Ministry of Natural Resources and Forestry

Ontario

Natural. Valued. Protected.

The rabies reporter

MNR Publication 51709 Volume 25, Number 1 January - June 2014

Rabies and rabies control during 2014

Beverly Stevenson, Ministry of Natural Resources and Forestry

As of June 30th, there were only five confirmed rabies cases in all of Ontario. All of them occurred in bats.

This is comparable to 2013 when there were six confirmed cases during the same period – five bats and one dog (from northern Ontario). All five of the bats confirmed during the past six months were big brown bats and were located in Brant, Frontenac, Huron, and Middlesex (2) counties. It has now been two years since a case of terrestrial rabies has been documented in southern Ontario.

Due to the success of our oral rabies vaccination (ORV) programs, plans for 2014 are reduced from 2013. If there are no confirmed cases of fox strain rabies in the upcoming weeks, ORV will not be conducted in southwestern Ontario. ORV was originally expanded to southwestern Ontario in 1994 and has been conducted annually (over a decreasing area) since then.

Proactive baiting will still occur in the St. Lawrence (Figure 1) and Niagara (Figure 2) areas to prevent the reincursion of raccoon strain rabies from New York state. Raccoon rabies

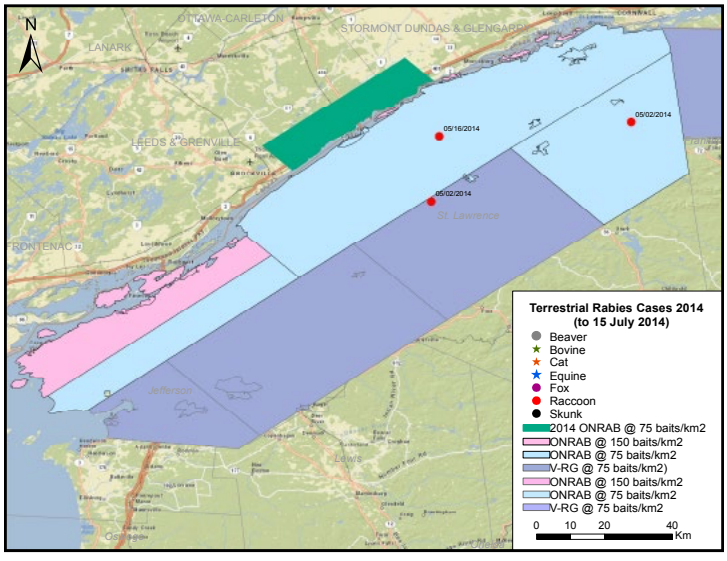


Figure 1. Location of proposed 2014 baiting in the St. Lawrence area of eastern Ontario and New York state in relation to 2014 rabies cases in New York.

The Rabies Reporter, a scientific newsletter about current issues in rabies research and control, is a joint effort of the Rabies Research Unit 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:

The Rabies Reporter
Rabies Research & Development Unit
Ontario Ministry of Natural Resources and Forestry
Trent University—DNA Bldg.
2140 East Bank Drive
Peterborough, ON K9J 7B8

Visit: Ontario.ca/rabies
ISSN (print): 1186-8961
ISSN (pdf): 1705-2106

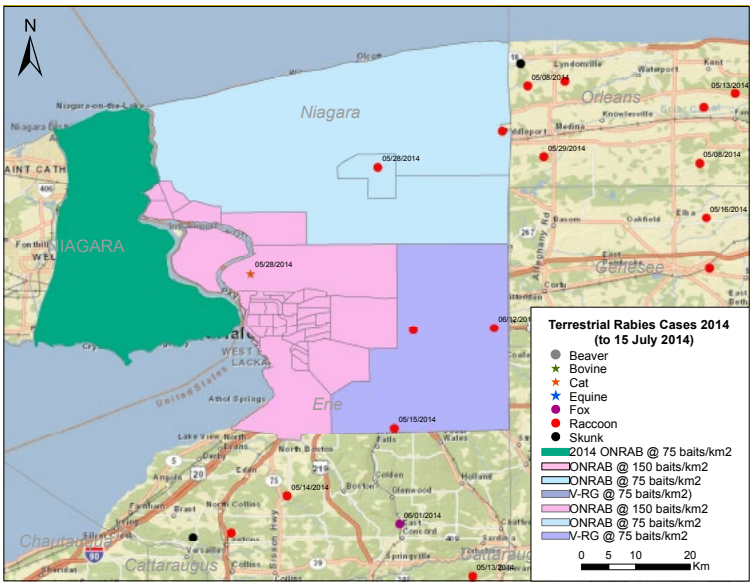


Figure 2. Location of rabies baiting in the Niagara area in relation to recent rabies cases in New York.
Data provided by Wadsworth Center, New York State Dept. of Health

cases still persist close to the border in New York in both areas.

In the St. Lawrence area, approximately 20,000 baits will be distributed on the mainland east of Brockville beginning August 17. The location of the baiting area is determined each year by mapping the location of cases and determining which areas are the most susceptible in relation to those cases. This year's baiting area will be centered on the Ogdensburg-Prescott bridge which crosses the St. Lawrence River. Although Wolfe, Howe, and Simcoe Islands have normally been baited in the past, it was not deemed necessary this year since there have been no reported cases near the islands.

In the Niagara area, approximately 65,000 baits will be distributed in the Niagara area between the Welland Canal and the Niagara River. Baits will be distributed by helicopter and by hand beginning on August 25 and should be completed in early September.

ONRAB® baits will also be distributed along the border in New York by the United States Department of Agriculture and Cornell University. This is the second year of a 3-year field trial to test the efficacy of ONRAB® baits in New York. Approximately 455,000 baits will be distributed along the St. Lawrence and Niagara Rivers beginning in mid-August.

As with any best laid plans, ORV plans are subject to change if new rabies cases are detected between now and the first day of baiting!

Rabies in Ontario - Who to call?

Natalie Gorman, Ministry of Natural Resources and Forestry

Historically, in Canada, the Canadian Food Inspection Agency (CFIA) has been the agency responsible for rabies surveillance, investigation, specimen collection, and submission, quarantine, and diagnosis.

Effective April 1, 2014, CFIA announced that it would be reducing some of its activities related to rabies. The provinces are now responsible for rabies surveillance, investigation, specimen collection, submission, and quarantine.

The CFIA's role still includes performing rabies testing on human and animal samples submitted, licensing rabies vaccines, and providing rabies statistics, among other things. However, they will no longer collect samples for rabies testing or investigate/quarantine domestic animals suspected of having rabies. (Source: Canadian Food Inspection Agency website)

So, who should you call in the event of suspected rabies cases or possible contact with rabies (in Ontario)?

- **PERSON** at risk of potential rabies exposure?
  - Call your local public health unit – see link for a list of health units in Ontario. (http://www.health.gov.on.ca/en/common/system/services/phu/locations.aspx) or call 1-866-532-3161 to be directed to your local health unit.
- **DOMESTIC ANIMAL** with potential rabies exposure (domestic pet or livestock)?
  - Call the OMAF Agricultural Information Contact Centre at 877-424-1300.
- **WILDLIFE** with suspected exposure to rabies?
  - Call the MNR Rabies Hotline at 1-888-574-6656.
- **SICK OR INJURED BAT** that has had no contact with a human or animal?
  - Call the Canadian Cooperative Wildlife Health Centre (CCWHC) Ontario at 1-866-673-4781.

You can help reduce the spread of rabies through vaccinating your pets, informing the above mentioned organizations if you suspect an animal has rabies, and by keeping your distance from wildlife. Remember, do not trap and transport wild animals to a new location; it is against the law in Ontario and you could spread disease.

Rabies in a raccoon in New Brunswick

Dr. Jim Goltz, New Brunswick Provincial Veterinary Laboratory

On June 2nd of this year, a raccoon from St. Stephen, New Brunswick, tested positive for the raccoon variant of rabies. The raccoon rabies variant was last detected in New Brunswick in May 2002, in this same general geographic area. Prior to this June 2014 occurrence in a raccoon, the last case of rabies in this province was detected in Fredericton in November 2013 in a Big Brown Bat (in this case, the virus was a bat variant of rabies virus and not the raccoon variant).

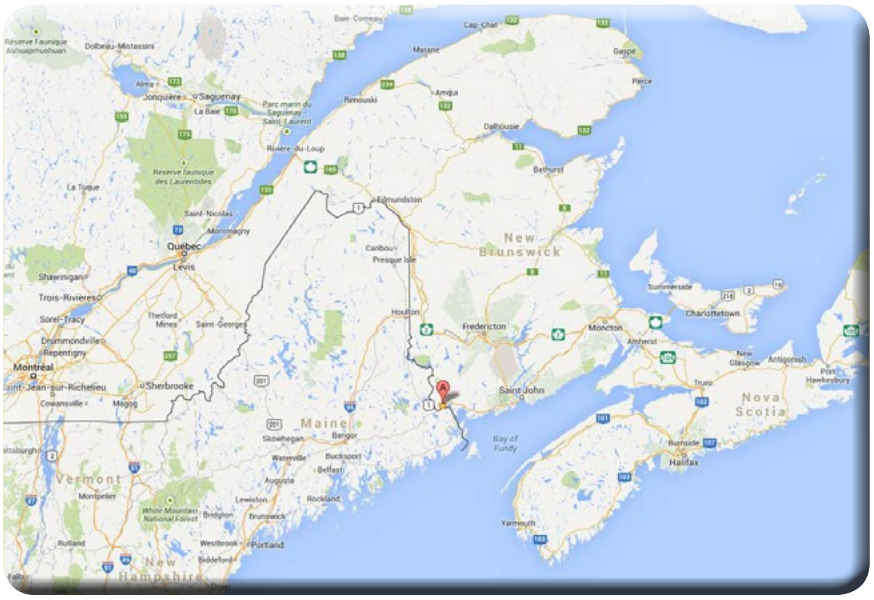


Figure 3. Map of New Brunswick showing St. Stephen near the New Brunswick / Maine Border.

In this recent raccoon case, a family in St. Stephen had returned home on the evening of Thursday May 29, 2014, to find their two dogs excitedly circling around something in the yard. The object of attention was a raccoon, which evidently was moving abnormally slowly and was circling. The raccoon was killed and buried. Afterward, the dogs shared popsicles with the family's two young children. It was not known if the dogs had had contact with the raccoon, but if they had been bitten, it is likely that they would have licked any wounds they incurred and so could have been exposed to the raccoon's saliva. The raccoon was dug up and its brain was extracted by the New Brunswick Provincial Veterinary Laboratory and sent to the CFIA's Rabies Laboratory in Ottawa for testing. Test results were completed on June 2nd and variant typing was completed on June 3rd.

Post-exposure treatment has been started on the two children. Both dogs had been vaccinated previously against rabies, although one dog was overdue for revaccination. Both dogs were given booster vaccinations for rabies and have been put under quarantine. The family also has an indoor-outdoor cat which had never been vaccinated against rabies. The cat was vaccinated and also is being quarantined. Four of the immediate neighbours also have dogs, and there is a school nearby.

In 2001, the New Brunswick government launched a successful trap-vaccinate-release program to control the raccoon variant of rabies, targeting wild raccoons, skunks, foxes and feral cats (defined as cats with no collars or identification). No decision has yet been made on a general response to this newly-detected rabid raccoon, apart from the immediate public and human health actions described above. The New Brunswick government has not yet established a provincial protocol for responses to suspected cases of animal rabies to replace protocol previously followed by the CFIA, which terminated its local responses to potential rabies cases as of 1 April 2014.

Article reprinted from:
http://www.healthywildlife.ca/category/rabies/.

Rabies Advisory Committee updates

Beverly Stevenson, Ministry of Natural Resources and Forestry

The Rabies Advisory Committee was established in 1995 to advise the Minister of Natural Resources and Forestry (MNRF) regarding the means to mitigate the impact of wildlife rabies in Ontario. The Committee, which consists of a Chair and up to eight members, is comprised of recognized experts in the fields of vaccines, baits, immunology, statistics, experimental design, public health and related areas pertinent to rabies control.

The Committee has fostered productive partnerships among governments (provincial and federal), private industry and universities, resulting in an effective, cooperative network that encourages innovation and applied research. The Committee members are a source of expertise on rabies and rabies science beyond that found within MNRF, and expedite inter-agency communication on rabies issues. The Committee plays a critical role in bringing together experts from veterinary and human public health areas to advise MNR on dealing with these important subjects. In recent years, the Committee has been active in tracking progress of the Ontario designed and produced ONRAB® rabies vaccine. Other areas of interest have focused on the development of Canadian and North American rabies management plans, cooperative control efforts (with Quebec, New Brunswick and north-eastern USA states) and human post-exposure treatments in Ontario.

The current appointment expires in August 2014.

We would like to thank the following retiring members for their expertise, contributions, and commitment to wildlife rabies research and control:

- Jim Broadfoot (Azimuth Environmental Consulting, Inc.) who has chaired the committee since 2006,
- Elliot Salsberg (retired from the Canadian Food Inspection Agency) who has been a member since 1995,
- Doug Campbell (Canadian Cooperative Wildlife Health Center) who has been a member since 2000,
- Peter Buck (Public Health Agency of Canada) who has been a member since 2002, and
- Michael Corriveau (retired from Renfrew County and District Health Unit) who has been a member since 2003.

Artemis Technologies Inc. updates

Beverly Stevenson, Ministry of Natural Resources and Forestry

Since 1997/98, Artemis Technologies Inc. (ATI) has been the sole manufacturer of rabies vaccine baits in Canada. ATI is located in Guelph, Ontario. Until late 2013, ATI was owned jointly by Andrew Beresford (Manager of Virus Production at Ayerst - the previous Canadian rabies vaccine bait producer) and Alex Beath (electrical/mechanical contractor responsible for plant maintenance at Ayerst).

Due to health issues, Andrew Beresford retired. Alex Beath became the sole owner and president of Artemis. During the reorganization of ATI, five new staff members were hired.

- Scott Bentham is now the Director of Production;
- Ken Peleman is the Quality Control / Quality Assurance Technician;
- Chris Ostrowski is the Bioreactor Technician;
- Joanne Hutton is a Laboratory Technician;
- Lisa Doke is Team Leader / Bait Production and
- Chuck McGinn is Maintenance Technician.
- Deb Beath is in charge of Finance and Administration.

In addition to producing vaccine baits for Ontario, Quebec, and the Unites States Department of Agriculture (USDA), ATI staff are also working on US licensing of ONRAB®, a captive feral dog trial on the Navajo Nation, skunk trials at the USDA National Wildlife Research Center (NWRC) in Colorado, a mongoose trial in Hawaii, and new bait and vaccine packaging methods.

Figure 4. Artemis Technologies Inc. facilities in Guelph, Ontario.

International planning for rabies control

Beverly Stevenson, Ministry of Natural Resources and Forestry

In April and May 2014, two very important rabies meetings were held in the USA.

The first was the national United States Department of Agriculture (USDA) rabies meeting which was held in San Antonio, Texas from April 20-24. Dennis Donovan (Ministry of Natural Resources and Forestry - Wildlife Research and Monitoring Section (MNRF-WRMS)) attended this meeting to provide information on the success of Ontario's oral rabies vaccine bait (ONRAB®). The meeting was attended by government representatives (USDA-Wildlife Services, Quebec, Centers for Disease Control, Canadian Food Inspection Agency, Texas State, etc.), academia, and the private sector (vaccine producers).

The second meeting was the Northeastern USA Animal Health Association (NEUSAHA) meeting which was held in Portland, Maine on May 12-13, 2014. Beverly Stevenson (MNRF-WRMS) attended the meeting to give updates on the status of rabies of rabies and rabies surveillance in Canada (with input from the Canadian Food Inspection Agency) and on Ontario's oral rabies vaccination programs. The NEUSAHA meeting was attended by state, provincial, and federal representatives as well as academia, veterinarians, health unit staff, and vaccine producers.

Both meetings allowed neighbouring jurisdictions and agencies to collaborate on rabies control as well as share information on successful and unsuccessful rabies control strategies and plans for the upcoming year, Since wildlife diseases are usually not hindered by municipal, state, provinical, or federal boundaries, it is imperative that neighbouring jurisdictions work cooperatively towards the common goal of eliminating rabies. The continued sharing of information and technology is required to attain the elimination of rabies from a large geographic area; this will be a significant public health achievement.

The importance of working together was formally recognized in 2008 with the signing of the North American Rabies Management Plan (NARMP). The NARMP is supported by national rabies management plans from Canada, Mexico and the United States. The Canadian Rabies Management Plan (CRMP) was signed in 2009. Both the NARMP and the CRMP will be reviewed and updated in the near future.

In addition to the above two meetings, there was also an international interagency rabies meeting held in Thorold, Ontario in July. The meeting was attended primarily by representatives from public health in both New York state and Ontario (Brant, Halton, Hamilton, Niagara, Niagara County (New York), and Wellington-Dufferin-Guelph) but also included representatives from MNRF, OMAFRA, and Ministry of Health and Long Term Care (MOHLTC).

The interagency meeting provided an opportunity for neighboring jurisdictions to share information on animal bite incident and post-exposure rabies prophylaxis statistics. Information was also provided by MNRF on recent rabies cases and proposed rabies control activities for 2014. MOHLTC and OMAFRA provided updates on the recent changes to rabies submission procedures.

4th Annual Kirk Sobey Memorial Fishing Derby

The 4th annual derby was another success raising over $1,000 for the Brenna and Kalynn Sobey education fund. The fishing derby was started in 2011 after the untimely passing of WRMS biologist Kirk Sobey due to cancer. Kirk left behind two young daughters and the fishing derby has been an annual event to help raise money for their education fund.

For more information on next year's derby, please contact Mike Allan at mike.allan@ontario.ca.

Rabies risk and vaccination status

Maureen Anderson, Ontario Ministry of Agriculture, Food and Rural Affairs

Currently, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) continues to use the recommendations previously established by the Canadian Food Inspection Agecny (CFIA) for observation and confinement of animals potentially exposed to rabies, which depend on the animal's vaccination status.

- **Fully vaccinated:** An animal that has received an initial rabies vaccination and revaccination at the manufacturer's recommended interval(s).
  Potential exposure to rabies = 45 DAY OWNER OBSERVATION PERIOD

- **Primary vaccinated:** An animal that has received an initial rabies vaccination at least 30 days earlier, but is not yet due for its first booster according to the manufacturer's recommendations (i.e. less than 1 year since initial vaccination).
  Potential exposure to rabies = 3 MONTH PRECAUTIONARY CONFINEMENT PERIOD

- **Unvaccinated:** An animal that has never received a rabies vaccination OR received its first rabies vaccination in the last 30 days OR has not been revaccinated within the manufacturer's recommended time frame (i.e. is overdue for a booster)
  Potential exposure to rabies = 6 MONTH PRECAUTIONARY CONFINEMENT PERIOD

In the first 3 months (April 1 to June 30) since the transition from the CFIA-led rabies response program OMAFRA placed 14 animals under confinement, including 4 that were exposed to a confirmed rabies-positive bat. All of these could have been avoided if the animals been kept up-to-date on their rabies vaccinations. As of mid-August, the number of animals confined has increased to 25.

A note about indoor cats: It is extremely important to stress the need for rabies vaccination to pet owners, including those who own indoor-only cats. Calls are frequently received from cat owners who have been surprised to find their cats playing with a bat in the house / apartment, or whose cats escaped outside for a few hours to a few days and returned with suspicious bite wounds. Confinement of such animals can be extremely stressful on pet and owner alike, particularly in multi-person and multi-animal households. Vaccination is key.

It is also important to emphasize that if someone finds a bat (or other wildlife) with which one of their pets (or a person) may have had contact, he or she should not release it or discard it until a risk evaluation has been performed to determine if the wildlife should be tested for rabies.

Potentially exposed animals: To vaccinate or not to vaccinate?

DO vaccinate animals that may have recently been exposed to a potentially rabid animal (e.g. the cat that was found playing with a bat last night, the dog that got into a fight with a fox on the weekend). This is based on the same rationale as post-exposure prophylaxis (PEP) in people, which is to boost antibody levels to help prevent any virus at the local site of entry from reaching the central nervous system. This applies to animals that are completely unvaccinated or may soon be due for a booster (e.g. the booster can be given early).

Do NOT vaccinate animals that have bitten a person in the last 10 days (or 14 days for animals other than dogs and cats), regardless of the potential that the animal may have been exposed to rabies. Any domestic mammal that has bitten a person must undergo a 10-14 day observation period imposed by Public Health to rule out human exposure to rabies virus. After the 10-14 days, the animal can and should be vaccinated as indicated.

OMAFRA calls and submissions - Summary

As of mid-July, OMAFRA had fielded over 150 calls from public health units, veterinarians and animal owners regarding potential rabies exposure incidents in Ontario. Approximately 20% of calls involved possible exposure of both human and domestic animals. Over one third of calls concerned contact with bats, and just under one third of calls concerned contact with raccoons. Over this period, OMAFRA facilitated testing of over 60 animals, one of which tested positive (a bat). As of mid-August, OMAFRA has responded to approximately 250 calls.

Animal Rabies Report: January to June 2014

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region		Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative	
	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13
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													1	1	1										**1**	**1**	**1**
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															1										**0**	**0**	**1**
York Region																									**0**	**0**	**0**
Toronto																									**0**	**0**	**0**
Simcoe																									**0**	**0**	**0**
Western																											
Peel																									**0**	**0**	**0**
Halton																									**0**	**0**	**0**
Dufferin																									**0**	**0**	**0**
Wellington																									**0**	**0**	**0**
Waterloo																									**0**	**0**	**0**
Perth																									**0**	**0**	**0**
Grey															1										**0**	**0**	**1**
Bruce																									**0**	**0**	**0**
Huron													1	1											**1**	**1**	**0**

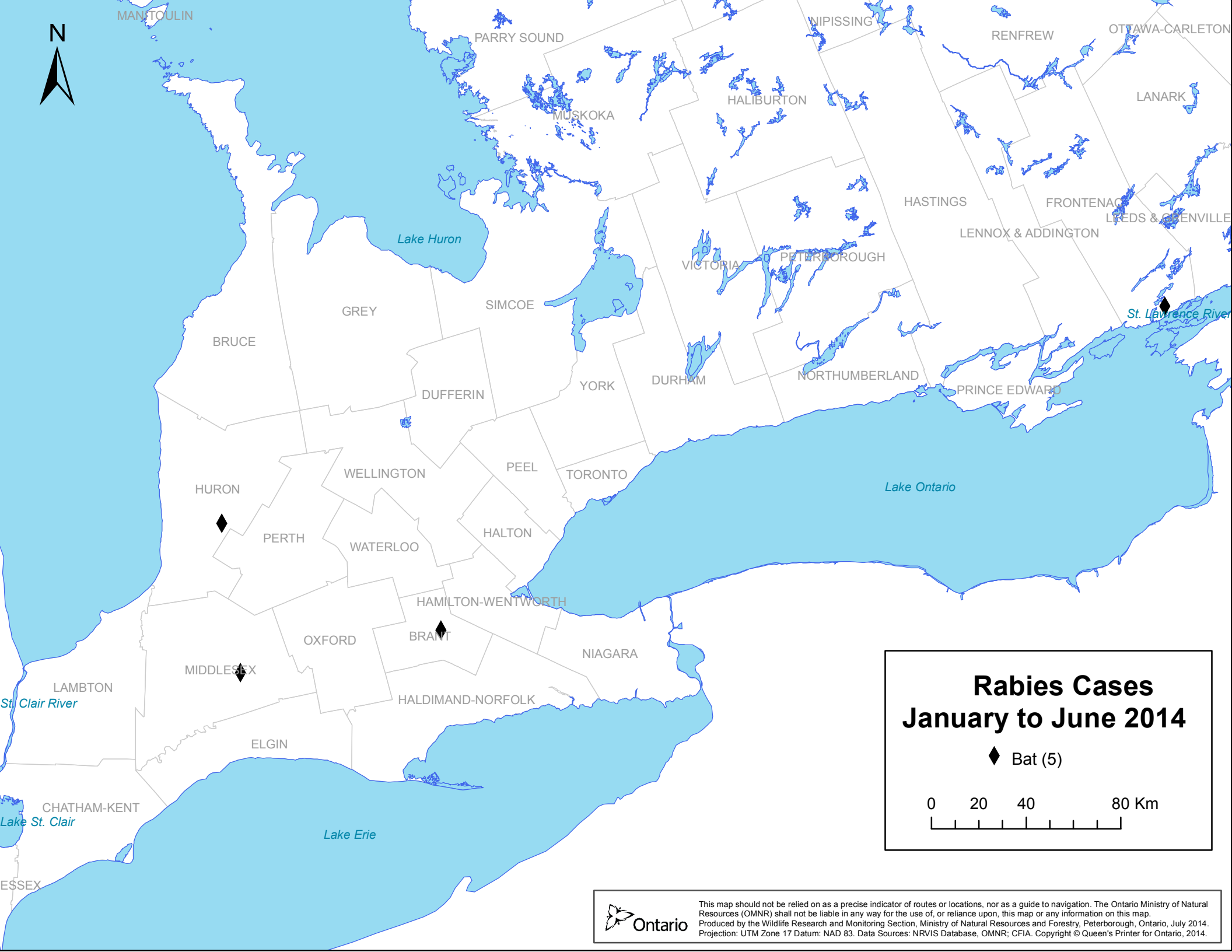
Animal Rabies Report: January to June 2014

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region		Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative	
	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13	#	14	13
Southern																											
Wentworth																									**0**	**0**	**0**
Haldimand-Norfolk																									**0**	**0**	**0**
Brant													1	1											**1**	**1**	**0**
Niagara																									**0**	**0**	**0**
Elgin															1										**0**	**0**	**1**
Oxford																									**0**	**0**	**0**
Middlesex													2	2	1										**2**	**2**	**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																		1							**0**	**0**	**1**
Regional Totals																											
Eastern	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
Central	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**
Western	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	**1**	**1**	**1**
Southern	0	0	0	0	0	0	0	0	0	0	0	0	3	3	2	0	0	0	0	0	0	0	0	0	**3**	**3**	**2**
Northern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**0**	**0**	**1**
Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**5**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**5**	**6**

CFIA·ACIA

Notes for this period: All bats were big brown bats.

Ontario


N
MANITOULIN
PARRY SOUND
NIPISSING
RENFREW
OTTAWA-CARLETON
HALIBURTON
MUSKOKA
LANARK
HASTINGS
FRONTENAC
LEEDS & GRENVILLE
LENNOX & ADDINGTON
Lake Huron
VICTORIA
PETERBOROUGH
St. Lawrence River
GREY
SIMCOE
BRUCE
YORK
DURHAM
NORTHUMBERLAND
PRINCE EDWARD
DUFFERIN
WELLINGTON
PEEL
TORONTO
Lake Ontario
HURON
PERTH
WATERLOO
HALTON
HAMILTON-WENTWORTH
OXFORD
BRANT
NIAGARA
MIDDLESEX
LAMBTON
St. Clair River
HALDIMAND-NORFOLK
ELGIN
CHATHAM-KENT
Lake St. Clair
Lake Erie
ESSEX
Rabies Cases
January to June 2014
Bat (5)
0 20 40 80 Km
Ontario
This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources (OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.
Produced by the Wildlife Research and Monitoring Section, Ministry of Natural Resources and Forestry, Peterborough, Ontario, July 2014.
Projection: UTM Zone 17 Datum: NAD 83. Data Sources: NRVIS Database, OMNR; CFIA. Copyright © Queen's Printer for Ontario, 2014.