

The rabies reporter

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The Rabies Reporter, a scientific newsletter about current issues in rabies research and control, 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 refereed, and should not be cited in papers intended for refereed journals. Send contributions, letters and inquiries to: rabies@ontario.ca.

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Rabies incidence in Ontario in 2016

Beverly Stevenson, Ministry of Natural Resources and Forestry

There were 288 diagnosed rabies cases in Ontario in 2016 - 29 bats, 1 cow, 1 cat, 1 llama, 1 red fox, 171 raccoons, and 84 skunks.

Twenty seven of the bats were big brown bats (*Eptesicus fuscus*) and two were hoary bats (*Lasiurus cinereus*) (Table 1). The number of bats submitted for rabies testing in 2016 (n=445) was about average when compared to the previous five years (n=495, 603, 519, 379, and 332 during 2011, 2012, 2013, 2014 and 2015 respectively). However, the proportion of bats testing positive was slightly higher in 2016 (6.3%); generally 4-5% of bats submitted test positive for rabies.

Rabid bats were again distributed throughout Ontario with cases occurring in: Ottawa-Carleton (2), Frontenac (1), Northumberland (2), Haliburton (1), Peterborough (1), Toronto (1), Simcoe (1), Halton (3), Huron (1), Hamilton (2), Niagara (5), Elgin (3), Oxford (2), Middlesex (2), Lambton (1), and Kent (1). One skunk from the Hamilton area was also infected with bat strain rabies virus.

A rabid skunk was confirmed near the location of the rabid cow from December 2015. The skunk was also infected with Ontario fox strain rabies virus. Although no more cases were detected in the immediate vicinity of these two cases, two additional Ontario fox strain rabies cases were confirmed in late 2016. The first was a rabid cow near Atwood (Perth County) in November which was located about 25 kms away from the previous cases. The second was a rabid skunk in December near Blyth (Huron County) which was just over 50 kms away from the two earliest cases.

From 2008-2014, rabies control efforts in Ontario focused on eliminating Ontario fox strain rabies in striped skunks (*Mephitis mephitis*). Skunks became the main rabies reservoir in southwestern Ontario following a very successful oral rabies vaccination (ORV) campaign targeting rabies in red foxes (*Vulpes vulpes*). ONRAB® was first tested on skunks in Ontario in 2006 and 2007 and results were promising. In 2008, high-density baiting using ONRAB® around rabid skunk cases began. Since then, the

numbers of skunks confirmed rabid has dropped dramatically. In 2011 and 2012, there was only one case of rabies in skunks each year; there were no cases in 2013, 2014, or 2015. In the 25 years prior to rabies control, rabid foxes and skunks ranged from 400-1,000 and 150-700 per year, respectively.

The mid-Atlantic raccoon strain rabies outbreak which was first detected in December 2015 continued to turn up positives throughout 2016. There were 255 confirmed cases of raccoon strain rabies in the Golden Horseshoe area of Ontario during 2016 (Figure 1). Of the 255 cases, there were 171 raccoons [Brant (8), Haldimand-Norfolk (18), Halton (7), Hamilton (127), and Niagara (11)]; 81 skunks [Haldimand-Norfolk (1), Halton (2), Hamilton (76), and Niagara (2)]; 1 red fox (Hamilton); 1 cat (Haldimand-Norfolk); and 1 llama (Haldimand-Norfolk). Approximately 97% of cases were detected through MNRF's enhanced surveillance program. The llama, one skunk, and one raccoon were submitted through OMAFRA. The cat and one raccoon were submitted through the local health units.

The numbers of domestic pets, livestock, and wildlife submitted to the Canadian Food Inspection Agency (CFIA) for rabies testing in 2016 (N=1,745) was significantly higher than in 2015 (N=1,326) but was still lower than traditional levels. The decrease in submissions was likely due to the transition of specimen collection from the CFIA to the province. Since 2015, a collection system has been fully in place with the Ministry of Health and Long-Term Care and the Ontario Ministry of Agriculture Food and Rural Affairs using the Ontario Association of Veterinary Technicians for collection and submission of specimens. Since 2015, MNRF has greatly increased the number of wildlife specimens tested; only animals which do not meet CFIA testing criteria are tested by MNRF.

Table 1. Ontario rabies positive cases by species in 2010–2016

[Data source: Centre of Expertise for Rabies, Canadian Food Inspection Agency (<http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/rabies/rabies-in-canada/eng/1356156989919/1356157139999>)].

Year	Dog	Cat	Cow	Llama	Skunk	Fox	Raccoon	Terrestrial	Bats	Total	Human
2010					10			10	29	39	
2011			1		1			2	24	26	
2012	1*	1			1			3	25	28	1**
2013	1							1	27	28	
2014									18	18	
2015			1				10	11	13	24	
2016		1	1	1	84*	1	171	259	29	288	

* One case tested positive for bat strain rabies virus.

** In 2012, there was a fatal human rabies case in Ontario but the victim contracted the disease while outside Canada.

Oral rabies vaccination 2016

Beverly Stevenson, Ministry of Natural Resources and Forestry

Southwestern Ontario (Ontario Fox)

Traditionally, baits have been distributed in southwestern Ontario (SWONT) by MNRF Twin-Otter (DHC-6) aircraft flying approximately 150m above ground along parallel flight lines spaced 2.0 km apart, at a density of 20 baits/km². This oral rabies vaccination (ORV) was conducted to control rabies in foxes and help prevent re-infection of fox populations by isolated cases of rabid skunks in SWONT.

ORV baiting also helped contain Ontario fox strain rabies to this area, preventing re-entry into the rest of southern

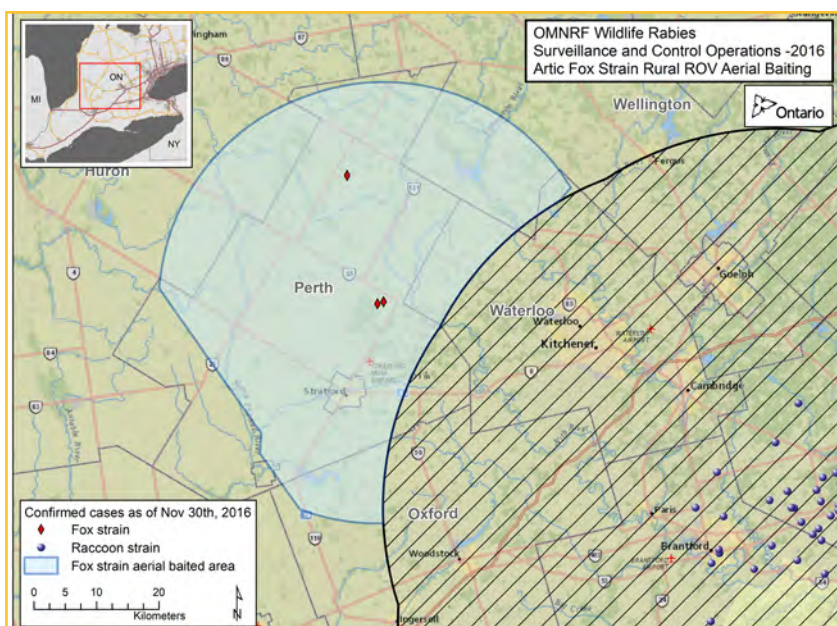


Figure 1. ORV in southwestern Ontario for Ontario fox strain rabies. Part of the fox area was included in the raccoon area and was baited at a higher density. UL baits containing ONRAB® oral rabies vaccine were distributed to target skunks and foxes.

Ontario.

The initial ORV program for SWONT was in 1994. From 1994-2014, portions of SWONT were baited annually in response to active cases. Baiting did not occur in SWONT in 2015 since no cases of rabies had been detected since 2012. The World Organisation for Animal Health recommends that an area can be declared free of rabies after two full years without a terrestrial rabies case provided that adequate surveillance is conducted.

In late December 2015, a calf infected with Ontario fox strain rabies was confirmed in Perth County (near Stratford). This required the re-implementation of the traditional fox and skunk ORV in SWONT (Figure 1).

On November 1, 2016, 45,218 baits were distributed in a 2,824 km² area of SWONT. Baits were distributed at a density of 20 baits/km² along parallel flightlines spaced 2 km apart. Although baits are usually distributed in a 50 km buffer surrounding all known cases, the ORV zone was restricted to a 35 km radius in 2016 as a result of bait availability and weather.

Southeastern Ontario (Proactive Raccoon)

In order to prevent a re-incursion of raccoon strain rabies from New York State, UL baits containing ONRAB® were distributed in an area along the St Lawrence River in eastern Ontario (Figure 2).

On August 28, 19,650 baits were distributed in a 429 km² area on the mainland bordering the St. Lawrence River near Kingston and on Wolfe Island. All baits were dropped along flight lines spaced 0.75 km apart and distributed at a density of 75 baits/km² over agricultural and forested habitats.

From September 12-14, 5,660 baits were also distributed by ground in the city of Cornwall. A cluster of cases had occurred in Franklin County, New York in the spring of 2015 with one case occurring on St. Regis Island (Akwasasne) in Quebec, close to the Vermont border. Akwasasne staff also ground baited Cornwall Island (Akwasasne) in Ontario on September 14 with approximately 1,600 baits. Akwasasne is a large First Nations reserve which straddles portions of Ontario, Quebec, and New York State and had not been baited by any jurisdiction in recent years other than in 2015.

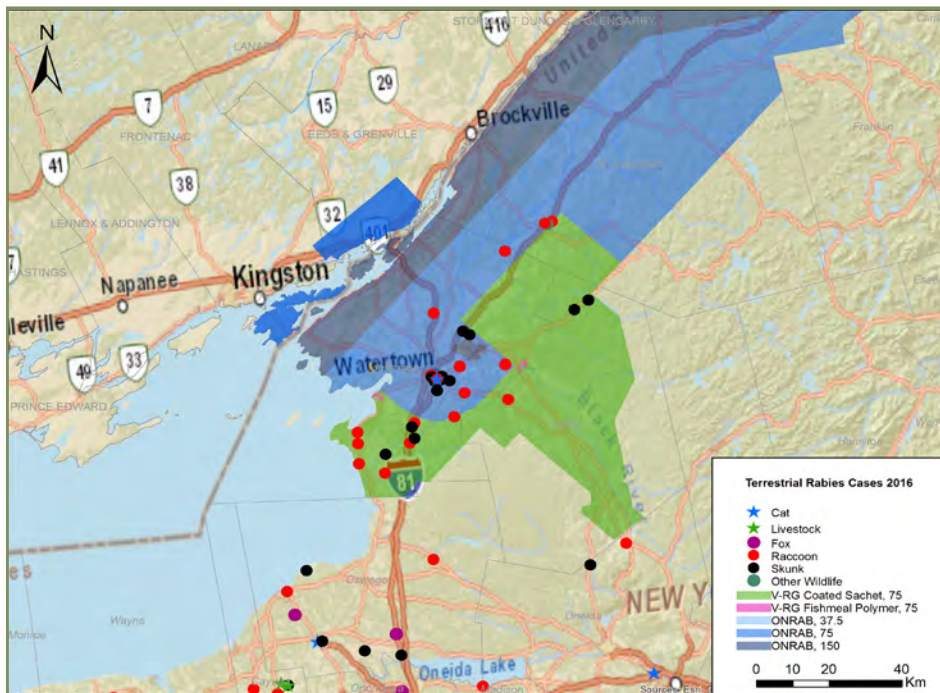


Figure 2. ORV in St. Lawrence region and neighbouring New York state in 2016. Terrestrial rabies cases in New York State are also depicted. UL baits containing ONRAB® oral rabies vaccine (blue shading) were distributed to target raccoons. V-RG vaccine (green shading) also targets raccoons but may not be as effective as ONRAB®.

The St Lawrence River area was once a hot spot for raccoon strain rabies but there has not been a case in eastern Ontario since 2005.

Golden Horseshoe (Reactive Raccoon)

Aerial Distribution

In order to help contain the spread of raccoon strain rabies, aerial baiting was immediately conducted in spring 2016 in response to cases already detected in the Golden Horseshoe area (Figure 3). This effort was predicted to immunize mainly adult raccoons and skunks - a necessary measure to help contain the spread of the disease. The only ORV campaign that had been conducted in this area in recent years was the winter baiting that was done in December 2015.

From April 1-7, 63,052 baits were distributed in a 1,389 km² area using an EC130 helicopter. The area included green spaces within all urban areas that were within 50km of any confirmed cases. Baits were distributed at a density of 150 baits/km². An additional 17,400 baits were distributed around an outlying rabies case on June 1 using an EC130 helicopter. These baits were distributed in the Caistor Center area at a density of 75 baits/km² along parallel flight lines spaced 750m apart.

Complementary to the helicopter baiting, 344,119 baits were distributed using Twin Otter aircraft from April 16-20. Baits were distributed at a density of 75 baits/km² along parallel flight lines spaced 750m apart.

The entire ORV zone was rebaited in August/September to target both juveniles and adults. From August 9-10, 32,400 baits were distributed at a density of 150 baits/km² using an EC130 helicopter in green spaces in the urban areas closest to the confirmed cases covering an area of 200 km².

From August 29 - September 5, 484,850 baits were distributed at a density of 75 baits/km² using a Twin Otter airplane flying parallel flight lines spaced 750m apart. The rural area covered was 8,841km².

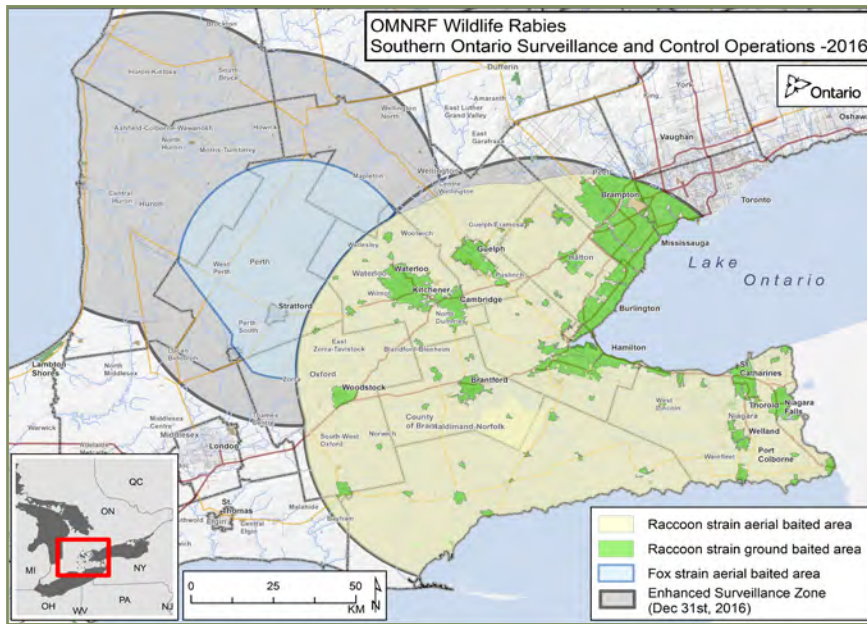


Figure 3. ORV zones for fox and raccoon strain rabies in southern and southwestern Ontario. The surveillance zone indicates areas not covered by ORV but where rabies suspect animals are being collected for testing.

Additional urban areas were baited using an EC130 helicopter from October 3-6. Baits were distributed at a density of 75 baits/km² in rural areas and 150 baits/km² in urban greenspaces. In rural areas, baits were distributed along parallel flight lines spaced 750m apart. In total, 79,261 baits were distributed over 725 km².

The aerial baiting ORV was complemented by ground distribution described below.

Ground Distribution

Ground baiting took place on a much larger scale in 2016 than ever before, as a direct result of the rabies cases detected in and around the Hamilton area since December 2015 (Figure 3). Two separate baiting campaigns were undertaken; a spring campaign and a fall campaign.

Spring ground baiting was conducted in response to the cases detected late in 2015 and early 2016, to immediately begin to immunize adult raccoons and skunks within 50km of any positive case. Controlling rabies in such a highly urban environment as Hamilton is a new challenge for Ontario, and as such ORV ground distribution of this magnitude has not been conducted before by MNRF.

Ground distribution of vaccine baits is conducted by crews of two driving the streets of urban and industrial areas distributing UL ONRAB[®] vaccine baits into raccoon and skunk habitat. Habitats such as flowerbeds, bushes, shrubs and dumpsters where animals may be foraging, as well as fence lines and large culverts often used by travelling animals are prime areas for baits. Green spaces such as forested parks, along railways and small hydro cuts are also targeted by crews and are covered on foot using existing trails and pathways. In this way, ground baiting augments rotary wing aerial baiting by penetrating dense urban centres where dropping baits from the air is neither practical, nor as accurate as required, due to the high density of houses. By baiting such a large area, it is hoped to create a buffer zone of vaccinated animals around the known positive cases. Vaccinated members of the population are protected in the event they come into contact with a rabid animal. In this way the spread of the rabies virus may be slowed and eventually stopped as the infected animals die off prior to the successful transmission of the virus.

During the spring ground baiting campaign, 163,985 baits were distributed between April 11 and June 22. Baiting

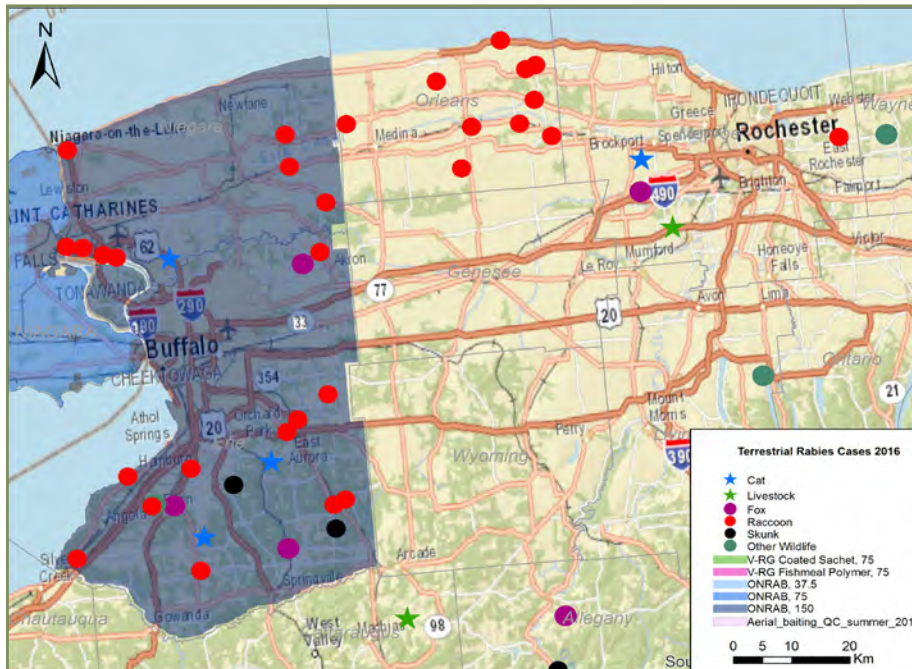


Figure 4. ORV in the Niagara region and neighbouring New York state in 2016. Terrestrial rabies cases in New York State are also depicted. UL baits containing ONRAB® oral rabies vaccine were distributed to target raccoons.

began in the Hamilton area and progressed around the Lake Ontario shoreline before being completed in the urban areas furthest from the rabies cases. Baits were distributed at densities of 75, 150 and 300 baits/km² depending upon habitat and program objectives.

Fall ground baiting was conducted from July 11 – November 8. During this time, another 244,551 baits were distributed by ground. The fall ground baiting area covered the same areas as spring as well as additional small towns and portions of Toronto as a result of expansions to the control zone.

Overall, a total of 415,796 baits were distributed by ground in 2016 - primarily at a density of 150 baits/km².

Niagara region

In order to prevent re-incursion of raccoon strain rabies from New York State, to prevent the spread of raccoon strain rabies from the Golden Horseshoe, and to maintain a buffer of vaccinated raccoons on the Niagara peninsula between Ontario and New York, urban areas (150 baits/km²) and rural areas (75 baits/km²) were baited aerially using an EC130 helicopter with MNRF staff (Figure 4). A total of 49,350 baits were distributed over 726 km² from October 3-6. We were once again able to distribute baits more efficiently in many areas in 2016 using the EC130 helicopter, thereby reducing staffing and time to complete the project.

The remainder of the Niagara area (110 km² in total), which was inaccessible by helicopter, was ground baited by MNRF staff as part of the larger urban ground baiting project which was part of the Golden Horseshoe rabies control program. Staff drove around the areas inaccessible by helicopter, mainly high density urban areas such as the core of Niagara Falls and Fort Erie, distributing baits from vehicles at a density of approximately 150 baits/km².

High Density ONRAB® Point Infection Control (PIC)

As no cases of Ontario fox strain rabies had been detected in southern Ontario for over two years, the need for high density PIC baiting was deemed to be minimal. However, residual pockets of rabies still exist, making

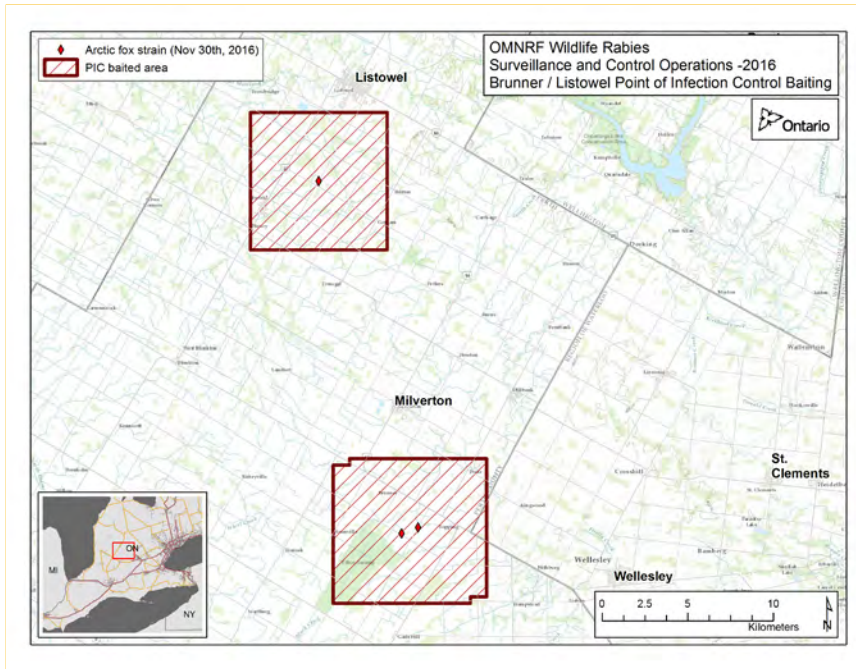


Figure 5. High density PICs in response to cases of Ontario fox strain rabies in SWONT.

it increasingly important to manage individual cases as soon as they occur. As a result, a Point Infection Control program will be implemented within 48 hours (seasonally dependent) in response to each diagnosed Ontario fox or mid-Atlantic raccoon strain rabies case that is located outside or near the perimeter of our current rabies control zones.

During the assessment of each case, we consider the following questions:

- Is the area accessible from the ground or is aerial baiting required?
- Is this an isolated case, meaning that an 8 km by 8 km plot is sufficient, or is this a cluster of cases requiring a larger area?
- Is the case in an area where high density baiting has already occurred this year?
- Are the animals still active or should the baiting be postponed until the following spring?

There are benefits to both ground and aerial bait distribution. Ground baiting specifically targets the habitat where skunks are likely to be present and it provides the opportunity to interact with most landowners in the area. This interaction is an opportunity to let landowners know that rabies is present in the area, educate them about rabies, and remind them to ensure that their pets' vaccinations are current. However, ground baiting can be very time consuming and some landowners can be unreachable or they may refuse to grant access to their property. (MNRF seeks permission from landowners in advance of accessing private property for the purpose of ground baiting.)

Helicopter baiting can either target wildlife habitat or can follow predetermined parallel flight lines. Helicopter baiting is much faster and allows a more rapid response to each case. The entire area can also be covered with helicopter baiting since individual landowner permission is not required. (The public is notified in advance through news releases and public notifications.)

For both methods of baiting, the local health unit, CFIA office, and Ministry of Natural Resources and Forestry district staff are notified of the baiting operations. For helicopter baiting, the local airport and police are also

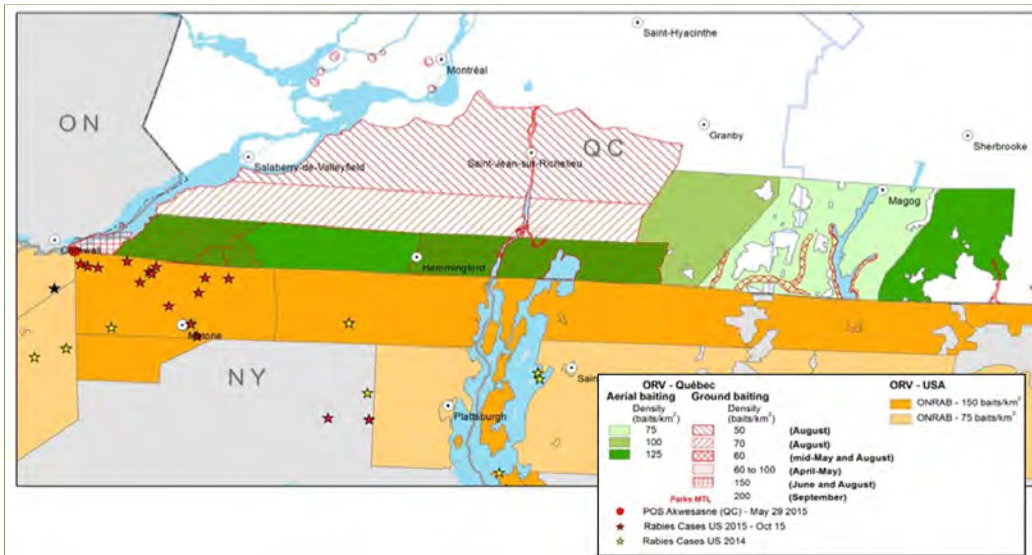


Figure 6. ORV in Quebec in 2016. UL baits containing ONRAB® oral rabies vaccine were distributed to target raccoons.

notified as they may receive calls about low-flying aircraft.

High density ONRAB® PICs in response to individual rabies cases was implemented in southwestern Ontario in the fall of 2009. Since then, 15 PICs have been conducted – 2 in 2016, 1 in 2015, 2 in 2012, 2 in 2011, 6 in 2010, and 2 in 2009. No PICs were conducted in 2013 or 2014.

In late December 2015, a case of Ontario fox strain rabies was discovered in a calf in Perth County (near Stratford). Due to the cold temperatures at that time of year, baiting was delayed until April 1. Just prior to the commencement of the baiting, a skunk from a nearby farm also tested positive for rabies. A total of 22,800 baits were distributed by helicopter at a density of 300 baits/km² and a flightline spacing of 250m in an area just over 8km x 8km surrounding these cases (Figure 5).

In late November 2016, an additional case of Ontario fox strain rabies was identified in a cow in Perth County (near Listowel). Within days of confirmation of the strain type, 19,000 baits were distributed by helicopter and ground (in urban areas) in an 8km x 8km plot surrounding the case. Baits were distributed at a density of 300 baits/km² and a flightline spacing of 250m.

Oral rabies vaccination in Quebec

In 2016, UL baits containing ONRAB® were distributed in southern Quebec through a cooperative partnership between the Ministère des Forêts, de la Faune et des Parcs and MNRF (Figure 6). This was the eleventh consecutive year that baiting was conducted in Quebec to help contain the spread of raccoon strain rabies. From August 24-27, a total of 354,850 baits were distributed using an MNRF Twin Otter (DHC-6) aircraft over an area of 3,817 km² adjacent to the Vermont border.

The objective was to create a buffer zone of protected wildlife in the event that animals infected with raccoon strain rabies crossed over from Vermont where this strain still persists in local raccoon and skunk populations. Flights were flown 150m above ground at an average ground speed of 265 km/h. Flights were flown along predetermined parallel flight lines spaced 750m apart at densities of 75, 100, and 125 baits/km² over both agricultural and forested habitats.

Oral rabies vaccination in New Brunswick

In 2016, UL baits containing ONRAB® were distributed in southeastern New Brunswick through a cooperative

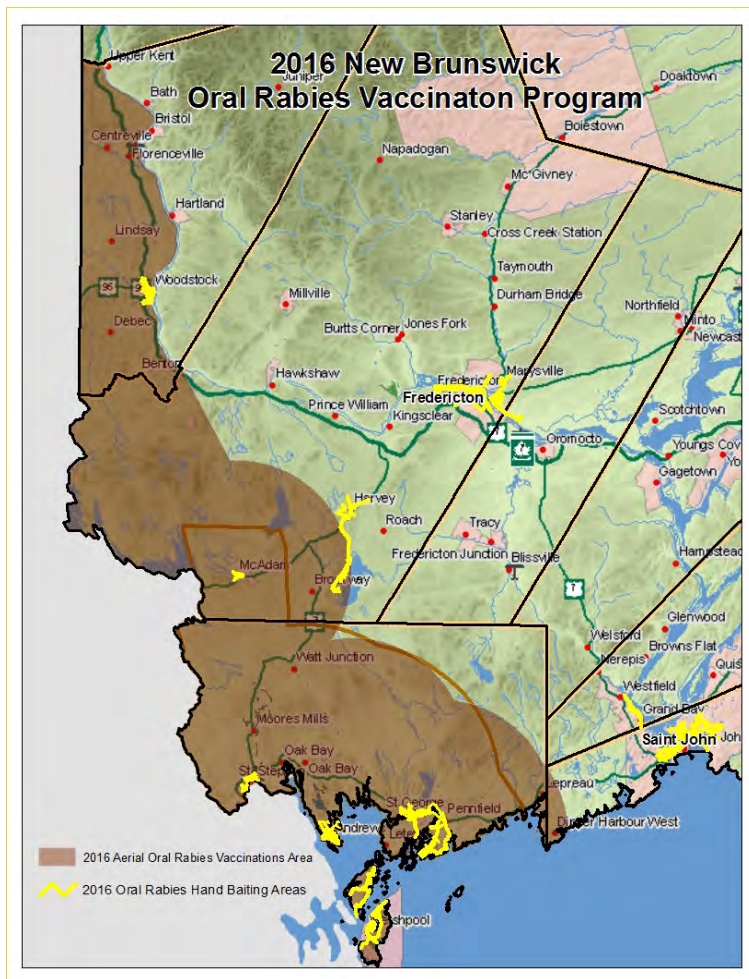


Figure 7. ORV in New Brunswick in 2016. UL baits containing ONRAB® oral rabies vaccine were distributed to target raccoons.

partnership between the Ministry of Agriculture, Aquaculture and Fisheries (MAAP) and MNRF (Figure 7).

This was the third time that ONRAB® baits were distributed in New Brunswick. In 2008, baits were distributed in an experimental plot along the Maine border for a comparison trial with V-RG - a genetic recombinant rabies vaccine. In 2015 and 2016, ONRAB® was used in New Brunswick to control raccoon strain rabies. From August 15-24, a total of 378,413 baits were distributed using an MNRF Twin Otter (DHC-6) aircraft over an area of 5,911 km² adjacent to the Maine border.

The objective was to create a buffer zone of protected wildlife in the event that animals infected with raccoon strain rabies crossed over from Maine where this strain occurs in local raccoon and skunk populations. Flights were flown 150m above ground at an average ground speed of 265 km/h. The plane flew along predetermined parallel flight lines spaced 750m apart and distributed baits at a density of 75 baits/km² over mostly forested habitats.

Since 1989, MNRF has distributed 82,511,290 baits in Ontario, Quebec, New Brunswick, Texas, New York, Vermont, New Hampshire, Maine, Florida and Appalachian Ridge zone (including Ohio, Pennsylvania, Virginia, West Virginia, Georgia, Alabama and Tennessee): 81,157,090 baits were deployed by aerial means and 1,354,200 by ground distribution.

New Brunswick rabies update 2016

Mike Allan and Jim Goltz, New Brunswick Department of Agriculture, Aquaculture and Fisheries

New Brunswick detected 27 wild animals (25 raccoons and 2 striped skunks) with raccoon strain rabies between late May 2014, when the current incursion began, and December 31, 2016 (Figure 8). In February, 2016, a single rabid raccoon was detected in southwestern NB, at Elmsville (Charlotte County). All rabies cases have occurred within the geographic zone in which vaccine baits were distributed in 2015 and 2016. No cases have been detected in domestic animals in New Brunswick.

In 2016, New Brunswick expanded its ORV control zone along the western border of the province in response to cases detected in wildlife in nearby Maine (Figure 7). From July 11 through September 22, 2016, the Departments of Agriculture, Aquaculture and Fisheries, and Energy and Resource Development, and MNRF worked cooperatively to distribute approximately 436,000 ONRAB® oral rabies vaccine baits by plane (376,929) and by hand (58,820) over 5700 km² in parts of Carleton, York and Charlotte Counties. Vaccine baits were distributed in the cities of Fredericton (18,870 baits) and Saint John (16,275 baits) at a density of 150 baits/km² as a proactive measure to prevent rabies from becoming established in these cities. Although no cases of raccoon variant rabies have been detected in either city, their close proximity to the current outbreak area and higher anticipated vector population densities in urban areas increases the potential for human and domestic animal health risks if rabies were to spread into these areas.

Funding has been secured and plans have been prepared to further heighten surveillance and continue the distribution of oral rabies vaccine baits in the western part of the province in 2017.

Between October 2015 and December 31, 2016, three cases of rabies were detected in big brown bats in Fredericton. Two of these rabid bats were infected with a big brown bat strain virus, and the third had a silver-haired bat strain virus. In recent years, increasing numbers of non-hibernating bats of this species have been found in and around houses here in winter. Since the conservation status of this species is considered to be “sensitive”, some efforts have been made to rehabilitate bats that are in good body condition when found. Rehabilitation was attempted in a bat found in a home on January 1, 2016, but the bat stopped eating about a month later, began to chew at its feet and died. This bat tested positive for rabies. Prior to these four cases of rabies in bats, 13 other rabid bats had been detected in the province since the mid 1970s. Now that several bat species are considered to be “at risk”, the management of situations involving bats appearing in homes requires extra scrutiny and risk assessment to balance public health concerns with conservation concerns.

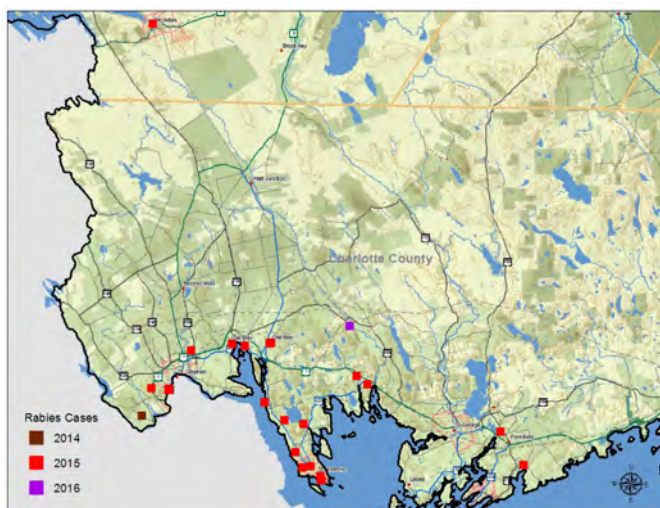


Figure 8. Raccoon variant rabies cases in New Brunswick 2014-2016.

Overview of 2016 raccoon rabies surveillance and control in Québec

Marianne Gagnier, Québec Ministère des Forêts, de la Faune et des Parcs

Despite the rabid raccoon detected in Québec in May 2015, likely related to the 15 cases discovered near the QC-US border (NY State) that same year, the Québec Raccoon Rabies Control Program has once again proved to be efficient with no cases detected in the province in 2016. This year was the eleventh consecutive year during which raccoon rabies control and surveillance actions were implemented. Spring and late summer vaccination campaigns conducted along the QC-US border coupled with enhanced surveillance and communications to encourage public awareness were once again the basis of Quebec's program.

In 2016, enhanced surveillance was carried out as planned. Through the year, a total of 725 specimens were collected under raccoon rabies enhanced surveillance activities in southern Québec, mainly in Estrie and Montérégie regions (Figure 9). Of these, 78% (n=564) were raccoons, 16% (n=118) were skunks and 4% (n=31) were foxes. Most of these animals were collected through road surveys (55%) or following a citizen reporting a suspicious animal (36%).

An oral rabies vaccination (ORV) was conducted along the Québec-US border, in targeted areas where raccoon rabies reintroduction is still a threat. ORV campaigns included ground (late-April and early-September) and aerial bait distribution (mid-August). Overall, 640,750 ONRAB® baits were distributed over 6 900 km². In 2016, bait densities ranged from 50-70 baits/km² (hand baiting) to 75-125 bait/km² (aerial baiting). As usual, the baits were distributed in preferred raccoon habitats, such as forest patches and adjacent edges of crop fields. Fifteen professional trappers and wildlife technicians were employed to manually distribute about 244,650 ONRAB® baits over an area of 3,900 km². An effort of about 200/person/day was needed to achieve this campaign, which took place from August 28 to September 16. Again this year, weather conditions were ideal throughout the whole ORV campaign, without a drop of rain.

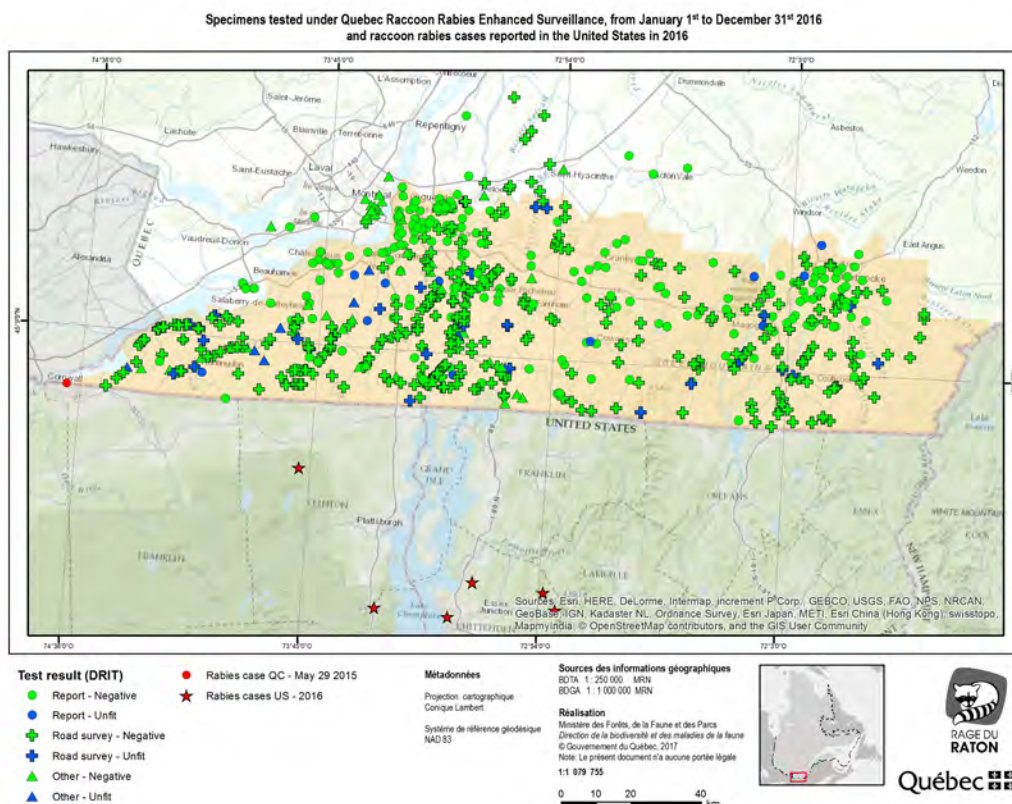


Figure 9. 2016 enhanced surveillance in Québec.

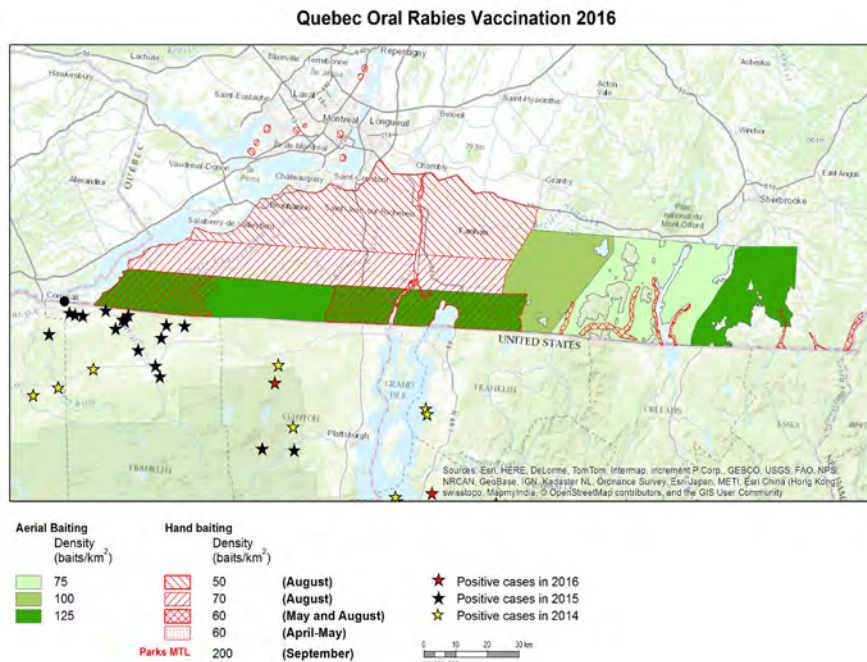


Figure 10. 2016 Oral Rabies Vaccination (ORV) in Québec.

A post ORV study was conducted between October 10 and 20 in the areas where ONRAB® baits have been distributed. The goal of this study was to assess the percentage of raccoons positive for rabies virus antibodies in 2016. Three cells of 100 km² each were sampled, with a total of 277 raccoons blood samples collected. Antibody prevalence ranged between 28-44% (c-ELISA, CFIA), with an average of 34%. These results appeared to be lower than any results collected since 2007. Many hypothesis still have to be tested to try to understand these results. However, the Québec government is confident that its immunization barrier along the US is still effective: the province remains rabies free.

For the Québec government, this program will remain essential until the raccoon rabies epidemic front is pushed further south, decreasing significantly the threat of reintroduction. To achieve this goal, the Québec government is still actively collaborating with neighboring jurisdictions (Ontario, New Brunswick and United States). As a sign of hope for the near future, the number of positive cases in the United States near Québec has decreased over the past few years, likely a result of the use of ONRAB® baits.

For further information on the Québec rabies surveillance and control program, please contact Marianne Gagnier at marianne.gagnier@mffp.gouv.qc.ca / 418-627-8694 ext.7422.

Get in touch:

email: info.mnrscience@ontario.ca

visit: <http://intra.net.gov.on.ca/mnrsrb>

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Enjoy your retirement - saying farewell to Dennis Donovan

Tore Buchanan, Ministry of Natural Resources and Forestry

Wildlife Research and Monitoring Section staff said goodbye, congratulations, and thank you to Dennis Donovan as he officially hung up his wildlife research hat in August. His impressive 38-year career with the ministry, starting at Pickle Lake in 1978, is a testament to his well-earned reputation of being level-headed, trustworthy, and knowledgeable.

Along with his wildlife expertise, Dennis was known for his unwavering support of staff, his approachable demeanour, and of course – his unrivalled hockey skills. Always the team player, with a laugh and a brave face, Dennis was integral to wildlife research.

Dennis's outstanding achievements in rabies research and control for more than 20 years are unprecedented and admired across the country and internationally. His ability to build relationships and move the yardstick has been instrumental to the province's rabies management success. His leadership was not only recognized among partners, but also was formally acknowledged when he was presented with an Amethyst Award for his contributions to the Rabies Program.

Dennis, you will be missed, and we wish you the very best in your retirement! And, hopefully, your next adventures lead you far, far away from stumbling, bumbling raccoons.



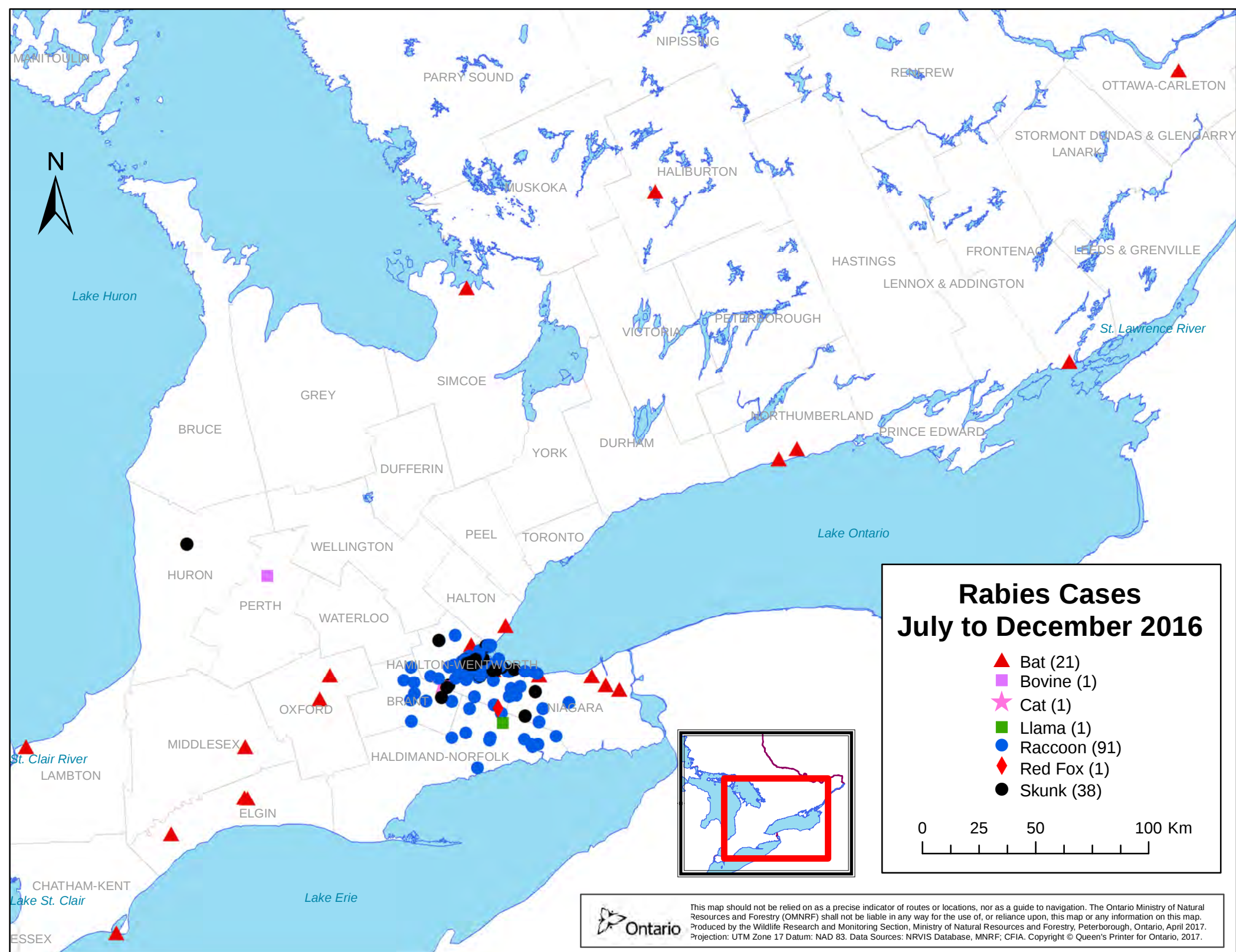
Animal Rabies Report: July to December 2016

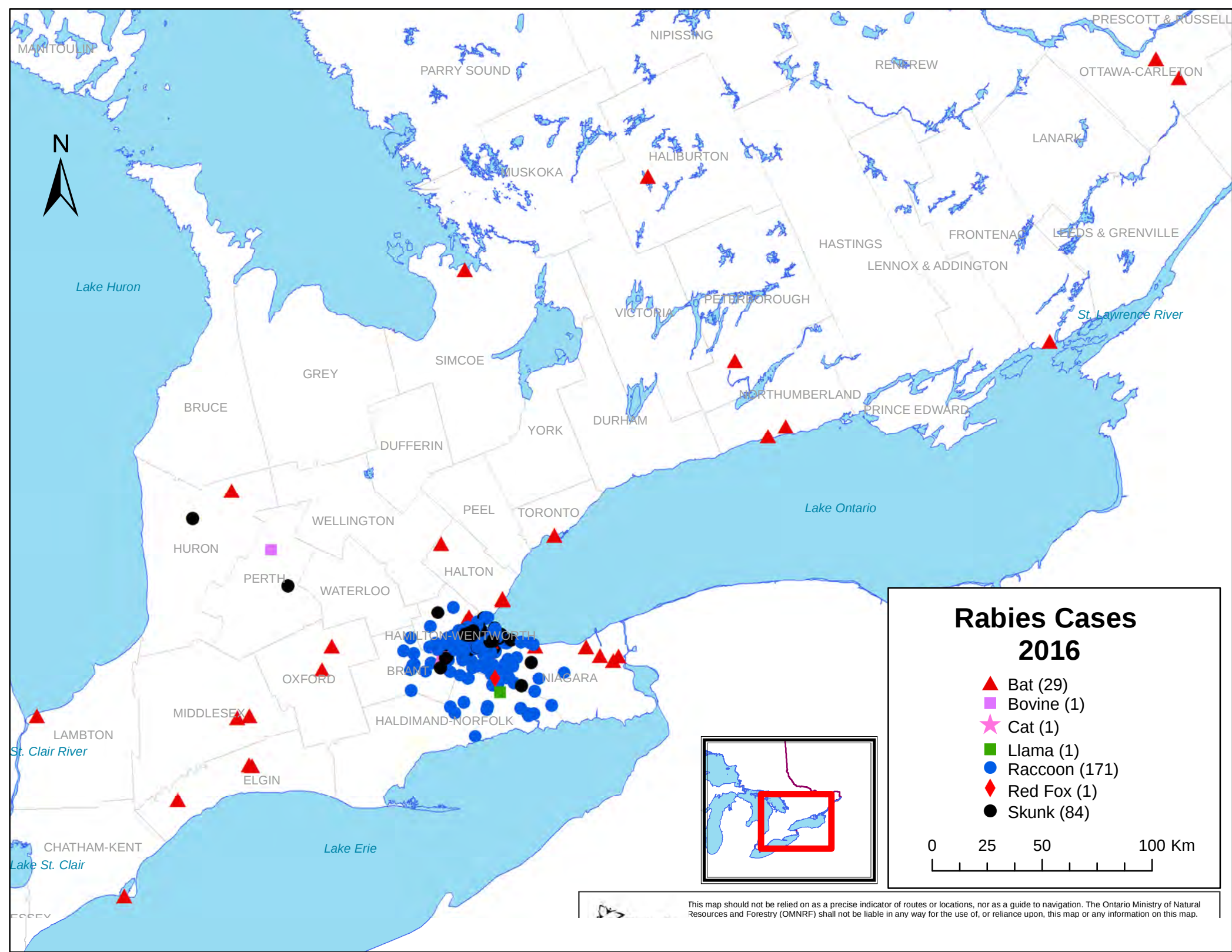
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Animal Rabies Report: July to December 2016

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region	Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative		
	#	16	15	#	16	15	#	16	15	#	16	15	#	16	15	#	16	15	#	16	15	#	16	15	#	16	15
Southern																											
Hamilton	1	1		57	126	9	32	77					2	2	2				1	1					93	207	11
Haldimand-Norfolk				13	17	1									1							1	1		14	18	2
Brant				11	11		1	1																	12	12	0
Niagara				6	10		2	2					4	5	2										12	17	2
Elgin													3	3											3	3	0
Oxford													2	2											2	2	0
Middlesex													1	2											1	2	0
Lambton													1	1											1	1	0
Kent													1	1											1	1	0
Essex																									0	0	0
Northern																											
Muskoka																									0	0	0
Parry Sound																									0	0	0
Nipissing																									0	0	0
Sudbury															1										0	0	1
Cochrane																									0	0	0
Timiskaming																									0	0	0
Algoma																									0	0	0
Thunder Bay																									0	0	0
Rainy River																									0	0	0
Kenora																									0	0	0
Regional Totals																											
Eastern	0	0	0	0	0	0	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	2	3	1
Central	0	0	0	0	0	0	0	0	0	0	0	0	4	6	4	0	0	0	0	0	0	0	0	0	4	6	4
Western	0	0	0	7	7	0	3	4	0	0	0	0	1	4	2	0	0	0	0	0	0	1	1	1	12	16	3
Southern	1	1	0	87	164	10	35	80	0	0	0	0	14	16	5	0	0	0	1	1	0	1	1	0	139	263	15
Northern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Totals	1	1	0	94	171	10	38	84	0	0	0	0	21	29	13	0	0	0	1	1	0	2	2	1	157	288	24

Notes for this quarter: One bat in Northumberland and one in Niagara were hoary bats. All other bats were big brown bats. The livestock in Haldimand-Norfolk was a llama and in Perth was a bovine. One skunk in Hamilton was infected with bat strain rabies.





Animal Rabies Report: January to March 2017

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region	#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative	
		17	16		17	16		17	16		17	16		17	16		17	16		17	16		17	16			
Eastern																											
Stormont, Dundas & Glengarry																								0	0	0	
Prescott-Russell																								0	0	0	
Ottawa-Carleton																								0	0	0	
Renfrew																								0	0	0	
Lanark																								0	0	0	
Leeds and Grenville																								0	0	0	
Frontenac																								0	0	0	
Lennox & Addington																								0	0	0	
Central																											
Hastings																								0	0	0	
Prince Edward																								0	0	0	
Northumberland																								0	0	0	
Victoria																								0	0	0	
Haliburton																								0	0	0	
Peterborough																								0	0	0	
Durham																								0	0	0	
York Region																								0	0	0	
Toronto																								0	0	0	
Simcoe																								0	0	0	
Western																											
Peel																								0	0	0	
Halton							1	1																1	1	0	
Dufferin																								0	0	0	
Wellington																								0	0	0	
Waterloo																								0	0	0	
Perth																								0	0	0	
Grey																								0	0	0	
Bruce																					3	3		3	3	0	
Huron																					1	1		1	1	0	

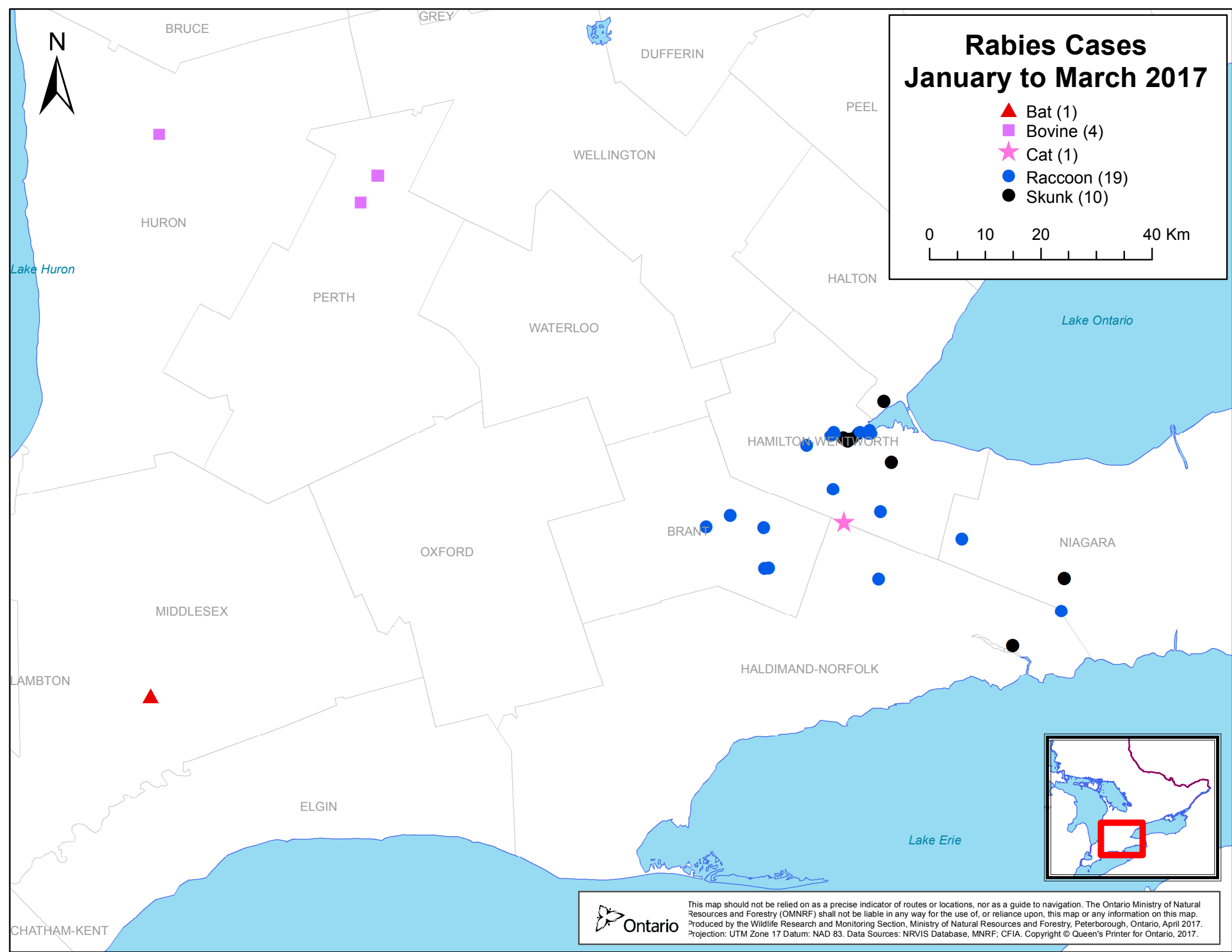
Animal Rabies Report: January to March 2017

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region	Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative		
	#	17	16	#	17	16	#	17	16	#	17	16	#	17	16	#	17	16	#	17	16	#	17	16	#	17	16
Southern																											
Hamilton				11	11	38	7	7	24										1	1					19	19	62
Haldimand-Norfolk				1	1	3	1	1																	2	2	3
Brant				5	5																				5	5	0
Niagara				2	2	1	1	1																	3	3	1
Elgin																									0	0	0
Oxford																									0	0	0
Middlesex													1	1	1										1	1	1
Lambton																									0	0	0
Kent																									0	0	0
Essex																									0	0	0
Northern																											
Muskoka																									0	0	0
Parry Sound																									0	0	0
Nipissing																									0	0	0
Sudbury																									0	0	0
Cochrane																									0	0	0
Timiskaming																									0	0	0
Algoma																									0	0	0
Thunder Bay																									0	0	0
Rainy River																									0	0	0
Kenora																									0	0	0
Regional Totals																											
Eastern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Western	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	5	5	0
Southern	0	0	0	19	19	42	9	9	24	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	30	30	67
Northern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	19	19	42	10	10	24	0	0	0	1	1	1	0	0	0	1	1	0	4	4	0	35	35	67

Rabies Cases January to March 2017

- ▲ Bat (1)
- Bovine (4)
- ★ Cat (1)
- Raccoon (19)
- Skunk (10)

0 10 20 40 Km



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