

The Rabies Reporter

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Inside this issue:

<i>Rabies in the First Quarter</i>	1
<i>Rabies in the Americas 2001</i>	2
<i>Ohio Spring Bait Drop</i>	3
<i>Navy Island</i>	3
<i>Raccoon Strain in Ontario</i>	5
<i>Farewell Miguel Escobar</i>	6

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 Animal Diseases Research Institute of the Canadian Food Inspection Agency; the Ontario Ministry of Health; and the Geographic Information Systems Laboratory of the Department of Geography at Queens University, Kingston. 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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www.mnr.gov.on.ca/mnr/rabies/rabmenu.html

RABIES IN ONTARIO FIRST QUARTER OF 2001

The numbers of rabies cases in the first quarter were small enough that no firm conclusions can be drawn concerning trends. Although the total number of cases is almost the same as last year, that is deceptive, as the locations are quite different. As stated in the last issue, there are four different events in progress in terrestrial rabies.

The abrupt rise and fall of the northern outbreak shows clearly in Figure 1. That is misleading, as that outbreak has moved. There was one case in the Sudbury area in the first quarter. There were 8 more in

April, and cases came in rapidly in May. That will be described in more detail in the next issue, when the pattern is clearer.

In the western region, the situation is quite similar to that in the last two years. Waterloo-Wellington-Dufferin, and Grey-Bruce-Huron still have rabid skunks and the total rabies cases by quarter have been between 12 and 24 since 1999. Last winter, snow remained on the ground for longer than it had in the previous 15 years. Radiotelemetry studies during 1975-1981 indicated that under such conditions, skunks

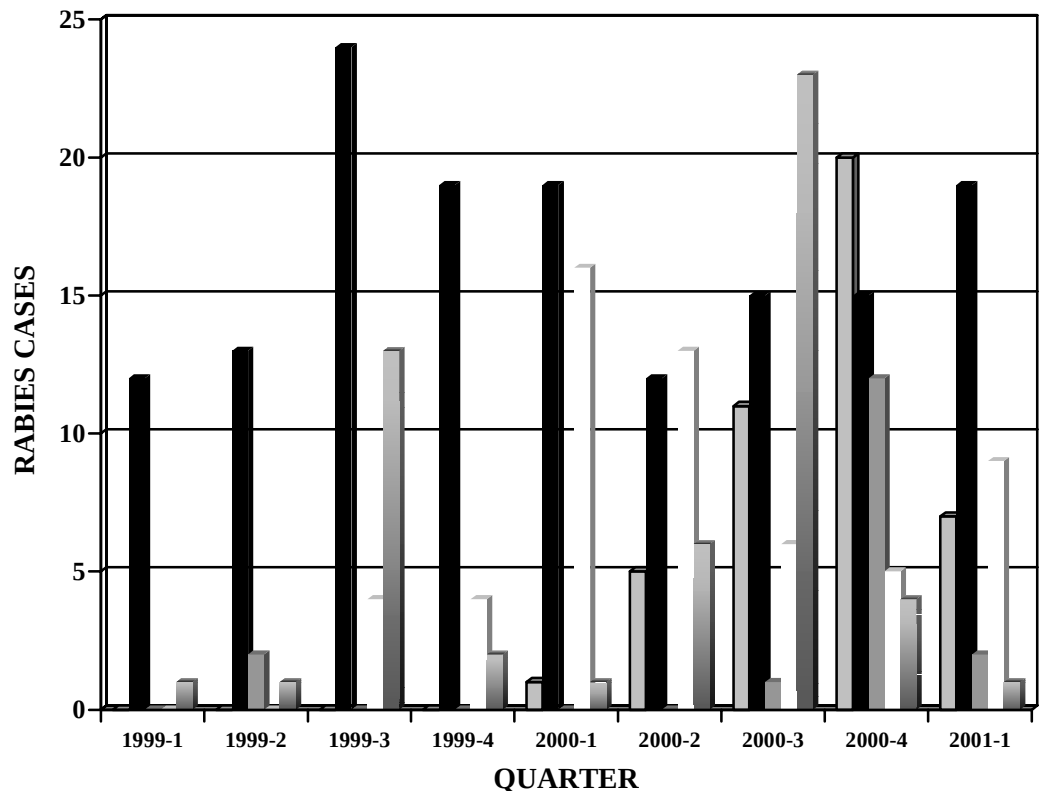


Figure 1. Summary of rabies cases in selected regions of Ontario, 1999-2001. The left bars (pale gray) show arctic fox strain rabies in northern Ontario. The next bars (black pattern) show the Western Region. The center bars (dark gray) show arctic fox strain rabies in skunks in the Central Region, which has Peterborough in its center. Raccoon rabies is shown by the next-to-right-hand (almost white) bars, while the rightmost bars show rabid bats.

should stay in their dens most of the time. Perhaps there could have been more rabid skunks had the winter been milder. One different feature in this quarter was that 3 of the rabid skunks came from specimens collected from trappers by the rabies team. Such animals would not normally be reported, so maybe there were only 9 rabid skunks compared to 15 in 2000.

The Peterborough area outbreak of arctic fox rabies in skunks was quiet during this quarter, but again, perhaps cases will be more numerous once the snow has melted.

There were 9 new cases of raccoon variant rabies, all in the county of Leeds and Grenville. These are all clustered in the area between Athens and Charleston Lake, an area no more than 20 km in diameter. MNR trappers found many of these cases. For example, in January, a farmer shot a suspiciously acting raccoon. A trap-

per was hired, and he found three more rabid raccoons in or near the same barn. The same happened a few kilometers to the east. Point Infection Control began in early April, and that resulted in more rabid animals being detected. A more comprehensive report will be in the next issue.

What is disappointing is that the area of active cases was covered with baits in late June 2000, and part of it was baited again in September. The preliminary results from the June baiting were disappointing, with especially low tetracycline prevalence among juvenile raccoons. Baiting has had very positive effects, especially on the New York side of the St. Lawrence, but it is not the universal magic bullet to eliminate raccoon rabies.

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RABIES IN THE AMERICAS, 2001

The Ontario Ministry of Natural Resources is pleased to host the 12th annual International Rabies in the Americas Meeting. This conference, featuring presentations on all aspects of rabies research and rabies control will be held Nov. 12th-16th in Peterborough, Ontario, Canada.

In keeping with the conference theme "A Holistic Approach to Rabies and Rabies Control" emphasis will be placed on presentations which feature synthesis and discussion on aspects of rabies and rabies control in the Americas. The conference will feature a special session on raccoon rabies in Northeastern United States and Canada, as well as sessions on bats, oral vaccination of wildlife, legal, economic and political aspects of rabies control programs and North-South dialogue around rabies control. A significant feature of this conference is longer 20 minute presentations, which will allow participants to fully explore their subject. As with previous meetings simultaneous English-Spanish translation will be available. Also, special 3 hour "technical" sessions featured at this conference for the first time in 2001, will allow participants to fully explore a particular subject. (Note: translation will not be available for technical sessions).

The conference will be held in the conference rooms of the Ontario Ministry of Natural Resources, 300 Water Street, Peterborough, Ontario, Canada. Registration fees will be maintained at the same level as 2000 - \$100 USD. Because of space restrictions, attendance will be limited to the first 170 participants daily. Accommodation has been arranged with the Holiday Inn, Peterborough, Ontario (705) 743-1144. Travel arrangements can be made with Lori Nichol, Frederick Travel,

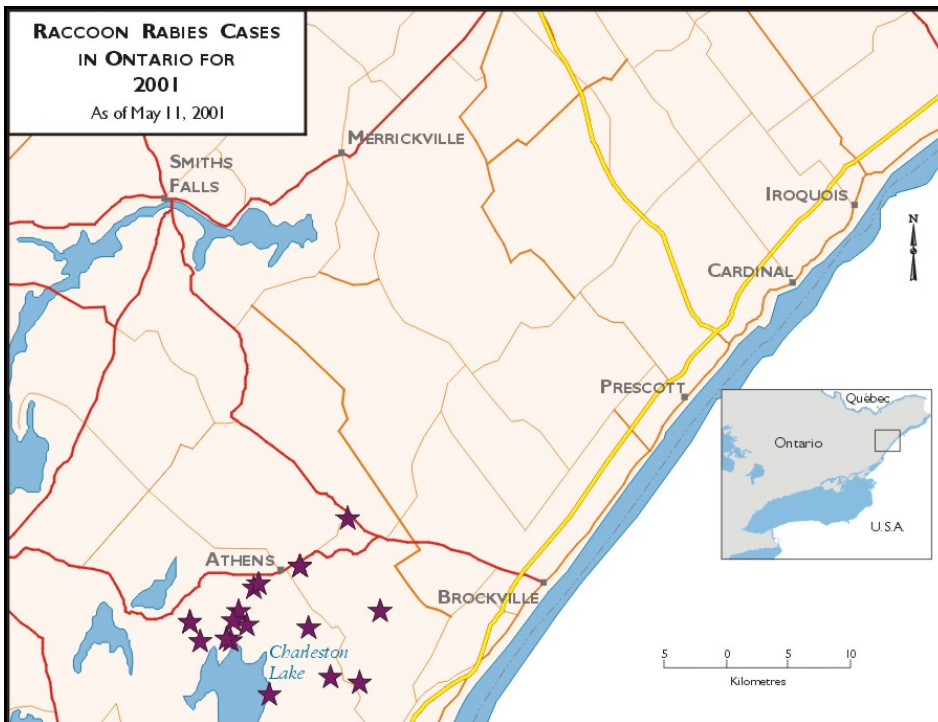


Figure 2. Map of the cases of raccoon strain rabies in eastern Ontario, 1 January—11 May 2001. All cases were within a zone whose first rabies case was 23 August 2000. (See Rabies Reporter 11(4)). Note that these cases were tightly clustered, within a diameter of about 20 km. Thanks to Joanne Lemoine and Derek Pinto for the map, plotted from data supplied by CFIA-ADRI.

1 - 8 0 0 - 8 0 0 - 7 2 9 2 (Lori@fredericktravel.com). In both cases, please indicate you are with the 12th International Rabies in the Americas Conference". Beginning in July 2001, the first call for papers, and conference registration packages will be available on the Rabies Unit website (www.mnr.gov.on.ca/mnr/rabies/conf.html).

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OHIO SPRING BAIT DROP—2001

This past spring the Ohio Department of Health (ODH) in cooperation with the United States Department of Agriculture (USDA), Wildlife Services, Ohio Department of Natural Resources (DNR), Ohio National Guard and Ontario Ministry of Natural Resources (MNR), distributed 437, 280 doses of rabies vaccine baits to establish an immune barrier along the Ohio-Pennsylvania border in order to halt the spread of raccoon strain of rabies.

Three Twin Otters arrived at Youngstown-Elser Metro airport on April 26, 2001. The Ontario crew comprised of chief pilot Neil Ayers (aka El Heffa), pilot's Jeff McClain, Dean Gill, Al Quinn, Gord Leamy and Dan Baron. The aviation engineers included Dan Berndt and Randy Godda. The Rabies Research Unit crew was comprised of Kim Bennett and Andrew Silver. Upon arrival, we said a quick hello to all our dear

friends, had a bite to eat, equipped the aircraft, and had a set of flights started from Elser by mid afternoon. At the end of the day, the planes were fueled, loaded with baits and parked for the night in a hangar that had no problems housing all three Twins as well as the DNR helicopter for the night.

Heading down for breakfast on the 27th, it was deemed a good idea that we had stored the aircraft in the hangar over night because, to our dismay, there was 3 inches of snow on the ground with still more falling. After a leisurely breakfast, we headed to the airport to prepare the aircraft for the day's flying. The snow delay allowed us to do all of the aircraft and bait machine safety briefings for the new and returning staff. Again, the National Guard did most of the labor-intensive work around the airport loading and unloading baits from the trailer and aircraft. By 11:30, all three aircraft were airborne and baits were being distributed across the barrier. The barrier runs along the Ohio – Pennsylvania border from Lake Erie to the Ohio River. By the end of day two approximately 164, 280 vaccine baits had been dropped.

On the morning of the 28th, the

weather looked great. All three aircraft were airborne by 7:30 a.m.; and by the end of the day a record number of baits had been dropped in Ohio - 179,040. To everyone's delight, Miguel Escobar showed up and decided to jump on the last flight of the day as a baiter. That night, we all headed out with our friend for a Mexican dinner and a couple of drinks.

The 29th would be the wind up day. By the end of it, we finished baiting the vaccination barrier, had camp broken down and had the aircrafts cleaned and loaded for the trip home the next day. That evening there was a special get together to say thanks and future good luck to Miguel Escobar for all his hard work in the rabies field. Miguel was leaving Merial to pursue other challenges. With Janet and Erin Hale's great help, a nice spread of food was laid out for every one at the hotel that night. With presentations to Miguel from Bob Hale (ODH), Neil Ayers (MNR) and Andrew Silver (MNR), Miguel thanked every one for what they had done to prevent the spread of rabies and for being such good friends.

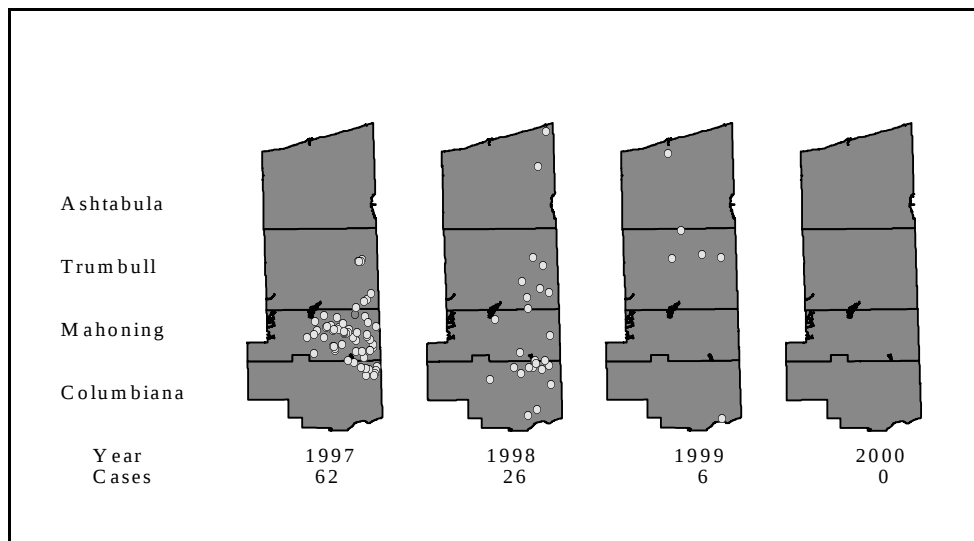


Figure 3. Summary of the rabies cases in Ohio, 1997-2001. Each dot represents one confirmed rabid animal. The shaded area corresponds approximately to the area baited in spring 2001.

On the 30th, it was time again to say bye to all our good friends from Ohio. We will see them for a longer period of time in the fall as the barrier will be extended into West Virginia. All Twins left Elser Metro around 8:00 am, each returning to their home bases in Ontario to prepare for the upcoming fire season.

I would like to thank every one who participated in the spring bait drop including the people that helped out from behind the scenes. It was a successful drop and it could have not been accomplished without the total teamwork from all organizations within the MNR as well as State organizations from Ohio and friends and family.

*Andrew Silver
Rabies Research & Development
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Peterborough*

NAVY ISLAND - A BORDER BATTLEGROUND

Navy Island is a 316 acre parcel of land situated on the Niagara River a short distance upstream from the brink of the falls. Because of its geographic location, lying between the mainland borders of the United States and Canada, its past has played a very important role in the development of Canada as we know it today.

New France had just ceded to the British following the Seven Years War in 1763, after which the British were left with all their forts and posts destroyed, except Fort Detroit and Fort Niagara. The British militia assembled and regrouped at Fort Niagara. The British Commander-in Chief was instructed to establish a naval shipyard on the Island in 1763, hence the name. Their orders were to build two sloops and three schooners to

carry troops and supplies up river and across Lake Erie to relieve Fort Detroit, which they achieved. They were the first vessels to navigate the upper Great Lakes under the British flag.

Over the ensuing years, the American militia made many attempts to defeat the British and take over the Niagara region and Upper Canada. There were fierce battles at Queenston Heights and Lundy's Lane. Navy Island played a pivotal role in defeating these advances including the final battle at Chippawa (directly across from Navy Island) which ended the War of 1812.

For almost 200 years, Canada and the United States have celebrated an undefeated border that stretches across North America from coast to coast. The Niagara River Region, the historic scene of fierce fighting and many battles, is calm and peaceful today---or is it?

We now fast forward from 1814 to the year 2000 and we find another American invader is poised to land on the Canadian shores. This time the enemy is not coming with cannons and muskets but with an arsenal just as deadly---RABIES---!

The American raccoon strain of rabies has advanced from the state of Florida in the 1940's to reach upper New York State and the Canadian border. The virus was successful in crossing the St. Lawrence River into Ontario in July 1999, north of Prescott. A subsequent outbreak of raccoon rabies occurred on Wolfe Island, which is situated at the eastern end of Lake Ontario at the mouth of the St. Lawrence River.

With this additional outbreak of rabies on Wolfe Island, the Rabies Unit decided that Navy Island, with its large raccoon population, close proximity to the American shore, and increased human activity, should be included in the year 2000 Niagara TVR program.

Dave Antonio and Ross Chambers (who has been involved with the Niag-

ara TVR operations since their inception in 1994) made preparations to Trap Vaccinate and Release on Navy Island. They started by contacting the Niagara Parks Commission (which has jurisdiction over the island), the Niagara Parks Police and the personnel operating the Police Patrol Boat, as well as some friends. Dave lives along the river and together, they made their intentions and movements known.

Commencing on June 12, 2000, we used Dave's fishing boat to transport our gear and traps across the river. We began setting traps at the southern point working clockwise around the island over the next two weeks. We picked up our first sets after a few days satisfied that we had captured all of the animals in the area and reset them in front of the last placed traps. Sets were staggered from the shoreline up to 100 to 200 yards inland, thus covering the entire island on our way around from the starting point.

In 2000, we had an unusually wet spring and it continued into June with incessant rain. When bad situations occur, I try to keep a positive note by thinking things are never so bad that they can't get worse. Well worse they got...and worse...and worse. There was hard driving rains with howling winds every day. With more heavy rain throughout the nights, there was water lying everywhere. Trapping conditions were terrible.

We started checking our regular cell traps at first light, then met up by mid-afternoon to do Navy Island. This left us soaked all day from dawn till dark, but we soldiered on. Despite the bad elements, we managed to vaccinate and tag 100 raccoons with 65 recaptures.

The raccoons we handled seemed in relatively good health with no signs of any diseases. We tried to determine what they were feeding on at this time of year by

checking the scat which we found. They were very runny with a jet black shiny hue similar to black ink. Leaning logs and scent posts were smeared with this very runny stool. Since it was too early for any ripe berries, Ross thought that they were feeding mostly on snails and small grubs. This stool was evident throughout the entire area.

We carefully checked all adults for signs of ear tags and captured two that had strong evidence of previous tags - one had a hole in one ear and a rip in the other coinciding with tag placement. The other adult had holes in both ears accordingly. We captured one adult albino, 11 juvenile the first week, and 21 juveniles the second week. What a difference a week makes!

We encountered many deer with young fawns ranging from a few days old to 6-8 weeks old, red squirrels, toads, snakes, frogs, a variety of snails, and numerous bird species. We did not capture or see any evidence of opossum, skunks or cats-----yet. We sighted one golden eagle, which we encountered many times over the next two weeks even surprising it once while feeding by a log at the water's edge. We recently learned that there have been many sightings of an adult pair of bald eagles hanging around the island this past winter. Hopefully, they will stay and nest. There is an old nest site at the northern end of the island located high up in an old tree. Recently, the tree was fitted with a new anti-predator guard around the base of the trunk. The last time a pair of bald eagles were observed using this site was in 1946.

One of the unique features of Navy Island is the many varieties of plants and large old trees including massive oak, black walnut, poplar, ash, and hickory. Many of these stately old trees have musket balls embedded deep in their trunks. With the absence of gray squirrels, the acorns, walnuts and hickory nuts were

scattered over the ground untouched from previous years. Ross remarked that he had never seen walnuts and hickory nuts so large. With plenty of old growth trees, ideal den sites were everywhere.

On summing up our two weeks of TVR work on the island, we felt we accomplished what we had set out to do and were satisfied we had vaccinated and tagged a very high percentage of the raccoon population missing few animals - albeit some juveniles. With all the bad weather, loading and unloading the boat, slugging the traps up steep slippery banks, being soaked and sloshing through water all day, and lack of sleep; Ross was always upbeat and never once got discouraged. We both felt it was well worth the time and effort to add to the TVR program. The only negative note was the human element - the garbage at the campsites, broken glass and litter strewn about. It was disturbing to see mature trees that had been cut down with just their top branches used for firewood. Others were cut down and just left lying on the ground. Most days, we left the island with bags of garbage in the boat.

The Niagara Parks System contains some of the highest concentration of raccoons in the Niagara TVR zones. With Niagara Falls hosting more than 17 million tourists annually, an outbreak of raccoon rabies would have a major impact on the Niagara Region.

The MNR Rabies Team has been working diligently and relentlessly at keeping the virus from entering the Niagara Region. Like remnants of the past, they are waging a modern day battle. So far, they have succeeded in keeping the enemy at bay.

I often pause and reflect on what transpired here so many years ago, whenever I am on Navy Island standing under these giant trees, which are living monuments of our history, pillars of testament to the past, these monarchs which witnessed the events that shaped our future, many bearing the scars of war. Although they have

not heard a shot fired in anger in almost 200 years, they stand guard; ever listening; as the war goes on.

Dave Antonio
Ross Chambers
Rabies Research & Development
Niagara TVR Program

A NEW RABIES STRAIN COMES TO ONTARIO

The spread of the raccoon strain of rabies could change dramatically the relationship we have with wildlife in the city.

The Ministry of Natural Resources is fighting a battle on our behalf - trying to stop raccoon rabies from spreading across the province. For decades, the "Arctic fox strain" of rabies was the cause of the majority of rabies cases in Ontario. A highly successful program run by the Ministry has reduced the number of fox strain animal rabies cases from an average of 2000 per year to fewer than 100 cases.

The Ministry started dropping "baits" in the wild containing a type of rabies vaccine that would vaccinate foxes. Twelve million baits have been dropped since the program began in 1989. The number of rabid foxes has dropped significantly. Since foxes were the main source of rabies in southern Ontario, this program decreased rabies in all animal species.

The number of humans that required treatment after suspected exposure to rabid animals dropped from about 2000 per year to 1000 per year in the same time period, resulting in millions of dollars of savings to the province.

The wildlife baiting program was therefore a success medically and in the all important "cost effec-

tive" way.

Since the 1990's New York State has had an outbreak of "raccoon strain rabies". Rabies spread rapidly through the raccoon population. To try to stop this strain from 'jumping' to Ontario, the Ministry created a buffer zone on the border with New York State. In addition to the rabies vaccine bait dropping program, they began a "Trap, Vaccinate, Release (TVR)" program. The idea was to vaccinate enough wildlife to stop the spread through raccoons and stop the new rabies from coming to Ontario. In Niagara and St. Lawrence region alone, 40,000 raccoons and 3000 skunks were vaccinated in the buffer zone. For five years, the TVR program worked. Raccoon rabies was kept out of our province.

In July of 1999 the first cases of raccoon rabies appeared in the Wolfe Island/Brockville area. Since then fifty confirmed cases of raccoon rabies have been discovered in the province.

The Ministry has launched an aggressive program in that area of eastern Ontario to keep the outbreak under control using TVR as well as vaccine baits. Part of the problem is that the wildlife rabies vaccine baits that work on foxes do not work on skunks and raccoons. Therefore an oral vaccine that works only on raccoons is being used. In fact, during 2000, more than 800,000 vaccine baits were distributed in eastern Ontario to control raccoon rabies. Efforts are underway to develop a vaccine that can be used in baits for raccoons, as well as for skunks and foxes.

Raccoons are also known to be notorious "hitchhikers". They commonly hide in motor vehicles, especially transport trucks. Raccoons are also wanderers. Most tend to travel less than ten kilometers, but some individuals have been shown to move up to 150 kilometers away.

The message is that in spite of the Herculean efforts of the workers in

the Ministry, coming to a backyard near you COULD be rabid raccoons. Unlike foxes, raccoons are common in the inner city.

We can hope that the spread of raccoon rabies will be halted in the Brockville area, or that it will be a few years before it reaches our area. With an estimated 1.2 million raccoons in the province, a raccoon rabies epidemic would be a public health challenge, to say the least! The technicians operating the Ministry's wildlife rabies control program deserve funding and support to give them the tools to continue to keep the public safe from this latest threat.

Gary Goeree*

[Reprinted from the Kitchener-Waterloo Record.]

* Dr. Gary Goeree, DVM, MSc is the Community Forum Editor for the Kitchener-Waterloo Record.

GRACIAS AMIGOS... THANK YOU... MERCI

Five years of camaraderie, extraordinary personal growth, and unforgettable professional experiences are now part of my memories. I learned from all of you. I want to express my sincere gratitude to all the people involved in the ORVP in North America. Working with all of you, the rabies experts, has been a great experience for me. I will remember all the rabies meetings, business appointments, conferences, the fieldwork and especially the people. I miss this fantastic human group.

All the best. Thank you my friends...

Miguel Escobar, DVM
meescobar@aol.com

FAREWELL MIGUEL

The Rabies Unit would like to take this opportunity to express our gratitude to Miguel. He has been a valuable asset to the rabies programs in both the United States and Canada.

While with Merial, Miguel helped improve international relations and the delivery of the oral rabies vaccination program. Miguel attended several bait drops to get some hands on experience and to determine how baits, packaging etc. could be improved to make the jobs of the baiters easier. This was a vastly different attitude from most office executives.

Rabies Research & Development
Trent University
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P.S. Miguel, you're welcome to sign on as a baiter at any of our bait drops. This time we'll pick up the tab for your supper!

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Animal Rabies Report: January to March 2001

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Animal Rabies Report: January to March 2001

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Animal Rabies Report: January to March 2001

Animal Type	Fox			Raccoon			Skunk			Other Wildlife			Bat			Dog			Cat			Livestock			Totals		
County or Region	#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative		#	Cumulative	
		01	00		01	00		01	00		01	00		01	00		01	00		01	00		01	00		01	00
Northern																											
Muskoka																								0	0	0	
Parry Sound																								0	0	0	
Nipissing																								0	0	0	
Sudbury	1	1																						1	1	0	
Cochrane	1	1	1						2	2					1	1					2	2		6	6	1	
Timiskaming									1	1														1	1	0	
Algoma																								0	0	0	
Thunder Bay																								0	0	0	
Rainy River																								0	0	0	
Kenora																								0	0	0	
Regional Totals																											
Eastern				9	9	16							1	1	1									10	10	17	
Central							2	2																2	2	0	
Western			1				10	10	15												7	7	3	17	17	19	
Southern																								0	0	0	
Northern	2	2	1							3	3					1	1				2	2		8	8	1	
TOTALS	2	2	2	9	9	16	12	12	15	3	3	0	1	1	1	1	1	0	0	0	0	9	9	3	37	37	37
Notes for this quarter:	In the Northern Region, the 2 livestock cases were 1 bison and 1 cow. The other wildlife was 2 wolves and 1 coyote. In the Western Region, the 7 livestock were 3 cattle, 2 horses and 2 sheep. The bat in Lennox-Addington was a big brown bat.																										

