not only is the downward trend continuing, it is stronger than before. This is the pattern we would expect to see if the policy was effective.

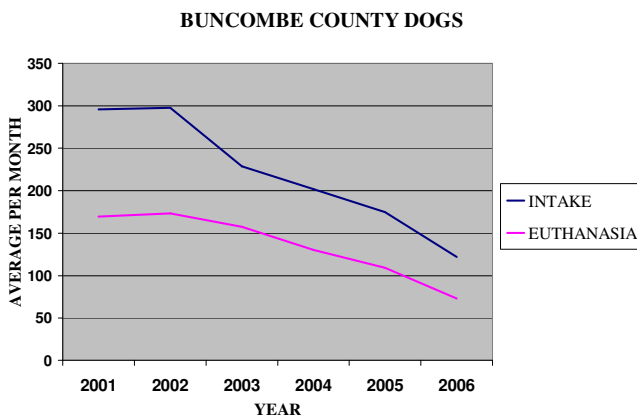


Figure 1

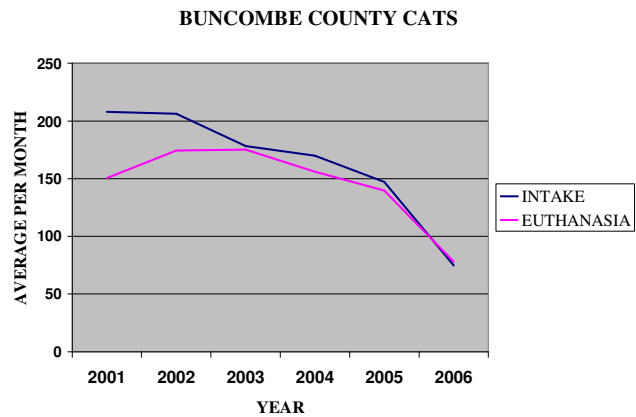


Figure 2

Figures 3-4, for Asheville, present a more mixed picture. For dogs, from an early declining rate, there appears to be a stabilization or slight increase in intake rates after 2004. Surprisingly, euthanasia rates diverge from paralleling the pattern of intake for dogs at this point. After initial declines, euthanasia rates stabilize and then continue a slight decline. That is, intake rates are going up slightly, while euthanasia rates are going down slightly. This probably can be explained by increases in adoption rates or efforts to reunite lost dogs with owners. Dogs are more frequently the beneficiaries of such efforts than cats.

For Asheville cats, there is a clear and dramatic decline in intake and euthanasia rates after 2005, the year in which the policy was enacted. This result lends strong support to the hypothesis that the policy has had an impact.

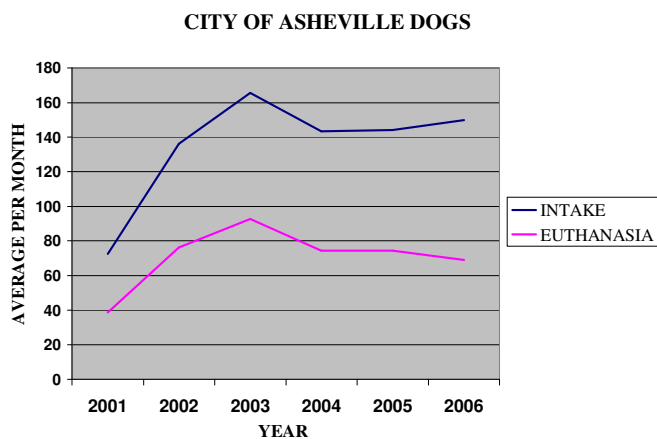


Figure 3

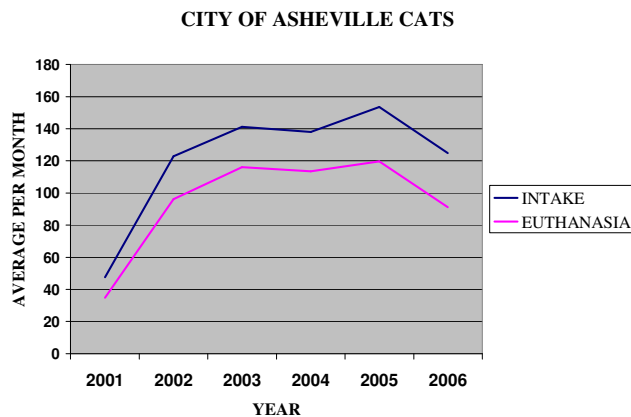


Figure 4

While the results from these graphs are mixed, there do not take into account other factors that might influence intake/euthanasia rates. To try to control for at least human population growth in the area (assumed to raise pet population), a series of simple OLS multi-variant regression models were tested. However, given that the data are time-series and therefore subject to autocorrelation, as a preliminary step, we had to transform the data to first-order differences (all transformations and analysis were done in SPSS statistical software).

We choose to use euthanasia rates as our dependent variable, given that reducing euthanasia is the ultimate outcome one hopes to achieve with this policy. Declines in euthanasia rates come about by reducing overall intake. We expressly control for adoption rates and population growth in the area. One limitation with this data is that population could only be measured on an annual basis. The other data were all on a monthly basis. Therefore, we replicated the population figures for each month in that calendar year. In addition, we were unable to control for other factors that might influence euthanasia rates, such as public education efforts, accessibility of facilities, etc.

Unfortunately, although eight different models were analyzed, with each animal type in each jurisdiction, and then various combinations, no significant results relevant to this study were found.<sup>1</sup> While this may be discouraging, we believe it is primarily a function of limited data. The policies have not been in effect long enough for long-term explanatory trends to be identified with confidence. We knew this level of analysis was exploratory.

### Results from Financial Analysis

Data collected from the City of Asheville's Department of Animal Control provided information on citations, fines, and unaltered permits issued. Since the passing of the ordinance in July 2005, 372 citations were issued, totaling \$74,400 in fines. Fees generated from unaltered pet permits totaled \$8200. According to Brenda Sears, Director of Animal Control, City of Asheville Police Department

<sup>1</sup> In one model, adoption levels were a statistically significant factor in predicting euthanasia levels for dogs and cats in Asheville.

(cite interview), additional enforcement costs for the animal control budget did not increase after the passing of the ordinance.

Data collected from Buncombe County Animal Control also provided information on citations, fines, and unaltered permits issued. Since the passing of the ordinance in February 2004, 281 citations were issued, totaling \$28,100. Fees generated from unaltered pet permits totaled \$10,500. According to David Long, Director of Buncombe County Animal Control (cite interview), additional enforcement costs for the animal control budget did not increase after the passing of the ordinance.

According to interviews conducted with Brenda Sears, and David Long there was no increase in the yearly budget for enforcement. As mentioned above, the nature of the law is that one must be caught in violation of another offense to be caught in violation of the spay/neuter law. Thus, there is not a need for additional staffing since it is essentially one more box to check when issuing a citation. Offending citation fees are waived upon proof of spaying or neutering or purchase of an intact pet permit.

To provide historical insight on the passing of the ordinance, we interviewed Tom Sobol (former County Chair), and Ellen Frost (Mimi Page Foundation). Both Mr. Sobol and Ms. Frost were proponents of the ordinance and were instrumental in convincing the county commissioners that passing the ordinance was a step in the right direction. They lobbied commissioners individually and expressed to them the economic benefits of a spay/neuter mandate. Ms. Frost further promoted the ordinance by running advertisements (funded by the Mimi Page Foundation) on television, radio, and in the local newspaper in order to gather support within the community for the ordinance.

### **Detailed Discussion**

Our objective was to provide a preliminary assessment of Buncombe County's mandatory spay/neuter ordinance and its impact on spay/neuter rates and euthanasia. Also examined was the economic feasibility of implementing this type of policy, considering the impact on traditionally limited animal control budgets.

Data from the Humane Alliance show an overall increase in the number of spays and neuters performed. We would expect that the numbers would show an increasing trend regardless of the policy, however, when we look at the percent increase between the year before and the year that the policy was enacted (2003 vs. 2004), there was a 30% increase in the number of spays and neuters performed. This percent is much greater than the percent increase the previous two years (2001 and 2002). During the years 2005 and 2006, data show a decrease in the total numbers of spays and neuters performed. Despite this decrease, there were 24% and 17% more spays and neuters performed compared to 2003, the year prior to the law. Increased facility demands, staffing demands, and surgical capacity are likely factors which play a role in this decrease and that the amount of spays and neuters performed in 2004 exceeded the Humane Alliance's functional capacity. Furthermore, other veterinary clinics in the area were not surveyed for their contribution to the total numbers of spays and neuters performed.

Analysis of the policy's impact on euthanasia was another important aspect of our study. As mentioned above, we hypothesized that the policy would increase the total number of spays and neuters resulting in a decrease in animal intake and a decrease in total euthanasia. Due to the functional constraints of the Humane Alliance, we decided to analyze the data looking at how the policy is directly affecting euthanasia rates. Furthermore, the data from the city and the data from the county were analyzed separately since they passed the ordinances on separate dates.

The descriptive data from the City of Asheville imply that a decrease in the number of euthanasias performed, for both dogs and cats are a result of the ordinance. This is surprising given that the ordinance was not passed in the city until July 2005, a full year and a half after the ordinance was passed in Buncombe County. Further, there was little expectation that the policy would have an impact

on euthanasia of the cat population due to the complication of proving cat ownership. Cats, in general, are more independent and often owners let their cats outside to roam freely, even in an urban environment. Subsequently, when an animal control officer wants to cite a cat owner for non-compliance with any of the animal control ordinances, it is often easy for the person to deny ownership. Also, a large stray and feral population of cats would seemingly make it even harder to affect a change in the number of cats euthanized. Asheville is commonly referred to as a liberal and progressive city, and so perhaps the decrease in euthanasia of the cat population was due in part to an increased acceptance and awareness of the ordinance by its population.

Although the policy seems to have had an impact, that conclusion was not supported by the regression analysis. However, the recent trend is clear -- that with each month that the ordinance is in effect in Asheville, fewer animals are being euthanized. So over time it might be expected that the impact of the policy will become more pronounced and there will be a continued drop in the number of both dogs and cats euthanized in the City of Asheville.

In Buncombe County, there is also a decrease in the overall numbers of euthanasias being performed for both dogs and cats, however, again, the regression analysis did not prove that the decrease was directly related to the ordinance. This is slightly surprising since the ordinance has been in place longer than in the city. The increased geographic area that Buncombe County encompasses compared to the City of Asheville is one possible reason for the lack of evidence. Community members in the more rural areas of the county may be less aware that the policy exists and be less likely to encounter an animal control officer than their counterparts in the more urban environment of Asheville. Regardless of whether or not the policy is found to be a statistically significant factor in the reduction in the short time the policy has been in effect, the fact remains that the euthanasia rate for dogs and cats is decreasing in Buncombe County.

The statistical evidence presented here is inconclusive. However, given the potential for the policy to work, that there has not been an *increase* in euthanasia in the face of a rapidly growing population since the policy took effect, its zero enforcement costs, and its support by multiple stakeholders in the community, there is no evidence for not continuing the policy. In fact, our initial results suggest the need to more closely monitor the data over the next five years, so that a more rigorous analysis can be made.

One of the more important aspects of analyzing this ordinance was determining the economic impact on the county, and city, animal control budgets. Many opponents to this type of legislation suggest that it will cost too much to enforce; that cost being transferred to the taxpayers. Interviews with the directors of animal control for both the city and the county quickly negated counter arguments by showing there was no increase in the cost of enforcement. By the very nature of the ordinance, one must be caught in violation of another ordinance in order to be caught in violation of the spay/neuter mandate. For example, if an animal is not prominently displaying its rabies tag, or the owner is not obeying the leash law, the Animal Control Officer can then request proof of reproductive alteration or proof of the intact permit. As mentioned in the results section above, this is just one more box to check on the citation form. Furthermore, animal control promotes education of the ordinance, giving owners information on the importance of spaying and neutering, impressing upon them that it is cheaper to alter ones animal than to pay the fine or purchase the permit, and where they can get their animal altered. If the owners are in compliance, the citation fee is waived. Revenue is generated when owners do not comply and must pay the citation fee, or when owners purchase intact permits. Therefore, the spay/neuter legislation not increasing local government costs.

The passing of the Buncombe County spay/neuter ordinance was due in part to the support provided by the Mimi Page foundation and the influence of Commissioner Sobol. This unique

partnership led to the passing of a progressive ordinance in a traditionally conservative community. While the advertisements funded by the Mimi Page foundation allowed for increased awareness of the overpopulation problem within the county, it was only a small part of a larger effort which allowed for the passing of the ordinance. Other counties wishing to pass similar ordinances could explore alternative outreach methods which would better suit the community in which they live.

There is no one single solution to solving the problem of pet overpopulation. Our research has demonstrated, however, that a successful policy model, which when combined with other efforts, may provide a more thorough and holistic approach to animal control and control of the pet population. We hope our research will spawn other research to confirm the longevity of this and similar spay/neuter ordinances, as well as spark an interest in creating more effective methods for controlling the cat populations. For example, The Asheville Humane Society was proactive in creating a separate spay/neuter event for cats, after noticing that the numbers of cats coming into the shelter were not decreasing after the passing of the ordinance. Other laws may need to be created to expand feral cat program and better control its population. Our intention is to publish our research in Animal Sheltering/Public Policy journals in an effort to assist other local governments in creating similar spay/neuter ordinances. Additionally, we will be presenting our research at the Davidson County, NC commissioners meeting as they consider whether to pass an ordinance modeled on the Buncombe County policy.

We also plan to promote our research as evidence of how traditionally opposing groups such as the shelter and AKC can compromise to form an plan for a community that will be in the best interest of the companion animal population, while being accepted by the human population.

## **Conclusion**

In conclusion, we believe that public policy mandating spaying and neutering pets is a viable option for counties wishing to expand their efforts at controlling the animal population in their area, while not compromising the budget. The following we believe to be factors for successful policy implementation: 1) Accessible low-cost spay/neuter clinic, specializing in high volume, quality surgeries; 2) No increase to the animal control budget; 3) Awareness of the county population that pet overpopulation is a problem from a stray animal/public health perspective; 4) Willingness of a county population to accept greater regulation for the greater good of the community in order to decrease the unwanted pet population; 5) Public forums and discussions addressing the county's needs and problems in order to create a tailored ordinance. Public policy is only one piece of the puzzle and cannot be seen as a single method for controlling pet overpopulation. When combined with other programs, spay-neuter legislation can help efforts in decreasing the pet overpopulation problem with greater success.



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