

# Summary of Rabies Testing Results in British Columbia 2024 Update

## Key Messages

**Between 2000 and 2023, the number of rabies-positive specimens in BC generally remained low.**

- Number of specimens sent for rabies testing: 95 – 505 per year
- Annual proportion of submitted specimens that tested positive for rabies: 2.4% - 12.8% (median: 4.6%).
- Bats represented the majority (97%) of all rabies-positive specimens.
  - The bat-variant of rabies virus has also been occasionally detected in domestic cats, skunks, and humans in BC.

**Between 2000 and 2023, the number of rabies-positive specimens with reported human or domestic animal contact has fluctuated over time, but also generally remained low.**

- Tested positive, all specimens with human or domestic animal contact: 0.8% - 7.6% per year (median: 4.8%)
- Tested positive, bat specimens with human or domestic animal contact: 1.2% - 13.6% per year (median: 7.1%)
- Increases in the annual number of specimen submissions with reported human or animal contact corresponded with rabies cases in humans (one in 2003 and one in 2019) and domestic animals (one cat in 2007) in BC.

### Additional things to know:

- Over the past five years, seasonal increases in the number of bat submissions with human or domestic animal contact begin in May, peak in July/August, and remain elevated until October.
- Keeping pets up to date with rabies vaccination is important as domestic cats and dogs made up almost one-third of specimens with human-only contact in 2023.

## Background

Bats are the only known reservoir of rabies in British Columbia (BC), although importation of other infected animals and spillover from bats to other animals can also occur. Rabies poses a serious threat to human and animal health, and infection is nearly always fatal once clinical symptoms appear. A robust surveillance and exposure management system is essential for the detection, control, and prevention of rabies. Fortunately, human cases of rabies are rare. Since reporting began in 1924, only 2 human cases of rabies have been reported in BC.

In Canada, rabies management is the shared responsibility of the public, veterinary and health professionals, provincial and territorial authorities, the Public Health Agency of Canada, and the Canadian Food Inspection Agency (CFIA). The CFIA provides testing for animals that have potentially exposed a person or domestic animal to rabies, as well as testing for suspect human cases.

This report summarizes the results of rabies testing of human and animal specimens submitted to the CFIA Rabies Laboratory from BC between 2000 and 2023.

## Findings

### Rabies-positive submissions

In 2023, eight specimens tested positive, all of which were bats (Table 1).

Between 2000 and 2023:

- 5,840 total specimens were submitted for rabies testing.
- 281 specimens tested positive for rabies.
- The majority (97%) of rabies-positive specimens were bats.

Other positive submissions include:

- Domestic cats (1 in 2007)
- Humans (1 in 2003 and 1 in 2019)
- Skunks (4 in 2004 and 1 in 2021)

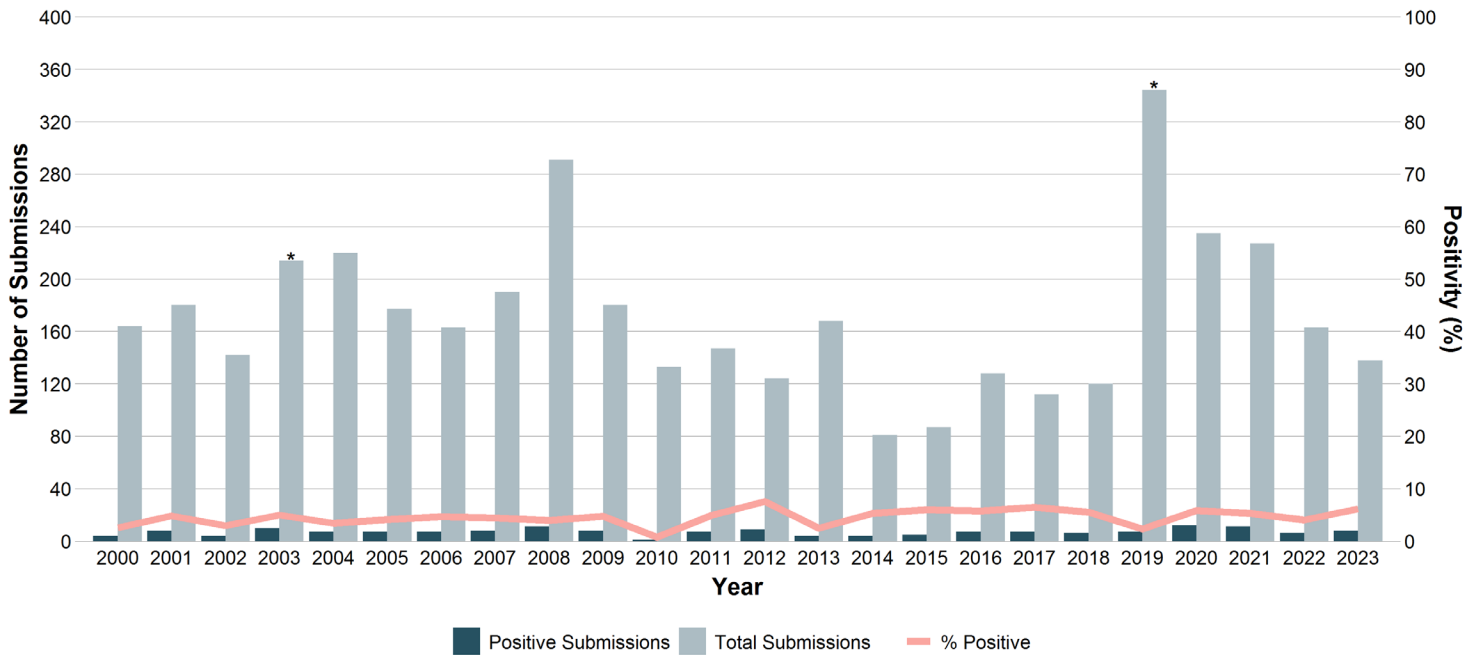
**Table 1.** Annual number of rabies-positive specimens by species, BC, 2000 – 2023.

Year	Bats	Domestic Cats	Humans	Skunks	Total
2000	12				12
2001	20				20
2002	11				11
2003	17		1		18
2004	13			4	17
2005	18				18
2006	11				11
2007	14	1			15
2008	14				14
2009	9				9
2010	5				5
2011	7				7
2012	10				10
2013	5				5
2014	9				9
2015	10				10
2016	18				18
2017	11				11
2018	10				10
2019	7		1		8
2020	17				17
2021	11			1	12
2022	6				6
2023	8				8
<b>Total</b>	<b>273</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>281</b>

### Submissions with reported human or domestic animal contact

The annual number of submitted specimens with reported human or domestic animal contact ranged from 81 to 344 per year (Figure 1). However, the proportion of rabies-positive specimens has generally remained low, ranging from 0.8% to 7.6% annually (median: 4.8%).

The annual proportion of rabies-positive bats with reported human or domestic animal contact ranged from 1.2% to 13.6% (median: 7.1%) and followed a similar trend to that of the overall positivity.



\* Years in which human rabies cases were reported in British Columbia

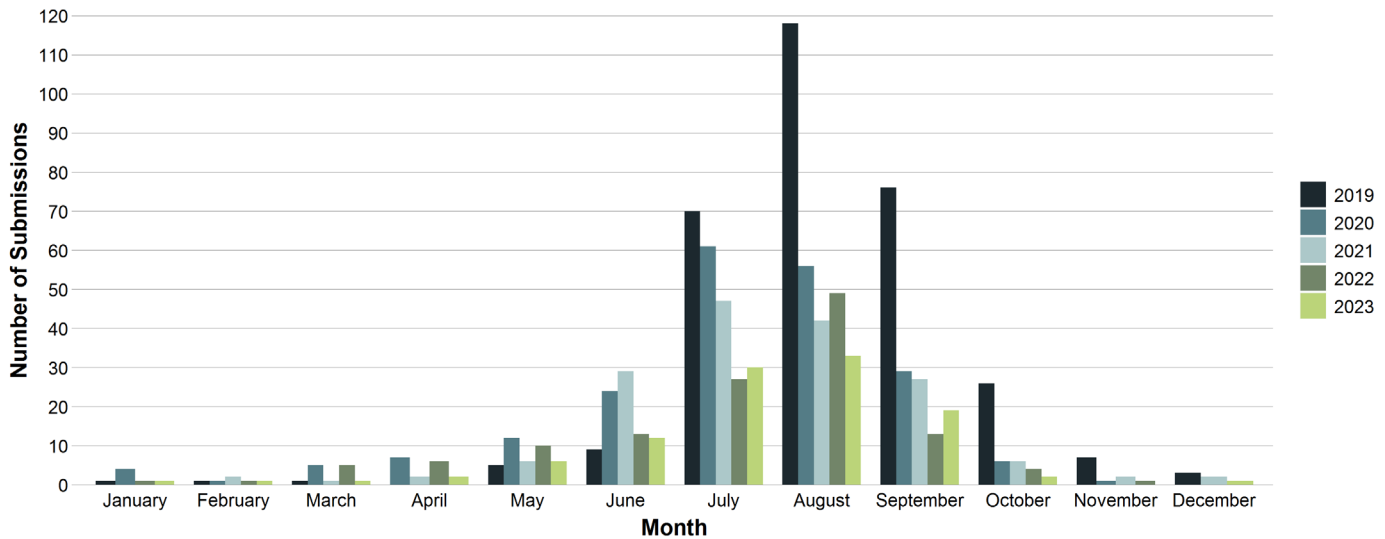
**Figure 1.** Annual number of submitted and rabies-positive specimens with reported human or domestic animal contact, BC, 2000 - 2023.

### Seasonality of bat submissions with reported human or domestic animal contact

Bat submissions with reported human or domestic animal contact **typically increase from May to October, peaking in July/August** (Figure 2).

This pattern may be explained by seasonal migration or winter dormancy, depending on the species of bat (Brigham, 2021). Humans also tend to spend more time outdoors in the warmer months, which can result in increased opportunities for bat encounters.

A pronounced increase in bat submissions for rabies testing was observed following the detection of a human case of rabies in BC in July 2019, which may be the result of increased awareness by the public.



**Figure 2.** Submissions of bats with reported human or domestic animal contact by month, BC, 2019-2023.

### Specimen submissions from 2023

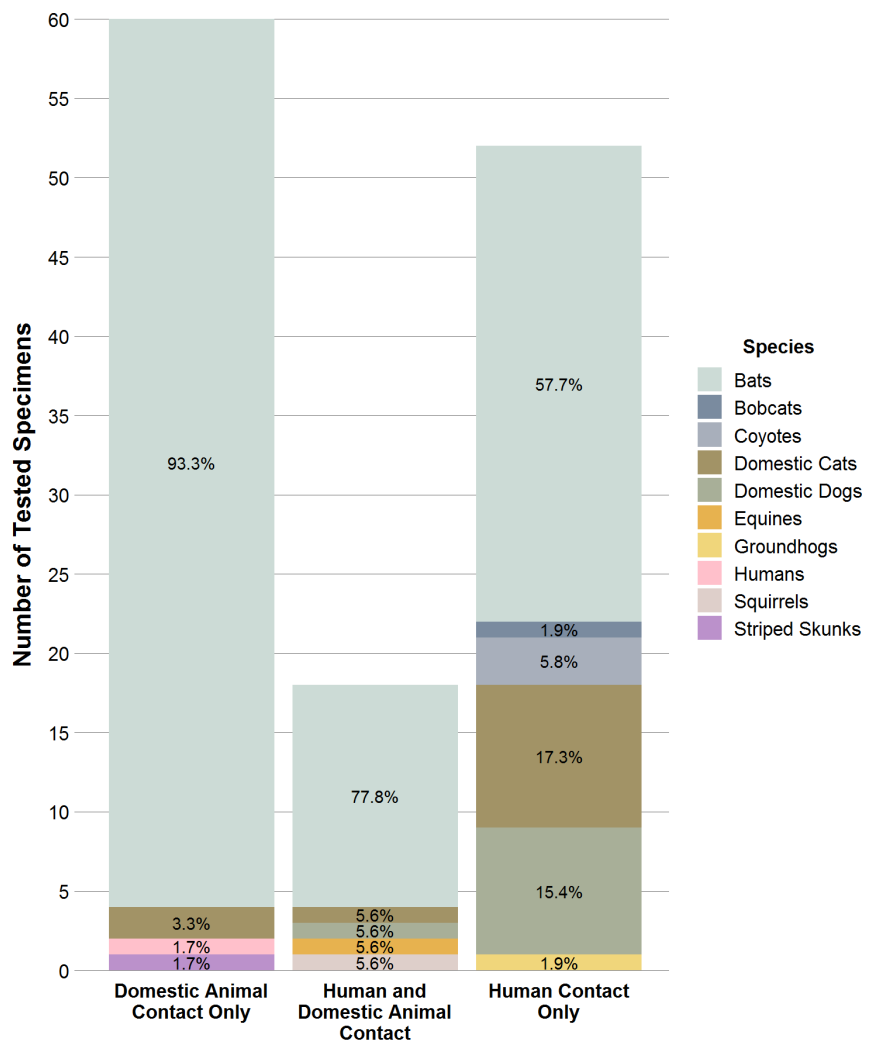
130 submissions with reported human or domestic animal contact were tested by CFIA. Of these:

- 8 (6%) tested positive,
- 60 (46%) had contact with domestic animals only,
- 52 (40%) had contact with humans only, and
- 18 (14%) had contact with both humans and domestic animals.

Across all three groups (domestic animal contact only, both human and domestic animal contact, human contact only), **the majority of specimens were bats** (Figure 3)

Companion animals made up nearly one-third of submissions with human-only contact (17.3% for domestic cats and 15.4% for domestic dogs).

One human and one striped skunk submission were tested, both with



**Figure 3.** Number and proportion of tested submissions by species and contact type, BC, 2023.

reported domestic animal contact only. Equine (horse family) and squirrel submissions reported contact with both humans and domestic animals. Bobcat, coyote, and groundhog submissions reported human contact only.

## Discussion

- The incidence of rabies in BC has remained low.
- Bats are the only known reservoir of rabies in BC. Skunks, domestic cats, and humans have also contracted the bat strain of rabies on rare occasions, but there has been no evidence of continued transmission within these species in BC.
- The human rabies cases in 2003 and 2019 were both the result of contact with rabid bats.
- The number of bat submissions with reported human or domestic animal contact increased in the warmer months between May and October and highlight a period of increased risk for rabies exposure.
- Bats continue to make up the majority of specimens submitted for rabies testing; however, companion animals (domestic cats and dogs) constituted almost one-third of specimens with human-only contact submitted for rabies testing in 2023. It continues to be important to keep pets up to date for rabies vaccinations to prevent them from getting rabies and potentially passing it to humans.

## Additional Resources

For more information about rabies in BC:

- [BCCDC Communicable Disease Manual](#)
- [BC Rabies Guidance for Veterinarians](#)

## Acknowledgements

We gratefully acknowledge the CFIA for their role in rabies testing and data management. We also acknowledge the role of veterinarians, the BCCDC Public Health Veterinarian, Medical Health Officers, Chief Veterinary Officer, the Provincial Health Officer, the regional health authorities, and the public in reporting and controlling rabies across the province.

## References

Brigham, M. (2021). *Bats of British Columbia*. E-Fauna BC: Electronic Atlas of the Fauna of British Columbia. <https://ibis.geog.ubc.ca/biodiversity/efauna/BatsofBritishColumbia.html>