

## A survey of cat shelters in Sweden

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### Abstract

Although cats are extremely common, pet owners seem to have a poor understanding of their natural behaviour and needs and a large number end up in cat shelters. In Sweden, no records exist of the number of cat shelters or their activities. The aim of this study was to investigate the occurrence of cat shelters in Sweden. We found 62 cat shelters during 2006; the year in which this study was conducted. Questionnaires were sent to these shelters with questions concerning: received animals, reasons for relinquishing cats, cat husbandry and how the shelter was run. The most common reason for relinquishing a cat was that the cat was homeless; another common reason was that the owner had an allergy to cats. The shelters had, on average, space for 29 cats, but this varied from six-to-100, and they received on average ten cats per month. This means that a total of around 7,400 cats enter the 62 shelters in Sweden each year. On average, the cats stayed more than three months in the shelter. Less than 10% of the relinquished cats were euthanised. Our study reveals that there are shelters that continuously receive unwanted cats. The majority of these cats are said to be homeless, therefore in order to minimise the number of cats in shelters in Sweden, the focus should be on reducing the number of homeless cats.

**Keywords:** animal shelter, animal welfare, domestic cats, human-cat interaction, pets, relinquishment

### Introduction

The domestic cat (*Felis catus silvestris*) is an extremely common pet. In the United States there are approximately 76 million pet cats, in Germany approximately seven million and in Italy the total is around nine million (Euromonitor International 2003, cited by Bernstein 2005). In Sweden, the number of pet cats is close to 1.3 million and approximately 16.8% of all households own at least one cat (SCB 2006). Although extremely common as pets, it would appear that owners have only limited understanding of cat behaviour. Adamelli *et al* (2005) found that most pet cats in Italy have only a moderate quality of life, despite the majority being in good physical condition and having a good quality of care. This relatively low quality of life is thought to be caused by a neglect of behavioural needs; the implication being that owners were unaware of their pets' needs. This lack of knowledge regarding cats is also illustrated by Salman *et al* (1998). They showed that around half the people relinquishing animals to shelters in USA felt that animals misbehaved deliberately in order to irritate their owner.

Many cats perform behaviours which are seen as unwanted by the owner. This issue was examined by Heidenberger (1997) in a large survey (1,177 cats) in Germany on mainly indoor cats. More than half of the cat owners said that their cat had a behavioural problem which they wanted to change. The most cited problems were (in decreasing order): anxiety, furniture scratching, high vocalisation, food and feeding problems, inappropriate urination and spraying and lastly

defaecation in the house. It is important to note that many of the cat behaviours that owners perceive as problems are in fact natural behaviours of the cat (Miller *et al* 1996).

The present study concerns cats in cat shelters in Sweden. Entering an animal shelter is associated with increased stress levels for cats. Kessler and Turner (1997) found that stress levels peaked on day one at the shelter, gradually decreasing during the two-week long observation period until almost reaching the same level as other cats living in the shelter. However, four percent of cats failed to show a reduction in stress levels, even after two weeks. Stress levels are dependent on the cat's history, eg if the cat is stray or owned (Dybdall *et al* 2007).

Several reasons exist for relinquishing cats, but causes that tend to be mentioned include allergy, owner moving and cat behavioural problems (Miller *et al* 1996; Scarlett *et al* 1999; Irvine 2003). It is worth noting, however, that this is what the relinquishing person says; the factual reason can be very different. For example, one woman stated she was relinquishing her cat because she was moving. After some follow-up questions it became clear that it was actually possible to take her cat with her. The woman only had to pay a deposit of US\$100, but was unwilling to do so. She mentioned that the cat's early morning behaviour had been bugging her as had its shedding of hair (Irvine 2003). Similarly, some animals are given up as a result of an allergy, yet other cats remain in their household (Scarlett *et al* 1999; Irvine 2003).

Relinquished cats are males as often as females (Patronek *et al* 1996), but they are often younger than two years of age (Miller *et al* 1996; Patronek *et al* 1996; Scarlett *et al* 1999). Possible explanations suggested by the authors are that young cats are more active than older ones and the owner has yet to become as emotionally attached to the cat. Heidenberger (1997) found that owners which interact for several hours per day with their cats experienced less problems with the behaviour of their cats compared to those who had little or no interaction.

In the USA, Patronek *et al* (1996) compared randomly chosen cat households with households which had relinquished cats to shelters. They found an increased risk of cats ending up in a shelter associated with the following: the owner had specific expectations regarding the cat's role in the family, the cat was allowed to venture outdoors, the cat was sexually intact, the owner had never read a book about feline behaviour, inappropriate daily or weekly elimination and inappropriate care expectations regarding husbandry. Patronek *et al* (1996) also concluded that behavioural problems were associated with a greater risk of relinquishment. In 1994, there were around 4,700 animal shelters in the USA which received at least 100 animals each per year, and the total number of cats received each year by these shelters was estimated to be seven million (Zawistowski *et al* 1998).

This study is part of a larger project in which the main goal is to increase cat owners' knowledge of cats and their natural behaviour, thereby leading to a reduction in the number of abandoned cats, euthanised cats and cats relinquished to shelters (Patronek *et al* 1996; Scarlett *et al* 1999). The aim of the present study was to investigate the occurrence and activity of cat shelters in Sweden.

### Materials and methods

We used the internet (mainly [www.eniro.se](http://www.eniro.se), [www.google.se](http://www.google.se), [www.djurhem.se](http://www.djurhem.se) and [katthem.orebrokatthem.com](http://katthem.orebrokatthem.com)) to track down cat shelters in Sweden. In this study, animal shelters which receive cats are referred to as cat shelters. Since we were interested in how the cats were kept at the shelters, only organisations which kept their cats in a single place were referred to as cat shelters. This meant that organisations which mediated unwanted cats without keeping them at all and organisations where cats were kept temporarily in homes prior to adoption were excluded. Apart from the shelters we knew satisfied our criteria, potential cat shelters we found on the internet were also approached. Therefore, some closed cat shelters and some organisations not defined as cat shelters in this study were contacted. Of the 80 organisations, 62 were defined as cat shelters.

The majority (43) of the 62 cat shelters received questionnaires in January 2006. Further internet searches in October and November the same year, led to an additional 19 cat shelters being identified. These, together with previous shelters which had not responded to the questionnaire, received a questionnaire in November 2006. Those which did not respond were contacted by telephone to remind them to fill in the questionnaire.

The questionnaire consisted of 26 questions and concerned the following: received animals, monthly estimation of relinquished cats, reasons behind relinquishment, number of euthanised cats, how the cats were kept at the shelter and how the shelter was run. The questionnaire, which was developed with the co-operation of several researchers in our Animal Environment and Health department consisted mainly of open questions where the respondents could express their answers freely. Only the question about the proportion of persons relinquishing cats that claimed to be the owner, had categories for an answer. Answers to all other questions were grouped in categories for analysis. The descriptive results are presented as percentages of those answering a certain question and with mean values together with standard error of the mean. We assumed that not all shelters kept a log book and therefore asked for estimations concerning, eg number of cats received per month.

### Results

The first circulation of questionnaires went to 43 cat shelters and 32 (75%) submitted replies. Additionally, a further 19 shelters received the questionnaire almost a year later. In total, 47 (76%) of the 62 cat shelters submitted a response. The average age of the shelter manager was 53 ( $\pm 2.1$ ) and 32 (82%) of the 39 shelters which answered to the question, had a female manager.

On average, 10 ( $\pm 1.1$ ) cats per month came to each cat shelter (median, 7.75 and range, 0.5–30; see Figure 1). Thus, in total, approximately 5,600 cats per year arrived at the 47 examined cat shelters. Many of the shelters stated that all or almost all cats were adopted. Out of 43 cat shelters, 41 (95%) reported that more than half of the cats were adopted. Of these 43 shelters, 24 stated that all or all healthy cats were adopted and, in addition to those, six cat shelters reported that over 90% of the cats were adopted. Out of 33 cat shelters which stated in numbers how many of cats received were euthanised each month, the proportion was found to be, on average 9.4%. Additionally, twelve shelters did not specify how many cats were euthanised, but that it was a few or only infirm animals.

One question encouraged respondents to divulge the different reasons given for relinquishing cats and to also write them in order with the most common first. The most frequently-stated reason was that the cat was homeless (66%) and the second being allergy (27%). Independent of rank and with the exception of allergy and homelessness, the following reasons were often mentioned: owner moving, death/illness/age of the owner, new family situation, got tired of it, lack of time and that a Governmental organisation relinquished the cat (Table 1).

The respondents were told to estimate whether: all, more than half, half, or less than half of the people relinquishing the cat(s) stated that they were the owner of said cat. Out of 43 animal shelters, 38 (88%) stated that less than half of people relinquishing cats said they were the owner. Instead, cats were found in a large variety of places; from rubbish bins and cardboard boxes to golf courses, gardens and

forests. Many cats showed up at homes, begged, got fed and were cared for. Others were seen wandering around or were relinquished by the police.

The majority (60%) of the cat shelters did not accept every single individual, as, first and foremost, feral cats but also a number of infirm cats were refused admittance. There were, in total, 18 cat shelters which stated that they did not accept feral cats; four mentioned other species, eg dogs, and two did not accept cats from a home in which the owner wanted help with finding a new home. Ill or very ill cats were mentioned by six shelters. A third of the cat shelters also took care of other species, eg dogs, rabbits, birds and Guinea pigs.

The cat shelters (43 responding) had room, on average, for 29 ( $\pm 2.8$ ) cats (median, 25 and range, 6–100; Figure 2). If we assume that this mean value is representative for all shelters, the 47 examined shelters are capable of housing 1,363 cats at any given time. Together, the 47 shelters received about 5,600 cats per year. If we divide the number of places available (1,363) by the number of cats received (5,600), each cat stays on average 0.24 years (approximately three months) in the shelter. Note that three months is an underestimation because not all cat places are constantly occupied.

In the event that a received animal had been mistreated, 48% of shelters replied that they consulted a veterinarian, 16% that they contacted a Governmental organisation (eg police/animal inspector) and 20% that the shelter itself took care of the cat.

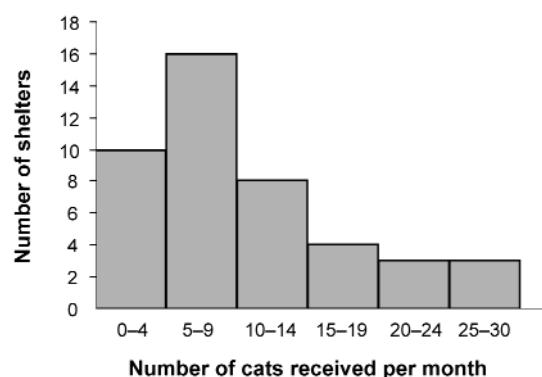
As many as 37 (80%) cat shelters had experienced abnormal behaviours in relinquished cats. The most frequently mentioned abnormal behaviours were: fearfulness/shyness (59%), aggression (49%), inappropriate elimination (14%) and feeding disorders (14%). Twelve shelters mentioned both aggression and fearfulness/shyness. Of the five that mentioned feeding disorder, two specified gorging, there was one refusal to eat and three had unspecified disorders.

Of the 37 cat shelters which had experienced abnormal behaviour, 46% replied that receiving cats with abnormal behaviour was a problem, 30% that it was sometimes a problem and 24% that it was not a problem. The most frequent reasons for it being a problem were: hard to find new homes, allotted time/resources, difficult to handle the cats and that it was difficult to have them in groups.

The cats were kept in boxes, cages or rooms. Most cat shelters (68%) stated that the cats had access to the outdoors. Forty-three animal shelters answered the question about whether they enriched the cats' environment or not; with all stating that they did. The environment was enriched with, eg toys, climbing structures, scratching boards, human contact, petting and shelves. Also, resemblance to a home environment was mentioned several times.

Cat shelters mainly started as there was a need for them and because of interest, love and empathy towards cats. No shelter mentioned that it was a Governmental or local authority initiative. On average, each manager had been in their position for 7 ( $\pm 1.1$ ) years. The work with the cat shelter was perceived as being rewarding, stimulating, joyful, but also hard and time consuming. The major drawbacks appeared to be lack of workforce and money, but also an inability to take care of all the cats needing help.

Figure 1



Numbers of cats received by cat shelters per month.

Table 1 Reasons given, independent of rank, for relinquishing cats.

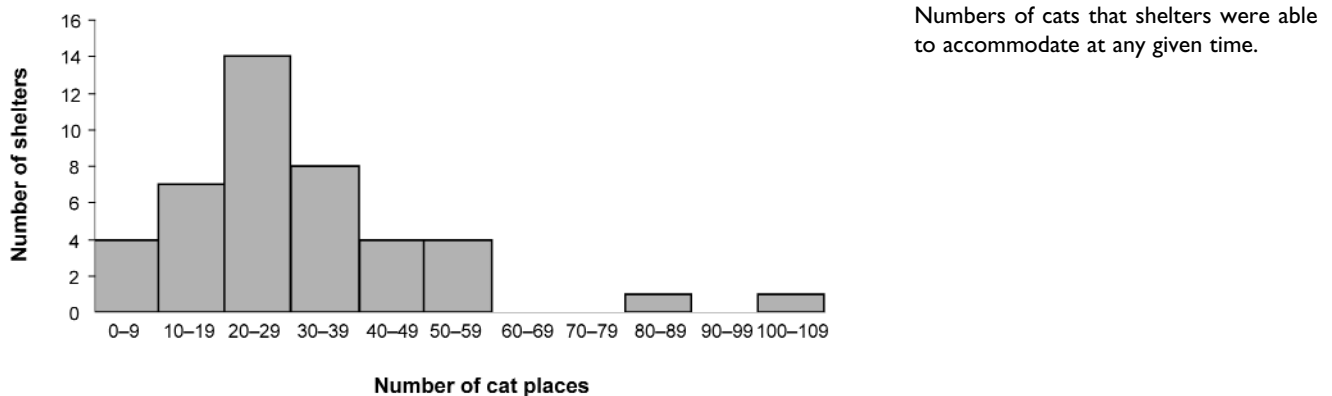
Reason	Number of shelters	Proportion (%)
Homeless	32	71
Allergy	26	58
Moving	12	27
Age/illness/death	11	24
New family situation	9	20
Tired of pet	5	11
Lack of time	4	9
Governmental organisation	3	7

## Discussion

The overall aim of this study was to gain an insight into cat shelter activity in Sweden. With a 76% response rate we are able to identify important factors affecting the activities in cat shelters in Sweden and compare conditions in Swedish shelters with those elsewhere, particularly the USA.

The 47 cat shelters we examined received approximately 5,600 cats per year. Assuming the 15 non-responsive shelters received a similar amount, it would mean a total of around 7,400 cats are relinquished to cat shelters in Sweden per year. Most of these cats are said to be homeless. The number of cats relinquished to shelters in Sweden is low compared to the total number of pet cats in Sweden (around 1.3 million; SCB 2006). In comparison, the USA, which has about 76 million pet cats, sees at least seven million cats received by shelters every year (Euromonitor International 2003, cited by Zawistowski *et al* 1998; Bernstein 2005). This shows the proportion of cats relinquished to shelters to be smaller in Sweden compared to the USA. However, more relinquished cats exist in Sweden than were reported in this study as agencies which mediate unwanted cats and organisations where cats are temporarily kept in homes before adoption were excluded.

Figure 2



The majority of cats received by shelters in the present study were adopted by new owners, with approximately 10% euthanised. It is worth noting that these figures are based on estimations by respondents, some of which were obviously wrong, eg two shelters adopted more cats than they received. The number of euthanised cats varies between organisations and countries, but several estimations in UK organisations state that the proportion of adopted cats is around 90% and that the number euthanised is 10% or lower (Rochlitz 2000). In a study in the USA, Zawistowski *et al* (1998) found that about 2.2% of cats were taken back by owners, 23.4% were adopted and 71.2% were euthanised (total number, 1.5 million cats). A possible explanation for this is that 35–40% of the cats which were received by the American animal shelters were relinquished by animal control. Animal control is an organisation with the task of capturing stray animals and the high proportion of relinquished animals caught by these organisations may indicate that there are a proportionally greater number of homeless cats in the USA compared to Sweden. Also, animal shelter policy is of great importance; the proportion of euthanised cats is probably higher if cats non-socialised to humans are received since they are far more difficult to handle. In the present study, many animal shelters (38%) did not accept feral cats. Since half of the responding animal shelters in the American investigation (Zawistowski *et al* 1998) were Governmental, it is likely that all types of cat were received, including non-socialised, and then these non-adopted animals would be euthanised. In one particular animal shelter in Sweden, half of the cats euthanised between the years 1997 and 2004 were due to illness and half to behaviour (Linder 2007). In total, 120 cats (10% of all those received) were euthanised during this period. Euthanasiation of cats is not necessarily an issue of animal welfare but, eg if abnormal behaviour caused by poor care, leads to the euthanasiation of cats it obviously has an impact on cat welfare.

### Reasons for relinquishing cats

The reason behind the relinquishing of cats varies both between animal shelters and countries. The most common cause, as stated by 66% of shelters in this study, was that the cat was homeless and someone found it and brought it to the shelter. Zawistowski *et al* (1998) investigated all animal shelters which received at least 100 cats per year in the USA and discovered that 35% of cats received were relinquished by the cat's owner.

An allergy to cats was also given as a common cause of relinquishment in this study. In total, 93% of the animal shelters reported either cat homelessness or an allergic owner as the most common cause. Previous studies from the USA confirm allergy as being a relatively common cause (15–18%) of relinquishment (Miller *et al* 1996; Scarlett *et al* 1999). However, one interesting study shows that 10.6% of those people relinquishing cats still had a cat in their household (Scarlett *et al* 1999). Less common causes also mentioned by many cat shelters (9–32 shelters) in this study were: moving, age/illness/death and new family situation. In a study by Miller *et al* (1996) moving was ranked as the number one reason for cats being relinquished to animal shelters. This was in accordance with Irvine (2003) who also found that the owners had made no efforts to find a new home where the cat could go instead. In an extensive study by Scarlett *et al* (1999) in the USA, abnormal behaviour was reported as the cause of 31.9% of relinquished cats; while in a similar yet smaller study by Miller *et al* (1996) the corresponding figure was found to be 15%.

### Received animals

Over half of the animal shelters in this study did not accept all individuals. The reason cited most often was that the cat was feral, but respondents did not explain what was meant by this. Our interpretation of these answers is that they do not receive non-human-socialised cats. It is important to note that there are no wildcats in Sweden (neither European nor African). It

is an issue of animal welfare to put cats not socialised to humans in an animal shelter. It is more stressful for a non-human-socialised cat to be handled by humans, compared to one which has been handled between two and twelve weeks of age (McCune 1995). Cats found stray show higher stress levels after entering an animal shelter compared to owner-relinquished cats (Dybdall *et al* 2007). Undoubtedly, it is stressful for all cats to be captured and introduced into a novel and limited environment with strange humans and cats. With a great deal of patience it is probably possible to 'tame' non-socialised individuals to a certain limit, but the level of welfare during this period and after, is open to discussion. It may be that euthanising these cats is a more humane alternative. These cats are also harder to adopt (Gourkow & Fraser 2006). The majority (29 out of 47) of animal shelters in this study did not state that they did not accept feral cats. This probably means non-socialised cats were received, but may also mean there were no non-socialised cats in their area. It is also likely that some of these cats defined as feral by the cat shelters, at one time had a human home and, thereby, are more or less socialised to humans.

#### Behaviour of received cats

Most animal shelters have experience of abnormal behaviours in received cats. However, 20% of shelters responded that they had not seen any abnormal behaviour. It is important to note that no clear definition of abnormal behaviour was given in our questionnaire. Our methodology does not provide any frequency or occurrence of abnormal behaviour, only whether or not each shelter has experience of abnormal behaviour. The most frequently mentioned abnormal behaviour was fear and aggression, but also inappropriate elimination and feeding disorders. In an investigation by Scarlett *et al* (1999), a third of abnormal behaviours in shelter-relinquished cats consisted of aggression towards humans and animals. In the same study, reported in a different paper, 44% of people that relinquished cats stated that they had noticed anxiety/fear in the final month before relinquishment (Salman *et al* 1998). In the present study, most animal shelters which mentioned aggression also mentioned fear, which might suggest it is difficult to distinguish between the two. Behaviours that people generally associate with aggression in cats are likely to be a combination of fear and aggression. A scared but not aggressive cat will attempt to make itself as small as possible, putting its ears flat against its head. This behaviour is probably performed by some cats, both socialised and non-socialised, which enter animal shelters. Incidences of abnormal behaviour in the shelter can be related to early rearing, and early experiences, which require further investigation. Only five animal shelters mentioned inappropriate elimination as an abnormal problem, which could indicate that relinquished cats are previously owned and trained to eliminate properly, or it could mean that the respondents do not view inappropriate elimination as abnormal behaviour.

#### Husbandry in cat shelters

Environmental enrichment was used to provide the cat with proper housing. It is worth noting that the respondents' interpretation of environmental enrichment may vary since a definition of this concept was not provided. Given that relinquished cats spend an average of more than three months at the shelters, it is crucial that a good environment is created. Animal shelters mentioned different enrichment factors in their husbandry; this can be taken as evidence of their having at least a basic knowledge of cat behaviour and needs since we know that enriched environments are important in terms of coping with stress and coping in an unfamiliar environment (Mason *et al* 2007). It also means shorter time at the shelter before the cat is adopted (Gourkow & Fraser 2006).

#### Conclusion and animal welfare implications

This study has shown there to be 62 cat shelters in Sweden which receive approximately 7,400 cats each year. The number of cats relinquished to shelters is low compared to the total number of pet cats in Sweden. It is unclear whether or not the shelters receive support from their local authorities, but many mention a lack of resources. Most of the cats received appear to be homeless, suggesting not only where the emphasis for reducing numbers of relinquished cats should lie but also that this is an issue for society in general. Further investigation could include a more detailed study on shelter cats and their behaviour, both before and after adoption. The information contained in the present study, in conjunction with further studies, will lead hopefully to fewer abandoned cats, thereby enhancing the welfare of pet cats.

#### Acknowledgements

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