



Ecological Impacts of Feral Cats

The domestic cat (*Felis catus*) is now found on all 7 continents, with 600 million cats worldwide and 148-188 million within the United States.^{1,2} As a domestic animal, cats have no native range and are a non-native species in all environments worldwide; native prey species often have no evolved defenses against this invasive predator. Domestic cats have the potential for intense environmental alterations due to their predatory instincts and close affiliation with humans, a relationship that has led to the species' global spread and artificially large populations.

Hunting: Domestic cats are highly skilled predators, and studies have shown that even when fed daily by humans, cats continue to hunt wildlife.^{3,4,5} Domestic cats have tremendous impacts on wildlife and are responsible for the extinction of numerous mammals,^{6,7} reptiles,^{8,9} and at least 33 bird species.¹⁰ The BP Deepwater Horizon oil spill, widely considered to be the worst environmental disaster in the history of the United States, resulted in the deaths of over 7,000 birds: A 2009 study estimated the number of birds killed by cats *every year* in the United States at one billion, conservatively.¹¹ In southern California, researchers observed that native bird diversity dropped as cat abundance increased.¹² A Virginia study conducted on free-ranging cats between January and November of 1990 found that 4 urban cats killed an average of 26 native vertebrates while a single rural cat killed 83 individuals.¹³ These data were conservative, accounting only for prey returned to the home and not eaten or left outside. Precise numbers of cat-caused mortalities are difficult to obtain given the secrecy with which most cats hunt, yet the abundance of scientific studies and eyewitness accounts make it clear that cats kill a large number of native wildlife.



*A four month old feral kitten devours an Eastern Cottontail rabbit.
Photo credit: Jake Berzon, Wikimedia.*

Competition with Wildlife: Predation by domestic cats is an obvious threat to wildlife, but competition with wildlife species is less direct and often overlooked. Feral and free-ranging cats compete with native mesopredators like skunks, opossums, raccoons, and foxes for prey. Unfortunately for these and other native species, the domestic cat has an overwhelming competitive advantage because humans subsidize their populations by supplying food, water, and shelter, allowing cat populations to reach densities 100 times higher than those of their native counterparts.¹⁴

Disease Transmission: Diseases in feral and free-ranging cats can be transmitted to wildlife, decreasing their fitness or causing death.^{15,16} Cats are natural vectors for rabies and can host a variety of other diseases and parasites including toxoplasmosis, hookworms, feline immunodeficiency virus, and feline infectious peritonitis. Since greater density of

individuals means a greater likelihood of disease transmission, feral cat colonies may serve as a reservoir for disease, threatening the health of cats and local wildlife.

The introduction of domestic cats to environments worldwide has caused a reduction in biodiversity and altered ecosystem functions. Domestic cats are non-native species that, when allowed to roam freely outside of the home, have severe and varied negative impacts on native ecosystems.

¹ O'Brien S.J. and Johnson W.E. 2007. The evolution of cats. *Scientific American* 297: 68-75.

² Dauphine N. and Cooper R.J. 2009. Impacts of free-ranging domestic cats (*Felis catus*) on birds in the United States: a review of recent research with conservation and management recommendations. *Proceedings of the Fourth International Partners in Flight Conference: Tundra to Tropics*, p 205-219.

³ Warner R. 1985. Demography and movements of free-ranging cats in rural Illinois. *Journal of Wildlife Management* 49: 340-346.

⁴ Churcher P.B. and Lawton J.H. 1987. Predation by domestic cats in an English village. *Journal of Zoology* 212: 439-455.

⁵ Churcher P.B. and Lawton J.H. 1989. Beware of well-fed felines. *Natural History Magazine* 95: 40-46.

⁶ Mellink E. 1992. The status of *Neotoma anthonyi* (Rodentia, Muridae, Cricetinae) of Todos Santos Islands, Baja California, Mexico. *Bulletin of the Southern California Academy of Sciences* 91: 137-140.

⁷ Tershey B.R., Donlan C.J., Keitt B.S., Croll D.A., Sánchez J.A., Wood B., Hermosillo M.A., Howald G.R., Biavaschi N. 2002. Island conservation in north-west Mexico: a conservation model integrating research, education and exotic mammal eradication. Pages 293-300 in C.R. Veitch and M.N. Clout, eds. *Turning the tide: the eradication of invasive species*. World Conservation Union, Gland, Switzerland.

⁸ Iverson J.B. 1978. The impact of feral cats and dogs on populations of the West Indian rock iguana, *Cyclura carinata*. *Biological Conservation* 14: 63-73.

⁹ Mitchell N., Haeffner R., Veer V., Fulford-Gardner M., Clerveaux W., Veitch C.R., and Mitchell G. 2002. Cat eradication and the restoration of endangered iguanas (*Cyclura carinata*) on Long Cay, Caicos Bank, Turks and Caicos Islands, British West Indies. Pages 206-212 in C.R. Veitch and M.N. Clout, eds. *Turning the tide: the eradication of invasive species*. World Conservation Union, Gland, Switzerland.

¹⁰ Lever C. 1994. Naturalized animals: the ecology of successfully introduced species. T & AD Poyser Ltd., London.

¹¹ Dauphine N. and Cooper R.J. 2009.

¹² Crooks K.R. and Soulé M.E. 1999. Mesopredator release and avifaunal extinctions in a fragmented system. *Nature* 400: 563-566.

¹³ Mitchell J.C. and Beck R.A. 1992. Free-ranging domestic cat predation on native vertebrates in rural and urban Virginia. *Virginia Journal of Science* 43(1B): 197-207.

¹⁴ Coleman J.S. and Temple S.A. 1992. Rural residents' free-ranging domestic cats: a review. *Wildlife Society Bulletin* 21: 381-390.

¹⁵ Jessup D.A., Pettan K.C., Lowenstine L.J., and Pedersen N.C. 1993. Feline leukemia virus infection and renal spirochetosis in a free-ranging cougar (*Felis concolor*). *Journal of Zoo and Wildlife Medicine* 24(1): 73-79.

¹⁶ Leutenegger C.M., Hoffmann-Lehmann R., Riols C., Liberek M., Worel G., Lups P., Fehr D., Hartmann M., Welienmann P., and Lutz H. 1999. Viral infections in free-living populations of the European wildcat. *Journal of Wildlife Diseases* 35(4): 678-686.