



**FIREPAW**

**THE FOUNDATION FOR INTERDISCIPLINARY RESEARCH AND  
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# **ANALYSIS OF UTAH RESULTS**

**PRODUCED FOR MADDIES FUND**

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## ANALYSIS OF RESULTS FOR UTAH

### Total Euthanasia Trends

After declining 10.1% or 4,637 animals in FY2000-2001, euthanasia decreased an additional 1.6% or 653 animals in FY2001-2002 compared to the previous year. Over the first two years of the program, euthanasia declined a total of 11.5 percent, or 5,290 animals (see Figure 1).

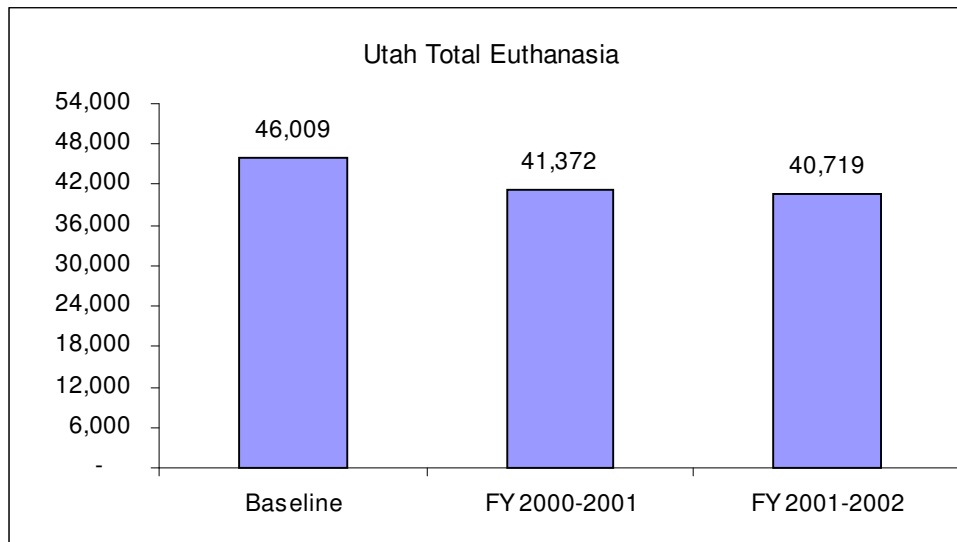


Figure 1

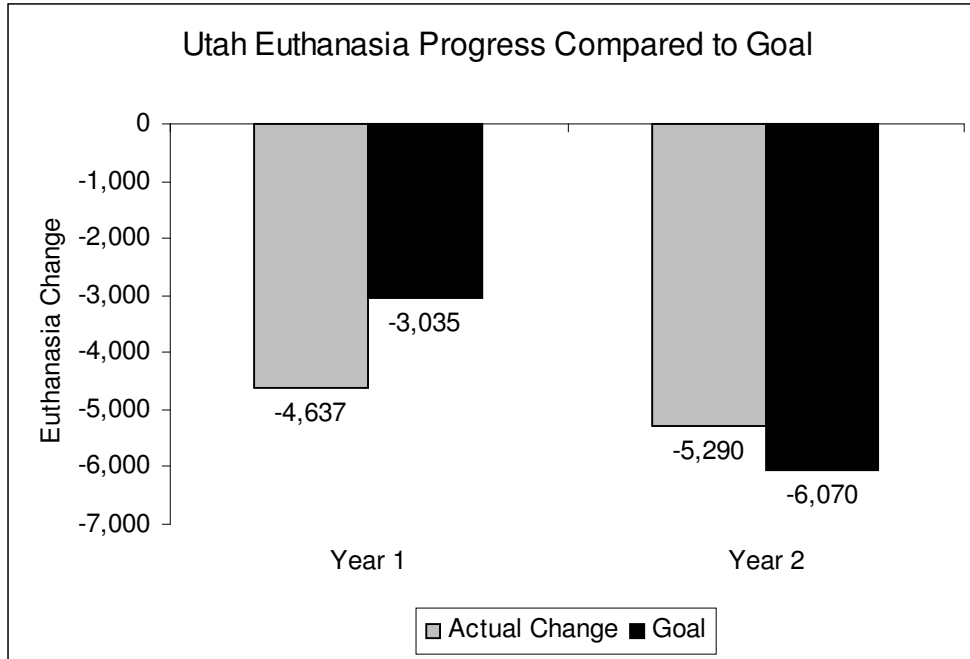
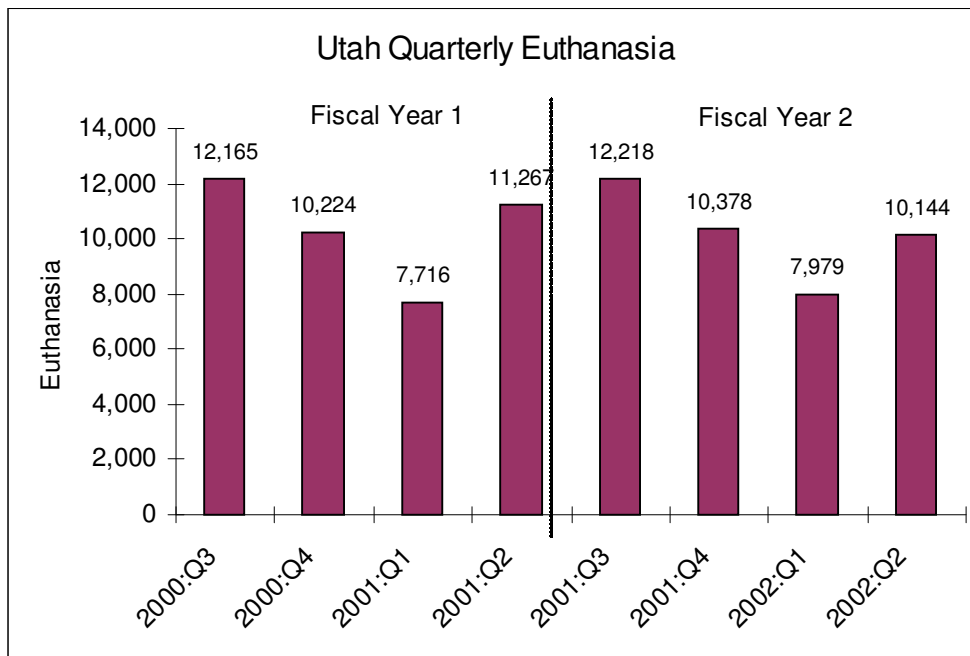


Figure 2

Quarterly data on euthanasia shows a clear seasonal pattern (see Figure 3)<sup>1</sup>. The pattern suggests that euthanasia peaks in the third quarter and hits its low point in the first quarter. Compared to Year 1, the second program year showed no improvement at a quarterly level except in the final quarter (2002 Q2). This quarter is somewhat encouraging since it is the last quarter for which data has been analyzed. Hopefully it is the start of a trend of decline rather than an isolated quarter.



<sup>1</sup> Since baseline data was collected only on an annual basis, it is not possible to look at actual euthanasia change at a quarterly level seasonality for the baseline year can be estimated, this would be estimated using the same Year 1 and Year 2 data, making the estimated change not very meaningful.

Figure 3

### Adoptable Animal Euthanasia Trends

For adoptable animal euthanasia, the results in terms of goal versus actual results at the end of Year 2 are not as strong as they are for total euthanasia. However the trend in Year 2 is more encouraging. Death rates missed the goals both years, with adoptable animal euthanasia actually increasing in Year 1 (see Figure 4). However, Year 2 showed a reduction of 4,625 animals over the Year 1 results. This left Year 2 adoptable animal euthanasia change at about two-thirds of the goal, which is still less than had been hoped for, but still a vast improvement over the first year's results.

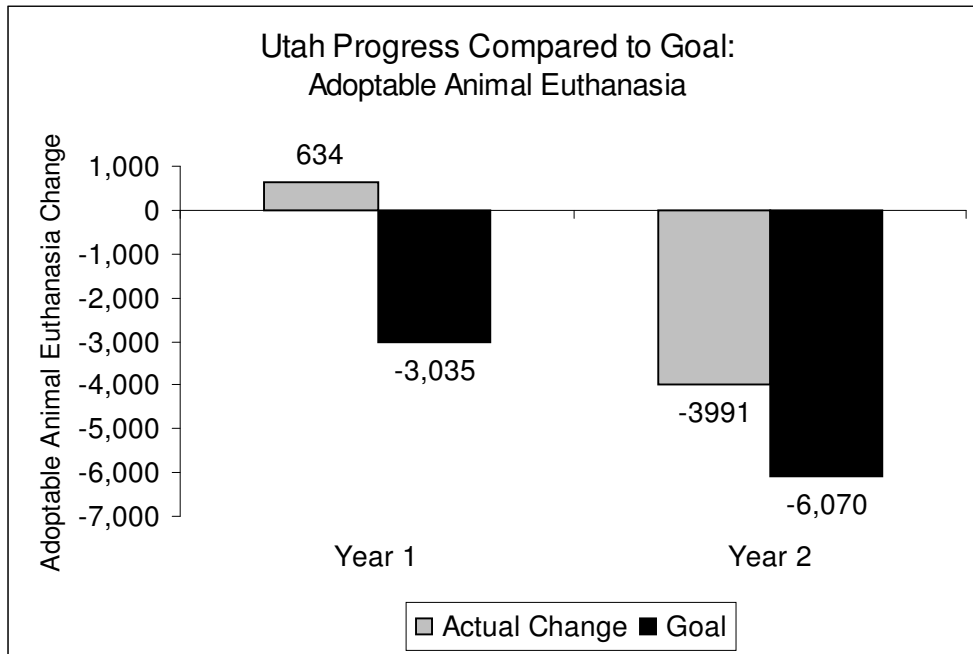


Figure 4

Over the total period adoptable animal euthanasia declined close to 4,000 animals. Euthanasia of treatable animals declined even more, dropping over 5,500. Since adoptable animals were the main focus of adoption campaigns for the No More Homeless Pets in Utah program, it seems unusual that most progress was in the "treatable" animal category. It is quite possible that categories of animals were subject to higher errors in the baseline year, and that some adoptable animals were categorized as treatable animals during this period, causing adoptable animal progress to appear to be weaker than actually was the case. Over the two-year period, nonrehabilitatable animal euthanasia increased by 4,258. The vast majority of this increase was in animal control facilities. Since intake at animal control did not increase, either the mix of animals coming in shifted, the categorization of animals shifted, or efforts were shifted from saving nonrehabilitatable animals to saving adoptable and treatable animals.

The quarterly pattern of adoptable animal euthanasia shows a clear seasonality pattern with the first quarter being the best period, similar to the data for total euthanasia. The second and third quarters had the highest euthanasia rates. Unlike total euthanasia, every single quarter in Year 2 showed a decline from the same period in Year 1 (see Figure 5). Once again, since accurate quarterly data is not available for the baseline, goals and changes are not shown.

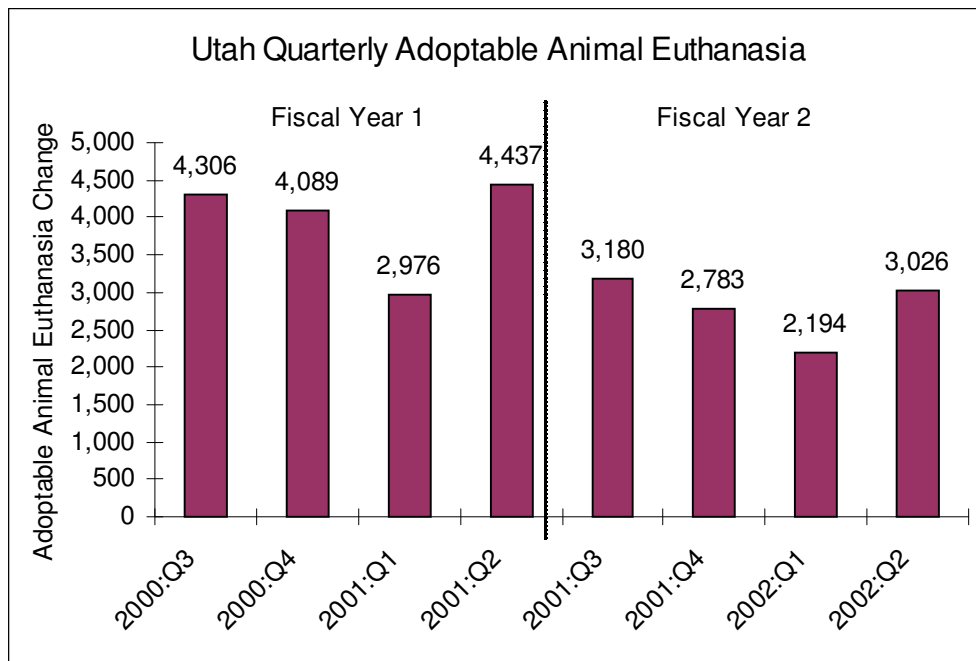


Figure 5

## Adoption Trends

Utah exceeded its adoption goals in the first year and then fell slightly short in Year 2 (see Figure 6). It is interesting to note that the results for total euthanasia change are very similar to the results for adoption change. Both exceeded the goal in Year 1 but fell slightly short in Year 2. For Year 2, euthanasia change was short by 780 animals, while adoption change was off by only 100 animals (or 1.7 percent of the goal).

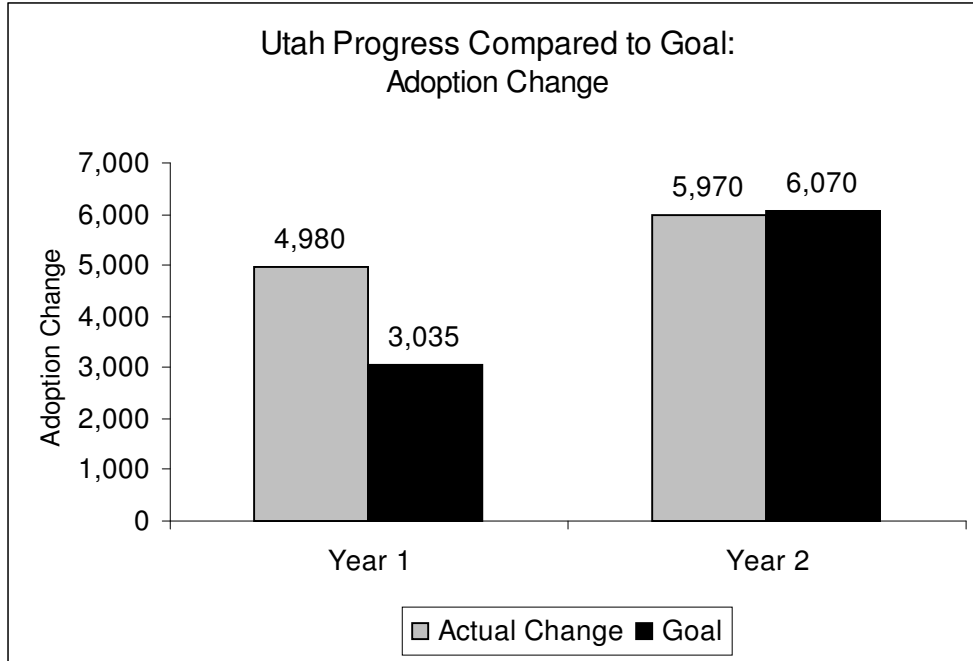


Figure 6

It is difficult to compare regional performance for adoption since no-kill organizations are responsible for most of the improvement in adoptions and they can span multiple regions. This is less of a problem for euthanasia, which takes place mostly in animal control organizations.

The quarterly pattern of adoption shows a similar seasonal pattern to euthanasia and adoptable animal euthanasia (see Figure 7). The lowest adoption quarter is the first quarter (the same quarter when euthanasia is at its lowest). In every quarter except the third quarter, Year 2 adoption was better than Year 1 adoption. Though the trend suggests improvements in adoption are continuing, it is questionable whether the improvements are continuing at a high enough rate to meet the goals for the out-years.

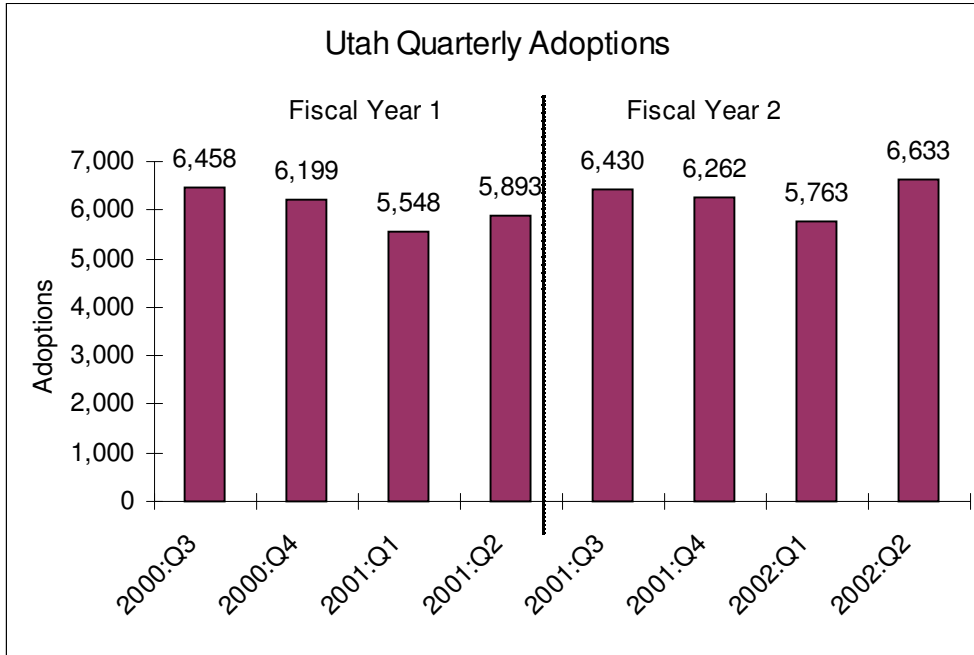


Figure 7

In the first year of the program, no-kill organizations were responsible for 78% of the adoption increase program-wide. In the second year, no-kill organizations were responsible for 71% of the total increase (see Figure 8).

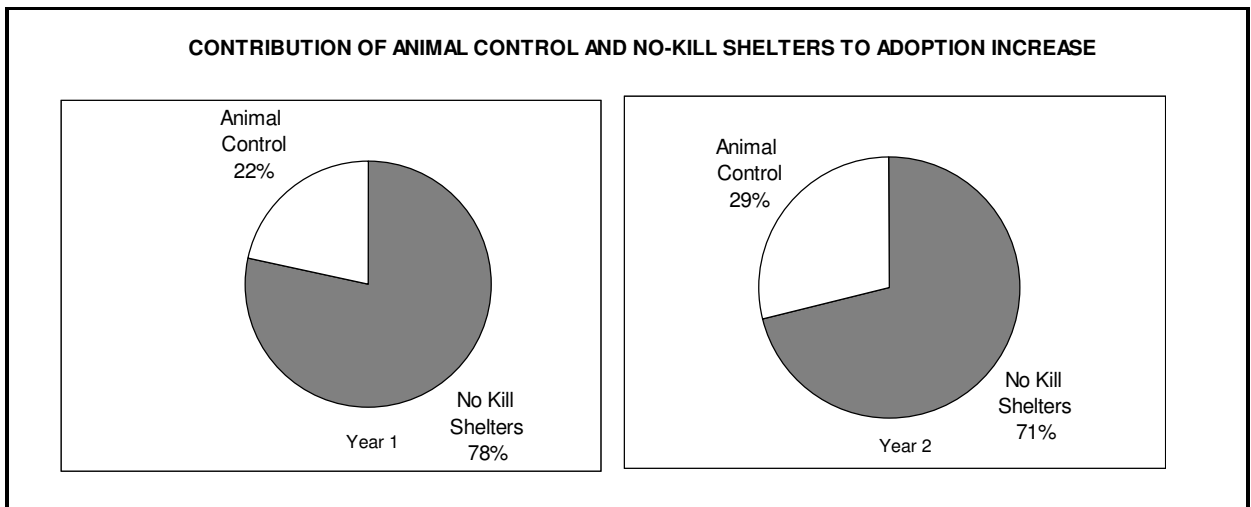


Figure 8

## Spay-Neuter Trends

Over all, Utah greatly exceeded its Year 2 spay/neuter goal. Although goals were not established for regions within the program, if goals for regions had been established based on adoptable animal euthanasia in the baseline year, then all regions except Utah County would have exceeded their goal.

The growth in spay/neuter procedures can be entirely attributed to discount procedures. Regular procedures declined in Year 1 then bounced back in Year 2, and actually exceeded the baseline level<sup>2</sup> (see Figure 9). Although discount procedures declined in Year 2, the rebound in regular procedures more than compensated for the decline, leading total procedures to rise both years. The simultaneous decline in discount procedures and rise in regular procedures observed in Year 2 was most likely due to a change in the spay/neuter program policies that reduced the amount of “bargain hunters” who would have spay/neutered their animal either way but chose to take advantage of the discounted procedure. This change seems to have worked. Regular procedures were actually higher in Year 2 than in the baseline period. This suggests that most if not all discount program users in Year 2 would not have otherwise spay/neutered their animal. This is a positive result, since it is very difficult to run a discount program that does not attract some people who would spay/neuter their animal anyway.

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<sup>2</sup> It should be noted that the baseline level used here is for Year 2. Year 1 has a slightly different baseline.

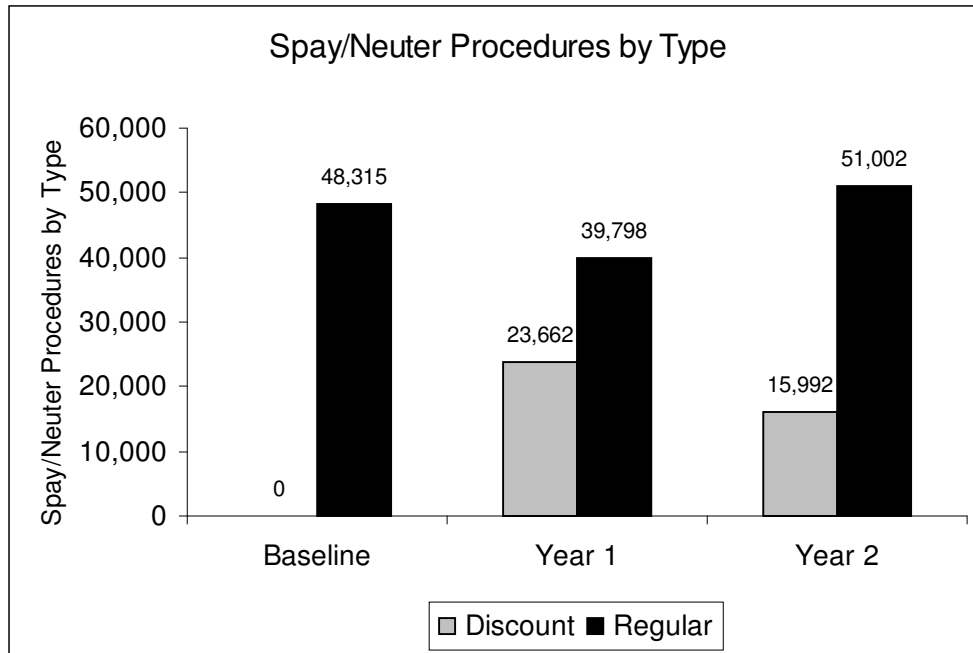


Figure 9

Breaking down the number of procedures performed by county adds further evidence that the program change between Year 1 and Year 2 had an important effect. By statistically examining the change in regular procedures as a function of the change in discount procedures, it was found that in Year 1 there was a highly significant and negative relationship with a coefficient of  $-0.7$ . In other words, for every discount spay/neuter added, one can expect regular procedures to decline by  $0.7$ . In Year 2, there was a significant and *positive* relationship with regular procedures going up by about  $0.3$  for every discount procedure performed.

### Source of Euthanasia Shortfall

As previously discussed, the improvement in euthanasia in the second program year fell short of goal. This was partially due to adoption programs that, though successful, were slightly short of the Year 2 goal. However, adoption was closer to the goal in Year 2 than euthanasia, therefore some of the shortfall in euthanasia progress appears to be due to rising intake. It is very important to understand the source of this change since it may become even more of a factor in future program years.

Unfortunately, total intake from the public for the program and in particular for regions within the program are difficult to precisely determine because the intake for no-kill organization includes animals transferred from other organizations. Therefore there is a risk of double-counting some intake. However, intake for animal control is much more straightforward to determine. Figure 10 shows the intake for animal control, adoptions plus redemptions for animal control, and adoptions plus redemptions for no-kill organizations<sup>3</sup>. Most of the euthanasia drop over the full period was due to adoptions and redemptions at no-kill organizations, with animal control adoptions and redemptions also making a significant contribution. Falling animal control intake also helped to reduce euthanasia.

<sup>3</sup> Redemption change was small in both years and proportional to intake change. It is included here to give a more complete picture of the sources of change.

However, the improvements in these three categories suggest that euthanasia should have gone down by more than 7,000 which would have been more than enough to reach the Year 2 goal. The actual euthanasia reduction was 5,290 which is less than the Year 2 goal of 6,070.

It is also noteworthy that the changes compared to Year 1 are much less than half of the changes compared to baseline. In other words, most of the improvement in the program's first two years occurred in the first year. It is quite possible for the program to experience diminishing returns as time goes on and to have an increasingly difficult time in incremental gains. If so, this may make it difficult for the program to reach its future yearly goals.

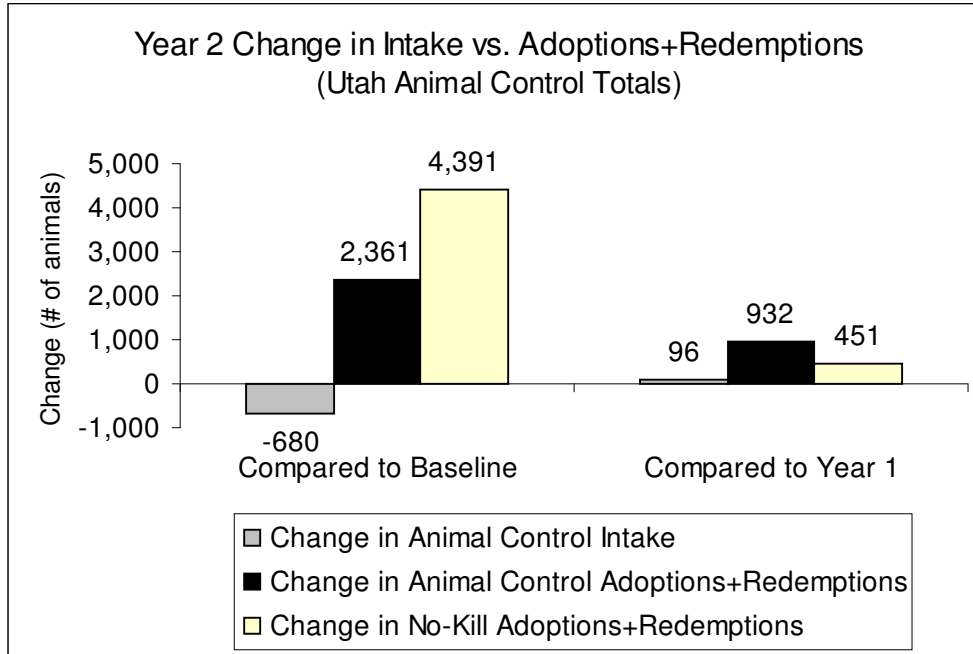


Figure 10

Since the data in Figure 10 suggests that the Year 2 euthanasia goal should have been achieved, it is important to understand why this was not the case. Rising intake at no-kill organizations is a likely source. Although actual intake from the public at no-kill organizations cannot be determined precisely, it can be estimated as intake (which includes both transfers and intake from the public) minus transfers<sup>4</sup>. When this is done, there does appear to be a rise in intake from the public at no-kill organizations. Intake including transfers went up at no-kill organizations by 4,898 in the first two years while transfers were at 3,216 in Year 2 (see Figure 11). Since transfers are not available for Year 0, it is assumed that there are no transfers in this period, though this most likely causes the change in transfers to be overestimated. Using this information and the assumption that the change in intake from the public is the difference, there was a growth of roughly 1,682 animals in intake at no-kill shelters. This is very close to matching the discrepancy between actual euthanasia change and the change implied by Figure 10, which is a discrepancy of 1,710 animals.

If we assume that 1,682 more animals went into no-kill shelters from the public than in the baseline year, then the total intake for the system rose by 1,002 rather than going down.

<sup>4</sup> This calculation should only be thought of as an estimate because there are some possible distortions in this number. Distortions could be due to animals entering or leaving the system (e.g. transferred out of state), or due to incomplete record keeping (for example, if an animal goes to three organizations but one or more does not record the transfer).

Therefore, despite a very successful spay/neuter program, it appears that intake rose over the program period.

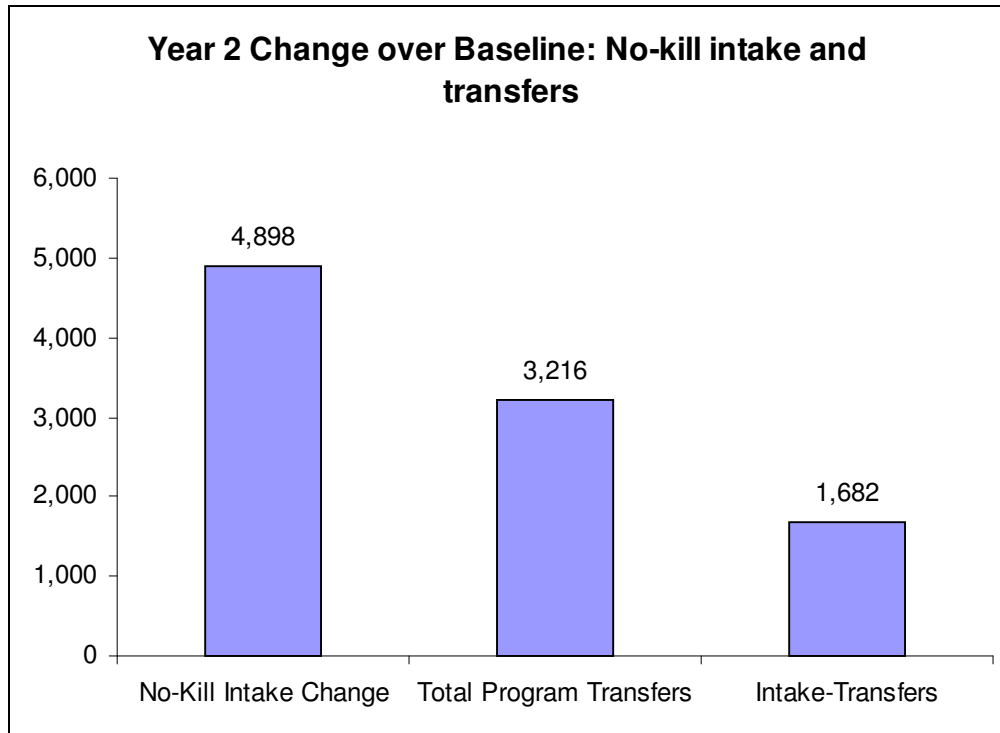


Figure 11

Since rising intake caused a shortfall in euthanasia from the program goal, it is important to identify the source of the rising intake. There are a number of potential causes. These include rising population, rising animal guardianship rates within the population, increased awareness about the shelter or increased comfort levels about the treatment of animals at the local shelter that cause more people to turn their animals in, a change in animal control policy/enforcement levels, increased birth rates, or rising returns from prior increases in adoption<sup>5</sup>. The contribution of these various causes can be better determined by further analysis of the intake trend.

As Figure 12 demonstrates, the increase in intake at animal control facilities is clearly from cats. While intake for dogs declined in Year 2 compared to both Year 1 and to the Baseline year, intake for cats rose both years. This suggests the problem is not just rising general population levels. It also suggests that the rise in intake is not returns from rising adoption, since more of the adoption gains were for dogs rather than cats and since dogs probably are at least as likely to be returned as cats following adoption.

<sup>5</sup> It is also possible that adoption policies become more lenient in an effort to meet adoption goals and that this caused an increase in returns that may have contributed to the rise in intake.

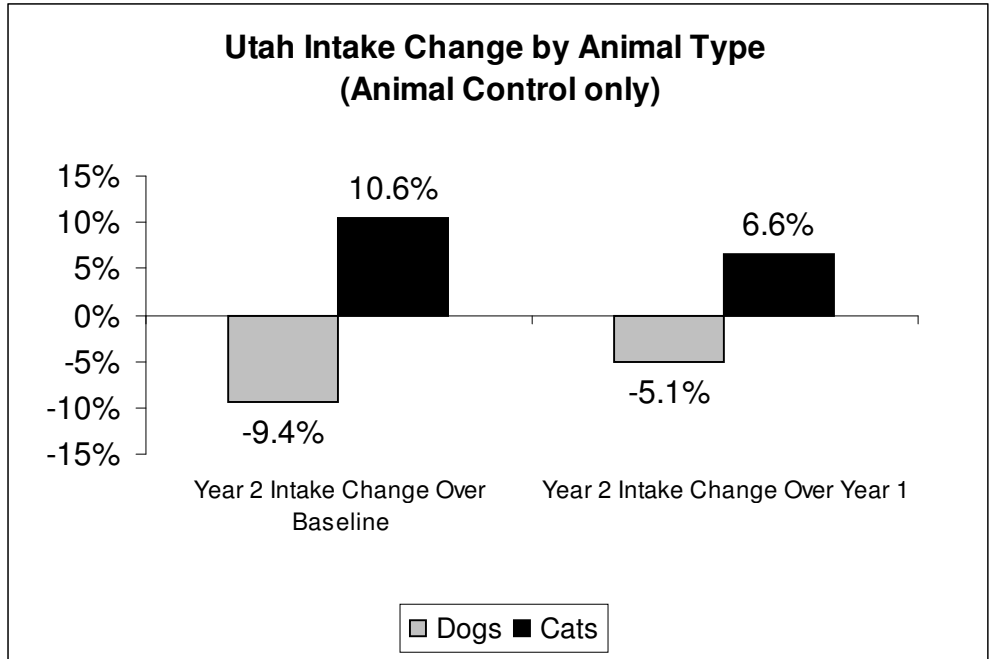


Figure 12

Splitting intake by source (field or counter) shows that the entire rise in intake in Year 2 compared to Year 1 was from people coming to the counter rather than from the field (see Figure 13). Unfortunately, data for intake source is unavailable for the baseline year.

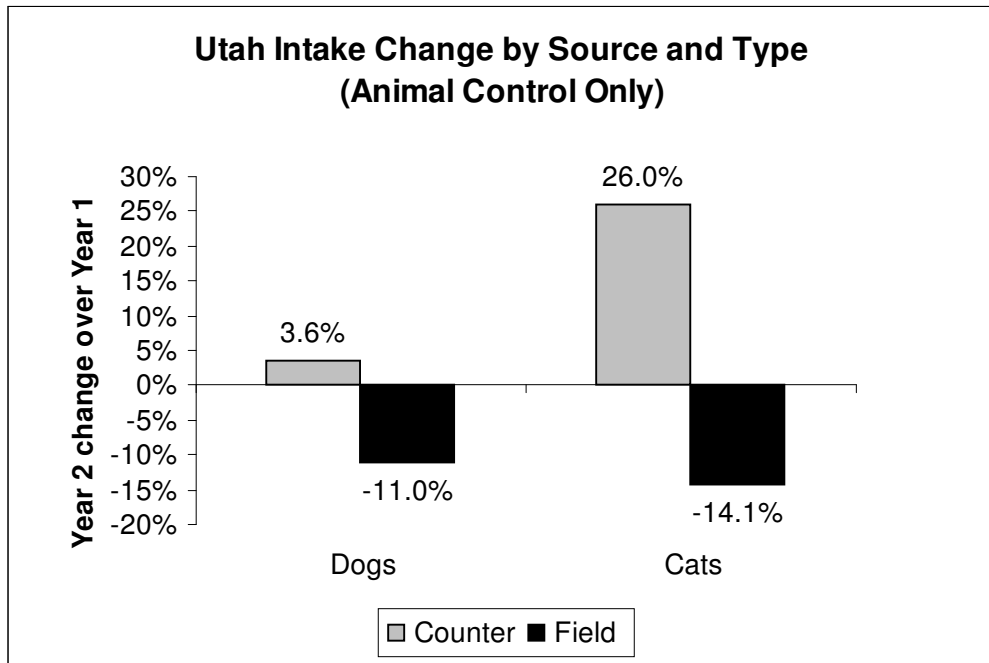


Figure 13

The fact that the rise in intake is entirely from people coming to the counter (at least in Year 2) suggests that the source of the rise in intake may be due to people being more willing to turn their animals in to the shelter due to publicity about the “No More Homeless Pets” program and a lower kill rate. The reduction in animals from the field suggests that there may be less stray

animals in the region due to spay/neuter programs. However, these gains are partially being masked due to the public's increased willingness to take their animal to a shelter. If some of the increased counter intake would otherwise have gone into the stray population, then this leads to a statistically deceptive result. The stray population is an uncounted population. The reduction in the suffering and death of this uncounted population is an important impact, but does not show up in statistics. In fact, this benefit to the stray population actually makes intake look worse.

Intake from the public by no-kill organizations is more balanced than animal control intake change. No-kill organizations had about equal growth in intake for both cats and dogs (see Figure 14). This is probably because the intake at no-kill organizations is discretionary and the rise in intake is closely matched by the rise in adoptions. As no-kill organizations have adopted more animals, they have the ability to take in more animals. Some of these additional animals at no-kill organizations are transfers from other organizations while the remainder comes directly from the public. Since the organizations have some discretion as to what additional animals they wish to take in, it is not surprising that when these organizations free up space from adoptions, they take in a fairly even mix of cats and dogs.

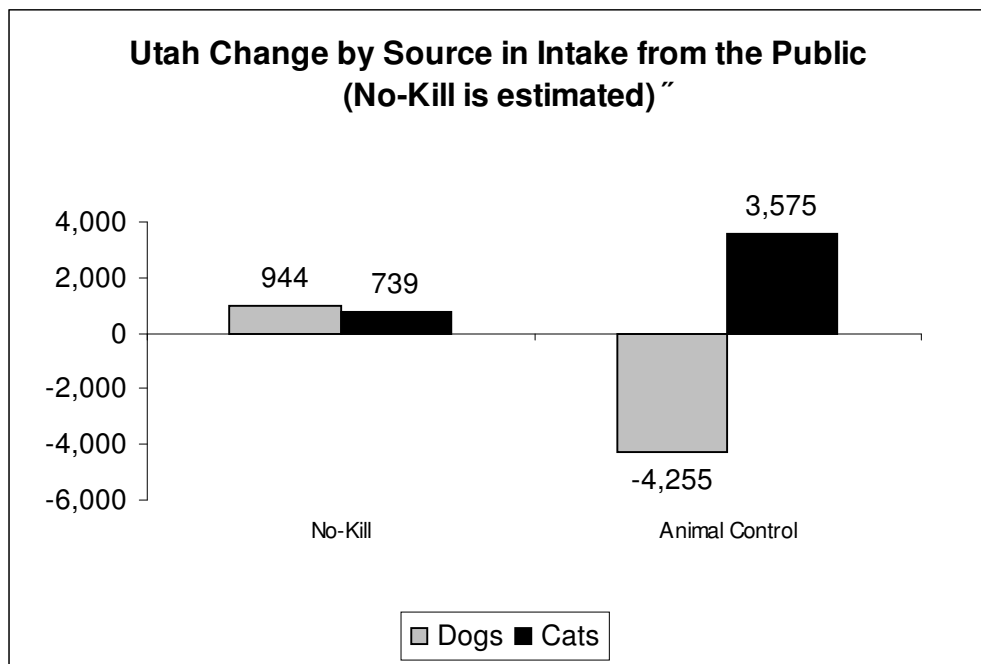


Figure 14

When dogs and cats are combined, over 100% of the increase in intake came from no-kill organizations. It is not surprising that no-kill organizations increased their intake since these organizations often control their intake based on available space. Since no-kill organizations increased adoptions, it is reasonable that increased intake would follow. The important question is where the new intake came from. One possibility is that the additional animals that went to no-kill organizations would have otherwise been turned in to animal control. Another possibility is that people who would have kept their animals if their only option was to turn their animal over to a “kill” shelter relinquished their animal since there was room at a no-kill shelter. A third possibility is that the animals would have simply been abandoned to fend for themselves if there had been no room at the no-kill shelter. And a final possibility is that the animals came from the stray population (either directly taken by shelter staff or turned in by a sympathetic individual).

It is likely that a little bit of each of these possibilities is true. Some no-kill intake is a substitute for animal control intake. It is possible that having space at a no-kill shelter might

encourage some people to surrender their animals. However, it is questionable how responsible some of these homes that are “on the fence” would be anyway. It is likely that some of these animals either would be turned in at a later date, be left unfixated to accidentally breed, or would simply not be in a home environment that is good for the animal. Therefore, if having a no-kill organization with space encourages some amount of surrenders, it may not be an entirely bad outcome.

The last two possibilities have some interesting implications. If some no-kill intake either comes from the stray population or takes in animals who would become part of the stray population, then this leads to a statistically deceptive result. The stray population is an uncounted population. Most attempts to address companion animal overpopulation will probably directly or indirectly tap into this stray population. This will lead to a reduction in the suffering and death of an uncounted population, which is an important impact, but does not show up in statistics. In fact, helping the stray population could make some statistical results look worse. Intake in particular may appear to rise if more of this stray population or potential stray population is brought into shelters. This may be at least part of the reason why intake rose despite effective spay/neuter programs.

The intake trend by region, year, and animal species was analyzed statistically. A variety of models and variables were used in this analysis. In general, higher growth in adoption rates was associated with slightly higher growth in intake. It is important to note that this does not necessarily imply that increases in adoption caused increases in intake. Although it is possible for higher adoptions to lead to higher intake through "returns", there are a number of other explanations, such as both adoption and intake being associated with a third factor. Given other findings regarding intake trends, it may be more reasonable to conclude that intake and adoption both increased in the same regions for reasons that are linked (e.g. rising numbers of animals in the region, increased shelter awareness, increased comfort with the care received by animals delivered to the shelter, increased animal control activity after adoption rises).

Interestingly, no consistent trend was found between intake and spay/neuter programs. In other words, regions that had greater increases in spay/neuter rates did not necessarily show a better intake trend. Again, this lack of a statistical relationship should not be interpreted too strongly. It most likely is due to the presence of confounding variables such as those described above or due to limitations in the data (e.g. lack of full knowledge regarding where spay/neuter procedures were performed or the activities of veterinarians who did not participate in the program).

The data was statistically analyzed at the county level. However, graphically, the aggregate county regions clearly show that there is not an obvious decline in intake in the regions with the greatest gains in spay/neuter procedures. In fact, if anything the trend appears to be the opposite.

## Evaluation of Program Progress

In general, the No More Homeless Pets in Utah program is doing quite well at achieving the goals that are directly under their control (increasing adoptions and spay/neuter procedures). However, as of Year 2 they are falling slightly short of the program goals in terms of euthanasia and significantly short of program goals in terms of adoptable animal euthanasia. In terms of total euthanasia, this is mainly due to an increase in intake from sources external to the program.

In addition, Year 2 improvements were weaker than Year 1 improvements, suggesting the possibility that there may be diminishing returns from program efforts. If diminishing returns continue, it may be very difficult to achieve the out year goals.

Although the results fell short of the original euthanasia goals, this does not mean the program has not been very successful in reducing euthanasia. It is reasonable to conclude that euthanasia is down considerably from what it would have been if the program had not been in place. Just how much euthanasia would have been saved depends on the assumptions used. One estimate is given in Figure 23, which indicates that euthanasia would have been up as much as 4,617 instead of down 5,290 in the second program year if not for the program, for a total saved of roughly 10,000 animals. The estimate assumes that each adoption results in one animal saved (i.e. adoption does not cause higher intake) and that each spay/neuter procedure results in roughly 0.3 less animals coming in each year<sup>6</sup>.

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<sup>6</sup> This last assumption is the most questionable. As discussed in this document, no relationship could be established statistically here, probably due to data limitations. Instead this figure is a rough estimate based on 15% of intake coming from litters that were born to unspayed animals, an average lifespan of roughly 4 years for animals in the system, and an assumption that 12% of animals in the general public are not spayed/neutered. These estimates are very rough figures based on prior research, so this number is a rough approximation at best.