

A Study of Equine Slaughter and Abuse Patterns Following the Closure of Horse Slaughter Plants in the US

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Introduction

Horse slaughter has become a hotly contested issue in the United States in the past year. A large number of articles have appeared in the print media claiming that the closings of the three US based horse slaughter plants, all of which were foreign owned, in 2007 caused crisis levels of horse abuse and neglect and even wide scale abandonment of horses. None of these articles, however, cites any evidence for these claims beyond opinion or the occasional anecdotal story.

The purpose of this study is to document trends that have occurred in the wake of the closing of horse slaughter plants in the United States, to include the numbers of horses slaughtered and where they were slaughtered during the study period. This period was selected to include one year before the first closings to provide a baseline. The further goal was to establish what effect, if any, the closings of the US based plants might have had upon the frequency of abuse and neglect.

Background

All three of the foreign owned horse slaughter plants operating in the United States were closed under state laws during 2007. On January 19th, 2007, a federal appeals court overturned a lower court decision and ruled that a 1949 Texas law prohibiting the sale of horse meat was constitutional and valid. Although the two Texas plants continued to slaughter for some weeks under an appeal to the Supreme Court, they ceased operations in February when the airlines refused to ship horse meat to their customers in Europe.

The Texas plants had been responsible for more than half of all the horses slaughtered in the United States. Within weeks of their closings, the Cavel plant in Illinois increased their production to take advantage of the opportunity.

On May 24, an Illinois law prohibiting horse slaughter went into effect. After closing briefly, the Cavel plant appealed the decision and reopened under a TRO (Temporary Restraining Order).

At the federal level, an amendment to the 2006 Agriculture budget had been passed with the goal of closing all US horse slaughter plants by removing USDA funding for their required ante-mortem inspections. This amendment, which should have taken effect in March of 2006, was sidestepped by the USDA when it instituted a pay-for-inspections program.

The USDA program was the immediate subject of a law suit but the plan was allowed to continue under another TRO as the suit worked its way through the court system. The lower court decided against the USDA as did the appeals court. The result was that the Cavel plant closed briefly on several occasions before slaughter ended there on September 20th of 2007 under the new Illinois law.

Data sources

Several data sources were used for this study, including the Illinois Department of Agriculture, the United States Department of Agriculture (USDA), the Canadian Food Inspection Agency (CFIA), the Bureau of Labor Statistics, the Illinois Department of Agriculture (ILDA) and the online database www.pet-abuse.com.

Limitations

There are several complicating factors in gathering and analyzing the data available. The most comprehensive data available is from the USDA and the CFIA. While these statistics give accurate numbers for horses slaughtered in the US last year, as well as exports by country, the US numbers are not differentiated between the three plants that were operating in January of 2007. These were the Cavel plant in Dekalb, Illinois, the BelTex plant in Fort Worth, Texas, and the Dallas Crown plant in Kaufman, Texas.

The biggest challenge is in obtaining and properly interpreting data on abuse and neglect. The first problem is that there is no way of knowing directly how many equines are being abused or neglected. The only metric available is the number of cases of abuse and neglect that are charged. Additionally, not all cases charged result in a guilty verdict, and the fact that a case does not result in such a verdict may be for reasons other than culpability.

Another issue in regard to charged cases is that they can take months or years to work their way through the court system. Therefore, this study uses each case on the date it was charged, whether or not it results in a guilty verdict, with the assumption that this metric will average out to be roughly proportional to true abuse levels over time. The study period is sufficiently brief that significant changes in law enforcement vigilance over its course are unlikely and the data should be valid for determining trends.

Moreover, very few states keep centralized data on equine abuse and neglect cases charged, and those that do keep it in a variety of formats. This study will look at one such state and analyze the correlation between its data and other metrics including slaughter rates and economic conditions for reasons that will become clear in the analysis.

The only centralized database that tracks all states is www.pet-abuse.com. There are significant limitations to this data source and they will be discussed in a later section. Since these limitations could draw doubt as to their validity, a significant effort was made to verify and otherwise test the data extracted from the database. This will be discussed in more detail in the section dealing with that analysis.

Historical perspective

Before looking at the data for 2006 and 2007, it is useful to gain a historical perspective on horse slaughter. While it is widely known that horse slaughter was at much higher levels in 1990 than in recent years, it is less well known that the United States has been exporting horses to slaughter in Mexico and Canada for this entire period, and to Japan since 1999.

Canadian and Mexican horse slaughter operations are quite different in nature. Canadian horse slaughter plants ship most of their product to Europe with a smaller fraction being consumed domestically. In Europe the meat is considered a delicacy and it brings relatively high prices. The plants tend to be similar to US plants because they must meet EU (European Union) approval.

Horse slaughter is more common in Mexico than in the US. There are two types of plants in Mexico; EU suppliers and domestic suppliers. There are two EU supplier plants located in central Mexico at the towns of Jerez and Fresnillo. In contrast there are dozens of smaller local plants throughout Mexico that are owned by the municipalities and that supply horsemeat for local consumption. Unlike the European consumers, the Mexican consumers view horsemeat as an inferior substitute for beef and it is often used as filler.

US Equines Slaughtered by Country and Year

Source: US Department of Agriculture

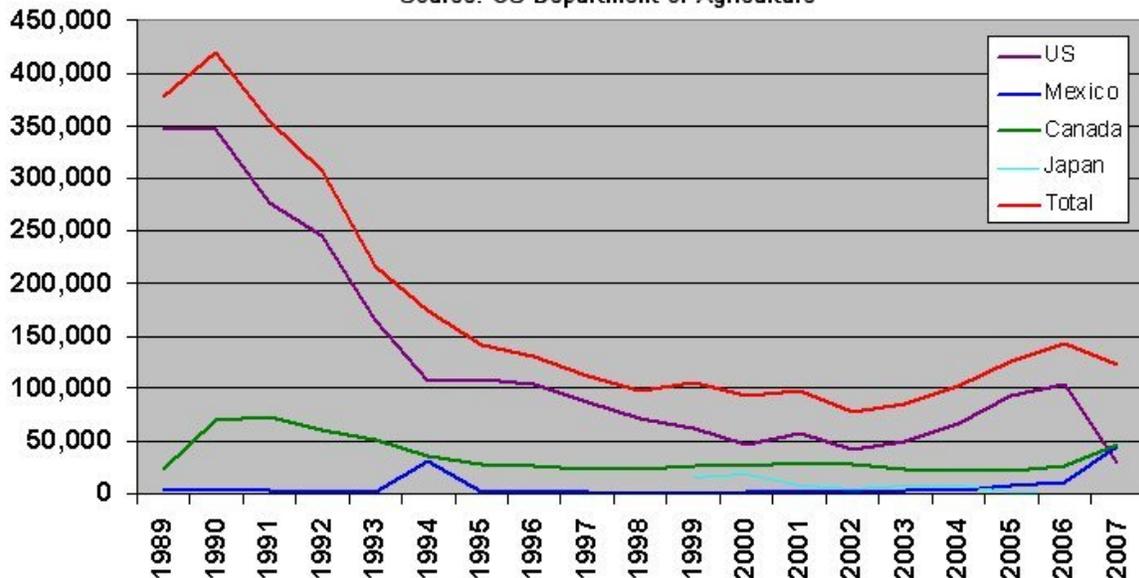


Figure 1

Figure 1 shows the number of US equines slaughtered and exported for slaughter each year since 1989, as well as the countries to which they were exported. There are several notable features about this data. The most often referenced feature is the famous steep decline in total slaughter between 1990 and 2002. There were over ten slaughter plants in the United States in the late 1980s and only three by the 2000.

Anti-slaughter proponents have long found this decline their most unassailable argument against the claim that slaughter protects horses from abuse and neglect. They argue that since slaughter decreasing by 81% did not bring about a crisis of horse neglect, ending it would not have such consequences either. This argument has yet to be countered in a meaningful way by those who espouse the theory that only “unwanted” horses are slaughtered. The question remains, however, whether the decline occurred because of supply limitations, legislation, market demand or other causes.

The possibility that the decrease was caused by limitations of supply is easily discounted by horse population studies¹. During this period the horse population of the US grew by 3 to 5% per year.

The effect of legislation on this decline is minimal but should be mentioned. Between 1989 and 1998 there were no legislative restrictions on the slaughter of horses in the United States. In 1998, after slaughter had already dropped from over 400,000 equines a year to under 100,000, California passed proposition 6 which banned the slaughter of horses and the export of horses from the state for purposes of slaughter. Since there were no slaughter plants operating in California at the time, there was no noticeable impact on the total slaughter in the United States. Despite many legislative initiatives, no other legislation affected slaughter until early 2007.

We can see from the export curves in Figure 1 that the overall decline was almost entirely driven by the decline in US slaughter and a parallel decline in exports to Canada. This parallel tracking phenomenon can be seen more clearly if we change the scale on the exports to Canada as shown in Figure 2.

Scaled Comparison of US Slaughter vs Exports to Canada

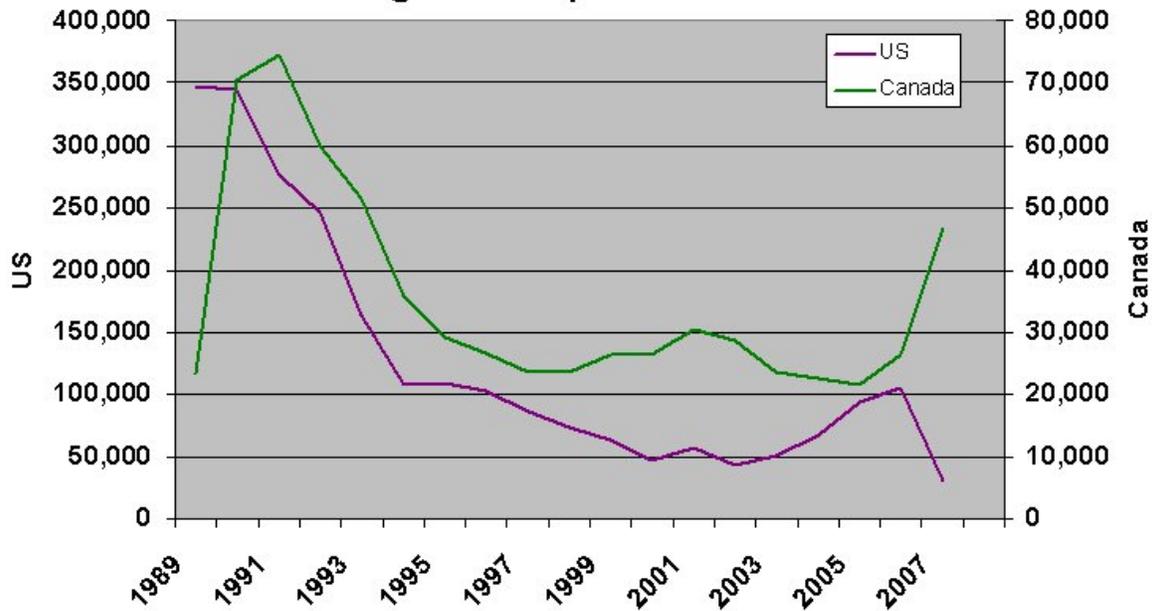


Figure 2

Exports to Canada tracked US slaughter during the precipitous decline of the 1990s in stark contrast to exports to Mexico. Since US and Canadian slaughter plants share the same customer base in Europe, this leads to the implication that slaughter and export to slaughter are driven primarily by market demand and not the supply of “unwanted” horses. If supply had been driving the market we would have seen similar patterns in exports to Mexico.

Finally, an Italian study⁶ of horse meat consumption confirms that it followed the same trend as US slaughter during that study period between 1995 and 2001. This further indicates that demand in Europe was likely the strongest determinant of US slaughter levels. Interestingly, this study will show that there may have been yet another component to the famous decline of the 90s.

The only other notable non-market influences on the reduction of slaughter were the burning of Cavel West in Redmond Oregon by arson on July 21st, 1997 and the burning of Cavel East in Dekalb Illinois by accidental causes on Easter Sunday of 2002. Cavel in Dekalb was rebuilt and was back in operation by the summer of 2004.

The burning of Cavel in Illinois came just as slaughter had ebbed and was beginning an upward trend that has continued to date. The relationship of abuse and neglect to slaughter during the period surrounding the burning of Cavel East was the subject of an earlier study². Ironically, the burning of Cavel appears to have saved approximately 50,000 horses while we will see later that the closing of all of the US based plants in 2007 saved only about 22,000 horses from slaughter.

The other two features of interest in the graph of Figure 1 concern exports to Mexico and Canada. Much has been made of the “unintended consequences” of driving slaughter over the border to Mexico and Canada, and later graphs will show that has indeed been

the case. However, Figure 1 exposes the little known fact that these current export levels are not historically unique.

Particular focus has been placed on Mexican exports because of the barbaric slaughter methods used in some of their local plants (as documented by undercover videos by HSUS and others). While Mexican exports accelerated dramatically after the plant closings in 2007, they also spiked in 1994 when domestic slaughter in the US was at levels over 100,000 horses per year. Likewise, exports to Canada were higher between 1991 and 1994 than in 2007.

Thus while it is true that the closing of the US based horse slaughter plants in 2007 drove American horses over the borders to Canada and Mexico, the converse is not true and domestic slaughter has not historically protected American horses from going to these countries in similar numbers.

Slaughter trends following US plants closures

As previously mentioned, all three slaughter plants in the US were closed during the year 2007. The two Texas plants ceased operations in February and the Illinois plant in late September. Figure 3 shows the resulting slaughter patterns from January of 2006 through March of 2008.

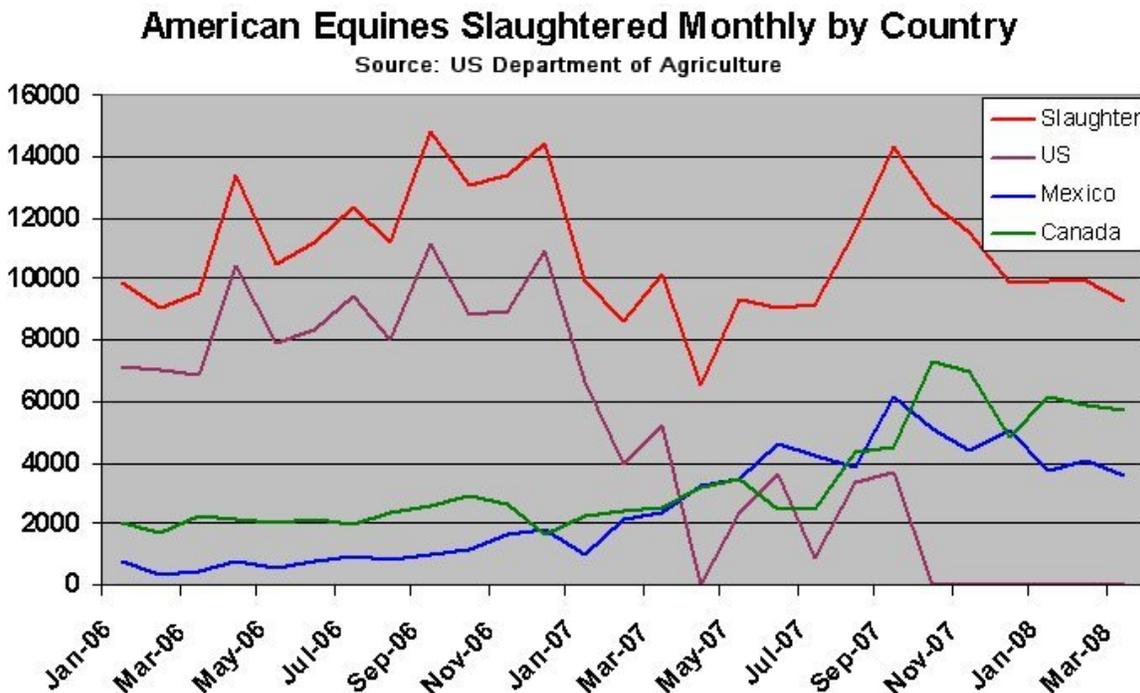


Figure 3

As can be seen from the red curve in Figure 3, the overall slaughter of US horses (domestic slaughter + exports) did not drop as dramatically as might be expected following any of the closings, even though domestic (US) slaughter did decline steeply following both the Texas plant closings in February and the Cavel closing in September.

The two temporary interruptions in Cavel operations discussed earlier can clearly be seen in the dips in April and again in July. Despite this, the industry had completely recovered to its peak slaughter levels by late September when Cavel slaughtered its last horse.

Two things happened during this period. First, Cavel ramped up its operations from its design capacity of 500 horses per week to well over 1,000. There is evidence that this ramp up had already begun well before the closings and was simply accelerated. This volume offset losses during the two interruptions and from the Texas plant closings. Secondly, Cavel management began making arrangements to move their operations over the border to Canada. When they were finally closed in September it took only weeks for Cavel to begin slaughtering operations at the Natural Valley Farms in Wolseley (SK) Canada.

The curve of Mexican exports (blue) shows an interesting and little known fact. *Mexican exports had already been increasing since mid-2006, well before the Texas plants were closed.* During the months following the Texas plant closings these exports continued with an even more rapid increase. This increase was boosted for a period of several months as BelTex dumped thousands of horses from its feedlot in Morton, Texas to slaughter plants over the border.

By September of 2007, the glut of horses from Texas feed lots had been exhausted and the exports to Mexico had begun to decline. This decline was partially offset by the continued strong flow of horses to Canada. By March of 2008 exports to Canada were approximately 50% higher than those to Mexico.

Figure 4 demonstrates how incredibly quickly Canada slaughter houses absorbed US horses. Remarkably, Canada more than doubled its equine slaughter in a single month. This was done by converting existing beef processing plants that had been struggling to compete with US beef slaughter plants. Some of these facilities had been built in response to the closing of the US border to Canadian beef due to an earlier mad cow outbreak in Canada. The number of slaughterhouses processing horses in Canada rose from three at the beginning of 2007 to seven at the end of the study period.

All Equines Slaughtered in Canada

(Source: Canadian Food Inspection Agency)

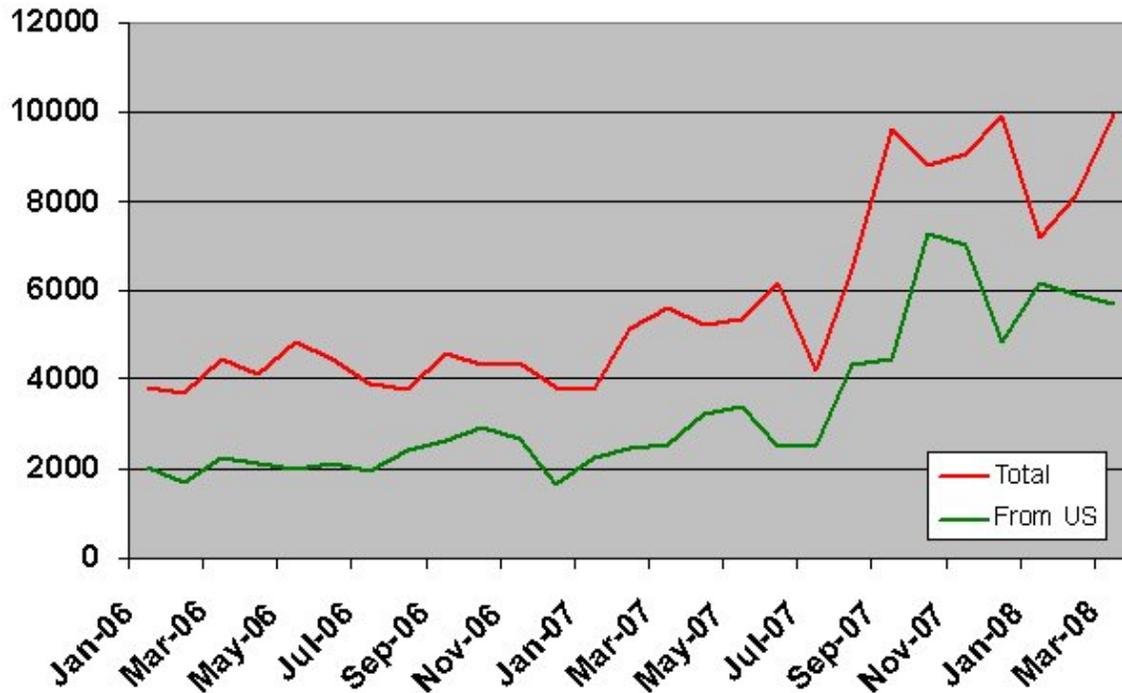


Figure 4

We can see from Figure 4 that Canada now depends on the US for the vast majority of the equines it slaughters. Before the closing of Cavel about 50% of the horses slaughtered in Canada were from the US, but between the closing and the end of the study period, 79.5% of all the equines slaughtered in Canada came from the US.¹

To help illustrate what happened with the slaughter of American horses, Figure 5 provides a year to year comparison of the total slaughter of US horses for 2006, 2007 and the first quarter of 2008.

¹ It should be noted that USDA numbers for horses exported to Canada for slaughter are considerably higher than the US import numbers released by Agriculture and Agri-food Canada. The USDA numbers appear to be the correct ones given their correlation with CFIS slaughter statistics as shown in Figure 4.

US Equines Slaughter by Month for 2006, 2007, 2008

Source: US Department of Agriculture

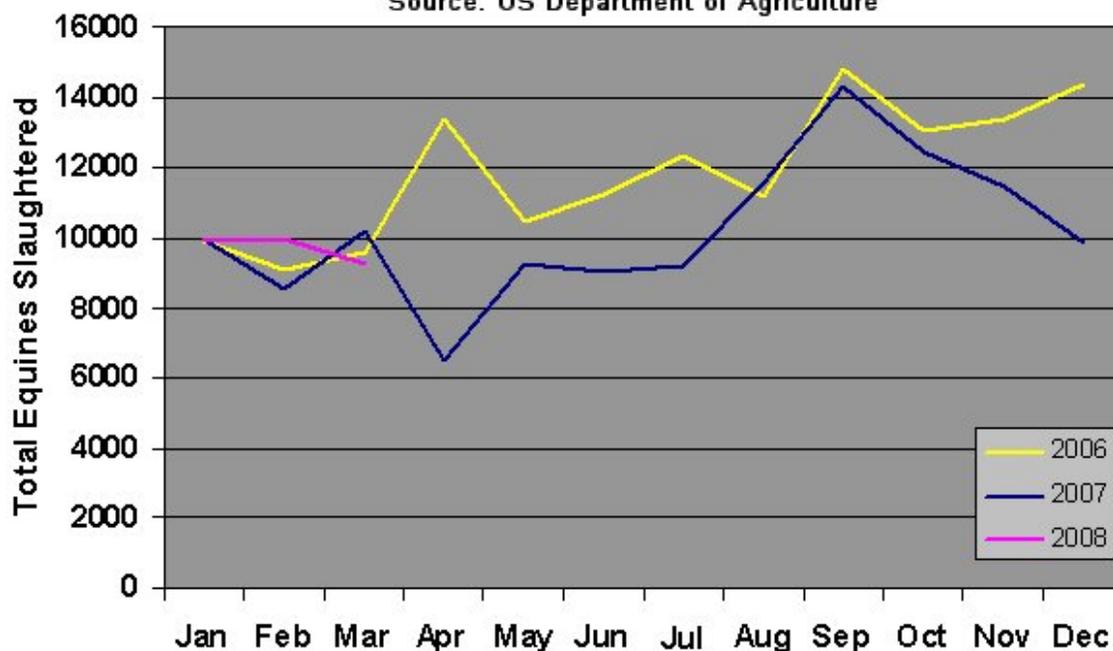


Figure 5

The 2006 (yellow) line represents the baseline year before any of the slaughter plants were closed. The blue line represents the slaughter rate during 2007, and the magenta line represents slaughter for the first quarter of 2008. This method of comparison is commonly used in accounting and government reporting because it provides year to year comparisons that take into account seasonal trends.

There was a significant but largely temporary drop in the 2007 slaughter level following the closings of the Texas plants in February. The slaughter rate then lagged below the 2006 levels until September when it reached parity just in time for the closing of the last US based plant (Cavel). Although slaughter again fell below 2006 levels in the last quarter of 2007, by the first quarter of 2008 it had returned to the same levels as both the previous years. The gap between the 2006 and 2007 curves represents the temporary reduction in slaughter and thus the number of horses spared from slaughter.

Summary of slaughter trends

While the slaughter of US horses and other equines dipped during 2007, it quickly returned to the same levels as before the plant closings. There were 122,459 US equines slaughtered or exported for slaughter in 2007 compared to 142,720 in 2006, a reduction of only 17% for the year. By the first quarter of 2008 the exports to Mexico and Canada had entirely replaced the reductions in US slaughter.

Returning to the stated purpose of this study, the desire was to determine whether the closing of the slaughter plants was a possible causative factor in any subsequent increase in abuse and neglect. The only mechanism by which this could have happened would have been if the closings caused a significant and sustained change in slaughter volumes. Since the resulting reduction in slaughter was quickly replaced by exports, there is no ongoing volume impact from the closings, and therefore no possibility it could significantly affect abuse levels.

The only increase in abuse caused by the closings has been the longer trips and more brutal slaughter conditions that the horses are subjected to.

Abuse, Neglect and Abandonment

At this point it has been established that any increase in equine abuse and neglect must be the result of factors other than the slaughterhouse closings, such as economic and weather (forage) conditions. The year 2007 saw declines in the economy, especially in the second half of the year and serious increases in feed and hay costs. The question is whether these factors did indeed cause a dramatic increase in abuse and neglect.

As discussed in the introduction, quantifying abuse and neglect is a much less exact science than tracking slaughter. Fortunately, there is no need to put too fine an edge on any conclusions drawn from the available data. The stated purpose of this study is to simply establish whether or not a “tsunami” or even a significant increase in equine abuse had occurred as has been claimed by some articles.

Abandoned Horses

If reliable data quantifying abuse and neglect is difficult to find, data concerning “abandoned horses” is even more problematic. This is largely because state and local governments do not recognize such a category. The closest data is on “Estray” horses, which reflects the fact that it is almost impossible to determine whether a horse was intentionally released or simply escaped, and only a few states track even this data. As a result, almost every story must be tracked down individually.

The first story about abandoned horses appeared in the mainstream press just weeks after the closing of the Texas plants. The story titled *Kentucky, Land of the Thoroughbred, Swamped with Unwanted Horses*, was written by Jeffrey McMurray, a college basketball stringer for the Associated Press (AP). The piece was based on horses seen free grazing on a reclaimed strip mine in Eastern Kentucky and claimed they had been abandoned because of reductions in horse slaughter forced by animal rights activists.

However, the slaughter rates shown in Figure 1 contradict McMurray’s claim of decreasing slaughter in the years between 2002 and 2007 and the Texas plants had been closed for only a month when the story appeared. More tellingly, it was determined that the “abandoned” horses were in fact owned by Trish Hayes of Breaks Riding Stables in Breaks Virginia. The horses had been the subject of an earlier AP story when teenaged boys were charged with shooting some of them. But by that time the story had gone international and many writers still reference the story as if it were valid.

In October a second AP story appeared in the Oregonian titled *Abandoned Horses a Dilemma for Ranchers*. That story claimed nine horses had been abandoned on the ranch owned by a Mr. McKenzie, but the Malheur County Incident Detail⁴ (police report) later showed that the incident had involved only one horse reported by Mr. McKenzie’s granddaughter and it was determined to be unfounded.

To this day stories continue to surface in respectable publications that contend there is an abandoned horse crisis in America. Yet research into individual cases³ has determined that very few are accurate and even then they involved fewer horses than reported.

Only a few sparsely populated western states even keep records of stray horses. Of the states that do keep accurate records, the trends are mixed but largely flat. The largest documented increase found in Estray horses was in Arizona⁵ which reported a 16% increase from 2006 to 2007. As a matter of reference, that translates to an increase of only about 16 horses statewide or 8 more than the three-year average.

The picture that emerges for horses is very different than that for dogs and cats, where abandonment is common. Any owner who would simply release a horse from its pasture is aware that there is a significant liability if that animal causes a traffic accident, and dropping a horse off at a distance from its home requires the ownership of a horse trailer or the collaboration of someone who does own one. It is not an easy crime to commit or conceal.

As a result, true horse abandonment appears to be rare. The more common method of abandoning a horse is to simply leave it to forage in its pasture without medical care or supplemental feed. Thus it was determined that the focus of this study would be on abuse and neglect where there is at least some statistical evidence.

Abuse and Neglect

Again, the analysis of trends in abuse and neglect was complicated by the fact that data is not available in a consistent manner from different sources. The picture that emerged, however, was that while some areas had indeed seen significant increases in abuse and neglect cases, others had, in fact, seen declines.

For example, there was a severe drought in much of the South during 2007, which drove hay prices up in some areas by 100% and more. Texas on the other hand, which had experienced several years of devastating drought, hay shortages and wildfires, enjoyed an abundant hay crop in 2007. More over, there have been significant fluctuations in the economy during the study period.

One of the states where good data was available and where a notable increase in abuse and neglect cases had occurred was, ironically, Illinois. Illinois was the only state in the US where slaughter occurred for most of 2007. In 2006, a study of the relationship between abuse and neglect in Illinois and total slaughter in the US² found that on average more slaughter was accompanied by more abuse. The variation was so great year to year, however, that the study concluded there was no meaningful relationship between the two.

Figure 6 revisits this comparison with the hindsight of two additional years of data. If a reduction in slaughter caused an increase in abuse and neglect, we would expect the two curves to be mirror images of each other. Looking at the two curves in Figure 6, it is clear that there is no consistent correlation between the sets of data.

There are two notable features to the curve of abuse cases (blue); a remarkable increase in abuse between 2000 and 2002, and another steep increase in 2007. The Cavel plant in Illinois burned on Easter Sunday of 2002. The next year the abuse rate flattened. Had this slaughter been preventing abuse we would have expected the curve to increase in steepness. The original study done in 2006 speculated that the changes in abuse were more likely the result of economic or weather conditions, but did not attempt to establish this correlation partially because the data set was limited at that time.

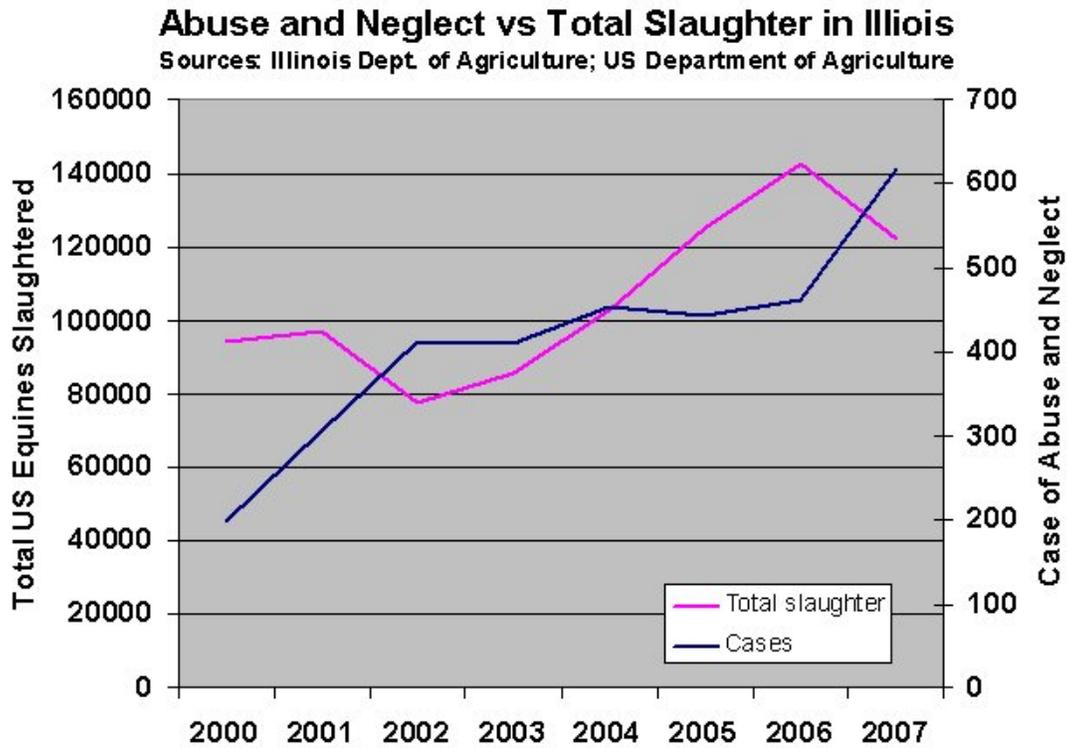


Figure 6

If, however, we now look at the abuse and neglect data from Illinois with respect to unemployment in the state, we see a very interesting correlation between upward trends in the two sets of data (Figure 7).

Abuse and Neglect vs Unemployment in Illinois

Sources: Illinois Dept of Agriculture; US Bureau of Labor Statistics

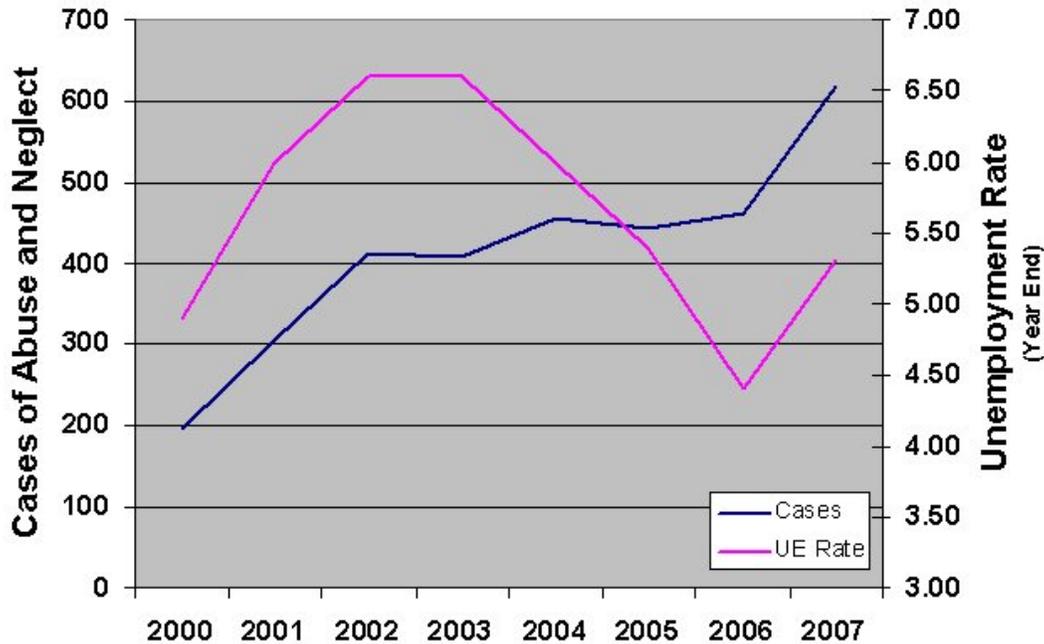


Figure 7

Although the upward slopes of the abuse and unemployment data have an uncanny correlation in the periods between 2000 and 2002, and in 2007, the downward trend of unemployment between 2003 and 2006 does not appear to be mirrored by a corresponding downward trend in abuse and neglect.

At first this lack of downward correlation appears to cast doubt on just how strong the relationship is, but that is due (at least in part) to a distortion in the way the government tracks unemployment.

A person is only considered to be “unemployed” while he or she is receiving unemployment compensation. People whose benefit period has expired before they get a new job are removed from the “unemployment” roles and from the statistics just as if they had found a job.

This trick of accounting biases the numbers by amplifying downward trends (good news) in unemployment. In other words, the downward trend in unemployment is exaggerated and may in fact be nonexistent. For example, if nobody at all got a job, every large increase in unemployment would be followed by an equal downward trend as benefits ran out.

Therefore, in reality, the shape of the true unemployment curve would probably be even more like the shape of the abuse and neglect curve.

The Illinois data supports the obvious conclusion that bad economic conditions lead to more abuse and neglect. This should come as no surprise, but the fact that slaughter does not affect abuse and neglect in a positive way (if any at all), may be surprising to the

advocates of the “unwanted horse” theory about slaughter’s beneficial contribution to the negation of abuse.

Measuring Nationwide Abuse and Neglect

The final question that remained to be answered was whether or not there was a major increase in abuse and neglect nationwide in 2007. The only source of such data nationwide is the online database of pet-abuse.com.

The data on this site is well organized for research, but there are significant limitations to its use. Data is entered as abuse cases are flagged from other media sources. If a case is not mentioned in the media immediately, it might not be represented in the data until months or even years after charges are first placed. The data thus has a tendency to “back fill” and one can safely assume that the more recent the data is the more likely it is to be understated.

The usefulness of this data becomes lower as one attempts to determine recent trends or to determine trends over shorter periods. Additionally, in any given month the data may consist of only a dozen or fewer cases, making short term trends more difficult. These difficulties and assumptions will be discussed further when the data is presented.

Several tests were performed to determine the data distortion caused by latency and backfilling of the data in the database. The period between September 2007 and January 10th 2008 was initially analyzed within days after the end of the period. It was again analyzed at two occasions a few months apart. Based on this comparison it was determined that the backfill issue was statistically insignificant after three months. Final data collection was performed three months after the end of the study period.

The journalistic nature of the data also presented issues. For example, some cases did not include the exact number of equines, but instead used variable terms (e.g., “several”). For purposes of uniformity, these descriptions were converted to numbers using a defined constant. For example, the word “several” was replaced with the number 6 and the word “dozens” was translated as 24. In any event, these cases were not common enough to significantly skew the results.

Both the number of cases and the number of equines involved in those cases are presented. It can be seen that the two roughly track each other. Again, the analysis of abuse was only used to determine if there had been a dangerous rise in abuse and neglect overall.

Finally, only cases of owner abuse and neglect were included in the statistics. Cases involving third party abuse were not included as the motive for such abuse is outside the purposes of this study. The results of this search yielded the graph in Figure 8.

Equine Abuse and Neglect Cases in US

Source: www.pet-abuse.com

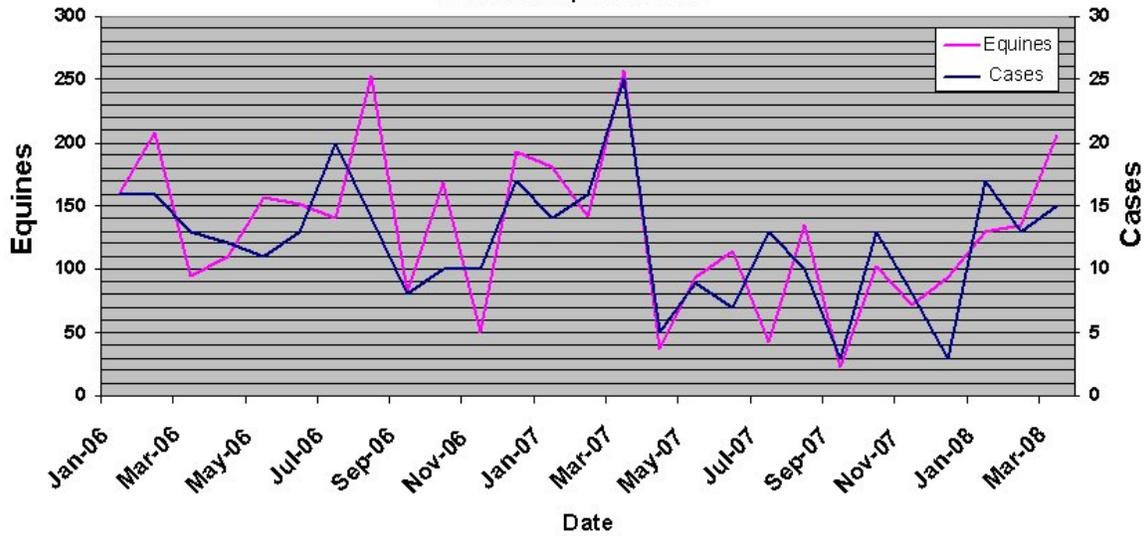


Figure 8

As expected, the data was somewhat inconsistent on a month to month basis, but one obvious conclusion can be drawn. *There clearly was NOT a catastrophic increase in abuse and neglect during 2007.* Other conclusions that might be drawn are a bit more risky since they might possibly be putting too fine an edge on the analysis. There appears to have been a slight drop in abuse after March and a slight upturn at the beginning of 2008.

Abuse and Neglect Compared to Unemployment Nationwide

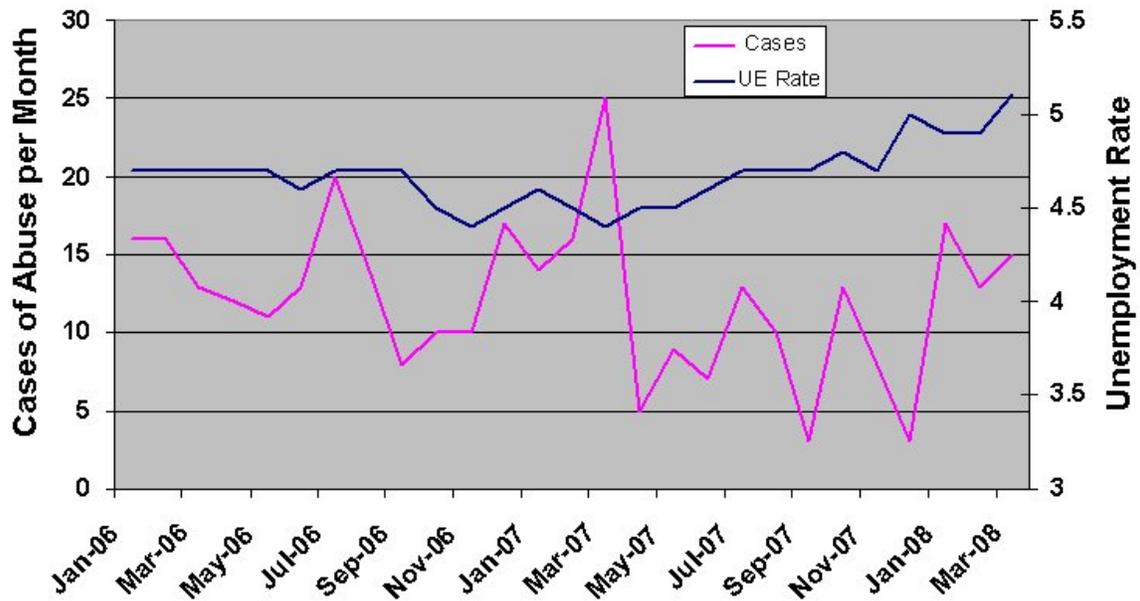


Figure 9

Finally, it is useful to test this graph against the nationwide unemployment rates to see if the unemployment rates could have predicted something close to what we saw from the pet-abuse.com database. Figure 9 shows that comparison. A drop in the unemployment

rate is apparent in late 2006, and from June onward there was an upward trend to unemployment.

There are obvious reasons why the nationwide unemployment number is a less than perfect barometer for nationwide equine abuse even if the two are closely correlate on a regional level. For example, the average unemployment does not take into account the fact that some states have larger horse populations than others and unemployment varies significantly between states. Weighting each state was beyond the scope of this study.

Even so, there are some interesting similarities between the unemployment curve in Figure 9 and the abuse case rate as determined from Pet-Abuse.com. A drop in unemployment occurred slightly before a similar drop in abuse. (Note that a drop following a relatively flat period is less likely to be an artifact than one following a recent up surge). Except for a spike in cases that occurred in March, the comparison would have been even clearer, but as previously stated the abuse data is very noisy when observed short term. Similarly, a general upward trend in unemployment later in 2007 seems to have preceded the upward trend in abuse during the last quarter of the study (first quarter of 2008).

The Illinois comparison was performed on a year to year basis which did not expose this lag of a few months. The identified lag is logically to be expected since most neglect cases take several months to become apparent (horses don't starve overnight) and then to be acted upon by authorities.

The fact that unemployment is a general barometer of trends in equine abuse and neglect is not surprising as it has long been known to have the same relationship to domestic abuse and child abuse. In the case of horses, however, it gives us a historical view into the probable number of horses that were at risk of neglect and thus "unwanted" by the definition of slaughter advocates. Unemployment is thus also an approximate barometer of the number "unwanted" horses and this fact allows us to see if slaughter has historically increased when this barometer was rising.

Total US Slaughter vs Unemployment Rate

Sources: USDA and US Bureau of Labor Statistics

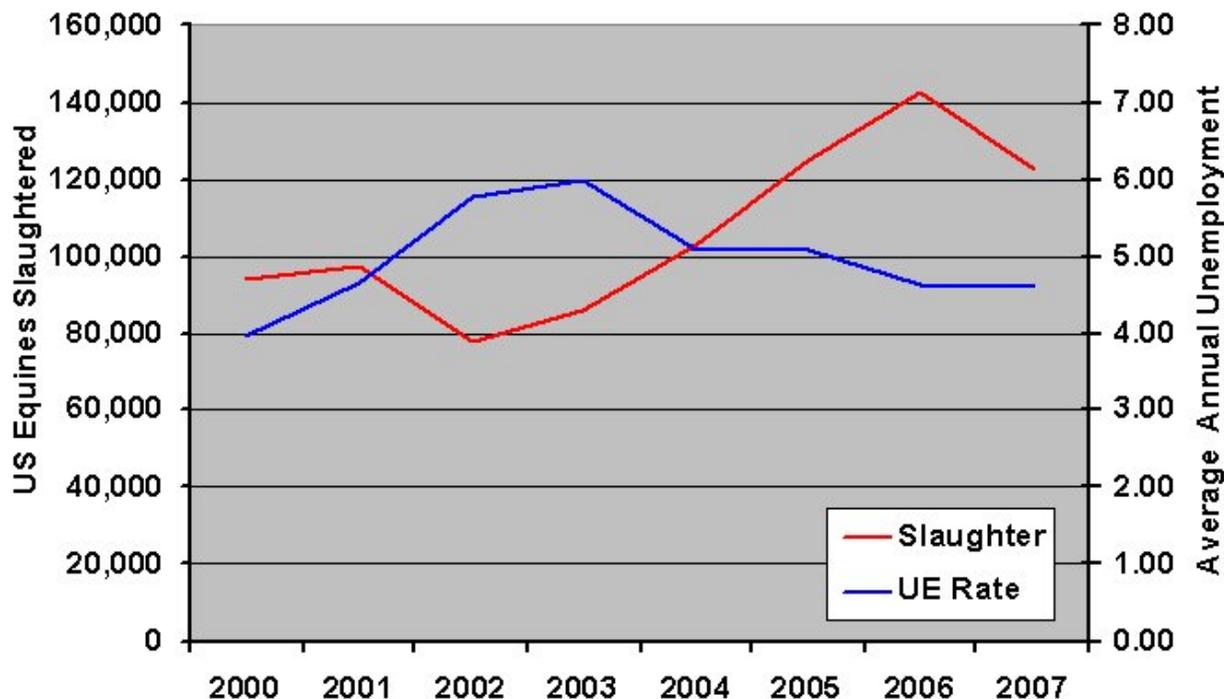


Figure 10

Figure 10 explores the relationship between horse slaughter and the unemployment barometer of abuse and neglect. To have a beneficial effect, slaughter would have to rise following increases in unemployment but during this decade it has done just the opposite. The same antithetical relationship existed in the 1980s and until about 1993.

However, from 1993 through 2000, the unemployment rate began a continuous decline during a well known period of prosperity. It is entirely likely that this decrease, combined with the increasing number of horses being kept in the population put supply side pressure on the slaughter industry just as demand was faltering. There were plenty of horses, but their owners were not willing to sell them at slaughter prices, and new owners probably outbid kill buyers for surplus horses from racing and other horse industries. The result was a “perfect storm” for the horse slaughter industry which produced the famous long decline.

The implication is that the horse slaughter industry may operate on a thin margin on supply side price. This implication was recently tested when Pure Thoughts Horse Rescue (PTHR) attended the famous Sugar Creek slaughter Auction in Ohio. At most their weekly auctions the bulk of the horses go to slaughter, but PTHR, financed by a benefactor, was able to outbid the kill buyers on every horse. The average price paid was \$432, not significantly above the average price seen for slaughter horses.

Conclusions

Despite the difficulties posed by the data limitations discussed, several conclusions about slaughter and abuse and neglect trends can be stated with confidence:

1. While the supply of low priced horses is essential to the slaughter industry, it does not determine the number that will be slaughtered. That number is set by the demand for horse meat in Europe. Slaughter therefore is useless as a tool for controlling the unwanted horse population and instead simply creates a low end market that competes with potential buyers of low end horses and encourages a continuous supply.
2. The rate of slaughter of US horses was only temporarily affected by the closings of the US based slaughter plants in 2007, and the slaughter rate has since returned to its previous levels. There was therefore no mechanism by which these closings could have impacted abuse and neglect.
3. There was clearly no epidemic of abuse and neglect in 2007 following the closings of the US based horse slaughter plants. None was predicted by the unemployment numbers and none was found in the database of cases. *In other words, on the question of whether the closings were the cause of a pronounced increase in abuse we find that neither the cause nor the effect actually happened.*
4. While US slaughter rates are clearly driven by the demand for horse meat in Europe, it appears the industry operates in a relatively narrow window of supply price. If we are to accept that horses sent to slaughter are “unwanted” then we can define an unwanted horse not as one with zero value but one whose value is greater to the slaughter industry than to a potential owner and that average value is probably under \$500.
5. Abuse and neglect is largely determined by economic conditions. An upturn in unemployment seen in late 2007 appears to have translated into the beginning of an upturn in abuse and neglect in early 2008. As of the end of the study period, abuse and neglect did not appear to have exceeded norms for the baseline year of 2006, but to the extent that the economic conditions continue to deteriorate, this trend may become more worrisome in the months to come.

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