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As self-proclaimed bird lovers, members of birding and nature organizations across the country are uniquely positioned to enjoy, monitor, and protect America's resident and migratory birds. Whereas enjoying and monitoring these birds is standard practice, how to protect the birds we see is sometimes less apparent. It turns out that one of the best ways to contribute to bird conservation in the United States is to promote the practice of keeping domestic cats (*Felis catus*) indoors.

Outdoor Cats: Impacts on Birds

The introduction of domestic cats to environments around the world has resulted in substantial ecological damage and contributed to the extinction of 33 species.¹ The International Union for the Conservation of Nature lists cats among the world's worst invasive species globally, and in the United States the Department of Interior's State of the Birds 2014 Report recognized outdoor cats as the number one source of direct, human-caused mortality for birds.^{2,3} A 2013 study by scientists from the Smithsonian Conservation Biology Institute and the U.S. Fish and Wildlife Service estimated that outdoor cats kill approximately 2.4 BILLION birds every year in the contiguous United States alone.⁴

Unfortunately, feeding cats is not enough to eliminate the risks to birds. Even well-fed cats instinctively hunt and kill.⁵ Although surprising to some cat owners, this behavior is confirmed repeatedly inside the home. When a cat plays with a feather toy or laser, it is demonstrating hunting behaviors that are often lethal when practiced outside on thrushes, sparrows, or other unfortunate victims. Even when cats do not directly kill birds, their mere presence has been shown to result in a reduction in the feeding of nesting chicks by one-third and an increased likelihood of nest failure by an order of magnitude.⁶

Cats Indoors: Protecting Wildlife, Protecting People

Maintaining cats indoors also benefits birds, other wildlife, and people when it comes to disease transmission. Cats are known to carry and transmit a wide variety of parasites and diseases and may serve as a reservoir for some of these.⁷ Rabies and toxoplasmosis are of particular concern. Domestic cats are the number one carrier of rabies among domestic animals and, according to scientists from the Centers for Disease Control and Prevention, represent a "disproportionate risk for potential human exposure" because people are much more likely to interact with a cat than with wildlife.⁸ Toxoplasmosis is a disease caused by infection with the parasite *Toxoplasma gondii*, which relies on felids to complete its life cycle. Up to 74% of all cats will host *T. gondii* during their lifetimes and subsequently excrete in their feces hundreds of millions of eggs (called oocysts) into the environment, where they remain infectious to all warm-blooded species for up to 18 months.⁹ Consequences of infection in people include miscarriage, blindness, memory loss, and death. For both rabies and toxoplasmosis, outdoor cats are far more likely to spread these diseases than indoor cats.

How to Help

Birding organizations have an opportunity to lead on an issue that is critical to the conservation of birds in America. For those of us that own cats, like myself, we can no longer avoid the inconvenient truth that allowing our pets outdoors kills birds. Whether our cats are walked on a leash or kept in an outdoor enclosure, we must represent the change we wish to see in the world and lead by example. Second, kind but persistent education of our communities about the many benefits of maintaining cats indoors (e.g., cats live longer, healthier lives) is necessary. A number of resources are available to help with this endeavor, but I recommend beginning with American Bird Conservancy's Cats Indoors website (www.abcbirds.org/ cats). Finally, promoting bird-friendly legislation and speaking against misguided public policies is essential to ensuring long-term conservation. With determination, it is possible to prevent the deaths of billions of birds throughout the United States and to show people that keeping cats indoors is better for cats, better for birds, and better for people.

¹ Medina F.M., E. Bonnaud, E. Vidal, B.R. Tershy, E.S. Zavaleta, C.J. Donlan, B.S. Keitt, M. Le Corre, S.V. Horwath, and M. Nogales. 2011. A global review of the impacts of invasive cats on island endangered vertebrates. Global Change Biology 17: 3503-3510.

² Lowe S., M. Browne, S. Boudjelas, and M. De Poorter. 2000. 100 of the World's Worst Invasive Alien Species: A Selection from the Global Invasive Species Database. The Invasive Species Specialist Group, International Union for the Conservation of Nature.

³ North American Bird Conservation Initiative, U.S. Committee. 2014. The State of the Birds 2014 Report. U.S. Department of Interior, Washington, D.C. 16 pages.

⁴ Loss S.R., T. Will, and P.P. Marra. 2013. The impact of free-ranging domestic cats on wildlife of the United States. Nature Communications 4:1396.

⁵ Adamec R.E. 1976. The interaction of hunger and preying in the domestic cat (Felis catus): an adaptive hierarchy? Behavioral Biology 18: 263-272.

⁶ Bonnington C., K.J. Gaston, and K.L. Evans. 2013. Fearing the feline: domestic cats reduce avian fecundity through trait-mediated indirect effects that increase nest predation by other species. Journal of Applied Ecology 50: 15-24.

⁷ Anderson T.C., G.W. Foster, and D.J. Forrester. 2003. Hookworms of feral cats in Florida. Veterinary Parasitology 115: 19-24.

⁸ Roebling A. D., D. Johnson, J. D. Blanton, M. Levin, D. Slate, G. Fenwick, and C. E. Rupprecht. 2013. Rabies prevention and management of cats in the context of Trap-Neuter-Vaccinate-Release programmes. Zoonoses and Public Health doi: 10.1111/zph.12070.

⁹ Tenter A.M., A.R. Heckeroth, and L.M. Weiss. 2000. Toxoplasma gondii: from animals to humans. International Journal of Parasitology 30: 1217-1258.