

The Rabies Reporter

The Ministry of Natural Resources and Forestry
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The Rabies Reporter is a scientific newsletter about current issues in rabies research and control. It is a joint effort of the Wildlife Research and Monitoring Section of the Ontario Ministry of Natural Resources and Forestry; the Rabies Laboratory at the Ottawa Laboratory (Fallowfield) of the Canadian Food Inspection Agency; and the Ontario Ministry of Health and Long-Term Care. Articles for future issues will be welcomed by the editor. The Rabies Reporter is not peer reviewed, and should be cited as a newsletter. Send contributions, letters and inquiries to: rabies@ontario.ca.

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Ontario.ca/rabies

The trend continues! Rabies cases down again in first half of 2019

Rachel Gagnon and Anne McCarthy, Ministry of Natural Resources and Forestry

Good news for the first half of 2019! The number of rabies cases detected continued to drop compared to previous years, even with the same level of surveillance. From January to June, 2019 a total of 21 rabies cases were detected in the province — down from 40 during the same time last year. Of the cases 14 were raccoon strain, while the rest were bat strains (Figure 1).

Raccoon strain: Between January and June, a total of 14 cases of mid-Atlantic raccoon strain rabies were detected. These included 7 skunks, 6 raccoons and 1 dog, all found within approximately 65 km of the original Hamilton case from 2015. The cases were located in Brant (1 raccoon), Hamilton (5 raccoons and 5 skunks), Niagara (1 dog and 1 skunk), and Waterloo (1 skunk). During the same time last year, there were a total of 27 cases detected in 5 counties (Brant, Haldimand, Hamilton, Niagara, and Norfolk).

Fox strain: There were no fox strain cases detected in the first half of this year. Last year, 4 cases were detected between January and June, and MNRF conducted localized oral rabies vaccine baiting to address those cases. Monitoring and sampling continues to be done regularly for dead, sick or strange acting animals within the surveillance area.

Bat strain: There were 7 bats detected with rabies from January to June 2019 across Ontario, including: Durham (1), Middlesex (1), Niagara (1), Ottawa (2), Wellington (1), and York (1). All were big brown bat strain. Last year at this time, nine bats tested positive for rabies.

Between December 2015 and the end of June 2019, there were a total of 463 raccoon strain and 21 fox strain cases detected in Ontario (Figure 2). MNRF will continue enhanced surveillance and rabies control throughout 2019.

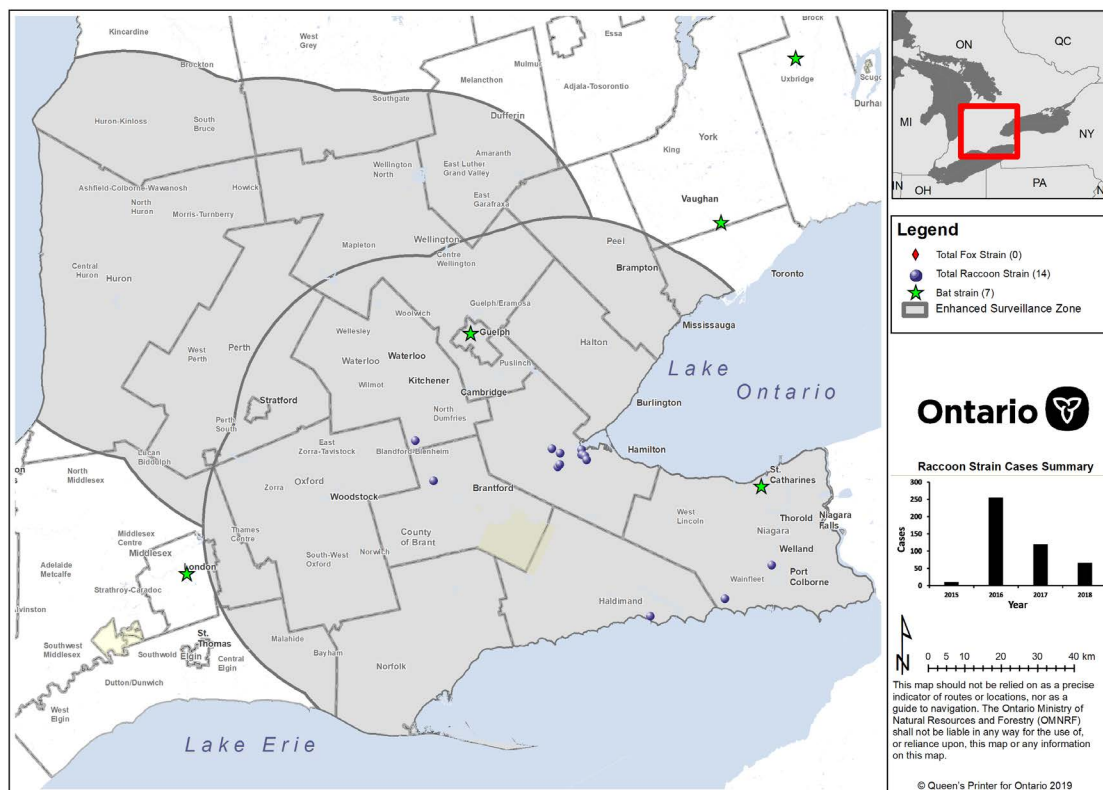


Figure 1. Rabies cases (N=21) detected in southern Ontario from January–June 2019.

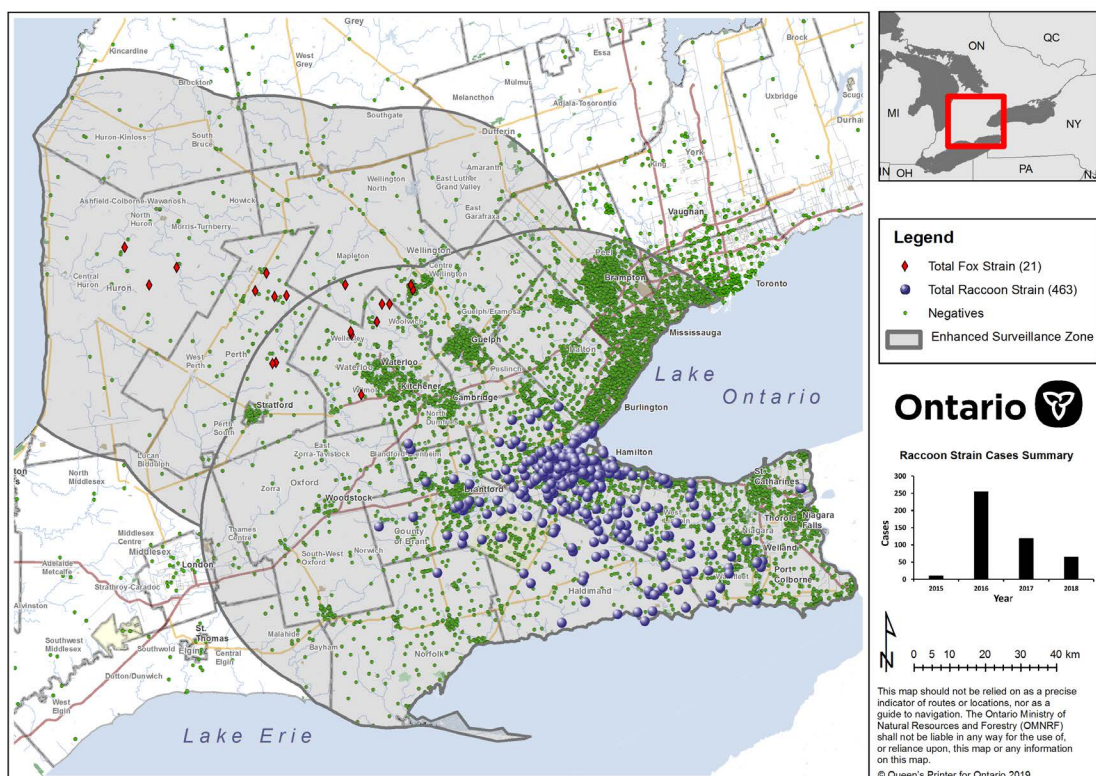


Figure 2. Total terrestrial rabies cases in southern Ontario from December 2015–June 2019 along with the surveillance and control zone.

Enhanced surveillance of rabies in Ontario

Ayden Sherritt and Sarah Hagey, Ministry of Natural Resources and Forestry

The Ministry of Natural Resources and Forestry monitors the occurrence of terrestrial rabies across Ontario by testing rabies vector species (raccoons, skunks and foxes). The animals tested have either been found dead, or have been put down because they were showing signs of disease, or strange behaviour. Testing the brain tissue of these animals allows us to detect rabies, and therefore determine whether the disease has spread. This is how MNRF conducts surveillance for rabies and evaluates the effectiveness of the rabies control program.

At the outset of the current rabies outbreak, surveillance was more opportunistic in nature, meaning that samples were collected and tested when available. This resulted in a bias in the distribution of samples across Ontario. There were more samples tested from urban areas with higher populations and more active animal service departments. By contrast, rural areas were under represented, or in some cases unrepresented because residents may not encounter or report strange acting or sick animals as frequently. To change this, in 2019 we implemented a new enhanced surveillance strategy. This strategy will help us more effectively monitor rabies cases in Ontario, and better evaluate and improve the success of our control efforts.

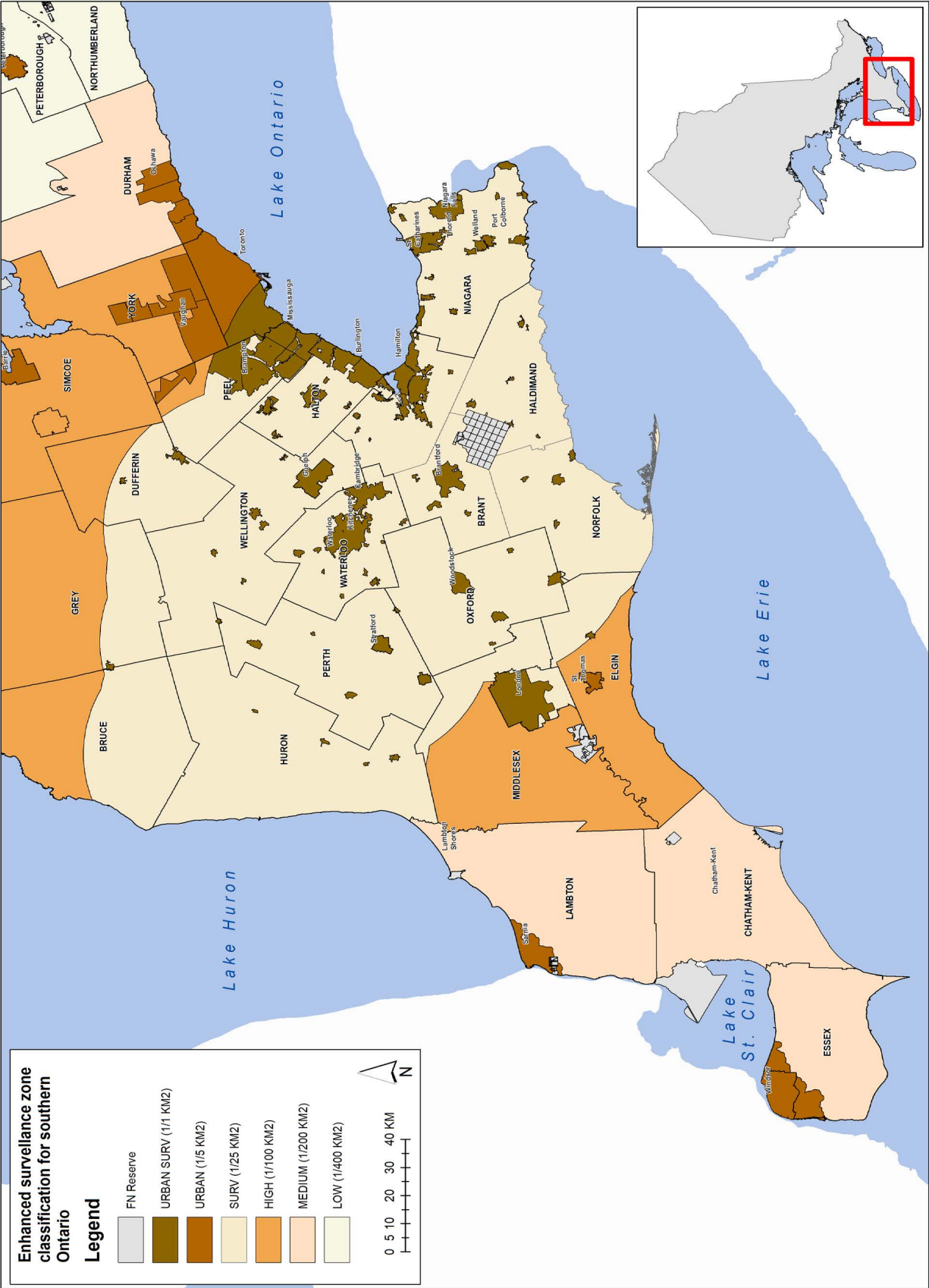
We set surveillance targets by dividing southern Ontario counties and municipalities into 6 zones and ranking them based on:

- 1- the proximity to the current outbreak
- 2- the type of landscape (rural vs urban)

Targets were calculated based on a “specimen per km²” sample ratio. In urban centers, where higher densities of both target vector species (raccoon, skunk and foxes) and humans were expected, higher sampling targets were assigned. Areas within the current surveillance zone (zone = 50 km radius around each active case) were also assigned higher targets. Lower targets were assigned to counties and municipalities further away from the current outbreak area as the likelihood of rabies decreases with distance from the original outbreak area. In order to remain flexible and adaptive, these targets and sample ratios can be adjusted based on additional surveillance needs or in response to new cases and expansions of our rabies control area.

The new strategy allows us to be more methodical in our surveillance efforts by developing a target-based approach for sample collection. By identifying ideal sample numbers and comparing them against actual sample collections from past years, we identified areas where surveillance efforts could be increased. We then reached out to our surveillance partners, local individuals and agencies (wildlife control operators, fur harvesters, Ministry of Transportation road crews, local animal control operators, etc.), to help us achieve those targets.

With the implementation of our new enhanced surveillance strategy, we are working to establish more partnerships with individuals and agencies within each county to be able to meet our targets and maintain a robust monitoring program. We continue to raise awareness of our rabies information line that is available to the public to report sick, strange acting or dead animals – an important tool in our rabies surveillance efforts. These methods have helped us test more samples from more counties in the first half of 2019 (2,663 samples from 27 counties) as compared to 2018 (1502 samples from 22 counties).



Dog rabies: Raising rabies awareness and key learnings

Peter Jekel, Niagara Region Public Health

Why do health units have a rabies control program? In Ontario, health inspectors investigate every reported animal bite in order to determine whether an animal is rabid. In most cases, the animal is not rabid. Over the past number of years, it was found that there was the odd case of a rabid bat being found, but very little activity in terrestrial animals.

That changed in December of 2015, when a raccoon was found in Hamilton, Ontario and picked up by the local animal control. It was positive for raccoon rabies, which was last seen in Ontario between 1999 to 2005 in the eastern part of the province.

From the initial finding of the positive raccoon in Hamilton, the numbers increased from 2015–16, but have been declining since.

In 2016, raccoon rabies was identified in Niagara for the first time. The current outbreak has resulted in 53 cases of rabies in Niagara and until February 2019 was confined to the raccoon and skunk populations. In addition, the disease was mainly found in the rural population of these animals though there has been some periodic spillover into more urbanized settings.

Niagara Region Public Health responded with a number of initiatives, using social media messaging, providing education through media interviews, and even a billboard campaign encouraging dog and cat owners to get their pets vaccinated against rabies. Our initial billboard campaign in September of 2018 resulted in a 369% increase in visits to the Niagara Region rabies web page. Our next billboard campaign was in February of 2019 and we saw a 1828% increase in web page visits. The billboard campaign and social media activity certainly played a strong part in the increased traffic to the page, but Niagara was also in the midst of investigating its first rabies positive dog in many years.

The investigation began on the Friday afternoon before a long weekend (February 16–18) and we quickly mobilized staff (we do have staff who work on weekends). Our usual experience with rabies investigations has been:

- if a person is bitten, we confine the animal for observation
- if it is a wild animal, and it is available, it is sent to the Canadian Food Inspection Agency for testing
- if the wild animal is not available, rabies post-exposure prophylaxis is recommended

Since 2015, some domestic animals have been found positive for rabies in Ontario; however, those cases were typically cows and cats. This was the first dog case. Dogs, unlike cats, are naturally gregarious and tend to stay close to their owner and family, as well as with any friends and neighbours that come to visit.

The dog owners brought their dog to the veterinarian to see what was wrong because it was having difficulty walking. Initially, the diagnosis was poisoning. After a couple of visits, since the animal was not getting any better, the recommendation was for euthanasia. The veterinarian, though still suspecting a poisoning, had the foresight to request rabies testing arranged through the health unit.

The follow-up investigation revealed 29 people having to be treated with rabies post-exposure prophylaxis—many of them the various veterinarians that were handling the dog on the several visits to their clinics. Fortunately, most of those exposed were in the Niagara area and could be easily reached, though one had travelled abroad, which provided an additional challenge.

Key learnings from this experience include:

- Remember why rabies programs are in place and practice due diligence in all investigations. Any one of those seemingly routine investigations may be the one that turns out to be positive.
- Reinforce the rabies vaccination requirement of all dogs, cats and ferrets through media, low-cost clinics and other educational opportunities.
- Reinforce with veterinarians and others who work with animals to get their rabies titres checked regularly to ensure that their immune response to a potential rabies exposure remains strong. You never know what animal could come through the door.
- General education of the public, especially children, about rabies and the need to stay away from unknown animals, is very important.



Keeping up with public education

MNRF is continuing its efforts to keep the public up to date about rabies in Ontario. This includes 5 posts on Facebook and Instagram between January and June 2019 with over 9,300 likes, 1,389 comments and over 11,000 shares.

Ontario Ministry of Natural Resources and Forestry
February 25 · 🌐

DYK how animals with rabies behave? The answer may surprise you – and help keep you safe! Rabies can take two forms – dumb or furious:

- Dumb: Animal shows loss of fear of humans, retreats to isolated places, and/or has partial paralysis of the face or body
- Furious: Animal shows extreme aggression, bites at limbs or the air, attacks objects or other animals, and/or is agitated

If you see an animal acting strangely:

- Keep your distance
- Don't touch it
- Don't feed it
- Don't touch an animal carcass (can contain live rabies virus)

If you suspect an animal has rabies, call MNRF's Rabies Information Line at (888) 574-6656 for information and advice on next steps. Learn more at ontario.ca/rabies

SEE AN ANIMAL ACTING STRANGELY?



👍 🐾 🐾 and 1.9K others · 315 Comments · 1.9K Shares

Ontario Ministry of Natural Resources and Forestry
March 12 · 🌐

Attention, pet owners! What to know if your pets come into contact with the oral rabies vaccine bait:

- The vaccine bait has been tested and is safe if accidentally eaten by pets or other domestic animals
- If a pet eats a vaccine bait, they should still be vaccinated by vets to ensure they are fully immunized.
- Bait ingredients: vegetable-based fats, wax, icing sugar, vegetable oil, artificial marshmallow flavour, and dark-green food grade fat-soluble dye.

If you're worried about your pet's health, contact your vet.

For more on the rabies vaccine, call MNRF's Rabies Information Line at (888) 574-6656 or visit ontario.ca/rabies.

PET OWNERS! Know the facts about oral rabies bait vaccine



👍 🐾 🐾 and 1.5K others · 192 Comments · 1.1K Shares

Ontario Ministry of Natural Resources and Forestry
February 11 · 🌐

What is Ontario doing to control rabies? This disease is a serious public health concern. We control it by:

- Working with partners to survey for rabies in wildlife within 50 kilometres of known cases
- Distributing rabies vaccine baits by air in rural areas and urban green spaces
- Distributing oral rabies vaccine baits by ground crews in urban areas
- Vaccinating wildlife in urban areas through a trap-vaccinate-release program

Learn more at ontario.ca/rabies.



👍 🐾 🐾 and 2K others · 149 Comments · 427 Shares

Congratulations and welcome to the team!

Ayden Sherritt is the new acting Senior Wildlife Technician providing leadership and expertise to several wildlife programs including rabies, chronic wasting disease, and airboat waterfowl banding. He received his Bachelor of Science in zoology from Guelph University and a Master of Science from Trent University studying habitat effects on caribou site fidelity. He has conducted wildlife research in Tasmania, Oregon, Arizona, and Alberta. He also has worked in other MNRF business areas: multi-species inventory and monitoring (MSIM), forest resources inventory (FRI), Far North terrestrial biodiversity, Parks ecology, wildlife policy, and species at risk.



Ontario Animal Rabies Report

Detected rabies cases by region from January to June 2018 compared to same period in 2019

Animal type Year	Fox 2018	Fox 2019	RAC 2018	RAC 2019	SSK 2018	SSK 2019	Other 2018	Other 2019	Bat 2018	Bat 2019	Dog 2018	Dog 2019	Cat 2018	Cat 2019	LVSTK 2018	LVSTK 2019	Total 2018	Total 2019
Eastern Ontario																		
Frontenac																	0	0
Lanark																	0	0
Leeds and Grenville																	0	0
Lennox & Addington																	0	0
Prescott-Russel																	0	0
Ottawa-Carleton									2	2							2	2
Renfrew																	0	0
Stormont, Dundas, Glengarry																	0	0
Central Ontario																		
Durham										1							0	1
Haliburton																	0	0
Hastings																	0	0
Northumberland																	0	0
Peterborough																	0	0
Prince Edward																	0	0
Simcoe																	0	0
Toronto																	0	0
Victoria																	0	0
York Region										1							0	1
Western Ontario																		
Bruce																	0	0
Grey																	0	0
Halton																	0	0
Huron					1												1	0
Peel									1								1	0
Perth																	0	0
Waterloo					2	1			1								3	1
Wellington-Dufferin- Guelph					1				1	1							2	1

Animal type Year	Fox 2018	Fox 2019	RAC 2018	RAC 2019	SSK 2018	SSK 2019	Other 2018	Other 2019	Bat 2018	Bat 2019	Dog 2018	Dog 2019	Cat 2018	Cat 2019	LVSTK 2018	LVSTK 2019	Total 2018	Total 2019
Southern Ontario																		
Brant			2	1													3	1
Elgin																	0	0
Essex																	0	0
Haldimand			1	1													1	1
Hamilton			14	4	4	5			1								19	9
Kent																	0	0
Lambton																	0	0
Middlesex									2	1							2	1
Niagara			3		2	1			1	1		1					6	3
Norfolk			1														0	0
Oxford																	0	0
Northern Ontario																		
Algoma																	0	0
Cochrane																	0	0
Kenora																	0	0
Muskoka																	0	0
Nipissing																	0	0
Parry Sound																	0	0
Rainy River																	0	0
Sudbury																	0	0
Thunder Bay																	0	0
Timiskaming																	0	0
Regional Totals																		
Eastern	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	2
Central	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Western	0	0	0	0	4	1	0	0	3	1	0	0	0	0	0	0	7	2
Southern	0	0	21	6	6	6	0	0	4	2	0	1	0	0	0	0	31	15
Northern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	21	6	10	7	0	0	9	7	0	1	0	0	0	0	40	21

Acronym Legend

RAC: raccoon

SSK: striped skunk

Other: other wildlife

LVSTK: livestock

