

# Managing Community Cats

A Guide for Municipal Leaders



THE HUMANE SOCIETY  
OF THE UNITED STATES

ICMA

A black and white cat with yellow eyes is sitting on a concrete surface. The cat has a white face with black markings around its eyes and ears. It is looking directly at the camera with a calm expression. The background is a plain, light-colored wall.

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# Why this guide is in your hands

This guide examines the role of community cats (sometimes called free-roaming cats) in cat overpopulation and the concerns shared by officials, constituents and animal care and control agencies about these animals. It provides recommendations for strategies to manage community cat populations and effectively reduce their populations in the long term.

Few animal-related issues facing local leaders are potentially more difficult and time-consuming than those involving unowned, free-roaming cats in the community. Complaints or concerns regarding cats often represent a disproportionate share of animal-related calls to elected officials and local animal care and control agencies. Dissent often arises among neighbors; between cat advocates and wildlife advocates; and among animal care and control leaders, local government leaders, and their constituents.

Often excluded from animal care and control budgets and mandates, community cats might be managed by field officers who have neither the training to handle them nor a holding space to house them. Whether by choice or regulation, many animal care agencies deal with community cats only when there is a specific nuisance complaint about them or concern for their welfare.

*The community cat “program creates a healthy, stable community cat population. It promotes public health in our neighborhoods by reducing the number of unvaccinated, unsterilized cats.”*

—JEFF BENNETT, DEPUTY MAYOR  
OF COMMUNITY DEVELOPMENT, INDIANAPOLIS, IN

“A well-managed TNR program will provide both cost control as well as long-term, community cat population control for a municipality. In Somerdale, we recognize this value and the positive impact it will have on our animal and residential population. We also recognize that this proactive approach is the most humane and effective means by which we can care for and manage our community cat population.”

—GARY J. PASSANANTE, MAYOR,  
BOROUGH OF SOMERDALE, NJ

In past decades, many local governments approached community cat populations using solutions like trap and remove, which usually involves killing the trapped cats. Those conventional approaches are now widely recognized as mostly ineffective and unable to address the larger community animal issue. New research (Boone et al., 2019) reveals that this non-targeted, low-intensity response to a population that is reproducing at high rates doesn't help to reduce cat populations and nuisances in our communities, improve cat welfare, further public health and safety or mitigate the real impact of cats on wildlife.

Instead, sterilization and vaccination programs—such as trap-neuter-return (TNR)—are being implemented to manage cat populations in communities across the country. Well-managed TNR programs offer a humane and proven way to resolve conflicts, reduce population and prevent disease outbreaks by including vaccinations against rabies and other potential diseases. This guide provides you with the tools and information you need to implement a well-planned and effective community cat management program.

# ABOUT TRAP-NEUTER-RETURN (TNR)

**1. TRAP:** Community cats are captured with a humane live trap. This is usually done by or with the assistance of the cats' caretakers. Ideally all the cats in the colony are trapped within a short timeframe.



**2. NEUTER:** The cats are then transported in their traps to a veterinary clinic. There the cats are spayed (females) or neutered (males) and vaccinated against rabies by licensed veterinarians. They may also receive other veterinary care as needed.

While under anesthesia, the tip of one of the cat's ears is removed. This allows the cat to be identified at a distance as having been sterilized and vaccinated, preventing the cat from being needlessly re-admitted to a TNR program.

The ear-tip is the universal symbol of a TNR'd cat.



**3. RETURN:** Cats recover quickly from surgery and can be returned the next day to the same location where they started out. Colony caretakers and other residents continue to provide food, water and shelter to the cats and monitor the colony for any issues that arise or new cats who show up.



# Cats in our communities



Cats are a popular pet in the United States. Between 25 and 34% of households own cats, with an average of 1.8 cats per home. That's a total of 58 to 76 million cats (APPA, 2019; AVMA, 2018). The majority—approximately 87%—of owned cats have been spayed or neutered, but they may have had one or more litters—intended or accidental—before being sterilized (APPA, 2019). In underserved communities, rates of sterilization in owned cats tend to be much lower, with the cost of surgery and transportation to the clinic being the biggest barriers to accessing desired veterinary services.

Approximately 68% of owned cats are kept indoors, with the number increasing to 72% who are kept indoors at night. This trend has been on the rise, up from approximately 20% in the 1970s (APPA, 2019). Yet that still leaves a sizable population of free-roaming owned cats that needs to be addressed while managing unowned community cats, particularly if the cats allowed to wander are not spayed or neutered.

## COMMUNITY CATS

“Community cats” are cats who live outdoors in a community and are cared for by one or more people who feed them and who may provide some form of shelter and/or medical care when needed. These caretakers don't usually consider the cats to be owned, or they may consider the cats to be loosely owned but different from cats they keep in their home. Community cats may live alone or in pairs or congregate in larger colonies that grow quickly if the cats are not spayed and neutered.

While these cats are often referred to as “feral”—which means having escaped from domestication and returned to a wild state—

the majority rely on humans for support. Their behavior may range from fearful and unsocialized to friendly and open to human interaction. Many of these cats, especially the social ones, are considered to be “at home” by residents in the area they live.

Estimates vary greatly for the number of community cats in the United States, ranging all the way from 10 million to 90 million (Loyd & DeVore, 2010). The limited evidence available indicates that the actual number may be in the 30–40 million range.

Cat colonies are not dispersed evenly across the landscape. Human demographics, types of land usage, climate, presence of predators and availability of resources all affect the size of a community's cat population. Estimates vary greatly on both a national and local level, providing only a loose number to use as a starting point for crafting effective interventions in your own community. Experts differ on recommended calculations for determining the number of outdoor cats in a community, with a range of formulas from human population divided by six (J. K. Levy & Crawford, 2004) to human population divided by 15 (Kortis, 2014). Remember, this estimate is exactly that—an estimate.

It's important to remember that these cats are already living in your community. Their origins may be varied; some may have once been owned cats, while others may be the offspring of generations of feral cats. Colonies form on their own—they are not “established” by the people caring for them.

The real problem is that so few community cats are spayed or neutered, and that they will continue to produce generations of outdoor cats if we do not intervene. Unsterilized community cats contribute about 80% of the kittens born each year and are the most significant source of cat overpopulation (J. K. Levy & Crawford, 2004). With an average pregnancy rate of about one litter per year and an average litter size of four kittens, a single cat can quickly become a potentially overwhelming situation. For this reason, large-scale and targeted reproductive control of community cats is critical to reduce cat populations in your community.

“When cat populations are present, the choice is not between having cats or not having cats. The choice is between having a managed community cat population, or an unmanaged one.”

—BRYAN KORTIS, NATIONAL PROGRAMS  
DIRECTOR, NEIGHBORHOOD CATS



# Meet the players

Community cat management is most effective when a multi-faceted approach is applied. Knowing the stakeholders in your community and working cooperatively with them to find common ground will lead to better outcomes and a more cohesive community cat management plan.

## GOVERNMENT AGENCIES

### Animal care and control agencies

Animal control agencies enforce laws aimed at managing animals and protecting public health and safety. They also respond to calls from community residents. For people concerned about the welfare of outdoor cats or those who find them a nuisance, animal care and control agencies are often the first points of contact. Most animal control agencies don't have the capacity to trap free-roaming cats, instead prioritizing calls for sick or injured animals or animals posing an immediate threat to the public.

The National Animal Care and Control Association supports humane cat management programs, including TNR.

*“After we implemented a shelter, neuter, return (return-to-field) program in 2010, it changed the way we do business and it has improved our ability to do more to help all animals.*

*It convinced us that more was possible. Last year alone, there were 3,000 fewer cats and kittens in our shelter. As a result, the capacity and savings that we have enjoyed have allowed us to do more to help the cats in our care and it has even benefitted the dogs because those resources don't have to be spent on more cats.”*

*—JON CICIRELLI, DIRECTOR, ANIMAL CARE AND SERVICES, SAN JOSE, CA*

### Public health agencies

Outdoor cats can present valid public health concerns, with rabies at the top of the list (due solely to the seriousness of the disease, not any particular prevalence in cats). Public health officials seek a reduction in the number of community cats as fewer cats means

*“Collectively, our goal is to eliminate the free-roaming cat population and decrease the spread of rabies in our communities. The only approach that has proven effective is conducting large-scale, targeted sterilization and vaccination programs that result in healthier cats and healthier communities.”*

*—DR. KARYL RATTAY, DIRECTOR, DELAWARE DIVISION OF PUBLIC HEALTH*

less opportunity for disease transmission. Managing community cat colonies allows those cats to be monitored for illness, and vaccinations given as part of a TNR program help provide “herd immunity” in the area, protecting both cats and humans alike.

## ANIMAL WELFARE ORGANIZATIONS

### Animal shelters and humane societies

Around 2.5 billion public and private dollars are spent each year operating animal shelters and humane societies across the country (Rowan, 2018). While some municipalities operate their own shelters, others contract with private shelters to house animals and often provide animal control and law enforcement. The primary role of most private animal shelters is the housing and adoption of homeless cats and dogs, but they may also care for injured or sick wildlife, serve as a resource for pet owners in the community and advocate for the well-being of cats and dogs throughout the community—including community cats.

An estimated 3.2 million cats enter U.S. animal shelters annually, and just over 860,000 are euthanized (ASPCA, 2019)—a tiny fraction of the total number of cats in a given community. One should not expect these efforts to have an impact on outdoor cat populations, their welfare, or environmental or public health concerns related to outdoor cats. Relying on the shelter system—without also implementing programs specifically aimed at managing community cats—stresses shelters, overwhelming their resources and far exceeding capacity. It also gives false expectations to citizens coming to these agencies for help resolving problems.

## MEET THE PLAYERS

The chart to the right from the state of California shows the estimated percentages of outdoor community cats (red) and owned cats (blue) who go outside, compared with the number of cats handled by the California sheltering system who are either euthanized or adopted out (green and navy blue combined) (Koret Shelter Medicine Program). Clearly, the tiny sliver of cats handled by the California sheltering system pales in comparison to the total cat population, demonstrating that these hard-working agencies are still making little long-term impact on decreasing the abundance of cats living outdoors. (Koret, 2013).

### Animal rescue groups

In addition to animal shelters, many communities also have animal rescue groups. These privately run organizations—usually, but not always, with nonprofit tax status—typically do not have a facility and rely on foster homes for any animals in their care. Primarily focused on finding homes for animals in the community, they often take animals from overcrowded shelters. There are many rescue groups that specialize in cat rescue, including those that participate in TNR activities. These groups often focus on the placement of adoptable cats and kittens found living outdoors and can also be a vital partner in providing resources to cat owners who need support to keep their cat in their home.

### TNR groups

Thousands of organizations exist around the country for the primary purpose of assisting community cats. While some are nonprofits, typically small and run by unpaid volunteers, others are ad hoc groups of residents who work hard to trap, neuter and return cats living outdoors in their neighborhoods. They likely also care for one or more colonies of cats. Their work may also extend to providing support to other community cat caregivers and mitigating conflicts that arise around a cat colony.

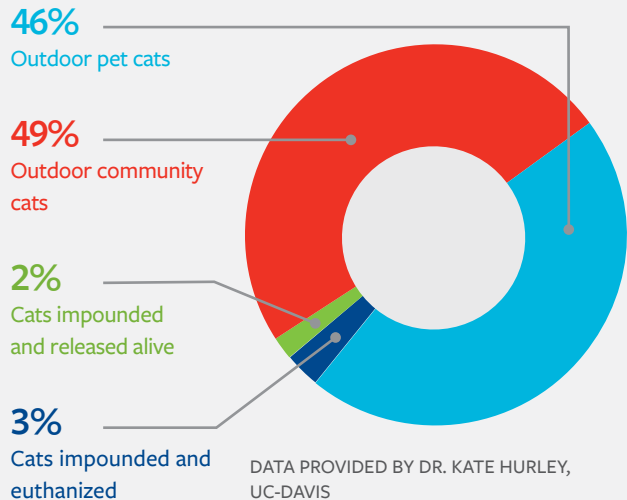
### VETERINARIANS

Nonlethal management of community cats, including TNR, is supported by the American Association of Feline Practitioners, American Animal Hospital Association, Association of Shelter Veterinarians and Humane Society Veterinary Medical Association, in addition to countless individual veterinarians.

The involvement of local veterinarians is a key component of any sterilization program. Sterilization capacity will be determined by how many surgeries your local veterinary partners can handle above and beyond their everyday business. Even if your agency employs a staff veterinarian, the community may need to engage additional local veterinarians. They can be strong partners for your program, filling in when extra capacity is needed, helping with injured and ill cats, and providing other kinds of medical support.

## SHELTER AND COMMUNITY CAT DYNAMICS

CALIFORNIA 2010



### WILDLIFE AGENCIES AND NONPROFIT CONSERVATION GROUPS

The federal government has not adopted or taken a specific position on TNR, although some federal wildlife agencies oppose the management of TNR colonies in or near wildlife conservation areas. State wildlife agencies are funded through a variety of state and federal sources, such as taxes placed on all firearms and ammunition sold, and thus have traditionally focused on the management of game species and recreational hunting. However, they are becoming increasingly involved in broader conservation agendas that include non-game, threatened and endangered, and invasive species. They typically do not regulate or get involved with TNR programs outside of protected wildlife areas, since cats are domestic animals and do not fall under their purview.

Private, nonprofit wildlife groups, such as the National Audubon Society or the World Wildlife Fund, are funded by donations and private grants and operate primarily to protect wildlife from harm and habitat degradation. Concern regarding outdoor cat predation on wildlife has become a hot topic in the conservation community, but all stakeholders (both cat and wildlife advocates) share the same end goal of reducing outdoor cat populations. Increasingly, these groups are working together to reach this common goal. See the “Welfare of wildlife” section on page 22 for more details.



*“I am very proud to be a part of the profession that puts the “N” in TNR. Nationwide, increasing numbers of veterinary professionals are participating in this lifesaving strategy. More and more veterinary practices treat free-roaming cats and the number of high-quality, high-volume spay/neuter clinics continues to grow. This is all in recognition of the fact that discontinuing the breeding cycle and then returning the cats to their original environment is the only scientifically proven effective and humane approach to stabilizing, and ultimately decreasing, free-roaming cat populations, as well as protecting potentially affected wildlife. The veterinary profession should be applauded for being such an integral part of the solution to a problem that has plagued our country for decades.”*

—SUSAN KREBSBACH, DVM, HUMANE SOCIETY VETERINARY MEDICAL ASSOCIATION VETERINARY ADVISER, OREGON, WI

### THE PUBLIC

Most people care about cats and want to see them treated humanely. Public opinion polls consistently find that people are opposed to killing healthy outdoor cats (Chu & Anderson, 2007; Karpusiewicz, 2012; Rand, Fisher, Lamb, & Hayward, 2019). Communities that embrace effective cat management programs will be rewarded with goodwill from their residents. Many communities are learning what officials in San Jose, California, experienced: that a public who readily understands and supports decisions made in the best interest of the cats turns out to be the best at reducing conflicts between cats and humans and cats and other animals.

While some residents might complain about cats in their backyard or cats adversely affecting their property, many of these complaints can be resolved with information about humane deterrents and civil dialogue with neighbors. Animal control officers can be an integral part of this approach; other successful models include enlisting the aid of a local nonprofit to help mediate cat-related conflicts. Agencies commonly find that nuisance complaints decline after implementing a TNR or return-to-field program.

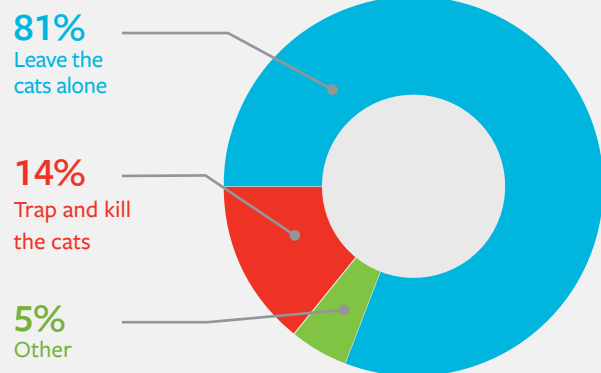
Public support—and volunteerism—is vital to large-scale sterilization programs. Upwards of 14% of the general public and 17% of pet owners already feed community cats (APPA, 2019; J. K. Levy & Crawford, 2004), making them prime recruits, especially when

low-cost, high-quality sterilization programs are available. TNR is also supported by the Cat Fanciers’ Association.

Nonlethal management programs will be readily supported by the majority in your community, while lethal control will not receive the same support and may actively be opposed by concerned residents. Policies designed to support and enable TNR activities are critical; those that place barriers to public engagement in TNR activities or threaten caretakers with penalties for their goodwill and volunteerism need to be amended or removed.



### WHAT WOULD YOU DO ABOUT UN-OWNED CATS IN THE STREET?



An overwhelming majority of Americans believe that leaving a community cat outside to live out his life is more humane than having him caught and euthanized, according to a nationally representative survey conducted for Alley Cat Allies by Harris Interactive in April and May 2007.

U.S. PUBLIC OPINION ON HUMANE TREATMENT OF STRAY CATS LAW AND POLICY BRIEF, ALLEY CAT ALLIES



# Managing community cat populations: What does work

Effective community cat management involves both addressing the outdoor cats that already exist in your community and preventing the influx of additional cats. Properly managed sterilization-vaccination programs do not create cat colonies or cat overpopulation—the cats are already there. Your choice is between proactive, effective management of an existing problem or continuing to react in crisis mode to an unmanaged problem. Well-designed and well-implemented community cat programs reduce the numbers of unsterilized and unvaccinated cats, are in line with public opinion, and can mobilize an army of compassionate, dedicated people to act for cats, wildlife and their communities. To be most effective, these programs must be adopted by more communities and supported by more animal care and control agencies and municipal officials. The Humane Society of the United States strongly recommends proactive, effective community cat management programs (including TNR and other sterilization programs), legislation that allows for and supports them, and coalition-based approaches that involve community leaders, citizens and stakeholders.

Solving community cat problems requires many strategies, including trap-neuter-return, targeting efforts, return-to-field programs, accessible spay/neuter for all cats, services for pet owners and collaboration across humane organizations. Each strategy is discussed in further detail in this section.



## TRAP-NEUTER-RETURN

Trap-neuter-return (TNR) and its variants are nonlethal strategies intended to reduce the numbers of community cats, improve the health and safety of cats, and reduce impacts on wildlife. At minimum, community cats are spayed or neutered so they can no longer reproduce, vaccinated against rabies, marked to identify them as sterilized and returned to their home territory. The universally recognized sign of a sterilized community cat is an ear-tip, a surgical removal of the top quarter inch of the of the cat's ear, typically the left (the right ear may be more common on the West Coast).

TNR can be conducted as a formal program through your animal shelter (alongside return-to-field programs, discussed later in this section) or through a nonprofit group dedicated to assisting community cats. It could also be conducted by a grassroots network of volunteers and other residents. Often programs start as community-driven, capitalizing on the willingness of community members to trap, transport and return the cats and, as the value of TNR becomes more apparent in the community, expand to a more formalized program.

“Veterinary students at the University of Florida have been performing TNR in the Gainesville area since 1998. Since Operation Catnip started focusing on litter prevention in community cats, the euthanasia rate for cats at our local shelter has plummeted from more than 4,000 in 1998 to less than 400 in 2012. Residents were wary at first, but 40,000 cats later, it's well-recognized that the program to sterilize, vaccinate and treat parasites in free-roaming cats has made our community better for people and for cats.”

—JULIE LEVY, DVM, PHD, DIPLOMATE ACVIM,  
DIRECTOR, MADDIE'S® SHELTER MEDICINE PROGRAM  
AT THE UNIVERSITY OF FLORIDA GAINESVILLE

# WHAT DOES WORK

However you start, community-wide TNR programs are effective because they:

- Halt reproduction of existing cats through sterilization, leading to the reduction and eventual elimination of outdoor cat populations through attrition.
- Vaccinate cats against rabies (and other diseases, depending on available resources), reducing public health and safety risks.
- Decrease nuisance complaints by eliminating or dramatically reducing noise from cat fighting and mating and odor from unneutered male cats spraying urine to mark their territory.
- Ease the burden on community resources such as animal shelters flooded with cats and their offspring.
- Bring new financial resources and volunteer workforces into the community.
- Can improve community and neighborhood relations and lead to new collaborations.
- Allow private nonprofit organizations that help community cats and volunteers to mediate conflicts between the cats and residents of surrounding communities.

- Maintain the health of cat colonies and allow caretakers to trap new cats who join the colony for TNR, reunification with their owner, or rehoming.

Additional benefits can be had by expanding your community's TNR program to include targeting, return-to-field, services for pet owners and collaboration across humane organizations.

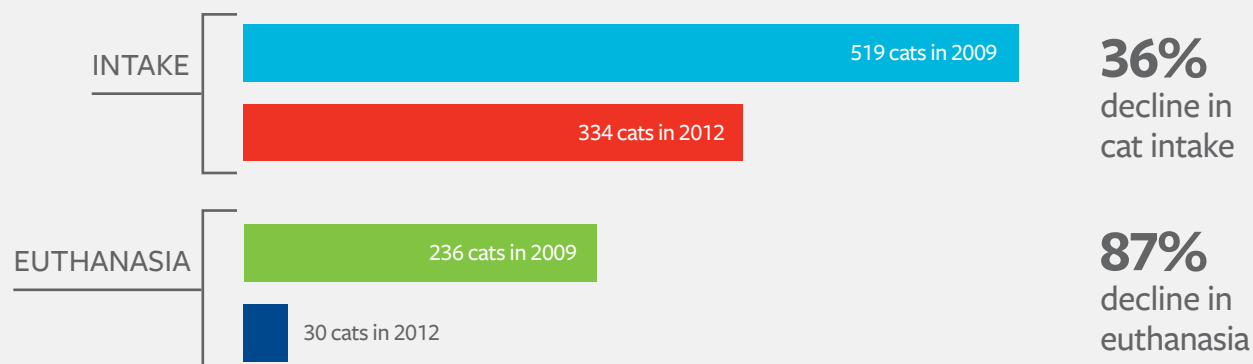
## TARGETING EFFORTS

TNR and sterilization efforts are constantly evolving and improving. Through better data collection on cat intake, complaint calls and euthanasia, and with the advent of accessible GIS software, we can now target and focus resources on areas where projects can have the biggest impact. Many projects have had success focusing their funding and efforts within certain zip codes, neighborhoods or specific locations, such as apartment complexes.

Through an assessment of the data for a given community, geographical hot spots become visible. By targeting the appropriate amount of resources—including trappers, surgeries and marketing—to fully address that target zone, programs can effectively stop the reproduction and get a handle on that population set before moving on to the next target area. This approach has a much faster and more visible impact on cat populations than a scattered,

## DECREASES IN INTAKE AND EUTHANASIA

IN RURAL MONTANA



### Where it worked:

Fox Hollow Animal Project, Ravalli County, MT (pop. 40,000; 2400 sq. miles)

A targeted TNR program provided 1,329 spays/neuters of community cats from July 1, 2010 through 2012.

(Data provided by PetSmart Charities)



“One of the most important recent advances in TNR is the strategy of targeting. By focusing resources like surgeries, outreach and trappers on areas with high concentrations of free-roaming cats, populations can be reduced faster and more efficiently, resulting in lower intake and euthanasia at shelters as well as fewer complaints.”

—BRYAN KORTIS, NATIONAL PROGRAMS  
DIRECTOR, NEIGHBORHOOD CATS

random approach centered on complaint calls across a wide geographical area. Targeted efforts allow you to reach a high enough rate of sterilization (ideally as close to 100% as possible) to quell population growth. Assessing your community, mapping cat hot spots and targeting your approach can also help reduce impacts on wildlife by identifying sensitive and vulnerable wildlife areas and focusing efforts in those areas.

### **RETURN-TO-FIELD**

Return-to-field, also known as shelter-neuter-return, is very similar to TNR, but focuses on the cats who come into your animal control

facility or municipal shelter as healthy, unclaimed strays. Historically, many of these cats were euthanized after being housed and cared for at the shelter for the legally required stray hold, particularly if they were feral or exhibited feral-like behavior.

In the return-to-field program, healthy, unowned cats are sterilized, ear-tipped, vaccinated and put back where they were found. The rationale is that if the shelter has no resources, a healthy cat knows how to survive—indeed had been surviving up until she was brought to the shelter—and should not be euthanized just to prevent possible future suffering. Using resources for sterilization has a larger impact than focusing resources on intake and euthanasia.

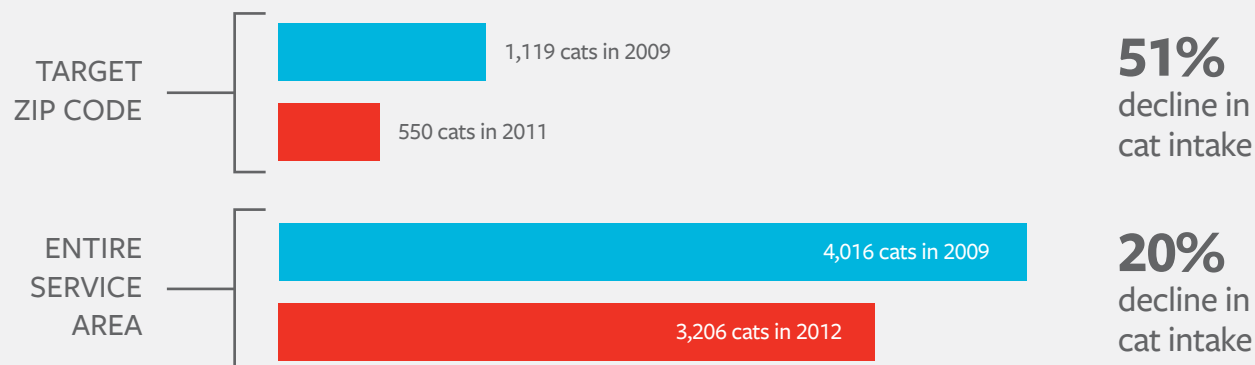
As will be discussed in the “What doesn’t work” section, returning these cats to where they were found will actually do more to reduce the overall free-roaming cat population than removing them. Return-to-field is an easy way to start implementing a community cat program. The HSUS’s Return-to-Field Handbook can guide your animal control agency and local shelter through establishing such a program.

In their efforts to combat cat overpopulation, the majority of

# WHAT DOES WORK

## DECREASES IN INTAKE

IN URBAN KENTUCKY



### Where it worked:

Alley Cat Advocates, Louisville, KY

A targeted TNR project provided 2,000 spays/neuters of community cats in five zip codes. As a result of the project, the councilwoman for the original target zip code sponsored a TNR-enabling ordinance that passed the city council.

*(Data provided by PetSmart Charities)*

municipal agencies and private organizations are spaying and neutering animals before they are adopted, providing subsidized spay/neuter for low-income pet owners and supporting community cat caretakers with low-cost spay/neuter services, training, equipment and increased legal protections. Programs like these can also attract private funding and grants and engender public goodwill. They act as community cat prevention programs, reducing the potential for intact owned cats to contribute to the community's free-roaming cat population or to join the population themselves. A young intact cat reaching sexual maturity may escape a home looking for a mate or an unneutered tomcat may be put outside once he starts spraying and stinking up the house. Investing in resources to provide a spay/neuter option for these cats can help stop the influx of new cats to free-roaming cat colonies.

Most citizens want to do the right thing for their cats, but barriers such as cost or transportation exist in communities across the country. For example, taking an unpaid day off work can offset the value of a "free" surgery if the clinic has limited hours. The most effective programs take into consideration what pet owners need in order to use the services offered. In order to truly address cat overpopulation, these barriers need to be removed for all members of our communities.

### SERVICES FOR PET OWNERS

Another strategy for preventing community cats is to adopt programs that assist residents in keeping their cats, thus reducing the number of cats that are surrendered to the shelter, lost or abandoned. These services, which should be accessible to all residents,

### BOOSTING YOUR IMPACT

A recent study looked at the additive value of employing both return-to-field and trap-neuter-return programs at six municipal animal shelters. These integrated community cat programs also employ, when appropriate, adoption, relocation and reunification of cats with their owners, enabling the facilities to provide the best outcome available to each individual cat.

All shelters saw a decline in both feline intake and euthanasia rates over the course of the three-year study. Intake declined by a median of 32% while euthanasia plummeted by a median of 83%. Of the more than 72,000 cats involved in the study, 83% were returned to their outdoor homes, 15% were placed for adoption, 0.6% were reunited with their owners and 0.3% were relocated for safety reasons. Less than 1% of cats were euthanized due to serious medical concerns or died (Daniel D. Spehar & Wolf, 2019).



can include preventive and wellness care (such as vaccinations), tips for finding pet-friendly rental housing and information on resolving unwanted behaviors such as scratching furniture. Make your animal control agency or shelter a resource for residents facing problems with their cat. Provide cat behavior advice—and potentially medical assistance—if doing so will prevent that cat from being surrendered to your municipal shelter or being abandoned outdoors.

It's also important to promote keeping cats indoors (or confined with a catio or cat-proof fence) and using collars, visible identification and microchipping for pet cats so that those who do go missing can be quickly reunited with their families.

### **COLLABORATION**

Each community is different. There is no one-size-fits-all solution for managing community cats. Stakeholders must work together

to create programs that address specific needs and maximize their community's available resources. Often, different groups hold different pieces of the solution.

At times, the community's collective resources may allow for kittens young enough to be socialized to be routed to adoption channels.

By working together, municipal agencies, shelters, veterinarians and cat rescue groups can humanely reduce community cat populations while protecting the public, cats and wildlife. The returns are plentiful: fewer free-roaming cats; lower cat intake and euthanasia; municipal cost savings; greater volunteer participation; more adoptions; better use of limited shelter, animal control and public health resources; increased goodwill toward shelters; and more lives saved.





# Managing community cat populations: What doesn't work

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Many conventional strategies have been used over the years to attempt to manage community cats. You might have tried them or have contemplated trying them, but here is why they don't work.

## **TRAP AND REMOVE: LETHAL CONTROL**

Trap and remove may at first glance seem to be a logical approach to solving community cat problems. You might be able to eliminate the population if your target is one small colony, but trap and remove does not effectively scale up to an entire community. In order to reduce the population, at least 50% of the cats will need to be removed annually (Andersen et al, 2004). Trap and remove efforts can actually lead to an increase in the population—one study recorded a staggering 211% increase in cats (Lazenby, Mooney, & Dickman, 2015)!

The resources (money, manpower, etc.) required to capture this many cats simply do not exist, either in the budgets and capacity of government agencies or in terms of public support. Haphazard lethal control efforts only result in a temporary reduction in

the cats' numbers, essentially putting a bandage on the problem and further distance from real solutions.

The unfortunate reality is that once removed, these cats have few options and shelters have no other recourse but to euthanize them. When euthanasia is performed on healthy but unsocialized cats, it can be characterized as unnecessary, calling into question whether their deaths are humane.

Opposition from many in the community who oppose killing cats and insufficient resources to achieve the level of removal/euthanasia necessary to achieve results can often prove to be insurmountable barriers to lethal control programs. Communities that use trap and euthanize strategies typically do not achieve reductions in the number of cat complaints, and cat intake at local shelters stays constant or continues to rise. Therefore, the only result of trap and remove/euthanize programs is turnover—new feline faces in the community, but not fewer.

## WHAT DOESN'T WORK



### TRAP AND REMOVE: RELOCATION AND SANCTUARIES

Some individuals or organizations may call for unowned cats to be relocated elsewhere or placed in sanctuaries. While this may seem like a humane alternative to lethal control, it is unrealistic due to the sheer numbers of cats in communities and the scarcity of appropriate relocation locations. Relocation simply shifts cats from one outdoor home to another.

Some shelters and rescues have implemented successful working cat programs, where unsocialized cats can be relocated to barns, warehouses and similar venues, often to provide rodent control. These programs are labor intensive and are by their nature limited. While working cat programs can provide an option for a small portion of the cats, they can't address the large number of unowned cats in the community.

Likewise, a small number of unowned cats may benefit from lifelong placement in a sanctuary. However, quality sanctuaries, if available in your area, quickly fill to capacity and are expensive to operate. Cat populations vastly outnumber available spots at sanctuaries, making them an unrealistic option for most communities. Many unfortunate examples exist of sanctuaries that grew beyond their capacity and resulted in neglect and cruelty. This places an additional burden on communities, requiring law enforcement intervention and resulting in a large group of cats again needing to be removed and relocated.

### FEEDING BANS

The logic behind banning the feeding of outdoor cats is that if no one feeds them, they will go away. However, cats are strongly bonded to their home territories and will not easily or quickly leave familiar surroundings to search for new food sources. Instead, they tend to move closer to homes and businesses as they

*“Bans on feeding feral cats do nothing to manage their numbers. Bans force feral cats to forage through trash cans and kill wildlife, such as birds, squirrels and rabbits. Establishing feeding stations ensures a healthy colony and allows a human being to interact with the colony and provide care for any cat that is under stress or who needs medical attention. Feeding stations also bring feral cats to a central location and help establish trust, making trapping [for sterilization] an easier task.”*

—WAYNE H. THOMAS, COUNCILMAN, HAMPSTEAD, MD

grow hungrier, leading to more nuisance complaint calls, greater public concern for the cats' welfare and underground feeding by residents. People who feed cats will ignore the ban, even at great personal risk, and enforcement is extremely difficult, resource intensive and unpopular. Furthermore, failing to provide sustenance to cats that they have fed up until a feeding ban was enacted could put caretakers in jeopardy of violating anti-cruelty laws at the state and local level (ABA, 2017).

Feeding bans are often prompted by complaints about a single situation where feeding practices have created a nuisance. Instead of managing by exception, these situations can be addressed through existing sanitation laws and implementation of best practices for feeding outdoor cats.

*“One of the new programs we created was our TNR program, the Apartment Cat Team (ACT). Our data showed us that apartment complexes and mobile home parks were “ground zero” for abandoned cats, feral cats and litters of unwanted kittens. The ACT program focuses on teaching and empowering apartment residents and managers in the benefits of TNR, spay/neuter, rabies vaccination and microchips. In addition, we are recruiting kitten foster homes and rescuing kittens out of feral life, socializing them and adopting them into new homes. The ACT program is a vital program that is contributing to a reduction in euthanasia—along with other innovative programs we have recently put into place to save cats and kittens. The ACT program gives us a chance to try a different approach that is not only more humane, but that also builds rapport between manager and tenant. The result is a public better educated about humane treatment of animals.”*

—MIKE OSWALD, DIRECTOR, MULTNOMAH COUNTY ANIMAL SERVICES, TROUTDALE, OR

### TREATING COMMUNITY CATS LIKE OWNED PETS: LICENSING LAWS, LEASH LAWS AND PET LIMITS

Laws intended to regulate pet cats and their owners don't work to reduce community cat populations, because community cats do not have "owners" in the traditional sense. Instead, they're cared for by compassionate citizens who happen upon them. Caretakers don't consider themselves "owners" of community cats, even if they provide daily food and medical care when needed. These caretakers should not be penalized for their goodwill; they are essentially supplementing the community's cat management protocols with their time and resources. Rather, laws should be designed to incentivize people in the community to care for these cats and to contribute to efforts to humanely reduce the community's unowned cat population.

*"While licensing a cat (like dogs) seems responsible, the unintended consequences of it are damaging.*

*Licensing owned cats does not take care of feral cats that are not owned by anyone."*

—COUNCILMAN ROD REDCAY, VP, DENVER BOROUGH COUNCIL, PA

Caretakers don't choose how many cats live outdoors, so pet limits are of little use. Because these cats are not owned, caretakers don't control the cats' movements, so leash laws are equally ineffective. It is not as if these cats can simply be taken indoors and transformed into house cats.

Most importantly, forcing ownership on those who feed cats does nothing to reduce the population. Requiring community cats to be licensed by caretakers is ineffective. Compliance for owned cat licensing is typically very low, and cat-licensing projects rarely pay for themselves, further draining already limited resources. Moreover, mandating caretakers to register colony locations often causes those concerned for the cats' welfare to go underground and off the municipal radar. Policies that impose penalties on caretakers are barriers to sound community cat management. However, proactive, nonlethal control programs can enlist the support of caretakers by gaining their trust and engaging them as volunteers.





# Concerns about community cats

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## **CONCERN: TNR is illegal in our community**

Some existing ordinances may have components that pose barriers to practicing TNR and return-to-field. Ordinances are typically written for pet cats or for dogs, so it's important to review local and state laws to know where amendments are needed to allow your community to implement TNR and return-to-field. For example, laws might ban feeding animals outdoors, limit the number of cats that can be owned (with "owners" defined in a way that includes colony caretakers), prohibit returning cats to the community under abandonment language, prohibit cats from roaming freely or require that all cats be licensed. For an effective community cat program to thrive, your community should amend these provisions to exempt managed community cats and their caretakers or enact an ordinance that explicitly legalizes TNR. Our website and the appendix include examples.

Even when conflicting regulations don't exist, some municipalities may choose to enact an ordinance authorizing community cat management programs and defining the roles and duties of all parties. Or a community might prefer, as a matter of local culture, to allow TNR and return-to-field informally. In such cases, an ordinance might be unnecessary and interrupt the functioning and growth of an already successful program.

The goal of a community cat ordinance is to clear barriers to a successful sterilization program so that you can reduce the number of unowned cats in your community. Your program will succeed only if your community encourages participation and full engagement by caretakers and removes overly burdensome requirements and restrictions that discourage their involvement.

# CONCERNS ABOUT COMMUNITY CATS

*“Carroll County has a law that is in effect in Hampstead, which states that if you care for an animal for more than three days, the animal is considered yours. Therefore, anyone caring for feral cats for more than three days would be considered their owner and if it were more than three cats, that person would be in violation of the Hampstead limit of three cats. The code change I proposed and got passed exempted persons participating in a TNR program with continued care of feral cats from the limit of three cats. This allowed citizens to participate in the TNR programs and management of feral cat populations.”*

—WAYNE H. THOMAS, COUNCILMAN, HAMPSTEAD, MD

## **CONCERN:** By allowing TNR, the municipality may be liable for any future conflicts with cats

The Tort Trial and Insurance Section of the American Bar Association supports the adoption of TNR programs by local governments. Conducting or allowing a TNR program in order to reduce cat populations, protect public health and mitigate nuisance complaints is a legitimate government purpose, thus the municipality can argue that it should not be held liable for third-party claims (ABA, 2017).

In addition, liability for harm caused by animals typically stems from ownership—but no one “owns” a community cat just as no one “owns” a squirrel who might cause damage. Even if a person is bitten or scratched, a TNR’d cat likely would have been

vaccinated against rabies. Rabies prophylaxis treatment may still be advised, but the real risk of rabies is reduced. Consider an alternate situation, where a person is bitten and sues the municipality because officials turned down a TNR program that would have dealt with an overpopulation issue and vaccinated cats against the disease. While state laws vary regarding rabies vaccination for cats, efforts should be made to revaccinate cats when possible.

## **CONCERN:** The cost to the municipality

Long-term solutions like TNR may sound expensive, but they usually end up costing less than repeated cycles of trap-house-euthanize. TNR is a long-term investment in a community. As it often starts as a grassroots effort, the cost of TNR is often covered out of pocket by individuals who care about community cats and by nonprofit organizations investing in the community. But animal care and control agencies and nonprofit animal shelters with self-funded programs have often found the cost of TNR and return-to-field less expensive than admitting, holding, euthanizing and disposing of healthy cats. Moreover, implementing TNR and return-to-field programs can drastically reduce cat intake at the shelter as well as cat-related complaints, which is a big cost savings. If officers don’t have cat complaints to respond to, they can focus on other duties.

The money saved can be put toward more sterilization surgeries or allocated to other areas of need. There are also many grant opportunities available for targeted TNR and return-to-field programs that can offset budgets and improve efforts.

## **CONCERN:** Community cats transmit diseases like rabies

Rabies is a disease of significant concern, and focusing on prevention is the best medicine. Vaccinating community cats against rabies is an opportunity to protect public health, not an added threat.

## **AMERICAN BAR ASSOCIATION RESOLUTION 102B**

RESOLVED, That the American Bar Association urges state, local, territorial, and tribal legislative bodies and governmental agencies to interpret existing laws and policies, and adopt laws and policies, to allow the implementation and administration of trap-neuter-vaccinate-return programs for community cats within their jurisdictions so as to promote their effective, efficient, and humane management.

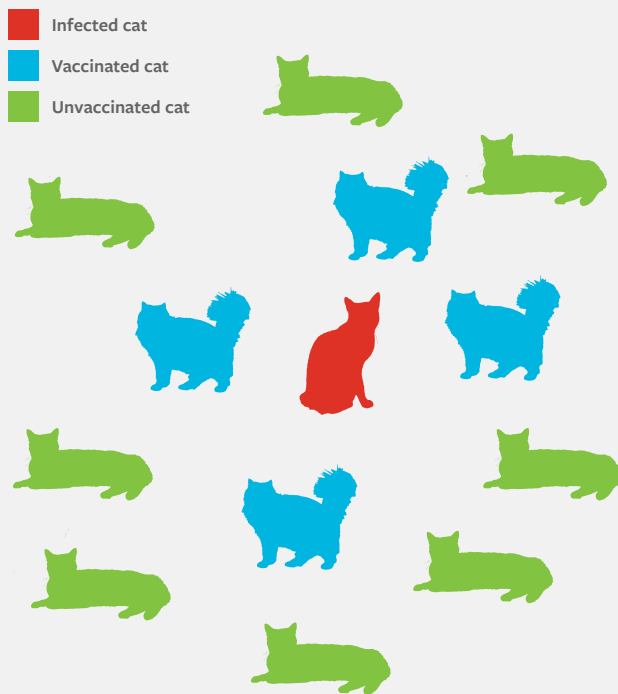
In sum, properly implemented TNVR programs serve multiple purposes, including stabilizing and reducing community cat populations, protecting public health through vaccination efforts, and/or resolving nuisance behaviors and corresponding complaints. These are all goals worthy of government involvement, and the governmental agency should make these interests and intents clear and remove any unintended legal obstacles that result from a misapplication of traditional animal control laws. Promoting the consistent interpretation and/or drafting of laws related to aspects of TNVR programs will serve to further these interests.

# CONCERNS ABOUT COMMUNITY CATS

## RABIES

### VACCINATION RING THEORY

The vaccinated cats act as a barrier between the infected and unvaccinated cats.



According to the Centers for Disease Control and Prevention, over the last 100 years, rabies in the United States has changed dramatically. The number of rabies-related human deaths in the United States has declined from more than 100 annually at the turn of the century to one or two per year in the 1990s. In the United States, human fatalities associated with rabies occur in people who fail to seek medical assistance, usually because they are unaware of their exposure. Modern day prophylaxis has proven nearly 100% successful (CDC, 2019).

The CDC also writes that the number of reported cases of rabies is decreasing in both wild and domestic animals. In 2015, wild animals accounted for 92% of reported cases of rabies. Although most rabies cases occur in wildlife, domestic animals are the source of most human cases that require post-exposure treatment because people are more likely to handle unknown dogs and cats than wildlife. The number of rabid cats declined by 10.3% between 2014 and 2015, and of all domestic cats tested for rabies between 2010 and 2015, only 1.1% were found positive for the disease (Birhane et al., 2017).

Removing cats is not the answer to this real but limited threat. The World Health Organization, which manages global campaigns on rabies eradication, hasn't recommended removing stray dogs (dogs are the source of 95% of human rabies deaths globally (Fahrion, Mikhailo, Abela-Ridder, Giacinti, & Harriesa, 2016)) to control rabies since 1983 because vaccine programs have been more successful (WHO, 1984).

Vaccinating community cats against rabies as part of a TNR program should be supported as a preventive measure against the potential spread of the disease. Not only will this protect individual cats from contracting rabies and passing it on, but it will provide protections for the larger community. The presence of some vaccinated cats prevents one infected cat from becoming an outbreak, as they act as a barrier between the infected cat and the unvaccinated cats. This is vaccination ring theory, and it's how smallpox was eradicated. Having some vaccinated cats outdoors is better than having none.

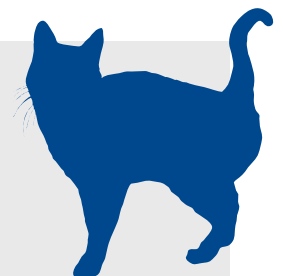
People who feed community cats should use feeding strategies that do not attract wildlife (e.g., not leaving food out overnight), as should people who feed their pet cats outdoors. Reducing interaction between community cats and wildlife will reduce the opportunity for the cats to contract rabies.

Some public health officials have concerns about revaccinating community cats when vaccines expire. Because the lifespan of community cats is typically much shorter than that of pet cats, a vaccine labeled with three-year immunity may provide protection for the life of many community cats. It's clearly better than no vaccine at all. Local governments can support both public health and community cat programs by helping to make rabies vaccines easily available for both community and owned cats.

#### **CONCERN:** Cats will continue to be a nuisance to residents

When outdoor cats are spayed and neutered, nuisance behaviors can be drastically reduced or eliminated. Neutered cats typically don't yowl late at night or fight over mates (Finkler, Gunther, & Terkel, 2011) so noise is greatly reduced. The odor from male cat urine is mostly eliminated because testosterone is no longer

**There has not been a proven case of cat-to-human transmitted rabies in four decades, and the more vaccinations administered through TNR programs, the more likely this trend is to continue (Anderson et al, 1974; Roebing et al, 2014).**



# CONCERNS ABOUT COMMUNITY CATS

present, and spraying to mark territory may stop entirely. Altered cats, no longer in search of mates, may roam less, staying closer to home (Scott, Levy, Gorman, & Neidhart, 2002) and become less visible to neighbors. Because they can no longer reproduce, there won't be kittens to be concerned about, and over time there will be fewer cats. This will result in fewer nuisance behaviors, fewer complaint calls and a reduced impact on wildlife.

For any remaining concerns, caretakers can use other strategies to encourage cats to stay where they are wanted and deter them from entering areas where they're not. Using readily available items or humane cat-deterrent products available in stores and online, residents, cat caretakers and animal control officers can work together to mitigate the complaint. Facilitating dialogue and mutually agreed-upon resolutions is often a much more effective outcome than removing the cat(s) in question, especially when the complaint is the result of a neighbor dispute unrelated to the cat.

## CONCERN: Welfare of outdoor cats

The idea that community cats are at great risk for suffering and untimely death if not admitted to a shelter is a long-standing one. Free-roaming cats do risk higher exposure to dangers such as predators, poisons, infectious and parasitic agents, weather extremes and cruel human acts. While the physical dangers to free-roaming cats are not to be ignored, a growing body of evidence suggests that they are generally fit and healthy, with less than 1% of cats coming into TNR clinics requiring euthanasia to end suffering (Wallace & Levy, 2006) (Daniel D. Spehar & Wolf, 2019). The overall health of community cats was found to have improved a year after being sterilized, vaccinated and returned (Scott et al., 2002) and they have greater immunity against a host of other diseases and parasites (Fischer et al., 2007).

Sterilized cats tend to fight less and stay closer to home, decreasing risk of injury or of being hit by a car. Sterilized cats are also less likely to transmit feline diseases that are largely spread through mating behavior and mating-related fighting (Finkler et al., 2011). While some believe cats living outdoors are more susceptible to common feline diseases, such as feline immunodeficiency virus (FIV) or feline leukemia virus (FeLV), these viruses occur at the same rate as in the pet cat population (Lee, Levy, Gorman, Crawford, & Slater, 2002).

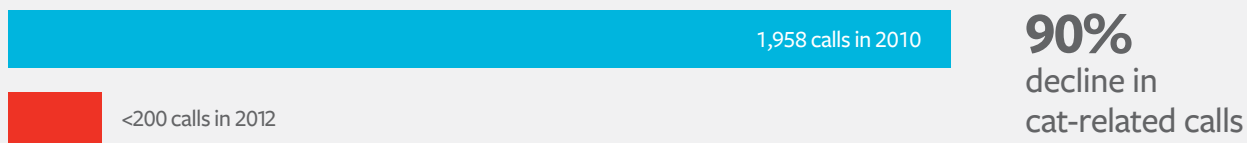
- The generally good condition of free-roaming cats may be explained in part by the support given to them by caregivers, who commonly provide regular food and water, and, oftentimes, shelter from the elements. More than 14% of the general public and 17% of pet owners feed free-roaming cats (APPA, 2019; J. K. Levy & Crawford, 2004).
- The greatest risk is to kittens, as only 25% of cats born outdoors survive past 6 months of age (Nutter, Levine, & Stoskopf, 2004). Recent population modeling work shows that high-intensity TNR not only reduces overall populations of free-roaming cats more effectively than other management tactics, but also results in significantly fewer of these preventable deaths—31 times fewer than not implementing any community cat management program (Boone et al., 2019).

## CONCERN: Welfare of wildlife

- There are no easy answers to the issue of cat predation on wildlife. What to do about it has been a concern for more than 100 years. However, neither cats nor wild animals are well served by a polarized, divisive and expensive “cats

## DECREASES IN COMPLAINT CALLS

IN SUBURBAN TEXAS



### Where it worked:

PETS Low Cost Spay and Neuter Clinic, Wichita Falls, TX (pop. 104,000)  
The clinic provided 1,188 spays/neuters of community cats from 2011 through 2012.  
(Data provided by PetSmart Charities)



## CONCERNS ABOUT COMMUNITY CATS



vs. wildlife” controversy—especially when all parties can agree that the long-term goal is no (or realistically very few) free-roaming cats. That’s not going to happen quickly nor is it going to happen by simply removing the cats found outside.

- Practical and sustainable solutions include using TNR, return-to-field and managing cats (individuals and colonies) so they do not impinge on designated wildlife areas and at-risk wildlife populations. Not all cat colony situations pose the same threat. For example, cats may need to be re-located when they congregate in or near a sensitive wildlife habitat, whereas they could be effectively managed behind a shopping center in a suburban town. When predation by community cats is an issue, respectful dialogue and

productive collaboration between cat and wildlife advocates is essential. There are several examples of such dialogue that communities might seek to follow (“Cats Safe at Home,” 2019).

- Wildlife and cat advocates can also help protect wildlife by joining forces in non-controversial collaborative projects such as informing cat owners about keeping owned cats indoors, seeking support and funds for installing cat-proof fences around sensitive natural areas, humanely relocating cat colonies that pose unacceptable risks to wildlife and, of course, continuing community cooperation to improve the efficiency and economy of TNR programs.



# Good policy for cats

Properly managed TNR programs do not create cat overpopulation—the cats are already there. Your community must choose between progress or an unmanaged, ever-growing problem. Well-designed and well-implemented programs that focus on nonlethal control and involve all community stakeholders are in line with public opinion. They can mobilize an army of compassionate, dedicated people who care about the cats, wildlife and their communities.

By working together, municipal agencies, shelters, veterinarians and cat rescue groups can humanely reduce community cat populations while protecting the public, cats and wildlife. The returns are plentiful: fewer community cats; lower cat intake and euthanasia in shelters; municipal cost savings; greater volunteer participation; more adoptions; better use of limited shelter, animal control and public health resources; increased goodwill toward shelters; and more lives saved.

Doing nothing or repeating failed approaches is no longer an option. Proactive, effective approaches exist and need to be fully embraced and implemented in a majority of our communities if we're going to have a lasting impact. Please join us in making our communities safer for all.

The best policies are those that encourage use of best practices without creating barriers for community participation in resolving a community issue. TNR should be conducted strategically, sustained at a rate necessary to cause a decline in the population, and paired with efforts to keep cats in homes. When implemented effectively, TNR can:

- Decrease municipal costs. TNR is less expensive than trapping and impounding cats, caring for them during their stray hold, and providing an outcome—be that adoption, transfer or euthanasia. Moreover, caring residents who feed hungry stray cats can be mobilized to take this action a step further and participate in trapping and sterilization, which can also decrease the number of community cats entering municipal and private animal shelters.

“Trap, neuter and return works. It is a humane solution and we are thrilled that in such a short time the TNR program is showing significant results in Fairfax County. With the help of citizen trappers, we are able to spay or neuter these cats before they contribute to our community’s homeless cat population. TNR is saving lives in Fairfax County.”

—DR. KAREN DIVINEY, FORMER DIRECTOR,  
FAIRFAX COUNTY ANIMAL SHELTER, FAIRFAX, VA

- Decrease public health and safety concerns. Vaccinating community cats against rabies as part of a TNR program should be supported as a preventive measure against the potential spread of the disease. Cats who are vaccinated and sterilized are also healthier overall.
- Decrease nuisance complaints. Spayed and neutered cats roam less; are less likely to fight over mates, food and territory; and no longer emit the pungent odor of intact male cat urine. Managed colonies of cats are less likely to disturb trash cans. With the use of humane deterrents, cats can be conditioned to avoid areas where they are not welcome. Good policy outlines a clear mechanism to resolve complaints via nonlethal means and engages the community in being part of the solution.
- Reduce predation on wildlife. Humanely reducing and managing community cat populations ultimately reduces the threat of predation on wildlife. When colonies are actively managed, any abandoned housecats and young kittens can be removed and rehomed, thus preventing population growth.

Thank you for considering these proven recommendations to make your community a healthier and safer place for people, cats and wildlife. May the information in this publication give you and your community a roadmap and tool set for implementing a humane community cat management program.



# Science in support of humane community cat management

“In the ongoing and polarized dialogue concerning the role of nonlethal management, including trap-neuter-return (TNR), in managing community cats, reference is often made to studies that demonstrate that this approach does not work. This selected bibliography points to studies that, among others not summarized here, comprise a body of work that shows TNR as a valuable tool in managing cat populations at the local level. Clearly, additional research would help us determine how nonlethal strategies can be best maximized as a tool for controlling cat populations, but we believe that the argument that it is indeed possible is past us now and that it is time to move forward with improving and perfecting this approach.”

–DR. JOHN HADIDIAN, SR. SCIENTIST (RETIRED),  
THE HUMANE SOCIETY OF THE UNITED STATES

## FEATURED STUDIES

### *Targeted TNR resulted in 82% decline from peak population in neighborhood study*

Citizen science was employed to document the impact of TNR in one Chicago neighborhood. Colony populations decreased by a mean of 82% from peak and 54% from when the colony was first

recorded. Eight of the 20 colonies identified in the neighborhood were eliminated by the end of the study period (D. D. Spehar & Wolf, 2018).

### **100% reduction in 17 years**

Newburyport, Massachusetts, implemented a trap-neuter-return program in 1992, which resulted in the elimination of more than 300 cats from the small town’s waterfront. Prior to starting TNR, then a new strategy, none of the colonies were managed. The last known cat on the waterfront died at age 16, 17 years after the TNR program began. The area has remained free of cats since that time. Examining retrospective data, this case study illuminates the effectiveness of comprehensive humane cat management efforts yet points to the need for the establishment of standardized data collection and assessment practices (D. D. Spehar & Wolf, 2017).

### **31% reduction in two years**

This survey of Australians involved in trap-neuter-return found colony size decreased from 11.5 cats to 6.5 cats in two years, a 31% reduction, through a combination of TNR and rehoming of social cats and kittens. Those surveyed reported a median of 69% of cats being sterilized. Cats were fed daily and provided



prophylactic health care (primarily treatment for fleas and intestinal parasites). TNR is not widely practiced in Australia and is illegal in many communities. Respondents participated in TNR as individuals more than in association with an organization and self-funded at least some of their work (Tan, Rand, & Morton, 2017).

#### ***An 85% reduction in population over 11 years***

Before implementing a TNR program on the University of Central Florida campus, periodic trap and removal efforts tried to keep the population at bay when it increased to nuisance levels. This 11-year study followed a population of 155 free-roaming campus cats from 1991, when the TNR program began, to 2002. No kittens were observed on site after 1995. Additional stray or abandoned cats arrived, but they were neutered and adopted before they could reproduce. The campus cat population decreased by 85% to 23 cats in 2002, demonstrating that a long-term program of neutering plus adoption or a return to the resident colony can reduce free-roaming cat populations in urban areas (Julie K. Levy, Gale, & Gale, 2003).

#### ***TNR can control feral cat populations***

Robertson reviewed the scientific literature on feral cats and feral cat control and concluded that there is scientific evidence that, under certain conditions, TNR can control feral cat populations. The practice of TNR on a far greater scale, as well as continued and increased funding and endorsement of TNR by private welfare organizations and municipal and government agencies, is essential for the success of TNR (Robertson, 2008).

#### ***In the long run, TNR programs are cost-effective***

For many years, Texas A&M University attempted to control its campus cat population with a trap-and-euthanize approach.

Two years after a TNR program was implemented on campus, there was a 36% reduction in the number of cats and fewer nuisance complaints to the university's pest control service. The authors also note that although the initial costs of starting up TNR programs can be substantial in terms of time and money, these costs tend to decrease with time as fewer new cats need to be caught (Hughes & Slater, 2002).

#### ***Trap-and-remove efforts can have the opposite effect***

To determine the population impact of trap and remove (culling) efforts on two open population sites in Tasmania, researchers used wildlife cameras and cat counts to track the number of cats at each site. Despite culling efforts, researchers found large increases in cat numbers: One site had a 75% increase, while another had a staggering 211% increase. Researchers suspect that the populations increased because new cats moved into the sites to take advantage of resources that became available when previously dominant cats were removed. Another explanation could be that kittens born to the unsterilized remaining cats had a better survival rate thanks to more readily available resources (Lazenby et al., 2015).

You can find other published studies regarding predation, TNR effectiveness, nuisance behaviors, public opinion and many more on our website. This resource is updated regularly as new studies are published to provide you with the most current information available. With an increased interest in effective community cat management, more research into the practice is being conducted and more relevant data collected than ever before. Go to [animalsheltering.org/catscience](https://animalsheltering.org/catscience) for the most current studies.

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