The Rabies Reporter

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Inside this issue:

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; the Rabies Laboratory at the Ottawa Laboratory (Fallowfield) of the Canadian Food Inspection Agency; and the Ontario Ministry of Health. 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:

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Review of Rabies in 2008

Record Low Numbers

By the end of 2008, there were 79 confirmed cases of rabies in Ontario. This is down considerably from the 106 cases in 2007; and not to mention making it only the fifth time that there have been fewer than 100 hundred cases reported in Ontario! Depending on how you look at it, this is the lowest number of rabies cases ever in Ontario. In 1998, the Rabies Reporter confirmed 78 cases. However, this did not include two clinical cases. (Clinical cases are animals which are exhibiting signs of rabies but are not submitted for rabies testing. Normally, these animals are considered to be rabid by experienced CFIA vets and there has frequently been a recent confirmed rabies case on that farm or on a nearby farm.) Since rabies became established in Ontario approximately 50 years ago, there has been a significant change in the prevalence of the disease. From 1957 until large-scale rabies control operations were implemented in 1989, Ontario averaged approximately 1,500 cases per year with most of these cases occurring in foxes and skunks. In the past decade, there has been an average of 120 cases per year and more recently this number has been closer to 100. Approximately half of cases now are bats.

A couple of points to note - there were no reported cases at all in December 2008, (December is historically one of the months with highest number of rabies cases (see Figure 1)) which is a first, and the 2008 number of bat cases confirmed was also down substantially. Last year, there were 62 cases in Ontario reported, while 2008 only brings 38 – a 38% decrease.

There were only two rabid foxes in 2008. One in Waterloo Region (southwestern Ontario) and one rabid fox from the Fort Severn area (located near Polar Bear Provincial Park on the Hudson Bay coast). Rabies is probably always present in far northern Ontario. However, the area is so sparsely populated with humans that it is not possible to determine the extent of rabies in this area. It is only when a rabid animal enters one of the communities and comes in contact with a person or pet that the animal is likely to be submitted for testing.

There were only 13 rabies cases in the last quarter of 2008. Of these, there were four skunks, one cow, one red fox and seven bats. The seven rabid bats were located in Durham (1), Niagara (1), Peel (1), Simcoe (1), Toronto (2), and Wellington (1) counties, bringing the total for the year to 38. The rabid skunks were located in only western Ontario: Bruce (1), Huron (1), Perth (1) and Wellington (1) counties. This made a total of 25 rabid skunks for 2008—down from the 30 cases in 2007. The one livestock case, a calf, was located in southern Ontario in Oxford County. This case is not closely associated with another rabid animal. There was a rabid bat near there approximately three months earlier and there was a rabid skunk a few kilometres away from there during the second quarter. As mentioned previously, one red fox case was confirmed in Waterloo County – bringing the total for 2008 to two.

Several years ago, it was estimated that approximately one out of every ten rabid animals was actually discovered and submitted to the lab. With increased surveillance efforts, especially for raccoon strain rabies, and fewer cases in wildlife, we hope that this percentage has become much higher in recent years. However, there will always be

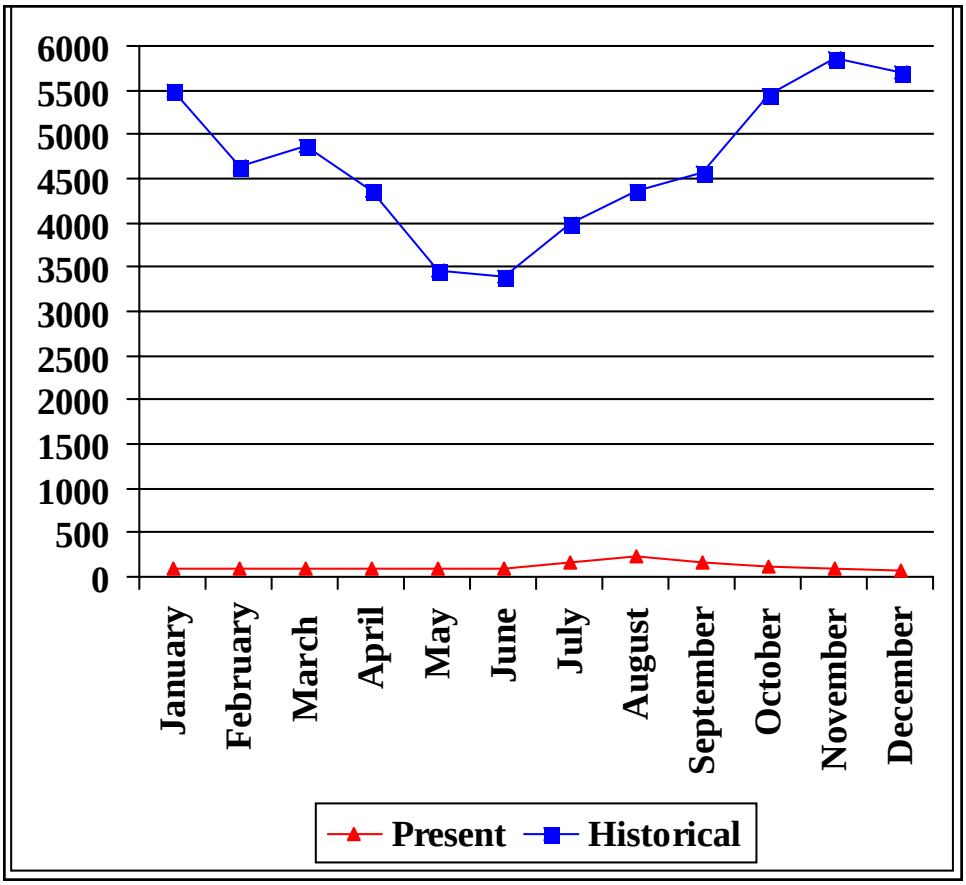

Figure 1. Breakdown of rabies cases by month in Ontario. Historical cases are from 1957-1997 and present cases are from 1998-2008. Prior to the implementation of large-scale rabies control programs in 1989, October, November, December and January were the months with the most number of rabies cases. Recently, bats have become the more prominent rabies vector and this trend has reversed. July, August, and September are now the months with the most number of rabies cases.

some animals which contract rabies and die of the disease without ever encountering humans or pets.

There was little change in the number of rabid pets. In 2008, there were three rabid dogs and two rabid cats. See Volume 19, Number 1 of the *Rabies Reporter* for more information on the rabid puppy.

There was an absence of rabies in other wildlife species which was unchanged from 2007. Typically, rabies in non-vector wildlife species (i.e. any species other than fox, raccoon, or skunk) is limited to an occasional case despite the fact that any mammal can be infected with rabies.

Ontario also continued to be free of raccoon strain rabies in 2008. There has not been a case of raccoon strain rabies since September 2005. Based on international standards, Ontario is now considered to be free of raccoon rabies. Although it has been more than two years since our last case of raccoon strain rabies, it is important to maintain our vigilance. Raccoon strain rabies is still present near the Canada-US border in both the St. Lawrence and Niagara regions.

Natalie Gorman
RRDU
Peterborough, ON

Rabies Research and Development Unit Staffing Updates

There have been a few changes to our team over the past few months.

- Bev Stevenson who was acting Senior Technician with the RRDU accepted another acting position in May as the Senior Fish and Wildlife Specialist in the Clinton MNR District Office.
- Please welcome Tore Buchanan as the newly appointed Senior Technician.
- Welcome back to Andy Silver, who has recently completed an assignment with the Science and Information Resources Division, MNR.
- While Val vonZuben is lending her talents to the Species at Risk Branch for the next six months, Matt Purvis will be acting in her role as Research Technician.
- RRDU's Information Officer, Adam McAllister has accepted a permanent position as a Program Advisor in the Corporate Emergency Management and Security Unit. Natalie Gorman will be fulfilling the communications role until March 2009.

Congratulations to all of these individuals!

Natalie Gorman
RRDU
Peterborough, ON

Rabies in the Americas 2008 Meeting

The International Conference on Rabies in the Americas (RITA) has been held annually since 1990 and is a forum for the presentation and discussion of developments in rabies research, surveillance, control and prevention. RITA 2008 was hosted by the Centers for Disease Control and Prevention, USDA-APHIS and the Task Force for Child Development, and was held at the CDC campus in Atlanta, Georgia. For six days, beginning with World Rabies Day on September 28th, 425 participants from North and South America, Europe, Asia, Africa and Australia were treated to the famous Southern hospitality of the "Peach State".

The opening session reflected the international flavour of the conference. Entitled "Rabies: A Global Perspective", it featured regional presentations on the status of rabies around the world. World Rabies Day was also celebrated with a "Run for Rabies" in the beautiful and historic Piedmont Park, with over 70 people participating. The funds raised will go towards the production of an educational video about bats and rabies to be distributed to state health departments and public libraries.

Figure 3. Run for Rabies—a World Rabies Day event.

The conference had a packed schedule, with two plenary sessions each day, poster presentations, workshops on GIS mapping and communications, and a roundtable discussion on strategies for global eradication of rabies. Topics addressed included: Epidemiology and Modeling; Scientific Advances; Diagnostics; Rabies in Latin America; Lyssavirus Pathogenesis and Host Immune Responses; Human Rabies – Prevention and Intervention; Bat Rabies; Wildlife Control Strategies; Domestic Rabies Prevention and Control; and Communication and Outreach. The sessions on September 29th were opened with a keynote address from Ms. Jeanna Giese, who delivered a very personal and heartfelt account of her experience with contracting and recovering from rabies.

Figure 2. Rabies survivor Jeanna Giese delivers an account of her experience.

As is the custom, Wednesday evening featured the Gala Dinner and Auction. Under the dinosaurs in the rotunda of the Fernbank Museum of Natural History, participants dined and danced and had the opportunity to bid on numerous items donated for the fundraising auction to support the Latin American Investigator Award. This year's winner was Dr. Emiliano Tesoro Cruz, from the National Medical Center, Mexico, who presented his very interesting work on a candidate DNA vaccine. The final day began with a signing ceremony for the North American Rabies Management Plan by representatives from the American, Canadian and Mexican governments.

Judging from the tired, but happy faces at the closing reception, RITA 2008 provided a challenging, informative program and presented many opportunities for the participants to meet, discuss, learn and socialize. The 20th RITA conference will be held in October 2009, in beautiful Quebec City, Canada and promises to continue the tradition of excellence exemplified by RITA 2008 in Atlanta.

Christine Fehlner-Gardiner
Centre of Expertise for Rabies
CFIA
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[Reprinted with permission from www.rabiescontrol.net/ARCnewsletter10.pdf]

USDA and CDC Sign North American Rabies Management Plan with Canada and Mexico

WASHINGTON, Oct. 3, 2008--The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) and the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) today signed the *North American Rabies Management Plan* with Canada and Mexico. The plan's aim is to strengthen cooperation and communication among the three countries in addressing wildlife rabies management and control.

"This plan is a crucial step to controlling rabies not only in the United States, but throughout North America," said Cindy Smith, APHIS administrator. "It solidifies our strong relationships with Canada and Mexico, as well as our federal and state partners, in addressing this potentially deadly virus in wildlife populations through information sharing and strategic planning."

The *North American Rabies Management Plan*, which is the culmination of more than three years of work by APHIS' wildlife services program, CDC and the governments of Canada and Mexico, establishes a framework and forum for constructive interaction among the countries to build long-term wildlife rabies management goals. The plan, signed at the 2008 Rabies in the Americas Conference, calls for annual meetings between the three countries to share information about oral rabies vaccine research, wildlife management, population control and surveillance techniques.

Collaboration between the three countries already is successful in controlling rabies in wildlife. Representatives from the United States and Canada in the fields of health, agriculture and wildlife management work together each year to provide expert information and guidance to develop complimentary rabies management plans to ensure the virus' containment in wildlife. In recent years, APHIS and Mexican officials also have worked to successfully contain and eliminate canine rabies in coyotes in south Texas.

"We've made tremendous strides in our efforts to combat rabies, particularly canine rabies. However, people are at risk from this terrible disease because it is still present in other types of wildlife," said CDC Director Dr. Julie Gerberding. "We must remain vigilant and this unprecedented agreement will enable us to continue to protect people from rabies."

Because human cases of rabies in North America are often the result of exposure to wildlife with the virus, each country works to eliminate the virus in its wildlife populations. In the United States, APHIS' wildlife services program staff established the *National Rabies Management Program* in 1997. That program was developed to prevent further spread of rabies in gray fox, coyotes and raccoons by using oral rabies vaccines in wildlife, as well as increasing public education.

[Reprinted with permission from http://www.aphis.usda.gov/newsroom/content/2008/10/content/printable/rabieplan_ws.pdf]

RITA 2009 Meeting

RITA+XX QUÉBEC

WHAT IS RITA?

RITA is the nick name of **The Rabies in the Americas meeting**. RITA is an annual event that has been held since 1990. It has been hosted in many countries across the Americas. For many years, RITA has grown in popularity and prominence with delegates now coming from more than 20 countries across five continents.

The meeting provides an opportunity for researchers, health professionals, international, national and local managers of rabies programs, wildlife biologists, laboratory personnel and other people interested in advancing knowledge of rabies surveillance, prevention and control, to meet each other, to share their successes and also to discuss the challenges to be met.

This year, RITA is celebrating its 20th anniversary. It will be held from Monday, October 19th to Friday, October 23, 2009 at Loews le Concorde hotel in the old Quebec City, in the "La belle province" of Quebec. **Don't miss it!**

We hope to greet you in beautiful and historic Quebec, first town in "New France", for RITA XX.

For more information on the meeting, please visit our web site at **www.rita2009.org** .

Julie Picard
Government of Quebec
Quebec

Farewell Frances Muldoon!

May 23, 2008 marked the end of an era at the Canadian Food Inspection Agency Centre of Expertise for Rabies. After 35 years in the federal public service, Frances Muldoon retired from her position as Rabies Diagnostic Supervisor at the CFIA Ottawa Laboratory Fallowfield.

As many of you know, Frances has been a key player in rabies surveillance in Canada for the past 13 years, managing a busy diagnostic laboratory and providing expertise on rabies diagnosis to any and all who asked. A native of Cape Breton Island, Nova Scotia, Frances received a Bachelor of Science from Dalhousie University in 1972 and then moved to Ottawa where she held positions in the Department of the Environment and the Department of Indian and Northern Affairs. In 1973, she joined the Animal Disease Research Institute (then part of the Department of Agriculture) where she honed her technical skills in Biologics Production and then Histopathology. From 1980 on, she was more closely associated with the Rabies group, first working as a diagnostic technician until 1989. For the next three years she provided technical assistance on a variety of research projects, working with Ken Charlton and Nonie Smart. In 1992, she returned to the diagnostic laboratory, where she became supervisor and coordinator of diagnostic activities in 1995. During this time, Frances was instrumental in the implementation of a quality assurance program (the laboratory is now ISO 17025 accredited) and the Laboratory Sample Tracking System (LSTS), the program now used by CFIA across Canada for tracking all diagnostic specimens. Frances has also trained numerous laboratory technicians, some of whom are still in the rabies laboratory, and many who have gone on to new endeavours. Frances will always be remembered for her lively personality and her folksy, common sense approach to getting things done.

Figure 5. Frances Muldoon enjoys her retirement celebration.

Shortly before her retirement, her friends and colleagues feted Frances and celebrated her accomplishments at an afternoon get-together. There were many kind words spoken, a photo retrospective, and several gifts of appreciation (some serious and some not-so-serious) for Frances' hard work all these years. CFIA Rabies Program Specialist Kim Knight-Picketts composed the following poem for the occasion, which in six stanzas captures Frances' personality and sums up her career in rabies.

Not one to sit still for any length of time, Frances has already become a partner in a successful business, supplying luxury gift baskets to individuals and corporate clients. While she will be missed, we wish her all the best in this next phase of her life away from the laboratory. Thank you Frances!

Christine Fehlner-Gardiner and Alex Wandeler
Centre of Expertise for Rabies
CFIA
Nepean, ON

Ode to Frances

There once was a lab tech named Frances
Who cut up and sectioned those brains
Entering info from all sorts of forms
Making sense out of incomplete claims

She was good at reading the FAT
Perhaps chewing a little as well
She knew who to tell, and perhaps who to not
when rabies was going to hell

Moving up and up to loftier heights
Supervising diagnostics came next
ROAs were approved, Static - stics sent to J.T.
When needed, some muscles were flexed

LSTS has improved under Frances' hand
SM as well as QC
She's left her mark on us all in some way
And tomorrow from us she'll be free

But we'll miss her, this wonder named Frances
Whose passion is true and pure
She understands life, embracing it all
Living fully we can be sure

There once was a lab tech named Frances
Who helped me more than she knows
It's been a pleasure, and fun, and I wish you the best
And I hope that our friendship grows.

Baiting Campaign 2008

After some last minute staffing logistics, the 2008 baiting season was ready to begin. This year we didn't do any baiting in the United States, but instead, did additional work in Quebec and New Brunswick. In order to be able to do post-baiting surveillance, we started this year's schedule with ONRAB baiting for skunks in southwestern Ontario where most rabies cases had been reported. Then we flew east and baited a few of the larger Ontario islands in the St. Lawrence River. From there, we were off to Bromont, Quebec to help with their baiting program; then finished off our first stint of baiting with 4 flights in New Brunswick. We had 2 weeks off before the remainder of the ONRAB baiting for foxes in south western Ontario was to be completed.

Stratford, Ontario

Baiting and ONRAB Appreciation Ceremonies

This year we flew out of the Stratford airport rather than Collingwood airport as the ONRAB plots had been moved to the south. On August 11th, the crews departed Peterborough for Stratford to meet the two MNR Twin Otters, OGA and OPJ, which were already there. The crew began with the set up of the radio tower while a smaller group worked at installing the bait machines and electronics. After the usual aircraft safety, baiting and navigator training we were ready for the first set of flights to get underway. The weather allowed us to get off to a good start and we completed a total of 4 flights by the end of the first day. We were fortunate enough to have fair weather again the next day and headed out to the airport early to fit in 2 flights before the ONRAB appreciation ceremonies began.

In an effort to say thank you to

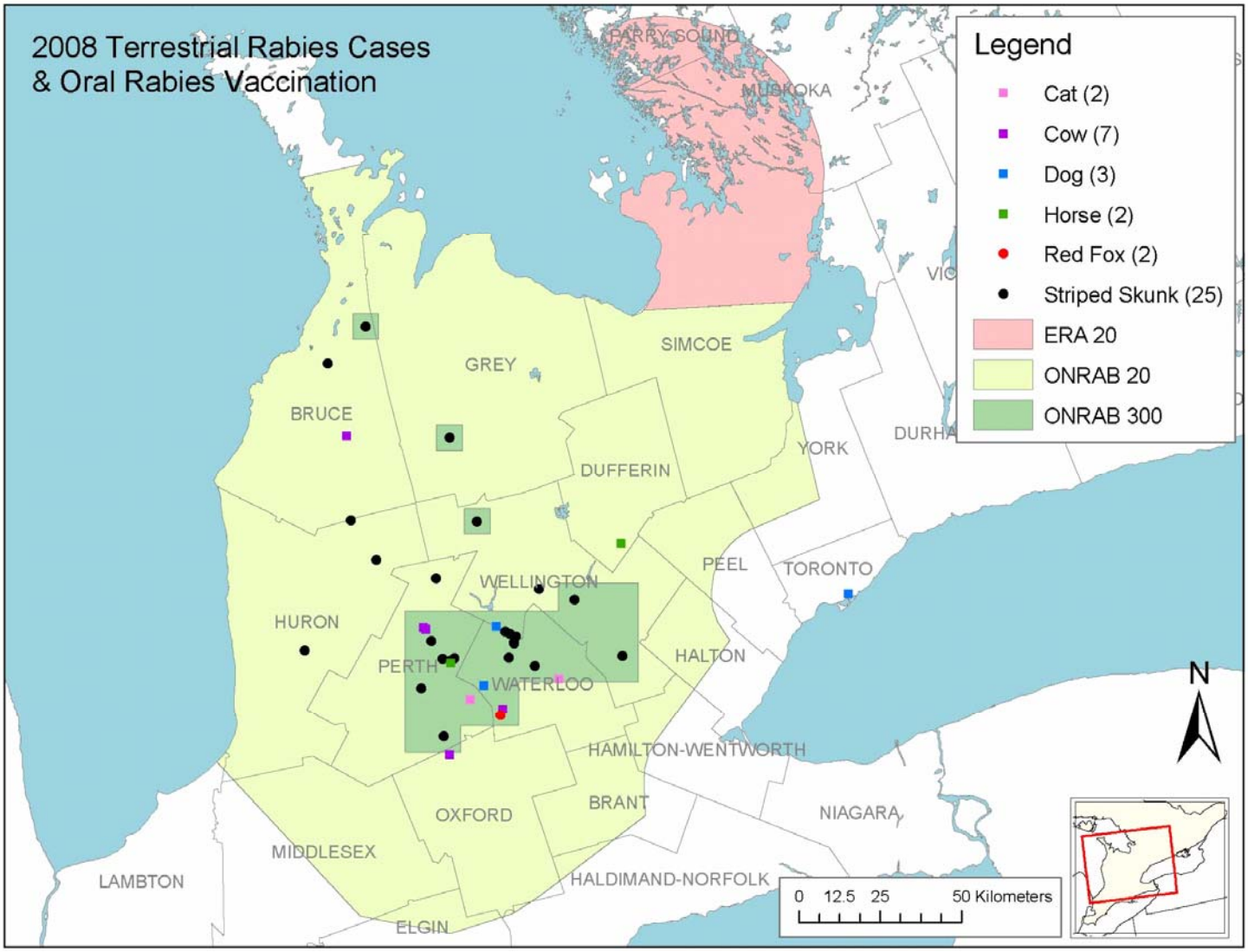

Figure 4. Oral rabies vaccination areas in southwestern and central Ontario.

those who had spent so much time developing the ONRAB vaccine – from initial research to the point where we are now – using it in the aerial baiting program – an appreciation luncheon was held. We were honoured to have both the Director of Applied Research and Development Branch, Cheryl Lewis; as well as Deputy Minister David Lindsay, attend and make presentations.

Following the ceremony, one plane continued with the baiting mission while one stayed behind to allow the dignitaries an opportunity to volunteer with the baiting. After such a hectic day, we still managed to get a total of 7 flights done. Our third day went well with the weather still cooperating – enabling us to finish the remaining 6 flights.

We dropped 516,945 baits for skunks at a density of 300/km^2 and covered an area of 2,574 km^2.

Brockville, Ontario

On August 15th, after the planes were loaded and the baiting crew aboard, the remaining staff drove to Brockville. One of the planes baited Wolfe and Howe Island near Kingston because there are still cases of racoon rabies near the New York-Ontario border. In under an hour, we dropped 14,580 baits. Afterwards, we landed in Kingston to refuel just in time to watch a storm cell to the north of us. Our rooms in Quebec were not available until the next day, so we were able to take a day to sleep in, clean up, catch up on some rest, and relax. A large group headed to the local farmers market and checked out the waterfront. After a week of restaurant food, several of us jumped at an invitation for a BBQ and a swim at a contract staff member's place on the St. Lawrence.

Bromont, Quebec

The morning of the August 17th had crews either driving or flying to Quebec. The planes arrived and we offloaded the engineer's equipment and spare bait machine gear while securing a place to hang our hats for the next few days. Once the pilot's rental cars arrived, we were off to our hotel, Le Menhir, at the base of one of Quebec's popular ski hills.

On the morning of August 18th, our new staff was introduced to our Quebec partners and after a short briefing we started our first ONRAB flights. Everything ran smoothly until a bit of bad weather rolled in – allowing us to get 7 flights completed. With an early start on the 19th, we continued with the aerial baiting and managed to get a total of 10 flights completed. We were hoping to finish the remaining ONRAB flights the next day. After the first 4 flights were completed, we decided to do the next 4 manually. This way we would be able to increase the bait density in some of the hotspots and use up the surplus baits. We distributed 702,675 ONRAB ultra lite baits over 7,091 km^2. On August 21st, we adjusted our bait machines and trained our new staff to distribute the VRG sachets. At the end of the day, we distributed 221,050 VRG sachets over 2,229 km^2. Having completed this area ahead of schedule we had the next day to recuperate, while some staff returned to Ontario. The remaining baiting staff decided to check out Quebec's largest zoo in Granby rather than lounge around the hotel. There was plenty to see and the parrot cage, although noisy, was the highlight of the day. We got to feed them and take pictures.

Fredericton, New Brunswick

On the morning of August 23rd, the baiting staff went to the airport and planned the flight to Fredericton while the rest of the crew drove over with the vehicles. After landing, we were able to relax at the Lord Beaverbrook Hotel. Some decided to take it easy at the hotel while a few of us checked out the walking trails of Odell Park. The next morning, the Ontario contingent met up with Jackie Badcock and her staff for breakfast to discuss their baiting plans. After heading to the airport, we waited for the baits to arrive. We were only able to complete one flight before the weather took a turn for the worse. The day was called and we decided it was better to wait for more volunteers to arrive tomorrow. The morning of August 25th was cool and breezy but we loaded the baits and headed up on the first flight. We were fortunate enough to see four moose, one coyote, one bear and a bald eagle; and got all 3 remaining flights done.

Our New Brunswick flights allowed us to drop 92,070 baits over 1,451 km^2. After saying our goodbyes the next day, the planes returned to Ontario for a couple of weeks before starting up the next leg of baiting work. It was nice to enjoy the scenery that New Brunswick and Quebec has to offer, not to mention one last chicken lunch at St. Hubert in Quebec before returning to Brockville for the night. The next day, everyone made their way back to Peterborough for a much deserved break.

Stratford, Ontario

After some time off and staffing was sorted out, we were ready to start the second stint of ONRAB baiting on September 14th. With our new hires signed on, we left the compound in Peterborough and headed to Stratford again to meet the pilots and engineers of Twin Otters OGA and OPJ. The rain and road conditions must have been just right as there were tons of frogs on the roads and a lot didn't make it. Once we arrived and had lunch, it was time to run through the baiting and aircraft safety training. We set up the radio

tower but the weather wasn't looking too promising - by mid-afternoon the day was called.

September15th was typical fall baiting weather with fog that cleared up by noon, and we completed 4 flights. September 16th was much nicer and we had a small timeframe to bait CFB Meaford in the morning and still manage to get another 6 flights done. We decided that the next day we would finish the Ontario slim flights in the northwest near Georgian Bay and Muskoka from the Barrie-Oro Airport rather than ferry back to Stratford. That morning, 2 flights took off to do the baiting near Midland and replacement crews drove over with the baits for the next set of flights. We landed, lunched and waited for volunteers from the Bracebridge office, as well as past co-worker Kathryn MacDonald, to arrive before starting the two Muskoka flights. With some cooler winds the morning fog burnt off and the 18th looked like another nice day, so we took advantage of the small window to get CFB Borden done. It ended up being a productive day with the help of some of our Niagara TVR staff and we completed 8 flights. On September 19th, we decided to do the remaining flights in manual mode to increase our bait rate as we only had 9 flights left. The first flight, near Goderich, with a wind turbine farm was an interesting way to end this year's baiting. Although it made for a long day, we decided to uninstall the equipment that evening so we could get an early start the next morning.

In five days, we managed to drop 431,628 ultra lites and 65,016 Ontario slims over 30,023 km^2. The weather cooperated and the schedule was spaced nicely to bring this year's fixed wing baiting total to 2,042,391 baits.

Mark Gibson
RRDU
Peterborough, ON

A Novice Baiter's Perspective
Reality and Expectations Collide

Myself (Tara), Aurora and Chris were eager to experience the thrills of the annual rabies bait drop. We had heard from a colleague that it could be a lot of fun, and what a great experience to add to the list.

We stopped at Tim Hortons on the way. We knew the flight was going to be a couple of hours long, and the last thing we wanted was to be hungry….right?

We arrived a little early and were introduced to the gamut of people who would be on various flights throughout the day. They were so friendly…not at all warning us of what was to come. We were split up…Aurora on one plane, Chris and I on the other. Aurora's flight left first. Chris decided to take a Gravol, to ease his stomach. I decide against taking one. "Gravol makes me sleepy, and I want to remember the whole exciting flight!", or so I thought….

We were told it was going to be chilly up in the plane…made sense, being high up in the air. I was already fairly well bundled up, but one of the crew members offered me her jumpsuit for some extra warmth. I get cold easily, and the last thing I wanted to be was too cold.

After some waiting around, it was finally time to board the plane. The crew showed us some neat features on the outside and on the inside of the plane. They showed us how the baiting equipment worked and gave us some safety training. Then they brought out the boxes of baits. The baits smelled like little drops of sweet,

Figure 5. Rabies bait dropping machine loaded with ultra-lite baits in the back of a Twin Otter.

Figure 6. Agricultural farmland in rural southwestern Ontario where rabies vaccine baits are distributed each fall.

delicious sugar. Supposedly this smell bothered some people, but it didn't bother me…they smelled like dessert, and I LOVE dessert….

They also said that it was very important that if we were feeling sick at any point in time during the flight, that we shouldn't feel shy about it. "It happens all the time. You'll feel so much better if you just let it out", they said. "Oh, and don't forget to turn off your headset if you do get sick. There's nothing worse than hearing 'that' broadcasted over the radios". Pshaw! That won't happen to us….

They started up the plane, we strapped ourselves in, and put on our headsets. This was as exciting as it was going to get! Once we were up in the air, the view was awesome; the bubble-style window made for a great panoramic view of the landscape: the perfectly squared-off farms fields, the woodlots, the secluded mansions with their swimming pools. So much cooler than being on the ground!

About a half-hour into the trip, I started feeling a little warm, which was odd because there was a chill in the air…I WAS glad that I had that extra layer of clothing. Then my stomach started churning…and I could feel my face start to flush….I shouldn't have eaten that 'bagel' and 'french vanilla cappuccino' from Tim Hortons….

And so I was sick….but at least I remembered to take off the headset so that nobody had to hear it with me. And since that part was over and done with, I should have felt great for the rest of the trip. Except that immediately after I didn't get that 'just-threw-up-feel-like-a-million-bucks' type feeling. Instead, I got the 'just-threw-up-feel-like-I've-been-hit-by-a-transport-truck' type feeling….

Hmmm….not quite what I was expecting…

Anyway, six little white bags later and the flight was over. And you're probably thinking that the pilot was doing flips, swerving up, down and all around, but he wasn't at all. It was almost as smooth as riding in a car! I can't imagine what it would have been like had he driven like that. Oh, well… I guess it's not something for us 'weak stomachs'. But something to put on the list of life experiences, nonetheless!

Tara Lessard
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Animal Rabies Report: October to December 2008

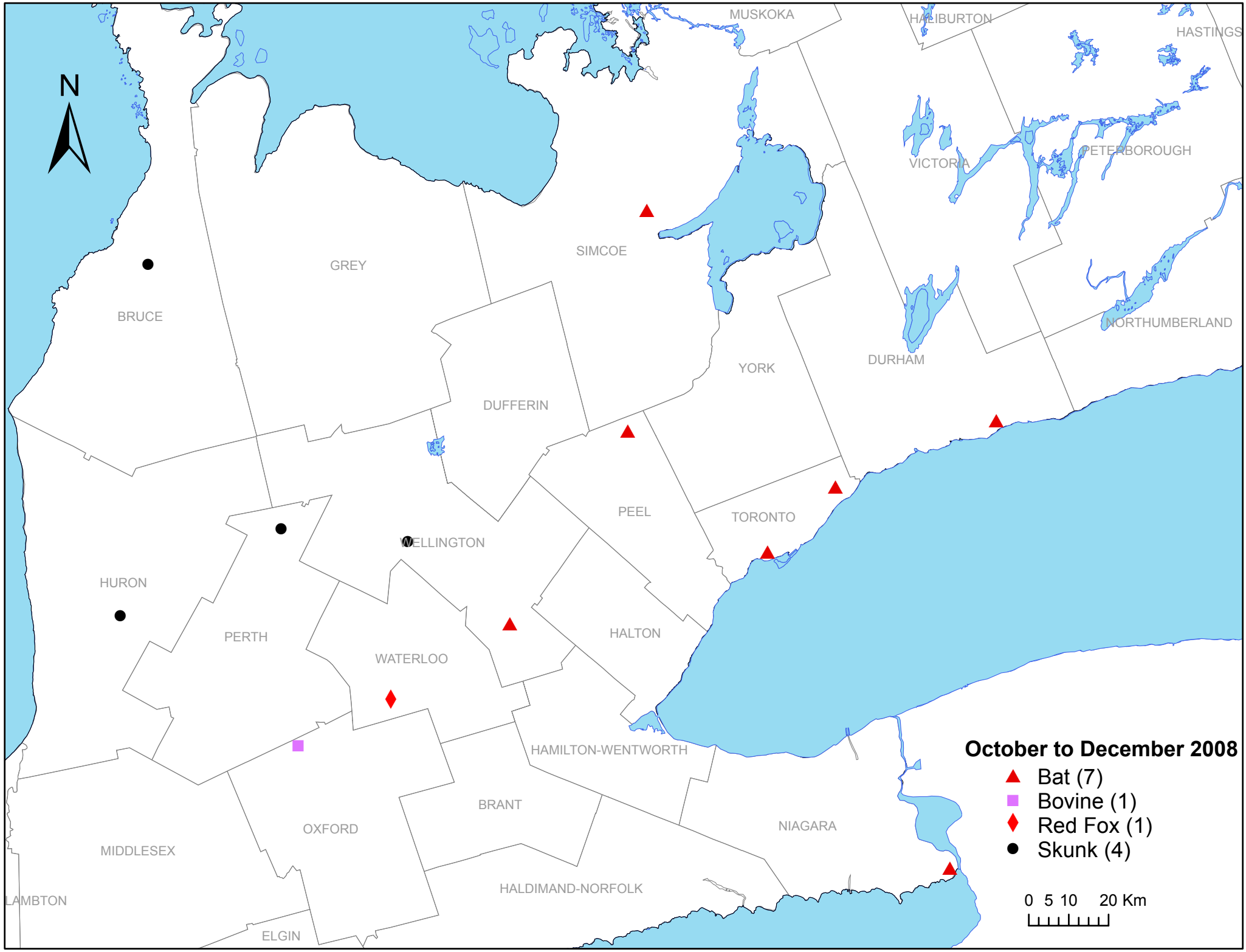
Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region	#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative	
		08	07		08	07		08	07		08	07		08	07		08	07		08	07		08	07		08	07
Eastern																											
Stormont, Dundas & Glengarry																									**0**	**0**	**0**
Prescott-Russell																									**0**	**0**	**0**
Ottawa-Carleton													1	2											**0**	**1**	**2**
Renfrew													1												**0**	**1**	**0**
Lanark																									**0**	**0**	**0**
Leeds and Grenville														3											**0**	**0**	**3**
Frontenac													1	3											**0**	**1**	**3**
Lennox & Addington														1											**0**	**0**	**1**
Central																											
Hastings																									**0**	**0**	**0**
Prince Edward																									**0**	**0**	**0**
Northumberland																									**0**	**0**	**0**
Victoria													1												**0**	**1**	**0**
Haliburton																									**0**	**0**	**0**
Peterborough														5											**0**	**0**	**5**
Durham													1	2	5									1	**1**	**2**	**6**
York Region															1										**0**	**0**	**1**
Toronto													2	4	2		1								**2**	**5**	**2**
Simcoe									2				1	2	4										**1**	**2**	**6**
Western																											
Peel									1				1	1	4										**1**	**1**	**5**
Halton																									**0**	**0**	**0**
Dufferin									2																**0**	**0**	**2**
Wellington							1	6	10				1	2	2								1	2	**2**	**9**	**14**
Waterloo	1	1						6	6					1	1		2	1		1			1	4	**1**	**12**	**12**
Perth							1	7	5					3	1					1			5	1	**1**	**16**	**7**
Grey								2	2									1							**0**	**2**	**3**
Bruce							1	1	1					1	1								1	1	**1**	**3**	**3**
Huron							1	3							2									3	**1**	**3**	**5**

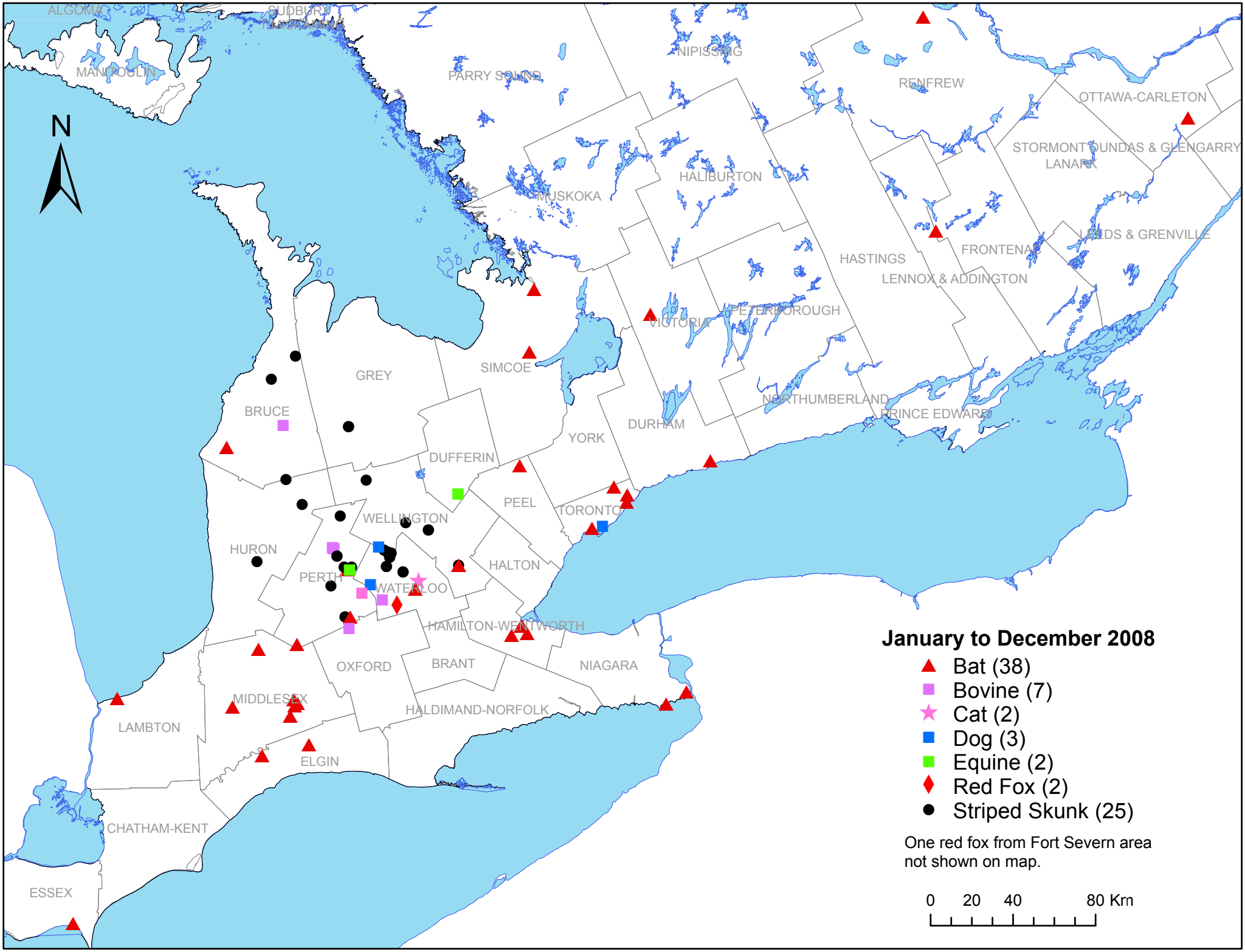
Animal Rabies Report: October to December 2008

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region	#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative	
		08	**07**		**08**	**07**		**08**	**07**		**08**	**07**		**08**	**07**		**08**	**07**		**08**	**07**		**08**	**07**		**08**	**07**
Southern																											
Wentworth													5	5											**0**	**5**	**5**
Haldimand-Norfolk														2											**0**	**0**	**2**
Brant																									**0**	**0**	**0**
Niagara													1	2	6										**1**	**2**	**6**
Elgin														2	2										**0**	**2**	**2**
Oxford									1						1							1	1		**1**	**1**	**2**
Middlesex														6	2										**0**	**6**	**2**
Lambton														1	2										**0**	**1**	**2**
Kent														1	1										**0**	**1**	**1**
Essex														1											**0**	**1**	**0**
Northern																											
Muskoka															2										**0**	**0**	**2**
Parry Sound																									**0**	**0**	**0**
Nipissing																									**0**	**0**	**0**
Sudbury															1										**0**	**0**	**1**
Cochrane																									**0**	**0**	**0**
Timiskaming																									**0**	**0**	**0**
Algoma															1										**0**	**0**	**1**
Thunder Bay																									**0**	**0**	**0**
Rainy River																									**0**	**0**	**0**
Kenora		1																							**0**	**1**	**0**
Regional Totals																											
Eastern	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9	0	0	0	0	0	0	0	0	0	**0**	**3**	**9**
Central	0	0	0	0	0	0	0	0	2	0	0	0	4	9	17	0	1	0	0	0	0	0	0	1	**4**	**10**	**20**
Western	1	1	0	0	0	0	4	25	27	0	0	0	2	8	11	0	2	2	0	2	0	0	8	11	**7**	**46**	**51**
Southern	0	0	0	0	0	0	0	0	1	0	0	0	1	18	21	0	0	0	0	0	0	1	1	0	**2**	**19**	**22**
Northern	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	**0**	**1**	**4**
Totals	**1**	**2**	**0**	**0**	**0**	**0**	**4**	**25**	**30**	**0**	**0**	**0**	**7**	**38**	**62**	**0**	**3**	**2**	**0**	**2**	**0**	**1**	**9**	**12**	**13**	**79**	**106**

Notes for this quarter:

CFIA·ACIA


N
MUSKOKA
HALIBURTON
HASTINGS
VICTORIA
PETERBOROUGH
NORTHUMBERLAND
DURHAM
SIMCOE
GREY
BRUCE
YORK
DUFFERIN
PEEL
TORONTO
WELLINGTON
HURON
PERTH
WATERLOO
HALTON
HAMILTON-WENTWORTH
BRANT
OXFORD
NIAGARA
MIDDLESEX
HALDIMAND-NORFOLK
LAMBTON
ELGIN
October to December 2008
Bat (7)
Bovine (1)
Red Fox (1)
Skunk (4)
0 5 10 20 Km


ALGOMA
SUDBURY
MANITOULIN
PARRY SOUND
NIPISSING
RENFREW
OTTAWA-CARLETON
STORMONT DUNDAS & GLENGARRY
LANARK
HALIBURTON
MUSKOKA
LEEDS & GRENVILLE
FRONTENAC
HASTINGS
LENNOX & ADDINGTON
PETERBOROUGH
VICTORIA
SIMCOE
GREY
BRUCE
NORTHUMBERLAND
PRINCE EDWARD
DURHAM
YORK
DUFFERIN
PEEL
TORONTO
WELLINGTON
HURON
HALTON
PERTH
WATERLOO
HAMILTON-WENTWORTH
OXFORD
BRANT
NIAGARA
MIDDLESEX
HALDIMAND-NORFOLK
LAMBTON
ELGIN
CHATHAM-KENT
ESSEX
N
January to December 2008
Bat (38)
Bovine (7)
Cat (2)
Dog (3)
Equine (2)
Red Fox (2)
Striped Skunk (25)
One red fox from Fort Severn area not shown on map.
0 20 40 80 Krn