**Headline:** Cats Are Fueling a Global Eco-Crisis, Pushing Birds and Other Species to Extinction

**Teaser:** Free-roaming cats are an invasive species and one of the most significant sources of human-caused bird mortality.

By Reynard Loki

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**[Article Body:]**

While there are [rare (and very cute) exceptions](https://www.youtube.com/watch?v=bGsN7jzp5DE), cats and birds do not get along. Cats are predatory by nature; their hunting instinct never goes away. Birds are one of their primary targets—and the fatality statistics are staggering. “There are now over 100 million free-roaming cats in the United States,” according to NYC Bird Alliance (formerly known as NYC Audubon), a nonprofit bird advocacy group. “[T]hey kill approximately 2.4 billion birds every year in the U.S. alone, making them the [single greatest source of human-caused mortality for birds](https://nycbirdalliance.org/take-action/make-nyc-bird-friendly/keep-cats-indoors).” (The other leading killer of birds is also human-caused: [window strikes kill as many as one billion birds in the U.S. every year](https://abcbirds.org/blog/truth-about-birds-and-glass-collisions/), according to the American Bird Conservancy. Ornithologist [Daniel Klem Jr.](https://observatory.wiki/Daniel_Klem_Jr.) of Muhlenberg College puts the figure somewhere [between 1.28 and 5.19 billion](https://meridian.allenpress.com/wjo/article-abstract/136/1/113/498924/Evidence-consequences-and-angle-of-strike-of-bird?redirectedFrom=fulltext).)

Feral and free-roaming pet cats pose a grave threat to wild bird populations around the globe, with significant ecological consequences. The toll cats take on birds—through [direct predation](https://abcbirds.org/program/cats-indoors/cats-and-birds/), stress induction, and disruption of nesting behavior—is increasingly well-documented by scientists and conservationists.

“When outside, cats are [an] invasive species that kill birds, reptiles, and other wildlife,” NYC Bird Alliance [points out](https://nycbirdalliance.org/take-action/make-nyc-bird-friendly/keep-cats-indoors). “But despite being fed, they kill wild birds and other animals by instinct.” Moreover, the domestication of cats has allowed the species to spread and thrive in many regions it might not have otherwise been able to inhabit. However, while the scope of the issue is vast and the ecological consequences are grave, solutions exist to mitigate this ongoing and expanding environmental crisis.

**A Global Eco-Crisis**

Estimates suggest that domestic cats (*Felis catus*) might be killing billions of birds each year. A major 2013 [study](https://www.nature.com/articles/ncomms2380) by the Smithsonian Conservation Biology Institute and the U.S. Fish and Wildlife Service concluded that free-ranging domestic cats kill between 1.3 and 4 billion birds annually in the United States alone. (This figure accounts for both feral cats and free-roaming pet cats, with the majority of the bird deaths attributed to cats without human guardians, which includes those cats in feral colonies, also known as [community cats](https://www.alleycat.org/resources/the-truth-about-community-cats/).)

The global picture is similarly grim. In a [2017 paper published in *Frontiers in Ecology and the Environment*](https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1002/fee.1633), ecologist Scott Loss of the Oklahoma State University, and Peter Marra, the former director of the Smithsonian Migratory Bird Center (who co-authored the abovementioned 2013 study with Tom Will of the U.S. Fish and Wildlife Service), assert that domestic cats have “contributed to at least 63 vertebrate extinctions, pose a major hazard to threatened vertebrates worldwide, and transmit multiple zoonotic diseases.” They point out that “[m]ore than a dozen observational studies, as well as experimental research, provide unequivocal evidence that cats are capable of affecting multiple population-level processes among mainland vertebrates.”

In countries like Australia and New Zealand, where many native species evolved without mammalian predators, the impact of introduced cats has been particularly catastrophic. Numerous species of birds, like the [piping plover](https://abcbirds.org/bird/piping-plover/), as well as small mammals and reptiles, have been driven to extinction or near extinction due to cat predation. [Islands are especially vulnerable](http://trnerr.org/wp-content/uploads/2013/06/ABCBirds_predation.pdf), as their ecosystems tend to be isolated and finely balanced.

**How Cats Affect Bird Populations**

The primary threat cats pose to birds is direct predation. Birds are particularly vulnerable during breeding season, when they are tied to specific territories and may have limited mobility while incubating eggs or feeding young. Ground-nesting birds are at incredibly high risk, as they often rely on camouflage and stillness rather than flight to evade threats—tactics that are ineffective against cats’ [stealthy and persistent hunting methods](https://untamedscience.com/blog/the-lone-hunters-understanding-the-predatory-skills-of-cats/).

Birds fortunate enough to evade capture still suffer being in the proximity of outdoor cats. Research indicates that the mere presence of cats can cause stress to birds, [impacting their reproductive success](https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecs2.3665#:~:text=Experiments%20conducted%20on%20passerines%20in%20intact%20natural,by%20changes%20in%20behavior%20(Huang%20et%20al.&text=A%20reduction%20in%20provisioning%20rate%20or%20time,overall%20chances%20of%20predation%20(Ghalambor%20et%20al.) and leading to adverse behavioral changes such as [increased vigilance](https://www.nature.com/articles/s41598-019-47684-6), which results in [reduced feeding rates](https://pmc.ncbi.nlm.nih.gov/articles/PMC6685979/) and [less effective parenting](https://academic.oup.com/beheco/article-abstract/22/1/23/231368). A 2013 British [study](https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.12025) published in the *Journal of Applied Ecology* found that birds may avoid returning to their nests or dens for extended periods to prevent leading predators, such as cats, from getting to their young. This avoidance behavior, driven by the stress of a nearby predator, can reduce the growth rate of young birds by approximately 40 percent. In some cases, [birds may abandon nests](https://www.scientificamerican.com/article/fact-or-fiction-birds-abandon-young-at-human-touch/) altogether if they sense persistent danger, especially from cats that return to the same area regularly.

By dramatically reducing bird populations, cat predation can also negatively impact [plant pollination](https://iucn.org/content/pollinating-birds-and-mammals-declining-reveals-first-global-assessment-trends-status-pollinators#:~:text=%E2%80%9COur%20study%20is%20the%20first,more%20than%20US$215%20billion.%E2%80%9D), [forest regeneration](https://phys.org/news/2024-04-tropical-forests-recover-naturally-fruit.html), and [human health](https://www.birdlife.org/news/2019/01/04/why-we-need-birds-far-more-than-they-need-us/)—all of which have detrimental economic consequences. [Trophic cascades](https://observatory.wiki/How_Trophic_Cascades_Can_Devastate_Ecosystems_and_Endanger_Human_Health) may even be triggered, causing adverse effects up and down the food chain. In a [study](https://www.sciencedaily.com/releases/2024/04/240415110545.htm) published in 2024 in *Nature Climate Change*, researchers led by ecologist Daisy Dent at the Crowther Lab at ETH Zurich, a Swiss university, showed that when wild birds move freely across tropical forest ecosystems, they boost the carbon storage of regenerating forests by as much as 38 percent. When they consume, excrete, and spread seeds, birds accomplish this invaluable ecosystem service, which the researchers contend is critical to maintaining a minimum of 40 percent forest cover. Put another way, without healthy populations of wild birds, forests in fragmented landscapes cannot recover naturally.

This expanding ecological crisis has been developing ever since cats were domesticated some 10,000 years ago in the Fertile Crescent of the Middle East. Some scientists have been sounding the alarm for quite some time. “The widespread dissemination of cats in the woods and in the open or farming country, and the destruction of birds by them,” wrote ornithologist Edward Howe Forbush in his 1916 book [*The Domestic Cat: Bird Killer, Mouser and Destroyer of Wild Life; Means of Utilizing and Controlling It*](https://www.loc.gov/item/agr16000378/), “is a much more important matter than most people suspect, and is not to be lightly put aside.”

In more recent times, ecologists Nico Dauphine and Robert J. Cooper from the Warnell School of Forestry and Natural Resources at the University of Georgia presented a [paper](https://abcbirds.org/wp-content/uploads/2015/07/Dauphine-and-Cooper-2009-Impacts-of-free-ranging-cats-on-birds-in-US.pdf) in 2008 at the Fourth International Partners in Flight Conference in McAllen, Texas, that highlighted the growing body of evidence that free-ranging cats are pushing some bird species into extinction. “A number of peer-reviewed quantitative studies of the impacts of free-ranging cat predation on native birds in the United States suggest that cat predation on birds may be unsustainable, drives ecological sinks, and may cause local extinctions,” they warned.

**Case Studies and Regional Impact**

The impact of cats on bird populations is not uniform across all environments; it varies significantly depending on factors such as the local bird species present, the type and quality of the habitat, and the density of free-roaming or feral cat populations. In urban and suburban areas with fragmented habitats, birds may be more vulnerable to predation due to limited cover and nesting options. Conversely, in more intact or rural ecosystems with fewer cats or more natural predators, the effects may be less pronounced, though still ecologically significant.

In 2021, ecological researcher Jakub Z. Kosicki from Adam Mickiewicz University in Poznań, Poland, used predictive modeling to demonstrate the “negative impact of cat density on native bird populations.” In his [study](https://www.sciencedirect.com/science/article/abs/pii/S1476945X2100057X), published in Ecological Complexity, Kosicki noted that “many studies… have shown that invasive species may exert very high predatory pressure on native fauna.”

Islands are hotspots for bird diversity but are also highly vulnerable. The [Stephens Island wren](https://www.historyextra.com/period/victorian/tibbles-cat-stephens-island-wren-extinction-stellers-sea-cow/), a flightless bird native to New Zealand, is often cited as one of the most infamous victims of cat predation. The species was driven to extinction shortly after a lighthouse keeper [introduced a cat to the island](https://www.allaboutbirds.org/news/the-obituary-of-the-stephens-island-wren/) in the late 19th century.

In city and suburban settings, cats disproportionately affect common songbirds such as robins, sparrows, and finches. While these birds may be more adaptable than their rural or wild counterparts (according to a [McGill University study](https://www.mcgill.ca/newsroom/channels/news/cities-breed-smarter-birds-259744)), heavy cat predation can reduce their populations over time. This is especially concerning in urban and suburban areas that otherwise serve as vital stopovers or breeding grounds for migratory species. New York City, for example, a major stopover for migratory birds along the Atlantic Flyway, is estimated to have [between 500,000 and 1,000,000 feral cats](https://www.curbed.com/article/feral-cats-tnr-volunteers-nyc.html) (despite [efforts](https://www.nytimes.com/2023/06/08/nyregion/feral-cats-nyc.html) to decrease their numbers humanely)—posing a mortal threat to the millions of birds who pass through.

Migratory birds who forage or nest on or near the ground are [particularly vulnerable to predation by domestic cats](https://stewardshipcentrebc.ca/PDF_docs/CatsBirds/SPGuide_ReducingImpactCatsBirdsWildlife2016.pdf). Studies indicate that such birds are at increased risk due to their ground-level activities. Additionally, research has shown that birds using [nest boxes](https://en.wikipedia.org/wiki/Nest_box) or feeders or those who glean from foliage have [heightened susceptibility to cat predation](https://www.carencooper.com/uploads/1/5/6/3/15638632/cooper_etal_em.pdf).

In addition to cat predation, urban birds must also contend with the threat of window strikes, which humans can also help prevent simply by [making windows visible to birds](https://www.allaboutbirds.org/news/why-birds-hit-windows-and-how-you-can-help-prevent-it/). “Cats and windows are connected in two significant ways,” says avian expert Jim Cubie. “First, cats often find and consume dead birds beneath windows, leading people to underestimate how many birds are actually killed by window collisions. Second, twice as many birds as those who die on impact bounce off the glass and fly away, often suffering serious injuries. These stunned birds are particularly vulnerable to predators, including cats, further contributing to bird mortality.”

**Human Responsibility and the Ethical Dilemma**

At the heart of this issue is a fundamental ethical question: How should humans balance their deep affection for cats with their responsibility to protect wildlife? Outdoor cats are not acting maliciously; they are merely following their instincts. However, their ability to hunt prolifically is a direct result of human actions—either through the intentional release of pet cats or the failure to manage feral populations responsibly.

Cat guardians may not realize the full extent of their pet’s hunting behavior. Some cats do not bring prey home, leading guardians to believe they are not hunting at all—even well-fed cats hunt, driven by instinct rather than hunger. Additionally, [cats may injure birds without killing them outright](https://www.aphis.usda.gov/sites/default/files/free-ranging-and-feral-cats.pdf), leading to delayed deaths due to infection, exhaustion, or inability to escape other predators.

Feral cats represent a more complex issue. Often abandoned or born in the wild, they survive in colonies, sometimes supported by humans who provide food but do not otherwise manage their populations (though [in the interest of cat](https://www.alleycat.org/resources/spayneuter-good-for-cats-good-for-communities/) health as well as ecological health, there is a growing effort among community cat organizations like [Long Island City Feral Feeders](https://licferalfeeders.org/) and educators like the [Community Cats Podcast](https://www.communitycatspodcast.com/resources-2/) to provide spay/neuter services as part of colony management). While compassionate in intent, feeding programs that are not paired with population control can inadvertently support large numbers of cats in areas where they continue to decimate local wildlife.

**Conservation Strategies and Solutions**

Addressing the problems caused by outdoor cats requires a multifaceted approach that respects animal welfare while prioritizing ecological integrity.

*Keeping Pet Cats Indoors*

This is the simplest and most effective solution—and one we’re lucky to have today thanks to the invention of kitty litter, as [Alley Cat Allies](https://www.alleycat.org/resources/the-natural-history-of-the-cat/) points out. Indoor cats live longer, healthier lives (avoiding predators of their own and car traffic) and pose no threat to birds. Cat parents can provide enrichment through toys, scratching posts, window perches, and “[bird TV](https://www.youtube.com/watch?v=CE-PQoozcFc&list=PLBhKKjnUR0XBlPQRzBX6Kc2WmYitO2Guc)” to satisfy their pets’ instincts without exposing them to outdoor dangers.

*“Catios”*

For guardians who want their cats to enjoy the outdoors safely, enclosed outdoor spaces (“cat patios” or “catios”) are an excellent option. “A catio is an outdoor enclosure that keeps cats and birds and wildlife safe,” writes [Cats Safe at Home](https://www.catssafeathome.org/), a collaboration between the Feral Cat Coalition of Oregon, Bird Alliance of Oregon, Bird Conservation Oregon, and Multnomah and Washington County Animal Services dedicated to protecting both cats and wildlife. “Catios offer cats healthy exercise time as well as safety from outdoor hazards like cars, predators and poisons, while preventing predation on birds. A catio is a win-win solution.” Karen Kraus of the Feral Cat Coalition of Oregon [said](https://www.communitycatspodcast.com/episode-262-karen-kraus-and-bob-sallinger%e2%80%8e/), “[W]e recognize that outdoor cats predate on wildlife and that we want to see a reduction in outdoor cats to help both wildlife and for the cats.”

*Leash training*

“While indoor cats use an average of 40 square yards in their home, community cats are natural hunters who have been known to roam up to 150 acres,” [writes](https://www.petmd.com/cat/behavior/how-to-leash-train-cat) Jeannine Berger, one of the few veterinarians who is board-certified by both the American College of Veterinary Behaviorists and the American College for Animal Welfare.

“But this far-reaching outdoor life comes with risks. In fact, outdoor cats live only half as long as indoor-only cats, due to exposure to cat fights, infectious diseases, and injuries,” she writes. “Because of these dangers, veterinarians encourage pet parents not to let their cats roam freely outside. This is where a harness comes in. Harnessing a cat and walking them on a leash lets them explore, enhances mental stimulation, and gives them ample exercise—all while keeping your kitty safe.”

Both catios and [leash training](https://www.petmd.com/cat/behavior/how-to-leash-train-cat) allow cats to experience the sights and smells of the outside world without endangering them or wildlife. New York–based company Travel Cat features a [blog](https://yourcatbackpack.com/blogs/tips) (check their [website](https://yourcatbackpack.com/) or [Instagram](https://www.instagram.com/yourcatbackpack/) for announcements of their virtual summit events) sharing tips on safe and effective harness and leash training for cat owners.

*Bird-safe collars*

Simply placing a bell on your outdoor cat’s collar will give wild birds a chance to escape before being pounced on, as they will hear the bell as a cat approaches. It might only give them a second or two as a warning, but that may be enough time to fly away.

As Ada McVean of the McGill University Office for Science and Society points out, “a [number](https://www.publish.csiro.au/wr/WR09127) of [studies](https://zslpublications.onlinelibrary.wiley.com/doi/10.1017/S0952836902000109) have looked at whether or not bells help prey escape from cats, and the general consensus is yes. Bells on collars seem to reduce the amount of prey caught by about half, which could be enough to no longer pose a threat to ecosystems.”

Another option is brightly colored collars, which songbirds can easily see, like the ones made by [BirdsBeSafe.com](http://birdsbesafe.com), a product endorsed by the [American Bird Conservancy](https://abcbirds.org/), a nonprofit bird advocacy organization.

*Trap-Neuter-Return and Contraception*

While the [subject of much debate](https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1004&context=ndhab), [trap-neuter-return](https://en.wikipedia.org/wiki/Trap%E2%80%93neuter%E2%80%93return) (TNR) programs aim to manage feral cat colonies over time and limit population growth by preventing reproduction. Critics argue that TNR does not go far enough to protect wildlife, as neutered outdoor cats still hunt. Still, humanely reduced or managed feral populations are better for birds than an increasing population. Some conservationists advocate for managed colonies being gradually phased out in favor of adoption or placement in enclosed sanctuaries. However, as Jenny Pierson of the [Cat Museum of New York City](https://www.catmuseumnyc.org/) points out, “The cat overpopulation crisis (in tandem with veterinary professional shortages) in cities like New York means that [overburdened shelters and rescuers/foster organizations](https://w42st.com/post/rising-vet-bills-threaten-decades-long-work-of-hells-kitchen-cat-rescuers/) are often already at capacity—meaning TNR may be the only option available to help save birds.”

During the COVID-19 pandemic, [spay and neuter surgeries](https://pmc.ncbi.nlm.nih.gov/articles/PMC9513967/) for dogs and cats decreased, creating challenges for those managing cat populations. During this period, [megestrol acetate](https://vcahospitals.com/know-your-pet/megestrol-acetate) (MA), a synthetic hormone, emerged as a solution: a short-term contraceptive available by prescription for unspayed female cats.

“Non-surgical methods of contraception and sterilization have long been a passion of mine,” [said](https://www.maddiesfund.org/megestrol-acetate-faq.htm) veterinarian Mike Greenberg, outreach programs director at Maddie’s Fund, a California-based nonprofit pet advocacy group, in 2020. “I hope for the day when we can say to our younger colleagues, ‘Yeah, it was crazy. We used to have to cut animals open and remove organs just to control fertility!’” Greenberg, who co-founded the [Veterinary Care Accessibility Project](https://www.accesstovetcare.org/), a nonprofit creating tools for data-driven decisions to improve access to vet care, added, “While megestrol acetate is certainly not the panacea, it is a tool in the toolbox.”

“MA has long been prescribed by American veterinarians to treat various medical conditions in both male and female cats with minimal side effects,” [asserts](https://www.alleycat.org/resources/non-surgical-contraception-for-cats-a-potential-lifesaver-during-covid-19/) Alley Cat Allies, a Maryland-based nonprofit cat advocacy organization. “But before [the COVID-19 pandemic], it has not been widely used in the United States as a contraceptive.”

“Using the lowest possible dosages, MA and MPA may… be used safely in pet queens as well as (in conjunction with TNR programs) for the control of feral cat colonies,” [writes](https://journals.sagepub.com/doi/10.1177/1098612X15594987) veterinarian Stefano Romagnoli, who teaches animal reproduction at the University of Padova in Italy, in a 2015 paper published in the Journal of Feline Medicine and Surgery.

*Public Education*

Raising awareness is crucial. Many people are unaware of the impact their pets may have on local ecosystems. Educational campaigns can encourage responsible [pet guardianship](https://www.avma.org/javma-news/2011-04-01/after-more-decade-has-pet-guardianship-changed-anything) (as opposed to “pet ownership,” which some experts argue can [lead to abuse because pets are viewed as objects rather than individuals](https://www.vox.com/future-perfect/2023/4/11/23673393/pets-dogs-cats-animal-welfare-boredom)). Local elected officials and community leaders can promote indoor living for cats and advocate for wildlife-friendly policies at the community level.

A city council member might, for example, partner with a local animal shelter to launch a public awareness campaign called “Safe Indoors, Safe Wildlife.” The campaign could include social media posts, posters in parks, and community workshops promoting the benefits of keeping cats indoors—for both their health and the protection of local wildlife. That official could also sponsor a resolution recognizing the ecological impact of outdoor cats and encouraging residents to commit to indoor cat care.

*Legislation and Policy*

Some jurisdictions have begun to pass [laws restricting the free-roaming of cats](https://www.alleycat.org/our-work/cats-and-the-law/local-laws/) or requiring that pets be kept indoors or on leashes. Madison, Wisconsin, for example, requires that cats follow the same rules as pet dogs, and that means being leashed when they are outdoors. “You aren’t allowed to have an animal off your property without it being under your control,” [said](https://isthmus.com/news/cover-story/most-madison-cat-owners-ignore-city-regulations/#:~:text=John%20Hausbeck%20of%20Public%20Health%20Madison%20and,put%20them%20on%20a%20leash%2C%E2%80%9D%20says%20Hausbeck.) Madison and Dane County’s public health supervisor, John Hausbeck. The only way to do that with a cat is to put them on a leash.” While enforcement can be challenging, such laws reflect a growing recognition of the seriousness of the issue.

Society needs to address the hard reality that outdoor cats constitute the leading human-driven cause of bird mortality. While cats have been cherished companions to millions of humans over the millennia (including this author), their outdoor behavior conflicts directly with the health and survival of wild bird populations, and that has knock-on effects across ecosystems, including impacts on humans.

By understanding the scope of the threat and implementing humane, effective, and practical solutions, we can begin to strike a better balance—protecting our beloved pets and the vulnerable birds who share our environment. As stewards of domestic animals, wild animals, and natural ecosystems, we have a responsibility to act with foresight and compassion for all species who call Earth home.

Dauphine and Cooper, the ecologists at the University of Georgia who warned of bird extinctions caused by free-roaming cats in 2008, co-wrote another paper three years later. Its title encapsulates this zero-sum game that we are playing with the natural environment: “[Pick one: outdoor cats or conservation](https://www.researchgate.net/publication/288947356_Pick_one_outdoor_cats_or_conservation).” Clearly, we can’t have both.

*[Author’s note: I am an enthusiastic cat lover, having participated in three feline “*[*foster fails*](https://www.lemonade.com/pet/explained/foster-fail/)*.” Also, as co-founder and board member of the* [*Cat Museum of New York City*](https://www.catmuseumnyc.org/)*, I am a dedicated cat advocate. I am also a longtime avian advocate and volunteer with* [*NYC Bird Alliance*](https://nycbirdalliance.org/)*,* [*New York City Pigeon Rescue Central*](http://nycprc.org/)*, and the* [*Wild Bird Fund*](https://www.wildbirdfund.org/) *to rescue sick and injured wild birds. Cats and birds may not get along; I love them both. Special thanks to avian expert and fellow Observatory author* [*Jim Cubie*](https://observatory.wiki/Jim_Cubie) *and* [*Cat Museum of New York City*](https://www.catmuseumnyc.org/) *executive director and fellow Observatory co-founder* [*Jenny Pierson*](https://observatory.wiki/Project:About) *for their help with this article.]*