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**Bureau of Infectious Disease and Laboratory Sciences**

**Rabies Annual Surveillance Summary, 2022**

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**Bureau of Infectious Disease and Laboratory Sciences**

Massachusetts Department of Public Health

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**To speak to the on-call epidemiologist**

Tel: (617) 983-6800

**Questions about infectious disease reporting**

Tel: (617) 983-6801

**Requests for additional data**

https://www.mass.gov/infectious-disease-surveillance-reporting-and-control

**Acknowledgments**

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Introduction

Rabies is a serious viral disease that affects the brain and spinal cord of mammals. Rabies is usually a disease of animals, but it can spread from an infected animal to a person. The virus is transmitted via direct contact with saliva (most commonly through a bite or scratch but can also enter broken skin or mucous membranes in the eyes, nose, or mouth) or brain/nervous system tissue from an infected animal. In people, the disease can be prevented by getting appropriately vaccinated after an exposure; otherwise, the disease is fatal. The animals that most commonly carry rabies in Massachusetts are raccoons, skunks, and bats.

All animal bites or other direct contact with wild mammals should be assessed for risk of potential rabies transmission. Animal bites by a domestic animal (dog, cat, ferret, or livestock) are required to be reported to the Animal Inspector of the city or town where the bite occurred. Animal bites by wildlife should be managed by calling the 24/7 Epidemiology Line (617) 983-6800 for risk assessment and coordination of the animal for rabies testing at the Massachusetts State Public Health Laboratory (MASPHL). MDPH uses this [table](https://www.mass.gov/doc/species-considerations-for-rabies-testing/download) in evaluating risk of rabies transmission by species. Additional resources are available at [www.mass.gov/rabies](http://www.mass.gov/rabies).

Prevention

The public should be aware of several important steps in rabies prevention: 1) teach children never to approach animals they don’t know – even if they appear friendly; 2) report any animal that behaves oddly to your local animal control official; 3) enjoy wild animals from a distance and do not keep wild animals as pets; 4) make sure your pets are vaccinated against rabies; don’t leave food or water for your pets outside; 5) do not let pets roam freely and keep them in a fenced yard or on a leash; 6) keep your garbage securely covered; and 7) keep your chimney capped and repair holes in attics, cellars, and porches to help keep wild animals like bats and raccoons out of your home. If a resident believes they have been exposed to rabies, please contact your local Animal Control Officer or MDPH at (617) 983-6800.

2022 Rabies Data

The following summarizes data collected on animal specimens from Massachusetts sent to the MASPHL for rabies testing in 2022. Data are current as of August 4, 2023, and subject to change. These data represent only animals that are submitted for testing. Previous annual reports are available on the MDPH website at [www.mass.gov/rabies](http://www.mass.gov/rabies).

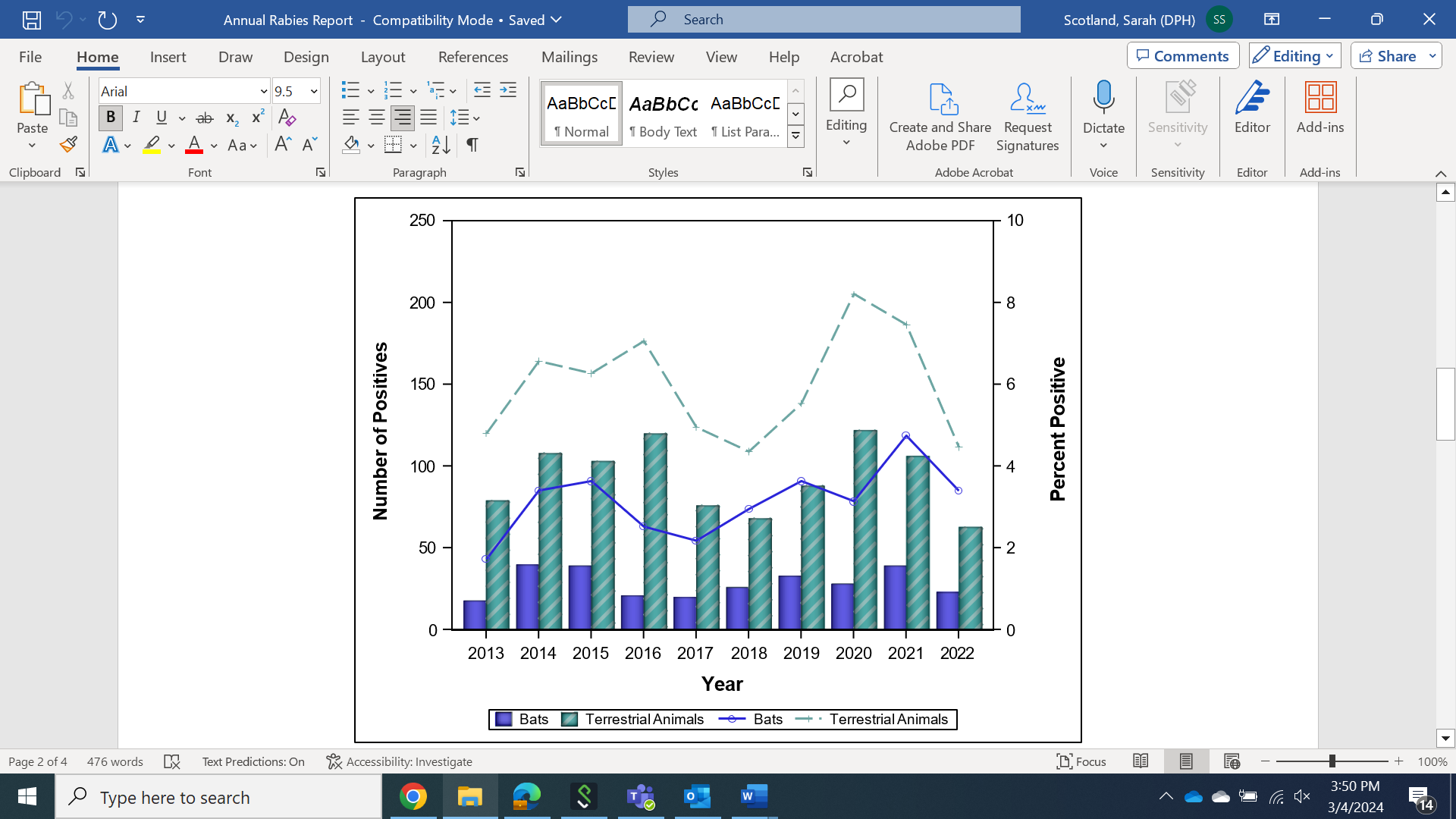
# Number of Submissions and Positive Results by Year

The number and percentage of terrestrial animals and bats that tested positive in 2022 was lower than that of the previous year (see **Table 1 and Figure 1**).

## Table 1. Number of Animals Positive for Rabies, Number of Animals Submitted, and % Positive, 2022

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Bats Submitted** | **Positive Bats** | **% Positive Bats** | **Terrestrial Animals Submitted** | **Positive Terrestrial Animals** | **% Positive Terrestrial Animals** |
| **2013** | 1,045 | 18 | 1.7 | 1,644 | 79 | 4.8 |
| **2014** | 1,175 | 40 | 3.4 | 1,644 | 108 | 6.6 |
| **2015** | 1,073 | 39 | 3.6 | 1,642 | 103 | 6.3 |
| **2016** | 833 | 21 | 2.5 | 1,700 | 120 | 7.1 |
| **2017** | 919 | 20 | 2.2 | 1,533 | 76 | 5.0 |
| **2018** | 881 | 26 | 3.0 | 1,558 | 68 | 4.4 |
| **2019** | 908 | 33 | 3.6 | 1,590 | 88 | 5.5 |
| **2020** | 891 | 28 | 3.1 | 1,486 | 122 | 8.2 |
| **2021** | 822 | 39 | 4.7 | 1,421 | 106 | 7.5 |
| **2022** | 677 | 23 | 3.4 | 1,408 | 63 | 4.5 |
| **Total** | 9,224 | 287 | 3.1 | 15,626 | 933 | 6.0 |

## Figure 1. Number of Animals Positive for Rabies and Percent Positive by Year: Massachusetts, 2013-2022



# Number of Submissions and Positive Results by Species

Raccoons, skunks, and bats accounted for the majority of rabies positive animals in Massachusetts in 2022.

## Table 2. Number of Animals Positive for Rabies/Animals Submitted (%), 2022

|  |  |  |  |
| --- | --- | --- | --- |
|  | **2022**  **Positives** | **2022**  **Submitted** | **2022**  **% Positive** |
| **BAT** | 23 | 677 | 3.4 |
| **CAT** | 4 | 509 | 0.8 |
| **COYOTE** | 0 | 2 | 0.0 |
| **DOG** | 0 | 506 | 0.0 |
| **FOX** | 4 | 24 | 16.7 |
| **OTHER\*** | 0 | 81 | 0.0 |
| **RACCOON** | 35 | 106 | 33.0 |
| **SKUNK** | 18 | 69 | 26.1 |
| **WOODCHUCK** | 2 | 111 | 1.8 |

\*includes beavers, bobcats, chipmunks, cows, deer, ferrets, fishers, goats, guinea pigs, horses, mice, minks, muskrats, otters, opossums, rabbits, rats, porcupines, sheep, squirrels, voles, and weasels.

# Submissions and Positive Results by County

In 2022, all counties in Massachusetts submitted at least one animal for rabies testing, and all counties except Dukes and Nantucket had at least one animal that tested

positive (see Table 3). Middlesex, Worcester, Essex, and Norfolk counties submitted the highest number of animals (n=387, n=331, n=263,

n=234 respectively). Worcester, Middlesex, Essex, and Bristol had the highest number of animals that tested positive (n=16, n=14, n=12, n=11).

## Table 3. Rabies Testing Data by County- Number of Animals Positive for Rabies/Number of Animals Submitted (%) 2022

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Q1 Positives** | **Q1 Submitted** | **Q1**  **%** | **Q2 Positives** | **Q2 Submitted** | **Q2**  **%** | **Q3 Positives** | **Q3 Submitted** | **Q3**  **%** | **Q4 Positives** | **Q4 Submitted** | **Q4**  **%** | **Total Positives** | **Total Submitted** | **Total**  **%** |
| **BARNSTABLE** | 0 | 10 | 0 | 0 | 14 | 0.0 | 1 | 34 | 2.9 | 0 | 9 | 0 | 1 | 67 | 1.5 |
| **BERKSHIRE** | 0 | 13 | 0 | 3 | 21 | 14.3 | 0 | 11 | 0 | 0 | 5 | 0 | 3 | 50 | 6 |
| **BRISTOL** | 3 | 28 | 10.7 | 3 | 56 | 5.4 | 2 | 70 | 2.9 | 3 | 32 | 9.4 | 11 | 186 | 5.9 |
| **DUKES** | 0 | 0 | 0 | 0 | 2 | 0.0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| **ESSEX** | 2 | 45 | 4.4 | 2 | 70 | 2.9 | 5 | 105 | 4.8 | 3 | 43 | 7.0 | 12 | 263 | 4.6 |
| **FRANKLIN** | 1 | 5 | 20.0 | 2 | 10 | 20.0 | 3 | 17 | 17.6 | 2 | 6 | 33.3 | 8 | 38 | 21.0 |
| **HAMPDEN** | 1 | 18 | 5.6 | 0 | 37 | 0.0 | 0 | 38 | 0 | 0 | 21 | 0 | 1 | 114 | 0.9 |
| **HAMPSHIRE** | 2 | 9 | 22.2 | 1 | 14 | 7.1 | 1 | 35 | 2.9 | 0 | 5 | 0 | 4 | 63 | 6.3 |
| **MIDDLESEX** | 3 | 83 | 3.6 | 3 | 99 | 3.0 | 4 | 154 | 2.6 | 4 | 51 | 7.8 | 14 | 387 | 3.6 |
| **NANTUCKET** | 0 | 0 | 0 | 0 | 1 | 0.0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| **NORFOLK** | 1 | 39 | 2.6 | 3 | 70 | 4.3 | 2 | 85 | 2.4 | 1 | 40 | 2.5 | 7 | 234 | 3.0 |
| **PLYMOUTH** | 3 | 28 | 10.7 | 1 | 49 | 2.0 | 1 | 68 | 1.5 | 2 | 28 | 7.1 | 7 | 173 | 4.0 |
| **SUFFOLK** | 0 | 33 | 0 | 0 | 48 | 0.0 | 1 | 65 | 1.5 | 1 | 28 | 3.6 | 2 | 174 | 1.1 |
| **WORCESTER** | 4 | 72 | 5.6 | 4 | 90 | 4.4 | 5 | 105 | 4.8 | 3 | 64 | 4.7 | 16 | 331 | 4.8 |

## Figure 2. Animal Submissions and Positive for Rabies, 2022

