

A Review of Current Methods used to control Free-roaming Cat Populations and their Effects on Feline Welfare

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Introduction

After recent debate over the best method for reducing free-roaming cat populations (Robertson, 2008), the general consensus is that methods should be effective, practical and, most of all, humane. Free-roaming cats present a variety of issues, such as the spread of zoonotic diseases, wildlife predation, threats to native species, spread of disease to pet cats, and public nuisance (Schmidt *et al.*, 2009). However, cat welfare is also a critical issue, especially inhumane methods of control used on the animals, and alarmingly high rates of disease, ill health and abuse among colonies (Lepczyk *et al.*, 2010; Farnworth *et al.*, 2011). This review assesses different methods of control, with due consideration of cat welfare.

Discussion

Euthanasia has long been the standard approach to management. This involves either trapping cats and taking them off-site to be euthanized, or having them destroyed on-site by techniques such as poisoning or hunting (Robertson, 2008). Euthanasia is the only method that instantly reduces the threat feral cats pose to native species (Farnworth *et al.*, 2010).

On-site destruction has been criticised as inhumane, since many of methods used can result in a painful death. Poisoning can inadvertently destroy other species in the area (Robertson, 2008). Euthanizing cats off-site is a more humane method, but the concept of euthanizing healthy animals is often raised in ethical debates. It has been suggested that feral cats have a high morbidity and mortality rate and that pre-emptively euthanizing them is more humane than allowing these diseases to develop (Robertson, 2008). Free-roaming cats are generally in poor health due to parasitism, injuries and inadequate food (Lepczyk *et al.*, 2010).

The public majority view is that lethal control is acceptable for feral cats but not for strays (Farnworth *et al.*, 2010). At many animal shelters feral cats are routinely euthanized (Slater *et al.*, 2010). Assessment of cats in animal shelters is an imperfect system as stray cats in unfamiliar or unpleasant environments can often display fear aggression and put up a struggle (Rodan, 2010). Owned cats could possibly be deemed feral and euthanized (Slater *et al.*, 2010). Microchipping of all owned cats should be strongly enforced so that they can be identified in these circumstances.

Trap, neuter and return is widely perceived as the most ethically appropriate form of control for free-roaming cats (Farnworth *et al.*, 2010). Cats are caught, neutered by a veterinarian and then returned to the area from which they came with the option of receiving additional medical care such as vaccinations or worming (Robertson, 2008). Studies have shown that although population decreases are not immediate following TNR implementation, a gradual decrease in both cat intake by shelters and euthanasia occurs (Schmidt *et al.*, 2009). When neutered cats are returned to their colonies, they keep the population at its carrying capacity and hence minimise excess resources that would otherwise attract and maintain immigrant cats (Schmidt *et al.*, 2009). Also, it has been shown that TNR programs are more cost-effective than euthanasia as they decrease animal control costs and obviate the cost of euthanizing the neutered cat's potential offspring (Robertson, 2008). Hence, TNR is a viable alternative to euthanasia on the premise that it can be implemented to a sufficient degree and that enough volunteers and funding can be sourced.

Additionally, there are medical advantages to neutering cats. Feral cats are often emaciated and neutering has been shown to improve their body condition (Robertson, 2008). Neutering lowers the prevalence of fighting, which would reduce disease transfer of Feline Immunodeficiency Disease (Farnworth *et al.*, 2011). A paper by Finkler and Terkel (2010) has

found that neutered female cats display reduced aggression (presumably due to decreased social and reproductive pressures), and have lowered cortisol concentrations. As stress detrimentally affects the health of animals, it was concluded that neutering positively affects the welfare of individual cats. Hence, TNR programs may greatly increase the long-term welfare of feral cats (Robertson, 2008).

Another option for management is a trap, neuter and adopt program. If kittens are caught during their socialisation period (before 9 weeks of age) and handled by humans, there is a chance they may go on to become household pets (Slater *et al.*, 2010). Rehoming kittens has been shown to reduce local populations of free-roaming cats significantly (Farnworth *et al.*, 2011). This method has the disadvantage of relying on the availability of homes for the kittens, and on shelters being able to hold the cats until they are adopted, which can be problematic (Fantuzzi *et al.*, 2010).

Methods of non-surgical contraception may soon become feasible options for feral cat management. These alternative treatments, such as melatonin implants, immunisation against endogenous gonadotropin-releasing hormone or luteinising hormone, and gonadotropin-releasing hormone agonist implants, are already being produced (Goericke-Pesch, 2010). However, at this stage most are short-term alternatives designed to last a year or less and hence are not yet viable alternatives to surgical contraception (Goericke-Pesch, 2010).

The young of unneutered cats and newly abandoned or lost cats are the primary source of influx for free-roaming populations. Cats have a very high reproductive capacity. Even with high mortality rates or the enforcement of TNR programs, feral numbers can be maintained (Robertson, 2008). Unwanted pregnancy is a common occurrence for intact pet cats with outdoor access, and kittens are often dumped (Goericke-Pesch, 2010). For control programs to be successful, there must be a concurrent public education effort informing owners of the benefits of neutering their pets and not allowing them to stray (Farnworth *et al.*, 2010; White *et al.*, 2010). Responsible pet ownership should be encouraged, subsidised neutering programs should be available, and owners discouraged from letting their cats roam outside (Lepczyk *et al.*, 2010).

Conclusion

Of the various methods presented above for the management of free-roaming cat populations, the trap, neuter and return program has recently been shown to be the most ethically acceptable (Farnworth *et al.*, 2010). This method, when combined with adoption programs and public education, would be successful in reducing free-roaming cat numbers and increasing the level of feral cat welfare (Robertson, 2008).

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