



NEW YORK CITY DEPARTMENT OF  
HEALTH AND MENTAL HYGIENE  
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## 2011 Veterinary Alert # 1

### Summary of Animal Rabies and Testing in New York City, 2010

- **In 2010, a record 145 animals from NYC tested positive for rabies; this was driven by the raccoon rabies epizootic in Manhattan.**
  - **Since 1992, when raccoon rabies arrived in NYC, the previous largest number of rabid animals reported in NYC was 53 in 1993; the smallest was 1 in 1998.**
- **The Bronx continues to be affected by raccoon rabies, while Staten Island had its second year in a row with no rabid raccoons reported.**
- **Bat rabies continues to been found in all five boroughs.**
- **The last dog to test positive for rabies in NYC was in 1954.**

*Please share with your colleagues in Veterinary Medicine and your staff*

February 9, 2011

Dear Veterinary Colleagues,

This is the annual summary of animal rabies testing data from the DOHMH Public Health Rabies Laboratory. Updated information regarding rabies can also be found on our website at [www.nyc.gov/health/rabies](http://www.nyc.gov/health/rabies). As in the past, urgent matters regarding rabies will be brought to your immediate attention via fax.

Throughout the US, different variants of the rabies virus exist and are maintained in their respective vectors, following geographically distinct patterns. Those vectors include raccoons, skunks, bats, and foxes. The raccoon variant is present along the Atlantic Coast, and the bat variant throughout the US, except Hawaii. Since the arrival of raccoon rabies in New York City in 1992, it has persisted enzootically, and raccoons remain the primary reservoir species in the City (**Table 1**). Occasionally, rabid raccoons transmit the virus to other animals, usually skunks, but also potentially to susceptible domestic animals, including dogs and cats.

Historically, most rabid animals had been identified in the Bronx and Staten Island, with isolated reports of rabid raccoons in Queens. This all changed in 2010. The biggest rabies story in 2010 was the large epizootic of raccoon rabies in Manhattan, which began in December 2009 and continued throughout much of 2010. The majority of rabid raccoons reported from Manhattan were collected in and around Central Park, the first of which was reported August 28<sup>th</sup>, 2009. An additional 10 rabid raccoons were reported by the end of 2009. In 2010 another 123 rabid raccoons were reported. A trap, vaccinate, and release (TVR) campaign was conducted from February 16<sup>th</sup> to April 9<sup>th</sup>, 2010 in an attempt to slow the spread of the virus among raccoons and prevent human and pet exposures. A second round was

conducted from September 20<sup>th</sup> to November 5<sup>th</sup> with the goal of vaccinating the juvenile raccoons born in the spring. In total, 396 raccoons were vaccinated in Central, Morningside, and Riverside Parks.

Outside of Manhattan, 18 rabid animals were found in the Bronx (12 raccoons, 3 bats, 1 skunk, 1 cat, and 1 coyote); 2 in Queens (1 raccoon and 1 opossum); and 2 in Brooklyn (both raccoons). The two rabid raccoons from Brooklyn marked the first time raccoon rabies had ever been reported from that borough. At this time it is unclear whether the two rabid raccoons were isolated events, but enhanced surveillance is being conducted in an attempt to identify additional cases.

Since 1992, a total of 519 terrestrial animals have tested positive for rabies in NYC. A much smaller number of rabid bats (32) has been found in all 5 boroughs, and it is important to note that bats are the primary vector of human rabies infections in the United States. Dogs and cats are also susceptible to rabies, but vaccination and animal control have significantly reduced the numbers of rabid dogs and cats, both in NYC and in the US. No rabid dogs have been reported in NYC since 1954, although dogs with the raccoon variant have been reported in neighboring areas outside NYC. Since 1992, only 12 rabid cats have been identified in NYC, mostly strays. Long Island was free of raccoon rabies until 2004, when the virus was identified in Nassau County; it has since spread to Suffolk County. In 2010, Nassau and Suffolk Counties reported no rabid animals. Westchester reported 39 rabid animals in 2010: 21 raccoons, 7 bats, 5 skunks, 5 cats, and 1 other wildlife.

Rodents (e.g., squirrels, rats, mice) and members of the rabbit family are not considered to be vectors of rabies. The one exception is the groundhog, which has tested positive for rabies in NYC (one in 2007 on Staten Island) and in neighboring areas outside NYC. Rabies infection of other domestic rodents or rabbits should be considered in unusual circumstances, such as when the animal has history of a bite wound and has been housed in an outdoor hutch, or when a rabies vector species (e.g., raccoon) has been observed in the vicinity.

Please review the annual summary, along with comparative data from the previous three years. For questions regarding the summary, general questions regarding rabies, consultation regarding rabies titer testing, or rabies vaccinations for you, colleagues or employees, please contact Dr. Sally Slavinski at 212-788-4160.

This information is made available through the collaborative efforts of the DOHMH Public Health Laboratory and the office of Veterinary Public Health Services, along with the Bureau of Communicable Disease. As always, we greatly appreciate your partnership and cooperation.

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**TABLE 1. Laboratory-Confirmed Rabid Animals in NYC, 1992-2010**

Animal Species	Bronx	Queens	Manhattan	Staten Island	Brooklyn	Total Positive	Total Tested	% Positive
<b>Raccoon</b>	175	10	143	121	2	<b>451</b>	5953	7.7
<b>Skunk</b>	41	0	0	2	0	<b>43</b>	257	16.7
<b>Bat</b>	11	4	7	5	5	<b>32</b>	838	3.8
<b>Dog</b>	0	0	0	0	0	<b>0</b>	1808	0
<b>Cat</b>	3	0	1*	7	1	<b>12</b>	2764	0.4
<b>Other**</b>	2	1	0	3	0	<b>6</b>	1890	0.3
<b>Total</b>	<b>214</b>	<b>13</b>	<b>28</b>	<b>138</b>	<b>6</b>	<b>544</b>	13510	4.0

\*The cat was from Columbia County but tested in NYC.

\*\*Other includes 2 coyote (1999 and 2010, Bronx), 3 opossums (1994 and 1992, Staten Island and 2010, Queens), 1 groundhog (2007, Staten Island).

**TABLE 2. 2010 Summary of Animals Rabies Testing Performed by NYC Rabies Laboratory**

SPECIES	BRONX		KINGS - BROOKLYN		NEW YORK - MANHATTAN		QUEENS		RICHMOND - STATEN ISLAND		Grand Total	
	# tested	# positive	# tested	# positive	# tested	# positive	# tested	# positive	# tested	# positive	# tested	# positive
<b>Bat</b>	11	3	5	0	10	0	4	0	8	0	38	<b>3</b>
<b>Cat</b>	17	1	14	0	38	0	11	0	7	0	87	<b>1</b>
<b>Dog</b>	7	0	13	0	19	0	8	0	4	0	51	<b>0</b>
<b>Groundhog</b>	0	0	0	0	0	0	0	0	1	0	1	<b>0</b>
<b>Coyote</b>	1	1	0	0	1	0	0	0	0	0	2	<b>1</b>
<b>Opossum</b>	2	0	2	0	1	0	10	1	6	0	21	<b>1</b>
<b>Raccoon</b>	34	12	24	2	196	123	74	1	11	0	339	<b>138</b>
<b>Skunk</b>	9	1	0	0	2	0	0	0	0	0	11	<b>1</b>
<b>Other</b>	0	0	0	0	0	0	0	0	1	0	1	<b>0</b>
<b>Grand Total</b>	<b>81</b>	<b>18</b>	<b>58</b>	<b>0</b>	<b>267</b>	<b>123</b>	<b>107</b>	<b>2</b>	<b>38</b>	<b>0</b>	<b>551</b>	<b>145</b>

- Eleven specimens were unfit for testing
- One cat from the Bronx and one raccoon from Manhattan were tested at laboratories outside NYC

**Table 3. Animals Rabies Testing Performed by NYC Rabies Laboratory by Animal, 2007-2010**

ANIMAL	2007		2008		2009		2010	
	# tested	# positive						
Bat	49	0	49	2	39	1	38	3
Cat	246	3	178	1	116	0	87	1
Deer	0	0	0	0	0	0	0	0
Dog	89	0	80	0	38	0	51	0
Ferret	1	0	0	0	0	0	0	0
Groundhog	3	1	0	0	1	0	1	0
Hamster	0	0	0	0	1	0	0	0
Monkey	0	0	1	0	0	0	0	0
Muskrat	4	0	6	0	0	0	0	0
Opossum	65	0	69	0	70	0	21	1
Rabbit	1	0	0	0	0	0	0	0
Raccoon	309	37	315	9	292	28	339	138
Skunk	21	3	34	7	15	0	11	1
Squirrel	4	0	2	0	1	0	0	0
Other	2	0	0	0	0	0	3	1
<b>Grand Total</b>	<b>794</b>	<b>44</b>	<b>734</b>	<b>19</b>	<b>573</b>	<b>29</b>	<b>551</b>	<b>145</b>

**Table 4. Animals Rabies Testing Performed by NYC Rabies Laboratory by County, 2007-2010**

COUNTY	2007		2008		2009		2010	
	# tested	# positive						
BRONX	159	14	178	13	138	15	81	18
BROOKLYN	89	0	83	1	65	0	58	2
MANHATTAN	124	0	97	0	117	12	267	123
QUEENS	199	1	244	1	204	1	107	2
STATEN ISLAND	220	29	129	4	48	1	38	0
OUTSIDE NYC	3	0	3	0	1	0	0	0
<b>Grand Total</b>	<b>794</b>	<b>44</b>	<b>734</b>	<b>19</b>	<b>573</b>	<b>29</b>	<b>551</b>	<b>145</b>