

History and Evolution of the Domestic Cat, *Felis catus*

All cats, large and small, wild and domestic, belong to the cat family Felidae. Within this family are two subfamilies: Pantherinae — the great cats, including the lion, tiger, leopard, snow leopard, clouded leopard and jaguar, and Felinae — the small cats. Felinae includes more than 30 different species, such as the lynx, ocelot, serval, margay, leopard cat, bobcat, jungle cat, wildcat, and the domestic cat. The small cats are found throughout Africa, Asia, Europe, and the Americas.

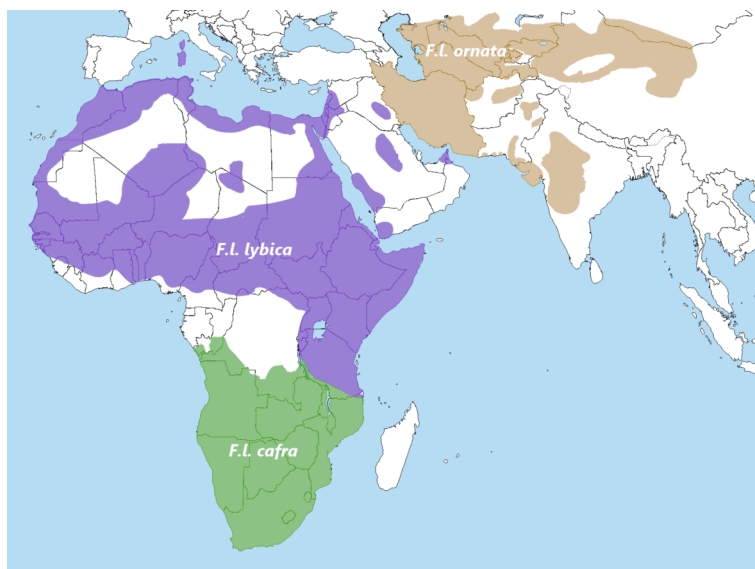
Several small wildcats, like the European wildcat, *Felis silvestris*, are similar in appearance to the average house cat. However, it is specifically the African wildcat, *Felis lybica*, who is considered the ancestor of what is now the most popular companion animal in the world: the domestic cat, *Felis catus* (Driscoll et al., 2007).

Felis lybica is a little larger and stockier than *catus*, but its coat is similar to that of the modern tabby cat. Even today, African wildcats have been successfully socialized to humans, whereas the European wildcat, *Felis silvestris*, is almost impossible to tame (Serpell, 2000). Young European

wildcats who live in captivity will quickly revert to a wild state as they grow older. Mummified cat remains have also shown the domestic cat's origins to be closer to *lybica* and modern molecular techniques show that the domestic cat is genetically most similar to the African wildcat. In 2007, scientists established the origin of the domestic cat by analyzing the DNA of one thousand wild and domestic cats (Driscoll et al., 2007). By sampling genes from several subspecies across three continents, they found that *Felis lybica* living in the Near East were likely domesticated between 10,000 to 12,000 years ago (Handwerk, 2007).

Dr. Jim Sanderson, the Founder and Director of Small Wild Cat Conservation Foundation, described the African wildcats as such:

Felis lybica is a separate species with three subspecies. In Eastern and Southern Africa, the subspecies is *Felis lybica cafra*. The ancestor of the domestic cat is *Felis lybica lybica*. The wildcat of Asia is *Felis lybica ornata*.



Domestication of the cat occurred when humans settled the Fertile Crescent, which stretches from the Nile in Egypt to the Tigris and Euphrates rivers in the modern-day Middle East. Around this time, human settlements started to grow crops such as wheat and barley, and with that came the necessity to store used grain. The wildcat found easy prey at the grain storage bins, which attracted large numbers of rodents (DK Publishing, 2014). Humans and wildcats recognized what could be a mutually beneficial relationship;



Kerri Tremeer

African wildcat (Felis silvestris lybica), considered the ancestor of today's domestic cat.

cats benefited from the availability of food sources around humans (as well as shelter from weather and other predators), while humans profited from a feline form of rodent control.

Most domestic animals were tamed by people, but geneticist Dr. Carlos Driscoll has written, "The cats were adapting themselves to a new environment, so the push for domestication came from the cat, not the human side" (Driscoll et al., 2007). Today, the descendants of the domestic cat number more than 600 million (Driscoll et al., 2009). Unfortunately, the cat's wild cousins are not faring as well and are in great jeopardy. Habitat loss from the rampant overdevelopment of land has resulted in the loss of prey animals, thus causing a near-extinction crisis for most of these wildcats.

Studies have discovered genetic markers that distinguish native wildcats from domestic house cats or feral cats (Randi et al., 2001). However, these cats have a similar enough genetic makeup that they easily in-

terbreed; in some cases, such as with African and Scottish wildcats, interbreeding threatens to "hybridize" the genetically pure wild form.

The Cats of Ancient Egypt

Because of this new evidence, domesticated cats are now believed to have arrived in Egypt from the Near East, rather than tamed from the resident wildcat species. However, some scientists admit that the African wildcats in Egypt could have been tamed by humans.

In any case, cats were treated with great respect in ancient Egypt. Many revered the cat goddess Bastet, and celebrated her connection with the moon, fertility, and protection. Another name for Bastet or Bast, was Pasht, from which the word "puss" is thought to have been derived (Zax, 2007). Bubastis, the city of Bastet, became one of the major religious centers of Egypt and in 945 B.C., it was made the capital of Egypt (Mercer, 1919). Bastet was one of the most popular goddesses (Mark, 2012). The Egyptians portrayed Bastet either as a giant cat or as a woman with the head of a cat. The celebration of Bastet at Bubastis continued for two thousand years until it was finally outlawed by the Christian Emperor, Theodosius (Quammen, 2012).

Ancient wall paintings show cats and kittens sitting under chairs and on laps in much the same way as our household cats act today. Wall paintings depict the cat as a welcome member of Egyptian households, as well as a prominent figure in myth and legend (Wilkinson and Hill, 1983).

In ancient Egypt the death of a cat was deeply mourned. The entire household shaved their eyebrows to display their grief over the loss (Herodotus, 2008). Millions of cats were mummified and buried in cat cemeteries in Bubastis and other centers (Kurushima et al., 2012). These mummified

cats were kept for centuries, but before valuable research could be done to establish the true origins of the domestic cat, the scientific value of these remains was overlooked and most were used as fertilizer (Lorenzi, 2012).

During this period in Egypt, cats were not allowed to be taken out of the country (Mark, 2012). However, the cultural significance of the cat and her ability to control rodent populations so entranced many foreign visitors that slowly many cats were smuggled out of Egypt and began their journey to the four corners of the world (DK Publishing, 2014).

Cats were first taken to the Far East, then, in the 10th century, to Europe and England. Unknowingly, crusaders also brought rats and mice to Europe from the Middle East and these quickly proliferated in their new environment. The cat's ability to maintain control of the newly burgeoning rodent populations made her welcome in most countries (Serpell, 2000). Her popularity rose quickly in Japan when mice began destroying silk farms. Soon cats were taken on ships to control stowaway rodent populations. When the ships docked in new countries, many cats jumped ship. These seafaring cats are the ancestors of the feral cat colonies found across the world today.

Cats were deliberately introduced to most of the world's islands to control rodent populations (Rodríguez et al., 2006; Courchamp et al., 1999). At least 65 major island groups have populations of introduced cats (Courchamp et al., 2003). This topic will be discussed in more detail in the "Cats and Predation" chapter.

The Persecution of Cats

The early Christian church became aware of the link between so-called pagan reli-



The ancient Egyptians revered cats and immortalized them in statue form.

Louise Holton

gions and cats as deities. As a result, the cat began to fall from favor in the Christian world during the Middle Ages. Western religions started encouraging the cruel torture and burning of cats, condemning them as pagan demons (Lawrence, 2003). During the 13th century the church blamed witchcraft for the social problems of the time, and cats became a scapegoat — along with witches and non-Christian believers (Serpell, 2000).

Many women who practiced ancient healing crafts using old folk medicines were accused of being witches. In some cases, women were killed solely because they cared for cats, because the church said they were conversing with the devil (Lawrence, 2003). Cats were accused of being witches' familiars or even witches in disguise. The Festival of St. John was celebrated annually with the burning alive of cats in the town square (Darnton, 1986).

Australian ecologist Frankie Seymour explains in "The Great Feral Cat Con Job: The Ungentle Art of Scapegoating and Scaremongering:"

By the late Middle Ages, cats in Europe had been hunted, hanged and burned almost to extinction. Then, of course, the Black Death (Bubonic Plague) arrived in Europe and 25 million people died in five years be-

Famous Cat Haters

Dwight D. Eisenhower (1890-1969). Eisenhower's loathing for cats was so great, he gave his staff orders to shoot any seen on the grounds of his home.

Johannes Brahms (1833-1897). One of his favorite forms of relaxation was to sit at an open window and attempt to kill neighborhood cats with a bow and arrow.

Napoleon Bonaparte(1769-1821). This emperor was once found sweating with fear and lunging wildly with his sword at the tapestry-covered walls. The source of his fear was a small kitten.

Source: PetHelpful, 2023

cause, for several hundred years before, there hadn't been enough cats to keep the rat population healthy. (Seymour, accessed 2014).

The persecution of witches and cats spread to the New World in cities such as Salem, Massachusetts.

This dark age left behind a legacy of superstition, myth, and misinformation about cats, some of which persist to this very day. Although more and more people have cats as companion animals, many others have an unreasonable aversion to cats. Some even suffer from ailurophobia — the irrational and panic-laden fear of cats.

Conclusion

It is unfortunate that this “war on cats” is

perpetuated to this day, as negative views of cats are wholly outdated and not based upon facts. We of course no longer believe that our predators who kill for sport and spread disease. Animal control agencies still euthanize untold numbers of feral cats under the assumption that they are unwanted, uncared for, and have no place in our ecosystem.

Modern science has proven these misconceptions wrong and has brought us a deeper understanding of the feline species. Attitudes are shifting — and humane policies for cat care and management are spreading. It seems we are finally waking up to our shared responsibility to care for the cats in our communities. This handbook is meant to be an informative and important tool for those working on behalf of cats.

Introduction to Feral Cats

What Exactly is a Feral Cat?

The word “feral” comes from the Latin *fera*, meaning “wild animal.” A feral cat is a cat who is born and raised in the wild, or one who has been abandoned or become lost and has reverted back to a “wild,” instinctual state in order to survive. A feral cat is commonly referred to as an “alley cat,” “street cat,” or “community cat.” While some feral cats tolerate different degrees of human contact, most are too fearful to be handled. Some feral cats are rarely seen, coming out only at night to look for food. Feral cats often live in groups, or colonies, and reside wherever they can find food. They seek out abandoned buildings, deserted cars, and storm water drains for shelter.

In most cases, environmentalists refer to feral cats as an invasive or exotic species, thereby insinuating that they have an adverse effect on their habitat. However, a much healthier and more accurate view of describing these animals is as an “introduced species that have returned to the wild and become naturalized” (Seymour, accessed 2014).

In Alley Cat Rescue’s opinion, feral cats should be referred to as “community cats.” After all, they belong to the neighborhoods and the communities where they live. The individuals who Trap-Neuter-Return (TNR) them are doing society a huge favor. The cats, once sterilized and vaccinated against disease, offer our cities and suburbs a service by controlling rodent populations and preventing disease. The term “community cats” also encompasses a broader scope of individual cats that includes stray, aban-

doned, free-roaming, and feral cats.

For the sake of clarity, the terms “feral cats” and “community cats” will be used interchangeably in this handbook. The former is the more readily identifiable term in today’s world, though we hope “community cats” will one day become the widely accepted term for these cats without having any negative connotations.



Roger Tabor

Feral cats exhibit a wide range of personalities. Some are so fearful of humans that they are seldom seen, while others will patiently pose for a picture!

Feral cats have lived in the U.S. for around 500 years. Some researchers believe cats came over on the Mayflower, which is probable, since explorers usually took cats with them on their ships to control rodent stowaways (Driscoll et al., 2009). Roger Tabor writes in his book, “Cats: The Rise of

the Cat,” that there were probably cats on the ships of Columbus in 1492, as it is known “from a letter written in 1495...that they were taken on his second voyage in 1493-5” (Tabor, 1991). There are also theories that cats came over to the U.S. even before the Mayflower.

One of the biggest myths promoted by anti-cat folks is that feral cat caretakers are responsible for dumping cats, and that by managing feral colonies, caretakers are encouraging folks to dump cats. The caretakers of these colonies did not put the cats out there. Uneducated and uncaring individuals are responsible for the outdoor cat population.

Cats end up on the streets because (1) they are kicked out; (2) they are let out because of financial constraints and the fear of taking them to a shelter, where they may be killed; or (3) they become lost. The majority of the cats who end up on the streets are unsterilized. Colony caretakers are stopping the breeding cycle and humanely managing the cats. When a new cat shows up at a colony, the caretaker ensures she is sterilized and vaccinated. Unfortunately, people are always going to dump animals; that's why organizations like ACR work to minimize this problem by educating the public about homeless animals. We also provide helpful resources for solving some of the most common cat behavioral issues, so that more cats stay in their homes and are not discarded.

Feral kittens are the offspring of a feral mother cat, or they can be born to a domestic mother cat who became lost, was abandoned, or who chose to have her litter away from humans. In order for kittens to become friendly and completely domesticated, they should be handled from a very early age - ideally from two weeks old. Feral mother cats teach their young to be wary of humans and to run and hide if they feel threatened.

Young kittens who have not been handled by humans will spit and hiss. They will be



Feral kitten hissing.

Desiree Stapley

wary of humans and flee when approached. A stray domestic cat who has had to survive on her own for a while will initially be wary of humans. However, she will regain her confidence fairly soon after re-establishing contact. There are varying degrees of wariness and shyness among both feral cats and other cats who have been abandoned to fend for themselves. It requires a certain amount of experience working with stray and feral cats to be able to properly judge just how feral a cat may be, or if the cat is even feral at all — maybe she is just a frightened house cat. Sadly, many in animal control refer to these cats as fractious animals. Many domestic cats are assumed to be feral and are killed in shelters merely because they act fearful and defensive in a frightening situation.

Defining and predicting feral cat behavior can be somewhat murky territory. If a domesticated cat becomes lost and has to fend for herself for a while, she could temporarily revert to some instinctively wild behavior. Some older feral cats can become fairly tame in time, yet other feral cats, even when trapped as young as four months of age, may remain feral forever.

Some feral cats bond with their original caretaker, but may never bond with a new person.

The domestic cat is one of the most adaptable mammals on Earth and can become wild easily. When a house cat is lost or abandoned, she will try to find a food source and shelter. She may find a home with humans again - 27 percent of Americans obtain their cat as a stray (ASPCA, n.d.) who arrived on their doorsteps — or she may find some old boxes behind a convenience store where other cats have formed a colony, and join this group. Thirty to 60 percent of lost cats, or cats who wander away from home, will eventually come to live in a feral colony (Berkeley, 2001). If she is not sterilized, she will soon become pregnant. Usually around half of her kittens will become ill with treatable illnesses, such as upper respiratory infections; most will die. She will teach her remaining kittens to be wild, teaching them survival behaviors inherited from her wild ancestors.

Most house cats do suffer and often cannot survive when they find themselves on their own. However, some survive quite well, which is why there is such a large population of feral cats all around the world. There is generally an enormous amount of discarded food waste in cities and suburbs, where colonies usually form. Feral cats are opportunistic feeders, scavenging whatever food is available. They will eat from garbage cans or beg for handouts. Cats are also hunters, preying on rodents, reptiles, insects, and birds. Cats, like other predators, prey on young, old, and ill animals. Cats learn very quickly the locations of potential food sources and which households, restaurants, and hotels throw food in dumpsters.

British biologist Peter Neville has studied cats and feral cat colonies for decades. He explains them this way:

There is perhaps no such thing as a feral cat, a domestic cat reverted to

the wild. Instead all cats — feral, stray, and pet — can be viewed as being the same species as their African wildcat ancestor, and the pet cat is simply exploiting an attractive opportunity. The 'normal' lifestyle is living around and with man, but not necessarily to the height of luxury that we offer him as a pet. Then the success of the cat 'living rough' and away from the direct care of man is that much easier to comprehend. (Neville, 1992)

Despite cats being able to survive in the wild, many of those who work in humane organizations are not willing to admit this. In order to discourage individuals from abandoning house cats to the streets to fend for themselves, some refuse to admit that any cat, even a feral cat, can survive without being someone's pet. This is where the myths and misinformation begin, and where theories about what constitutes the proper way to protect feral cats becomes muddled. Yet, in defense of those who feel that all cats are helpless on their own, these people have usually witnessed a tremendous amount of suffering and neglect among the animals they have dedicated themselves to protecting. Many cats have been abused, relinquished to shelters for euthanasia when they become inconvenient. But there are many who care for and feed feral cats, to whom they have no obligation, except that their compassion dictates that they must.

Those who advocate that no cat can survive on her own are met with contradiction when colonies of feral cats are seen surviving quite well. When cats have been trapped and sterilized, provided with shelter, food, and water, they actually thrive. It may seem contradictory to advise people that it is cruel to abandon cats to fend for themselves while saying that many cats can survive quite well on their own. However, we have a moral and ethical responsibility to care for the animals that we have domesticated, whether it be by taking them into our homes or by making their life in our alleyways a little easier. We do not con-

done abandoning cats to survive on their own. However, for those who already live on the streets, we believe it is in the best interest of the cats (and of humans) to sterilize and vaccinate them. These animals deserve the basic medical treatment that our companion pet cats receive.

Where are Feral Cats Mainly Found?

College Campuses

Some students bring unsterilized cats to school and abandon them at the end of the year. Cafeteria dumpsters ensure that a constant supply of leftover food is available. Attracted by this food source, lost or abandoned cats enter from the surrounding residential areas and join the colonies.

Many colleges have students and staff who implement TNR programs on campus. Some of these are: Operation Catnip at the University of Florida, U.C. Davis' Feline Medicine Club, Feline Friends Network at Stanford University, and UT Campus Cat Coalition at the University of Texas, as well as programs at California Polytechnic State University and George Mason University in Virginia.

Military Bases

Transient military personnel abandon domestic cats when transferred to other bases. Many of the cats are not sterilized and, with their offspring, begin forming colonies. Military personnel often assist with TNR programs on bases and try to find homes for adoptable cats; however, many military installations insist feral cats must be removed.

Fast-Food Places, Restaurants, Convenience Stores, Rest Stops

Eating establishments produce a constant source of leftover food in dumpsters that attracts rodents and feral cats. Colonies

soon form around this reliable food source.

Densely Populated Urban Areas

Some negligent caretakers allow domestic, unaltered cats to wander. Garbage left in alleys provides an available food source for cats, and they also prey on rodents who are attracted to the leftover scraps; this encourages the formation of colonies. Feral cats find shelter in abandoned houses and buildings. Porch cats are common in cities and surrounding suburbs, as stray and feral cats find shelter under porches and food sources in yards and dumpsters.

Hospitals

In the United Kingdom, hospital grounds represent areas where successful colonies of managed, sterilized cats live. Hospital personnel have found that caring for feral cats is therapeutic for long term patients, providing a great deal of enjoyment. Such programs have been particularly successful for patients in mental institutions (Remfry, 1996).

A study at the Gillis W. Long Hansen's Disease Center in Carville, Louisiana found that feeding feral cats can have long-term positive benefits for cats and patients. The overall health of the cats at the Center improved after TNR, and the size of the colony stabilized. The authors of the study also found there were fewer behavior-related complaints about the colony; that staff and patients at the Center were eager to participate, as evidenced by their volunteering to perform the TNR; and that the caretakers formed a lasting bond with the cats, eventually treating them as companion animals (Zaubrecher and Smith, 1993).

Farms

Many farmers allow feral cats to live in barns to control rodent populations. Sometimes these cats may be underfed due to the mistaken belief that this will make them better "mousers." This is a false belief, as hungry cats will move away to areas



Judy Zukoski

Relocated barn cat.

where better food sources exist. Poorly fed cats are also susceptible to disease. All too often, farmers do not sterilize the cats on their property, causing further overpopulation problems. However, farms can offer

an excellent opportunity for relocating sterilized feral cats from unsafe locations in cities and urban areas. For detailed relocation instructions, please refer to "Guidelines for Safely Relocating Feral Cats."

The Evolution of a No-Kill Approach to Animal Welfare

“Whose interests does shelter euthanasia serve? The traditional answer asserts that animals are the beneficiaries—it alleviates suffering and protects helpless creatures against fates worse than death. Based on this belief between 20,000 and 30,000 mostly healthy companion animals daily are ushered out of this life. In the face of those numbers still alarming even if improved over recent years, the question of whose interests it serves and the validity of euthanasia’s guiding assumptions deserve reexamination.”

-Craig Bestrup, Ph.D., author and former Executive Director of the
Progressive Animal Welfare Society (1997)

The reexamination of animal welfare in the United States began in 1989 when Ed Duvin, a long-time animal and political activist and historian of social change, wrote an article titled “In The Name of Mercy.” Commenting on his article, Duvin said:

When I finally wrote ‘In the Name of Mercy,’ it did not take long to recognize that I had struck a nerve. This was the intention, as ‘Mercy’ was crafted to produce discomfort with the status quo — so much that never again would millions of companion animals be ‘euthanized’ as a matter of routine (Duvin 2013).

In 1990, Alley Cat Rescue founder, Louise Holton helped bring trap-neuter-return on a larger scale to the USA as a means of changing the way feral cats were managed and viewed by society. Wrongly considered pests, these cats were labeled “dangerous and a nuisance” by some environmental groups and, as a result, were trapped and killed. ACR is committed to the development of viable no-kill policies. We agree with Duvin that when shelters kill companion animals, they turn a blind eye towards the “damaging long-term effects of devoting most of their energy to collection, processing, and killing, [while] leaving sparse

resources for bold preventive measures” (Duvin, 2013).

In 1994, Lynda Foro established the non-profit organization, Doing Things for Animals (DTFA). DTFA began publishing an annual directory of and running an annual conference for humane organizations whose missions were to provide humane education that would help end the tragedy of killing healthy, adoptable animals.

In 1993, the San Francisco SPCA, under the direction of Richard Avanzino, created the “Feral Fix Program” (“Feral Cat Advocacy: Deep Roots Continue to Blossom in the Bay Area,” 2006). Free vaccinations and sterilizations were made available for all feral cats in San Francisco, five days per week.

All those who work in the humane and animal welfare movement would like a no-kill country. We should therefore all be working together towards the goal of no-kill. Let those of us who are able to take in a small number of animals and who do not euthanize healthy animals work with agencies that are overwhelmed by the numbers of animals brought to them. If all the groups and concerned individuals worked togeth-

er, if all those who place animals in homes spayed or neutered them before adoption, if all the feral cat caregivers could be given the resources to sterilize their colonies, it would go a long way towards achieving this ideal of a no-kill society.

Unfortunately, two other problems exist in the U.S. that are not easy to solve — the dumping of companion animals and individuals not spaying or neutering their animals, which creates litters of unwanted kittens that overwhelm shelters each spring. The two most common reasons people relinquish companion animals are due to a move or a “no pet policy” at their new residence (Endo, 2018). Other common reasons include behavioral issues, no time to care for the animal, death or illness in the



Alley Cat Rescue

Working with outdoor cats where they are, out in nature, is more humane than bringing them to a shelter, where they will likely be killed.

family, and divorce or having a new baby. The economy also plays a large part in why individuals abandon companion animals. The loss of a job, foreclosure on their house, and the inability to pay bills forces many families to give up their animals. And upon learning their local shelter is full and fearing their cat will be euthanized, they often release the cat outdoors hoping she will have some chance at survival.

As a compassionate society, it is our re-

sponsibility to use all available resources to address each of these problems in order to progress toward being a no-kill nation.

Will Community Cats Suffer if We Don't Take Them to Shelters?

Dr. Kate Hurley, head of the shelter medicine program at U.C. Davis, initially believed outdoor cats should be rounded up and taken to a shelter, where they would of course be killed. But today she travels to conferences to speak on why this practice should end (Hurley and Levy, 2013).

In a discussion through the No-Kill Maddie's Fund Foundation, Hurley and Levy argued against long-standing assumptions that nothing but suffering and untimely death await outdoor cats not admitted to shelters. The veterinary experts cite growing evidence that these cats not only survive on their own, but that feral cats brought to TNR clinics are generally healthy; less than one percent require euthanasia for disease, trauma, or other incurable conditions (Wallace and Levy, 2006).

They also noted veterinarians find less than 10 percent of cats have a medical condition on intake at shelters (Wenstrup and Dowidchuk, 1999). Though community cats have a higher risk of infection by parasites than owned cats, they have an equal risk of contracting feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV), and a lower risk of feline infectious peritonitis (FIP) (Lee et al., 2002; Luria et al., 2004). (Refer to “Health Care for Feral Cats: Guidelines for Colony Caretakers” for more information on viral diseases.)

Additionally, in what Hurley and Levy call “the most complete long-term study of

community cats in a TNR program” (Hurley and Levy, 2013), researchers believed the cats in a TNR'd colony lived an average of three to five years. Yet after the 11-year follow-up period, the cats still living on the property had been there for an average of seven years, meaning they live longer than expected (Wenstrup and Dowidchuk, 1999).

Most community cats are being cared for in some capacity, with feeding being the most common activity. According to a survey done by the American Pet Products Association, about 14% of U.S. households care for unowned outdoor cats (APPA, 2019). Free-roaming cats are sometimes so well cared for that it is not unusual for cat lovers to adopt them into their homes from the streets.

However, as Hurley and Levy point out, though adult cats are able to thrive in the community, kittens are often not as lucky. A study found 75 percent of feral kittens died within six months of birth (Nutter et al., 2004) - a terrible statistic that TNR could tackle by decreasing reproduction. “The bottom line,” says Dr. Hurley, “[is that] traditional sheltering is not an effective tool to eliminate or protect community cat populations” (Winograd, 2013).

According to data collected by PetPoint Industries and supplied to ACR by Dr. Andrew Rowan, 319,900 cats were euthanized in shelters in 2021, which is roughly 11.5 percent of all cats taken to shelters that year. Though euthanasia rates have been decreasing over the past decade, the overpopulation of domestic animals remains a concern, and several factors are at the root of this problem. Despite growing campaigns promoting the spaying and neutering of companion animals, some guardians — as many as 15 percent in the U.S. — still do not have their pet cats fixed (“Pets by the Numbers, n.d.”). However, the percentage of pets (cats and dogs) in underserved communities that are not fixed is much greater at 88% (“Pets by the Numbers,” n.d.) as people in those communities face



Louise Holton

Community cat in Mount Rainier, MD

challenges such as lack of access to transportation and lack of access to veterinary care. The end result is many unintended litters and many more cats and dogs who need homes.

Unfortunately, guardians often find that they cannot take care of their animals. The majority of companion animals relinquished to shelters, perhaps as many as six to eight million animals a year (Scheer and Moss, 2011), are turned in by their caretakers. Alley Cat Rescue receives calls every day from individuals looking to give up their cat(s) for a number of reasons: the person is moving, the person brought in another companion animal who does not get along with the cat, the arrival of a baby, behavioral issues, medical issues, financial constraints, or the person simply no longer wants the cat.

Along with the overabundance of animals being born and abandoned, there are simply not enough animals being adopted from shelters. Every year, 17 million Americans get a new companion animal, with fewer than half - only 40 percent of dogs and 43 percent of cats - being rescued from shelters or rescue groups (“Pets by the Numbers,” accessed 2022). Because of this, res-

cue groups and shelters often deal with a huge number of animals and a shortage of available homes.

Alley Cat Rescue and other organizations are working hard to form partnerships with locally-run shelters to improve the situa

tion for community cats. *Animal People* stated that the introduction of TNR into the U.S. contributed greatly to the reduction of killing of cats in shelters (Faunalytics, 2012). We strive for a day when no healthy cats — domestic, stray, or feral — are killed in U.S. shelters.

TNR in a Nutshell

Trap-Neuter-Return (TNR) is the most effective and humane way to treat feral cats and manage their colonies. Cats are trapped and taken to a veterinarian to be sterilized and given any medical attention necessary. Then, friendly cats are moved to an adoption program. This immediately (and most importantly) reduces colony size. Those cats not suitable for indoor life are returned to the place of trapping. All cats are scanned for a microchip and returned to their guardian if one is found.

Anyone can learn to safely practice TNR, and will witness first-hand the benefits of a humane approach to outdoor cats.

When combined with diligent population management such as targeted adoption programs, early-age sterilization of pet cats, and minimization of abandonment, spaying and neutering colonies of cats:

- helps stabilize and reduce cat populations (Spehar & Wolf, 2020; Gunther et al., 2022)
- eliminates behaviors associated with mating (fighting, yowling, and spraying)
- may increase the adoptability of adult feral cats (Levy & Wilford, 2017)
- improves the overall health of outdoor cats
- is more effective and less costly than repeated attempts at eradication
- is humane to the animals and fosters compassion in the community

Key stakeholders (cat caretakers, citizens of the local community, volunteers, and any property owners where the cats reside) should work together to implement a man-

agement plan. Financial support may be available from an already-established organization; if not, money may have to be raised by voluntary contributions. Local governments should be approached and asked to contribute funds, as TNR will save them money over time. In the end, a proper TNR program will cost much less than repeated eradication attempts. TNR does require a significant investment, especially when managing large colonies, so be sure to have a long-term budget laid out ahead of time. Major expenses include equipment, veterinary services, and cat food.

Assessment

It is important when implementing a new TNR program to get an idea of how your community is currently managing feral cats. Identify all individuals who feed community cats and all locations of feeding sites. Create a spreadsheet to track pertinent information regarding the cats (i.e., number of cats, sex of each cat if possible, state of cats' health, whether females are pregnant, if there are kittens). Also, identify the cats who are only occasional visitors or who are very friendly, as these may be companion animals.

Planning

Before trapping, make arrangements for kittens and cats who can be socialized after veterinary treatment so that they can be placed into an adoption program or foster home. All cats and kittens should be sterilized prior to adoption, and caretakers can charge an adoption fee to help recover part of the cost. Obtain humane traps and transfer cages and learn how to properly use them. Refer to "Steps for Successful and Safe Trapping" for information on equipment.

Make arrangements for transport, over-

night stay for the cats prior to being released, and delivery to and from the veterinary clinic. If you're not working with a cat rescue organization, then you will need to reach out to local veterinary clinics to find one willing to help. ACR's website lists [spay/neuter clinics](#) in the U.S. Confirm with the clinic beforehand that the veterinarian is prepared to treat feral cats, as some are not. Once you find a veterinarian who works with feral cats and is willing to help, you may want to inquire about a possible fee reduction, since you will be bringing several cats to be sterilized.

Talk to Your Neighbors

Depending on the size of the colony, you may need to address some concerns from neighbors. You may be able to defuse conflicts.

- The most common complaints about cats include the soiling of gardens, late-night yowling, leftover food scraps attracting wildlife, the sight of sickly animals, and sometimes just the fact that free-roaming cats are around. A feral cat caretaker can alleviate many of these problems and concerns.
- Be reasonable and professional, even if your neighbors are not. This will give them confidence that you know what you are doing and that you care about their concerns.
- Let them know that you did not create this situation. The cats are there because someone else failed to sterilize their cat and abandoned the them, or the cat became lost.
- Explain the benefits of TNR and the ineffectiveness of eradication. Tell them that withholding food is not only cruel but also pointless, as the cats will

continue to breed. Explain how many fewer cats there will be due to your efforts, and that you are caring for the cats and preventing the birth of more.



Mama "Squirrel" and kittens, Bronx, New York City,

City Critters, Inc.

You may also want to call a community meeting to discuss the situation and possible solutions. People may be more comfortable when they learn that groups across the country and around the world are implementing TNR programs for feral cats.

Main Steps for Implementation

Once the planning stages are done, you're ready to start work in the field.

Spots near vacant buildings and other uninhabited areas can be good locations for colonies. Be careful of buildings scheduled for demolition or areas too close to major

highways.

The area where the cats are currently living is generally the best place to keep them. If relocation is necessary, start searching for a suitable new location (i.e., farms, neighbors with land). (Refer to “Guidelines for Safely Relocating Feral Cats” for more information.) Euthanasia, the final option, is recommended only for very sick cats who cannot be treated and released.

Notify your neighbors of your plan before trapping begins to allow them to keep their cats indoors so they are not trapped.

Don't leave a cat in an unprotected trap and never leave the cat where she might be threatened by other animals, people, or weather. Immediately cover the trap with a towel or blanket when the cat is caught in order to calm her down. When one cat has been trapped, move her to the transfer cage so you can use the trap for a second cat.

Do not trap in inclement weather, especially during heat waves; traumatized cats are very susceptible to heat stroke. The use of rabies poles and tranquilizers are discouraged. Tranquilized cats may leave the area before the tranquilizer takes effect and can get into situations that could endanger their lives, such as wandering onto busy streets.

Do not trap lactating mothers, if possible. If, however, a lactating mother is trapped, decide whether to have her spayed as she could be hard to retrap. If you do decide to have her spayed, find her kittens as soon as possible.

You may keep the cat in a trap or you may carefully transition them to a larger cage if fostering for more than two days. Place newspaper under the trap to absorb urine, and provide food and water. Keep the trap or transition cage in a basement, shed, covered porch, or other area that is out of extreme weather conditions. Keep the trap

covered with a towel or blanket to keep the cat calm.

Veterinary Care

All cats to be returned must be identified by clipping one quarter inch off the top of the left ear. Ear-tipping is the universal marking to identify a cat who is part of a managed TNR program. Ear-tipping can be a life saver for feral cats — if trapped by animal control, they can be returned to their colony. This procedure is performed while the cat is under anesthesia, and the ear is properly cauterized to stop bleeding.

All cats should be treated for internal and external parasites, inoculated for rabies and distemper, and given a long-term antibiotic injection. Microchipping is also recommended, in case the cat is ever trapped and taken to animal control. She could then be identified and returned to the colony.

After surgery, male cats should be fostered overnight and if possible females should be kept for two nights prior to being released. Never release a cat immediately after surgery. Most veterinary clinics do not hold feral cats after surgery, so you will have to make other arrangements ahead of time.

Refer to the chapters “Health Care for Feral Cats: Guidelines for Colony Caretakers” and “Guidelines for Veterinarians” for more information.

Domestication

Although some older cats can be domesticated or socialized, the best time to tame feral cats is when they are kittens, ideally before they are eight weeks old. While it is possible to domesticate older kittens (12 weeks old), if no homes are available and your local shelter is killing unwanted domestic kittens, a more humane and practical solution for all is to sterilize, vaccinate,

and return the kittens to the colony.

Refer to “Feral Kittens and Pregnant Cats” for more information.

Relocation

When returning a cat to the original site is not possible, relocate the cat to a different site, such as a farm, a riding stable, or even a backyard, as long as new caretakers are willing to take responsibility for the cat's consistent care. Relocation may take several weeks or months and must be undertaken with the utmost care. “Dumping” feral cats in rural areas, forests, or farmland is inhumane, as well as illegal.



Louise Holton

Cat shelter, Adams Morgan, Washington, D.C.

When relocating a feral cat, you must confine the cat for three to four weeks to allow her to get familiar with the new sights, sounds, and smells. This period allows a new bond of trust to be established. If this confined transition period is not adhered to, the cat may not remain on the property, which can lead to a traumatic situation for the cat. Try locating two cats who know each other together. This will help their transition to the new site easier.

Refer to “Guidelines for Safely Relocating Feral Cats” for more information.

Long-term Maintenance

The long-term management of a colony should include arrangements for daily feeding, fresh water, provision of insulated shelters, and providing and cleaning litter boxes. (Refer to “Winterizing Feral Cat Colonies” for more information.) Dust the shelter bedding with flea powder to prevent infestations, and keep feeding areas clean and tidy. It may take several months to bring a large colony under control and achieve stable groups of content and healthy cats. Any new cats attaching themselves to you and the colony should be trapped and sterilized. Many of these new cats may be domestic strays, able to be resocialized and placed into homes.

Feral cats can be retrapped a few years later for booster rabies vaccinations, health check-ups, teeth cleaning, etc. At this time, they will be more trusting of their caretaker and can be tricked into cages and traps. A plan should be worked out with the veterinarian where mild illnesses can be treated with antibiotics placed in moist food.

The Community Benefits of Feral Cats

Having a managed feral cat colony in your neighborhood can benefit the entire community. The colony can demonstrate to all that compassion for cats teaches nonviolence and tolerance towards others.

- Feral cats can minimize rodent problems. While cats do not hunt rats and mice into extinction, they do keep their populations in check and discourage new rodents from moving into the area. Feral cats fill in a gap in the current ecosystem. For example, bobcats (*Lynx rufus*) used to live up and down the East Coast, but were hunted ruthlessly and driven away by development. Feral cats exhibit similar behaviors to these

native feline predators, and they help to control the same species of small prey animals.

- An established, stable, sterilized, and vaccinated colony of feral cats will deter other stray and feral cats from moving into the area. This actually decreases the risk that residents will encounter an unvaccinated cat, and will virtually eliminate problem behaviors like fighting and spraying.
- Many people enjoy watching feral cats, and observing animals has been shown to lower blood pressure in medical studies (Sakagami and Ohta, 2010).
- People who help to care for feral cats by feeding them and taking them to the vet enjoy many benefits. Often cat caretakers are elderly and live alone, a population at risk for depression, loneliness, and isolation. Cats relieve these conditions and often bring a sense of happiness and purpose to people who help them. Just as companion animals have been shown to extend life expectancies, lower blood pressure, and relieve stress

(Qureshi et al., 2009; Levine et al., 2013), caring for feral cats can improve the health and happiness of the caretaker.

- Individuals who cannot take on the full-time commitment of adopting a companion animal can participate in programs to help feral cats. This provides a viable alternative to irresponsibly purchasing an animal one is not prepared to care for.

Steps to Prevent Problems with Neighbors

- All cats should be spayed or neutered to prevent the noisy and objectionable breeding behavior that neighbors dislike: yowling, spraying, fighting, and excessive roaming.
- Make sure cats are vaccinated against rabies to alleviate health concerns. Immediately retrap and vet any cats who become ill or injured. Maintain good vet records, including a rabies tag number for each vaccinated cat, to provide evidence that the feral cats are healthy.
- Be sure your cats are ear-tipped so neighbors can easily identify cats who are sterilized, vaccinated, and cared for.
- Clean areas where urine has been sprayed. White vinegar or Nature's Miracle can eliminate any odors or staining. Cats will continue to spray in an area that smells of urine, so maintain the site as needed. Avoid using ammonia products; they smell so similar to cat urine that they may encourage more spraying.



The author, feeding a colony in Adams Morgan, Washington, D.C.

- To prevent cats from soiling neighbors' yards and gardens, dump sand in an out-of-the-way area, or in covered wooden litter boxes that can be built outdoors at the colony site. Cats much prefer to use the clean sand and will do most of their eliminations there. Scoop daily to keep sand boxes clean and to prevent odor, or more often in hot weather. Pouring a layer of baking soda beneath the clean sand or litter can be helpful in preventing odors. Cats will stop using the litter or sand if the odor becomes too strong. Odor is another reason neighbors might complain.
- Keep food areas clean. Pick up any and all trash regularly, even if it's not your trash. Remove empty food bowls, old dried-up food, dirty bedding materials, etc.
- If the area where the cats are fed is particularly objectionable for neighbors, gradually move the feeding station to a less objectionable area. This can be done in increments and completed in one to two weeks. Create a small, partially enclosed feeding site to make bowls and cats less visible.
- Try to make the shelters you have erected look clean and unobtrusive. Shelters and feeding stations can be painted in natural colors, like dark green and brown, to blend in with surrounding foliage.
- To keep from attracting wildlife, feed only in the morning or daylight hours when raccoons and other wild animals are not active. Again, be sure to remove leftover food after feeding.
- Treat feral cats with a flea product when trapping them. Advantage Multi for Cats is a broad-spectrum parasite preventive in a monthly topical application. It prevents heartworm

disease, kills adult fleas, and will treat flea infestations. Only a few drops need to be applied to the back of the cat's neck; your veterinarian can do this for you. This medication is for use on cats and kittens at least nine weeks of age and weighing at least two pounds.

- Advantage Multi treats roundworm infections caused by *Toxocara cati*, hookworm infections caused by *Ancylostoma tubaeforme*, and ear mite infestations caused by *Otodectes cynotis*.
- Some herbal products will deter fleas. Try sprinkling mint, dried pyrethrum flowers, or a non-toxic herbal flea powder, like Diatomaceous Earth, beneath the bedding. Be sure to change the bedding material or hay in shelters regularly.



Feral colony in Key Largo, FL. Feeding stations are tucked out of sight amongst lush vegetation.

Desiree Stapley

- There are also some oral flea treatments available. Capstar (nitenpyram) is an oral medication designed to kill adult fleas. The pills can be crushed into wet food and used daily. Use caution to ensure that

a cat eats only one dose, and does not go around eating any other cats' medicated food. Capstar is intended for cats who are at least four weeks of age and weigh more than two pounds. It begins to kill adult fleas within 30 minutes of ingestion.

Cats and Gardens

Here are some helpful and humane suggestions for neighbors who wish to keep community cats out of their yards and gardens. For more information on the products mentioned in this section and where to purchase them, please see the Helpful Resources section in the back of the handbook.

- Push wooden chopsticks or plant stakes eight inches deep into flower beds to discourage digging and scratching.
- Push Cat Scat Mats into flower beds and gardens to prevent digging. These plastic mats can be cut to fit any size area and consist of flexible plastic spikes that are unpleasant for cats to walk on.
- Cover exposed ground in flower beds with large attractive river rocks to prevent cats from digging. Rocks have the added benefit of deterring weeds and beautifying the landscape.
- Cats dislike citrus smells. Scatter orange and lemon peels or spray a citrus-scented solution on areas you don't want cats. You can also scatter citrus-scented pet bedding such as Citrafresh. Cayenne pepper, coffee grounds, and pipe tobacco work to repel cats as well. Some suggest lavender oil, lemongrass oil, citronella oil, eucalyptus oil, and mustard oil.
- Cat Repellent Clips are biodegradable

clips filled with a blend of natural, organic garlic, citronella, lemongrass, and cinnamon oils. These clips can be placed anywhere you don't want cats, like in gardens or flower beds. Clip onto plants and shrubs that cats tend to nibble the leaves of. These clips safely and effectively repel cats for six to eight months.

- Spray a cat repellent (available at pet supply stores) around the edges of the yard, the top of fences, and on any favorite digging areas or plants.
- Plant the herb rue to repel cats or sprinkle the dried herb over the garden.
- Try an ultrasonic animal repellent, which emits high frequency noise inaudible to humans. Cats find the noise extremely loud and annoying, repelling them from the area. These devices are available at lawn and garden stores.
- Use a motion-activated sprinkler, such as the Scarecrow sprinkler. Any cat coming into the yard will be sprayed but unharmed, and it is good for the lawn. These are also available at lawn and garden stores.
- Reppers Outdoor Sticks contain methyl nonyl ketone, which is a cat (and dog) training aid and repellent, that can be used both inside and outside. These repellent sticks are nontoxic to plants, mammals, and humans and can safely keep animals out of your garden, flower bed or potted plants for up to 60 days. These repellent sticks have been tested and proven to work by Alley Cat Rescue staff and neighbors!

You may want to offer to help your neighbors with any of the above, whether purchasing supplies for them or setting up the deterrents.

Addressing Other Problems

If neighbors express concern about the effects of feral cats on local wildlife, provide them with copies of ACR materials on feral cats and predation (see the chapter “Cats and Predation”). Explain that cats are rodent specialists and keep rodent populations in check, and if rodents are left unchecked, they could potentially spread deadly diseases.

Also, some neighbors may fear feral cats will pose a threat to their children. Explain to them that feral cats are naturally wary of people and will not approach humans they do not know. A feral cat will not attack a person unless the cat is cornered or feels threatened. Advise neighbors to teach their children not to approach or touch unknown animals. Children should ask an adult for help if they think an animal may be trapped, sick, or injured, or if they find a baby animal.

Feral cats do not pose a health or disease risk to humans, but some neighbors may need to be reassured. Give them copies of ACR's factsheet on “Zoonotic Diseases.” Also advise them that they can avoid any

risk by not touching community cats and by washing their hands after gardening.

Sometimes, even after having expended your best efforts, neighbors may continue to complain, or even be hostile towards you and the cats. If any complaints are made to you or to animal control, it is important to act quickly and demonstrate that you are willing to cooperate with neighbors. It may also be beneficial to bring in a professional mediator to help solve the problem in a way that is satisfactory to all concerned. Even if there have been no complaints, minimizing the impact of the outdoor cat colony on the neighborhood can help to deter conflicts.

Conclusion

If any of the above seems overly complicated or time-consuming at first glance, remember that you are fighting for the lives of feral cats and building good public relations for the future. In addition, you might be strengthening your community by getting more people involved! All feral cat problems that are solved positively and amicably help leave a better overall impression regarding feral cats and caretakers, and will serve to make it easier for all of us to continue to care for our outdoor cats.

The Effectiveness of TNR Programs: Why Eradication Does Not Work

Every day, more and more sterilization programs for feral cats are being implemented across the United States and around the world. Compassionate communities are embracing this humane, nonlethal method of managing community cats, not only because it preserves innocent life, but also simply because it is effective. Unlike its traditional counterpart, catch-and-kill, which has been practiced for decades, Trap-Neuter-Return (TNR) programs stabilize populations, improve the overall health of outdoor cats, and reduce shelter in-take numbers, costs, and euthanasia rates. In addition, such programs drive community involvement and encourage compassionate actions.

TNR is Effective, Reduces Costs, and is Humane

Proven Effective to Reduce Feral Cat Populations and Reduce Shelter Euthanasia Rates

Along with sterilizing community cats, many kittens are removed from the colony and placed into an adoption program when colonies are TNR'd. This immediately reduces the size of the colonies. Friendly, stray cats are scanned for microchips and returned to their guardians or rehomed. Any cats who can be socialized are also placed into an adoption program, further immediately reducing the number of cats in a colony.

Alley Cat Rescue took a national survey of

colony caretakers in 2012, 2017, and again in 2019. The data from these surveys, combined with data from Animals 24-7's 1992 and 1996 national surveys, revealed a "48% decline in kitten births in monitored neuter/return colonies during the first years that neuter/return was practiced. Between 2012 to 2017, kitten births dropped 72% and between 2017 and 2019, they had dropped by 77%" (Clifton, 2021).

A University of Florida study found that spaying/neutering community cats led to a dramatic decline in the number of cats who were admitted to and euthanized by the local shelter (Levy et al., 2014). During the two-year study, the shelter staff TNR'd 2,366 community cats (an estimated 54 percent of the feral cat population in the targeted area), with most of the cats being returned to the site and some being adopted (Levy et al., 2014). After implementing TNR, the shelter's intake of cats in that area decreased by 66 percent and the shelter euthanasia rate for cats dropped by 95 percent (Levy et al., 2014). In addition, this TNR project reduced cat intake by animal control for the entire county by 13 percent and shelter euthanasia rate by 30 percent (Levy et al., 2014).

Another successful TNR program took place at the University of New South Wales (UNSW) in Sydney, Australia. Over the course of nine years, and supplemented by the rehoming of "socializable cats and kittens" (Swarbrick and Rand, 2018), TNR reduced the free-roaming cat population from 69 to 15 cats. Subsequent institutional support for the program was strong because of a reduction in complaints from campus staff and students, the minimal institutional costs, and the improved health status of the remaining cats (Swarbrick and Rand, 2018).

In Italy, where the national law for managing feral cats is a no-kill policy, TNR programs have been in place for more than a decade. Colony caretakers, who once worked under a shadow of fear and persecution, now have the freedom to carry out the necessary steps of a proper TNR program. One Italian study revealed that with TNR, the average number of cats per colony decreased between 16 percent and 32 percent over a few years, but the researchers also concluded that further education of the larger community would be necessary to make TNR fully effective (Natoli et al., 2006).



Nancy North

A well-known cat sanctuary in Rome called Torre Argentina agrees that education is key to managing community cat populations. Torre Argentina educates about the importance of sterilization in its public outreach. They believe that public education has led to more Romans sterilizing their own companion animals, which in turn has led to a decline in sterilizations at the sanctuary since 2008 (“Torre Argentina’s Cat News,” accessed 2015).

Less Costly and Less Time-Intensive Than Eradication

Unlike eradication programs, which are paid for using tax dollars, most TNR programs operate using private money and volunteers carry out the work. A study commissioned by Best Friends Animal Society and funded by Petsmart Charities found that TNR programs for free-roaming cats can cut outdoor cat management costs in half. The study says that with an estimated 87 million free-roaming, community cats in the United States, it would cost governmental entities about \$16 billion to trap and kill these cats as opposed to about \$9 billion to support TNR programs run by rescue or-

ganizations and individual volunteers (“New Research Exposes High Taxpayer Cost for ‘Eradicating’ Free-Roaming,” 2010).

As part of a population modeling project for the Alliance for Contraception in Cats and Dogs, a team of researchers conducted an economic analysis of both TNR and catch-and-kill. Their results also support TNR as the more cost-effective solution to managing community cats. According to the study, the cost of catch-and-kill methods are 4.5 to 9 times *greater* than TNR, as projected over a seven-year period (Miller et al., 2014).

A study was published in 2021 that used computer simulated modeling to compare the costs of TNR and other removal methods (including euthanasia) of free-roaming cats. The study showed that, while removal and euthanasia of 75 percent of all cats in a target area was the most efficient approach in reducing the total cat population, it would cost more than to trap, sterilize, and release the same percentage of the cats in the area. Additionally, although removal of cats led to the quickest decline in feral cat population size, high-intensity TNR could be as effec-

tive and reduce a population by the same amount as removal after an extended period of time. A final, important comparison determined by this study is that, "Of five management scenarios that reduced the final population size by approximately 45%, the three scenarios that relied exclusively on removal were considerably more expensive than the two scenarios that relied exclusively or primarily on sterilization" (Benka et al., 2021).

Addresses Public Health Concerns



Linda Tanner

Feral family at Crescent City Harbor wharf, Crescent City, CA

TNR programs provide community cats with vaccinations that prevent the transmission of diseases to humans and to other cats. At minimum, a rabies vaccine is administered, which creates a buffer zone between wildlife and humans. "By keeping a critical mass (usually 80 percent) of feral cats vaccinated against rabies in managed colonies, a herd immunity effect may be produced, potentially providing a barrier between wildlife and humans and preventing one of the major public health threats caused by feral cats" (Slater, 2002). The distemper and feline leukemia (FeLV) vaccines also prevent the transmission of those diseases to other cats.

Providing community cats with vaccines decreases the chance of the public coming in contact with an unvaccinated cat. Ron Cash, the former business administrator of Atlantic City who oversaw the Department of Health and Human Services, has said, "TNR is good public health policy." Prior to implementing TNR for the cats living on the Atlantic City boardwalk, Cash said he received numerous calls from the public about the cats. However, after observing the results of TNR he said, "The [cat] population that's here is much healthier. They're coexisting with people very well now" ("Business Administrator Ron Cash," accessed 2013).

Returning feral cats to their outdoor homes after sterilization also ensures rodent populations are kept in check; maintaining low rodent populations helps prevent the spread of disease. Fitzgerald and Turner, among others, studied cats and their prey for over 20 years in a mostly uninhabited forest in New Zealand, and their research clearly shows how cats keep rodent populations in check. In the beginning of the study, cats were common and the rat population was "low and stable." However, as the study continued and cats were trapped, leaving only a few individuals in the area, the number of rats began to increase slowly. After several years with only a few cats present, the rat population "peaked at about five times their original numbers" (Fitzgerald and Turner, 2000).

During the 14th century, the Black Plague claimed the lives of over 25 million people. This was partly because, years earlier, Europe's witch hunts had brought the continent's cat population almost to extinction. The low cat population meant a high rodent population, which made for the spread of disease. It wasn't until the Age of Exploration, when cats began accompanying sailors on their voyages to new lands (to control the rat stowaways), that the cat

became popular again.

TNR Improves Cats' Health, While Helping Them Become Better Neighbors

Along with reducing and stabilizing feral cat populations, TNR programs also improve the overall health of outdoor cats; cats are relieved from the constant stresses of mating and pregnancy. In one study, veterinarians examined the effects of sterilization on feral cat health by measuring the body condition of 14 feral cats upon trapping, and then taking measurements one year following sterilization. When trapped initially, the cats were lean though not emaciated. One year after being sterilized, the cats showed significant increases in weight and improvements in body condition. In addition, caregivers reported that the cats had a decreased tendency to roam after being neutered (Scott et al., 2002).

Another study conducted from 2012 to 2014 in Israel found that “In general, the health of sterilized free-roaming cats was found to be superior to that of intact free-roaming cats” (“Sterilization improves the overall health of free-roaming cats in urban study,” 2020) According to the study, sterilizing cats within an area seems to positively affect the health of *unsterilized* cats in that area as well (“Sterilization improves the overall health of free-roaming cats in urban study,” 2020).

On average, spayed females live 39 percent longer than unspayed females, and neutered males live a full 62 percent longer than those unneutered (Banfield Pet Hospital, 2013). Sterilization greatly decreases the risk of certain cancers (uterine, mammary, testicular, prostate), while providing vaccines prevents the spread of disease. Neutering male cats also decreases fighting (for mates and territory), which leads to the

reduced risk of transmission of diseases, particularly FIV and FeLV (Banfield Pet Hospital, 2013).

In addition, sterilizing both female and male cats decreases their need to roam in search of mates, which decreases the risk of injury. Unneutered cats are at four times the risk of being hit by cars than neutered cats, and three times more likely to need treatment for an animal bite (Banfield Pet Hospital, 2013). Most TNR programs also treat cats for internal and external parasites to address disease and potential malnutrition.

Lastly, caretakers provide daily food and fresh water to colonies of TNR'd cats; a proper diet leads to improved health and reduces the need to roam in search of food. Any cats showing signs of illness or injury are promptly trapped and treated accordingly.

Sterilization greatly reduces yowling, fighting, and spraying, so complaint calls to animal agencies are decreased. Helping feral cats become better neighbors improves community morale (Hughes et al., 2002).

Drives Community Involvement and Promotes Compassion

Implementing local TNR programs helps drive community involvement and encourages compassionate action. TNR also creates opportunities for outreach, education, and cooperation. Cats and dogs play a large role in the lives of most Americans and these animals are treated like family members. Today's society also has a heightened awareness of the staggering euthanasia rates occurring in animal shelters, and there is more determination than ever to reduce the killing of healthy animals. Rather than a simple problem of too many animals, many view the situation “as a people problem — the result of the human-

animal bond failure,” which makes “the killing of animals an unacceptable response” (Hughes et al., 2002).

The traditional catch-and-kill method is no longer viewed as morally acceptable; many individuals would rather see a cat sterilized and returned to the site over having the cat trapped and killed. A 2014 national U.S. survey conducted by Baell Research revealed that 73% of respondents believed it is more humane to leave a feral cat where she is than to bring her to a shelter to be euthanized, while only 9% believed euthanasia is better for a cat, and 18% skipped the question or said they did not know (Wolf and Schaffner, 2019).

According to the 2021-2022 survey by the American Pet Products Association, 24 percent of pet cats have been acquired as strays or caught from outside (“Pets by the Numbers,” accessed 2022). Compassionate people feed and care for homeless cats. They use their own time and money to fulfill the basic needs of these animals. When they are given the proper tools (access to low-cost TNR services) and they are permitted to conduct TNR without penalty (fines, jail time), they are able to help more cats. TNR programs *encourage* individuals to get involved and make a difference in their communities. TNR also establishes a point of contact for concerns about the cats and for resolving any community issues.

Eradication is Ineffective, Costly, and Cruel

Once an eradication program has started, in order to be successful, it must continue until all targeted individuals have been killed. A primary weakness of eradication programs is that it is nearly impossible to identify all targeted subjects, let alone determine if they have all been killed, and when they are not, the breeding cycle will

repopulate the area. Since individuals become trap-shy or immune to introduced disease, it becomes more difficult to kill the last few individuals.

A mistaken assumption that eradication is complete when it really isn't can have disastrous consequences; “the species can bounce back and even expand its range, causing environmental and economic damage, and rendering the initial eradication campaign redundant” (Rout et al., 2013). Although scientists try to predict the appropriate time to stop eradication programs, “imperfect detection methods make it difficult to tell whether an invasive species has been successfully eradicated” (Rout et al., 2013).

The “Vacuum Effect”

History has shown that the catch-and-kill method does not effectively reduce feral cat populations. Killing is a temporary, “quick fix” that may appeal to authorities but it does not stop the breeding cycle. When cats are trapped and removed from an area, new cats quickly move in to fill the vacated territory and start the breeding process all over again. This phenomenon was discovered by British biologist Roger Tabor and is referred to as the “vacuum effect” (Tabor, 1983). However, if a colony of cats is “neutered and returned to its area it will continue to hold the location and keep other cats out by its presence” (Tabor, 1995). The few new, unsterilized cats who may join the colony are also sterilized and returned.

The vacuum effect is perfectly illustrated by a study conducted by Lazenby et al. (2015) in the forests of Tasmania, Australia, where “low-level culling of feral cats” actually caused an *increase* in the number of cats in the area, despite the initial illusion that there was a decrease in population. Over the course of 13 months, researchers attempted to “simulate the resource-effort that typically might be availa-

ble to and expended by natural resource managers,” which entailed trapping cats and shooting them in the head (Lazenby et al., 2015). At the end of the study, researchers noted a significant increase in feral cat numbers with an average of 75 percent at one site and 211 percent at the other site. It was also noted that “cat numbers fell, and were comparable with those in the pre-culling period, when culling ceased” (Lazenby et al., 2015). More importantly, the researchers acknowledge their efforts “did not constitute a sustained, multifaceted, long-term downward pressure on [their] study populations, which may be required if culling is to be used in programs of feral-cat control” (Lazenby et al., 2015). Subsequently, the catch-and-kill method of managing feral cats continues to prove ineffective.

Counterproductive

Eradication programs for feral cats can be highly counterproductive, with potentially catastrophic consequences on local ecosystems. As Dr. Niels Pedersen, Director of the Center for Companion Animal Health at the University of California- Davis, explains, “What people don’t understand is that cats are the dominant carnivore in almost all human-oriented ecosystems... Every attempt to take cats out of the equation has led to disastrous ecological shifts as far as buildup of rodents as well as other over-populated species.”

After cats were eradicated from Macquarie Island, near Antarctica, the rat population exploded, decimating the ground-nesting bird populations (rats feed on eggs and baby birds) (Strickland, 2009). Rabbits, too, increased in population, and destroyed the island’s vegetation; this resulted in decreased materials for birds to build nests and left the native penguin population more susceptible to predators. Scientists spent seven years eradicating the rats, mice, and rabbits to combat their increased predation on birds (Strickland, 2009;

“Lessons Learned from Devastating Effects of Cat Eradication on Macquarie Island,” 2009). And on Wake Atoll, part of the Pacific Islands, a U.S. military base eradicated the cat population (though a few cats have since been sighted), which allowed for the rat population to dramatically increase. The base has been trying to control the rat population ever since.. Following a failed 2012 campaign to remove all the rats from the island via poisoned bait, a final attempt at total eradication was proposed in February 2022 (Mauser, 2022).

Marion Island provides yet another real-world example of why removing cats from an enclosed ecosystem does more harm than good to that ecosystem. After the 19-year long cat-culling campaign, the mouse population exploded and, as on Macquarie Island under the same circumstances, chicks of endangered bird species began falling prey to the mice (Clifton, 2018). Now, the same groups that wanted the island’s cats eliminated to protect the seabirds are calling for the extermination of all mice from Marion through the “Mouse-Free Marion Project ” (Saving Marion Island’s Seabirds, accessed 2022).

Other counterproductive eradication attempts include: the explosion of the local rat population in Albany, Ore., after “aggressive city efforts in recent years to control the feral cat population” (KOIN 6, 2013), and an increase in the local skunk population in Cape May, N.J., following the removal of a colony of feral cats (Cox, 2008).” An eradication effort on Little Barrier Island near New Zealand resulted in a proliferation of rats, who then preyed on the petrels meant to be protected from cats (Rayner et al., 2007).

In a letter to *Nature*, biologists Kevin R. Crooks and Michael E. Soulé explain that when large mammalian carnivores disappear (or in the case of eradication programs, they are lethally removed), small carnivores, or meso-predators, increase

(Crooks and Soulé, 1999). In other words, when a top predator, such as the cat, is removed from the food chain, smaller predators like rats — along with prey animals like rabbits — increase in abundance, which is often bad news for an ecosystem. As seen on Macquarie Island, removal of the top predator (cat) left prey populations (rats and rabbits) unchecked and vegetation was decimated, causing the entire ecosystem to collapse.

Costly and Very Time-Intensive

Eradicating feral cats is a futile endeavor that comes with a hefty price tag — at the expense of the taxpayer — and requires decades of continual killing. It took over 15 years and cost AU\$3.5 million (about \$2.5 million USD) to eradicate the 2,500 cats on Macquarie Island (which is only 21 miles long and 3 miles wide), with another AU\$24.7 million (about \$20.2 million USD) allocated to eradicating the rats and rabbits over seven years (Veitch et al., 2011). Marion Island near South Africa is only 15 miles long and 10 miles wide, yet it took 19 years to kill 3,400 cats (Bester et al., 2002). The now necessary “Mouse-Free Marion Project” is expected to require another \$2.1 million (“Sponsor a Hectacre”). Additionally, it cost \$1.3 million to eradicate the cats living on Ascension Island (located in the South Atlantic Ocean), which is only 34 square miles (Veitch et al., 2011). These eradication programs that are deemed “successful” within the scientific community have been carried out on small, isolated islands with little to no human habitation. Attempting to eradicate an entire population of feral cats on a continent, with far more variables and unpredictable outcomes, would be impossible.

Cruel and Inhumane

Along with being ineffective and costly, eradication programs are also cruel to the animals being culled. In many cases, the animals die slow, painful deaths due to as-

phyxiation, starvation, dehydration, dismemberment, or over-exposure to weather elements. Killing methods used for feral cats include poisoned bait, cage traps, leg-hold traps, shooting, gassing, drowning, hunting with dogs, and exposure to deadly viruses. One method used in Australia lured cats into tunnels where they were sprayed with a toxic substance (Murphy et al., 2011).

The country’s government has also been working to create a deadly virus to be released nationwide to control the feral cat population, along with producing a toxic bait known as “Curiosity” (Owens, 2014; Arup and Phillips, 2014) and a robot called a Felixer, which identifies passing cats by their size and speed and then sprays the cats with a toxic gel (Science X, 2020).

In the above island examples, every eradication program required more than one method of killing to eliminate most or all of the feral cats. On Marion Island, nearly 100 cats were intentionally infected with the feline panleukopenia virus (feline distemper), which ultimately killed around 2,800 cats. Some cats, however, built up an immunity to the disease, so the remaining individuals were shot at night (Bester et al., 2002). On Ascension Island, the cats were killed by live trapping and shooting, poisoned bait, and leghold traps (Ratcliffe et al., 2010). One study of 87 island eradication programs, including Macquarie Island, revealed that “on average, each campaign employed 2.7 eradication methods including leg-hold traps (68%), hunting (59%), primary poisoning (31%), cage traps (29%), and dogs (24%)” (Ratcliffe et al., 2010).

Collateral Damage

Eradication programs rarely kill only the intended species; more often, many non-target animals are killed as well. Poisoned bait does not discriminate between a cat

Perpetual Killing

Australian Environmentalist Frankie Seymour explains that: “Reducing a population of mislocated animals is a complete waste of time (and money) unless you are prepared to keep on reducing it—killing and killing and killing, generation after generation. The moment you turn your back for a year or a season, the population will return to full occupation of all available niches.”

Seymour also points out that “when you kill animals to control their numbers, you are constantly culling for individuals who are clever or fast or strong enough to thwart your attempts to kill them—and they pass those faster, smarter, stronger genes (as well as their experiential knowledge) on to their offspring. This is basic Darwinism—survival of the fittest—yet the thought of it does not seem to have entered the heads of those who advocate lethal control of ‘feral’ animals” (Seymour, 2006).

and another meat-eating animal, and intentionally unleashed viruses like, feline distemper, infect feral cats and domestic cats alike. In these programs, when live-trapped cats show no sign of ownership (i.e., a collar or microchip) they will be killed even if they are someone’s pet.

Non-target animals sometimes pay quite a high price when people try to eradicate cats. On Ascension Island, 38 percent of domestic house cats were killed, causing “public consternation” (Ratcliffe et al., 2010). Over 6,000 land crabs were also killed by ingesting poisoned bait, and “a moratorium on crab claw consumption” was implemented to prevent secondary poisoning of humans (Ratcliffe et al., 2010). In some cases, eradication of feral cats is done through secondary poisoning, meaning prey animals are intentionally poisoned in order to kill cats who eat the tainted prey. On the New Zealand island of Tuhua, cats were removed through secondary poisoning by attempting to eradicate two types of rats living on the island (Ratcliffe et al., 2010).

Even on Marion Island, where “acceptable” numbers of non-target animals were killed, hundreds of birds died in traps set for cats, including some of the petrels that the eradication of cats was meant to protect (Bester et al., 2000). After most or all of the cats had already been killed, researchers set out

30 thousand slaughtered chicken carcasses that had been laced with poison across the island. There is no record of how many cats or other animals died from consuming these tainted birds (Bester et al., 2000).

Perpetuates Animal Abuse

When policies support lethal methods of control, it sends a message to the public that it is morally acceptable to kill sentient beings. Humans created the situation that feral cats are currently in: we domesticated them, we relocated them to every corner of the Earth, and we allowed them to reproduce. Therefore, it is our responsibility to manage them humanely. Killing is the highest form of abuse; it is certainly not humane.

Feeding Bans

Some authorities blame caregivers for perpetuating and even starting the problem by feeding stray and feral cats. They think the cats can be “starved out,” so they implement feeding bans and threaten anyone caught feeding outside cats with fines and jail time. These plans never work because cats are territorial animals who won’t quickly abandon an area, and they are also very resourceful scavengers, finding new food sources even when supplies are scarce. In addition, compassionate people continue to feed outdoor cats regardless of

potential fines and other repercussions; it seems to be a natural act for humans to feed an animal to keep her from starving. One recent study concluded that as much as 25 percent of U.S. households, approximately 30 million, are feeding at least one community cat (Lord, 2008). Instead of blaming feeders/ caretakers and criminalizing their actions, we should encourage their acts of compassion by assisting them with the resources and information to help sterilize the animals.

Conclusion

TNR programs are highly effective in stabilizing feral cat populations, reducing shelter costs and euthanasia rates, and improving the overall health of outdoor cats. In a proper TNR program, all kittens and adoptable adult cats are immediately removed and placed into adoption programs, which decreases a colony's size instantly. All remaining cats are sterilized to stop the breeding cycle. Euthanizing cats who are too sick or injured to be helped also decreases the number of cats in a colony, and, over time, natural attrition will further reduce the size of a colony.

When feral cats enter a traditional shelter they are usually euthanized immediately. Most agencies do not have the time nor the resources to house feral cats. However, by working with local rescue organizations to implement TNR programs, fewer cats end up in shelters, fewer cats are killed, and the feral cats who do come in can be returned to their appropriate colony.

The traditional method of controlling feral cats by catching and killing them is not only outdated, it has been proven ineffective, counterproductive, and costly. The few examples scientists like to provide of

“successful” cat eradication programs took several years, millions of taxpayer dollars and were carried out on tiny islands, most uninhabited by humans. Removing the cats in these examples also increased prey populations of rats and rabbits, so eradication programs were implemented to remove those animals, which were harming the ecosystem, as well. Once you start killing, you have to continue to kill until all targeted animals are removed or the breeding cycle will repopulate the area.

TNR provides a practical solution with a more subtle way of interacting with the environment. TNR stops the breeding cycle without removing the existing animals from the ecosystem. This does not create any open niches and keeps nature in balance. Professor Andrew Linzey of the University of Oxford, England, once said:

In the name of biodiversity, these ‘managers’ regularly kill one form of life in order to ‘allow’ another to survive ... perhaps populations rise and crash as a matter of course ... we seem to have forgotten ... that it is a self-regulating system. (Linzey, 2001)

With more individuals sharing their homes with companion animals, the bond between humans and animals is strengthening. People are making more compassionate decisions and becoming more vocal regarding animal concerns. And they are awakening to their place within the environment and moving away from the view that humans are separate from the environment. The public no longer finds it morally acceptable to use lethal animal management practices, such as catch-and-kill. Today's society supports programs that preserve and respect life, like TNR.

Steps for Successful and Safe Trapping

In the TNR community, targeted trapping (also known as “mass trapping”) is considered the most efficient and effective way to help as many cats as possible while spending the shortest amount of time trapping. Targeted trapping aims to trap every cat in a group or location for TNR.

Targeted trapping helps improve the life of all cats in a group. It leads to fewer nuisance complaints, as well as an increase in rabies vaccinations, plus improved animal welfare. Additionally, targeted trapping makes it easier to organize important information such as medical records, tracking sheets, and to monitor time and money spent. This information will help you in the future, as well as help demonstrate your success.

Once you’ve assessed the situation and devised a plan with all key stakeholders, it’s time to proceed with trapping and transporting. Following these instructions and guidelines will help ensure the safety of all.

Preparing to Trap

Assess the Situation

Identify all individuals who feed community cats and all locations of feeding sites. Create a spreadsheet tracking pertinent information about the cats.

Evaluate whether the location is an appropriate environment for the cats. As long as it is safe for them, the area where the cats are currently living is the best place to return them after sterilization. If relocation is necessary, refer to “Guidelines for Safely Relocating Feral Cats”.

Notify neighbors before trapping begins to

prevent them from thinking that you will harm the cats and also to allow them to keep their cats indoors. Make arrangements for kittens and cats who may be socialized after veterinary treatment, so they can be placed into an adoption program. Foster homes should be arranged prior to trapping.

Pre-exposure Rabies Vaccinations

These are recommended for those working with feral and stray cats, and for veterinary staff and wildlife rehabilitators who handle small mammals. The chance of contracting rabies from an infected cat is extremely slight (the last documented occurrence in the U.S. was in 1975); however, it is always best to take all precautions. Rabies from animals is usually transmitted to humans through bites, but can also be transmitted by scratching or contact with saliva. In either case, your health department can administer a series of vaccinations to be safe. If bitten by a rabid animal, one need only receive two additional injections as post-exposure treatment if they had already been vaccinated.

If you are bitten by an animal you suspect may have rabies, see your doctor IMMEDIATELY! And with any injury, immediately wash the wound with hot, soapy water for several minutes, and clean it with peroxide. Apply an antibiotic cream.

Refer to “Zoonotic Diseases” for more information.

Make an Appointment

Before you begin trapping, contact your local shelter, rescue group, or vet clinic to

make a sterilization appointment. You **must** work in conjunction with a clinic; do not show up or call them saying you have a cat in trap without **first** making proper arrangements. Make sure to ask upfront what cost(s) will be incurred and what form of payments are accepted.

The Correct Equipment

While traps made specifically for cats are available, any humane trap with a sliding rear door that is at least 30" long by 10" wide will work (Kortis et al., 2013).

If you are only trapping a couple of cats, you may borrow a trap from a friend, a feral cat group, or an animal control agency. Animal control agencies that want more information can contact Alley Cat Rescue; we have a shelter outreach program to assist and inform shelters about the Trap-Neuter-Return (TNR) protocol as a better way to control outdoor cat populations.

If you are trapping a large colony, you should probably buy several traps for your own use. If you use several traps at once, you can catch the cats far quicker, before the remaining cats become trap-shy, and this will make it easier for you.

Remember, never try to catch a feral cat or kitten by hand. These animals are usually very afraid of humans and can inflict painful bites.

Supply List

- One humane trap per cat, properly labeled with your contact information and a short note explaining that you are trapping cats as part of a humane TNR program.
- One bed sheet or large towel for each trap. The cloth should be large enough to cover the entire trap on all sides. Covering the trap will calm the cat and lessen the risk of injury.
- One large blanket, bed sheet, or plastic cover to protect your vehicle's seats.

- Folded newspaper to line the bottom of each trap.
- An easy-open can of tuna in oil, sardines in oil, mackerel, or other enticing bait. You may use a spoon or the lid from the can to scoop out bait. Do not leave the can in the trap.
- A flashlight or headlamp for early-morning or late-night trapping.
- Masking tape to use to identify and label traps.
- Tracking sheets to identify cats and to record information.
- A pen and a marker.
- Extra cat food and clean water to leave for any cats remaining in the colony who are not being TNR'd at that moment.
- A pair of thick gloves.
- A roll of paper towels and hand sanitizer.
- A few twist ties (bread ties) or zip ties x p., to secure trap doors once a cat has been caught.

Always inspect your equipment prior to trapping. Make sure traps are working properly and gloves are free from major holes or tears.

Establishing a Regular Feeding Schedule

Establishing a routine feeding schedule will make trapping easier. Feed the cats at the same time and place each day for at least one week prior to trapping.

During this period, the colony should be assessed. Determine if any cats are tame (friendly) and can be adopted into homes, and plan ahead for fostering any kittens you trap. Record such information as the name of the cat, description, spayed/

neutered, etc. This information will help establish proper health records for your colony.

Trapping

The first step to trapping is to withhold all food for 12 to 24 hours before setting a trap. This will ensure that the cats are hungry enough to enter a trap. Also, surgery will only be done on cats who have NOT eaten during the last 12 hours. Withholding food for a short period will not harm the cats. Continue to provide the cats with clean, fresh drinking water.

Perform the trapping during the late evening or early morning; this usually coincides with a regularly scheduled feeding. Get the trap(s) ready near your vehicle or away from the trapping site before placing them there, as you don't want to scare off any cats if a trap goes off accidentally.

Place the trap on a flat surface. Unlatch the rear door and take it off so you can get your hands inside the trap. If your trap does not have a rear door, then you might want to secure the front door open with a twist tie so that it won't keep falling shut while you work.

Fold several pieces of newspaper lengthwise and place them inside the bottom of the trap. This disguises the wires and trip plate. Do not use newspaper if it is windy, or make sure to use several sheets that will stay down and not scare the cats.

Place approximately one tablespoon of bait in the rear center of the trap. You can place the food directly onto the newspaper. Next, drizzle some liquid from the bait the entire length of the newspaper inside the trap. This strategy is meant to entice the cat into the trap and towards the larger amount of food at the rear of the trap. However,

it is important not to put too much bait in the front or middle of the trap, because this may satisfy the cat and she will leave without setting it off.

Set up the traps at the trapping site, most likely in the feeding area. Place the trap on the ground and make certain it is stable and will not rock or tip. Cover the entire trap with a sheet or towel, leaving the opening uncovered and ensuring the cover won't interfere with the door shutting.

If using multiple traps, stagger them, so they are facing in different directions. Try to think like a cat and place the traps where they will be tempted by the smell of the bait. Move quietly and slowly, and try to remain relaxed so your behavior won't frighten cats away.

Set the traps. Leave the area quietly. The cats are unlikely to enter the traps if you are standing nearby. You may want to sit in your car or take a short walk. If you are trapping in your yard, you can go inside.

Traps should never be left unattended for more than one hour under any circumstances. It is good to check the traps frequently and quietly, from a distance. Never leave a cat in a trap unattended. Also, traps may be stolen, damaged, or set off; a trapped cat also might be released by someone who doesn't understand your in-



Trapping cats at Adams Morgan colony, Washington, D.C.

Desiree Stapley

tentions.

Trapping feral cats may take some time. Be patient. Once a cat appears, it may take a few minutes for her to go into the trap. Make sure the trap has sprung, and the cat is securely trapped, before you approach.

Do not attempt to transfer a trapped cat to another cage or carrier unless you are very experienced in dealing with feral cats and have the proper equipment to do this. A transfer cage is the best item to use for safe transfer. It fits snugly up against the trap and a sliding door on each piece of equipment will allow a safe transfer. You should have another person assist with this task. Before moving the trapped cat, ensure the trap is covered with a sheet or large towel. Covering the trap will keep the cat calm.

It is still normal for the cat to thrash around inside the trap but she will not hurt herself if the trap remains covered. If a cat has already hurt herself, do not release her.



Alley Cat Rescue

Feeding time at a colony

Most injuries from traps are very minor, such as a bruised nose or torn claw. The cat

will calm down eventually. Use twist ties to ensure the rear door is secure.

Once you have trapped as many cats as you can, transport them in the traps to the veterinary hospital. If you trap cats at night and need to hold them until their appointment in the morning, keep them in their traps and make sure they are in a dry, warm location. They can stay in a shed, basement, or isolated room if the weather is poor. Do NOT leave trapped cats in extreme cold or heat.

Transporting the Cat

Before transporting a trapped cat to the clinic, it is advised to cover your vehicle seats with a sheet, large towel, or plastic trash bag to prevent damage to your upholstery. If your vehicle has a hatchback, you can place the trapped cat in the rear as long as she will receive proper ventilation; do **NOT** transport a trapped cat in the trunk. Ensure the trap is securely situated in the car, so it will not tip over or fall off a seat while you are driving. Keep the trap covered with a sheet or towel.

All cats must remain in a trap, covered with a sheet or towel. When dropping the cat off at the clinic, remind your vet the cat is there to be TNR'd — that you will be releasing the cat in 12 to 24 hours — so dissolvable sutures and surgical glue are used. The cat should also be vaccinated and ear-tipped. Additionally, make sure your vet applies a topical internal parasite (worm) treatment and a topical flea/tick treatment. Make your vet aware of any wounds or injuries so those can be treated.

Postoperative Care

After surgery, allow the cat to recover overnight in the same trap, still covered. Usually the veterinarian's staff will replace any soiled newspaper in the bottom of the trap with fresh newspaper. If they do not do

this, ask them to. Fresh newspaper will make the cats more comfortable during recovery.

Female cats usually need to be held for 24 to 48 hours after surgery. Male cats can be returned to the trapping site 12 to 24 hours following surgery, as long as they are fully awake and do not require further medical attention. Make sure all cats are fully conscious and alert prior to being released. If the cat needs further care (longer than 48 hours) you will need to transfer her into a holding cage.

Kittens must be kept warm during recovery because they are vulnerable to anesthetic-related hypothermia. A heating pad can be used to keep kittens warm, but be sure it is not too hot. Kittens also must be fed around four to six hours after surgery. Feeding the kittens after they have recovered from the anesthesia is recommended to prevent hypoglycemia.

Adult cats can be given a small amount of canned food, which is easier to digest than dry food, eight hours after receiving surgery. When you open the carrier or trap to put in food, be careful that the cat does not escape. Keep your hands out of the trap and always re-lock the door.

Normal behaviors during recovery include: deep sleep, head bobbing, wobbly movements, fast breathing, lack of appetite, and shivering. Slight spotting and bleeding from the left ear tip is expected but should stop by the time of release. There should be no continued bleeding from the surgery area, and prolonged recovery time (still inactive and lethargic, six-plus hours after surgery) or getting drowsy or weak again after waking up is not normal. If any abnormal behavior is suspected, contact your veterinarian immediately, as the cat may need intravenous fluids.

Once the cat has fully recovered and appears alert, clear-eyed, and is not display-

ing any abnormal behaviors, she may be released. Release the cat in the same place you trapped her. Pull back the cover and open the rear door. Step away from the trap quickly and quietly. Do not be concerned if the cat hesitates a few moments before leaving. She is simply reorienting herself to her surroundings. It is not uncommon for the cat to stay away for a few days after release; she will return eventually. Continue to provide food and water. Do not release a cat during inclement weather, and always have the phone numbers of your veterinarian or a nearby emergency clinic on hand in case of emergencies.

Additional Trapping Tips

If some cats won't go into the traps, you may want to try feeding them in unset traps for several days before trapping. Feed the cats in the same place and time as always. Tie up the doors to the traps so they stay open, and place the food inside. When the cats see other cats eating inside the traps they will try it themselves. Once they become accustomed to the traps, they will be easier to trap.

If you are still unable to trap a cat, or if the cat has learned how to steal bait without springing the trap, consider using a drop trap instead, which provides the trapper with more control. Refer to the Helpful Resources section in the back of the handbook for more information on drop traps.

Never release the cat into a new area. If the cat needs to be relocated, please refer to "Guidelines for Safely Relocating Feral Cats." Relocating cats without following the proper steps can endanger a cat's life. She will try to return to her old home, and may become lost or attempt to cross major roads. Also, feral cats form strong bonds with other cats in their colonies. Separating a cat from her colony members and

leaving her alone in a new environment will cause stress, depression, and loneliness. So if relocation is necessary, do try to relocate several cat buddies at the same time.

Avoid Trapping During Spring

Spring is also known as “kitten season.” Try to trap before or after this season so that you allow the mothers to nurse their young properly. Around mid-May is usually when the majority of kittens are old enough to eat on their own.

If you do trap a lactating mother you have several choices:

- Release the cat without sterilizing. You may struggle to retrap her, however.
- Have her sterilized, requesting that your vet uses the flank incision. This will allow the mother to be back with her kittens the next day and she can continue to nurse them.**
- Have her sterilized if you are able to locate the kittens and they are old enough to be safely fostered without the mother (around eight weeks old).
- Keep her (and you'll have to catch her kittens) in a foster home until the kittens are weaned, and then sterilize both the mother and kittens.

If you trap a pregnant cat, here are your options:

- Release the cat without sterilizing. Again, you may struggle to retrap her.
- Keep the cat and have her spayed. If she is in the early stages of pregnancy, the pregnancy can be terminated.**
- Keep the cat and allow her to birth her kittens in foster care. Once the kittens have been weaned, the mother can be spayed, and the kittens sterilized.



Desiree Stapley

It takes a real stroke of luck to catch two feral cats in a single trap!

**It is important to discuss these options with your veterinarian prior to trapping, so you can devise a plan. Your vet will determine which is the safer option for the mother cat.

Springtime also means increased activity of other wildlife. If you should accidentally trap a non-target animal such as a raccoon, opossum, or skunk, carefully open the back door and release the animal where it was trapped. Most wildlife are afraid and will run away. Do not release the animal in another area. Taking animals away from their homes is cruel and inhumane. They may have families around and they are usually immune to local diseases. Moving them causes disorientation and they will not know where to find food sources.

Do Not Use Tranquilizers Before or During Trapping

Tranquilizers have the potential to be extremely dangerous to outside cats. It will take some time for the cat to react to the drug. During this time the cat may become disoriented and cross busy roads or get into other dangerous situations. Some cats need smaller doses, others need larger doses.

es. You will not know how much to give the cat. In any event, tranquilizers are not recommended. Just be patient and realize that your persistence will pay off, and that it may take a longer time and require using different tricks before a particular cat is trapped.

If you have a female cat who is constantly giving birth to kittens and you cannot catch her, consider the contraceptive drug, Ovaban. But remember, this is only to be used for a short period. Long-term use can have serious side-effects. (Refer to "Chemical Sterilization" for more information.)

Feral Kittens and Pregnant Cats: Guidelines for Fostering and Socializing

Female feral cats usually look for safe, hidden places to give birth. The young offspring learn from their mothers to be wary and distrustful of humans. The tiny kittens will spit and hiss if approached by humans, and though small, will bite and scratch if not handled properly. When dealing with feral kittens, as with any wild animal, you should have a pre-exposure rabies vaccination and keep your tetanus shot current. Minimize all risks by using the correct equipment.

In most areas of the U.S., except northern regions with extreme cold, kitten season can extend from February through November. Most kittens, however, are born during spring. Cats can have three litters each year, although two are more likely, with a gestation period of approximately 65 days.

Kitten mortality rates are usually very high — often around 75 percent (Nutter et al., 2004). Kittens are at their most vulnerable before weaning (before 12 weeks of age) (Fournier et al., 2016; Johnson, 2022), with 60-80 percent of kitten deaths occurring before their eighth week (Hollinger, 2016). Many become sick from diseases that are treatable, such as upper respiratory

infections (URIs). Without medical care and supportive treatment, weak kittens usually perish. Those kittens who survive this initial period often build up immunities to common diseases, and once a colony has been sterilized and stabilized, most of the cats remain healthy and viable for many years under the care and supervision of caretakers.

To Tame or TNR?

If your local shelter is euthanizing domestic kittens for lack of homes, you may want to consider trapping any pregnant feral females and having them spayed. You can also TNR any kittens when they are eight to twelve weeks old and return them to the colony. Even at the young age of twelve weeks old, many kittens may be difficult to socialize; returning them to the colony will allow more tame kittens to be adopted from shelters. Peter Neville notes that even under ideal conditions “around 15 percent of kittens seem to resist socialization and demonstrate only limited willingness to become generally sociable adults” (Neville, 1992).

The critical socialization period of a feral kitten is from two to seven weeks of age. Researchers at the Waltham Centre for Pet Nutrition in Great Britain have found that friendliness is also passed along to kittens from the mother or father, meaning that some kittens may retain their feral instincts no matter how well they are socialized (Jablonski, accessed 2014).

The process of taming kittens can take four to eight weeks, depending on their age and degree of wildness.



Alley Cat Rescue

Spring brings lots of mama cats and babies.

Any person attempting this process should be patient and committed. Be cautious when working with feral kittens. Remember they are wild and will defend themselves if they feel cornered or threatened.

Be aware that a young feral cat who may be completely tame and loving with one person can revert to her wild state when placed in another home. It can sometimes take six months or longer for that cat to bond with the new caretaker.

Alley Cat Rescue strongly advises that kittens be spayed or neutered before being placed in adoptive homes. The end goal is to stop the killing of healthy animals in shelters. Sterilization of domestic animals is, by a significant margin, one of the greatest contributors to the reduction of animal euthanasia in the United States (Rowan & Kartal, 2018).

What to Do If You Find Feral Kittens

It is not uncommon, especially during “kitten season,” to find a litter of unattended kittens, or a seemingly orphaned kitten by itself. Chances are, however, that the mother cat is somewhere nearby. She may be watching from a distance, or off searching for food. Sometimes the mother cat may leave her kittens alone for several hours. If you find a single kitten alone, the mother may be in the process of moving her litter from one location to another.

Although it may be tempting to jump in and help, take the following steps before doing anything.

1. Assess the kittens' apparent health.
 - Does their fur look healthy, full, and fluffy? Or are the kittens dirty and looking sickly?
 - Are they sleeping quietly, huddled together? Or are they crying?

- Are they dry, or wet?

If the kittens look sickly, dirty, wet, or are crying, bring them indoors as it is likely they are not being cared for by their mother. Otherwise, go on to step 2.

2. Assess the environment.
 - Are the kittens in immediate danger from rain, wet weather, or the cold?
 - Are there potential predators around, such as raccoons or dogs?
 - Is there nearby traffic, like pedestrian foot traffic, bicycles or cars?

If the answer to any of these questions is yes, you should move the kittens to a nearby safer location, close enough for the mother to find them, or in the case of weather concerns, provide a simple shelter for them. Then proceed to step 3.

3. After assessing the situation, if you determine that the kittens are healthy and in a safe location, it is best to wait and watch to see if the mother will return. You should stay at least 35 feet away, but the farther the better. Do not place food near the kittens to try to entice the mother to return. She almost always hides her litter away from food sources to protect them from other cats or predators.

4. In some cases you may need to leave the area completely and check back in four to six hours to see if the kittens are still okay. The mother will most likely not return until she no longer senses the presence of humans, especially if she is feral. Keep in mind that healthy kittens can survive several hours without food as long as they are warm. Hypothermia is a much greater risk than starvation for neonatal kittens.

If the mother returns and you've determined the area is relatively safe, leave

the kittens alone until they are weaned at approximately five to six weeks old. You can monitor the area from a distance and offer shelter and food, but keep the two apart from one another. Remember, mom won't use the shelter if food is nearby. Once the kittens are old enough, you can trap them, so that they can be seen by a veterinarian, socialized, spayed/neutered, and, hopefully, adopted.

Remember, it is extremely important that you also trap the mother cat and take her in to be spayed so that she will not continue to give birth to litters on the streets.

In the event that the mother does *not* return and it becomes apparent that the kittens are in need of human intervention, remove the kittens as soon as possible. However, you must also be prepared to provide them with the care they need to thrive. Taking in young kittens is a big commitment. They require a tremendous amount of care and attention. If you feel you are not capable of providing them with

the care that they need, you can try contacting your local animal shelters to see if they have any available volunteers to take the kittens in.

Trapping Feral Kittens

Kittens will make themselves visible when they are about four to six weeks old. ACR recommends trapping kittens between the ages of five and eight weeks, when they have developed enough to leave their mother but are still young enough to be tamed.

Use baited traps for safe handling and transporting. While they may look just like any domestic kitten, they have wild instincts. Always wear gloves or long sleeves when handling feral kittens and never underestimate their quickness.

How to Safely Foster a Feral Kitten

All kittens should receive their first vaccines by six to eight weeks of age. Your veterinarian will administer a series of vaccines at three- or four-week intervals until the kittens reach 16 weeks of age. Rabies vaccines can be given as early as 12 weeks of age. If fostering kittens too young to receive vaccines, it is important to use caution when allowing the kittens to interact with other cats.

It is also important to treat for internal and external parasites around six weeks of age. The majority of feral kittens are born with internal parasites, such as roundworms, and have external parasites, such as fleas and ear mites. Parasites can cause loss of appetite, diarrhea, anemia, and can be deadly for a kitten. Most internal and



Shaïda Tala Sabin

ACR recommends trapping feral kittens when they are between five and eight weeks of age; old enough to survive away from the mother, but still young enough to be tamed.

external parasites can be treated with a topical medication, such as Advantage Multi.

When kittens reach about eight weeks of age and weigh around two pounds, they should be sterilized. Take care to ensure their incision sites remain clean and heal properly. A long-lasting antibiotic injection, such as Convenia, should be administered.

Begin the taming process by confining the kitten to a large cage in a quiet spare room or bathroom. Adding a cat den or small box to the cage will help the kitten feel safer and more comfortable. Line the cage with newspaper and provide a litter box, along with food, water, and kitten milk replacer in a bowl.

For the first day, do not attempt to handle the kitten. She must first learn to feel safe. Set up the cage in a quiet environment and visit her frequently. Talk to her so she gets used to your voice. You can also turn on a radio or TV for her to get used to human voices. Remember to always move slowly and quietly.

If the kitten needs to be medicated, use liquid medicine in moist food, or crush tablets into baby food. Whole tablets should not be administered to a feral kitten or cat because it may cause trauma and can undo the taming process. It also increases your risk of getting bitten.

If the kitten escapes from confinement, do not grab her with your bare hands. Use gloves or a carrier to catch her.

Caring for Orphaned and Newborn Kittens

If kittens are under five weeks of age and unable to eat solid food, bottle-feed them with a commercial kitten formula (*Goat's Milk* KMR or *Breeder's Edge*). Cow's milk

does not contain enough fat or protein for kittens. Make sure you hold the kitten upright and do not force too much milk into her mouth or the fluid will go into her lungs and she could aspirate.

Young kittens should be kept in a box lined with absorbent paper towels; make sure they stay dry. Keep the box warm (around 90 degrees F) during the first two weeks of life using a heating pad covered with a towel, or you can use an infrared lamp. It's very important to keep kittens warm.

For three-week-old kittens, decrease the temperature to around 80 degrees F. If a kitten is too weak to drink from a bottle, feed her with an eye dropper. Massage the belly to stimulate digestion, and use a cotton ball or paper towel to stimulate elimination of urine and feces after each feeding. Moist cotton balls can be used to clean the area afterwards. Rub Vaseline on the



Louise Holton

Orphaned feral kitten fostered and bottle-fed by the author.

anal area. The mother usually cleans the babies during the first few weeks so you will have to take on this task.

Begin weaning from three to four weeks old. Mix canned kitten food with kitten milk formula and hand feed until the kittens are accustomed to eating on their own, then gradually change over completely to canned food.

If you do not have kitten formula on hand, use the following formula for temporary feeding only (12 to 24 hours): Add one egg yolk to eight ounces of cow's or goat's milk. Feed kittens two tablespoons per four ounces of body weight daily. Divide total amount into equal feedings. Small, weak kittens should be fed every three to four hours.

The milk that is produced by the mother cat for the first two days after birth is called colostrum. This milk is high in protein and antibodies that protect the newborn kittens. Orphan kittens who do not have this protection should be vaccinated against rhinotracheitis, calicivirus, and panleukopenia at four weeks of age. Vaccination at an early age should only be considered for orphaned kittens. If kittens remain with their mothers, they should receive their first vaccinations at eight to ten weeks of age, when they lose their maternally derived immunity.

Common Infection Diseases

Kittens are susceptible to respiratory diseases such as those caused by feline herpesvirus and calicivirus. Panleukopenia (feline distemper) and feline leukemia (FeLV) may be contracted in utero. Panleukopenia, if contracted before birth, can result in cerebellar hypoplasia, which causes balance and walking problems in a kitten that start at two to three weeks of age. In unvaccinated populations, feline distemper is a very deadly and contagious disease.

Respiratory diseases cause sneezing, coughing, and nasal discharge. The most probable cause is either rhinotracheitis or calicivirus. Often the disease becomes chronic and sometimes cannot be completely cured. The cat may sneeze or have runny eyes for most of her life.

A mild case can be treated by providing a warm environment, cleaning the eyes and nose areas, and using a vaporizer. Antibiotics will not help treat URIs, which are viral infections, but are sometimes used to combat secondary bacterial infections. Conjunctivitis of the eyes requires constant cleaning with moist, warm cotton balls and application of Terramycin or Chlorasone a few times per day directly into the eyes. If left untreated, upper respiratory infections can cause severe health problems, pneumonia, eventual blindness, or even death.



Alley Cat Rescue

It is critical to begin the socialization process for feral kittens early, between two and seven weeks of age.

Refer to the chapter on “Health Care for Feral Cats: Guidelines for Colony Caretakers” for more information.

How to Tame Feral Kittens

After you have given the kittens about two days to settle in, select the least aggressive kitten, place a towel firmly around the kitten's body and pick her up. Keep her wrapped securely in the towel as you remove her from the cage and set her on your lap. If the kitten stays calm, pet her gently

on the head from behind. Never approach from the front. Initially, hands will frighten feral kittens and they may bite when approached from the front. Continue to softly pet her head while you talk to her in a soothing voice. Some kittens may respond quickly to being petted, while others may take more time adjusting. Practice this step several times a day for several days, until each kitten is comfortable with being picked up and petted.

You can also offer the kittens baby food from a spoon to help increase trust and build up their courage. Food can be a great incentive when taming a feral kitten; just make sure if using baby food, you only use plain meat-based food.

As the kittens become more comfortable with being handled, you can try to pet them without the towel. Gently hold the kitten on your lap. Some kittens may get scared and want to jump from your lap, so be prepared to wrap the towel back around her; but be careful not to scare her. Go through this process with each kitten. Repeat this handling process as frequently as possible.

Within about a week the kittens should have made progress. Remember that each kitten will develop at a different rate. As the kittens become more comfortable being around you and other humans, they should be allowed access to the entire room. It is important to limit hiding places and make sure the door to the room remains closed. Continue to make frequent visits to handle and play with the kittens. Use toys to encourage interaction and build trust.

Toys are a great way to distract a kitten, while discreetly petting her. Provide a variety of scratch posts to train them on appropriate scratching areas.

If there is another tame cat in the house who enjoys the company of kittens, this will help the taming process. Kittens are

“copycats” and will follow the tame cat’s behavior. Remember to always use caution when introducing new cats.

Please note, you should also be prepared to find barn homes or a sanctuary for any kittens who are unable to be socialized. No matter how much time has passed and how much effort you put into taming a feral kitten, some individuals do not warm up to human contact and will remain feral for life. It is in the best interest of the kitten to be placed in an appropriate outdoor home, rather than forcing her to live indoors if this is not the environment suited for her.

Placement in Adoptive Homes

Sadly, most people who wish to adopt a cat want a friendly, fully socialized animal. Some people are afraid to tell potential new adopters that kittens were once feral, for fear they will not be placed. Alley Cat Rescue believes this is not in the best interest of the kitten. The cats or kittens may retain some feral instincts and it is important to disclose this information to the adopter. “Unsocialized” or “not completely socialized” can be more appealing words to use when describing the kittens, rather than saying “feral.”

People’s perceptions about feral cats need to change. Education is important, and people must be made aware of the millions of feral cats living in alleys who need our understanding and our help, not fear and disdain. Most people who have lived with cats before will understand that many are shy and can act wild at times.

Feral kittens do best if there are no very young children in the home. The most suitable home is a calm environment so the kittens feel secure. Ideally, two kittens should be placed together in a home, or with another cat or friendly dog, or where an adult person is at home part of the day. The taming process is extremely rewarding. Many tamed feral cats will continue to be a

bit elusive, while others will demand human contact constantly.

When a feral kitten is placed into a new home, ACR strongly recommends that the new guardian go through a similar “mini-taming” process with the kitten. The new home may be very confusing and scary at first; Most kittens soon settle down happily into their new environment and start enjoying the luxuries offered.

Refer to “Guidelines for Establishing an Effective Adoption Program” for more information on rehoming cats and kittens and “Guidelines for Safely Relocating Feral Cats” if a barn home is necessary.

Caring for Pregnant Feral Cats

As discussed previously in the chapter on “Steps for Successful Trapping,” there are several options to consider before trapping a pregnant feral cat. All available options should be discussed with your veterinarian so an appropriate course of action can be established.

Feral cats may become stressed when they are held in captivity. Stress can cause illness and a mother’s inability to properly care for her kittens, especially when giving birth. Providing a safe, quiet place for her, where she won’t be disturbed, will minimize any stress and reduce the risk of birthing complications.

To safely foster a feral mother cat (or any feral cat) you will need a large cage and a cat den for her to hide in to feel safe. Keep the cage in a spare bedroom. Line the cage with newspaper and provide fresh, clean towels. Cover the top of the cage with sheets to give her a safe environment. Limit your access to the room and the cage.

Leave her alone to give birth in a quiet en-

vironment. Some of the kittens could die, either at birth or from viral infections. If the mother does not show any interest in caring for a particular kitten, it is usually because she instinctively knows the kitten is not going to survive. Try to encourage the mother to care for any kittens she is ignoring, but only do this safely — don’t stress her. If she clearly is not going to care for a particular kitten(s), you will need to remove the kitten and begin bottle feeding as described above.

The mother cat should allow all kittens to nurse. She should be washing and grooming them regularly. Make sure the mother is also taking care of herself: eating/drinking, going to the bathroom, and cleaning herself. Monitor the mother as much as possible for signs of upper respiratory infection, diarrhea, and any other common illnesses. A mother with a viral or bacterial infection can pass them on to her kittens so if she seems ill, consult a veterinarian.

When the kittens are around two to three weeks old, you can attempt to pet them. Mothers can be very protective of their young, so take extreme caution. The easiest way to begin the taming process is to sneak pets when you are cleaning the cage. The more you work with them and the mother cat, the easier and faster it will be for them to become socialized. (Refer to “Adopting an Adult Feral Cat” for more information.)

Conclusion

Fostering cats and kittens in a home environment can be an enjoyable and rewarding experience, and it also frees up shelter space, so more cats can be assisted. However, it is important to keep in mind that being a foster parent means increased responsibility; most cats and kittens who need to be fostered require a lot of time and energy to prepare them for adoption. Prior to fostering, make sure you are fully

aware of and fully equipped for what it means to be a foster parent. For more detailed information on fostering cats and kittens, and guidelines for establishing

your own foster program, please refer to Addendum 3. An example foster parent agreement form can also be found at the end of the handbook.

Guidelines for Safely Relocating Feral Cats

Alley Cat Rescue receives numerous calls from people across the country who want to move feral cats. Often someone's first instinct when they find a feral colony is to remove the cats, or to "find a home" for the cats. Many people do not realize that the cats are already living in their home — their outdoor home. The colony has probably lived there for some time, in some cases for a decade or more. (Refer to "TNR in a Nutshell" for solutions to common complaints about community cats.)

Many people would like to find a cat sanctuary for feral cats to live out their lives. However, few cat sanctuaries can accommodate ferals and unless the cats' lives are threatened, the present home of the feral cat colony is the optimal place for them.

Additionally, cats are social animals. Colony cats develop strong bonds with one another and become dependent on each other. When you relocate feral cats, you may be separating them from family members and causing them undue stress. Colony cats are also psychologically attached to their territory.



George Smith

The author, relocating cats to a farm home.

Only in certain cases — if a caretaker is unavailable to care for the colony, or if the cats simply cannot remain at their present location for safety reasons — does ACR believe relocation can be a viable option. In such cases, relocation has to be undertaken with great care. New homes are difficult to find and certain procedures have to be followed, otherwise the relocated cats may not remain on the new premises.

Despite these challenges, if proper procedures are followed, it is possible to successfully relocate feral cats. ACR has relocated hundreds of feral cats to new, safe homes, and you can too, by following the steps below.

Steps for a Successful Relocation

Once you have decided that relocation is the only option left for the colony, several steps should be followed:

Assess the Colony

If some or all cats need to be sterilized, this should be performed in conjunction with the relocation efforts. Keep in mind that all cats should be relocated in pairs. They have usually bonded with one another and the move will be less traumatic if they are not alone.

Find a New Outdoor Home

Farm homes or horse stables make the best places for relocating feral cats. Most farmers are willing to take cats to help control rodent populations and in most cases, cats and farm animals get along very well.

Make sure the new caretaker is interested

in providing a good home. A country home that is only occupied on weekends while the owners work in the city is not acceptable. The cats need daily food and water. People must agree to provide for the cats' basic needs, including veterinary care if necessary, and sign an adoption contract similar to one used for domestic cat placements.

Be wary of homes on busy country roads. City cats are used to slower city traffic and although there may be fewer cars on country roads, they tend to go much faster.

Be careful of dogs at the new home. Although it may not be a problem, the new caretakers should be willing to introduce the dogs to the new cats slowly and not allow the cats to be chased, or the cats will leave. In most cases, cats and dogs will peacefully coexist with little interaction.

Take precautions if cats, especially kittens have the potential of coming in contact with predator animals, like foxes, coyotes, and owls, and be particularly wary of coyotes. Erecting tall fencing or confining the cats to a barn during night-time hours will minimize the risk of confrontation.

In searching for an appropriate location, contact friends and relatives who live in rural areas and see if they have any neighbors who have land or outbuildings. Ask them to place notices in newspapers and flyers in local tractor and feed supply stores, or run newspaper ads yourself. In addition to word of mouth, hanging flyers, and placing newspaper ads, the Internet is a good source for finding new homes. Just make absolutely sure that the new home checks out before relocation; thoroughly do your research prior to trapping.

Although the above locations are most ideal, feral cats can also be relocated to a backyard, particularly one in a suburb; to another alleyway, especially if it is close to the original home; or in some instances, feral

cats can be relocated to an already-established colony. Extra care should be taken when introducing new cats; introduce them slowly and keep new cats confined for a few weeks. You may need to put a cat playpen outdoors to keep the cats confined where the colony sleeps and eats. Note there will be a transition period where the cats establish a "pecking order;" some mild fighting is normal.

Trapping and Transport

Refer to the chapter on "Steps for Successful and Safe Trapping" for proper trapping techniques. As mentioned previously, any cats who are not already sterilized will need to be vetted prior to relocation. Once the cats are trapped, either transport them to your veterinarian to be sterilized (and then relocated) or transport them to the new location.



Packing cats up for relocating to a sanctuary.

Alley Cat Rescue

Whether transporting one cat or several, keep the traps covered with a sheet or large towel; this will help calm the cat. Make

sure both ends of the trap are secured with twist ties. Use old sheets to protect your vehicle's seats and floors. Check that there is good air circulation in the vehicle, especially on hot days, and travel the most direct route to the new location. You want to minimize the cat's time spent in a trap and in a vehicle. Do not place the cat in the trunk or any unsafe area of a car.

Confinement Period



Judy M. Zukoski

Cats can be relocated to barns or stables. A three-week confinement period is very important for acclimating a cat to her new home.

It is very important that cats be confined in their new home for the first three to four weeks. This is enough time to familiarize the cats to their new environment, so they will remain on the premises. Even though there are instances of cats remaining when they have escaped upon arrival, this is rare and most cats will take off, never to be seen again. Other than being dangerous for the cat, this can be traumatic for the rescuer

who has usually put a lot of time, energy, money, and care into the rescue. So prior to relocating any cats, ensure the new caretaker is aware of this vital step in the process.

The confinement period will give the cat time to get accustomed to new sights, sounds, and smells. She will learn that the new caretaker provides food, water, and a warm, safe place to sleep. Providing a secure environment for the cat will ensure she considers this her new home. You should warn the new caretaker that during the first couple days the cats may struggle to find a way out. Most cats settle down in the cage after a day or two when they realize that no harm will come to them.

A large cage or playpen should be used for confinement and within an area that is protected from the elements. Be skeptical if you are told that the new barn is completely cat-proof and that the cats will not escape. There are few barns that really are escape-proof. Always take cages/ playpens, litter boxes, and food/water dishes with you, just in case. The confinement area must have a litter box (which needs to be cleaned daily), a box to hide in, and clean bedding or straw. Set the confinement area near a place where the cats can hide once they are allowed out of the playpen. They will likely run and hide when first released.

If a cat does escape, set food and water out and sprinkle her used litter (for scent) around the barn. Cats often hide for a period of time but will stay in the area. Leave plenty of food and water to prevent them from leaving in search of food.

Instruct the new caretaker to feed the cats at the same time each day. This will allow them to get used to the location and time that they will receive food once they are roaming free.

During the confinement period, it is important for the new caretaker to make con-

tact with the cats by talking to them or by playing a radio softly. This will help them get used to human voices.

Take care not to confine the cats for longer than a month. Even friendly, domestic cats cannot tolerate a lengthy confinement period.

Follow-Up

Make sure to call or visit after the relocation. You will want to stay in touch to make sure the cats are doing well and also to keep a contact for future relocations.

If you do relocate a whole colony, make sure that the food sources at their original location disappear completely, or other

stray cats will move in to repopulate the area. Removing the food sources can be difficult, especially when garbage is thrown out in backyards and alleyways. Check from time to time to ensure that no new cats have moved into the vacated territory.

Conclusion

Relocation can be a safe and viable option for feral cats if undertaken properly and if these guidelines are followed. But remember the best option for the cats in a feral colony is for them to remain in their original home whenever possible. Sometimes this may mean finding caretakers or speaking out for the cats to stay at their present location.

Zoonotic Diseases

Zoonoses are diseases and infections that are transmitted between animals and humans. A zoonotic agent may be a bacterium, a virus, a fungus, or other communicable disease agent. Around 60 percent of all human pathogens are zoonotic, and up to 75 percent of all emerging pathogens are zoonotic in origin (Salyer et al., 2017).

Recently emerged zoonotic diseases include Severe Acute Respiratory Syndrome (SARS), which sparked an epidemic in 2002 and came from animals sold in Chinese markets (World Health Organization: WHO, 2019); the avian influenza H5N1 virus, which can be contracted through direct contact with infected birds or contaminated environments, but is not highly transmissible between humans (World Health Organization: WHO, 2020; Nuñez and Ross, 2019); and the family of Coronaviruses, including COVID-19, which are transmitted by a variety of species, most prominently wild bats (Tiwari et al., 2020).

While it is true that cats can transmit a few diseases to humans, the Cornell Feline Health Center reports you are much more likely to contract infectious diseases from other humans than you are from your cat (“Zoonotic Disease: What Can I Catch from My Cat?,” 2014). Simple precautions, common sense, and good hygiene, including careful handling of litter boxes and treating cats aggressively for fleas and other parasites, can further reduce any possible risk of zoonotic disease transmission from cats. Individuals with immature or weakened immune systems, such as infants, individuals with acquired immunodeficiency syndrome (AIDS), the elderly, and people undergoing cancer therapy should take extra precautions.

Following are a few zoonotic diseases that can be transmitted from cats to humans, and the precautions that can be taken to prevent transmission.

Rabies

Of all zoonotic diseases, rabies is the most feared and most misunderstood. Rabies is an acute and deadly disease caused by a viral infection of the central nervous system. The rabies virus is most often spread by a bite and saliva from an infected mammal. Although there is an extremely low incidence of humans contracting rabies in the U.S., the virus still causes great panic.

The primary carriers of rabies are wild animals, although any unvaccinated mammal can be a vector for rabies. The CDC reports that wild animals accounted for 91.8 percent of reported rabies cases in the U.S. in



Nancy North

Zoonotic diseases are a consideration for colony caretakers, but simple precautions can serve to mitigate the risk of transmission for them and the millions of people living with outdoor cats across the world. This colony is in the Buenos Aires Botanical Garden in Argentina.

2019 (Ma et al., 2021). Bats remain the primary source of human infection, at around 70 percent (Nigam, 2019; Saplakogu, 2022; Gross, 2022). Raccoons accounted for another 32.3 percent of the cases, as well as skunks for 19.5 percent, and foxes for 7.7 percent (Ma et al., 2021).

Among domesticated animals, dogs are the source of most transmissions to humans worldwide (“Animals and Rabies,” accessed 2023); however, in the United States, cats are the most commonly-reported rabid domesticated animal (Aiello, Moses, & Allen, 2016). Therefore, it is extremely important for owners to ensure that their cats’ vaccinations are kept up-to-date.

In the last 100 years, the number of human deaths from rabies in the U.S. has fallen from 100 or more per year to an average of one or two (Nigam, 2019). In most fatal cases, death occurred largely because the victim failed to recognize the health risks associated with bite wounds and did not seek medical advice or treatment.

Several programs have been responsible for the decline in rabies cases in the U.S. Vaccination programs for dogs and cats began in the 1940s, virtually eliminating the chance of contracting the disease from our beloved companion animals. Effective pre-exposure and post-exposure rabies vaccines have not only reduced the risk of infection for those who receive the pre-exposure vaccine, but they also reduce the effects of the illness and prevent death in those who receive post-exposure treatment. Further protection against rabies came in the 2000s when the USDA introduced an oral rabies vaccination program for wildlife. Then in 2022, the oral vaccination program began distributing fish-flavored edible pellets over large areas of the eastern U.S. by aircraft (Kanowsky, 2022).

Some countries in Asia, Africa, and Latin America have a relatively high incidence of rabies infection. These countries have large

populations of tame and feral dogs who live in cities and come in close contact with humans. These countries do not have the resources to provide spay/neuter and TNR programs; therefore, dogs remain the major vector species for rabies in these countries.

Obvious signs of rabies infection in a cat include, foaming at the mouth, trouble walking, lethargy, and erratic and extremely aggressive behavior. A cat with rabies will usually die within four to six days. Unfortunately, the only option is to euthanize a rabid cat to prevent suffering and transmission of the virus.

Any unvaccinated cat who bites a human should be quarantined for 10 days, examined by a veterinarian, and then vaccinated prior to release. If a cat appears ill at the time of the bite or becomes ill during the quarantine period, a veterinarian should evaluate the cat for signs of rabies and continue to monitor the cat’s health closely.

To prevent the transmission of rabies, never approach or attempt to handle an unfamiliar cat (or wildlife). Always use a humane trap and wear thick gloves when handling or transporting a cat whose vaccination history is unknown. It is highly recommended that anyone handling feral or stray cats (or other animals, especially wildlife) should receive the pre-exposure rabies vaccine.

It is also important to make sure all domestic cats (and dogs) receive the rabies vaccine, and that TNR programs are implemented for community cats. In TNR programs, feral cats receive a three-year rabies vaccine, which studies have shown to be effective for longer than three years (Dodds et al., 2020). Vaccinated cats provide a buffer zone between wildlife and humans, and vaccinating community cats will reduce the risk of a person coming in contact with an unvaccinated cat.

If a cat bites you, immediately wash the

wound with hot, soapy water for several minutes and then clean it with peroxide. Apply an antibiotic cream. Monitor for infection (redness, swelling, pus) and seek medical attention if the wound doesn't seem to be healing. If a cat (or other animal) is showing signs of rabies infection, the animal should not be approached and the appropriate authorities should be alerted immediately. For more information on rabies and preventing the transmission of the disease, please refer to Addendum 4 in the back of the handbook.

Cat Scratch Disease

Cat scratch disease, or cat scratch fever, is caused by a bacterium spread to cats by flea bites and droppings. When the cats get flea droppings on their nails and between their teeth from scratching, the bacterium can be transmitted to humans if the cat breaks the skin with her teeth or claws ("Cat Scratch Disease," accessed 2022). It can also occur if an infected cat licks a person's open wound.

Again, always use caution (wearing thick gloves and using a trap when possible) when handling an unfamiliar cat. This will help prevent being scratched or bitten.

Lyme Disease

Lyme disease is caused by bacteria and is transmitted by ticks. In 70-80 percent of cases, a rash will appear at the site of the bite, often in a bull's eye pattern. Early symptoms can include headache, fever, and fatigue. In most cases, the infection and its symptoms are eliminated by antibiotics, especially if the illness is treated early. Delayed or inadequate treatment can lead to more serious symptoms that affect joints, the heart, and the nervous system (WHO, "Lyme Borreliosis," accessed 2014).

Lyme disease can also affect cats (and dogs). It is highly recommended that domestic cats who spend some part of their day outdoors, and all community cats (when possible), should be treated with a monthly topical flea and tick medication. Shelters and bedding should also be treated using flea and tick powders or sprays. Providing cats with tick preventative treatments not only protects the cats, but it also protects the caretaker and others from contracting Lyme disease.

If you do find a tick biting you or a cat, carefully remove it using a pair of tweezers. Make sure to completely remove the head and the mouth parts, which can be difficult to remove if the tick has become engorged. Clean the area, apply antibiotic ointment, and monitor for infection (redness, swelling, bull's eye rash). If you see signs of infection, seek medical attention immediately. Dispose of the tick by flushing it down the toilet.

Campylobacter

Campylobacteriosis is usually transmitted through raw or undercooked meat, but humans can also catch the infection from other humans or animals. The main source of contamination in both humans and cats is undercooked poultry. Although campylobacter is not common in cats, it can sometimes be found in kittens, who usually get it from kennels (PetMD, accessed 2014). The bacteria causes cramping, diarrhea, fever, and abdominal pain (NIH, "Campylobacter Infection," accessed 2014). Symptoms usually last about one week and can be treated with increased hydration or antibiotics, if necessary.

Wearing gloves when handling cat feces can prevent possible contamination. Making sure the living space of cats is clean will also help prevent them from becoming infected.

Salmonella

A foodborne pathogen, salmonella causes diarrhea, fever, and stomach pains within hours or a few days of infection. Like campylobacter, the main source of contamination is raw or undercooked food, largely poultry or eggs. Infected humans often recover without treatment, though hospitalization is sometimes necessary in severe cases.

Cats and other animals can pass salmonella in their stool. The bacteria is common in cats who are fed raw meat or cats who eat birds and rodents. If a cat has diarrhea, wear gloves when cleaning her litter box and wash your hands thoroughly afterward to avoid contamination (“Salmonella,” accessed 2014).

Fungal Infections

Fungal infections can be common occurrences in cats, with skin lesions typically appearing on the tips of the ears, nose, tail, and also on the feet and hocks; however, the rash can spread to all parts of the body. The skin around these lesions is often flaky and bald, not always red in color, and the rash is usually itchy. In humans, the infection is called Ringworm because the outside of the spots usually appears more red than the inside, resulting in a characteristic ring shape (“Ringworm,” accessed 2014).

Fungal infections are highly contagious and can spread to other animals, as well as to people, through simply touching an infected animal or person. It can also be transmitted from unwashed clothing and showers. It is important to keep an infected cat quarantined and to wear gloves when applying ointment.

Treatment for humans as well as cats depends on severity, but may include antifungal ointments and oral medications. Topical treatment sterilizes the outside of the

body, while oral medications kill the infection internally. For small outbreaks, over-the-counter antifungal creams (i.e. athlete's foot cream) can be used to treat cats, dogs, and humans.

Parasites

There are a few diseases common to both cats and humans that are caused by parasites. These include cryptosporidiosis, giardiasis, and toxoplasmosis. Cryptosporidiosis and giardiasis can cause diarrhea in cats and people, and is usually contracted by drinking contaminated water. To prevent the spread of infection, everyone should have a veterinarian perform an annual fecal examination on their cats. If a cat should have one of these parasites, use extra caution while cleaning litter boxes by wearing gloves and washing your hands.

Cats and dogs can carry these parasites, but contaminated water is a greater threat. No one should drink water directly from lakes, rivers, streams, or springs (“Parasites - Cryptosporidium (also known as “Crypto”),” accessed 2014). Those who want to take extra precautions may wish to boil water to eliminate parasites such as *Cryptosporidium* or *Giardia*. These precautions are especially important when travelling outside the U.S. because water standards elsewhere may be different.

Toxoplasmosis

Toxoplasma gondii is an intestinal parasite that is most often associated with cats. The parasite causes the disease toxoplasmosis, which is a health concern for pregnant women. Raw meat, especially pork, is actually the primary mode of transmission of the parasite to humans. Consuming raw or undercooked meat is a danger, as is failing to wash your hands properly after handling meat or utensils used with contaminated meat. *Toxoplasma* cannot pass through the

skin, but oocytes left on the skin can unintentionally be ingested if hands are not washed properly, resulting in infection (“CDC - Toxoplasmosis,” 2018).

This parasite is estimated to infect as much as one third of the world’s human population, but very rarely do those infected get sick (Montoya and Liesenfeld, 2004). Most healthy people have immune systems that can fight off the parasite and will never become sick. However, the parasite can be dangerous in rare cases. Individuals with weakened immune systems, such as AIDS patients, can sometimes become seriously ill as a result of infection, and pregnant women can pass the parasite on to their unborn child. For this reason, people in these groups were historically advised to avoid cats prior to modern research proving avoidance to be unnecessary (“Toxoplasmosis in Cats,” 2019). It is important to note that there is less risk of acquiring toxoplasmosis from cats than eating unwashed vegetables and undercooked meat (Vittecoq et al., 2012). Additionally, owning an indoor cat does not significantly increase the risk of contracting toxoplasmosis (Hai-Xia et al., 2016; Lepczyk et al., 2019). Both latitude and access to the outdoors play significant factors in transmissions of *T. gondii* and related strains, with cats that were both living in the northern hemisphere and given access to the outdoors being nearly three times as likely to carry the parasite (Lepczyk et al., 2019). Pregnant cat owners in the United States may therefore wish to consider restricting their cats to the house for the duration of their pregnancy.

Further precautions can also be taken when in contact with cats to ensure a pregnant person’s safety. If pregnant, one should avoid cleaning litter boxes if possible, as infected cats can pass the oocyst of *Toxoplasma* in feces. If a pregnant woman has no alternative but to clean the litter box herself, she should wear disposable gloves and wash her hands thoroughly afterwards. The same goes for if she is gar-

dening, as it is possible for the parasite to live in soil (“Toxoplasmosis,” accessed 2014).

All cats newly adopted by families with pregnant members in the home should be tested for the disease. Pregnant women can also be screened for toxoplasmosis. The greatest risk occurs when the parasite infects a woman during pregnancy — if she was exposed to toxoplasmosis before the pregnancy, there is less risk to her child since she will have developed antibodies to fight the parasite. Nevertheless, it is recommended to wait at least three to six months after an infection before trying to become pregnant (Center for Food Safety and Applied Nutrition, 2018; “CDC - Toxoplasmosis,” 2018). If a woman does contract toxoplasmosis while pregnant, medication is available.

According to *WebMD*:

It is important to understand the mode of transmission from cats to understand how minimal the risk is. Even a cat with an active toxoplasmosis infection is only capable of passing it on for seven to ten days of her entire life, when there’s an acute infection. It takes anywhere from one to three days for oocysts shed in the feces to become infectious - which means the litter box would have to sit unscooped for one to three days before the infection could be passed on [emphasis added]. Then, to become infected from cat feces, a person would have to touch the feces and then touch an opening in their body.

ACR does not want to make light of the fact that if a pregnant woman does contract toxoplasmosis, it can be dangerous for her unborn baby. However, those who do not like cats exaggerate this particular hazard. Many doctors are uninformed that the risk of toxoplasmosis for pregnant women is low, and exposure from cat feces is far less

likely than from raw and undercooked meat.

Worms

Roundworms, hookworms, whipworms, and tapeworms can cause disease in humans and malnutrition in cats if left untreated. Visceral larva migrans, a disease that often goes away on its own but can be serious in rare cases, can result from accidental consumption of roundworm eggs. Children who play in soil can be at risk, or the eggs could travel on vegetables that were in contact with infected soil (NIH, "Visceral Larva Migrans," accessed 2014).

Cutaneous larva migrans, on the other hand, is caused by any kind of contact with hookworm-contaminated soil. It is most common among travelers returning from tropical regions (Caumes, 2000). To prevent possible worm infections, children and adults should wash their hands after playing/working outside and coming in contact with soil. Fruits and vegetables should be washed thoroughly before consumption. Travelers should wear sandals on unfamiliar beaches, and no one should go barefoot in areas that might be contaminated by dog or cat feces. Worms go away on their own or with anti-parasitic drugs ("Visceral larva migrans," 2020).

Cats can be treated with a monthly topical dewormer, such as Profender, or deworming pills can be crushed into wet food to prevent infection. Fecal exams can be performed to detect parasites. In colonies, outdoor litter boxes should be regularly scooped. And remember to ALWAYS wash your hands after handling cat feces.

Murine Typhus

Murine typhus (*Rickettsia typhi*) is caused by fleas that are often carried by rats, but can also be found on opossums, cats, dogs,

and other wild animals. Typhus occurs around the world, but in the United States, murine typhus is limited to the southern states, particularly Texas and California, where the primary carriers are opossums, rats, and cats (Civen, 2008; Blanton et al., 2016; Mullins et al., 2018). *R. typhi* does not produce disease in cats and dogs as it does in people. Epidemic typhus, spread by lice, is generally a more severe disease.

Spray or dust the cats' sleeping areas with a flea preventative, especially during warm, dry seasons. Capstar pills can be crushed into canned cat food, and a monthly topical flea treatment should be applied. Clean up neighborhoods and backyards, because junk left lying around attracts rodents. Cat owners in these areas may also want to seriously consider restricting their cats' outdoor access to supervised periods or secure enclosures, as free-roaming pet cats are just as susceptible to flea borne diseases as unowned cats (Luria et. al., 2004; Ayllón et al., 2012).

Plague

Plague is also usually carried by fleas, which in turn are transported on rodents and other mammals. Plague infects humans and animals ("Plague," accessed 2014).

Precaution should be taken in situations where exposure to rodent fleas is possible, such as when working outdoors or camping ("Prevention of Plague | CDC," 2018). Use a repellent to keep fleas off yourself and wear gloves when handling an animal with fleas. You should also treat cats and other companion animals for fleas. To prevent flea infestations, all cat blankets should be washed regularly and sleeping places can be dusted with flea powder. Capstar pills can be crushed into canned cat food, and it is also highly recommended that cats be treated with a monthly topical flea treatment such as Advantage Multi.

Conclusion

Although there are potential hazards of acquiring some diseases from stray and outdoor cats, the incidence is rare, and in most cases cat companionship provides improved health benefits. If common sense and good hygiene are exercised when working with colonies, transmission of infectious diseases from cats to humans can be minimized. Contact with other humans is more likely to be a source of contracting infectious diseases than contact with animals (“Zoonotic Disease: What Can I Catch from My Cat?,” 2014).

However, it is critical to be vigilant about cleanliness, especially when feeding feral cats and cleaning up cat feces. Taking precautions will help not only with potential health hazards, but will stop neighbors from complaining about dirty places due to outdoor cats.

There are millions of feral cats living in every corner of the world, and they help with the control of rodents in cities and towns. After all, this was one of the reasons



Louise Holton

Feeding feral cats in Rome, Italy

they became friends with humans in the first place. One rarely hears of humans becoming ill because of the cats living among us in our alleyways and on our streets. It is a friendship appreciated on both sides, by cats and by humans. The transmission of disease from cats to humans, as a result of this closeness, can certainly be managed.

Winterizing Feral Cat Colonies

In the winter months, providing shelter for feral cats is even more important than providing food (Calhoon and Haspel, 1989). Cold, wet weather can have adverse and potentially serious effects on cats. It is very important for feral cats to stay dry. If they become wet, they will need a shelter to dry off to prevent hypothermia or freezing. In most cases, however, feral cats are able to tolerate cold temperatures and make do just as any other wild animal. They search out warm, dry shelter and find any and all nearby food sources. Feral cats will also huddle together in order to conserve heat. When several cats huddle together in a small shelter, their combined body heat raises the temperature inside the shelter appreciably.



Decorated winterized shelters allow cats to escape the cold in style.

Providing shelter, along with feeding the cats, greatly reduces winter hardships and helps to keep the cats healthy.

You can buy a shelter from a pet supply

store, build your own shelter, or provide other types of protection against the elements. If feral cats rely on a shed or other building for shelter, it is recommended that a smaller portable shelter be placed inside.

Shelter Materials

Material with excellent insulation qualities, such as Styrofoam or mylar, work best. The shelter's interior should have a minimal amount of air space, thus reducing the amount of heat the cat's body must generate to keep the space warm. Still, you do want to allow enough room for a few cats to huddle.

Covered litter boxes (some have doors) and plastic or rubber totes work perfect for shelters. Outdoor dog "igloos" from a pet supply store also work well, and many websites sell specially-designed cat shelters. (Refer to the "Helpful Resources" section for more information.)

Use Styrofoam to line the containers and place straw in the bottom for bedding.

Additional Tips

Use straw (not hay) for bedding; it stays dry and can easily be changed. Do not use blankets or towels; they retain moisture.

Raise the shelter off the ground a few inches by placing it securely on bricks or on a pallet. It's more likely to retain moisture and rot if left on the ground. Plus, this prevents water from flowing into the openings when it's raining.

Clean the shelters each spring and autumn

by replacing the bedding with fresh straw. You may even want to sprinkle flea powder or other flea deterrent in the bottom of the shelter, before adding the bedding. Do not allow cats to lay directly in flea powder and always read product instructions prior to use.



Alley Cat Rescue

A basic, winterized foam shelter is a welcome sight for feral cats in cold conditions.

Microwavable heating pads and hot water bottles can be placed in shelters to keep cats warm. Most will stay warm for up to 12 hours, and can be especially helpful to protect against night time temperatures. Electric heating pads can be used for porch cats, and outdoor lights can be added to shelters for heat.

How to Construct a Shelter

Supplies You Will Need

- Sturdy cardboard box or plastic tote with lid (ideal size 24”L x 13”W x 15”H)
- Several thin pieces of Styrofoam (about 1/4” thick) or a small

Styrofoam cooler

- Straw for bedding
- Duct tape
- Utility knife
- Ruler or measuring tape
- Marker

Instructions

1. With the box or tote sitting on the ground, top up, draw a circle with a 6” diameter in the center of one (or both) of the short sides of the box. Cut out the circle to create a door(s).
2. Duct tape the edges of the circle door for reinforcement and to protect the cat from being scratched by any rough edges.
3. Measure the Styrofoam pieces so they line the bottom and the walls of the box. Cut the pieces to size and use the duct tape to secure all pieces of Styrofoam to the inside of the box. You can also use a Styrofoam cooler that will fit inside of the box/tote. Cut openings in the Styrofoam to match the door(s) in the box.
4. If using a cardboard box, fold closed three of the top flaps (allowing one of the larger flaps to stand open), and duct tape the three flaps closed. One box top flap is left unsecured to allow for easy bedding changes. If using a plastic tote, simply remove the lid to change bedding.
5. For a cardboard box, run strips of duct tape lengthwise along the bottom of the box to help waterproof the bottom. This may be done to each side of the box for extra protection. Also, cover the entire box with a plastic tablecloth or tarp (secured by heavy rocks or bricks) to prevent water damage.

Bedding

Bedding can make a shelter more comfortable and increase warmth, but it is not essential. It is better to have no bedding than bad bedding. Bad bedding is material that the cats lie on and cannot burrow in. For example, flat newspaper, blankets, and towels will draw out the cat's body heat when she lies on top of it.

Straw (again, not hay), shredded pieces of newspaper, and Styrofoam pieces all make good bedding.



Alley Cat Rescue

A foam cooler and straw add insulation to a weatherproof rubber tote shelter (top removed).

Food and Water

Provide the cats with a feeding station — a simple structure with a roof and a floor that will keep food and cats dry.

Nutrition is especially important for outdoor cats during the winter because the cold can create additional stresses for their immune systems. They require a boost in calories and more lean proteins to account



Waterloo Alley Cat Project

A covered shelter keeps cats and food dry.

for their increased activity in the cold. Feeding them a higher quality food is also beneficial.

Normally, healthy cats do not require a lot of water and can get most of their water needs from eating moist food; however, in the winter when canned food can freeze, dry food becomes a cat's staple. Therefore, providing fresh water is a necessity during cold weather. The best solution to keep water from freezing is to use a solar-powered or electrically-heated bowl. Water will evaporate relatively quickly, so the bowl needs to be filled regularly. You can also use microwavable heating pads/disks to place under water and food bowls to keep from water freezing.

The type of bowl you use in general can make a difference. Use one made of thick plastic, like a Tupperware container; it takes longer for water to freeze when in a plastic dish compared to a metal dish. Styrofoam containers lined with plastic also make great water bowls. The best bowls are deep, insulated, and have relatively small openings compared to their volume. Black or dark colored bowls will absorb solar radiation better. Position the bowl so it's protected from the wind and, if possible, exposed to the sun. Placing the bowl beneath a Styrofoam cooler with a hole large enough for the cat's head and shoulders will also help keep the water from freezing.

Health Care For Feral Cats: Guidelines for Colony Caretakers

In the previous chapters, we provided the how-tos of carrying out the trapping, transporting, and fostering of feral cats. Caretakers should be familiar with the following important information so they may make informed decisions and help properly manage the health care of their colony.

Overall Health and Life Expectancy

Those opposed to TNR programs claim outdoor cats are suffering, diseased, and living lives of misery. No doubt there are some cats in *unmanaged* colonies in unhealthy condition, but more often we see managed colonies (i.e. colonies in which TNR is implemented and the cats are fed regularly) with hardy survivors who are healthy. A New Zealand study published in 2019 assessed the health of pet cats, managed colony cats, and unmanaged colony cats and found “that stray cats—particularly managed stray cats—can have reasonable welfare that is potentially comparable to companion cats,” (Zito et al., 2019).

In an earlier, highly-reported study, veterinarians looked at the health of feral cats by measuring the body condition of cats *prior* to being trapped and sterilized. When trapped initially, the cats were reported to be lean but not emaciated. Veterinarians also measured the falciform fat pad, or the deposit of fat along each side of the abdomen, and found each cat to have a small amount of fat present; meaning the cats were eating enough to be able to store fat and maintain a fairly stable weight (Scott et al., 2002, web).

As for the occurrence of viral diseases such as feline leukemia (FeLV) and feline immu-

nodeficiency virus (FIV), large epidemiologic studies “indicate FeLV and FIV are present in approximately 4% of feral cats, which is not substantially different from the infection rate reported for pet cats” (Levy and Crawford, 2004). Furthermore, models of the transmission of the two diseases among feral cat populations “indicate that neither virus impacts overall colony size,” meaning these viruses are not quickly killing infected cats, but rather cats are capable of living years with either disease (Levy and Crawford, 2004).



Feral cats, Adams Morgan, Washington, D.C. These cats recovered fully from parasites and infection after receiving medical care as part of a TNR program.

Judy M. Zukoski

The life expectancy of a feral cat is still highly debated, with some sources claiming a feral cat will only live to be about two years old. Numerous studies show, however, the life expectancy is greatly increased for cats who have been TNR'd. A study on a Florida college campus over the course of 11 years reported that more than 80 percent of the cats had been residents for more than six years, which is comparable to the mean lifespan of 7.1 years for household cats (Levy, 2003). A study from 2008 through 2017 on the effects of a TNR pro-

gram on a colony at the University of New South Wales campus (Sydney, Australia) recorded that most of the nine cats who were present from the start and until the end of the TNR program were older than 10 years of age (Swarbrick and Rand, 2018). Two of the six cats in 2017 who had immigrated onto the campus were also over 10 years old (Swarbrick and Rand, 2018).

In 2019, Alley Cat Rescue surveyed rescue organizations across the United States that provide TNR services to their communities. Out of the 218 groups that responded, 72 percent reported the average age of local colony cats to be between two to six years old. Another 20 percent said the feral cats they assist were between six and ten years old, with more than 25 percent of respondents reporting feral cats in their communities who were 13 years or older (Clifton, 2019).

Feline Viral Disease

The three most prevalent feline viral diseases are feline infectious peritonitis (FIP), feline leukemia virus (FeLV), and feline immunodeficiency virus (FIV). These viruses are specific to cats and cannot be transmitted to humans or other animals. Feral cats who survive to adulthood and are well fed are usually robust animals and largely immune to local diseases.

Feline Infectious Peritonitis (FIP)

Feline infectious peritonitis (FIP) is a viral disease caused by certain strains of the feline coronavirus. Infected cats usually show no symptoms in the initial stages of coronavirus infection, and the virus only progresses into clinical FIP in a small number of infected cats - five to 10 percent — and only when there is a mutation of the virus or an abnormality in the immune response (“Feline Infectious Peritonitis,”

2020).



Louise Holton

Breakfast for the feral colony at the Buenos Aires Botanical Gardens, Argentina.

For cats who develop FIP, symptoms usually appear suddenly and increase in severity, usually resulting in death (without treatment - see "Treatment" section below). The cats often develop nonspecific symptoms such as weight loss, loss of appetite, depression, roughness of hair, and fever. Tissues around the infected cells, usually in the abdomen, kidney, or brain, also become intensely inflamed (“Feline Infectious Peritonitis,” 2020).

Because the symptoms of FIP are not uniform, often manifesting differently in different cats, and sometimes appearing similar to those other diseases, there is no definitive way to diagnose it without a biopsy. Veterinarians often diagnose FIP based on an evaluation of the cat’s history and symp-

toms in combination with coronavirus test results ("Feline Infectious Peritonitis," 2014).

There are two forms of the virus. In the wet ("effusive") form, cats will have an accumulation of fluid in the abdominal cavity, the chest cavity, or both. In addition to the symptoms of both forms, cats with the wet form can show labored breathing and abdominal distension. In the dry ("noneffusive") form, cats will have small accumulations of inflammatory cells form in various organs. Symptoms of the dry form depend on which organs are affected by the inflammatory cells. For example, a cat with affected kidneys will show excessive thirst and urination. The wet form usually progresses more rapidly than the dry form, but in both cases the cat's hair will become rough and dull and he will become progressively more lethargic and depressed.

Any cat that carries any coronavirus is potentially at risk of developing FIP. However, cats with weak immune systems (including kittens, cats already infected with feline leukemia virus (FeLV), and geriatric cats) are most likely to develop the disease. Most cats that develop FIP are under two years of age, but cats of any age may develop the disease.

Although a recently developed anti-viral drug called GS-441524 (GS) has been shown to be able to cure a majority of FIP infections, its use is not practical for many feral cats as it must be administered by daily injection over a period of at least 12 weeks. The cost of the drug varies greatly between manufacturers, but is at minimum \$80 per 5 mL bottle, which is beyond the means of many rescues and caretakers. However, those with the ability and resources to treat a feral cat or kitten with GS have a good chance of saving that animal's life.

A vaccine to prevent FIP is available but its

use is controversial. The vaccine is not 100% effective and must be given before the cat is exposed to coronavirus. Since FIP is not a common ailment, the vaccine is not always recommended.

Feline Leukemia Virus (FeLV)

The feline leukemia virus (FeLV) is a cancer-causing virus. In addition to causing feline leukemia, FeLV suppresses the cat's immune system, leaving the animal vulnerable to a variety of opportunistic diseases.

The signs and symptoms of infection with FeLV are varied and include loss of appetite; poor coat condition; infections of the skin, bladder and respiratory tract; oral disease; seizures; swollen lymph nodes; fatigue; fever; weight loss; recurring bacterial and viral illnesses; anemia; diarrhea; and jaundice ("Feline Leukemia Virus," 2016). Some cats can be carriers of the disease yet show no signs of illness for many years.

Infected cats shed FeLV primarily in their saliva, although the virus may also be present in the blood, tears, feces, or urine. Some possible modes of FeLV transmission include mutual grooming, sharing food dishes and litter boxes, and in utero transfer from a mother cat to her kittens. A mother cat can also transmit FeLV to her kittens through infected milk.

A simple blood test can be performed in a veterinary office to determine if a cat has contracted FeLV; however, most TNR programs choose not to test feral cats for the disease. (Continue reading for more information on testing feral cats for viral diseases.) Whether a feral cat tests negative for the disease or she is not tested, we strongly recommend all feral cats receive an FeLV vaccine to reduce the risk of transmission.

There is no cure for FeLV, although good

supportive care can improve the quality of an infected cat’s life. Nutritional support (herbs, vitamins) and other alternative treatments can help strengthen a cat’s impaired immune system.

Feline Immunodeficiency Virus (FIV)

Feline immunodeficiency virus (FIV) is a retrovirus that virologists classify as a lentivirus, or “slow-acting virus.” FIV suppresses a cat’s immune system, compromising her ability to fight off infection. However, cats diagnosed with FIV may live long, healthy lives, never showing symptoms of the virus, though some cats may experience “recurrent illness interspersed with periods of relative health” (“Feline Immunodeficiency Virus,” 2021).

Common signs and symptoms of the disease include poor coat condition; persistent fever; loss of appetite; weight loss; inflammation of the gums and mouth; chronic or recurrent skin, urinary tract, bladder, and upper respiratory infections; and a variety

of eye conditions. FIV-positive cats can also be much more susceptible to various kinds of cancer and blood diseases, and some experience seizures, or behavioral and neurological disorders (“Feline Immunodeficiency Virus,” 2021).

Fortunately, FIV is not transmitted easily. The primary mode of transmission is through bite wounds. This explains why the cats most likely to become infected are free-roaming, unneutered males prone to territorial fighting. FIV does not appear to spread through casual contact among cats. There is no danger of FIV spreading through sexual contact, and only rarely does a mother pass it on to her kittens, either through birth or infected milk (“Feline Immunodeficiency Virus,” 2021).

A blood test can be performed in a veterinary office to determine if a cat has contracted FIV. However, as with FeLV, most TNR programs choose not to test feral cats for the disease.

Kittens testing positive for FIV are not necessarily infected. If a kitten tests positive,

Effect of Test and Removal on FeLV Prevalence

	No Action	TNR, Testing & Euthanizing FeLV+ Cats	TNR, No Testing
# CATS STERILIZED	0	833	1500
# CATS LEFT INTACT	1500	667	0
# INTACT FEMALES (65% OF POPULATION)	975	434	0
# CATS TESTED AND EUTHANIZED	0	25	0
# FELV POSITIVE CATS (3%)	45 (all intact)	20 (all intact)	45 (all altered)
# KITTENS BORN IN ONE YEAR (5.7/FEMALE)	5558	2474	0
# FELV POSITIVE KITTENS BORN	126	56	0
TOTAL # FELV+ CATS AND KITTENS	171	76	45

the test is often detecting antibodies passed from the mother to the kitten through colostrum, the first milk that the mother cat produces. Positive kittens should be retested between four and six months of age, when any antibodies obtained from the mother cat will have disappeared.

There is a vaccine to protect against FIV, though it is rarely administered. Any cat who receives the vaccine will then test positive for the disease, because she will be carrying antibodies.

There is no cure for FIV; however, like with FeLV, proper nutrition and good supportive care can help strengthen a cat's impaired immune system and improve her quality of life.

To Test or Not to Test?

Funds for TNR programs are usually limited and testing requires time and money that may be better spent on sterilization if as a nation we are going to reduce the feral cat population. This is especially true considering that up to 50 percent of positive FeLV and FIV tests for feral cats can be false-positives, and confirmation testing is impractical (Levy and Crawford, 2004). Alley Cat Rescue does not perform testing as part of our standard TNR program; however, all cats who are placed into our adoption program or feral cats who are re-located are tested.

Operation Catnip's founder, Dr. Julie Levy, points out that the greatest cause of feline deaths in the United States is the killing — by humans — of unwanted stray and feral cats, which causes more deaths than all feline infectious diseases combined (Levy and Crawford, 2004). Subsequently, most TNR programs choose to focus their efforts and resources on sterilization rather than testing.

Vaccination Protocols

Please note: For those who are assisting outdoor cats by fostering, we highly recommend you vaccinate any pet cats prior to introducing any new cats - even if the new cat will be isolated in a spare room or in a large cage. Some viruses can be transmitted through the air and through contact with improperly cleaned food and water dishes, bedding materials, your clothing, and hands.

Typically, feral cats receive vaccinations at the time of sterilization; however, cats can be re-trapped later to update any vaccines.

Due to the rabies virus being a zoonotic disease, meaning it can be transmitted to humans, most health codes and laws require that all cats receive a rabies vaccination. (Refer to the chapter, "Zoonotic Diseases" for more information.) It is highly recommended that cats receive a three-year rabies vaccine. Kittens can receive a rabies vaccine as early as 12 weeks of age.

Feral cats should receive an FVRCP vaccine, providing funding allows. This is a combination vaccine that includes protection against rhinotracheitis, calicivirus, *Chlamydia psittaci*, and feline distemper.

The risk of vaccine-induced sarcoma, a highly malignant cancer, has caused the veterinary community to look into the possibility that cats are being over-vaccinated. In 1996, the Vaccine-Associated Feline Sarcoma Task Force (VAFSTF) formed to investigate how to prevent these sarcomas. The panel made a new vaccination recommendation that booster doses of vaccines against feline panleukopenia, feline viral rhinotracheitis and feline calicivirus (FVRCP) now only be administered every three years instead of the traditional one-year booster. The panel found that the three-year rabies vaccination provides adequate immunity, and suggested this over

annual shots to lessen the risk of sarcomas forming (“Vaccine-Associated Feline Sarcoma Task Force (2001 Report)”, 2001).

ACR strongly recommends providing three-year rabies and FVRCP vaccinations, although, in some cases, if a veterinarian has not seen a particular cat before (as is the case for first time feral cats), she may insist on giving the cat a one-year rabies vaccine instead. In our experience, we have found that feral cats who are part of managed colonies are easier to retrap after a few years than once every year. Cats who are trapped too often may become trap-shy, making retrapping much more difficult.

Additional Health Concerns

While being spayed or neutered, the veterinarian will examine the cat's skin for wounds or injuries, making sure to thoroughly clean and treat accordingly. Bite wounds and minor abrasions are common. A long-acting antibiotic injection, such as Convenia, is usually administered after sterilization procedures, and will also aid in reducing and treating any infection. For severe wounds or injuries, caretakers can administer additional antibiotics in wet food, or if the veterinary hospital or the



Louise Holton

ACR colony cat, Stumpy. She required foster care for a few extra days post-surgery.

caretaker has the space and is capable of housing the cat, she may spend a few days recovering confined to a cage.

Parasite infestations are the most common transmittable health concern for feral cats (Levy and Crawford, 2004). These include internal parasites like worms, and external parasites, such as fleas, ticks, and ear mites. As mentioned in previous chapters, it is highly recommended that TNR programs include treatments to prevent internal and external parasite infestations. Most topical applications, such as Advantage Multi, prevent and treat a wide range of parasites. For added protection and to treat severe cases of internal parasites, a topical dewormer such as Profender may be applied, and deworming pills and liquids, such as Drontal, can be crushed into wet food. (Refer to the chapter on “Zoonotic Diseases” for more information.)

Upper respiratory infections (URIs) are also common in feral cats, especially kittens. Signs and symptoms of URIs include nasal discharge, eye discharge, sneezing, and wheezing. Loss of appetite is also common in cats with URIs because their sense of smell is decreased due to a stuffy nose. A long-acting antibiotic injection can be administered or daily antibiotics, such as Clavamox or Amoxicillin, can be added to wet food for treatment of secondary bacterial infections, which often develop during the viral infection. For cats who can be handled, antibiotic eye ointments can also be administered. (Refer to the chapter, “Feral Kittens and Pregnant Cats” for more information.)

When they have already been trapped, cats should also receive a dental exam, because dental care is very important to a cat's overall health. Dental disease is a prevalent health concern for feral cats. In the colonies that Alley Cat Rescue manages, we have found that some older cats who lost weight and stopped eating were suffering from dental problems. We retrapped those

cats and our veterinarians removed some infected or damaged teeth, and the cats gained back their weight. Some cats, especially those infected with FeLV or FIV, are prone to stomatitis, or the inflammation of the mouth. In our experience, the best treatment for this is to remove all teeth and treat flare-up conditions with antibiotics.

Additional Health Concerns

While being spayed or neutered, the veterinarian will examine the cat's skin for wounds or injuries, making sure to thoroughly clean and treat accordingly. Bite wounds and minor abrasions are common. A long-acting antibiotic injection, such as Convenia, is usually administered after sterilization procedures, and will also aid in reducing and treating any infection. For severe wounds or injuries, caretakers can administer additional antibiotics in wet food, or if the veterinary hospital or the caretaker has the space and is capable of housing the cat, she may spend a few days recovering confined to a cage.

Parasite infestations are the most common transmittable health concern for feral cats (Levy and Crawford, 2004). These include internal parasites like worms, and external parasites, such as fleas, ticks, and ear mites. As mentioned in previous chapters, it is highly recommended that TNR programs include treatments to prevent internal and external parasite infestations. Most topical applications, such as Advantage Multi, prevent and treat a wide range of parasites. For added protection and to treat severe cases of internal parasites, a topical dewormer such as Profender may be applied, and deworming pills and liquids, such as Drontal, can be crushed into wet food. (Refer to the chapter on "Zoonotic Diseases" for more information.)

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Hospice Care

Hospice care for terminally ill and aging companion animals has become more popular over the years. It is similar to long-term hospice care for terminally ill humans. With the guidance of trained veterinarians, animal guardians can administer pain killers and other medications, and can nurse their sick animals until they either die naturally, or until the guardian feels the quality of the cat's life is poor enough to consider euthanasia.

ACR feels that the hospice care concept is al-

so an appropriate one to consider for aging and terminally ill feral cats. Some feral cats, by old age, have come to trust their caretakers to the point that it may be possible to trap the cat and provide in-home hospice care. However, all caution should still be used. Even though the cat is elderly, she is still feral and should be confined to a large cage. More information can be found in the Helpful Resources section.

If in-home hospice care is not possible and the cat can be trapped, caretakers may consider euthanasia. However, if it becomes too traumatic for a sick cat to be trapped, and you are unable to do so after several attempts, it may be kinder to leave her alone to die in peace.

We are sure that many caretakers of animals have felt that perhaps they should have allowed their cat or dog to die in peace alone, and at other times have felt that perhaps the animal should have been euthanized sooner to prevent her from suffering further. Everyone goes through this during a time of grieving, and feral cat colony caretakers are no different. These are hard decisions to make. However, they need to be made at some point. It is therefore worth considering ahead of time, and discussing with your veterinarian what procedures to follow.

Euthanasia

Veterinarians and colony caretakers should discuss guidelines for euthanizing feral cats prior to trapping. Most feral cats are healthy, and common illnesses and infections are easily treatable with antibiotics and parasite control measures. However, for conditions that require long-term, in-house care, but where such treatment is not possible, it is more humane to euthanize the cat than it would be to release her back outside. In cases of extreme injury or illness that exceed medical capabilities, the cat should also be euthanized. In all cases, Euthanasia should only be practiced when all other options have been exhausted.

Conclusion

Keep in mind that feral cats can be difficult to handle, especially without previous experience, and this can be a major concern for some veterinarians and their staff. Bring the cats to vet appointments in covered traps and explain why to the staff if they are not used to treating feral cats. However, following the guidelines laid out in this handbook, TNR programs can be implemented with minimal mishaps. Gathering as much preliminary information as possible about a feral cat colony prior to trapping, and communicating openly will ensure that the caretaker and veterinarian are on the same page.

Health Care for Feral Cats: Guidelines for Veterinarians

Alley Cat Rescue and our network of colony caretakers and veterinarians have successfully trapped and sterilized tens of thousands of feral cats. With over 30 years of experience working with feral cats, we have put together this chapter as a guide for veterinarians and their staff, who may not have previously worked with feral cats.

The most important thing to keep in mind is that the wild nature of feral cats presents a unique challenge when treating them. Therefore, the less you handle them, the safer it is for both veterinary staff and for the cats. Feral cats can be treated without mishaps by using the proper equipment and implementing these simple steps and procedures.

Preliminary Plans

When planning a colony management program, the caretaker should consult a veterinarian prior to trapping. The caretaker should note: the size of the colony (adults and kittens); the health of the colony (Do there appear to be sick or injured cats?); and if there appear to be any tame or adoptable cats in the colony. This information is pertinent to devising a proper plan of action. It is difficult to guarantee that the cats will be trapped on an exact schedule. Caretakers may not know the exact number of cats, and they may not be able to predict either the weather conditions or their luck with trapping.

Most Trap-Neuter-Return (TNR) projects, especially with colonies, require flexibility and patience from both the client and the veterinarian. ACR recommends veterinarians draft a list of what they require or expect of their clients. This should include hours of operation, the procedures caregiv-

ers need to follow (with the important message that the cats must remain in their traps), and the terms of payment, including whether some of the cost is a donation by the clinic. The caretaker should also let the clinic know if the cats will be returned to the outdoor colony or kept for possible adoption, fostering, barn homes, etc.



Alley Cat Rescue

Feral cat arriving in a trap for treatment by ACR vets, Doctors Rauf Ahmad and Pervaiz Manzoor.

It is important to remember that the cat's well-being is the top priority. No cat should be exposed to any danger or allowed to become too stressed while remaining in the trap. Cats should have little human contact after surgery and should be allowed to recover in a calm, quiet environment, with traps or cages covered by blankets or towels.

Fundraising and Payment Plans

Payment plans should be worked out ahead of time. Both caretaker and veterinarian must remember that while clinics cannot function without adequate remuneration, a caretaker attempting to manage

a colony usually has limited resources and is working to help resolve a community problem using their own personal funds. A workable plan usually can be devised to suit both veterinarians and caretakers. ACR provides resources on our website for finding funding and listings of low-cost clinics in the U.S. Caretakers can also contact SPAY USA (800-243-SPAY), which maintains a national registry of low-cost spay/neuter service providers. There are also national low-cost sterilization programs available. Veterinarians can participate in the Friends of Animals subsidized program (800-321-PETS), which reimburses veterinarians for part of their surgical costs.

Equipment and Handling

Having the proper equipment is vital when working with feral cats. Special traps, squeeze-side cages, nets, restraint modules, and cages to house the cats after surgery are all necessary items. All equipment containing feral cats must have large notices attached that read, “Warning! This cat may bite.” A small transfer cage, which fits against the sliding door of the trap, can be used to move the cat if necessary.

Some veterinarians tranquilize feral cats by tipping the trap on its side. It is easier to immobilize them while they are still in their traps. Feral cats should be handled only when tranquilized. (For information on purchasing equipment, refer to the Helpful Resources listing at the end of the handbook.)

Pre-Exposure Rabies Vaccinations

As a precaution, all individuals working with feral cats should receive pre-exposure

rabies vaccinations. Refer to “Steps for Successful and Safe Trapping” for more information on rabies vaccines for humans, and to the “Zoonotic Diseases” chapter for information on additional health hazards.

Surgery

Male cats who are part of a TNR program should be sterilized through castration, while female cats should receive an ovariectomy. Castration is the complete removal of the testes in male cats, and ovariectomy is the removal of the uterus, fallopian tubes, and ovaries in females. Vasectomies and hysterectomies are NOT recommended; leaving the testicles and ovaries intact will perpetuate nuisance habits such as fighting, yowling, and spraying. While several studies suggest that Trap-Vasectomy-Hysterectomy-Release (TVHR) could be equally or more effective at population control (Mendes-de-Almeida et al., 2011; McCarthy et al., 2013; Ireland & Neilan, 2016), more recent research indicates that TNR is significantly more successful at reducing nuisance behaviors (Ireland & Neilan, 2016; Janeczko, 2019). Therefore, the traditional method of TNR is preferred over the TVHR method.

In England, where these programs have been implemented for over four decades, flank incisions are used for females (who are not pregnant), as this could possibly lessen the chance of infection and evisceration (internal organs protruding through the incision). However, most U.S. veterinarians perform the midline incision; proper use of inner and outer sutures minimizes the risk of evisceration when using the midline method. (Refer to “Left Lateral Flank Spay Technique” for more information on this procedure.)

While the cat is still under anesthesia, an overall physical exam should be performed so any other conditions can be addressed.

The cat should be examined for wounds, and any lesions should be examined for parasitic or fungal infections and treated accordingly. Eye and ear infections should also be treated. The cat's mouth and teeth should be examined; any decaying teeth should be removed. Any matted or painfully knotted fur should also be removed.

A long-lasting antibiotic, such as Convenia, should be administered to prevent postoperative infections and to treat any other underlying infections. If antibiotics are needed after release, they should be given to the caretaker, who can mix crushed tablets or liquid medication into moist food. It is also recommended that a pain medication such as Trobutrol be administered.

Anesthetics

A number of general anesthetics that cause minimal post-surgical trauma are available for surgical procedures. Some veterinarians use a combination of Telazol, Torbutrol, and Propofol plus Isoflurane, an inhalant gas, which helps keep the cats at an appropriate level of sedation. Each veterinarian will use their own drugs, but these are suggestions of what vets ACR has worked with have used successfully over the years.

Sutures

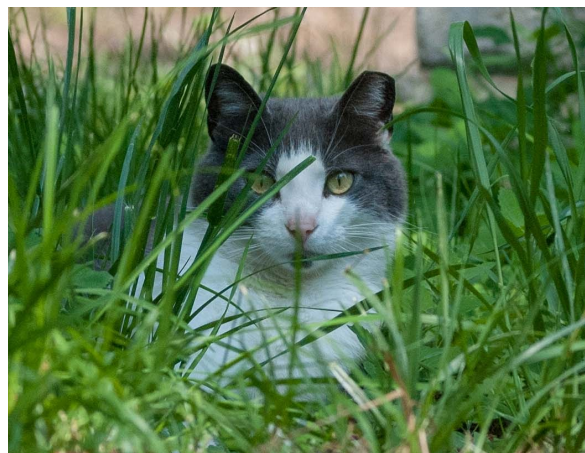
Absorbable sutures and surgical glue should be used to avoid the trauma of having to retrap cats for suture removal. PDS (Polydioxanone) sutures in size 3-0 are recommended for internal closure, and Vetbond by 3M for external closure. The surgical glue is very important as it will prevent any chance of evisceration.

Ear-Tipping

Left ear-tipping is the preferred universal

method for identifying sterilized feral cats belonging to managed colonies (Griffin et al., 2016). Ear-tipping will easily allow the caretaker to spot a new cat entering the colony and identify cats who have already been sterilized. Any ear-tipped cat trapped in error can easily be identified within the trap and released, and animal control staff will see that the cat comes from a managed colony and the cat can then be returned to the caretaker.

All feral cats, while still under general anesthesia, should have the top quarter inch of their left ear removed. The shape of this ear is then unmistakable, even from a distance. It must be emphasized that if too much of the pinna is removed, the ear looks cropped and may be aesthetically unacceptable to the cat caretakers. If the cut is not straight, the silhouette is not distinctive enough. Ear-notching is NOT recommended, because this can be confused with an injury from a fight.



Alley Cat Rescue

Caretakers and vets know this cat has been sterilized by the tipped ear.

Alternatives to ear-tipping are often ineffective. Ear tags may fall out and collars can get caught on bushes and possibly choke or injure the cat, so neither should be used. Tattoos are hard to see without trapping and handling the cat, and tattoo standardization between clinics and shelters is poor (Mielo et al., 2022). The Amer-

ican Veterinary Medical Association recommends using multiple forms of identification in conjunction with ear-tipping, especially reliable methods such as microchips (Griffin et al., 2016).

Vaccinations

Feral cats who are over one year old should be given a three-year rabies vaccine, along with a distemper vaccine (FVRCP) to prevent Rhinotracheitis, Calici, Panleukopenia, and *Chlamydia psittaci*. It is also highly recommended that a feline leukemia (FeLV) vaccine be administered, regardless of whether the cat is tested for the disease. ACR's veterinarians administer a distemper vaccine that includes the FeLV vaccine; using this combination vaccine saves money in the long run over administering separate distemper and FeLV vaccines.

The American Veterinary Medical Association recommends that all cats be vaccinated for common feline viral infections (2017). Sterilization has been repeatedly shown to decrease susceptibility to these infections (Gates et al., 2016; Garigliany et al., 2016; Stavinsky et al., 2017), but recent research also suggests a correlation between increased caretaker involvement and pathogen transmission within feral cat colonies, likely related to population density (Hwang et al., 2018).

Treating for Internal and External Parasites

It is highly recommended that feral cats be treated for internal and external parasites. Topical treatments, such as Advantage Multi and Profender, can be applied while the cat is still under anesthesia. Caretakers can also be provided with pills like Capstar or Drontal, which can be crushed into

food.

Testing for Viral Diseases

Testing for viral diseases, such as FeLV and FIV, in feral cat colonies should be optional, not mandatory. As discussed in earlier chapters, the rate of transmission for FeLV and FIV in feral cats is very low, and sterilization will decrease the spread of these infections. Also, funds for TNR programs are usually limited, therefore resources are better spent on sterilization and rabies vaccines rather than on testing. (For more information, refer to the section on "To Test or Not to Test?" in the chapter, "Health Care for Feral Cats: Guidelines for Colony Caretakers.")

Kittens

Early age spay/neuter is highly recommended and can be performed on kittens who are eight- to 16-weeks-old, as long as they weigh at least two pounds. Please make sure they recover on heating pads and their body temperatures are closely monitored. To prevent hypoglycemia, kittens under four months of age should only fast for three to four hours prior to surgery, and they should also be encouraged to eat a small meal within one hour of recovery from surgery. In addition, all kittens should be examined for signs of upper respiratory infection. (Please refer to the chapter, "Early Age or Pediatric Spay/Neuter" for more detailed information.)

Pregnant and Lactating Females

Colony caretakers should be advised against trapping lactating females if possible, as her kittens could die from starva-

tion and exposure while she is at the veterinary clinic. However, if a lactating female is inadvertently trapped, and her kittens can be located and fostered, the mother cat can be spayed through a flank incision, or even a midline incision, as long as the incisions are well sutured. Once fully recovered from anesthesia, a lactating female can be returned to the colony and reunited with her kittens to resume nursing, or she can be fostered along with her kittens.

Because healthy cats are euthanized in shelters every day and TNR funds are usually limited, Alley Cat Rescue recommends that pregnant cats who are not far along should be spayed. If the caretaker wants to keep a pregnant cat, she should be fostered at the veterinary clinic or in a home until the kittens are born and have been weaned, and then she be sterilized along with the kittens. Ultimately, the final decision should be made based on what is safest for the mother cat. All options should be discussed with the cat's caretaker prior to trapping, so that fostering arrangements can be made if necessary.

More information on safely fostering feral cats can be found in the chapter, "Feral Kittens and Pregnant Cats" chapter.

Postoperative Care

No cat should leave the clinic until fully conscious. Male cats need a minimum of an overnight stay in the clinic or in a home, where their recovery can be monitored. Female cats, especially previously pregnant cats, need to be kept longer to recover properly; at least two or three days is recommended. Cats who appear to not be recovering well from surgery should be rechecked by a veterinarian prior to release. If a cat is not fully conscious after six hours, she may need fluids.

It is safest to allow the cat to recover in a large carrier or in a trap, because these can

then be used for direct transportation to the colony site. This will lessen the risk of injury to humans and trauma to the cats, which can often occur while transferring cats from a cage to a carrier and vice versa. Cover the trap or carrier with a sheet or towel to lessen the cat's stress.

If feral cats stay in cages at the clinic, remember they are wild. A small enclosure/den that can be secured shut can be placed inside of a cage. These boxes give feral cats somewhere to hide and will make them feel more secure. This will also prevent the cat from escaping, and make it safer and easier for staff to clean the cage. A sheet or towel should be pulled over the front of the cage. Make sure the cage is securely locked to prevent escape and write on the cage card, "Warning! This Cat May Bite."

Never underestimate the ability or determination of feral cats to escape. Exercise great caution when changing cat litter or when feeding. Their sometimes docile appearance can be very deceptive, and they may lunge at the door in an attempt to escape.

What to Do if a Feral Cat Escapes in the Clinic

If a feral cat escapes from a trap or cage while in the clinic, a special net can be used to recapture the cat. Under no circumstances should anyone try to catch the cat by hand. Do not attempt to throw a towel or blanket over the cat; this is dangerous because the cat can still attack.

If the cat hides in an inaccessible place, it is best to set a trap. Cats can be left for three days without food to make them hungry enough to enter the trap. Water should be left for them outside of the trap.

Euthanasia

Veterinarians and colony caretakers should discuss guidelines for euthanizing feral cats prior to trapping. Most feral cats are healthy, and common illnesses and infections are easily treatable with antibiotics and parasite control measures. However, for conditions that require long-term, in-house care, but where such treatment is not possible, it is more humane to euthanize the cat than it would be to release her back outside. In extreme cases of injury or illness that exceed medical capabili-

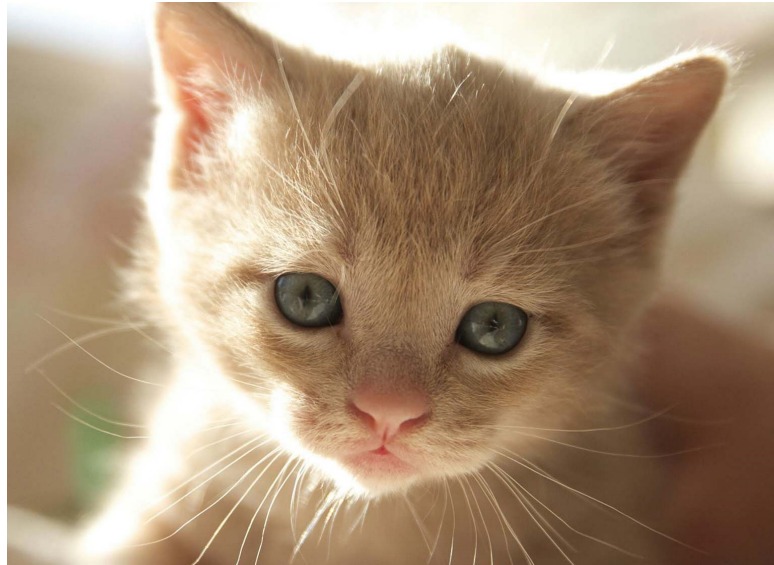
ties, the cat should also be euthanized. Euthanasia should only be practiced when all other options have been exhausted.

Conclusion

Feral cats can be difficult to handle and present certain challenges for a veterinarian and staff, but by following the simple steps mentioned above, TNR programs can be implemented with minimal mishaps. Communicating openly will ensure that the veterinarian and caretaker are on the same page.

Early Age or Pediatric Spay/Neuter

Traditionally, veterinarians sterilized kittens around six months of age. However, studies and statistics show that early age or pediatric (between eight and 16 weeks of age) spay/neuter surgery is safe and provides greater short- and long-term health benefits than surgery done later in development (Kustritz, 2022; Howe, 2015). Nowadays, early age spay/neuter is more commonly practiced than later procedures among veterinarians, yet some misconceptions surrounding this topic still remain.



Alley Cat Rescue

A beautiful spring kitten.

Some individuals still think it is healthier to allow a female cat to give birth to one litter of kittens prior to being spayed, and that a female cat should not be spayed until after her first oestrus period. However, motherhood provides no extra health benefit to a female cat. In fact, statistics show that quite the opposite is true. According to the 2013 “State of Pet Health Report” released by Banfield Pet Hospital, spaying female cats eliminates the risk of pyometra, a life-threatening infection of the uterus, and when female cats are spayed *before* their first oestrus cycle, the risk of them developing cervical, uterine, and mammary cancer is greatly reduced (“State of Pet Health Report,” 2013). Similarly for male cats, neutering eliminates the risk of testicular cancer (“State of Pet Health Report,” 2013).

Some people also mistakenly believe that spaying or neutering a cat “too early” in development can result in behavioral problems, although once again the opposite has been found to be true. Spaying or neutering

a kitten early in age can actually *curb* certain behavioral issues such as territorial spraying/urinating and aggression.

Early age spay/neuter has been endorsed by the American Veterinary Medical Association (AVMA) because it provides a solution to the overall need to stem the overpopulation of companion animals (Nolen, 2013). Further support for this procedure comes from the Association of Veterinarians for Animal Rights (AVAR), the American Animal Hospital Association (AAHA), the American Society for the Prevention of Cruelty to Animals (ASPCA), Spay USA, and the American Humane Association (AHA). There are also several statistics that create incentive early age spay/neuter for kittens:

- Research shows that 40 to 50 percent of people adopting cats from rescue groups or shelters do not abide by the contracts that were signed at the time of the adop-

tions, including specific sterilization requirements (Hoskins, 2005). While the American Pet Products Association reports show that 87 to 91 percent of companion cats have been spayed, 20 percent of those cats had produced at least one litter prior to being spayed (Christiansen, 1998).

- Cat guardians harbor serious misconceptions about the reproductive habits of cats. 84 percent of 715 people surveyed believe cats cannot get pregnant before the age of six months (Christiansen, 1998).
- Euthanasia of healthy cats in shelters is the leading cause of death in cats. That is, more cats are deliberately killed for lack of homes and lack of space than those who die from feline diseases (Levy and Crawford, 2004).

Over the past 11 years, the number of cats being euthanized in shelters has decreased by a remarkable 82 percent (PetPoint Shelter Data, 2021). Despite this improvement, it is unacceptable that hundreds of thousands are still being killed (PetPoint Shelter Data, 2021).

Overpopulation, however, is not a problem without a solution. Two important tools that reduce the number of unwanted animals without resorting to killing are early age spay/neuter and pre-adoption sterilization (spaying/neutering all animals before they are adopted into new homes). Both practices help not only put an end to the killing of perfectly healthy animals in our nation's shelters, but will also go a long way in stopping more stray and outdoor cats from joining feral colonies.

In addition to helping the greater community of cats in our country, early age spay/neuter helps each individual kitten. The procedure is safe, and kittens sterilized before they are twelve weeks old have even fewer complications from surgery than in



Alley Cat Rescue

Keep kittens on a warming pad after spay/neuter surgery.

procedures done on older cats (“Juvenile Spay/Neuter,” 2022).

Precautions can be taken by veterinarians during surgery and by caretakers during recovery to ensure kittens' safety. After surgery, to prevent low blood sugar or hypoglycemia, kittens under four months of age should only fast for three to four hours prior to surgery, and they should also be encouraged to eat a small meal within one hour of recovery from surgery. It is not recommended that litters of kittens be separated before surgery, and upon recovery from anesthesia, they should be immediately reunited to prevent unnecessary anxiety.

Alley Cat Rescue strongly believes that feral cat caretakers can be leaders in the effort to increase early age spay/neuter of kittens. As individuals who deal directly with feral cats, caretakers are in a special position to stop overpopulation at its source. When possible, caretakers should try to

trap feral kittens between eight and 16 weeks of age to be spayed or neutered. If your veterinarian does not provide early age sterilization for kittens, you can inform them of its life-saving benefits and encourage them to adopt this low-risk procedure.

If we do not actively work to increase the number of cats spayed before they can have litters of their own, we are passively allowing overpopulation to continue. With early age spay/neuter, we can help cats and save lives.

Left Lateral Flank Spay Technique

A survey of veterinarians in the United Kingdom showed that 96 percent performed ovariohysterectomies on cats using the flank laparotomy technique (side incision) rather than the midline coeliotomy technique (midline incision) (Coe et al., 2006). British veterinarians prefer the flank spay, whereas U.S. veterinarians prefer to use the midline spay technique. Proponents of the flank spay technique believe it results in less of a chance for infection at the wound site, and a decreased risk of evisceration (internal organs protruding through the incision) occurring should the incision break down post surgery (Remfry, 1996).

The Flank Spay Technique

A flank spay is when the incision is made on the left side (flank) of the body rather than on the midline of the abdomen. The spay procedure is the same as performed during the midline incision, and the same reproductive organs (ovaries and uterus) are removed with both procedures.

As with a midline spay, the flank incision should be made as small as possible. Intra-dermal sutures should be used instead of skin sutures to prevent the cat from pulling them out. Dissolvable sutures are highly recommended, as well as surgical skin glue.

Advantages of Using Flank Spay Technique

If the spay incision should break down after surgery, protrusion of vital organs

through the incision is less likely with a flank incision (Remfry, accessed 2014). The flank position also helps prevent the incision from becoming infected if the cat is not able to be kept in a perfectly clean environment following surgery.

Because the surgery is performed on the side of the body, monitoring the incision is much easier. The incision line can be seen from a distance without having to handle the cat; the midline technique, where the incision is made on the abdomen, requires the cat to be handled in order to clearly monitor its healing. As little handling of a feral cat as possible equals less stress on the cat and less risk of injury to both cat and human.

Performing the flank incision is also beneficial if the cat has nursing kittens; however, it is not recommended for pregnant cats (Peterson, 2006). Since the flank incision is not made near the mammary glands, the female is able to be sterilized and her kittens can continue to nurse following surgery. Using the flank incision is more comfortable for the mother during post-operative recovery, and there is a lower risk of evisceration because the nursing kittens are not pulling at the incision site like they would had a midline incision been performed. In addition, mother cats often have large mammary glands from nursing. During a midline incision, excessive bleeding and leakage from the mammary glands can cause infection; this is avoided with the flank incision.

Disadvantages of Using Flank Spay Technique

A few disadvantages or complications that can arise from performing the flank spay have been noted, including “the possibility that the entire uterine body may be difficult to remove, a dropped ovarian pedicle may be difficult to recover, and that it may be difficult to expose the opposite ovary and uterine bifurcation” (Coe, 2006).

Also, the scar will be covered over with fur once completely healed, making it difficult to identify a cat as being spayed. Occasionally the fur will regrow in a slightly different color or pattern following a flank spay, but the sure way to identify a cat as having been spayed is to ear-tip her. Ear-tipping feral cats is the universal symbol for a sterilized individual, regardless of which surgery technique was used.



adrigu via Flickr

Cat spayed using the midline approach. The incision is through the underbelly.

Postoperative Care

After all surgeries, Alley Cat Rescue recommends that both female and male feral cats receive a long-acting antibiotic to prevent infection and to help treat any underlying

infections that may not be visible. All cats should be held for at least 24 to 48 hours to ensure they are fully conscious prior to being released. It is not recommended to trap lactating mothers; however, if one is inadvertently trapped, the flank surgery allows nursing felines to be released back to their litter within a 24-hour period. Most kittens around three-weeks-old should be able to survive in mild temperatures for about a day without their mothers.

Flank Spay in the U.S.

Despite the majority of British veterinarians preferring the flank spay, many U.S. veterinarians believe the midline ovariohysterectomy is the safest procedure to perform. Their primary concerns regarding the flank incision are limited access to the cat's abdomen should complications, such as bleeding, arise, and difficulty identifying a previously spayed cat (not all vets will know to check for a surgery scar on the flank, and not all flank-spayed feral cats will be properly identified by ear-tipping) (McGrath, et al., 2004).

However, some veterinarians in the U.S. do choose to perform the flank spay, citing a few advantages to the procedure over the traditional midline approach. Some feel the flank incision to be safer, as the incision is less affected by gravitational forces than the midline incision, and that the overlapping musculature on a cat's flank protects against evisceration should the closing sutures fail. The flank spay can also save time for veterinarians, as the relevant organs can be easier to find through a flank incision (McGrath, et. al., 2004).

One advantage of the flank procedure is that the incision can be viewed at a distance so the ferals need not be handled

Operation Catnip of Gainesville



Cat being prepared for a flank approach spay procedure, often favored by colony caretakers for its visibility from a distance. The incision is through the left side .

(McGrath et al., 2004). The few veterinarians who use this method claim they have

not experienced excessive bleeding using the flank incision and they ensure sterile surgeries.

Conclusion

Both the flank and midline techniques safely sterilize female cats in about the same amount of time, with about the same amount of difficulty (Coe, 2006). In comparing the flank and midline approaches, Coe and others came to the opinion that “the midline approach is preferable, predominantly because the uterus sometimes cannot be identified from the flank approach, and it is difficult to be certain whether this is a technical problem or the cat has already been neutered, without exploring from a midline approach” (Coe, 2006).

Chemical Sterilization

History of Non-surgical Sterilization Methods

In 1963 it was discovered that drugs called synthetic progestins could suppress oestrus (the heat cycle) in female cats. Denmark was one of the first countries to try the drug progestin megestrol acetate when, in 1971, several colonies of outdoor cats were administered low doses (2.5 to 5 mg) orally once per week to prevent oestrus. Out of the nearly 500 females to whom the bait was available, 20 became pregnant and of that number, five aborted, one died giving birth, and 14 produced normal litters. In some instances, cats developed mammary and cystic tumors as well as pyometra (a serious and potentially deadly condition in which the uterus becomes infected and filled with fluid) (Kristensen, 1980).

In 1977, Dr. Jenny Remfry worked with the Universities Federation for Animal Welfare to carry out several field trials for megestrol acetate in the United Kingdom. At the end of the study Remfry concluded, “Even the most reliable helper may be unable to ensure that a feral cat receives her weekly dose. Therefore trapping and spaying is probably still the best method available to stabilize cat populations” (Remfry, 1978).

In 1984, a study conducted in Billings, Montana used megestrol acetate on cats. Approximately 70 percent of the cats did not produce kittens. However, there were still some kittens born in the colony because some female cats did not receive adequate doses of the drug (Kirkpatrick and Turner, 1985).



Sergey Ovchinnikov on
Unsplash

Chemical sterilization is being investigated as an alternative to traditional surgical procedures, as it could provide a cheaper and less labor-intensive method of sterilizing large numbers of cats quickly in remote or hard-to-reach locations.

In 2000, the Alliance for Contraception in Cats and Dogs (ACC&D) was founded by Drs. Henry Baker, Stephen Boyle, and Brenda Griffin as a program of Auburn University. The organization’s mission is to develop non-surgical birth control methods to manage cat and dog populations. In many developing nations where poverty is endemic, veterinary care and population control are non-existent. Surgical sterilization, especially for large populations of feral cats and dogs, is not feasible in these areas. Providing non-surgical methods of sterilization would make population control easier, faster, and cheaper (“Our Mission and Values,” accessed 2023).

Types of Non-surgical Sterilization

Chemical Castration

Several methods of chemical castration exist, with some already approved by the

FDA and others undergoing field trials. Chemical castration has been studied for nearly 60 years and targets the destruction of gonadal cells in males causing infertility by a lack of sperm production (Hedge, 2013).

Immunocontraception

Researchers at the USDA Animal and Plant Health Inspection Service National Wildlife Research Center (NWRC) developed a GnRH (gonadotropin-releasing hormone) immunocontraceptive vaccine called GonaCon. When the GnRH vaccine is injected, the body's immune response neutralizes the hormone's function, resulting in infertility in both males and females (National Wildlife Research Center, 2011). Scientists say the vaccine shows great promise as a wildlife infertility agent to be used instead of lethal control (Levy et al., 2011).

In 2011, scientists at the University of Florida found that a single dose of GonaCon controls fertility for at least five months and up to five years in adult female cats. Single dose vaccinations were given to 15 female cats and placebos to five others. All five cats given placebos became pregnant. Of the cats treated with GonaCon, 93 percent remained infertile for the first year, 73 percent for two years, 53 percent for three years, and 27 percent were still infertile five years later as the cats' antibodies to the vaccine decreased (Carey, 2011).

"We're hoping this research will lead to a nonlethal method of control for feral cat populations that is less expensive, labor-intensive, and invasive than current methods, such as surgical sterilization," said Julie Levy, DVM, Ph.D., lead researcher of the study and director of the Maddie's Shelter Medicine Program at the University of Florida (Carey, 2011).

A 2018 study of GonaCon's efficacy and longevity on horses found that the vaccine's effects wore off considerably after

two years, but that a second shot of the vaccine provided strong fertility control for more than three years (Baker et al., 2018).

Sex Steroid Hormones

Megestrol acetate (MA) is used as an oral contraceptive for female cats and dogs to prevent oestrus ("Cat Adoption Team Megestrol Acetate Clinic", accessed 2022). It is available in several countries under different brand names. In the U.S., the drug has not been approved by the FDA ("Cat Adoption Team Megestrol Acetate Clinic", accessed 2022) and is sold as Ova-ban and Ovarid; it was previously sold as FeralStat. It is also used to treat health and behavior problems in cats.

Long-term use and higher dosages can produce serious side effects, including pyometra, diabetes mellitus, mammary gland swelling or cancer, and adrenal gland suppression ("Cat Adoption Team Megestrol Acetate Clinic"). Many of these side effects are reversible upon discontinuation of MA.

GnRH Agonists

GnRH agonists suppress reproductive hormones in both males and females, leading to sterility. One such drug, Suprelorin, is a subcutaneous implant that releases a continuous dose of the synthetic hormone, deslorelin, which prevents the production of male fertility hormones, including testosterone. It takes about six weeks from implantation for an animal to become infertile ("Suprelorin® (Deslorelin Acetate)," accessed 2022), and lasts from one to three years.

The drug is currently approved by the Food and Drug Administration (FDA) only for use in male dogs. Conceptually, the drug should work to sterilize female dogs as well as both male and female cats. However, for a short period after implantation, Suprelorin can actually induce estrus in female

dogs and cats. This would be a problem for outdoor animals, as they could still become pregnant during that window.

Studies thus far have also shown that Suprelorin does not work reliably in cats. Additionally, in some studies, a percentage of female dogs and cats implanted with Suprelorin have developed uterine diseases.

Gene Transfer

In May of 2021, the Michelson Found Animals Foundation and the *Michelson Prize & Grants Program* announced that “research of a single-dose sterilant for female cats [had] completed a second-year breeding study, and results were extremely promising,” (“Gene Transfer,” 2021). The Alliance for Contraception in Cats & Dogs



Shaïda Tala Sabin

Chemical sterilization could be used to treat feral cats where they are, in large, open spaces.

(ACC&D) reports with excitement on their website, “We believe that this progress could represent the onset of lifetime sterility in these cats while also preventing estrus and related behaviors,” (“Gene Transfer,” 2021).

In the study, genes that could suppress reproduction are introduced into cats via a single shot. This method will not control fertility in males, but does have the poten-

tial to work for female dogs (“Gene Transfer,” 2021). Determining whether the sterilizing effects of this treatment are permanent will require a lengthy trial.

Other Methods

Another set of studies that will explore non-surgical fertility control options are beginning in 2023. One at the University of Georgia will look at the possibility of creating an oral vaccine for male cats that will reduce reproductive hormones, thereby decreasing the cats’ fertility. A study at Tufts University will investigate an injectable medication that could do the same for female cats (Morris Animal Foundation, 2022).

Conclusion

Alley Cat Rescue believes that chemical sterilants *can* have a place in controlling cat colonies in the U.S. but at this time, they cannot adequately *replace* surgical sterilization. Chemical sterilants are still in trial phases and a long way from being approved by the FDA. Most also require the cats to be trapped in order to administer the dose, and cats need to be dosed regularly in order to be effective.

Thus, Trap-Neuter-Return (TNR) is still the *best* method of community cat population control. TNR not only reduces populations, it also improves the health of the cats. Spaying/neutering greatly reduces the risk of reproductive cancers, while vaccinations, proper diet, and parasite treatments help boost the immune system. Providing a contraceptive drug alone would do nothing to protect cats from certain diseases or parasites, and chemical sterilants can have adverse side effects.

ACR does recognize, however, the urgent need for chemical sterilants in developing countries and areas with large, extensive open space. In areas where veterinary care is already limited, surgical methods of ster-

ilization are not feasible. Also, vast areas of open wilderness provide another hurdle for implementing TNR programs, so administering a chemical sterilant would be most helpful. Populations of stray cats and dogs are commonly poisoned, shot, drowned, or

electrocuted to control their numbers. The newer methods of oral contraception could certainly prevent this suffering and needless loss of life, and hopefully engender a new ethic in these places for humane control.

Guidelines for Establishing an Effective Adoption Program

This section of the handbook provides guidelines to help rescuers rehome or adopt out friendly stray cats and any feral cats and kittens who have been socialized. As mentioned previously, removing and rehoming friendly cats from outdoor colonies is part of a successful Trap-Neuter-Return (TNR) program because it helps decrease the number of cats living in a colony.

Depending on the number of cats and kittens one is rehoming, it might be more practical to contact a local rescue organization for assistance, since they already have the resources in place. Plus this frees up TNR folks to trap and TNR more feral cats.

Some adult feral cats can be “adopted” by their caretakers and, over time, they may become assimilated to living indoors. Refer to “Adopting Adult Feral Cats” for more information, and see also “Guidelines for Safely Relocating Feral Cats” when rehoming feral cats.

Tips for Rehoming Cats and Kittens

Before deciding to rehome a friendly cat, take her to a vet to be scanned for a microchip in case she is a lost pet whose owner is looking for her.

When rehoming cats, word of mouth is the most useful tool one can have. Simply talking with friends, family, coworkers, neighbors, and even your local postal workers, school bus drivers, and landscapers can lead to finding suitable homes for adoptable cats. Engaging in friendly conversation regarding companion animals can help one provide information about a cat or kitten



Louise Holton

The top priority of every adoption program is the health and well-being of the cat.

who is in need of a home. Keeping a few cute pictures on hand to show prospective adopters is a bonus.

Creating a simple flyer for each cat or litter of kittens you are trying to rehome can be another great adoption tool. The more visibility you can provide for the cat, the better the chances you will have of finding her a home. Include a color photo and important information such as: the cat has been spayed or neutered; she is current on vaccinations; she has been tested for disease, treated for parasites, and microchipped; and mention if she gets along well with other cats or dogs. (It is highly recommended that all cats and kittens are spayed or neutered prior to rehoming to prevent unwanted litters. Plus, a sterilized and vaccinated cat offers more incentive for potential adopters and for rescue organizations to work with you, because you have already done some of the hard work for them.)

Adding certain details to a flyer can be off-putting to some adopters who don't necessarily know what these details mean. Explaining special-needs cases to potential

adopters via conversation and providing supplemental information can make all the difference in finding special-needs cats suitable homes. Though make sure all important details are disclosed to adopters in some way to prevent the cat from being returned or abandoned.

Supply flyers to those you speak with and ask them to share with their friends and family. Contact local businesses and see if they would be willing to hang your flyers for clients to see. Think animal-friendly businesses like veterinarian hospitals and pet-supply stores; though other businesses may be willing to help if the owner and/or staff likes animals. Public spaces such as churches, schools, or even your office can be good places to leave flyers as well. You can also advertise with a local newspaper.

Take advantage of social media to help find homes for adoptable cats and kittens. With countless individuals having access to the Internet, using social media sites like Facebook, Twitter, and Instagram will greatly increase visibility and the potential of finding the perfect home. These sites offer quick and easy sharing with the click of a button! These days, there are some great (free) online platforms such as Rehome by Adopt-A-Pet, GetYourPet.com, and Home To Home that can connect you to potential adopters. Please note, we do not recommend using websites like Craigslist to rehome cats, for they can attract individuals who may not have good intentions for animals.

Another great idea for rehoming cats is to give potential adopters the option to first foster a cat or kitten. Providing a trial period is a great way to help some individuals get over the fear of commitment. Permitting someone to foster a cat for a month or two, to see if the cat will be happy in her new home and whether she will get along with other cats, dogs, or even children, can help relieve some of the potential adopter's initial reservations. This is also an effective

way to see if this is the right home for the cat; some cats have a more difficult time adjusting to new surroundings and to new people and animals. In addition, fostering can serve as a way to screen potential adopters to ensure they will be responsible guardians.



Alley Cat Rescue

ACR volunteer at an adoption event.

Lastly, be creative, persistent, and patient! Think outside of the box when trying to rehome a cat. Share cute stories or stories of triumph and use quality photos to pull on peoples' heart strings. Explain why a particular cat is special and how wonderful it would be if she was adopted. Don't give up! You might not rehome a cat overnight, but with some time and effort, you will find the right home for her.

Adoption Guidelines and Forms

These next few paragraphs and accompanying forms, which can be found in the appendix of the handbook, are meant to help



Four-day-old kitten fostered by ACR.

guide individual rescuers who are rehoming cats and kittens on their own. If you are working with a rescue organization to place cats, they will most likely have their own guidelines and forms to use.

Prior to rehoming a cat or kitten, Alley Cat Rescue provides all potential adopters with an [adoption application](#) and a list of guidelines they will be expected to follow. ACR wants to see our rescued cats placed in homes where they will be treated as a member of the family for the rest of their lives which, with care, can be from 15 to 20 years.

As part of an initial screening for adopters, you may want to consider requesting references, including their veterinarian. This will allow you to ask about the potential adopters previous companion animals, if they had any, and to gauge if the individual has the appropriate time and space to devote to a new pet.

Upon adopting a cat from ACR, individuals must sign a legal contract stating compliance with our requirements, which are in the best interests of the cat. ACR would rather an individual be upfront about their reservations and possible non-compliance with our guidelines and contracts, than

adopt out a cat only to have her returned or abandoned.

To ensure a recently adopted cat is adjusting well to her new environment, ACR highly recommends conducting a post-adoption follow-up. This can be in the form of an email, a phone call, or a pre-scheduled visit. Following up with recent adopters not only gives you peace of mind, but it also allows for individuals to ask questions or express any concerns. Most adopters are happy to hear from you and are excited to share news regarding their new family member.

Important Notes

- Work in conjunction with a rescue organization, even if it is just for advice or online posting assistance. It never hurts to ask.
- Offer a foster period to potential adopters to help alleviate any initial hesitation and/or reservations. Be willing to work *with adopters*.
- Ask potential adopters for references (including their veterinarian), so you can better ensure the cat will be adopted by a responsible, caring individual.
- If possible, offer adopters the ability to contact you post-adoption with questions or concerns.
- Please note that only some rescue organizations have a no-kill policy, meaning they do not euthanize healthy animals, and keep all animals until they are adopted. County-run shelters in particular usually do NOT operate under a no-kill policy, meaning they will euthanize healthy animals if they need to free up space for incoming animals. Most county-run shelters have a

time limit of a few days to adopt out animals, and once that specified limit is reached, the animal is killed. The County of Los Angeles Care and Control revealed in its 2020-2021 "Paw Status" report that it euthanized about 32 percent of cats brought to its shelters between July 1 2021 through June 30, 2022 ("Paw Status," 2022) So before you agree to work with an organization, ask them specifically if they operate under a no-kill policy.

- All cats and kittens who are up for adoption should be spayed or neutered prior to being rehomed. Remember, these cats and kittens came from outdoor colonies with unsterilized cats. The key to a successful TNR program and to ending cat homelessness is through spaying and neutering.
- All cats and kittens should be vaccinated prior to rehoming. Providing vaccines prevents disease and other health conditions, some of which can be fatal. It is always best to ensure a cat or kitten receives her initial vaccinations, so her immune system can build up antibodies to resist potential future exposures.
- All cats and kittens should be treated for internal and external parasites prior to rehoming. These parasites can cause health issues and should be prevented.
- All cats and kittens should be tested for FeLV and FIV prior to rehoming. Testing a cat prior to adoption can prevent cats from being returned, abandoned, or killed, should she be later tested and found to be positive for either disease. Some veterinarians still recommend to their clients to euthanize FeLV and FIV positive cats, which is not necessary. Therefore, it is safer to test the cat prior to rehoming so potential adopters are aware of her special needs.
- Always keep safety in mind. Never give out your personal information, such as your home address, whether it be listed on a flyer, a website, or to someone you recently met. Instead only provide your phone number and/or email address as the primary method for contacting you. And suggest meeting potential adopters at their house, so you can inspect the home and gauge if you think it is a safe environment for the cat; take a friend with you or let someone know where you will be.
- Never use the words "Free to good home" on flyers or online sites. Advertising "free" animals can attract individuals who may not have good intentions for the animals. Unfortunately, some people are looking only to make money and do not care for the well-being of animals and are drawn to such ads, particularly those looking to sell animals to research laboratories or breeding facilities. Sometimes it can be helpful to mention an adoption fee to dissuade these individuals and to only attract those who are truly interested in adoption. Plus, asking for a small adoption fee can help recoup some of your veterinary costs, and allow you to rescue more cats.

Adopting Adult Feral Cats

About 24 percent of individuals acquire their cat(s) by feeding a hungry stray who shows up at their door (“Pets by the Numbers,” accessed 2022). The cat probably became lost or was dumped outside to fend for herself. At first, she may be shy and somewhat afraid of people, but usually with lots of love, shelter, and food, she will start to trust people again and can be reintroduced to indoor life.

On the other hand, even though a feral cat may frequent porches and be regularly seen sleeping in garages and sheds, she probably has lived her entire life with minimal human contact and will most likely remain feral. She knows that humans can provide food and shelter, but she will keep her distance and may run and hide if approached too closely. This behavior is true for most feral cats, though some individuals may become comfortable with their caretaker and be able to adjust to life indoors. So while adopting a stray is more likely, it is sometimes possible to adopt a feral cat.

There are two different scenarios in which an adult feral cat can be socialized. In the first scenario, the cat is living outdoors and you simply build on your current relationship through regular encounters. The second scenario involves socializing a feral cat who is confined to a cage in your house. Please note, the first scenario is safer for both parties and is recommended over the latter. In cases where a feral cat requires indoor confinement (if she sustained an injury and requires constant care and medication or you are fostering a pregnant or nursing feral cat), it is possible to socialize the cat while exercising extreme caution. In either case, patience, persistence, and positive reinforcement can help build trust in the relationship.

If it is necessary to confine a feral cat indoors, you will need a large cage and a cat den in which she can hide to feel safe. It is



Nancy North

Feral cat in Buenos Aires

highly recommended that you keep the cage in a spare bedroom or other room that has limited foot traffic. Line the cage with newspaper, provide plenty of clean blankets, and cover the top of the cage with a folded sheet. Prior to bringing a feral cat into your home, make sure you have read over the chapters that discuss proper handling and fostering guidelines to prevent any mishaps.

Building Confidence and Trust

Building confidence and trust with a feral cat is the most important part of the relationship. A bond will not form overnight; it may take months for a feral cat to trust humans. And even then, each cat is different, having her own personal degree of comfort with human closeness and contact. Some feral cats may only bond with their caretak-

er(s) and hide from new people.

It is important not to rush or push a feral cat into trusting you. Forcing the issue will not help, but rather could hinder any progress you have made. Sudden movements and forced contact can scare the cat and reinforce her wariness of humans. Building a relationship must be done at her pace. And always keep in mind that you may never gain a feral cat's trust enough to where you can pet her, let alone bring her into your house. It is helpful to have a plan in mind if you are able to socialize a feral cat; however, it is not wise to become overly attached to any preconceived notions you may have about your relationship — only time will reveal the level of human closeness and contact the cat will tolerate.

Working with a Feral Cat Outdoors

It is most common for an individual to socialize a feral cat by working with her while she is in her outdoor home. Providing a reliable food source and shelter will help build a trustful relationship. It is also important to establish a permanent feeding area and a set schedule; most animals find security in routine. Make sure the feeding station and shelter are in an area with limited foot traffic and keep the area clean. Remove all excess food, especially overnight, to prevent other animals like raccoons, skunks, and opossums from hanging around. Provide a shelter that does not draw attention.

Once a regular feeding schedule has been established and the cat seems to realize this is her new home, you can start to socialize with her by sitting nearby while she is eating. Sit as close to her as she will allow without running away. At first you may need to be quiet, not making any noise, and just be in her presence. Eventually you can start to talk to her in a soft, soothing

voice, and make your way closer to her. Allow her to smell your hands and become familiar with your scent. Some feral cats will permit petting while they are eating, which provides a happy distraction; again, use caution when trying to make physical contact. It may take several weeks or months to reach the point in your relationship where she will seek out your affection and allow physical contact. Remember to take things slowly and try not to let her sense any frustration if this process is taking some time.



Nancy North

Feral cat, Mango, trapped by ACR in Los Angeles, CA.

Moving Her Indoors

Either before or after you have made physical contact with her, you can begin to coax her into your house. It is much easier to help a feral cat become accustomed to being indoors when you have an enclosed porch area, basement, or other room that is closed off from the rest of the house, where you can safely leave a door cracked open to the outside. At first, she will need to know that she can escape if she feels frightened.

Use food to entice her into the new area and set up an additional shelter, using blankets that already have her scent on

them. You will also want to set up a litter box. It can be a balancing act when transitioning a feral cat from one area to another. You do not want to completely remove her original food source or shelter until she is comfortable with the new set up. Making drastic changes suddenly can make her uneasy and can harm the trust you have established, so take it slowly. It is recommended that once she becomes comfortable living in her new area, that you close the door during the night to increase her safety. Cats are nocturnal and most active at night.

Once she has become comfortable with living on the porch or in the basement, you can decide if you want to introduce her to the rest of the house or if you want to simply call this space her home. There are quite a few additional items to consider when deciding whether to introduce a feral cat to living in a house. You will need to take into account your house's dynamics (other animals, small children, how busy and loud), and you should determine if she will want to live fully indoors. Many caretakers have "porch cats" or "basement cats" who are content living on their porches and in their basements with no desire to live in the house. And there is no reason to force the issue. Providing her a warm, safe place she can live for the rest of her life is more than most feral cats have.

If you do decide to try to introduce her to the rest of the house, you can use the same steps of transition as before. Allow the door adjacent to the porch or basement to remain open at first, so she can escape back to her area where she is most comfortable. It is helpful to keep bedrooms and other spare rooms closed to minimize the amount of new space she has to explore and the amount of hiding places available. When feral cats are introduced to new areas they tend to hide. You need to be careful not to allow her to hide for long periods of time, because going without human contact for too long could cause her to revert back

to her wary self. Remember to use caution, only allowing her in the house when supervised. As she becomes more comfortable in the house, you can allow her to have free-range with less supervision. This method of transition is recommended when no other animals live in the house. (However, if you do decide to use this method to introduce her to the rest of the house and you have other animals, it is highly recommended that they be confined, so she can explore the house without intimidation.)

If other animals live in the house, it is best to first confine her to a single room for a short time. This will allow her some time to get comfortable with her new surroundings and living indoors, before the added stress of being introduced to new animals. Adapting to a new territory and adapting to new animals at the same time is not recommended. Introducing too many new elements at one time can be overwhelming and may hinder any progress you have made in building trust with her. The more comfortable she feels around new cats and dogs, the easier it will be to introduce her to the rest of the house; eliminating one stress at a time will be very beneficial to her progress. The following two sections go into greater detail on the process of helping a feral cat become accustomed to living indoors and how to safely introduce new animals to one another.

Please keep in mind, whichever method (s) you use to transition a feral cat to living indoors, be very cautious that any sudden and dramatic changes can be especially frightening. You do not want to traumatize her. So take your time, be patient, and use baby steps when working to gain her trust and grow your relationship.

Working with a Feral Cat Indoors

For a feral cat who is confined to a cage indoors, the routine of providing fresh food

and water, scooping the litter box, and changing the newspaper and bedding will help aid in gaining the cat's trust. These regular visits reinforce to the cat that you are not there to harm her but rather to provide for her. Always remember to be especially cautious when opening the cage door; cats are fast and she may attempt to escape. Move slowly, without any sudden movements, and use a quiet, soothing voice. Also, it is highly recommended that a cat den be added to the cage to give the cat a place to retreat to when you are in her space; providing a den will help her feel more safe.

Allow her to smell your hands, either through the bars of the cage or inside the cage, so she becomes familiar with your scent. You can also feed her meaty human baby food on your fingers. Over time, if she is starting to warm up to you, she may rub her face against your hand and begin to invite physical contact. Again, only proceed to the next step of the relationship when the cat cues you to do so. Reaching into the cage and trying to engage in physical contact before she is ready will most certainly result in a defensive behavior (scratching or biting) and can set back any progress you have made. With time and patience, hopefully she will show signs of interest in receiving your contact.

To ease any stress or tension, you can leave a radio or television playing softly. The constant chatter can help a cat get used to human voices and help her to not feel alone when you are not in the room. Utilizing products, such as sprays and plug-in diffusers, that simulate natural cat hormones can aid in relaxation. And lighting lavender scented candles or wearing lavender essential oil, while you are in the room, can help ease anxiety. Still, never leave a burning candle unattended and do not wear too much oil, as to completely cover your natural scent.



Alley Cat Rescue

Denise, an ACR "office" cat, is guarded around humans when alone, but becomes friendly and affectionate when other feline friends are close by .

Another option is to allow a friendly cat to hang out in the room with you, while visiting the feral cat. Cats are "copycats" and if another cat is purring and being friendly to a human, the feral cat will see this and may become more trusting. Just be sure to keep the feral cat confined and do not allow the friendly cat to be in the room without supervision; this will prevent any inappropriate behavior such as bullying. And always make sure all cats have been vaccinated and neither cat is showing signs of illness (sneezing, running nose, or eyes) prior to making introductions.

To increase your engagement with the cat and also ease stress, you can begin to play with her. Wand-like toys (the ones with strings attached to long sticks) are perfect for prompting play. Again, use slow, non-threatening motions and only continue these actions if she seems interested in re-

sponding; do not force the issue if she seems agitated. You may want to attach a wand toy to the cage or leave a ball in the cage, so she can play on her own, and try giving her small amounts of catnip. Remember to provide positive reinforcement for any and all good behavior, such as giving her a few treats and praising her.

As she becomes more comfortable with you playing and petting her, you can slowly allow her to venture out of the cage. To prevent her from hiding and reverting back to her wary nature, keep her confined to that room. Make sure all doors and windows are closed and, if possible, make sure there are not too many pieces of furniture for her to hide under, (though having a cardboard box or two in the room, where she can “hide” for a bit to feel safe can be helpful). You just do not want her to be able to hide somewhere that you will not be able to coax her out. Take some time to build on this stage, allowing her plenty of time to settle into her room, and remember not to push her too fast onto the next step.

After she has sufficiently settled into her room, if you have other companion animals, now is the perfect time to slowly introduce them to one another. As stated in the previous section, the more comfortable she feels around new cats and dogs, the easier it will be to introduce her to the rest of the house. If you've allowed another cat into her room, as suggested to help with socialization, she may already be familiar and partially comfortable with your other cat and that is a great step. The animals should also be able to smell each other and perhaps even reach each other under the door, which helps.

When introducing another cat or dog to the feral cat, it is safest to re-confine her to a cage to make initial introductions. It is difficult to determine how each animal will react to one another, so it is best to have a barrier at first. Only allow one additional animal in the room with her at a time; you

do not want to overwhelm her or make her feel threatened. After a week or so of introductions through a barrier, you can work up to allowing more intimate interactions. (The next section will go into greater detail on how to introduce new animals safely.)

Once she has made introductions with her other housemates and they seem to get along for the most part (some initial minor fighting is to be expected until everyone has reached an understanding), you can slowly introduce her to the rest of the house. Allow her to explore the remaining rooms for short periods of time, while supervised of course, and then confine her back to her room so she can feel safe. It is helpful to keep bedrooms and other spare rooms closed to help minimize the amount of new space she has to explore and the amount of hiding places available. At first, you might also want to confine your other companion animals to allow the feral cat to explore; this can be a delicate balance, so use your best judgment of the situation. Continue with periods of exploration and periods of confinement until you and her feel comfortable with her having free-range of the entire house.

Tips for Introducing New Cat Safely

The most important tip to remember when introducing new cats to one another, is to ensure all individuals are spayed or neutered and vaccinated prior to initial contact. You do not want to contribute to the cat overpopulation problem due to accidental pregnancies, nor do you want to transmit any disease, so please take all precautions. It is also highly recommended that all cats are tested for disease prior to making any new introductions. And cats should be treated for internal (worms) and external (fleas) parasites to prevent transmission. (Please refer to “Health Care for Feral Cats: Guidelines for Colony Caretak-

ers” for more information.) Make sure there are no visible signs of illness in either cat, such as an eye infection or upper respiratory infection, prior to making introductions; it is much easier to treat one cat than treat two or more cats for an illness. And, again, take it SLOWLY when introducing new animals to one another.

As mentioned above, the best way to introduce a new cat to another cat (or dog) is to confine the new cat to a single room for a few weeks. This will allow her some time to adjust to her new environment without any intimidation from her housemates, while also providing her a place where she can feel safe. The new cat can make her initial acquaintance with a protective barrier in place. It is highly recommended, especially when introducing a feral cat to other animals, that you also use a large crate to help facilitate introductions. Always supervise and only allow one additional animal in the room with her at a time.

Initially, the animals should show interest in wanting to smell each other and they may even reach through the bars to bat at each other. Hissing, growling, and some swatting is to be expected. Promote good behavior and help keep the cats calm by offering treats (meaty baby food, without onion, fed on a spoon or your fingertip is a particularly tasty snack), petting them, and using a soothing voice to praise. Use a wand toy to coax them to play together through the bars. Be consistent in training them on what actions are viewed as acceptable and which are not.

After a week or two of getting acquainted through a barrier, you can slowly allow more intimate interactions. It is advised to have a water bottle on hand to correct any bad behavior and to safely break up any fighting. It may take some time for the cats to work out their hierarchy of who is “top cat.” Sit on the floor in front of the cage and gently coax the feral cat out into the room, while keeping an attentive eye on your oth-

er cat.

At this stage, they should be fairly familiar with each other and engage in a nose-to-nose greeting. As they continue to thoroughly smell each other, some hissing and swatting may occur. Be prepared to correct any behavior before it escalates into fighting. A few squirts from a water bottle should defuse any fighting or you can make a loud noise, such as clapping your hands, to startle them. Never use your hands to break up a cat fight; that is very dangerous and could result in injury. Allow the cats to interact with each other for short periods of time, building up to longer visits. Use your best judgment to gauge each cat’s ability to tolerate the other in deciding how long each visit should last.

Utilizing products, such as sprays and plug-in diffusers, that simulate natural cat hormones can help alleviate stress and tension and aid in relaxation. In addition to a pleasing lavender scent through candles or oils, adding a few drops of a calming agent to the cat’s water can also help. Always read the labels before using any products and provide supervision during initial use to make sure your cat(s) do not have any allergic reactions. (Refer to “Helpful Resources” for a list of companies who make such products and where you can purchase them.)

Again, toys can be a great way to facilitate interaction between cats, while relieving stress. Most cats can be easily coaxed into playing with one another, because it creates a distraction that is positive. When both cats are enjoying themselves and having fun, they are less likely to be bothered by the other’s presence. Wand toys and laser pointers are especially helpful in directing joint play sessions, as well as the circular cardboard scratchers that have a track for a ball; get the ball spinning and watch as the cats dart after it! Use treats, catnip, and praise to reinforce positive behavior.

Things to Consider

Never forget that a cat's wild nature is always there under the surface, and can kick in at any time. Even a feral cat who has been socialized and welcomes human contact will still retain some of her wild instincts. When she feels scared or threatened, she may go into attack mode, as her survival instincts take over, so you must always keep this in mind.

If you are not especially careful and do not take into account the wild nature of the cat, you could become injured. A visit to an emergency room for a cat bite, especially from a feral cat, can get you and the cat into quite a predicament. The anti-cat folks have made careers of telling everyone that feral cats carry rabies and are sick and diseased (which we have discussed is untrue). So, unfortunately, most doctors are always suspicious of cat (and dog) bites.

When first introducing a feral cat to a room in the house, she may try to climb the curtains or the blinds, so it is advised that you remove these at first, until she settles down. Cats do feel safer when they are elevated off the ground, so it can be helpful to add a cat tree in front of a window so she can look out. Just be sure that if you have drop ceilings (the type where the tiles can be lifted up), cat trees and other furniture are not elevated so high that she is able to get into the ceiling.

Most feral cats will use a litter box right away. They have a natural instinct to relieve themselves in material that is easy for them to dig in, such as soil, sand, or mulch. At first, use a material that is similar to what she has been used to outdoors. Play sand works well. Do not use construction sand, which may contain harmful additives. You can then slowly transition to a standard cat litter, but make sure not to use one that is scented. Some litters have

special cat attractants in them to help entice the cat to use it, so those may be helpful.

If you have a dog(s) in the house, it can be helpful to provide an area of the house that is just for the cat. Creating a dog-free zone can really aid in her feeling comfortable living indoors, especially if your dog is very active and/or highly interested in the cat. You might consider installing a cat door so she can access a particular room or use a baby gate to help define particular boundaries for your dog. Use this dog-free space to set up her feeding area, litter box, and a bed or two. Having separate areas for your cat(s) and dog(s) can also help reduce tension and fighting in the house, as well as help to keep them from eating each other's food and to keep dogs out of litter boxes.

Trips to the veterinary clinic can be a challenge. For most cats, it is not that easy to get them into a carrier, especially when they learn a carrier means a trip to the vet; but from a feral cat's perspective, a carrier could mean this is going to be her last day on earth. Therefore, it is helpful to acclimate a feral cat to a carrier before needing to actually use one. Place an opened carrier in the cat's living area with a blanket inside, as an inviting place to sleep. Put treats in the carrier to help entice her inside and practice simply shutting the door while she is in there. Be careful not to scare or traumatize her, but slowly help her get used to the idea of being in there without any threat of danger.

If you are unsuccessful at helping her to get comfortable being in a carrier, you can use a net specially designed for catching cats. You can either use the net to help assist in dropping her into a large carrier or you can place her into the carrier while she is still trapped in the net. I have transported cats in this special net many times to the vet.

You can also use a cat den or transfer cage to safely transport a feral cat. Most feral

cats find these small boxes comfortable and prefer to sleep and hide in them. Place a towel or blanket and a few treats inside the den to help entice her.

If a feral cat is especially difficult to transport, you can ask your veterinarian for a light sedative to put in the cat's food. This will make the cat easier to handle. The veterinarian may have to tranquilize the cat before treating her anyway, so this might be something worth discussing.

The last thing to remember is that not all feral cats are able to be socialized. Every cat responds differently to humans and you should always keep the cat's best interest as a top priority. In the case where you are unable to successfully socialize a feral cat, whether she is outdoors or indoors, you must make the decision as to where it is *best* for her to continue living. Do not keep a feral cat in your house if she has been hiding under the bed for a year and you never see her. Even though she may be eating and drinking, what kind of life is it for a cat to live under a bed for her entire life?

If she is outdoors and there is no immediate danger to her (no one is threatening to trap or kill her and she does not live next to a busy highway), then allowing her to remain living in her outdoor home is her best option. Again, you can see if she would be comfortable living on your porch, basement, or other enclosed area of your house for added shelter and security. But if she does not want to do that, provide her with a makeshift shelter. (Refer to "Winterizing Feral Cat Colonies" for instructions on building simple shelters.) You could also

build her an outdoor enclosure to help provide her with some added protection or in the case where she might be in danger/threatened living outdoors.

Another option is to find her a barn home. It is not usually advised to relocate a feral cat, but if she is in danger and it is not possible for her to continue living in the current location, relocating her would be a more appropriate option. Keep in mind, there are vital steps that must be taken in order to safely and successfully relocate a feral cat. You cannot just release a feral cat at a new site and believe she will stay put. She must be provided with a proper transition period of confinement in order for her to stay put and consider the new site her home. For more information on finding suitable barn homes and safely rehoming a feral cat, refer to the chapter, "Guidelines for Safely Relocating Feral Cats."

Conclusion

If you want to give an adult feral cat an indoor home, with lots of patience, persistence, and tolerance this is achievable with some cats. It's not impossible to adopt some feral cats. Just remember, a feral cat may allow you to pet her when she is living outdoors and wanting food, but this does not mean she will act domesticated if you bring her indoors. Every cat acts differently. While you might be able to tame one cat, another one might be a different story. And always remember to be cautious, take the relationship slowly, and keep the cat's best interest in mind when deciding what living arrangement would be most appropriate.

Indoor/Outdoor Cats

The indoor/outdoor cat debate is very controversial. Unlike in most European countries, where the majority of cats spend their days outdoors, North Americans are increasingly keeping their cats permanently indoors. Approximately 63 percent of cat caretakers in the U.S. keep their cats strictly indoors (Foreman-Worsley et al., 2021). As people continue to move into the cities, life in highrise apartments is making it difficult for more cats to access the outdoors. Hazards in a busy city are also greater than those in the suburbs or out in the country.

Up until the 1950s, caretakers didn't have much of a choice in the matter, as they had to allow a cat out to go to the bathroom. Thanks to the invention of cat litter, caretakers now have the ability to restrict their cat's outdoor activities.



Maggie Funkhouser

Mama Cat, who lives solely outdoors and has made this garden her home base.

Most cats living in England have access to the outside via a cat flap (cat door). If an individual wants to adopt a cat and keep her strictly indoors, the shelter won't refuse the adoption; however, most shelters prefer that cats have access to a garden. In

the U.S., it is the opposite situation; most shelters will *refuse* a home unless the cat is to be kept strictly indoors.

INDOOR-ONLY CAT ISSUES

- boredom can cause behavioral issues
- indoor cats can become overweight due to lack of exercise
- bored cats can become overly dependent
- escape from home — accidents like this happen when someone leaves a door open; the indoor cat then has no experience with the outdoors
- consuming poisons in the house
- eating poisonous house plants

Risks for Cats Who Live Strictly Indoors

Cat caretakers must take into consideration that indoor cats can be vulnerable to developing psychological and behavioral problems. Dr. Nicholas Dodman of Tufts University School of Veterinary Medicine and Roger Tabor both note that American cats sometimes have higher rates of anxiety-related problems, which may be related to cats living indoors with little effort being made to find outlets for their natural instincts (Tufts University School of Veterinary Medicine, October 1995; Tabor, 1997). Author Patricia Curtis makes a similar note in her 1997 book, "The Indoor Cat:"

The indoor cat of an uninformed and

negligent owner may be neurotic, extremely unhappy, and in poor health. Some owners have unrealistic expectations of their cats; some are just indifferent. It is known that among zoo animals confinement can be a powerful stress factor. A domestic cat confined to a house or apartment will, in certain circumstances, develop stress symptoms. The kitty may chew up houseplants as cats eat grass outdoors, sharpen claws on furniture for lack of tree bark, or leap to the top shelf of a cabinet of breakable treasures to achieve the lofty vantage point cats enjoy.

Sadly, behavioral issues are some of the most common reasons caretakers relinquish cats to shelters; that is why it is so important to provide a stimulating environment for indoor-only cats.

VCA Animal Hospitals writes, “If you decide to keep your cat as an indoor pet, you will need to be very aware of the extra responsibility that an indoor cat brings. You must take the time and trouble to ensure that the indoor environment offers the cat the opportunity to express as many of its natural behaviors as possible” (“Cat Behavior and Training - Enrichment for Indoor Cats,” accessed 2023).

Alley Cat Rescue's Position

We do not believe that everyone should open their doors and allow their cats to roam around outside, especially in areas where outdoor living is unsafe! We do believe that cats, if given a stimulating environment, live quite contentedly indoors. For caretakers who want to allow their cats outdoors, ACR strongly advises the use of specialized fencing designed for confining cats, and we promote outdoor cat enclosures or “catios.” This way cats have a nice balance of indoor and outdoor living with-

out safety risks.

A wide variety of fencing products are available today that make it safe and convenient for cats to access the outdoors, yet still remain confined. There's cat fencing that connects to the top of an existing fence, and there are fencing systems that can be installed for entire yards. You can buy several different types of cat enclosures, or you can build your own. Most porches and patios can easily be enclosed by using screen material. (Refer to the Helpful Resources chapter for companies that sell cat fencing.)

Leashed walks are another option for some cats. It may take some practice and coaxing, but with time (and treats) some cats will get used to and enjoy being outdoors while on a leash.



Maggie Funkhouser

Tiger and Squeezy enjoy their outdoor catio.

Whether a cat is secured in an enclosure, walked on a leash, or in a community where she can roam freely, any cat who has access to the outdoors should also have access to a covered shelter, especially during cold winter months. (Refer to “Winterizing Feral Cat Colonies” for more information.)

ACR has difficulty accepting policies that would rather euthanize feral cats than allow them to live good lives under responsi-

ble care in an outdoor home. One of the major reasons that nonlethal control of feral cat colonies is so contentious in the U.S. is because of the prevailing attitudes towards outdoor cats. While the public has mostly embraced the outdoor life of feral cats, some shelters still find it difficult to accept *any* cats being outdoors. Their general belief is that outdoor cats live hard, shortened lives of only about two years. However, as we discussed earlier, the average lifespan of a sterilized outdoor cat who is properly cared for is comparable to that of an indoor cat.

Feral cats are wild animals and they are already living in their home — outdoors. Most adult feral cats would be very unhappy living inside houses. Some can adjust and become comfortable sharing space with their caretaker(s); however, others will spend their entire lives hiding under beds and couches because they are too stressed by being confined. With the massive number of feral cats living in colonies throughout the country, it would simply be impossible to find enough homes or sanctuaries for all of them.

Authorities must begin to accept outdoor feral cats as part of the urban landscape, so the millions of volunteers willing to feed and care for feral cats can quickly sterilize the feral cat population. This, consequently, would help make the cats healthier and safer. As policies progress to support TNR efforts for outdoor cats, the needless killing of healthy cats in our nation's shelters will dramatically be reduced, along with the associated wasteful spending of taxpayer's money.

Whether they were born to a feral mother cat, became lost, or were abandoned, these cats are accustomed to living outdoors and their natural, wild instincts help them survive. Felines have been living on this planet, as part of the landscape, for millions of years as solitary hunters high on the food chain. Feral cats have been found living in a variety of climates and environments, including some of the harshest places on the planet.

However, though feral cats are capable of living without human support, they live much better lives with some assistance. As people have domesticated cats, we are morally obligated to care for them. We created the domestic species over thousands of years, as well as the problem of overpopulation within man-made environments, so it is our responsibility to ensure their populations are managed in a humane manner. TNR not only reduces the number of cats by stopping the breeding cycle, it also improves the cats' health and quality of life because dedicated caretakers look after their safety.



Atticus and Leo lived as porch cats for many years.

Alley Cat Rescue

Cats and Predation

Felis catus, the domestic and feral cat, is a predator and carnivore. Like any predator, the cat is equipped with sharp teeth and claws, and highly developed sensory capabilities such as heightened eyesight and sense of smell, and an extensive range of hearing. The cat also has very sensitive whiskers and guard hairs that expand her sense of touch. Along with being classified as predators, cats are also considered scavengers, meaning they will eat whatever food is available, including human handouts, garbage, and carrion.

The diet of cats has been studied on four continents, with at least 16 studies done in Europe, 12 in North America, 15 in Australia, and one study in Africa. 72 studies have been conducted on islands (Bonnaud et al., 2010), with most occurring on remote oceanic islands (Fitzgerald and Turner, 2000). And although these studies have helped identify the most common prey cats feed on and the many contributing factors as to why they feed on certain prey, few studies have examined the *impact* of cat predation on such prey populations.

There simply is not sufficient information available to determine if cat predation has any detrimental effects on the overall populations of prey animals, including birds; yet environmental and bird groups continue to push for the eradication of feral cats, claiming cats are in fact contributing to the decline of bird species and other wildlife. The few studies that have been conducted on the effects of cat predation were conducted on remote islands with closed ecosystems, where local bird populations have not evolved with predators. Because cat

predation on continents is very different from island environments, it is inaccurate and inappropriate to extrapolate data from these particular studies to predict predation on continents. (Continue reading the next chapter, “Debunking the Myths and Misinformation” to learn more about the faulty science these environmental groups use to advocate for the eradication of outdoor cats and banning of TNR.)



Cats are opportunistic feeders and will eat where food is available

Roger Tabor

Rodent Specialists and Scavengers

The domestic cat (both housed and feral) is considered to be a “generalist resident predator, exploiting a wide range of prey, and able to switch readily from one prey to another;” however, some also classify cats as “partially migrating generalists” because they will travel in order to scavenge for food (Fitzgerald and Turner, 2000).

Cats use two different types of strategies when hunting: mobile or the “M-strategy” and stationary or the “S-strategy.” When using the mobile strategy, cats are observed moving between two points and stopping when potential prey is detected. For the stationary strategy, cats will sit and wait for any signs of prey movement and then ambush or pounce (Fitzgerald and Turner, 2000).

German zoologist and cat behaviorist, Paul Leyhausen has concluded that cats prefer the stationary strategy, which is much better suited to catching burrowing rodents (Leyhausen, 1979). Cats will wait for hours outside of burrows for these animals to come out. This preferred hunting method, says Leyhausen, is “definitely detrimental to success in bird hunting” (Berkeley, 2001). “Small songbirds are more mobile (faster and in three dimensions) and less predictable when they move than rodents” (Fitzgerald and Turner, 2000). Birds fly in any direction and make it more difficult for cats to catch them.

In her 2001 book, “Maverick Cats,” author Ellen Perry Berkeley examines almost 50 years of studies conducted on the stomach and fecal contents of feral and rural cats in the U.S. The results confirm that small mammals make up the largest percentage of the cat’s diet. Rodents are the main diet of cats (Leyhausen, 1979) and without cats to help keep the numbers in check we would have a far bigger problem, as seen on islands when cats were removed.

An analysis of feces from feral house cats in New Zealand’s Orongorongo Valley found that mammals accounted for 93 percent of the food by weight, and birds 4.5 percent (Berkeley, 2001). And a study by Coman and Brunner in Australia found (by stomach analysis) that mammals made up 88 percent of cats’ diets by volume, and birds made up 5.2 percent (Berkeley, 2001). A more recent study that analyzed the contents of the stomachs of feral cats

on Socorro Island between November 2012 to April 2014 revealed that small mammals accounted for the greatest percentage of the cats’ diet (21.6 percent), followed by invertebrates at 16.66 percent, and then reptiles at 14.81 percent. Birds made up just 5.82 percent of the cats’ stomach contents. True to the cat’s reputation as a scavenger, a startling 19.31 percent of the stomach contents fell into the category of “anthropogenic refuse,” more commonly called trash (Ortiz-Alcaraz et al., 2018).

In “The Domestic Cat: The Biology of Its Behavior,” Fitzgerald and Turner conclude that dietary studies carried out by Leyhausen, Fitzgerald, and others support the findings that the domestic cat living on continents primarily preys on small mammals. The “remains of mammals were present in 33 to 90 percent of guts and scats (on average 69 percent frequency of occurrence) whereas, contrary to the widely held view that cats prey heavily on birds, remains of birds were found on average at 21 percent frequency of occurrence” (Fitzgerald and Turner, 2000).

When cats are not hunting rodents, they are scavenging for food. Cats are opportunistic feeders and will eat what is most readily available. Cats will dig through trash, eating the leftover food that humans have tossed out. They hang outside of cafeterias at colleges, behind convenience stores, and hotel kitchens. Food scraps and discarded grease and cooking oils from restaurants provide high-calorie meals for cats. Dumpsters also provide a steady source of food for rodents, making them easy prey.

Through the years, cats have learned to recognize dumpsters and humans as potential food sources. Biologist and cat behaviorist, Peter Neville says, “A deliberate strategy of scavenging has enabled many feral cats to almost give up hunting altogether. They may learn instead to lie around waste bins of hotels for fresh supplies or to cadge from well-meaning

human providers in urban areas” (Neville, 1992). This behavior is one of the primary reasons cat domestication began more than 10,000 years ago.

In the above dietary studies, garbage was included in the data for two of the studies. In an Oklahoma study, after mammals, garbage was listed as the second main source of food (26.5 percent) (Berkeley, 2001). Roger Tabor states, “Although cats are superb hunters, it is their scavenging ability that allows them to survive as feral-living animals and live with us eating food off a saucer” (Tabor, 1995). Feral cats are very resourceful and have been able to survive on garbage and food scraps for centuries.

Old, Sick, and Young Prey

Cats, like any predator, tend to feed on the most vulnerable prey, because they are the easiest to catch. These individuals include those who are young or old and those who are sick or in a weakened state. One study conducted by Liberg shows that cats preyed heavily on young, weakened, and dying rabbits, while another study revealed that cats living in a New Zealand forest “methodically hunted” a population of rabbits, targeting young individuals as they emerged from burrows (Fitzgerald and Turner, 2000). Studies by George and Carss also show that most of the prey brought home by cats were young animals (Fitzgerald and Turner, 2000).

In ecosystems that lack populations of rodents and rabbits, cats tend to focus their diet on birds; however, Paul Leyhausen says cats “almost always catch only old, sick or young specimens” (Berkeley, 2001). Research has shown that most birds caught by cats are a “doomed surplus” who would have died anyway. According to one study, researchers found that songbirds

killed by cats tend to have smaller spleens than those killed through non-predatory events. They concluded that “avian prey often have a poor health status” (Møller and Erritzøe, 2000).

And the UK’s Royal Society for the Protection of Birds (RSPB) states, “It is likely that most of the birds killed by cats would have died anyway from other causes before the next breeding season, so cats are unlikely to have a major impact on populations.” Every year, many millions of birds die naturally due to starvation, disease, or other forms of predation. And most of the millions of baby birds hatched each year will die before they reach breeding age (RSPB, 2014).



Roy Pederson vs Shutterstock

Cats are resourceful and can often find sustenance in human refuse.

Ground-feeding Birds

In examining the diet of birds on continents, Mead looked at records of banded birds in the U.K. and found that 31 percent of the birds recovered were caught by cats, whereas 69 percent died of other causes (Fitzgerald and Turner, 2000). He noted that all species of birds recovered “feed on the ground or low vegetation and regularly

live in gardens” (Fitzgerald and Turner, 2000). Mead suggested that “cats did not affect the overall population levels of these birds, and because the birds in suburban and rural parts of Britain have coexisted with cats for hundreds of generations, they may now be under less pressure from cats than they were from the assorted natural predators in the past” (Fitzgerald and Turner, 2000).

Several other studies have also concluded that most species of birds eaten by cats on continents are ground-feeding ones. In Liberg’s study, he recorded that mostly starlings and pheasants were caught, while Bradt and Borkenhagen recorded house sparrows, and Farsky, Hubbs, and Niewold recorded pheasants (Fitzgerald and Turner, 2000).

Diet is Determined by Available Prey and Seasonal Cycles

Once again, cats are opportunistic feeders and will eat whatever food is most available. Dietary studies have revealed invertebrates (insects, spiders, isopods, crayfish, and molluscs) are frequently consumed by cats, but they provide little sustenance. More reptiles are eaten by cats living at low latitudes; whereas household food is highly common in the diet of cats at higher latitudes. Fitzgerald and Turner (2000) report that “in much of Europe it may be difficult to find places where cats do not have access to household food.”

Several studies have been conducted that show how changes in the number of prey species available in a particular area are reflected in the diets of cats. One study conducted by Liberg revealed that cats preyed heavily on rabbits when the rabbit population was high, and as the rabbit population declined, cats began eating

more rodents (Fitzgerald and Turner, 2000). Young rabbits were favored between May and September, because they were easy prey; just as weakened, dying, and dead rabbits were favored during the winter months. Another study carried out in the Netherlands showed a similar correlation. When the vole population was high, most cat stomachs contained remnants of voles and more voles were counted per stomach. The converse was also true; when the vole population was low, fewer were eaten by cats (Fitzgerald and Turner, 2000).

After examining the stomach contents of 128 feral cats in Australia, Coman and Brunner concluded, “It appears that feral cats are opportunistic predators and scavengers and the level of predation of any one prey type will depend largely on its relative availability” (Berkeley, 2001). Earl Hubbs made a similar discovery noting how the seasonal variability of a particular geographic location is reflected in a cat’s diet. Hubbs remarked, “This seasonal variability of the cat’s diet suggests a constant adjustment to availability of various types of prey and is not necessarily a direct reflection of preference” (Berkeley, 2001).

Other Factors that Affect Diet and Hunting

As cats grow older in age their hunting tends to decrease. This makes physiological sense, since senior cats do not have the physical ability to hunt as they did when they were younger, and their sensory skills have been reduced. Several studies support this conclusion, including one conducted by Borkenhagen that found that cats less than five years old brought home the largest number of prey (Fitzgerald and Turner, 2000).

Another important factor that drives hunting and affects diet is determined by whether a female cat has kittens or not. Several studies have shown a correlation between female cats with kittens and increased hunting. Studies conducted by Meister reveal that females with kittens are more efficient hunters than non-mother cats (female and male). In one of the studies, six mother cats captured more rodents than 17 non-mother cats, despite having spent much less time hunting than did the non-mother cats (Fitzgerald and Turner, 2000). Leyhausen also reported that mother cats catch considerably more prey when they have kittens, for “it is assumed that the kittens themselves provide the stimuli that promote carrying prey home” (Fitzgerald and Turner, 2000).

Predators Do Not Destroy Prey

No matter who the predator or the prey, it is not part of the natural balance of life for a predator to *destroy* its prey. Oliver Pearson, who studies the complex interaction between predator and prey, said it's “absurd” to assume that predators cause permanent damage to prey populations, even when they kill almost every last prey specimen. Pearson told Ellen Perry Berkeley that “Feral cats have been terrorizing my study area for one hundred years and haven't done any noticeable damage yet” (Berkeley, 2001).

One of the few studies that actually looks at the effects of cat predation on prey, cautions the use of extrapolated estimates. Author of the study, D. G. Barratt says:

Predation estimates alone do not necessarily reflect relative impacts on different prey types. Nor do apparently high rates of predation prove that prey populations are detrimentally affected, particularly in highly disturbed and modified environments. For birds, at least,

habitat-related factors may be substantially more important in determining communal structure in suburbs than predation by house cats. (Barratt, 1998)

As seen in the study by Liberg, when the local population of rabbits began to decline, cats switched over to eating rodents. The same was true with the mentioned Netherlands study, where cats fed on voles when the population was high, and less so when the population had decreased. Paul Errington, considered an international authority on predation, said:

Preying upon a species is not necessarily synonymous with controlling it or even influencing its numbers to any predictable degree. Predation which merely removes an exposed prey surplus that is naturally doomed anyway is entirely different from predation the weight of which is instrumental in forcing down prey populations or in holding them at given approximate levels. (Berkeley, 2001)

Naturalist and ornithologist Roger Tory Peterson also remarked on surplus prey being taken when he said:

Most thought-provoking of all is to discover the balance of nature: the balance between a bird and its environment ... that predation harvests only a surplus that otherwise would be leveled off in some different way; hence putting up fences and shooting all the hawks and cats will not raise the number of Red-eyed Vireos to any significant degree. (Peterson, 1996)

Nature always keeps animal populations in check; when a surplus of one species exists a shortage of another species will also exist. The number of each species will fluctuate up and down as nature works to find balance between the two populations.

Native Species Versus Alien Species and Filling Empty Niches

In today's world, most so-called alien or exotic species come labeled as noxious, pests, vermin, invaders, introduced species, or invasive species. They are considered to have no beneficial place within the environment and many are said to compete with or out-compete native species for a place within local ecosystems. These "pests" are also considered not to have any monetary value, and in some cases they are said to cause monetary damage or profit loss when they interfere with livestock and farming operations. Lethal management practices are implemented to control the majority of these species. Feral animals fall under this label of "alien" and are often considered pests. Eradication programs exist for many of the planet's feral cats, dogs, rabbits, pigs, goats, sheep, horses, and camels.

Humans have been distributing animals, plants, and viruses around the world since their beginning. In the past, ships sailing to discover new lands carried stowaway rats and disease, but they also intentionally took with them pigs, sheep, rabbits, and cats for rodent control. As disease became a growing concern, sailors kept cats aboard their ships to kill rats.

Today's landscape looks nothing like it did hundreds of years ago, let alone thousands or millions of years ago. Species have traveled to all corners of the globe with and without assistance from humans, meshing into new habitats and creating all new ecosystems with all new food webs. It is difficult to ascertain the origin of all of the species on the planet. The landscape is constantly changing, which makes it hard to label species as either native or exotic. Scientist James Carlton coined the term "cryptogenic" to label organisms that cannot with assurance be defined as either na-

tive or exotic (Low, 1999).

And as the line between native and exotic continues to blur, a new era will come to light. Biologist and author, Tim Low speaks of this phenomenon as a "cryptogenic future" where exotic species become accepted as native wildlife (Low, 1999).

New habitats are being created all the time, and not all native species are negatively affected by exotic species. Some native species become dependent on introduced species, and in most cases, exotic species are simply filling niches that have been vacated by native species because humans have driven them to extinction. Coman and Brunner state:

Whether feral cats have been responsible for the decline in numbers of some native mammals is open to question. The once common *native* cat (*Dasyurus viverrinus*) is now either rare or extinct in most parts of Victoria [Australia], and introduced feral cats may be doing little more than filling an ecological niche left vacant by the near disappearance of the indigenous carnivore. (Berkeley, 2001).

Feral cats are also filling the niche of natural predators who are not present in urban environments. Not many foxes, coyotes, hawks, or owls reside in cities, so feral cats fill that void and feed on rodent prey, which is abundant in urban areas.

Cats on Islands

The dietary information discussed above was derived from studies conducted on continents. In this section, we will examine the diet of cats living on islands, where birds have not evolved with mammalian predators. Island ecosystems are very different from continental ecosystems; however, the findings from these few island

studies have been inappropriately applied to continents and this misinformation continues to be much publicized by conservationists and the media.

Cats were intentionally transported to islands around the world to control rodent stowaways, and rabbits were brought for food. “Although the islands where cats have been introduced differ enormously in size, climate, and native fauna, they tend to have the same few introduced mammals as prey and few, if any, native mammals” (Fitzgerald and Turner, 2000). House mice, black rats, brown rats, Polynesian rats, and European rabbits can be found on islands where cats have also been introduced.



Roger Tabor

Cats are opportunistic feeders and will eat where food is available.

Dietary studies of cats on islands that also have an introduced rabbit population have shown that rabbits, “usually form a large proportion of the [cats’] diet, on average 55 percent frequency of occurrence,” and on islands without rabbits, “rats are usually present in more than 70 per cent of gut contents or scats” (Fitzgerald and Turner, 2000). On islands located at temperate latitudes, house mice are common in the diet of cats. However, on islands with no rabbit populations and small rodent populations,

birds are an important food source for cats. “On islands where seabirds are recorded in the diet, birds are present on average at 60 percent frequency of occurrence” (Fitzgerald and Turner, 2000). And for islands that completely lack mammalian prey, cats survive by feeding on birds, skinks, and invertebrates.

Seabirds who have evolved on islands void of mammalian predators have not developed any “defensive behaviours,” making them easy prey for introduced species (Fitzgerald and Turner, 2000). These birds are not used to living with nor defending themselves against predators, so many of them easily become prey. Most island birds who fall prey to cats also build their nests on the ground. Petrels, penguins, and terns “usually comprise a large proportion of the birds eaten on the smaller oceanic islands” (Fitzgerald and Turner, 2000). Van Aarde’s analysis of the prey remains found in cat stomachs on Marion Island revealed that feral cats “feed mainly on nocturnal burrowing petrels” (Berkeley, 2001).

Island birds are not only eaten by cats, but they are also largely consumed by introduced rats. Rats destroy nests, eating eggs and feeding on fledglings. As illustrated previously, the removal of cats from islands subsequently results in the rapid increase of rat populations, which cause more damage to the very birds conservationists intended to protect. In the book, Trophic Cascades: Predators, Prey and the Changing Dynamics of Nature, (2010) John Terborgh and Dr. James A. Estes include studies that further support the counterproductivity of eradicating feral cats and point out how cats actually protect birds from rats:

Mesopredator release has also provided management lessons for eradication efforts that target both an invasive apex predator and an invasive mesopredator. Using multispecies models that accounted for the presence of two inva-

sive predators (cats and rats) on native islands, for example, Courchamp et al. (1999), conclude that the eradication of cats alone could result in a release in the rat population and ultimately intensified bird declines. More sophisticated models, such as Fan et al. (2005) similarly predict that as an apex predator, cats offer birds some degree of protection from rats.

Removing cats from islands also leads to an increase in rabbit populations. When cats were eradicated from Macquarie Island, the rabbit population quickly increased, destroying the island's vegetation. This resulted in decreased plant materials for birds to build nests and left the native penguin population more susceptible to predators. Again, the very birds conservationists were trying to protect ended up being more vulnerable.

The fact is that whether cats live on continents or on islands, their diet consists mainly of small mammals (i.e., mice, rats, and rabbits); however, on some islands, particularly ones with low or no mammalian prey populations and high bird populations, cats tend to feed more frequently on seabirds. (This makes sense since we discussed earlier how a cat's diet depends on what prey is available.) Island environments are closed systems, meaning they are shut off from surrounding areas and no new organisms enter the system. When a new species is introduced to an island ecosystem, there is great risk of upsetting the entire system, for island ecosystems are highly sensitive to change. Unfortunately, many conservationists use these few island studies that show high predation rates on birds to give the false impression that the same conditions exist on all islands and even on continents.

Conclusion

As presented by the evidence above, cats

mostly prey on rodents and rabbits, while relying on their scavenging skills to help supplement their diet. Cats provide the invaluable service of preventing the spread of disease by controlling rodent populations, and they have been protecting food storage from rodents for thousands of years. Their predation on rodents and rabbits, particularly on islands, has also been shown to *protect* vulnerable bird populations.

Again, there is currently not enough information available to even begin to predict how cat predation affects the overall populations of prey, in particular birds. Based on today's research, it is also difficult to estimate on average how many birds a cat kills each year, and organizations continue to disagree on the estimate of how many feral cats there are living in the U.S.

After extensively examining studies on the hunting and dietary behaviors of cats, Fitzgerald and Turner (2000) conclude, "Any bird populations on the continents that could not withstand these levels of predation from cats and other predators would have disappeared long ago ..." And Meade points out, as noted above, that birds living in England today are under *less pressure* from cats than they were in the past from natural predators.

Some of the planet's bird populations are in great decline and ACR supports the need to increase protection for these birds and other threatened wildlife. However, it is not only irresponsible and a misuse of power to blame cats for decreased bird populations, but morally unacceptable — especially when conservationists advocate for total eradication of cats. National reports and world reports continue to provide evidence that points to human activity as the true culprit for declining bird populations. (We will go into more detail regarding the loss of bird populations in the chapter, "Where Have All the Birds Gone?")

Birds on islands are particularly vulnerable

to cats because they lack the defense mechanisms possessed by birds living on continents. However, as stated previously, we disagree with conservationists extrapolating the results from these studies across continents when these ecosystems and fauna are vastly different. Unfortunately, this “bad science” has only muddied the waters on cat predation and has made some conservationists dislike cats very intensely. Former Smithsonian bird researcher, Nico Dauphine, for example, was convicted of attempted animal cruelty after she was caught on camera trying to poison a feral cat colony in Washington, D.C. (Cratty, 2011).

And while conservationists continue to spread this misinformation without offering any viable solution to the feral cat problem — nor for protecting birds — animal organizations across the U.S. and around the world are implementing Trap-Neuter-Return (TNR) programs every day, which benefit both cats and birds. Sterilizing outdoor cats stops the breeding cycle and prevents countless litters of kittens. Reduction in colony size not only reduces hunting

pressures on local wildlife, but as depicted in the above studies, cats who do not have kittens to feed tend to kill less prey.

TNR programs also remove kittens and cats who can be socialized from colonies and any friendly stray cats, thus further reducing colony size. Mature and senior cats, whom studies have shown hunt less, become the remaining colony residents. Since cats consume whatever food source is most available and the easiest to procure, providing regular meals as part of a successful TNR program, aids in reduced hunting.

Eradication attempts of feral cats are counterproductive and inhumane, not only to the cats, but to other animals who may be inadvertently poisoned or trapped and are simply considered “collateral damage.” It makes no sense to kill one species in order to save another based on a classification system (native vs. exotic) that is clouded with uncertainty, and while there is no denying our planet is headed towards a cryptogenic future. Conservationists and cat rescue organizations must work *together* in order to protect both cats and birds.

Debunking the Myths and Misinformation

In report after report, bird advocates blame cats for the decline in bird and other wildlife populations, and cats are depicted as enemies of the environment. Just as cats were hunted during the late Middle Ages under falsified pretenses, bird conservancy groups and wildlife organizations are creating a “witch-hunt” for modern times. The information these organizations are providing on the effect cats have on the environment often has errors, exaggerations, omissions, and bias. And perhaps worse yet, the groups making the reports completely ignore statistical information regarding the effectiveness of Trap-Neuter-Return (TNR), which has been gathered by numerous highly accredited veterinarians and cat organizations through years of research and rescue.



Troy Snow

The healthy appearance of this beautiful, ear-tipped feral goes against the misconception that community cats are unhealthy and diseased.

As seen in the previous chapter, the relationship between cat predation and prey populations is highly complex and very little research has been conducted on this topic. For conservationists to advocate for the killing of a species based on a lack of information and abundance of *misinformation* is irresponsible and unethical.

In a 2016 blog post on HuffPost, author Marc Bekoff was shocked by the book *Cat Wars* by bird advocate Peter Mara, head of the Smithsonian Migratory Bird Center. He found particularly worrisome the statement in the book that: “...the most desirable solution seems clear— remove all free-ranging cats from the landscape by any means necessary,” (Marra and Santella, 2016)

Bekoff explains that humans are the cause for the unprecedented loss of wild animals and their homes, and humans are causing destructive climate change.

But bird advocates are determined to hold cats responsible and advocate for a war on cats, never mind the consequences. If all cats were removed from a continent, the effects on rodent species would be catastrophic. Rodents would overrun our cities and towns, plus removing cats would not stop the real culprits— habitat loss, fragmentation, and human overdevelopment. Removing cats would not help climate change, which is already having an effect on the world with heatwaves, drought, terribly destructive hurricanes, floods, towns and houses washing away, and human lives lost.

Dr. Niels Pedersen, Director of the Center for Companion Animal Health at the University of California-Davis, advocates for trap-neuter-return programs. Dr. Pedersen

points to the often-overlooked ecological consequences of removing cats from the landscape where they have existed for centuries. He writes, “What people don't understand is that cats are the dominant carnivore in almost all human-oriented ecosystems. Every attempt to take cats out of the equation has led to disastrous ecological shifts as far a buildup of rodents as well as other overpopulated species.”

And Pedersen is somewhat skeptical of the recent Loss et al, study. “I’m not saying their conclusions aren’t correct, but meta studies often start with a preconceived hypothesis and then cherry pick various published research studies to yield a preconceived conclusion.”

Bekoff mentions that Marra and his co-author, Chris Santella dismiss the growing field of Compassionate Conservation by saying it risks “the lives and experience of wildlife,” (Beckoff, 2016) Actually, Compassionate Conservation does the exact opposite, offering non-lethal solutions, which is what trap-neuter-return offers community cats.

The advocates for TNR have helped reduce feral cat colonies on every continent in a practical and effective manner for over 30 years. Whereas those who rant against feral cats do nothing more than cast feral cats in the role of villain, and ignore the real issue of environmental destruction at an unprecedented rate by humans. Few groups are courageous enough to tackle overdevelopment of the land for buildings, houses, roads and shopping malls, and of course our extremely destructive animal agricultural practices. World Wildlife Fund’s 2022 *Living Planet Report* claims that wildlife populations have plummeted by 69% since 1970. Do the groups opposed to outdoor cats believe that cats did this? According to World Wildlife Fund, “we are living through the dual crisis of biodiversity loss and climate change driven by the unsustainable use of our planet’s re-

sources.”

Humans are to blame for this, not cats. To ignore this and continue to vilify cats is totally irresponsible.

Infamous Studies and Extrapolated Numbers

It cannot be emphasized enough that *few* scientific studies have been conducted to accurately portray cat predation on prey populations. Most studies cited by conservationists have been on the dietary habits of cats, with little research dedicated to the overall effects of cat predation. And some of these studies are based on flawed, unpublished information with small sample sizes, poor data gathering techniques, and results that are extrapolated across continents and different types of environments (as presented with the island studies in the previous chapter).

One of the most infamous studies highlighted by conservationists to falsely accuse cats of killing billions of birds every year was conducted by Peter Churcher and John Lawton; the study has become known as the “English Village” study. Churcher asked his neighbors to collect any prey their cats brought home, and over the course of a year, 70 cats returned home with over 1,000 prey specimens. These findings were then extrapolated across all of Britain, based on the cat population size at the time, and it was concluded that cats in Britain were killing an estimated 100 million birds and small mammals each year (Tabor, 1991).

The flaws of this study are numerous. To start, it is based on a very small sample size — 70 cats over a period of one year. Secondly, recording the number of prey brought home by cats is not a very accurate

method of collecting data. As we have seen, cats are known to scavenge and eat carrion, so simply bringing prey home is not indicative of the number of prey actually *killed* by the cats. A lot of variables were at play in collecting data for this study, so how accurate can one say the results are?



Troy Snow

Flashy headlines about cat predation should be regarded with skepticism. Many have flaws and rely too much on estimation.

An error made by conservationists who cite this already-flawed study is that they are extrapolating data across an entire country. Roger Tabor examines this study in his 1991 book, “Cats: The Rise of the Cat,” and says, “It is not realistic just to multiply the number of catches of these [70] rural cats by the entire cat population of Britain. Most cats are town cats with small ranges, and catch fewer items of prey than the village cats of this survey.” Tabor continues on to explain that even though a high number of house sparrows were consumed by cats, their population doubled the following breeding season, and because most people assist birds (feeders, nesting boxes), their populations are “kept at well

above ‘natural’ levels. Even if there are a lot of cats in built-up areas, there are also a lot of birds” (Tabor, 1991).

In 1994, a reporter for the *Sonoma County Independent*, Jeff Elliott, investigated the growing claim that cats are responsible for killing millions of birds and the push for eradicating cats. In his article, “The Accused,” Elliott remarked on the infamous English Village study saying, “Rarely are projections made with such limited data, except in junior high science projects.” Later in 1995, Churcher himself cautioned against such projections stating, “I’d be very wary about extrapolating our results even for the rest of Britain, let alone America.” He continued by saying, “I don’t really go along with the idea of cats being a threat to wildlife. If the cats weren’t there, something else would be killing the sparrows or otherwise preventing them from breeding” (Tufts, 1995).

Another study that is often presented as “evidence” by conservationists is the “Wisconsin Study,” performed by John Coleman and Stanley Temple. The study is a survey of rural residents of Wisconsin performed to estimate the number of free-ranging cats living in the entire state. The results from this survey were published in the *Wildlife Society Bulletin*, where submissions are subject to a peer-review process. This survey in no way measures cat predation, but only estimates the number of cats in Wisconsin.

Subsequently, the authors published several additional articles in an attempt to predict the potential impact of free-ranging cats on the bird population in Wisconsin; however, these articles were never peer-reviewed and some of the estimates are based on unpublished data. One such article appeared in 1996 in the *Wisconsin Natural Resources Magazine*, where Coleman and Temple make their “best guesses” (the term used by the researchers themselves)

of the number of birds killed by cats in rural Wisconsin. They concluded: 7.8 million birds as the low estimate, 38.7 million as the intermediate estimate, and 219 million birds each year for the highest estimate. In 1999, the authors published another article in *Wildlife Control Technologies*, extrapolating those guesses, stating, "Nationwide, rural cats probably kill over a billion small mammals and hundreds of millions of birds each year" (Coleman and Temple, 2005).

It wasn't until Jeff Elliott interviewed Temple that the truth was revealed. "The media has had a field day with this since we started. Those figures were from our proposal. They aren't actual data; that was just our projection to show how bad it might be," replied Temple (Elliott, 1994). Yet, almost 20 years later, these exaggerated and "guesstimated" numbers are still being used and they are becoming more and more accepted as fact.

Sticky Numbers

Peter J. Wolf, the voice behind *Vox Felina*, examines just how these sticky statistics have come to be viewed as actual data. In his 2010 blog post, "Repeat after Me," Wolf recalls a National Public Radio broadcast where *Wall Street Journal* columnist Carl Bialik describes the process by which such slippery figures gain traction:

An interesting phenomenon of these numbers is that they'll often be cited to an agency or some government body, and then a study will pick it up, and then the press will repeat it from that study. And then once it appears in the press, public officials will repeat it again, and now it's become an official number.

Unfortunately, this is exactly what has happened with the data from both the English Village study and the Wisconsin study.

Along with major newspapers such as the *New York Times*, the *Los Angeles Times*, and the *Wall Street Journal*, conservation organizations like ABC, the National Audubon Society, and the NFWS continue to repeat these sticky numbers as solid evidence.

Roger Tabor addressed this concern in regards to the English Village study saying, "The mesmeric effect of big numbers seems to have stultified reason" (Tabor, 1991). And Gary J. Patronek, VMD, Ph.D. of Tufts University said this about cat predation statistics in a letter to the editor of the *Journal of Veterinary Medicine* (1996):

If the real objection to managed colonies is that it is unethical to put cats in a situation where they could potentially kill any wild creature, then the ethical issue should be debated on its own merits without burdening the discussion with highly speculative numerical estimates for either wildlife mortality or cat predation. Whittling down guesses or extrapolations from limited observations by a factor of 10 or even 100 does not make these estimates any more credible, and the fact that they are the best available data is not sufficient to justify their use when the consequences may be extermination for cats.

If asking for reasonable data to support the general assertion that wildlife mortality across the United States attributable to cat predation is unacceptably high can be construed as 'attempting to minimize the impact,' then I am guilty as charged. What I find inconsistent in an otherwise scientific debate about biodiversity is how indictment of cats has been pursued almost in spite of the evidence.

As demonstrated here, it is very easy for a small, scientifically valid, peer-reviewed

study to be manipulated — thanks to the media and anti-cat groups — into a much larger, broader statement that can be used to push an agenda to kill cats.

Conclusion

As we've seen throughout the previous chapters, the few cat predation studies that have been carried out on continents have resulted in biologists stating (1) cats are no more harmful a predator than any other predator, (2) cats have been a part of the landscape for thousands of years, therefore birds and wildlife who could not withstand such predation from cats would have died off long ago, and (3) human activity (habitat loss mainly due to agriculture) is more devastating to bird and wildlife than any cat predation. Unfortunately, conservationists continue to cherry-pick studies, citing unpublished, unreviewed data, and equate guesses with reliable, scientific research in order to falsely accuse outdoor cats for declining bird and wildlife populations.

In March 2013, George Fenwick, president of ABC, clearly stated his position on outdoor cats and TNR programs when he wrote in a *Baltimore Sun* opinion piece called, "House Cats: The Destructive Invasive Species Purring on Your Lap:"

The only sure way to protect wildlife, cats and people is for domestic cats to be permanently removed from the outdoor environment. Trap-neuter-release programs that perpetuate the slaughter of wildlife and encourage the dumping of unwanted cats is a failed strategy being implemented across the United States without any consideration for environmental, human health, or animal welfare effects. It can no longer be tolerated.

Local governments need to act swiftly and decisively to gather the 30 million

to 80 million unowned cats, aggressively seek adoptions, and establish sanctuaries for or euthanize those cats that are not adoptable.

Dr. Julie Levy from the University of Florida's Veterinary School and co-founder of Operation Catnip was quoted in *Best Friends* magazine (2013) as stating, "There are much more important pressures on bird populations [than cats] - primarily pollution and habitat destruction. And those are harder areas for bird groups to be effective in." Levy said:

The problem is that part of the campaign is an attack on humane control of homeless or feral cats. Most of us love song-birds as much as we love cats, so we are not trying to choose one species over another. We're trying to come up with a solution that benefits everybody in the picture.

Levy concludes that the goal should be to reduce the feral cat population saying, "we can do it in a humane way that respects the animals rather than in a 50-year-old vision



Porch cat, sharing a shelter with an opossum. Feral cats usually live alongside most wildlife quite safely, except for coyotes. Although it has been found that coyotes and feral cats often avoid each other.

Louise Holton

of animal control, in which the only way you can help animals is by killing them” (Best Friends, 2003).

Alley Cat Rescue agrees that outdoor cat populations need to be reduced. But we also believe that because nonlethal methods exist and work, they should be used. The seemingly attractive “quick-fix” of killing does not work. Never has and never will. And more importantly, eradication will cause even more devastation to birds if these conservation groups ever convince the U.S. government to agree to such a plan.

For too long cats have received a bad rap and been blamed for the destruction of birds and wildlife. It is time for conservation groups to stop using exaggerated numbers to support these claims.. Yes, cats do kill birds, but for agencies, especially government-supported ones, to push for the eradication of cats based on falsehoods is horrifying and tragic...and it could have devastating consequences. Removing all outdoor cats — a mesopredator and a highly specialized rodent hunter — would be an unimaginable disaster for the American environment.

Killing Outdoor Cats is a Dangerous Game

One only has to look at the history of eradicating cats from small islands to see the countless flaws and devastating effects associated with this management approach: (1) it took many years to remove all or most of the cats (19 years in one case); (2) each case required several methods of control, including poisoning, shooting, trapping, and a releasing a virus and predatory dogs; (3) after the cats were removed, rodents and rabbits took over and destroyed the environment, putting at risk the very animals conservationists were trying to save.

Where Have all the Birds Gone?

In 2022, World Wildlife Fund (WWF) reported a 69% drop in mammals, birds, and reptile populations since 1970. ACR thinks the environmental groups who spend time and resources blaming cats should rather spend that time looking into habitat destruction and working towards the sustainable use of our planet's resources. We agree with WWF's sentiment that "we all have a role to play" ("HOME," accessed 2022) - not just governments.

One of the ways individuals can make the biggest impact is by slowly working towards changing their diets to be healthy and sustainable. We must make sure our personal carbon footprints — from travel, heating and cooling homes, and especially what we eat - are sustainable. Consume less, reuse more. It's easy to do.

Sure, invasive species do play a part in decreasing wildlife populations, but at least as far as cats are concerned, they are not the main culprit. In any case, thousands of ordinary citizens all across the world have stepped up to control and reduce the number of outdoor cats.

According to World Wildlife Fund, the way we produce food is "causing 70% of biodiversity loss in land and 50% in freshwater" ("How to Live More Sustainably," accessed 2022). ACR is not saying everyone has to become a vegan, but, to continue quoting World Wildlife Fund, "people consume animal-sourced food far beyond what is healthy for people and our planet" ("How to Live More Sustainably," accessed 2022). In our opinion, if one is seriously concerned about the state of our planet, it's an easy transition to follow Meatless Mondays as a start, and it is fun to explore ethnic plant-based foods.

"According to a 2000 study published by a global alliance of conservation organizations called BirdLife International, almost 1,200 species—about 12 percent of the world's remaining bird species—may face extinction within the next century."

-Worldwatch Institute,
"Winged Messengers" (2003)

Several leading environmental groups like Rainforest Alliance, Greenpeace, Sierra Club, Center for Biological Diversity, and Rainforest Action Network, are now acknowledging the destructive impacts of animal agriculture and suggesting people eat lower on the food chain.

We have some resources at the end of this book to help.

The consequences of human activities such as habitat destruction are the true causes for declining bird and wildlife populations.

Habitat Loss, Climate Change, Pollution, and Pesticides

According to a study published in the journal Annual Review of Environment and Resources, the main threats to bird populations are habitat destruction and overexploitation of many species ("Global Bird Populations Steadily Decline," 2022). The survival of migrating birds highly depends on the planet's forests. Without available tracts of forestland, countless bird populations lose their nesting sites and food sources. Songbirds use these forests to fly back and forth with the changing seasons, returning every year to the same areas to

lay their eggs and raise their young; however, more and more of these birds find themselves returning to sites where forestland has been bulldozed, leaving them with little-to-no available resources for survival.

The Council on Hemispheric Affairs says, “experts estimate that each minute, 11 football fields of forest are cleared” (COHA, 2009). What is truly frightening about this figure is how world governments continue to support such actions.

With all the environmental and ecological consequences, one must question the motives of not only the Brazilian government [referring to clearing the Amazon rainforest], which has tolerated such a destructive development model, but also its endorsement by the international community which has jeopardized the future of mankind. (COHA, 2009)

With this tragic rate of clear-cutting of forestland and the rapidly growing sprawl of cityscapes, habitat destruction is obviously the number one reason for declining bird and other wildlife populations. Professor of biology at Stanford University, Rodolfo Dirzo says, “We tend to think about extinction as loss of a species from the face of Earth, and that's very important, but there's a loss of critical ecosystem functioning in which animals play a central role that we need to pay attention to as well” (Carey, 2014). All animal and plant species on this planet are connected; the loss of any one species can affect an entire ecosystem, sending out a ripple effect to surrounding environments.

One of the major driving factors behind deforestation, besides the reliance on paper products, is the increased consumption of animal products. According to a 2006 U.N. report, pastures and ranges for livestock take up to 26 percent of the Earth's ice-free land (Phelps and Kaplan, 2017). Animal

“The global environmental crisis has caught up with migratory birds. There are simply too many people making ever increasing demands on a fixed supply of resources. It is inconceivable that we can continue on the same reckless path for very long.”

-John Terborgh, “Why American Songbirds are Vanishing” (1992)

agriculture has been turning lush forests and grassy prairies into barren deserts for thousands of years, but thanks to the advent of factory farming in the 1950s, this pace has exploded dramatically. It is hard to believe that much of North America was once covered by luscious forest, seeing that land today as home to livestock production. The devastation of clear-cutting forest for animal agriculture is now continuing in Latin America, especially the Amazon River Basin, where 70 percent of forestland has been turned into pastures for livestock grazing (United Nations, 2006).

Raising animals for food contributes substantially to global warming and is responsible for more water pollution, topsoil depletion, and wildlife destruction than any other human activity. Senior U.N. Food and Agriculture Organization official, Henning Steinfeld reported that “Livestock are one of the most significant contributors to today's most serious environmental problems. Urgent action is required to remedy the situation” (United Nations, 2006). Animals raised for food is the single largest source of methane emissions (“Overview of Greenhouse Gases: Methane Emissions,” 2022). “Livestock and their byproducts account for at least 32,000 million tons of carbon dioxide (CO₂) per year, or 51% of all worldwide greenhouse gas emissions” (Goodland and Anhang, 2009).

Along with deforestation and global warming, birds are also in decline due to increased air, water, and soil pollution and the use of toxic chemicals. Again, the major contributor to both of these problems is an-

imal agriculture. In 1997, the USDA estimated that animals raised for food produced 1.4 billion tons of waste, which is 130 times the nation's volume of human waste, or five tons of animal waste for every U.S. citizen (Horrihan et al., 2002). The waste, containing vast amounts of nitrates, pathogens, and hormones, winds up in the air, the water, and the soil. Air pollution causes respiratory problems, and water pollution kills large portions of marine life either directly or through formations of algal blooms; decreased marine life is bad news for birds, especially seabirds who rely on fish and other aquatic life for food.

The Food and Agriculture Organization of the United Nations (2014) says, "greenhouse gas data show that emissions from agriculture, forestry and fisheries have nearly doubled over the past fifty years and could increase an additional 30 percent by 2050..."

The use of toxic chemicals such as pesticides, herbicides, fungicides, and fertilizers poses a severe risk to birds as well, killing them directly or causing decreased breeding success, physical malformations, or impaired ability to migrate or to avoid predators. The U.S. uses one-fifth of the five billion pounds of pesticides used globally each year, with the agricultural sector accounting for the majority of that use (Grube et al., 2011). The application of pesticides and fertilizers on the estimated 14,136 golf courses worldwide adds to the problem. On average, each golf course uses around 150 acres of land, with each acre being treated with 18 pounds of pesticides annually (Cox, 1991). In the 1991 *Journal Of Pesticide Reform*, Caroline Cox writes:

Is 'an oasis of burbling creeks, swaying trees, and rolling seas of shimmering green' an appropriate description of a golf course? Or would 'a toxic waste dump, a destroyer of wetlands, and a misuse of farmland and water' be more correct? What does pesticide use on golf

courses mean for golfers, nearby residents, wildlife, and the environment in general?

According to reports since 1971, because of "exposure to the organophosphate insecticides diazinon, chlorpyrifos, and isofenphos, blackbirds, blue jays, Brant and Canada geese, coots, grackles, gulls, mallards, robins, and starlings, have all been killed on golf courses" (Cox, 1991).

A 2013 study led by Canadian toxicologist Dr. Pierre Mineau identifies acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the U.S. (Mineau and Whiteside, 2013). The indirect effects of pesticides mediated through a loss of insects as a food resource also takes a toll on birds, while eagles, owls and hawks accumulate high chemical concentrations in their bodies from ingesting poisoned prey; farmers poison any animal viewed as a threat to their operation, including rodents, rabbits, and foxes. Unfortunately, it is almost impossible to find any place on the planet where chemical residues are not detectable.

Windows, Communication Towers, Power lines, and Wind Turbines

Millions of birds, worldwide, die each year when they collide with man-made structures, like glass windows and buildings, communication towers, power lines, and wind turbines. Ornithologists estimate that between 100 million and 1 billion birds are killed each year from building strikes, particularly with windows (Loss et al., 2014). Birds simply cannot differentiate a reflection from reality. Even if a bird flies away after striking a window, she may die later as a result of internal injuries.

Communication towers (radio, television, cellular) are very tall structures, usually located on elevated land, and their supporting guy wires are extremely dangerous for migratory birds. Fast flying birds do not see these loose wires and birds who are not very agile have difficulties avoiding them. Scientists estimate that 6.8 million birds are killed every year in the U.S. and Canada due to flying into communication towers (Longcore et. al, 2012). Collisions with power lines are estimated to kill up to 175 million birds annually, with tens to hundreds of thousands more birds being electrocuted (Manville, 2005).

Although wind turbines are an important form of clean technology for renewable energy production and an important tool in combating climate change, they can be dangerous for migratory birds. Their blades rotate at speeds of up to 200 kilometers per hour and, when placed along the major migratory routes of birds, like coastlines and mountaintops, wind turbines can become obstacles for birds causing both injuries and fatalities. It is estimated that 573,000 birds are killed every year in the U.S. from collisions with wind turbines (Smallwood, 2013).

Other Causes Contributing to Declining Bird Populations

Although the above mentioned issues are the main culprits of declining bird populations, other important factors that also play a significant roll should be taken into consideration. According to data from the U.S. Department of Agriculture (USDA), the Federal Wildlife Services, a branch of the USDA, killed more than 2.7 million animals during fiscal year 2014; nearly 60 percent of animals killed were birds, in-

cluding bald and golden eagles, blackbirds, bluebirds, cardinals, cormorants, cranes, doves, ducks, egrets, falcons, finches, geese, hawks, herons, ibises, meadowlarks, ospreys, owls, pelicans, ravens, robins, sparrows, swallows, wild turkeys, vultures, and woodpeckers, just to name *a few* (USDA, 2015). Along with birds, numerous other animals (including 300+ mountain lions and nearly 800 bobcats; 700+ feral cats; and 16 pet dogs) are killed intentionally or unintentionally every year by the government to protect powerful agricultural, livestock, and other special interests. Since 1996, our country's Wildlife Services has shot, poisoned, and snared more than 27 million native animals. "It's sickening to see these staggering numbers and to know that so many of these animals were cut down by aerial snipers, deadly poisons and traps," said Amy Atwood, a senior attorney at the Center for Biological Diversity in a press release (Center for Biological Diversity, 2015).

"Human-related factors threaten 99 percent of the most imperiled bird species, and bird extinctions already far exceed the natural rate of loss. At least 128 species have vanished over the past 500 years, 103 of them since 1800."

-Worldwatch Institute, "Winged Messengers" (2003)

The 2014 "State of the Birds" report claimed that one of the main causes of declining sea birds is oil spills, while some populations of birds are in decline because of oil and natural gas extractions. The report also cited mountaintop coal mining as a contributing factor, for entire mountain peaks of forestland are cleared to extract mineral resources (North American Bird Conservation Initiative, 2014).

Longline fishing claims hundreds of thou-

sands of seabird lives every year when birds are inadvertently hooked on baited lines and drowned. Sadly, at least 23 species face extinction from this industry. The Worldwatch Institute reports, "more than 30 countries have longline fleets, yet little has been done to address the problem despite findings that simple mitigation measures can drastically cut bird by-catch" (Youth, 2003).



Magnus Johansson/CC BY-SA 2.0

Cats are talented tree climbers and love to be up high, yet prey primarily upon ground dwelling animals like rodents.

Humans also exploit birds through hunting and the pet trade industry. Poorly regulated or illegal hunting and capture contributes to the killing of millions of birds. In nations such as Malta and China, "deep-forest birds such as Neotropical curassows and Asian pheasants quickly disappear when hunters invade pristine areas" (Youth, 2003). If birds are not being hunted, then they are being captured and sold into the exotic pet trade. "A third of the world's 330 parrot species are threatened with extinction due to pressures from collecting for the pet trade, combined with habitat loss" (Youth, 2003).

Some Bird Populations are on the Rise

Even though birds may be killed by cats and other predators, many experts have said repeatedly that this does not mean the birds preyed upon are declining. In fact, although some songbird populations are declining, other bird populations such as blackbirds, greenfinches, blue jays, and brown-headed cowbirds are exploding. Many birds have been faring well in the U.S., especially birds living in urban environments. "Birds are increasing and that's good," said Kevin McGowan of the Cornell Laboratory of Ornithology (Bryner, 2009).

The 2009 "State of the Birds" report stated, "The urban/suburban indicator, based on data for 114 native bird species, shows a steady, strong increase during the past 40 years." The report continued on to say:

American Robins can thrive in many habitats, including lawns with abundant earthworms. California Quail and Abert's Towhees find suburban plantings a suitable substitute for native aridland habitats. Gulls, vultures, and crows seek abundant food at garbage dumps and along roadsides. Hummingbirds, chickadees, sparrows, finches, woodpeckers, and other birds take advantage of bird feeders. Even hawks and owls find increasingly safe nesting sites and abundant prey in our towns and cities. (North American Bird Conservation Initiative, 2009)

So while reports indicate a decline in some bird populations (mostly songbirds who migrate and depend on forestland), those species that take up residence in urban and city landscapes are increasing in numbers.

These birds find nesting sites in tall buildings and backyard sanctuaries. They scavenge through human garbage and frequent garden bird feeders. Ironically, the highest concentration of feral cats can also be found in these same landscapes; most cats tend to congregate in cities and urban areas because more people live there, and because that is where food and shelter is most available. If bird populations are rising in our cities and urban areas, while the birds are living alongside feral cats, then how can conservationists blame cats for the demise of birds?

Conclusion

At a time when the burgeoning human population is causing so much destruction to the Earth, we need to remind ourselves of our species' responsibility and consider our *double standards*. We often excuse or ignore the devastation done to the environment by humans and the results of this destruction to the wildlife we share this planet with. Urban sprawl, shopping malls, roads, golf courses, and most of all, the use of harmful pesticides, all play a part in reducing habitat and food sources for wildlife.

Roger Tabor, one of the world's leading experts on cats and one of the few biologists who has studied feral cats for over 30 years, had this to say to Estelle Munro in her 2003 article, "Living in the Gray Zone:" "The clear leading animal that's really putting wildlife at risk is the human population. We just don't like to acknowledge that it is our fault. It's not a case of the cat being the worst offender. It isn't even remotely the worst offender. It's

us."

Conservationists state they are not saying cats are the number one cause of bird deaths, but they also say that it is too late to find solutions to stop, or at least slow down, land development, and it is easier to kill cats, so they'll take that approach. The director of the American Bird Conservancy's "Cats Indoors!" campaign, Linda Winter puts it simply, saying, "We may not know the exact numbers of birds that cats kill, but we know cats kill them, and it's an unnecessary and easily avoidable loss" (Ridgley, 2003).

Humans have the largest effect on the environment and all living things on the planet Earth. Unfortunately, not until politics, money, and personal agendas are set aside will the devastation on the planet halt. Blaming cats for songbird decline is a facile and simplistic "solution" to a complex problem. Alley Cat Rescue invites conservation groups to work *with* us and the many other cat rescue groups across the country to implement humane, nonlethal management programs for feral cats. That is how we will get a handle on reducing the number of outdoor cats so that cats, birds, and other wildlife will all benefit.

We ALL want the same thing: fewer feral and outdoor community cats. We, Trap-Neuter-Return (TNR) advocates, have a solution, whereas the conservation groups do not. We want to achieve fewer cats through humane, nonlethal methods. They would like to ban our work. This will only cause more colonies to form, and more kittens to be born, suffer, and in many cases, die. Again, time spent blaming cats for our environmental ills is time wasted. If we re-

Double Standards: Humans are Pests

"If there is a world's worst pest, an exotic invader that surpasses all others, surely it is the human species," biologist and author Tim Low notes in his book, [Feral Future: The Untold Story of Australia's Exotic Invaders](#). "No other animal has swarmed across the globe in such numbers or displaced so many other life forms in the process ... Our ability to invade new habitats is unsurpassed." (Low, 1999)

ally want to save birds and other wildlife, then we need to work together and focus our energy on tackling the big-picture is—

sues, like habitat loss, climate change, and pollution, which are the *true* culprits of wildlife devastation.

TNR: Past, Present, Future

TNR Timeline in the U.S.

1980 Annabell Washburn, often credited with being the first advocate to bring TNR to the U.S., establishes Pet Adoption and Welfare Service (PAWS). PAWS begins practicing TNR on feral cats living on Martha's Vineyard in Massachusetts.

1982 Ellen Perry Berkeley's "Maverick Cats: Encounters with Feral Cats," the first book about feral cats, is published in the U.S.

1986 Washburn works with Tufts University School of Veterinary Medicine staff and students to sterilize feral cats in the British Virgin Islands, marking one of the first collaborations between veterinarians and activists.

1988 Founding the program Alliance for Animals, Donna Bishop introduces TNR for feral cats in Boston.

1989 The Stanford Cat Network (now the Feline Friends Network), the first TNR program for a large college, begins on the Stanford University campus. Within 15 years, a population of 1,500 is brought down to 85 feral cats.

1990 Louise Holton co-founds Alley Cat Allies (ACA), the first U.S. national organization to promote and implement nonlethal control for feral cat colonies. Holton based ACA on the Cat Action Trust (U.K.).

1991 *Animal People* magazine staff begin a seven-month trial of TNR in Fairfield County, Conn.

1992 Merrimack River Feline Rescue Society establishes a TNR program in Newburyport, Mass.

1992 Tufts University's School of Veterinary Medicine sponsors the first feral cat workshop organized by Dr. Andrew Rowan, with Merritt Clifton, Louise Holton, and Donna Bishop as presenters.

1992 Feral Cat Coalition located in San Diego, Calif. starts the first mash-style TNR clinic.

1993 Ocean Reef, Fla. resident, Alan Litman, with the cooperation of the Ocean Reef Community Association, establishes and launches ORCAT.

1993 San Francisco SPCA, under the direction of Richard Avanzino, creates the "Feral Fix Program."

1994 Lynda Foro creates the first national No-Kill directory and the first No-Kill Conference.

1994 San Francisco becomes the nation's first no-kill city when the San Francisco SPCA, under Rich Avanzino, establishes an adoption pact with the Department of Animal Care and Control.

1994 Operation Catnip in North Carolina opens a mash-style spay/neuter clinic.

1994 PetSmart Charities provides grants towards TNR programs for free-roaming cats.

1994 Jeff Elliott's article, "The Accused" is published in *The Sonoma County Independent*, shedding light on the misinformation and myths surrounding cats and predation.

1995 The American Veterinary Medical Association (AVMA) Animal Welfare Forum focuses on the welfare of cats and includes discussions about feral cats and their management. Louise Holton is called upon by Dr. John Hamil of The California Vet Medical Association to answer questions about feral cats and rabies; he calls Holton an expert in the field.

1995 Doing Things for Animals (founded by Lynda Foro) holds the first national no-kill conference, “No-Kills in the ‘90’s.” (“No-Kill Timeline,” accessed 2022).

1996 American Humane Association and The Cat Fancier’s Association sponsors a conference, “A Critical Evaluation of Free-Roaming/Unowned/Feral Cats in the United States.”

1997 Louise Holton founds Alley Cat Rescue (ACR) to focus on establishing a shelter to rescue homeless cats and offer subsidized spay/neuter services to support local TNR in Maryland; to date ACR has spayed or neutered over 400,000 cats. ACR established a national network of Cat Action Teams across the U.S. to assist people and a directory of low-cost spay neuter clinics.

1998 Dr. Julie Levy opens a second chapter of Operation Catnip in Alachua County, Fla.

1998 Feral Cat Coalition of Portland receives a grant to build a mobile vet hospital, and they change their name to Feral Cat Coalition of Oregon to serve feral cats across the entire state.

1999 Neighborhood Cats in New York City is created by Bryan Kortis, Ruth Sharp, and Shirley Belwood.

2001 Best Friends Animal Society holds its first “No More Homeless Pets” conference.

2001 A third chapter of Operation Catnip opens in Virginia.

2004 The No Kill Advocacy Center is created by Nathan Winograd, listing TNR programs for feral cats as part of the No Kill Equation.

2005 The first “No Kill Conference” (organized by the No Kill Advocacy Center) is held.

2006 The Humane Society of the United States (HSUS) advocates TNR for feral cats.

2008 University of California, Davis researchers find that domestic cats originated from wild cats in the Fertile Crescent region of the Middle East (Bailey, 2008).

2010 The Los Angeles Superior Court issues an injunction that prohibits Los Angeles shelters from promoting or supporting TNR until an environmental impact report on feral cat predation is completed (Yoshino, 2010).

2012 “The Outdoor Cat: Science and Policy from a Global Perspective” conference is hosted by The HSUS and co-sponsored by the Humane Society Institute for Science and Policy, the Found Animals Foundation, and the Humane Society Veterinary Medical Association.

2013 Maryland Senate Bill 820, which creates a state-funded Spay and Neuter Grants Program to reduce shelter euthanasia, is passed.

2014 A large survey by Beall Research reveals that public opinion does not support euthanizing healthy cats as a means of population control (Wolf and Schaffner, 2018).

2015 Madrid, Spain becomes a no-kill city after adopting legislation that bans “the slaughter of stray animals.”

2019 Alley Cat Rescue publishes the results of a widespread survey of TNR groups and colony caretakers. The data, compared

to responses to the survey from 2012, show that the total number of community cats sterilized annually by respondents increased from 45,000 in 2012 to 62,000 - an increase of about 4% per respondent.

2021 The City of Los Angeles resumes its city-wide, government-funded TNR program, which had been halted since 2009.

2021 The Joy Freedman Care for Cats Act is introduced in Baltimore County, MD. This act codified a TNR program in the County Code and called for guidelines and procedures for the program to be established.

2021 The “D.C. Cat Count;” a collaborative effort between the Humane Rescue Alliance, PetSmart Charities, the Humane Society of the United States, ASPCA, and the Smithsonian Conservation Biology Institute; is one of the first efforts to count the number of cats living within a city. The goal of the Cat Count is to determine how best to manage the population (Hedgpeth, 2021).

2021 The largest survey of U.S. cat care and advocacy groups is published in a report titled “The State of the Mewnton.” The survey covers a wide range of topics relating to organizations’ operations and procedures, and responses reveal the most common practices, as well as common deficiencies, among nonprofit cat groups (Aeluro et al.). [Link to study](#)

2021 Participants in the 11th annual Alley Cat Rescue Feral Fix Challenge collectively sterilize over 45,000 community cats in the U.S., Greece, South Africa, the U.K. and the United Arab Emirates.

2022 Conservation biologists use camera traps throughout Washington, D.C. to study cat predation. The data shows that cats are unlikely to hunt native wildlife in urban settings (not including parks) and that cats were more likely to prey on rats

than native wildlife up to 800 feet away from the borders of forested areas (Herrera and Gallo, 2022). [Link to study](#)

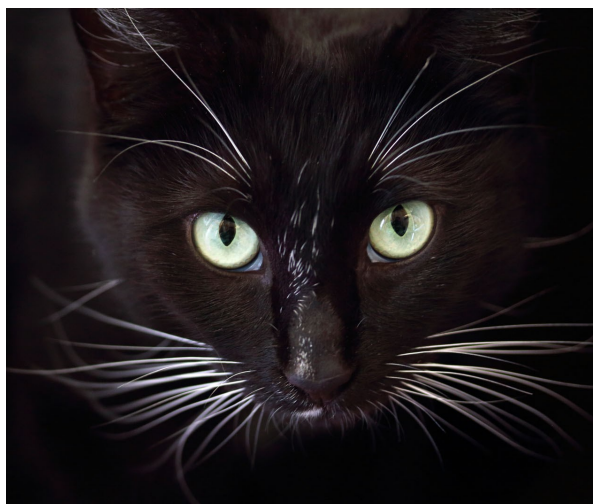
**See end of handbook for sources list.*

Late 1960s and 1970s in England

There were several TNR pioneers during these years, one being former model Celia Hammond, who started trapping and sterilizing feral cats and returning them to their outdoor homes. Celia pressured the Royal Society for the Prevention of Cruelty to Animals (RSPCA) to change their policy away from catch-and-kill, which led to the creation of the Feral Cat Working Party. Celia became the first chairwoman of the National Cat Rescue Coordinating Committee (NCRCC), a British group organized in 1975 by animal activist Ruth Plant.

Ruth, another TNR pioneer, was certainly ahead of her time, being one of the first individuals to question animal control’s lethal methods for managing stray cat and dog populations while suggesting that suppressing the reproductive cycle could provide a more effective and humane solution. In treating hard-to-handle feral cats, Ruth naturally turned to contraceptive pills; which led Dr. Jenny Remfry to carry out some of the first field trials of administering synthetic progestins to free-roaming cats in the UK. Ruth also strongly believed that education was key to ending pet homelessness and encouraged an open dialogue between animal control and the public, rather than simply killing animals (Remfry, 2001). “Ruth Plant believed firmly — heretically, in those days — that animal welfare work shouldn’t be limited to pets but should also serve stray and feral animals” (Berkeley, 2004).

In 1977, two members of the NCRCC created a new organization, the Cat Action Trust



Mother cat, Smokey.

(CAT). Celia Hammond was appointed a patron, Ruth Plant became Honorary Secretary, and Roger Tabor and Dr. Jenny Remfry served on the Advisory Panel (Remfry, 2001). Today, the Cat Action Trust has several branches of volunteers neutering feral cats throughout England and has become a model organization.

Feral Cat Symposium Held in 1980

Universities Federation for Animal Welfare (UFAW) invited 14 speakers for their symposium, “The Ecology and Control of Feral Cats,” held in London, England. “It is fair to say that UFAW’s symposium was a defining event, a watershed occurrence. Before 1980, feral cats were considered vermin; after 1980, they were beginning to be considered worthy of humane treatment,” notes Berkeley (Berkeley, 2004).

Dr. Jenny Remfry, who worked with UFAW, deserves immense credit for this change in attitude, along with veterinarian Roger Ewbank, who became director of UFAW in 1979. Ewbank became interested in Remfry’s work with feral cats and “thought the time was ripe to put the ecol-

ogists in touch with the people advocating population control” (Berkeley, 2004).

Tom Kristensen, a veterinarian from Denmark’s Society for the Protection of the Cat, spoke at the symposium about the wonderful results they had with TNR in the mid-1970s. Dr. Remfry had visited Denmark in 1976 to find out what they were doing and brought her findings back to Britain. Her recommendation was to implement TNR for all feral cats (Berkeley, 2004).

Roger Tabor also spoke at the symposium, sharing data from his study of neutered cats in London’s Fitzroy Square. His study included a group of black and white cats similar in coloring to T.S. Eliot’s famous “Jellicle Cats.” Tabor noted that the resident cats, “even a few years after neutering, still maintain their tight family cohesiveness and still continue to exclude other cats” (Tabor, 1981).

Biologist and author Peter Neville spoke of similar neutering programs in France, Israel, Italy, Kenya, and South Africa, and he himself went on to establish official programs in Greece and Tunisia (Neville, 1992).

Ellen Perry Berkeley reports on all of this in *Maverick Cats: Encounters with Feral Cats*. She also noted that the Feral Cat Working Party “gives its highest recommendation to the neutering of whole colonies, ‘provided that their long-term welfare is ensured’” (Berkeley, 2001).

Dr. Jenny Remfry, with the help of Peter Neville, wrote *Feral Cats: Suggestions for Control*, published by UFAW in 1982. The booklet became a bestseller and the third edition was published in 1995. Remfry reported that attitudes were continuing to become “more enlightened” (Remfry, 1989).

South Africa in the Mid- to Late 1970s

The Johannesburg SPCA changed its stance on feral cats after admitting that decades of trapping and removing them had not worked. They began doing TNR instead. The SPCA was partially inspired by the humane work being done for feral cats in Britain.

Today South Africa has a fairly thriving TNR community working together around the country. Volunteers use their own resources as funding is scarce.

Late 1980s and Early 1990s

In Boston, Mass. in 1984, AnnaBell Washburn, who was working on Martha's Vineyard with PAWS, an organization she had founded a decade earlier, had attended a conference of the World Society for the Protection of Animals and heard Peter Neville speak about the worldwide success of neutering schemes for feral cats. Later in 1985, while vacationing at her house on Virgin Gorda in the British Virgin Islands, she discovered several colonies of feral cats and over the next decade, she took Tufts veterinary students to the island each year to conduct TNR (Slater and Shain, 2005).

In the July 1990 issue of *Cat Fancy*, author Ellen Perry Berkeley wrote the article "Feral Cats," highlighting a few groundbreaking programs tackling the feral cat issue throughout the U.S., including AnnaBell Washburn's dedicated work. Both Annabell Washburn and Kim Bartlett were instrumental in encouraging me to start an organization, to bring TNR as the preferred method of managing feral cats to the national stage. Subsequently, in October of 1990, after caring for a colony of cats in the

neighborhood of Adams Morgan in Washington, D.C. since that summer, I co-founded Alley Cat Allies; which has given community cats, especially feral cats, the much-needed voice they deserve.

Alan Litman, the founder of ORCAT had a vacation home in the exclusive Ocean Reef community located in Key Largo, Fla. and in the late 1980s, started Ocean Reef's Trap-Neuter-Release (TNR) program for the community's cats.



Billie, rescued by Alley Cat Rescue.

Alley Cat Rescue

Ocean Reef was initially a fishing village and had many introduced rats, so a good-intentioned groundskeeper brought in five unneutered cats to help solve the problem. The cats did their job of course and the rats were under control, but the cats began to multiply and eventually more than 2,000 of them were patrolling the area.

Ocean Reef's residents had been trying to control the cat population through killing, but as we know, this is not a long-term solution. Alan stepped in with a unique plan. He had read somewhere about TNR and being an avid cat lover, he believed the cats



Harry William Liam, feral kitten rescued by Alley Cat Rescue.

should be trapped and sterilized, rather than killed. And although he lived in Pennsylvania, he would visit his Ocean Reef home for one week every month, during which time he started trapping cats and taking them to a local vet to be sterilized.

In 1993, Litman and a group of homeowners opened their own clinic, the Grayvik Animal Care Center, and sterilized 500 cats. Today the population is down from the initial 2,000 cats to around 200 (“Who We Are — ORCAT,” accessed 2023). ORCAT is recognized as a model TNR program throughout the country. The colonies lived in luxury, with clean feeding stations hidden discreetly behind or beneath the luxurious foliage, as the cats of Ocean Reef.

The feeders do the rounds by golf cart conducting routine rounds, including feeding, watering, and cleaning up any messes the cats may have made. The feeding route around the area takes about four hours, as there are 70 colonies and feeding stations set up. Some colonies are just four or five cats, while some consist of more.

All the cats, without exception, are in great health. They are monitored carefully, and if any appeared sick they were trapped and

taken to the clinic for treatment. Some older cats are 19 and 20 years old! And every year, the community comes together for a fundraiser for the cats.

TNR took off on a national scale and several major groups, such as Catalysts for Cats in Santa Barbara, were formed to implement TNR locally in their cities (“Catalyst for Cats, Inc.,” 2008). Catalyst for Cats has achieved a lot for feral cats in their area, and to date, they continue their dedication to alleviating the suffering of cats and reducing their populations through TNR.

Another forward-thinking individual of the time was Sally Mackler. Mackler was one of the first to incorporate mash-style operations to TNR services to communities. Mackler, along with Dr. Rochelle Brinton, formed the Feral Cat Coalition in San Diego, Calif. in 1992. Since inception, the Feral Cat Coalition have TNR’d over 50,000 cats and they continue to provide free TNR services to the residents of San Diego county (“Welcome! - Feral Cat Coalition,” 2023).

In 1994, San Francisco, Calif. became the nation's first no-kill city, marking a historical achievement in the evolution of the no-kill movement. Under the direction of Rich Avanzino, the San Francisco SPCA established an adoption pact with the Department of Animal Care and Control. The agreement guarantees a home to every adoptable dog and cat in San Francisco.

Late 1990s and Early 2000s

In 1997, a local rescue group, including well-known veterinarian Julie Levy, founded Operation Catnip in Raleigh, N.C. to assist stray and feral cats. This was the first and is still the largest program of its type in the southeastern United States. Later in 1998, Dr. Levy moved to Gainesville, Fla.

and opened a second chapter of Operation Catnip. A third chapter was soon opened in February of 2001 in Richmond, Va. Operation Catnip provides a monthly, one-day TNR clinic for stray and feral cats; the program is free of charge to the public (“About Us,” 2020).

Also in 1997, the Feral Cat Coalition of Portland (FCCP) received a grant that enabled the group to build a mobile veterinary hospital to provide TNR services for feral cats. In doing so, the group decided to change their name to the Feral Cat Coalition of Oregon (FCCO) to better reflect their assistance with feral cats throughout the entire state. This mobile clinic was the first of its kind in North America and it remains the only mobile hospital exclusively serving feral cats (“Who We Are — Feral Cat Coalition of Oregon”, accessed 2015).

Also in 1997 Alley Cat Rescue (ACR) was founded in Mt. Rainier, Md. ACR is dedicated to rescuing homeless cats from the streets and providing sterilization services to the local community. ACR proudly follows a no-kill policy, where cats and kittens remain in our care until appropriate homes are found; this includes hospice care for sick and elderly cats. We operate an adoption program and provide low-cost spay/neuter services to low-income residents of Maryland, Washington, D.C., Virginia, and Southern California, as well as a TNR program for feral cats. ACR has sterilized over 50,000 cats since our inception.

In 2001, under the leadership of Nathan Winograd, Tompkins County of New York became the second no-kill community in the U.S., “saving 100 percent of healthy and treatable animals, and 100 percent of feral cats” (Winograd, 2009). Later in 2004, Nathan founded the No Kill Advocacy Center, which lists TNR programs for feral cats as part of the No-Kill Equation. The following year, the No Kill Advocacy Center held its first No Kill Conference,

which continues to be held annually.

Most Recently: 2010 to 2022

Los Angeles has a history of outdoor cat overpopulation and high shelter euthanasia rates. The number of TNR groups and no-kill rescues have grown across the city and surrounding areas in response, hoping to alleviate suffering and save lives. However, the progress of humane cat population management was dramatically slowed in Los Angeles in late 2009 when the Los Angeles Superior Court issued an injunction prohibiting city shelters from financially supporting or even promoting TNR while the environmental effects of outdoor cats in the city was reviewed. The injunction was the result of a lawsuit brought against the city by the Audubon Society and other bird conservation groups who claimed TNR violated state environmental laws. All of the city’s TNR-related programs were ordered halted; this included subsidization of spay/neuter surgeries of adopted animals, release of unsocialized cats to private TNR programs, public campaigns promoting TNR, and even referral of feral cat complaints to TNR groups (Yoshino, 2010). The ban lasted for nearly 12 years, during which time countless kittens were born and died in the streets, and shelter euthanasia claimed many thousands of lives.

The injunction on city TNR services was finally ended at the close of 2019 when the long-awaited economic impact report revealed neither cats nor TNR have any significant environmental impact (Daugherty, 2019).

As the complexity surrounding outdoor cats continues to increase, so does the need for stakeholders to come together on one platform to review all available science so more adequate policies can be created.

Such was the aim of the HSUS and co-sponsoring organizations, the Humane Society Institute for Science and Policy, the Found Animals Foundation, and the Humane Society Veterinary Medical Association, when they hosted a conference called "The Outdoor Cat: Science and Policy from a Global Perspective" in December of 2012. Dr. Kate Hurley, Dr. Julie Levy, Laura Nirenberg, Andrew Rowan, and Dennis C. Turner were among the presenters. Concluding the conference, participants acknowledged the lack of information and the need for further studies in order to more effectively combat the issues, while also recommending optimizing existing management tools and public education about pet ownership.

Nearly a decade later in 2022, another landmark collaborative effort toward better management of cat populations took place in the form of the "D.C. Cat Count." The Cat Count was one of the first efforts to count the number of cats living within a city. Organized by the Humane Rescue Alliance, PetSmart Charities, the Humane Society of the United States, ASPCA, and the Smithsonian Conservation Biology Institute, the project took three years and involved a survey of 2,600 households, people on foot searching out and counting cats, and camera traps ("Research," 2021). In addition to serving as a potential model for other cities and areas to create better estimates of their cat populations, the D.C. Cat Count is a rare example of wildlife conservationists and cat welfare



Troy Snow

TNR is now endorsed by some of the largest animal organizations in North America.

Conclusion

Managing feral cats through spay/neuter started with a handful of compassionate individuals, who saw a more humane way of reducing cat populations. Today, TNR programs are implemented in thousands of cities across the United States and in several countries around the world. Pioneers like AnnaBell Washburn, Celia Hammond, and Ruth Plant paved the way for TNR and helped change the public's view of feral cats.

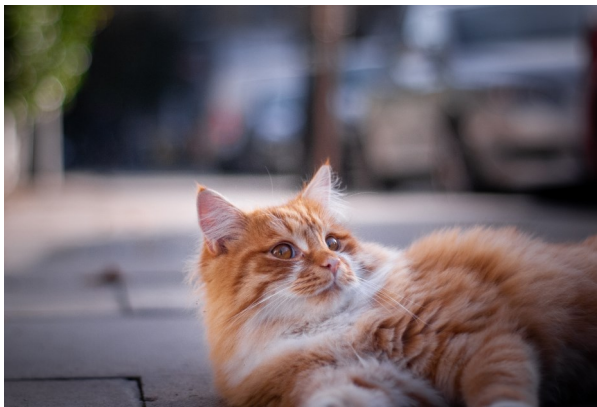
TNR is endorsed by some of the largest animal organizations in the country, including the American Society for the Prevention of Cruelty to Animals (ASPCA), The Humane Society of the United States, and The American Humane Asso

organizations working together to achieve common goals.

ciation. The Canadian Federation of Humane Societies supports TNR, and the U.K.'s Royal Society for the Prevention of Cruelty to Animals (RSPCA) supports the TNR where possible through local charities. With countless studies and research supporting the effectiveness of TNR in reducing cat populations and the public's commitment to nonlethal methods, TNR programs will continue to increase and save the lives of millions of community cats.

International Programs for Feral Cats

Feral cats are under attack in almost every part of the world. The same myths that exist in one country about feral cats exist in other countries as well, with the possible exception of England. One and a half million feral cats live mostly harmoniously in England (most live in crowded London), without being considered a major health hazard to local humans. And TNR programs for feral cats have existed there since the 1950s. As part of our dedicated work to help cats, ACR will continue to bring communities from around the world together so we can humanely manage feral cat populations and reduce their suffering. For more information on any of our international programs, please visit our website.



A cat seen resting on a London sidewalk.

In truth there is no utopia for animals anywhere in the world. The goal of Alley Cat Rescue is to bring nonlethal control, specifically Trap-Neuter-Return (TNR), to feral cats everywhere in the world. Feral cats are considered by many to be “introduced” or “alien pests.” Feral cats were introduced to most countries by humans hundreds of years ago, and killing them will not miraculously wipe them out, especially on continents. We should be ethically bound to treat all sentient beings with compassion,

and whenever proven, nonlethal methods are available, we should be morally bound to use these instead of resorting to killing.

When we make these statements, the anti-cat folks say, “What about all the birds and small mammals that cats prey on?” The answer to this is:

1. We are controlling and reducing the number of stray and outdoor cats through acceptable and effective programs. Killing does not work. In fact it is counterproductive and allows for unneutered cats to enter vacated territory, and the breeding to continue.

2. Cats prey mostly on rodents — they are rodent specialists — and they help society by keeping rodent populations in check.

3. Predation on rodents helps birds, as studies show that rats do far more damage to birds than cats do.

4. The birds preyed on by cats are mostly young, old, or sickly and would not survive to see the next breeding season.

5. Most feral and domestic cats live in urban areas and yet, according to the 2009 “State of the Birds” report, “114 native urban birds species show a steady, strong increase for the past 40 years.” This begs the question, if cat predation decimates bird populations, how are numbers of birds increasing in areas where the most outdoor cats congregate?

6. ACR asks all cat advocates to help birds and other wildlife by making simple changes to their lifestyles that

will protect the habitat of birds. Take steps towards creating bird-friendly gardens, not using pesticides and fertilizers, and eating lower on the food chain, as animal agriculture contributes substantially to habitat destruction, climate change, and pollution. This is the single most important thing any of us can do to help birds survive.

ACR Helps Cats in South Africa

The African wildcat (*Felis lybica*) is the ancestor of today's domestic cats. Unfortunately, like so many cat species (cheetah, leopard, tiger), the African wildcat (AWC) is in danger of extinction. Human encroachment is one reason for their decline. Land development forces AWCs to live on smaller tracts of land. Their habitats are fragmented, making migration from one tract of land to the next dangerous. Plus, habitat loss decreases the number of prey animals, making finding food more difficult. Besides the dangers imposed by humans, hybridization is a threat to the African wildcat. Local domestic cats (whether they are family pets, strays, or feral), breed with AWCs. This dilutes the species' gene pool, decreasing the number of pure wildcats. Currently, the African wildcat is considered endangered and is protected under CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix II. Unfortunately, this protection is limited (hunting is only regulated and/or prohibited in a few countries) and in South Africa, there is no legal protection for them. Farmers routinely kill African wildcats out of fear that they will kill farmed animals and livestock.

Adding to the problem, veterinarian clinics are sparse and locals do not have the transportation nor the money to take their cats to the vet. This means many cats are not sterilized, which increases the probability

of domestic cats breeding with the AWCs. ACR saw this first hand while visiting South Africa, when we spotted stray and feral cats in several of the cities on the outskirts of game reserves. The need to TNR stray outdoor cats is essential for both species of cats.

In 2007 ACR worked with a group in Sun City, South Africa, to provide TNR to feral cats living at the resort, which borders the Pilanesberg Game Reserve. Again, our efforts are to prevent the interbreeding of feral cats and African Wildcats.



Alley Cat Rescue

African wildcat in South Africa. This wild cat's numbers are in decline due to habitat loss and interbreeding with feral cats and strays. Alley Cat Rescue has a TNR project in South Africa.

Over a decade later, in 2018, we obtained the funds needed to revive our South African TNR program. We focused on free-roaming cats along the 200 mile border of Kruger National Park. In partnership with local TNR organizations, we have sterilized about 3,500 cats as of August of 2022.

In 2021, we expanded our work to include towns and farmlands within the Eastern and Western Cape areas where there are many farms that use cats for rodent control. Much of the farmlands border nature reserves with AWCs, so the likelihood of the free-roaming farm cats mating with AWCs in these areas is dangerously high. ACR teams in the Eastern and Western Cape areas explain the hybridization issue to the farmers, and also assure them that sterilizing their cats will improve the cats' health and life span. Most of the farmers happily then accept the volunteer's offer to TNR the cats.

A TNR group based in Secunda (which is near the southern half of Kruger National Park) contacted Alley Cat Rescue in 2022 with an urgent plea for assistance with the community cats living on and around the extensive property owned by the energy and chemical company, Sasol Ltd. The free-roaming cat population there is quite out of hand. We were motivated to join the TNR efforts there in particular because of the AWC hybridization threat posed by such a large number of domestic cats. We were further convinced of the need for increased TNR there when we learned that local authorities were concerned about the transmission of feline viruses such as FeLV and FIV from *Felis catus* to the local Serval population. ACR has now been involved with TNR, including vaccinations for FeLV, since May of 2022.

ACR Helps Cats in Mexico

In March of 2007, ACR visited Puerto Vallarta, Mexico along with four veterinarians and two vet techs to hold a free spay/neuter clinic. Over two days, we spayed and neutered 100 cats and dogs, including several feral cats. Many generous animal lovers helped with the clinic by volunteering, organizing, and donating supplies.

Laura Gelezunas, a Banderas News video journalist living in Puerto Vallarta, had seen the problem and contacted ACR for help. We jumped on the opportunity to take our expertise in working with stray and feral animals to help in Mexico. This was the first mash-style spay/neuter clinic that ACR had organized, and the largest clinic for Puerto Vallarta.

Along with sterilizing 100 cats and dogs, our veterinarians shared vital surgery techniques, postoperative care treatment, and tips for working with feral animals with the dedicated vets working in Puerto Vallarta, who now run their own spay/neuter clinics. There are an estimated 100,000 stray dogs and 49,000 stray cats living in the Puerto Vallarta area (Thelmadatter, 2021). The success of this clinic has prevented hundreds of thousands of unwanted animals from being born and is the first step in the fight against pet overpopulation.

Australia

There is a pervasive belief amongst Australian policy makers that outdoor cats are one of the leading threats to native wildlife. This myth has inspired several cat-culling campaigns that used disturbing lethal technology.

A relatively early campaign launched in 1999 began field trials of the experimental poison FST-2 to kill feral cats. The designers of the new poison claimed that it specifically targets cats and would not kill other animals. Other so-called "safe" poisons are now known to cause birth defects, cancer, and additional problems in both animals and humans. The designers also claimed the poison took one hour to kill the cats. However, Clive Marks of the Victoria Institute of Animal Sciences cautioned, "It is very important that we do not have cats eating a sub-lethal dose, which leaves them debilitated." Hugh Wirth, a veterinarian and then-president of Austral-

ia's RSPCA, stated that the poison was inhumane (Bonner, 1999).

In 2015, the Australian government announced a plan to kill two million cats by the year 2020. That number was based on the inaccurate estimate that there are up to 20 million feral cats on the continent (Doherty, 2019). A study published in 2017 revealed there is no scientific evidence to support the estimate and that the real number of feral cats in Australia is between 2.1 and 6.3 million (Legge et al., 2017). The campaign continues as of August 2022, well past the 2020 deadline, because the goal number of killed cats has not yet been achieved. This is more evidence that culling is an inefficient mode of cat population control.

Some local governments within Australia have introduced their own culling plans. The government of Banana Shire in Queensbury announced in 2017 a plan to decrease their outdoor cat population by incentivizing cat killing among community members with a bounty of \$10 for the pelt of an adult cat and \$5 for the pelt of a kitten.

In 2021, the Kangaroo Island Council and Mayor Michael Pengilly began introducing new technology to aid their effort to completely rid the island of its approximately 1,600 (Hohnen et al., 2020) cats. One such innovation is the Felixer trap, which uses artificial intelligence to identify passing cats by their size, shape, and speed and then spray the cats with poison.

New Zealand

As in Australia, the government of New Zealand considers cats a dangerous invasive species that threatens to wipe out many native animal species. The NZ Department of Conservation has a section about feral cats within the "Pests and Threats" section of their website. Per the

website, "We usually control feral cats [on public conservation land] as part of a wider programme targeting other invasive species such as stoats, hedgehogs and rodents" and list control techniques used as "poisoning, trapping and shooting." ("Feral Cats," accessed 2022)

Following the announcement of the Predator Free 2050 plan, which seeks to eradicate non-native predators - including stoats, rats, and possums - from the country by 2050, there were complaints from environmental groups that cats are not among the targeted species. Nonetheless, the safety of feral cats is far from guaranteed as the general belief among even cat owners in New Zealand is that pet cats are not the same as feral cats, who are to blame for hunting native wildlife (Buchanan, 2022).

Israel

Israel has a well-known outdoor cat overpopulation crisis. It stems from the introduction of cats into the area for rodent control. The original cats bred prolifically almost year-round due to the warm climate so that in the span of less than a century, Israel's outdoor cat population grew to an estimated two million (Zenebe, 2020).



Feral cat in Tel Aviv, Israel

Arnold Plotnick

When Israeli authorities first recognized the extent of the overpopulation problem, they tried some cruel and ineffective methods to correct it, including killing free-roaming city cats en masse.

For many years, both The Cat Welfare Society of Israel (CWSI) and Arad for Animals have been working tirelessly to stop the cruel poisoning of cats in Israel. In 1998, after one attack by a rabid dog in an isolated area nine kilometers outside of Arad, the city announced that it would eradicate all stray cats and dogs in Arad. After the discovery of one rabid fox in the city of Arad in 1999, officials responded by ordering the poisoning of all stray and feral cats in the area (Friedman, 1999).

The Israeli government used to use alpha-chloralose to poison cats. This poison causes convulsions and consequently a slow, painful death. It does nothing to stop the spread of rabies. Israel's Ministry of Agriculture and Veterinary Services had authorized municipal veterinarians to put out food laced with strychnine in the streets and fields. Stray animals along with companion animals would eat the poisoned food and die of asphyxiation over a period of 24 hours.

Israeli Veterinary Services claimed that the mass poisonings were necessary to protect the public from rabies (Friedman, 1998). Many scientific experts and world agencies, such as the World Health Organization (WHO), have stated that poisoning animals is not only cruel but also ineffective in controlling rabies. In fact, it increases the spread of the disease by creating vacuums into which rabid animals can then enter.

In the late 1980s, Rivi Mayer was one of the first people to suggest spaying and neutering street cats in Israel. Mayer said neutering cats is not part of Israel's culture yet and that more education needed to be done to get people to spay and neuter pet

cats and the strays they feed. One part of the problem has been that Jewish belief forbids neutering of any animal (and, though it is not said explicitly in the Bible, spaying as well).

In January 2000, CWSI, with the help of several veterinarians, trapped 70 feral cats at a kibbutz and neutered and vaccinated them in one weekend. This event led to the establishment of a TNR program for feral cats in that area.

Fortunately, the Israeli government's attitude toward cats has evolved and many current national regulations favor caring for community cats and humane population control through sterilization. In 2004, culling campaigns ceased as Israel made killing "strays" illegal (Zenebe, 2020). The website of Israel's Ministry of Environmental Protection offers guidelines for the treatment of "street cats in a legal and humane manner," ("Street Cats," 2020). In 2021, Jasmine Sax-Fridman of the Knesset (Israel's legislature), along with Agriculture Minister Oded Forer successfully passed a deal that greatly increased nation-



Feral cat in Israel at Suzana Cafe

Arnold Plotnick

al spending for the sterilization of stray cats in 2022 and 2023 (Reich, 2021).

The citizens of Israel are also becoming more interested in companion animals and in supporting humane, nonlethal control of animal populations. A lot of credit for these changes must go to the tireless work of people like Rivi Mayer from CWSI and Ellen Moshenberg, who have never given up the struggle for humane care of animals.

England

Much of today's TNR processes were developed in England. TNR pioneers such as Celia Hammond and Ruth Plant began programs in the 1950s and 60s. The non-profit, The Universities Federation for Animal Welfare (UFAW), was among the first organizations to take up the mantle of TNR study. UFAW's Assistant Director in 1977, Dr. Jenny Remfry, performed field trials investigating trapping methods and sterilization to manage cat populations. She presented her early findings in 1980 at UFAW's international symposium, titled *Ecology and Control of Feral Cats*. Another presenter at the symposium was Jane Dards, a researcher who studied feral cats. Dards reported that the cats she studied were generally in good health, rather than starving and miserable, which many people believed to be the usual condition of outdoor cats (Houser, 2018). The symposium was a historical event, instrumental in shifting attitudes toward humane treatment of feral cats.

Biologist & author Roger Tabor was the first to study feral cat colonies in the U.K. and monitored the colonies at Fitzroy Square and other sites. He found that, where cats had been eradicated, most colonies had recovered in numbers within two years. Tabor was the first to dub the tendency of cats to repopulate after eradication, "the vacuum effect."

The two largest and best-known English TNR groups are Cats Protection and the Cat Action Trust. However, several other groups, such as SNIP (Spay/Neuter Islington's Pussies) have neutered cats in part of London, and SNIP has established an international team of veterinarians who will travel to foreign countries to implement spay/neuter programs. Another internationally active organization rooted in England is International Cat Care (ICatCare). It began in the 1950s under the name the Feline Advisory Bureau, with a focus on improving veterinary care for cats. Over the years, its mission grew to encompass all forms of cat care, including the management of community cats. Today, ICatCare is a strong supporter of TNR.

Another group in England is The Celia Hammond Animal Trust (CHAT), founded in 1986. Over the years, CHAT has sterilized thousands of feral cats, and now has two veterinary clinics where they provide low-cost surgeries, as well as a dedicated cat rehoming/sanctuary center. Celia Hammond, who over 30 years ago gave up a lucrative modeling career to help cats, told *Your Cat* magazine that she thinks she has helped rescue more than 50,000 cats over the years.

In 2021, researchers calculated for the first time in history an estimated number of stray cats living in UK cities. They found that there are around 250,000 urban strays and believe some of the reason for the large population is because people were not able or too afraid to get their pet cats fixed during the COVID-19 pandemic (Bryant, 2021).

France

Famous French model, actress, and singer, Brigitte Bardot, became known for her animal rights activism. In 1986, she established the Brigitte Bardot Foundation for the Welfare and Protection of Animals,

which has helped thousands of feral cats through spay/neuter programs.

TNR was officially made the primary course of action to control community cat populations in France in 2015 ("Population Management at EU Level," 2022). The law was amended to say that unowned cats could only be taken to shelters when implementing TNR was impossible in a given municipality.

Greece

Visitors to Greece immediately see the many cats roaming the streets, laying around archaeological sites, and of course loitering around tavernas looking for a handout. In many ways, Greece offers an ideal atmosphere for outdoor cats with its year-round mild weather and array of street vendors. This partly explains why unowned outdoor cats abound there and can be seen daily wandering the streets. In fact, Greece has among the largest number of stray cats (and dogs) in the world (Smith, 2021).

Prior to Greece's inclusion in the European Union in 1981, the general Greek attitude toward street cats was ambivalent at best. TNR was not considered, and some people killed feral cats without recourse because they considered the cats a nuisance. However, pressure from the EU to conform to other member nations' higher standards for animal welfare sparked a change in Greek perception of cats and a powerful TNR and rescue movement grew among private citizens, who formed nonprofit organizations to tackle the problem of cat overpopulation.

Animal Protection Aegina Agistri (APAA) operates a large-scale TNR program on the two islands in its name. The organization relies on help from community members, veterinarians, and local governments to achieve impressive sterilization numbers

every year.

Nine Lives Greece was formed in 2006 with the mission "to improve conditions for existing and future felines in Athens and beyond." (Nine Lives Greece, n.d.) In addition to TNR, Nine Lives has a feeding program that feeds around 500 stray cats daily in Athens (Nine Lives Greece, n.d.). The organization ensures the cats stay healthy. Local shopkeepers and restaurateurs help look after the cats and allow them to live in and around the buildings.

Italy

A remarkable law was adopted in 1998 in Rome. It guarantees cats the right to live where they are born. This means that they are allowed to live in their homes whether these may be in the Coliseum, the Teatro di Marcello, Trajan's Market, or the Caius Cestius Pyramid. It has been estimated that Rome has around 10,000 cat colonies. Many of the cats are now sterilized thanks to the efforts of a few caring individuals (Natoli et al., 2006).

Torre Argentina, Rome's Cat Sanctuary, is one such organization helping to care for around 250 cats, who find shelter in some of the oldest temples in Rome (400-300 BC). Every day volunteers from different countries feed, clean, and care for the cats. Tourists are welcomed to wander the ruins, visiting with the cats and stopping by the gift shop. Patrons are also encouraged to "adopt" a cat to help continue their life-long care.

Venetians believe that their city was saved from the devastating plague of 1348 by their cats who killed the diseased rats. After visiting Venice in 1964, English tourist, Helena Sanders formed a group called Dingo to spay and neuter many of the cat colonies. Venice also adopted a law to guarantee cats the right to live in freedom (Natoli et al., 2006). Dingo helped to stabilize and reduce colonies using TNR. Thirty years

ago the cats numbered around 12,000. The success of Dingo in Venice, using nonlethal control, is a model for other cities to emulate. Venice has been very successful at controlling its cat population, which was down to 2,000 in 2017 (Wang, 2017).

Feral cats enjoy some significant protections throughout Italy as a whole, as well as within individual cities. The Italian Parliament passed Law no. 281 in 1991, which protects community cats against being eradicated or ejected from their urban locations (Natoli et al., 2019).



Louise Holton

The Torre Argentina cat sanctuary in Rome, Italy, has about 250 cats living among the ruins.

Portugal

Animias de Rua (AdR) was founded in 2005 to help the street cats of Porto, Portugal. At the time, Portugal had very few organizations working for feral cat welfare. AdR began a TNR program for one colony of 45 cats (“Partnership With Animais De Rua,” accessed 2022) and have since helped thousands of animals. AdR is now one of Portugal’s premier animal welfare organizations in Porto and other parts of the country.

Singapore

“Saving lives through enriching more minds.”

This great statement is the mantra of The Cat Welfare Society in Singapore. It works closely with town councils, housing boards, environmental agencies, and the Veterinary Authority of Singapore to resolve cat issues effectively and humanely. The Cat Welfare Society of Singapore wishes to cultivate a community outreach movement to reach people with the message of responsibility and tolerance. The group helps communities resolve issues related to community and outdoor cats.

China

Beijing is infamous for rounding up and killing thousands of feral and abandoned cats in preparation for the 2008 Summer Olympics. Four years later, it experienced the typical outcome to round-up-and-kill — the cats came back (Bruno, 2012).

Mary Peng, co-founder of the International Center for Veterinary Services in Beijing says China does not have the tradition of neutering pets. Peng is a Chinese-American, a native New Yorker who has lived in Beijing for the last 20 years. She has taken on the mission of convincing Beijing’s residents that the best solution to the feral cat population is TNR. Peng says Beijing learned in the recent past that exterminating cats just leads to a new colony eventually moving back in. Of course the mass killing of adorable kittens usually causes an uproar.

Peng offers clinics in English and in Chinese on TNR. She helps identify care pro-

viders, or cat feeders, to help get them involved with TNR. Cats are sterilized and given rabies vaccines. (China has a big human rabies problem; around 3,000 people die of rabies each year.)

Peng has a good example of a reduced, TNR'd colony. In 2006, 23 cats in a colony were trapped. As with every colony some were taken in and adopted, and today only five cats remain. "We proved to the community it can be done here," she says (Bruno, 2012).

Through the work of cat welfare advocates like Peng, TNR is slowly gaining traction within China. This is extremely important as the Chinese national government disseminates information linking stray animals to the spread of zoonotic diseases, including COVID-19, which has caused horrible instances of cruelty to dogs and cats living on the street. Fortunately, the voices of animal lovers are strong in China, and growing stronger. One can find examples of TNR programs scattered around the country. The government of Hangzhou funded such a program to get a handle on their community cat population of about 300,000 (Kong and Yao, 2014). Within a year, over 600 cats had been sterilized through the program (Ke, 2015).

Hawaii (U.S. State Worth Special Mention)

The English explorer James Cook brought cats to the islands of Hawaii in the late 18th century. Cats were valued members of the early sailing ships because they helped control the rodent populations. Mark Twain toured the island of Kauai in 1866 and said: "I saw cats: Tom cats, Mary Ann cats, long-tailed cats, bobtail cats, blind cats, black cats, tame cats, wild cats, platoons of cats, companies of cats" (Twain,

1975).

companion animal, Kauai has a large population of feral cats. Several Kauai natives such as Dottie Beach, a retired board member of the Kauai Humane Society, take care of the community cats. Islanders also feed cats at the beach and at the many hotels and resorts. Unfortunately, not all hotels show compassion towards the cats and some call in "bounty hunters" who often use cruel methods to kill the cats.

Other islands like Oahu and Maui have groups such as The Feline Foundation, Hawaii Cat Foundation, and AdvoCATS, all implementing TNR programs for feral cats. The Hawaiian Humane Society has spayed and neutered over 11,000 feral cats for 1,417 feral cat caretakers since 1993. In total, these groups have neutered over 75,000 cats through their low-cost spay neuter programs.

The Feral Cat Task Force of Kauai says the answer to the feral cat problem is to step up education efforts and strengthen local laws. The group is working hard to reach its goal of "zero feral, abandoned and stray cats on the island by the year 2025" (Moriki, 2014).

At the beginning of the year 2000, Hawaii's Department of Health came up with a plan to amend the Vector Control policy and to implement a ban on the outdoor feeding of free roaming cats. ACR joined with several groups on the islands and rushed letters, faxes, and emails to the Health Department and the Governor opposing the feeding ban and expressing support for properly managed, well-fed colonies of cats.

After the public outpouring of support for the caretakers and the cats, the state agreed to look at legislation allowing them to study the feral cat issue. There are at least 18 groups in Hawaii implementing TNR on the different islands.

Conclusion

If you are an animal lover and cannot stand seeing neglected animals anywhere, there are several international organizations you can contact, before you travel, for information on how to get help for these animals. Please refer to Addendum 5 in the back of the handbook for a list of organizations.

And when you hear the environmental groups vilify cats and use them as scapegoats for the damage done to the planet, remind them to take heed of the United Nations-sponsored Millennium Ecosystem Assessment. The report states that humans are rapidly transforming the environment, converting more land into farmland since the end of World War II than in the 18th and 19th centuries combined. The report continues, noting that even these new farmlands have been exploited and pollute

ed to meet the rising demands of humans for food, water, and raw materials, and that up to 30 percent of mammal, bird, and amphibian species are at risk of extinction due to habitat loss and human actions (Blua, 2005).

There are community cats living all across the world. As they did centuries ago, they still play a vital role in controlling rodent populations. Rodents do far more damage to birds and other wildlife than cats and are also vectors of diseases, such as the plague, to humans. Let us keep pushing for humane, nonlethal management of feral cat populations.

Alley Cat Rescue's commitment is to help stray and outdoor community cats in the United States and worldwide, and to implement humane care to help improve their lives, put an end to cat overpopulation, and reduce the number of feral cats living in colonies.

Addendum 1: Wild Cat Organizations

Unfortunately, many species of wild cats are listed as “endangered” or “threatened,” with some even listed as “critically endangered” and “extinct in the wild,” meaning they are only found in captivity. Some species of wild cats have become totally extinct — lost from the Earth forever. If we do not take sufficient steps *now* to protect and preserve the remaining species of wild cats, they, too, will soon become extinct. Below is a list of organizations around the world that work to save wild cats, if you wish to support their efforts.

Alley Cat Rescue

www.saveacat.org
Mt. Rainier, Maryland

Animal Legal Defense Fund (ALDF)

aldf.org
Cotati, CA

Big Cat Rescue

www.bigcatrescue.org
Tampa, Florida

Born Free Foundation

www.bornfree.org.uk
United Kingdom

Carolina Tiger Rescue

www.carolinatigerrescue.org
Pittsboro, North Carolina

Drakenstein Lion Park

www.lionrescue.org.za
South Africa

Emdoneni Cat Rehabilitation Centre

www.emdonenilodge.com
South Africa

Endangered Wildlife Trust

www.ewt.org.za
South Africa

Ewaso Lions

ewasolions.org
Kenya

Exotic Feline Rescue Center

efrc.org
Center Point, Indiana

Four Paws UK

www.four-paws.org.uk
United Kingdom

Global Federation of Animal Sanctuaries

www.sanctuaryfederation.org
Phoenix, AZ

Hoedspruit Endangered Species Centre

www.hesc.co.za
South Africa

International Fund for Animal Welfare

www.ifaw.org
Washington, D.C.

International Society for Endangered Cats

www.wildcatconservation.org
Alberta, Canada

Jaguar Rescue Center

www.jaguarrescue.foundation
Costa Rica

Kruger National Park

www.sanparks.org/parks/kruger
South Africa

NABU’s Snow Leopard Conservation Programme

en.nabu.de
Kyrgyzstan

Panthera

panthera.org
New York, NY

Pilanesberg National Park
www.pilanesbergnationalpark.org
South Africa

San Diego Zoo Wildlife Alliance
sandiegozoowildlifealliance.org
San Diego, California

Shambala Preserve
www.shambala.org
Acton, California

**Small Wild Cat Conservation
Foundation**
smallcats.org
Corrales, New Mexico

**The Ann van Dyk Cheetah Centre
(formerly the DeWildt Cheetah Centre)**
www.dewildt.co.za
South Africa

**The Big Cat Initiative (by National
Geographic)**
www.nationalgeographic.org/projects/big-cats/
Washington, D.C.

The Cat Survival Trust
www.catsurvivaltrust.org
United Kingdom

The Wild Animal Sanctuary
www.wildanimalsanctuary.org
Colorado and Texas

The Wild Cats Conservation Alliance
conservewildcats.org
China, Indonesia, Nepal, Russia, Thailand

Wild Cat Sanctuary
www.wildcatsanctuary.org
Sandstone, Minnesota

Wildlife Conservation Society
www.wcs.org
The Bronx, NY

World Animal Protection
www.worldanimalprotection.org
New York, NY

World Wildlife Fund
www.worldwildlife.org
Washington, D.C.

Addendum 2: Foster Guidelines

The following information provides detailed instructions on how to safely foster cats and kittens in a home environment. Guidelines for establishing a foster care program have also been included. We recommend supplying any potential foster parents with a sheet of similar instructions prior to having them sign an agreement form, so they are fully informed.

Caring for Foster Cats and Kittens

Sanitary living conditions are very important for cats/kittens in foster care. This is especially true for kittens because their immune systems are not fully developed during their first few weeks of life. Take care to change bedding material if soiled, and use a mild detergent to wash bedding. Carriers should be wiped out with a diluted bleach solution (four ounces of bleach mixed with one gallon of water) before each use. This diluted bleach solution should also be used to clean litter boxes, food and water bowls, and other items as needed, before use with a new animal.

The food that is chosen for the foster cat/kitten should be appropriate for the age and health of the individual cat/kitten. Also, make sure all special-needs cats who require a particular diet are fed with food suitable to their needs (e.g. cats with UTI issues should be fed special urinary diet food).

Any diet changes should be made gradually over the course of several days, mixing the new food with the old food. The amount of new food added to the mixture should be increased each day, until the diet consists only of the new food. This will lessen any

digestive discomfort that can often occur when changes are made abruptly.

Boxes in which the kittens will be staying should be lined with several layers of clean fabric. Take care to use fleece, flannel, or cotton material on the top layer. For the first few weeks of their lives, kittens cannot retract their claws and they may get stuck in the loops of towel material.

Kittens cannot maintain their own body temperature for at least the first two weeks of their life, so it is very important they are kept away from drafts and additional warming may be necessary. If you choose to use a heating pad, it should be used on the lowest setting. Never place the heating pad across the entire bottom of the box; the kittens need to be able to move away from the heat if it becomes too hot for them. Heating pads must be covered with a waterproof material and they should be placed in the box in such a way that the kittens cannot crawl under the heating pad. Whenever you are using a heat source, please monitor the kittens closely to avoid burns.

Feeding Kittens, Newborn to Two Weeks of Age

Neonatal kittens need to be bottle fed using a milk replacer specifically designed for kittens, such as *Goat's Milk KMR* (Kitten Milk Replacer) or *Breeder's Edge*; these products can be purchased at most animal supply stores. Follow the guidelines on the label of the milk replacer to determine the amount to feed each kitten. Be careful not to overfeed, as this may cause diarrhea

which leads to dehydration. Make sure you hold the kitten upright when feeding and do not force too much milk into her mouth or the fluid will go into her lungs and she could aspirate.

Orphaned kittens will reject the milk replacer when they are full. However, keep track of how often they reject the milk replacer. If the kittens miss two consecutive feedings, please contact your veterinarian immediately as this could be an indication that something is wrong with the kittens.

If diarrhea develops upon increasing formula, return to the previous feeding level for at least three to four days. After this period, you may increase the amount of formula. If diarrhea persists for more than 24 hours, please see a veterinarian immediately.

The eyes of newborn kittens open between seven to twelve days. Once the kittens have opened their eyes, encourage them to lap the milk replacer from a shallow bowl. Leave the bowl in the box with the kittens for one hour to allow ample time for the kitten to lap the milk replacer. If after one hour, the kittens will not lap from the bowl, then go back to bottle feeding. After three to five days of continued bottle feeding, try to encourage the kittens to lap the milk replacer from a shallow bowl again.

Once the kittens are comfortable with lapping the milk replacer from the shallow bowl, add small amounts of kitten food (canned wet food or moistened dry food) to the formula. This will help to transition the kittens to solid food.

Please make sure to never feed chilled or listless kittens. Chilled kittens should be warmed gradually, and upon returning to their normal body temperature, they can be offered a small amount of warm water before resuming a regular feeding schedule. If the kittens remain chilled or listless, please see a veterinarian immediately.

Foster Care Program Guidelines

A foster care program can allow staff and volunteers a chance to provide care in their homes for cats/kittens who are currently not in an adoptable condition or cats/kittens who need special care. For cats who would have difficulty surviving in a shelter environment or need special care, such as very young kittens or sick or injured cats, it is the only alternative to euthanasia. Foster homes are able to provide an environment where cats/kittens can thrive until they are ready to be adopted.

The decision to foster a cat/kitten should be considered carefully and foster agreements should be taken seriously. Fostering should be a positive experience for the cat/kitten. The decision to place a cat/kitten in foster care should be made carefully and only after considering the following questions:

1. Will this cat/kitten be able to be placed up for adoption, after he/she has been fostered?
2. Does the foster applicant have proper housing and adequate time available to foster the cat/kitten(s)?
3. Does the foster applicant meet all of the requirements and agree to all terms in the foster agreement? (See the foster agreement example at the end of this chapter.)

Additional Considerations:

- Foster parents who have other animals under their care need to understand the risks of bringing a new foster animal into their home and the risks of animal-to-animal disease transmissions. Foster parents who have cats living in their household should make

certain their cat(s) has tested negative for feline leukemia (FeLV) and feline immunodeficiency virus (FIV), and the foster cat/kitten going into their care has been tested as well. Foster parents who have other dogs and cats under their care should have these animals current on all vaccinations and all animals within the household should be spayed/neutered.

- New foster cats/kittens should be kept separate from other animals living in the household for at least a week, even if each animal appears to be

healthy. Foster parents should also practice good hygiene such as washing hands between contact with each cat.

- Zoonotic diseases are diseases that can be transmitted between animals and humans. Common zoonotic diseases include: ringworm, mites, and fleas. Less commonly transmitted zoonotic diseases are tapeworm, coccidian, toxoplasmosis, or giardia. Foster caretakers should be educated about possible zoonotic diseases and what precautions to take to help prevent transmission.

Addendum 3: Rabies

Rabies is a viral infection of the central nervous system that is transmitted in the saliva of infected animals. Most infections occur when people are bitten by an infected animal. The rabies virus cannot cross intact skin, but infection can occur if the saliva gets into a person's eyes, nose, or mouth. One cannot get rabies from the blood, urine, or feces of a rabid animal, or from just touching or petting an animal.

Of all the zoonotic diseases, rabies is one of the most feared and misunderstood, even though its threat to humans in the United States is very small. In the last 100 years, the number of human deaths from rabies in the U.S. has fallen from 100 or more per year to an average of one or two (CDC - Rabies in the U.S. - Rabies, accessed 2022). The decline in rabies cases is due to both the improved control and vaccination of domestic animals and to the development of effective post-exposure treatment and vaccines.

Rabies and Wildlife

The Centers for Disease Control and Prevention (CDC) reports that, for the past 80 years, rabies has been reported more frequently in wildlife than in domestic animals ("CDC - Rabies in the U.S. - Rabies," accessed 2022). The CDC also reports that about 5,000 cases of rabies in animals are reported each year, and over 90% of those cases are in wildlife ("CDC - Rabies in the U.S. - Rabies," accessed 2022).

Since 1954, there have been 25 human deaths from rabies in Canada, the most recent being in Ontario in 2012 (Public Health Agency of Canada, 2018). The number of rabies infections reported in animals declined dramatically between 2000 and

2013, from 670 animals to 116, respectively. In subsequent years, reports have fluctuated up and down, but have not gotten anywhere near the number of cases from 2000 (Public Health Agency of Canada, 2018). The animals most often reported to be rabies-positive in recent years are bats, foxes, skunks, and raccoons (Public Health Agency of Canada, 2018).

Mexico ended the threat of rabies transmission to humans from dogs through a vaccination campaign and, in 2019, the country was the first to be officially certified with that distinction by the World Health Organization (Davies, 2019). Other animals in the country, including bats and cattle, still carry and can transmit the virus.

Rabies and Bats

According to the CDC, 70% of rabies infections in humans reported between 1960 to 2018 were contracted from bats ("CDC - Rabies in the U.S., 2020). Even then, the incidence is very low at about 62 cases over almost 60 years (Ross Johnson, 2022). It has not always been clear how humans acquire rabies from bats. In many cases, the fact that those people who died from rabies had contact with a bat was established only after the death of the person. It may be that the bite wounds are so small that they had not been noticed.

The number of rabid bats is indeed very small — The CDC estimates that around one percent of the bat population in the U.S. has rabies (Wilke, 2019). As a precaution, if you ever encounter a sick bat, call a wildlife rehabilitation center for advice and do not handle the bat. If a bat dies or bites a human, rabies tests should be done im-

mediately on the bat. If rabies is confirmed, post-exposure treatment should be started right away.

Rabies and Feral Cats

Firstly, **no person in the U.S. has died of rabies acquired from a cat since 1975.** This last incident occurred in Minnesota, when a 60-year-old man was bitten on the finger and died approximately seven weeks later (Brunt et al., 2021). Cats are less susceptible to rabies than many other animals, and in fact there is no cat-specific rabies — cats are infected with whichever species-specific strain is present in the infecting animal, such as raccoons, skunks, or bats. (The same is true for humans.) When cats do get rabies, they usually get the “furious” type; they stop eating, become very aggressive, and make unprovoked attacks on other animals and humans. **Rabid cats usually die within four to six days.** Generally, the CDC recommends a 10-day rabies quarantine for cats who have come in contact with a wild animal. Some health departments, such as the one in Maryland, insist on a six-month quarantine period.

Lethal vs. Nonlethal Solutions

The main response to rabies in the U.S. in the past has been to try to reduce the vector species by killing groups of those animals. This effort has proven totally ineffective, hastening the spread of the disease by removing healthy animals, and thus creating territorial “vacuums” for other animals of those species to enter. The mid-Atlantic epidemic was actually caused by hunters bringing infected raccoons into the region from Florida.

In Western Europe, the very successful oral vaccine VRG (vaccinia-rabies glycoprotein), developed in the U.S., has proven

to be an effective, economical, and humane control for rabies. Wildlife vaccination via food bait has blocked the spread of the disease and prevented small outbreaks from becoming major epidemics by maintaining healthy populations of key vector species as immune barriers (Browne, 1994). A new oral vaccine, ONRAB (AdRG1.3 or human adenovirus-rabies virus glycoprotein), has shown promise in Canadian studies and is being investigated in the U.S. in Ohio, Vermont, New York, New Hampshire, and West Virginia. ONRAB is different in that it cannot induce rabies in humans or domestic animals who come into contact with it (Canadian Centre, 2012). Early trials have shown ONRAB to be significantly more effective than VRG in vaccinating raccoon populations (Fehliner-Gardiner et al., 2012). This is particularly important, as raccoons are the primary carriers of rabies in the U.S. and a threat to pass the virus to community cats.



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Alley Cat Rescue Advocates a Comprehensive Nonlethal Rabies Control Program Based on Three Primary Initiatives:

1. Implement widespread oral vaccine immunization barriers for key wildlife vector species, primarily raccoons and skunks.
2. Educate the public on steps to

minimize human risk from wildlife rabies, including vaccinating outdoor cats and dogs and reporting sick bats to wildlife groups or the local health department. (Do not kill bats indiscriminately. They are a vital asset to our environment.)

3. Recognize and support the vaccination and nonlethal management of feral cat colonies as an effective and important part of a comprehensive control program.

Preventing Rabies in Feral Cats

The most effective means of stabilizing and reducing populations, controlling rabies, and protecting human health is to sterilize and return healthy vaccinated cats back to their supervised colonies. This helps to reduce roaming for mates, searching for food, and fighting; reducing these behaviors also reduces the transmission of other diseases. As mentioned previously, vaccinated colonies also create a buffer zone between humans and wildlife.

Addendum 4: International Animal Organizations

Below is a list of international animal welfare organizations from around the world you might find helpful during your travels.

African Parks

www.africanparks.org

Headquarters in South Africa, with offices in the Netherlands and the U.S.

Animal Equality

www.animalequality.net

Headquarters in the U.S. and U.K., with projects in Germany, Italy, Spain, Mexico, Venezuela, and India.

Harmony Fund

www.harmonyfund.org

Supports animal rescue in hard to reach places, such as war zones. Projects worldwide.

Humane Society International

www.hsi.org

Headquarters in the U.S., with offices in Australia, Brussels, Canada, Costa Rica, India, and the U.K.

International Animal Rescue

www.internationalanimalrescue.org

Offices in the U.K. and U.S.; Cat rescue project in the U.K., other projects in India, Indonesia, and Malta.

International Animal Rescue Foundation

www.internationalanimalrescue.org

Headquarters in the U.K., with projects in Greece, Georgia, South Africa, and others.

International Fund for Animal Welfare

www.ifaw.org

Offices in the U.S. and 14 other countries.

International Cat Care

www.icatcare.org

Headquarters in the U.K.

SPANNA (Society for the Protection of Animals Abroad) www.spana.org

Headquarters in the U.K., with clinics throughout Africa and the Middle East.

World Animal Protection

www.worldanimalprotection.org

Headquarters in the U.K., with offices in 13 other countries, including the U.S.

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Alley Cat Rescue conducted a survey of TNR groups and colony caretakers throughout the U.S. We received 298 responses, though only a little over 50% of respondents confirmed that they were actively practicing TNR. The breakdown of responses for each survey question can be found below.

Those respondents collectively reported sterilizing about 67,822 cats annually, with one third reporting to sterilize 100 or more cats each year. The largest number of annual sterilizations reported by a single responder was an impressive 15,501.

Particular success was seen with reducing the number of kittens being born in colonies. Overall, the average number of kittens found per survey respondent dropped from 3.34 before TNR was begun in their colonies, to 1.7 after they had implemented TNR. The percentage of respondents who reported over 20 kittens in their care dropped remarkably from 48% before TNR to only 10% after TNR, revealing the TNR groups have greatly reduced the number of kittens being born within individual colonies.

Question	Answer & Percentage	
1. Do you have a physical shelter?	Yes	33.78%
	No	66.22%
2. What is your organization's capacity? (How many animals can it hold?)	10-20	47.7%
	21-40	15.92%
	41-60	12.10%
	61+	24.20%
3. How many paid employees do you have?	0-3	89.85%
	4-6	2.54%
	7-10	1.02%
	11+	6.60%
4. Do you have a foster program/network?	Yes	60.19%
	No	39.81%
5. How many volunteers, including fosters, do you have?	1-10	58.54%
	11-20	14.63%
	21-30	9.27%
	31+	17.56%

6. How many years have you been in operation?	1-5	37.33%
	6-15	38.71%
	16-25	14.29%
	26+	9.68%
7. Besides providing TNR for feral cats, do you offer spay/neuter services to "owned" cats?	Yes	57.62%
	No	42.38%
8. If yes, how many "owned" cats do you sterilize per year?	1-20	42.96%
	21-50	17.04%
	51-80	8.15%
	81+	31.85%
9. Do you sterilize cats before you adopt them out?	Yes	95.90%
	No	4.10%
10. If yes, how many cats in your adoption program do you sterilize per year?	40-60	41.10%
	61-80	9.59%
	81-110	10.27%
	111+	39.04%
11. How many cats has your group TNR'd in TOTAL?	200-500	45.21%
	501-1000	13.83%
	1001-5000	22.34%
	5001-10,000	8.51%
	10,001-15,000	4.26%
	15,001-20,000	2.13%
	20,001-25,000	1.06%
25,001+	2.66%	
12. How many cats do you TNR per year?	1-100	54.05%
	101-300	19.82%
	301-500	9.01%
	501-700	4.50%
	701-900	3.60%
	901-1,500	3.60%
	1,501+	5.41%
13. What is the average size colony in your area? (How many cats per colony?)	5-10	53.24%
	11-20	33.80%
	21-30	9.26%
	31+	3.70%
14. How many colonies do you take care of?	1-5	78.28%
	6-10	12.12%
	11-15	5.05%
	16-20	0.51%
	21-25	1.01%
	26+	3.03%

15.	How many colonies do others in your area take care of?	1-5	45.50%
		6-10	15.87%
		11-15	8.99%
		16+	29.63%
16.	What is the average age of the cats in these colonies?	1 month-1 year	6.83%
		2-6 years	73.66%
		6-10 years	18.05%
		10+ years	1.46%
17.	What are the oldest ages of some of the cats?	3-5 years	14.42%
		6-8 years	27.88%
		9-12 years	31.25%
		13+ years	26.44%
18.	How long do you hold a cat for recovery after surgery?	A few hours	4.59%
		1 day	47.71%
		2 days	27.98%
		3 days	19.72%
19.	Do you ear tip all cats you TNR?	Yes	92.34%
		No	7.66%
20.	Do you test for FIV and FeLV?	Yes	36.41%
		No	63.59%
21.	If you do test, how many cats have tested positive for FeLV?	1-5	69.41%
		6-10	15.29%
		11-15	7.06%
		16+	8.24%
22.	If you do test, how many cats have tested positive for FIV?	1-5	67.39%
		6-10	7.61%
		11-15	6.52%
		16+	18.48%
23.	Do you provide rabies vaccines?	Yes	86.70%
		No	13.30%
24.	Do you provide other vaccinations and/or treatments?	Distemper	70.69%
		Leukemia	21.26%
		Dewormer	72.99%
		Deflea	78.16%
25.	How many kittens were reported prior to TNR?	5-10	16.37%
		11-15	18.13%
		16-20	15.20%
		21-25	8.19%
		26+	42.11%

26.	How many kittens were reported after TNR?	0-5	66.86%
		6-10	12.79%
		11-15	10.47%
		16-20	1.74%
		21+	8.14%
27.	How many kittens have been removed for adoption?	5-10	30.86%
		11-15	17.14%
		16-20	9.14%
		21-25	3.43%
		26+	39.43%
28.	How many adult cats have been removed for adoption?	0-5	53.85%
		6-10	18.13%
		11-15	7.14%
		16-20	4.95%
		21+	15.93%
29.	How many cats have been relocated?	0-5	60.00%
		6-10	13.14%
		11-15	9.14%
		16-20	4.00%
		21+	13.71%
30.	After performing TNR, how many new cats moved into the colonies?	0-5	80.57%
		6-10	14.29%
		11-15	1.14%
		16-20	0.57%
		21+	3.43%
31.	How many cats died from natural causes?	0-5	66.08%
		6-10	19.88%
		11-15	4.68%
		16-20	2.92%
		21+	6.43%
32.	How many died due to suspicious circumstances?	0-5	82.46%
		6-10	9.36%
		11-15	5.26%
		16-20	1.17%
		21+	1.75%
33.	How many were killed by cars?	0-5	80.00%
		6-10	12.57%
		11-15	4.57%
		16-20	0.57%
		21+	2.29%
34.	How many were euthanized?	0-5	86.36%
		6-10	4.55%

	11-15	2.84%
	16-20	2.27%
	21+	3.98%
35. What is your average cost to neuter a male feral cat?	\$25-50	71.67%
	\$51-75	16.67%
	\$76-100	6.11%
	\$101+	5.56%
36. What is your average cost to spay a female feral cat?	\$25-50	55.56%
	\$51-75	23.33%
	\$76-100	12.22%
	\$101+	8.89%
37. What do you charge the client to neuter a male feral cat?	\$0-25	61.49%
	\$26-50	24.84%
	\$51-75	6.83%
	\$76+	6.83%
38. What do you charge the client to spay a female feral cat?	\$0-25	58.02%
	\$26-50	26.54%
	\$51-75	8.64%
	\$76+	6.79%
39. Does your local animal control agency approve of TNR?	Yes	79.29%
	No	20.71%
	Other (please specify)	0%
40. Does your local animal control offer TNR to local people?	Yes	36.46%
	No	63.54%
41. Has your animal control ever trapped-and-killed whole colonies?	Yes	41.01%
	No	58.99%
	Other (please specify)	0%
42. If yes, have other cats moved into the area?	Yes	83.56%
	No	16.44%
43. If yes, new cats moved in, how long after the eradication did they move in?	Less than 1 month	46.15%
	2-3 months	38.46%
	4-5 months	10.77%
	6+ months	4.62%
44. Is the public aware of feral cats in your area?	Yes	183
	No	22

45.	Is the public sympathetic to feral cat colonies?	Yes No Somewhat	19.80% 12.87% 67.33%
46.	Does your group promote educational/ outreach programs regarding TNR and feral cats?	Yes No	89.47% 10.53%
47.	How effective have such outreach programs been?	Not at all Somewhat Extremely	3.98% 74.43% 21.59%
48.	How would your organization classify working with county-run animal shelters?	Easy Intermediate Difficult	18.86% 45.71% 35.43%
49.	How would you classify working with local government/ city officials regarding animal issues?	Easy Intermediate Difficult	9.57% 46.28% 44.15%
50.	How would you classify working with local wildlife groups (i.e. Fish and Wildlife Service, Game Commission, Audubon Society), if any?	Easy Intermediate Difficult	16.89% 40.54% 42.57%

Become An Activist for Cats

Now that you've read through the handbook and learned the issues surrounding cats, here are a few steps you can take on their behalf.

- Implement a Trap-Neuter-Return (TNR) program for free-roaming cats in your community.
- Advocate for TNR programs in your community by sending polite and educational letters to city council members, accompanied by a supporting petition with signatures. You might even want to include a copy of this handbook to offer additional information.
- Address neighbors' concerns and complaints by educating them on the importance and effectiveness of TNR; offer to set up sprinklers and other harmless deterrents to keep cats out of gardens; and build outdoor litter boxes and scoop them daily.
- Encourage your veterinarian to treat feral cats and offer TNR services.
- Respond to negative press by submitting editorial letters that present the facts on TNR and cat predation.
- Contact wildlife and bird conservation groups and encourage them to adopt nonlethal forms of animal management, including TNR for community cats.
- Request ACR's TNR brochure to distribute.
- Volunteer, foster, and donate to your local cat organizations.
- Support colony caretakers by building shelters and/or feeding stations and donating food.
- Adopt an alley cat.

Helpful Resources

Humane box traps are available from the following companies:

ACES (Animal Care Equipment & Services, Inc.)
(800) 338-ACES(2237)
www.animal-care.com

Safeguard Traps
800-433-1819
www.safeguardproducts.com

Tomahawk Live Trap
(800) 272-8727
www.livetraps.com

Tru-Catch Traps
1-800-247-6132
www.trucatchtraps.com

Information on drop traps can be found at:

Droptrapdesign.blogspot.com

Tomahawk Live Trap
(800) 272-8727
www.livetraps.com

Transfer cages and cat dens:

Tomahawk Live Trap
(800) 272-8727
www.livetraps.com

Holding pens, playpens, and carriers can be purchased from:

Chewy.com
1-800-67-CHEWY (672-4399)

Drs. Foster & Smith
(800) 826-7206
www.drsfostersmith.com

Petsmart, Petco

Nets for safely catching cats can be purchased at:

ACES (Animal Care Equipment & Services, Inc.)
(800) 338-ACES(2237)
www.animal-care.com

Specialized fencing and catios:

Affordable Cat Fence
1-888-840-CATS(2287)
www.catfence.com

Cat Fence In
1-888-738-9099
www.catfencein.com

Purrfect Fence
1-888-280-4066
www.purrfectfence.com

Feeding stations:

FeralVilla.com

Outdoor shelters:

FeralVilla.com

Petsmart, Petco

YunnaCreations
(901) 299-4806
www.etsy.com/shop/YunnaCreations

Heating pads and warming beds:

Chewy.com

CozyWinters.com

800-340-1528

Petsmart, Petco

Cat scat mats and cat repellent products are available from:

Beaphar (company in Holland)

Reppers Outdoor Sticks

www.beaphar.com

Chewy.com

Gardener's Supply Company

1-800-876-5520

www.gardeners.com

Petsmart, Petco

Calming products can be purchased at most pet supply stores and online:

- Feliway - sprays, diffusers
- Whisker City - sprays, water additive
- Rescue Remedy by Bach - water additive

Parasite prevention can be purchased at most pet supply stores, online, or through a veterinarian:

- Advantage Multi (Bayer) - fleas, ticks, ear mites, heartworms, roundworms, hookworms
- Capstar - fleas
- De Flea (Natural Chemistry) - sprays, shampoos
- Frontline Plus - fleas, lice, tick

- Heartgard - heartworms, hookworms

- Profender - tapeworms, roundworms, hookworms

- Revolution - fleas, ticks, ear mites, heartworms, roundworms, hookworms

Other helpful resources:

Alley Cat Rescue
www.saveacat.org

City Critters, Inc.
www.citycritters.org

Little Buddies
www.littlebuddies.org

Spay USA
www.spayusa.org

Vox Felina
www.voxfelina.com

Providing critical analysis of claims made in the name of science by those opposed to feral/free-roaming cats and trap-neuter-return (TNR).

*Managing Community Cats:
A Guide for Municipal Leaders*

Written by the Humane Society of the United States. Concisely focused on what local leaders want and need to know, this guide offers an in-depth look at community cat management programs, addresses proactive approaches, and the importance of collaborative efforts in local communities.

Download your copy at: <http://www.animalsheltering.org/resources/all-topics/cats/managing-community-cats.pdf>

Sample Forms, Letters, and Petitions

Sample Letter to City Council

Date

Attn: (insert name of your district's councilman)
(insert name of city) City Council
Address
Direct Email (if known)

Dear Council Member (insert last name),

I am writing this letter to express concern for (insert city name)'s homeless cat population, and to offer some suggestions as to how the situation can be managed humanely and effectively.

Only one method of feral cat population control has been *proven* to be effective, financially responsible, and humane. This method is Trap-Neuter-Return, or TNR. TNR is the process of trapping, spaying/neutering, vaccinating, and then returning feral cats back to their outdoor homes. TNR reduces outdoor cat populations over time because it stops the breeding cycle. Whenever possible, TNR programs also remove kittens and cats who can be socialized from outdoor cat groups and place them with adopters, further reducing group size.

A wealth of scientific studies show the efficacy of TNR in reducing feral cat populations. I encourage you to review the examples offered on Alley Cat Rescue's website at this link: <https://www.saveacat.org/tnr-statistics.html>.

TNR truly decreases outdoor cat populations over time, as opposed to removing or eradicating groups of feral cats from an area, which is only a temporary solution. The complete removal of a colony of cats will only result in a new group or groups of cats staking out the area as the resources that attracted the original group remain and are no longer being guarded by those original cats. This is known as the "vacuum effect." TNR, on the other hand, leads to a small group of healthy, vaccinated cats that steadily dwindles over time as they die off naturally without breeding.

TNR is also the most economical option for feral cat control. This is due in large part to the fact that it is more effective than eradication. Additionally, TNR reduces intake and euthanasia rates at municipal shelters, which translates to fewer expenses for the city.

Some of the benefits of TNR can be seen immediately; nuisance complaints about cats fighting, yowling, and spraying will certainly decrease because sterilization eliminates those behaviors in cats. Perhaps the primary benefit of a TNR program in many of your constituents' opinions would be that a rabies vaccine is administered when the cats are sterilized, and that creates a buffer zone between wildlife and humans, while also of course reducing the risk of the public coming in contact with an infected cat.

The humaneness of TNR is extremely important to me personally, and I am sure that many of our city's residents also want compassionate treatment of these beloved companion animals. TNR allows feral cats to live out their lives, vaccinated against the most prevalent feline and zoonotic diseases, and it prevents kittens from being born under circumstances that are conducive to poor health, infection, suffering, and death.

A TNR program is not a fully humane operation if it does not allow some maintenance of the cats who have been sterilized and released. Maintenance should involve monitoring of and providing food for cats once they have been returned. While feral cats do find ways to subsist on their own in cities, they do so mainly by scavenging through litter and trash, and by drinking from dirty pools of water. They usually find the minimum amount of food needed to survive, and almost none of what they eat is of nutritional value. Poor nutrition greatly weakens cats' immune systems to the extent that they can die from a common upper respiratory infection. Feeding the cats could be part of a city TNR program, or the work of volunteers, and it can be done responsibly. Rules can and should be set that require feeders not to leave food out for longer than one hour, and to clean up all leftover food and trash every day.

If you would like assistance in your decision-making process or to help organize and manage a TNR program, please let Alley Cat Rescue know and they will send you resources. They can be reached at acr@saveacat.org or by calling 301-277-5595. Thank you for your time and compassion for our feline friends!

Sincerely,

(Your signature)

Your Name Printed

Your Contact Information

Sample Petition

Support Trap-Neuter-Return (TNR) Programs for _____'s Stray and Feral Cats (insert city name)

Recipient: _____
(insert city council or local government)

Background information:

Trap-Neuter-Return (TNR) is a highly effective, nonlethal method of controlling feral and stray cat populations. Through TNR programs, cats are caught with humane traps, spayed/neutered, vaccinated, and returned to the site to live out their lives, supervised and provided with long-term care by dedicated volunteers. Kittens/cats who are friendly or can be socialized are placed into an adoption program (coordinated by a rescue organization) to be found permanent homes. TNR immediately reduces the size of colonies because all kittens and tame cats are removed. It further reduces the size of colonies over time by stopping the reproductive cycle of the feral cats who are returned.

TNR reduces euthanasia rates at shelters in two ways; by reducing the number of unwanted kittens being born, which frees up shelter space for cats who are relinquished by their owners, and by creating an alternative option for unsocialized outdoor cats who cannot be adopted.

TNR is also more effective than eradication (catch-and-kill) attempts. Catch-and-kill attempts fail and can even be counterproductive. The complete removal of a colony of cats results in a new group or groups of cats moving into the area as the resources that attracted the original group remain. This is known as the "vacuum effect." As Biologist Roger Tabor explains, "if a colony is neutered and returned to its area it will continue to hold the location and keep other cats out by its presence." Ineffectiveness leads to greater costs as eradication campaigns need to be repeated every few years.

Community members benefit from TNR programs because a rabies vaccine is administered when the cats are sterilized and that creates a buffer zone between wildlife and humans, while also of course reducing the risk of the public coming in contact with an infected cat. Additionally, sterilization also eliminates common complaints associated with mating behaviors, such as fighting, yowling, and spraying.

TNR is the most effective, most humane solution for outdoor cats and it fosters compassion within communities.

Petition:

We, the undersigned, call on _____ to support the implementation of
(insert city council)
Trap-Neuter-Return (TNR) programs for all stray and feral cats living in _____.
(insert city name)

We support TNR programs through which friendly cats and kittens, and those who can be socialized, are removed and placed into foster and adoption programs to find permanent homes.

We support TNR programs that sterilize, vaccinate, ear-tip, and return feral cats to their sites to live out the rest of their natural lives, where they will be supervised and cared for by a dedicated volunteer.

We support TNR as the preferred nonlethal management plan of all stray and feral cats, and petition _____ to pass an ordinance making it legal for TNR programs to be
(insert city council)
implemented, and making TNR the standard method of managing cat populations in _____.
(insert city name)

Name (print)

Signature

Sample Cat Adoption Contract



ALLEY CAT RESCUE

AN ALLIANCE FOR CAT PROTECTION

Adopted Cat(s) _____ **Chip #** _____

Adopter wishes to adopt a cat from Alley Cat Rescue. Alley Cat Rescue, and the Adopter wish to enter into this Cat Adoption Agreement to provide the cat with a suitable forever home. Adopter represents that the information provided in the adoption process is true and correct to the best of the Adopter's information and belief.

1. Return Policy _____ **(initial)**

The Adopter agrees that in the event that he or she is unable to care for the cat, he or she agrees to contact the Rescue and return the cat to the location specified by the Rescue. The Adopter understands that he or she is responsible for the care of the cat until he or she has delivered it to the Rescue, and will safely return the cat with up-to-date veterinary records.

2. Identification _____ **(initial)**

The Adopter agrees to update the cat's microchip information so that the Adopter can be contacted in the event the cat is found as a stray. The Adopter agrees to obtain the proper municipal license if required under law.

3. Veterinary Care _____ **(initial)**

The Adopter agrees to provide the cat with the necessary vaccinations as advised by his or her veterinarian. The Adopter agrees to obtain immediate veterinary care should the cat become sick or injured, and to take full financial responsibility for any veterinary expenses.

4. Care of the Cat _____ **(initial)**

The Adopter understands that the adopted cat is an indoor pet, aside from working cats. The adopter agrees to provide the cat with fresh water, food, adequate exercise, access to a clean litter box and loving attention.

5. Declawing _____ **(initial)**

The Adopter agrees NOT to declaw the cat, or allow anyone else to declaw the cat. Adopter understands that this causes unnecessary pain for the cat.

6. No Representations _____ **(initial)**

The Adopter understands that Alley Cat Rescue does not make any guarantees regarding the health, temperament, or training of the above described cat.

7. Seizure or impoundment of the Cat _____ (initial)

If the cat for any reason is picked up by local law enforcement or animal control, the Adopter will make immediate arrangements to reclaim the cat.

The Adopter agrees that he/she is legally competent to enter into this agreement, and this Agreement is binding upon the personal representatives and executors of both parties.

Agent for Rescue: _____
acr@saveecat.org

Adopter's Signature: _____

Date Signed: _____

Adopters Information

Name: _____ **Tel:** _____

Address: _____

Email: _____

License #: _____

Emergency Contact (name and number):

Sample Guidelines for Adopting a Cat or Kitten

Alley Cat Rescue wants our rescued cats placed in homes where they will be treated as a member of the family for the rest of their lives. When you adopted a cat from Alley Cat Rescue, you signed a contract stating that you will comply with our requirements; which are to give him/her a long, healthy life in a loving home.

There are many helpful books on cat care and cat behavior. Books and magazines can be an excellent resource for answering your questions about your cat. *There is also a wide variety of information readily available on the internet.*

- The Wild Life of the Domestic Cat, by Roger Tabor
- Understanding Cats, by Roger Tabor
- Adopting Cats & Kittens, by Connie Jankowski
- The New Natural Cat: The complete Guide for Finicky Owners, by Anitra Frazier
- The Purina Encyclopedia of Cat Care, by Amy Shojai
- The Stray Cat Handbook, by Tamara Kruez
- Kitten Care & Training, by Amy Shojai
- Magazines: Cat Fancy Magazine, The Whole Cat Journal, Catnip, and Cat Watch

About The Author

Alley Cat Rescue



LOUISE HOLTON helped pioneer Trap-Neuter-Return (TNR) in the U.S., where she has founded two international cat advocacy organizations. Louise first co-founded Alley Cat Allies in 1990, and then moved on in 1997 to create Alley Cat Rescue (ACR), of which she is currently the president.

Louise worked in her home country of South Africa in the mid-1970s with the Johannesburg SPCA on TNR programs and brought to the U.S. her contacts in the United Kingdom to help set up TNR programs here. She has worked with biologist and world-famous author Roger Tabor, veterinarian and TNR pioneer Jenny Remfry, the Universities Federation of Animal Welfare (U.K.), as well as the British Cat Action Trust.

Louise started ACR with a trap-neuter-return program for feral cats and adoption program for friendly cats. Programs now also include:

- advocacy for non-lethal cat population management
- the annual Global Feral Fix Challenge, a campaign that encourages veterinarians to provide as many free or low-cost spay/neuter surgeries for community cats as possible throughout the year
- TNR and other cat-related education and resources for the public
- sponsorship of TNR projects across the U.S.
- the African Wildcat Conservation Action Plan in South Africa, which protects and preserves the African wildcat (AWC) species through TNR of outdoor domestic cats who live near wildcat territories

Over the past four decades, she has helped sterilize thousands of cats, presented at numerous conferences and symposiums, and won several awards for her written work, including a Muse Medallion from the Cat Writers' Association for her informational booklet, "Feral Cat Colony Management and Control: Facts and Myths about Feral Cats" and her series of articles published in *The Animals' Voice*. Louise has been presented with the National Humane Achievement Award from the Humane Coalition of Massachusetts and the Animal Kingdom Kindred Spirit Award and Animal Champion Pin from the Doris Day Animal Foundation.

She lives in Maryland with some of the unadoptable cats ACR has rescued over the years, and also manages some outdoor colonies. Louise shares her home with a Jack Russell mix, Bandit, rescued from Mexico when ACR ran their MASH-style clinic there. She rescued Lily, who passed away a couple of years ago, along with Bandit.