



Rabies in Humans and Wildlife

Rabies is a viral disease of terrestrial mammals. It affects the central nervous system of mammals, and is present in the saliva of infected animals, facilitating transmission of the virus through bite wounds. Early symptoms are similar to flu-like illnesses but become more severe as the disease progresses, and may include hallucinations, paralysis, difficulty swallowing, and hydrophobia, or fear of water.¹ Once the late-stage symptoms of rabies set in, death usually follows shortly due to cardiac arrest or respiratory failure. Rabies is nearly 100% fatal, but clinical disease may be prevented if the patient receives prompt treatment after a possible exposure. The treatment consists of immune globulin and rabies vaccine, which can cost \$7,000 or more; every year, The United States spends approximately \$300 million on rabies prevention.

In the United States, rabies is carried by several species of mammals found on the East Coast, including raccoons, red foxes, and skunks, which are identified as rabies vector species (RVS). Cats make up a small percentage of RVS but are responsible for a disproportionate number of human exposures. For example, in New York State, cats represented just 2.7% of the animals infected with the disease in 1998, but were responsible for approximately 1/3 of the recorded cases, or 4,200 human exposures (see map below of positive rabies tests in cats in the United States).² Although dogs historically posed a greater rabies threat to humans, dog-related incidents have become less frequent in recent decades, dropping from 1,600 cases in 1958 to just 75 in 2008.³ This reduction is likely the result of increased public awareness and more effective vaccination programs. Meanwhile, cases involving cats have increased over the same period with spikes of up to 300 cases in a single year.



Feeding stations attract wildlife, creating a pathway for transmission between wildlife, cats, and humans.

Photo Credit: Mike Lynch

When humans establish outdoor feeding stations for feral cats, they provide a potential mechanism for rabies transmission between those cats and the wildlife that are attracted to the food. Furthermore, managed colonies create an opportunity for the transfer of rabies to humans, since feral cats fed in proximity to people will be less

fearful and in closer contact with their human hosts. While most people will not interact with wildlife, especially animals displaying erratic behavior, cats are perceived as domestic and approachable. In 2009, there were seven rabid cat attacks on the East Coast. In 2010 there have been two of unprovoked attacks by rabid cats on people in Florida. The first occurred when a man and a woman hit a cat with their car; both were bitten while trying to aid the cat. In the second instance, a rabid cat entered a home, possibly in search of food, and attacked an elderly woman.⁴

As a RVS, domestic cats pose a direct threat to human health. Managed feral cat colonies bring together all the elements necessary to create high risk: concentrated numbers of unvaccinated cats, wildlife vector species attracted to food sources, proximity to humans, and contact among all three of these groups. Feral cat colonies can lead to rabies transmission among these groups.

¹ Center for Disease Control. <http://www.cdc.gov/rabies/>

² Edison, M. and A.K. Bingman. 2010. Terrestrial rabies and human postexposure prophylaxis, New York, USA. *Emerging Infectious Diseases* 16:527-529.

³ Blanton, J.D., K. Robertson, D. Palmer, and C.E Repprecht. 2009. Rabies surveillance in the United States during 2008. *Journal of the American Veterinary Medical Association* 235:676-689.

⁴ Lelis, L. 2010. Rabies warning issued in Volusia after rabid cat attacks. *Orlando Sentinel*.