

2008 Rabies Summary
Massachusetts Department of Public Health

The following report summarizes data collected on animal specimens sent to the William A. Hinton State Laboratory Institute (HSLI) for rabies testing from January to December 2008. Cumulative reports summarizing rabies testing from 1992-2002 and annual reports from 2003 to 2007 are available on the MDPH website and can be found through www.mass.gov/dph/epi.

Number of Submissions and Positive Results by Year

The number of animals that tested positive in 2008 was similar to the number in 2007 and lower than in 2005 and 2006 (see **Table 1**). This decline continues to reflect, in part, a reduction in surveillance animals being submitted from Cape Cod. The decline also likely reflects decreased raccoon and skunk populations reported on Cape Cod, due to the 2004 introduction of the rabies virus, an observation that has been noted by multiple wildlife organizations familiar with the ecology of the area.

Table 1. Number of Submissions, Positive Results, and Percent Positive by Year			
Year	Number Submitted	Number Positive	% Positive
1992	1079	57	5%
1993	3971	720	18%
1994	4532	735	16%
1995	3438	400	12%
1996	3005	115	4%
1997	3128	282	9%
1998	3938	498	13%
1999	3270	226	7%
2000	3310	276	8%
2001	3346	280	8%
2002	3137	304	10%
2003	2983	216	7%
2004	3479	327	9%
2005	3388	329	10%
2006	2910	232	8%
2007	2802	152	5%
2008	3077	154	5%
Total	54,762	5,303	10%

Number of Submissions and Positive Results by Species

In 2008, 3077 specimens were submitted to the HSLI for rabies testing. Of these specimens, 154 tested positive for rabies. **Table 2** shows positive animals in 2008. During the second quarter of 2008, a dog from Essex County tested positive for rabies. This one and a half year-old Wheaton Terrier was surrendered to a local Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA) facility less than a week after adoption due to unusual behavior and several biting incidents. When the dog tested positive for rabies, MDPH worked with the MSPCA, the local board of health and the New Hampshire Department of Health and Human Services and issued a press release to notify individuals who might have had exposure to the dog. Numerous

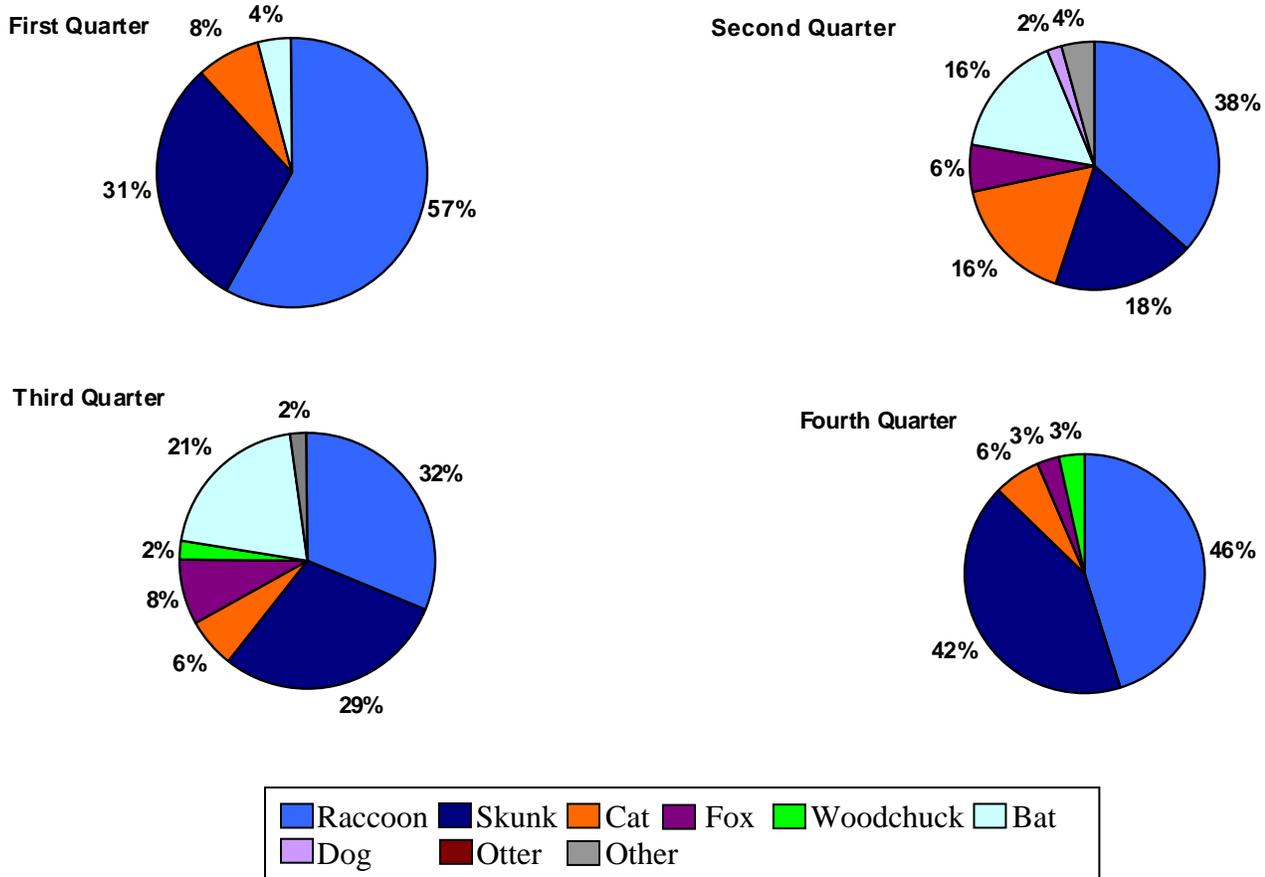
exposed individuals were identified and received post-exposure prophylaxis following this incident.

Raccoons and skunks continued to account for the large majority of rabies positive animals in Massachusetts, although the proportion of all rabies positive animals that they represent varies by quarter (see **Figure 1**).

Species	(%) 1st Quarter	(%) 2 nd Quarter	(%) 3rd Quarter	(%) 4th Quarter	(%) Total 2008
Raccoon	15/107 (14%)	18/126 (14%)	15/63 (24%)	14/63 (22%)	62/359 (17%)
Skunk	8/33 (24%)	9/56 (16%)	14/111 (13%)	13/55 (24%)	44/255 (17%)
Cat	2/167 (1%)	8/262 (3%)	3/365 (<1%)	2/234 (1%)	15/1028 (1%)
Fox	0/2 (--)	3/12 (25%)	4/9 (44%)	1/7 (14%)	8/30 (27%)
Woodchuck	0/2 (--)	0/21 (--)	1/17 (6%)	1/4 (25%)	2/45 (4%)
Bat	1/56 (2%)	8/152 (5%)	10/478 (2%)	0/64 (--)	19/750 (3%)
Cow	0/2 (--)	0/1 (--)	0/0 (--)	0/0 (--)	0/3 (--)
Coyote	0/3 (--)	0/2 (--)	0/6 (--)	0/5 (--)	0/16 (--)
Dog	0/73 (--)	1/113 (<1%)	0/112 (--)	0/98 (--)	1/396 (<1%)
Otter	0/0 (--)	0/0 (--)	0/0 (--)	0/0 (--)	0/0 (--)
Other	0/38 (--)	2/55 (4%)	1/59 (2%)	0/44 (--)	3/195 (2%) **
TOTAL	26/483 (5.4%)	49/800 (6.1%)	48/1220 (3.9%)	31/574 (5.4%)	154/3077 (5%)

**Bobcat, Goat, Horse

Figure 1. Proportion of All Positive Results Represented by Each Species, by Quarter



Enhanced surveillance of raccoons continued on Cape Cod through the end of 2008, however state support for the Cape Cod Oral Rabies Vaccine Program was discontinued after the fall baiting in 2008 and HSLI has discontinued testing of surveillance specimens as of 2009.

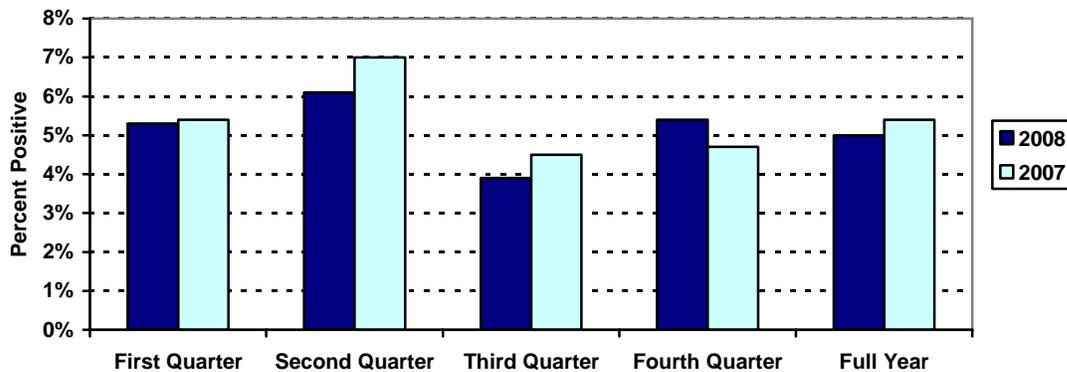
Cumulative Submissions and Positive Results by Month

Animal submission numbers fluctuate throughout the year. The highest number of submissions occurs during June, July and August (see **Table 3**). The lowest number of submissions occurs during the winter months. This same trend is seen annually and is due to the greater activity of wildlife species during the spring and summer months coinciding with the time that humans increase their outdoor activity level. These simultaneous events result in more frequent contact between humans and wildlife and lead to more animal rabies testing.

Month	Submitted, 2008	Positive, 2008	Submitted, 2007	Positive, 2007
January	161	6 4%	142	5 4%
February	132	6 5%	142	6 4%
March	190	14 7%	173	14 8%
April	220	23 10%	148	11 7%
May	238	11 5%	249	23 9%
June	342	15 4%	345	19 5%
July	376	16 4%	400	14 4%
August	549	15 3%	504	18 4%
September	295	17 6%	256	21 8%
October	200	15 8%	170	7 4%
November	171	10 6%	130	7 5%
December	203	6 3%	143	7 5%
Total	3077	154 (5%)	2802	152 (5%)

The proportion of animals testing positive for rabies also varies throughout the year, generally showing a consistent pattern from year-to-year (see **Figure 2**). The change in the percent positive is normally small between quarters and significant departures from this seasonal pattern can be used to detect alterations in the amount of virus circulating in an area.

Figure 2. Proportion of Total Positives by Quarter, by Year



Submissions and Positive Results by County

In 2008, each of the 14 counties in Massachusetts submitted at least one animal for rabies testing, and all counties, except Nantucket and Dukes, had at least one animal that tested positive (See **Table 4** below). Middlesex and Barnstable counties submitted the highest number of animals (n = 554, n = 455, respectively). Barnstable County continued to submit surveillance specimens throughout 2008; this increased the number of animals tested in their county relative to other areas which only submit animals that may have exposed a human or a domestic animal. Worcester County had the highest number of animals that tested positive (n = 34) and Berkshire County had the highest proportion of submitted animals that tested positive (13%).

County	1 st Quarter		2 nd Quarter		3 rd Quarter		4 th Quarter		2008
Barnstable	2/116	(2%)	3/109	(3%)	3/139	(2%)	3/91	(3%)	11/455 (2%)
Berkshire	1/8	(13%)	0/9	(--)	4/132	(13%)	3/12	(25%)	8/61 (13%)
Bristol	0/29	(--)	2/49	(4%)	4/90	(4%)	2/29	(7%)	8/197 (4%)
Dukes	0/1	(--)	0/1	(--)	0/4	(--)	0/1	(--)	0/7 (--)
Essex	0/43	(--)	6/77	(8%)	3/132	(2%)	2/54	(4%)	11/306 (4%)
Franklin	1/6	(17%)	0/14	(--)	0/18	(--)	2/12	(17%)	3/50 (6%)
Hampden	2/25	(8%)	6/38	(16%)	4/47	(9%)	0/27	(--)	12/137 (9%)
Hampshire	0/9	(--)	6/24	(25%)	1/20	(5%)	1/13	(8%)	8/66 (12%)
Middlesex	3/81	(3%)	9/126	(7%)	10/249	(4%)	4/98	(4%)	26/554 (5%)
Nantucket	0/0	(--)	0/1	(--)	0/2	(--)	0/0	(--)	0/3 (--)
Norfolk	4/39	(10%)	2/87	(2%)	4/151	(3%)	2/57	(4%)	12/334 (4%)
Plymouth	5/35	(14%)	2/70	(3%)	5/83	(6%)	1/48	(2%)	13/236 (6%)
Suffolk	1/26	(4%)	5/93	(5%)	1/123	(1%)	1/66	(2%)	8/308 (3%)
Worcester	7/59	(12%)	8/96	(8%)	9/121	(7%)	10/56	(18%)	34/332 (10%)

Number of Animal Submitted for Rabies Testing by County, 2008

