

# The Rabies Reporter

November - December 1990

Volume 1, Number 3

## ***In This Issue:***

Changes to the Zoonosis Reports  
Northern Rabies Cases  
The 1990 Rabies Bait Distribution  
July-September Zoonosis Reports  
July-September Fox and Skunk  
Rabies Incidence Maps

## ***In the Insider***

Unusual Rabies Events:  
Kent and Essex County 1987-1990

## Changes to the Zoonosis Reports

This issue, the zoonosis reports have been modified to report rabies incidence by counties rather than Health Units. Counties are grouped by Health Unit and Agriculture Canada District Offices. The five regions: Eastern, Central, Western, Southern and Northern are based more on geographic location rather than areas of supervision. As well, major metropolitan centres in Ontario are reported separately. The primary reason for this is to make the information more comparable to that used to produce the rabies incidence maps.

Some modification to the categories in the zoonosis reports has also occurred. "Livestock" has replaced the "Cattle" and "Other Livestock" categories.

Although the information for both the zoonosis reports and the incidence maps are derived from Agriculture Canada databases, there is a distinct difference between the two. The zoonosis reports contain clinical rabies cases, those determined by symptomatic diagnosis as well as those diagnosed by the fluorescent antibody test of brain tissue. Since there is no sample, there is no record in the Agriculture Canada database from which the map data are obtained.

At the end of each zoonosis report the number of clinical cases is reported, along with a year to date total of clinical cases broken down by animal type.

## Northern Rabies Cases

Several people have written to point out discrepancies between local rabies records and Rabies Reporter zoonosis reports for Thunder Bay, Rainy River and Kenora. Investigation has revealed that there is a problem in data flow within the reporting system of Agriculture Canada. Rabies cases for these areas are processed through Lethbridge rather than Ottawa. Although the data is forwarded to the Animal Diseases Research Institute in Ottawa, it is encoded on a different specimen control protocol and not easily entered into the main database. Agriculture Canada and Ontario Ministry of Natural Resources are working to retrieve this information. When it becomes available a summary of data will be published in the Rabies Reporter.

## The 1990 Rabies Bait Distribution

### Southwestern Ontario

Baits were dropped over 29 test plots, each 15 by 15 km (225km<sup>2</sup>) during the week of 24-28 September. A total of 182,110 rabies vaccine baits were air dropped from two Twin Otter aircraft. The goal of this baiting program was to test means of improving bait delivery to the fox population, maximizing acceptance while minimizing cost. Principles developed in the small scale experimental trials in Southwestern Ontario will be applied to the large scale experiments in Eastern Ontario.

The experiments were designed to address a number of questions dealing with bait design and distribution. The effects of variations in bait densities (# baits/km<sup>2</sup>) on acceptance (% of the fox population which ate a bait) are being assessed. Different flight patterns (# of flight lines between concession roads) are being tested to maximize efficiency of the distribution process. Two different "scents", cod oil and chicken soup essence, were tested for their ability to in-

duce foxes, skunks and raccoons to eat the baits. Variability in acceptance was investigated by replicating each treatment several times.

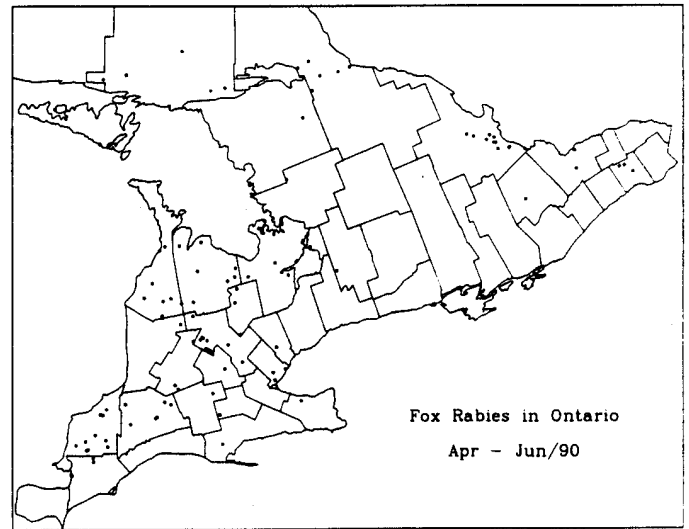
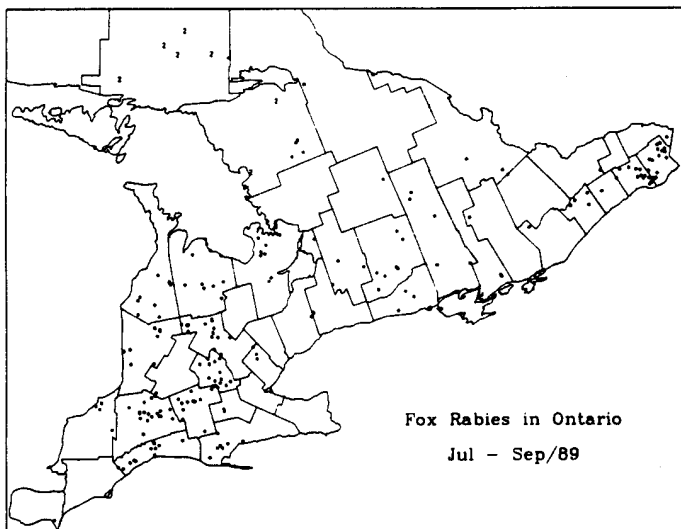
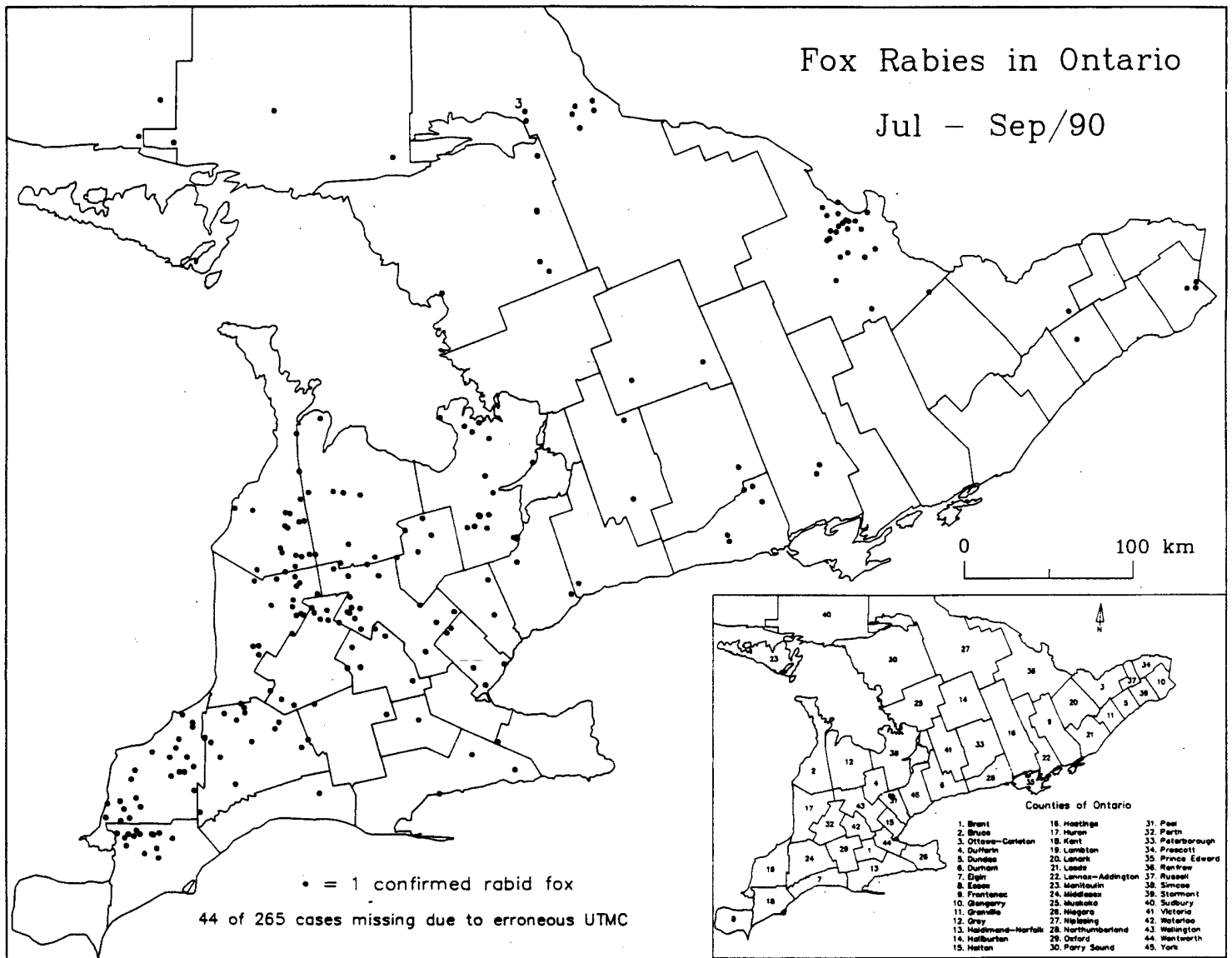
There were five treatments: two with two flight lines per concession at 25 and 50 chicken baits/km<sup>2</sup>, two with one flight line per concession at 12.5 and 25 chicken baits/km<sup>2</sup> and one with two flight lines per concession at 25 baits/km<sup>2</sup> but using bait containing cod oil as attractant in place of the normal chicken soup concentrate. The plots were located from the base of the Bruce Peninsula to the shore of Lake Erie, all within 80 km of Lake Huron. Each plot was chosen to maximize possible specimen returns, based on the fur harvest records of previous years. Specimens, collected from trappers as by-products of the fur harvest, are necessary to evaluate acceptance and vaccination rates. Unfortunately there was a lot of rabies in the whole area last summer, as shown in the incidence maps in this issue. That, coupled with the very low price for fox pelts, has resulted in fewer specimens than necessary for complete analysis of the experiments.

### Eastern Ontario

The Eastern Ontario Study area incorporates an area bounded on the west by a line from Napanee north to the Ottawa River and extending east to the Quebec border, encompassing approximately 30,000 km<sup>2</sup>. Baiting operations in the area took place between the 11<sup>th</sup> and the 26<sup>th</sup> of October. A total of 573,416 baits were dropped from two Twin Otter aircraft.

This was the second year of the Eastern trial. The area being baited was significantly increased from the previous year. In 1989, the eastern and western most thirds of the areas were baited, "walling off" and isolating the central area which was in the midst of a rabies outbreak. This year the entire area was baited, in keeping with computer simulations indicating that the best time to bait an area is immediately after a rabies event. As in Southwestern Ontario, specimen collection is now ongoing.

continued on last page



## Unusual Rabies Events

### Essex County, 1987-1990.

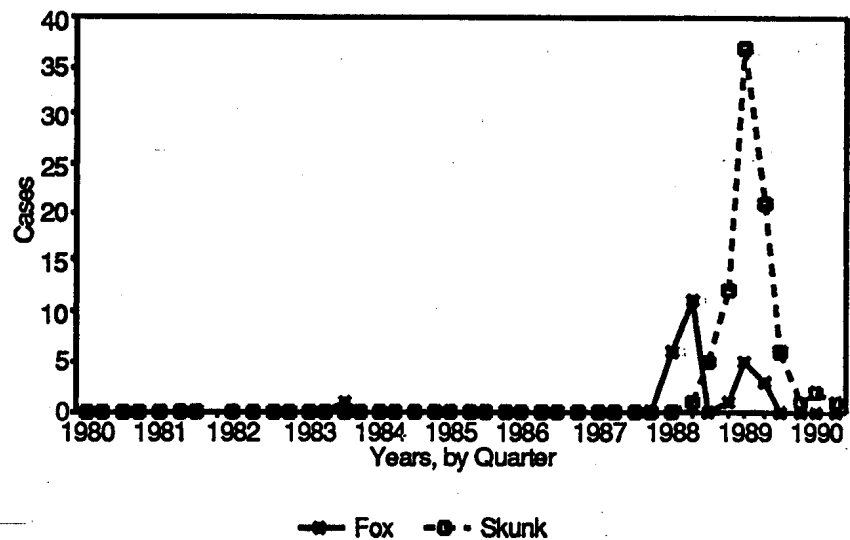
Essex County is the small appendix of Ontario lying between Lake Ontario and Lake St. Clair. It has been relatively free of rabies for the last twenty years, but suffered a rabies outbreak in both foxes and skunks since 1988. This series of events raises two questions; why was Essex rabies free for so long and why has rabies increased in the last three years.

The most obvious explanation of Essex County's freedom from rabies is simple geographic isolation. Surrounded by water on three sides, by Lake Erie, Lake St. Clair and the St. Clair River, Essex County is less likely to be invaded by foxes and skunks than a county completely enclosed by land with no barriers at its boundary.

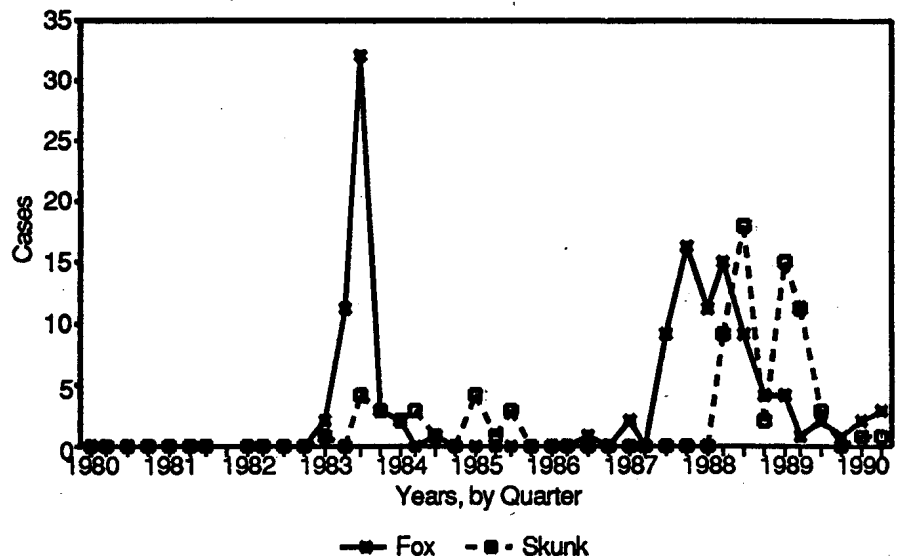
On its land side Essex County abuts Kent County. Although Kent County has a history of rabies incidence, these events do not generally reach Essex County. This suggests that in some way, the border area between Kent and Essex Counties acts as a filter keeping rabies from Essex. For example, after the 1984 rabies outbreak in Kent County, which resulted in 33 rabid foxes, only a single rabid animal was found in Essex. Why the border area may dampen the spread of rabies is unknown. One suggestion is that it is poor fox habitat due to wet soils (reducing potential burrowing sites and the availability of prey items such as ground-hogs) and intensive agricultural practices are not conducive to fox habitat. Lower fox density reduces transmission of rabies.

Rabies may have reached Essex county but never been able to establish a foothold. This may have been a matter of luck. It may also reflect a density dependant component of rabies transmission. The fox population simulation model used in rabies research suggests that the

## ESSEX COUNTY Fox and Skunk Rabies



## KENT COUNTY Fox and Skunk Rabies



density of rabies vectors has a direct effect on the introduction and persistence of rabies in an area. The higher the density (# of vectors/unit area) the more likely rabies is to persist. The matter is further complicated by interactions between red foxes and striped skunks, the two major rabies vectors in Ontario. Foxes probably

carry rabies into new areas, while skunk populations may serve to maintain rabies in a locality.

Although the 1983-1984 rabies event in Kent County did not gain a foothold in Essex, a similar rabies outbreak in 1987-1989 did. This may indicate a change in conditions in Essex which in-

# Animal Rabies Report: July to September 1990

| Animal Type      | Fox |            |    | Skunk |            |    | Other Wildlife |            |    | Dog |            |    | Cat |            |    | Other Domestic |            |    | Total |            |    |
|------------------|-----|------------|----|-------|------------|----|----------------|------------|----|-----|------------|----|-----|------------|----|----------------|------------|----|-------|------------|----|
| County or Area   | #   | Cumulative |    | #     | Cumulative |    | #              | Cumulative |    | #   | Cumulative |    | #   | Cumulative |    | #              | Cumulative |    | #     | Cumulative |    |
|                  |     | 90         | 89 |       | 90         | 89 |                | 90         | 89 |     | 90         | 89 |     | 90         | 89 |                | 90         | 89 |       | 90         | 89 |
| Eastern          |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |                |            |    |       |            |    |
| Stormont         |     | 5          | 21 |       | 7          | 1  | 1              | 1          |    |     |            | 2  | 1   |            |    | 2              | 5          |    | 17    | 29         |    |
| Dundas           | 2   | 4          | 13 |       | 4          |    | 1              |            | 1  |     |            |    |     |            |    |                | 4          | 8  | 4     | 13         |    |
| Glengarry        | 3   | 8          | 22 | 1     | 3          | 2  |                |            | 1  |     |            |    | 3   |            |    |                | 6          | 16 | 4     | 17         |    |
| Prescott         |     | 1          | 3  |       | 1          | 1  |                |            | 2  |     |            |    |     |            |    |                |            | 2  |       | 2          |    |
| Russell          |     |            |    |       | 2          |    |                |            |    |     |            |    |     |            |    |                |            |    |       | 2          |    |
| Carleton         | 1   | 8          | 10 | 3     | 6          | 3  | 1              | 1          | 3  |     |            |    |     |            |    |                | 1          | 5  | 6     | 16         |    |
| Renfrew          | 25  | 56         | 28 | 2     | 2          | 4  |                | 2          | 1  | 2   | 6          | 4  | 1   | 1          | 2  | 1              | 24         | 15 | 31    | 91         |    |
| Lanark           |     | 7          | 34 |       | 2          | 5  |                | 2          | 1  |     | 2          | 2  |     | 1          |    | 5              | 25         |    |       | 18         |    |
| Grenville        |     |            | 11 |       |            | 1  |                |            |    |     |            | 2  |     | 1          |    |                |            | 4  |       | 19         |    |
| Leeds            |     |            | 3  |       |            | 1  |                |            | 1  |     |            |    |     |            |    |                |            |    |       | 5          |    |
| Frontenac        |     | 1          | 6  |       |            | 1  |                |            | 1  |     |            |    |     | 2          |    |                |            |    |       | 1          |    |
| Lennox-Addington |     |            | 11 |       |            |    |                |            |    |     |            |    |     |            |    |                |            | 2  |       | 13         |    |
| Central          |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |                |            |    |       |            |    |
| Hastings         | 2   | 6          | 48 |       | 4          | 7  |                |            | 3  |     | 1          | 7  |     |            |    |                | 1          | 13 | 2     | 12         |    |
| Prince Edward    |     |            | 1  |       |            | 1  |                |            |    |     |            |    |     |            |    |                |            |    |       | 2          |    |
| Northumberland   | 4   | 5          | 13 | 1     | 3          | 10 | 1              | 1          | 7  |     |            | 1  |     | 4          |    | 5              | 14         | 6  | 15    | 49         |    |
| Victoria         | 2   | 7          | 6  | 1     | 7          | 4  |                | 2          | 1  |     |            |    | 1   | 1          |    | 2              | 2          |    | 5     | 19         |    |
| Haliburton       | 2   | 4          | 7  |       |            | 2  | 1              | 1          |    |     |            |    | 1   |            |    |                | 1          | 1  | 3     | 7          |    |
| Peterborough     | 4   | 9          | 15 |       | 3          | 22 | 1              | 3          | 5  |     |            |    | 1   | 1          | 1  | 4              | 3          | 6  | 20    | 46         |    |
| Durham           | 1   | 4          | 10 |       | 8          | 15 | 2              | 3          | 3  |     |            | 1  | 1   | 1          | 2  | 3              | 17         | 5  | 18    | 47         |    |
| York Region      | 1   | 2          | 7  |       |            | 10 |                |            | 3  |     |            | 1  |     | 2          |    |                | 1          | 1  | 2     | 24         |    |
| Scarborough      | 2   | 2          | 1  |       |            | 2  |                | 1          |    |     |            |    |     |            |    |                |            | 2  | 2     | 5          |    |
| East York        |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |                |            |    |       |            |    |
| City of Toronto  |     |            |    |       |            |    |                | 1          |    |     |            |    |     |            |    |                |            |    | 1     |            |    |
| City of York     |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |                |            |    |       |            |    |
| North York       |     |            |    |       |            | 1  |                | 1          |    |     |            |    |     |            |    |                |            |    | 1     | 1          |    |
| Ettobicoke       |     |            |    |       |            | 10 |                |            | 1  |     | 1          |    |     |            |    |                |            |    |       | 11         |    |
| Simcoe           | 23  | 67         | 20 | 5     | 12         | 17 | 4              | 6          | 1  |     | 3          | 3  | 4   | 6          | 1  | 6              | 18         | 22 | 42    | 112        |    |

| Animal Type<br>County or Area | Fox |            |    | Skunk |            |    | Other Wildlife |            |    | Dog |            |    | Cat |            |    | Livestock |            |    | Total |            |    |
|-------------------------------|-----|------------|----|-------|------------|----|----------------|------------|----|-----|------------|----|-----|------------|----|-----------|------------|----|-------|------------|----|
|                               | #   | Cumulative |    | #     | Cumulative |    | #              | Cumulative |    | #   | Cumulative |    | #   | Cumulative |    | #         | Cumulative |    | #     | Cumulative |    |
|                               |     | 90         | 89 |       | 90         | 89 |                | 90         | 89 |     | 90         | 89 |     | 90         | 89 |           | 90         | 89 |       | 90         | 89 |
| Western                       |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    |       |            |    |
| Peel                          | 2   | 4          |    |       | 3          | 5  |                | 1          |    |     |            |    | 1   |            | 1  | 2         | 1          | 3  | 11    | 6          |    |
| Halton                        | 6   | 18         | 3  | 1     | 1          | 9  |                | 3          | 1  | 1   | 2          |    | 1   | 1          | 1  | 4         |            | 9  | 29    | 14         |    |
| Dufferin                      | 5   | 10         | 3  |       | 2          | 4  | 1              | 1          |    |     |            | 2  | 1   | 1          | 1  | 2         | 7          | 13 | 9     | 23         |    |
| Wellington                    | 20  | 38         | 32 | 3     | 16         | 20 |                | 2          | 3  | 1   | 1          | 7  | 1   | 6          | 2  | 10        | 19         | 10 | 36    | 74         |    |
| Waterloo                      | 6   | 15         | 24 | 7     | 13         | 12 | 1              |            | 1  |     | 3          |    | 4   | 1          |    | 3         | 4          | 13 | 35    | 44         |    |
| Perth                         | 8   | 23         | 14 | 1     | 9          | 14 |                | 2          | 2  |     | 2          |    | 1   | 2          | 1  | 1         | 6          | 11 | 44    | 37         |    |
| Grey                          | 9   | 35         | 36 | 2     | 16         | 26 |                | 2          | 1  |     |            |    | 1   | 5          | 3  | 4         | 33         | 16 | 91    | 82         |    |
| Bruce                         | 19  | 43         | 23 | 5     | 12         | 8  |                |            |    |     |            |    | 2   | 4          | 1  | 3         | 27         | 28 | 86    | 60         |    |
| Huron                         | 20  | 33         | 14 |       | 9          | 12 |                |            |    | 2   | 1          | 1  |     | 2          | 2  | 1         | 9          | 38 | 8     | 83         |    |
| 37                            |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    |       |            |    |
| Southern                      |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    |       |            |    |
| Wentworth                     | 2   | 5          |    |       | 1          | 4  |                |            |    |     |            |    |     | 1          |    |           |            | 1  | 2     | 7          | 5  |
| Haldimand                     | 10  | 14         | 5  | 2     | 4          |    |                |            |    |     |            |    | 2   | 2          | 2  | 5         | 15         | 2  | 19    | 35         | 9  |
| Norfolk                       | 1   | 8          | 14 |       |            | 4  |                |            |    |     | 1          |    | 1   | 3          | 1  |           |            | 1  | 2     | 12         | 20 |
| Brant                         | 1   | 6          | 2  |       | 3          | 5  |                | 1          |    |     | 2          | 2  |     | 2          |    |           | 1          | 1  | 1     | 15         | 10 |
| Lincoln                       | 3   | 6          | 12 | 1     | 1          | 2  |                | 1          | 1  | 1   | 1          | 1  | 1   | 2          | 5  | 1         | 1          |    | 6     | 12         | 21 |
| Welland                       |     |            | 8  |       |            | 2  |                |            |    | 3   |            |    |     |            | 1  |           |            |    |       | 14         |    |
| Elgin                         | 1   | 9          | 30 |       | 2          | 16 | 1              | 1          |    |     | 3          | 5  | 6   | 4          | 1  | 3         | 4          | 3  | 24    | 59         |    |
| Oxford                        | 5   | 12         | 20 |       | 5          | 10 | 1              | 2          | 1  | 1   | 1          | 2  | 1   | 3          | 1  | 1         | 7          | 11 | 9     | 30         | 45 |
| Middlesex                     | 13  | 28         | 32 | 7     | 14         | 8  | 3              | 5          | 3  | 2   | 2          |    | 1   | 3          | 1  | 15        | 28         | 25 | 41    | 80         | 69 |
| Lambton                       | 23  | 41         | 6  | 1     | 7          | 5  |                | 2          |    | 1   | 1          |    | 2   | 4          |    | 6         | 9          | 4  | 33    | 62         | 16 |
| Kent                          | 14  | 20         | 6  | 4     | 7          | 27 |                |            | 2  |     | 4          | 5  | 1   |            | 1  | 2         | 1          | 19 | 34    | 41         |    |
| Essex                         |     |            | 8  |       | 3          | 61 |                |            |    |     | 3          | 3  |     |            | 1  |           |            |    | 6     | 73         |    |
| Northern                      |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    |       |            |    |
| Muskoka                       |     | 2          | 11 |       |            | 5  |                |            |    |     | 2          |    |     |            | 1  |           | 1          |    | 3     | 19         |    |
| Parry Sound                   | 6   | 9          | 36 |       | 1          | 4  |                | 1          |    |     | 1          |    |     |            |    | 1         | 2          | 6  | 13    | 42         |    |
| Nipissing                     | 12  | 37         | 16 | 2     | 7          | 3  | 1              | 3          |    | 1   | 2          |    |     |            |    | 3         | 7          | 16 | 52    | 26         |    |
| Sudbury                       | 2   | 16         | 47 |       | 2          | 10 | 1              | 1          | 2  | 1   | 1          | 1  | 1   | 1          | 1  |           | 3          | 4  | 21    | 64         |    |
| Cochrane                      |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    |       |            |    |
| Timiskaming                   |     |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    |       |            |    |
| Algoma                        | 2   |            |    |       |            |    |                |            |    |     |            |    |     |            |    |           |            |    | 2     |            |    |

| Animal Type<br>County or Area | Fox |            |     | Skunk |            |     | Other Wildlife |            |    | Dog |            |    | Cat |            |    | Livestock |            |     | Total |            |      |
|-------------------------------|-----|------------|-----|-------|------------|-----|----------------|------------|----|-----|------------|----|-----|------------|----|-----------|------------|-----|-------|------------|------|
|                               | #   | Cumulative |     | #     | Cumulative |     | #              | Cumulative |    | #   | Cumulative |    | #   | Cumulative |    | #         | Cumulative |     | #     | Cumulative |      |
|                               |     | 90         | 89  |       | 90         | 89  |                | 90         | 89 |     | 90         | 89 |     | 90         | 89 |           | 90         | 89  |       | 90         | 89   |
| Northern ( continued)         |     |            |     |       |            |     |                |            |    |     |            |    |     |            |    |           |            |     |       |            |      |
| Thunder Bay                   |     |            |     |       |            |     |                |            |    |     |            |    |     |            |    |           |            |     |       |            |      |
| Rainy River                   |     |            |     |       |            |     |                |            |    |     |            |    |     |            |    |           |            |     |       |            |      |
| Kenora                        |     |            |     |       |            |     |                |            |    |     |            |    |     |            |    |           |            |     |       |            |      |
| Saskatchewan                  |     |            |     |       |            |     |                |            |    |     |            |    |     |            |    |           |            |     |       |            |      |
| Eastern                       | 41  | 90         | 162 | 6     | 27         | 19  | 1              | 7          | 8  | 2   | 8          | 12 | 1   | 3          | 10 | 4         | 42         | 82  | 55    | 177        | 293  |
| Central                       | 41  | 106        | 128 | 7     | 37         | 101 | 9              | 18         | 25 |     | 5          | 14 | 4   | 10         | 17 | 11        | 34         | 71  | 72    | 210        | 356  |
| Western                       | 95  | 219        | 149 | 19    | 78         | 90  | 2              | 11         | 10 | 3   | 6          | 6  | 8   | 26         | 11 | 31        | 139        | 86  | 158   | 482        | 377  |
| Southern                      | 73  | 149        | 143 | 15    | 47         | 144 | 5              | 10         | 7  | 4   | 18         | 21 | 8   | 27         | 16 | 30        | 66         | 50  | 135   | 317        | 382  |
| Northern                      | 22  | 64         | 110 | 2     | 10         | 22  | 2              | 5          | 2  | 1   | 4          | 3  | 1   | 1          | 2  |           | 5          | 12  | 28    | 89         | 151  |
| Totals                        | 272 | 628        | 692 | 49    | 199        | 377 | 19             | 51         | 52 | 10  | 41         | 56 | 22  | 67         | 56 | 76        | 286        | 301 | 448   | 1275       | 1559 |

Clinically Diagnosed Cases Included: 45

Livestock: 128 cattle, 8 horses, 3 goats, 11 sheep, 1 swine

Other Wildlife: 19 bats, 6 raccoons, 5 coyotes, 3 wolves, 3 bison, 2 groundhogs, 1 deer

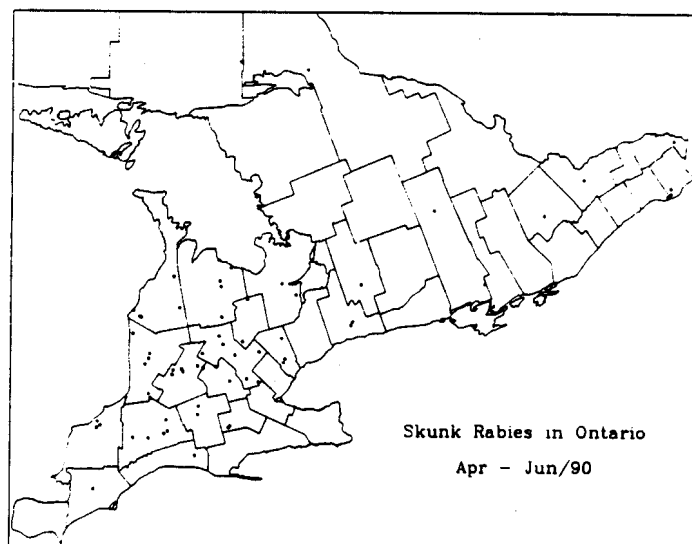
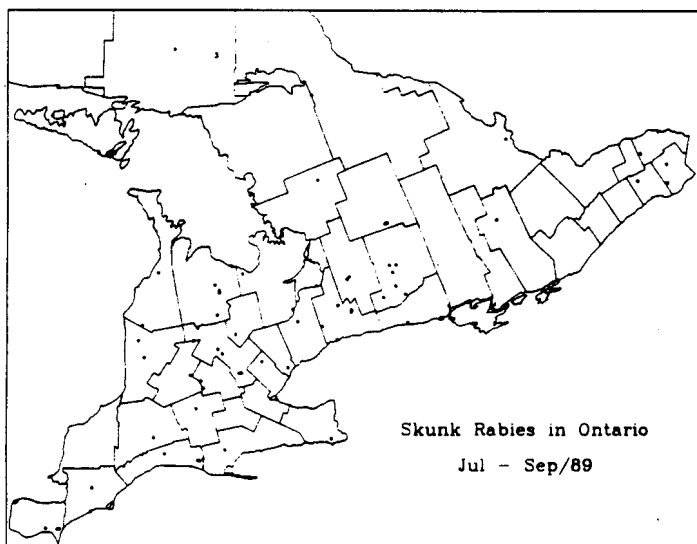
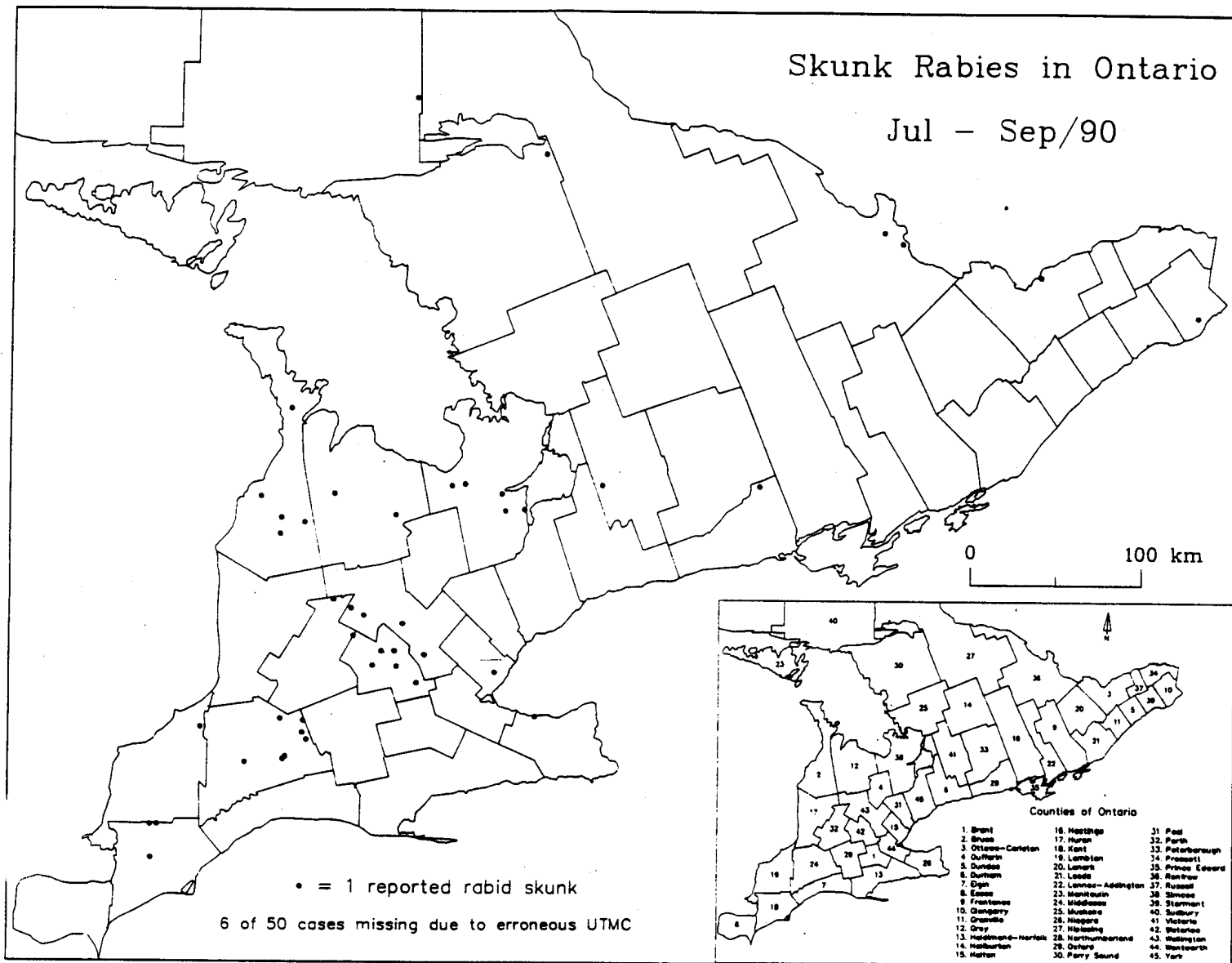
creased the probability of rabies persistence. The most obvious change to suggest is an increase in fox and/or skunk density in the area. Unfortunately no firm information exists. Vector populations may have been high in 1986. This year was the all-time record rabies year in Ontario. Four major and independent outbreaks of rabies, each with unusually high number of cases suggest high numbers of foxes. Meteorological records indicate several mild winters preceded the 1986 outbreaks, which would have increased fox and skunk survival.

Another possible explanation for increased fox numbers is the recent and drastic drop in the price of fox fur. This implies that foxes became more numerous as a result of less trapping, setting the stage for a rabies outbreak. This situation is possible, but unlikely since trapping in southern Ontario probably removes only 40 - 50% of the fall fox population, losses which can be replaced in a single breeding season. As well, heavily trapped areas such as Huron and Grey Counties showed no reduction in rabies during the peak years of the fur harvest. In fact, record rabies outbreaks in 1986 followed a decade of high pelt prices.

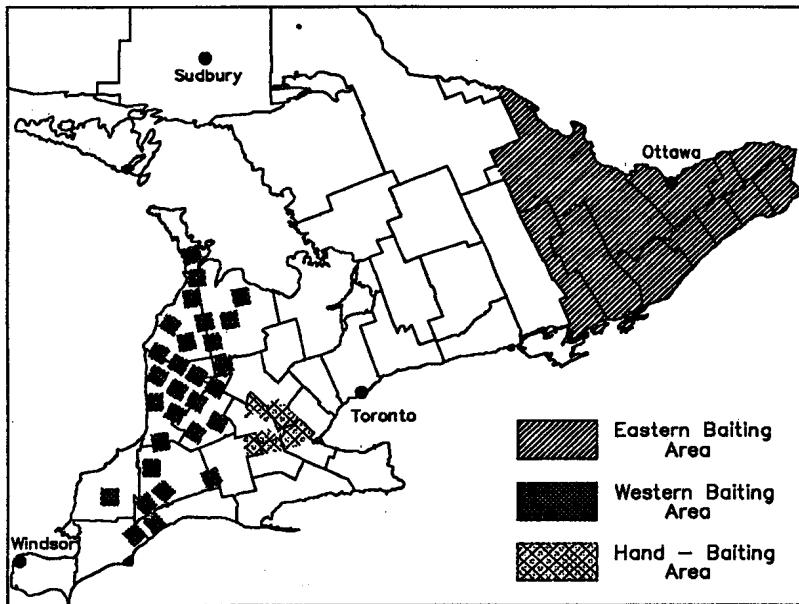
Will rabies persist in Essex county?

Without reintroduction of rabies, outbreaks are, in some respects, self dampening. Mortality due to rabies often results in vector populations falling below the level necessary to maintain rabies in the area. In Essex, rabies cases are tailing off in late 1990. The 1988-1990 rabies event appears to have reduced skunk populations to levels where rabies will not persist. Rabies will probably be absent from Essex County again until a chance introduction of the virus by a fox from Kent County. In the meantime we are working forward to the assessment of this year's experimental large scale oral baiting program in Eastern Ontario. If this scheme reduces rabies as expected, we will have a means of preventing rabies outbreaks in Essex and other parts of Ontario.

C.D. MacInnes & C.P. Nunan



## MNR Rabies Baiting Program - 1990



Technical innovations were one of the high points of the 1990 rabies bait-drop. Planning and execution of individual flights was done using digital maps of the road and river network. Computer aided drafting software (AutoCad) was used to design the flight paths, calculate the coordinates of each turning point and to plot detailed maps of each flight. Data from the digital maps was downloaded to a database program to produce flight sheets for data recording, to calculate the number of baits needed for each flight and to serve as templates for data entry. Waypoints were preloaded into a LORAN-C aircraft navigation computer. When an aircraft landed the prepared LORAN unit could be simply exchanged with the one in the aircraft to speed up servicing between flights. Results of the day's operations could be entered, verified and assessed within hours of the last flight landing.

### Cambridge Hand Baiting Trials

In Cambridge District, 31,000 baits were hand placed by local trappers to test the efficiency of hand baiting relative to aerial dropping. Hand baiting is a method of distributing baits commonly used in European rabies vaccination programs. Theoretically, a trapper's knowledge of fox habits allows optimal placement of baits. The study is in its second year. This is a joint venture of Cambridge District OMNR, Waterloo-Blenheim Trappers Council, North Wellington Trappers

Council, the Fur Management Council of Brant, Hamilton and Wentworth Counties and the Rabies Research Unit.

### Urban Rabies Baiting

Rabies baits are also being used in the Urban Rabies Program to complement the Scarborough Trap-Vaccinate-Release program. A total of 11,520 baits were distributed in the ravines and golf courses of Metro Toronto by Rabies Unit personnel. Urban ravines appear to be fox travel-ways. Baiting ravines and fox habitat within the city may reduce rabies introductions from the rural environment.

### Letters

I would like to congratulate all those who contributed to the publication of the first edition of the **Rabies Reporter**. Keep up the good work.

Some suggestions I have for future editions would be: summaries of past vaccine/bait drops and plans for future drops; articles from the A.D.R.I. Rabies Unit and articles from the Ministry of Health.

In particular I would like to see articles covering such issues as responsibilities of various government agencies in rabies control; rabies virus survivability and the degree of risk associated with secondary contact (i.e. rabid animal to domestic animal to person within a short time span); and rabies vaccination clinics and how they are oper-

ated throughout the province. I would also like to see rabies incidence projections using the map format.

I noticed one error in your Rabies Report for the Hastings-Prince Edward Health Unit. The cumulative total for dog cases for 1990 should be one (1) not five (5).

I would like to comment on the Common Errors Found in UTM Reporting". I believe that all the errors which are plaguing the reporting systems are preventable. An error rate of less than 3% should be the target and immediate and long term steps should be taken by Agriculture Canada to achieve this. A great deal of time, effort and public money has gone into the introduction of the UTM and LSCS and allowing the system to not function properly means that a lot of this expenditure is going for naught.

I assume that "true errors" have been substantially reduced by the experience of working with the system. However, the error rate probably could be further reduced by a speedier method of feedback of error to the district offices. At the same time an effective method must be found for ensuring that the appropriate corrective actions are taken to prevent recurrences of the same mistakes. Compulsory use of the UTM by district staff should be considered.

Either Agriculture Canada is committed to this project or it is not. If it is, then let us do it right.

**Bert. L. Carswell, DVM**  
District Veterinarian  
Agriculture Canada  
Belleville District

**The Rabies Reporter**, a scientific newsletter about current issues in rabies research and control, is a joint effort of the Rabies Research Unit, Ontario Ministry of Natural Resources; the Food Production and Inspection Branch of Agriculture Canada; The Ontario Ministry of Health and the Department of Geography, Queens University, Kingston.

Comments, letters, submissions and enquiries should be sent to:

The Rabies Reporter  
Rabies Research Unit,  
Wildlife Research Branch  
P.O. Box 5000,  
Maple, Ontario L6A-1S9

