

## West Nile Virus and Other Mosquito-borne Disease Report

### November 4 – November 10, 2018 (Report Week 45)

#### West Nile Virus

##### Canada

###### Human

During surveillance week 45, ending on November 10, 2018, an additional 5 clinical cases of West Nile virus (WNV) were retrospectively reported to the Public Health Agency of Canada (PHAC). A number of other possible infections remain under investigation.

As of week 45, a total of 345 clinical cases of WNV have been reported by the following four provinces: Alberta (45), Manitoba (32), Ontario (126), and Québec (142). Of these, 189 (55%) have been classified as WNV neurological syndrome, 109 (31%) as WNV non-neurological syndrome and 47 (14%) as unspecified. Twenty-six deaths have been reported. In addition, 25 WNV asymptomatic infections have been reported: Alberta (5), Manitoba (2), Ontario (9), and Québec (9).

###### Mosquito

During the 2018 West Nile virus season, PHAC was notified of 17,565 mosquito pools tested for WNV: Saskatchewan (773), Manitoba (1,924), Ontario (13,099), and Québec (1,769). Of these, 571 (3%) pools have tested positive for WNV: 52 in Saskatchewan, 168 in Manitoba, 305 in Ontario, and 46 in Québec.

###### Bird

To date, 144 out of 295 (49%) dead wild birds have tested positive for WNV by the [Canadian Wildlife Health Cooperative](#) (CWHC), Manitoba Agriculture and British Columbia Ministry of Agriculture-Animal Health Centre: British Columbia (3), Alberta (1), Saskatchewan (4), Manitoba (36), Ontario (37), Québec (55), New Brunswick (3), Nova Scotia (1), and Prince Edward Island (3). In addition, one captive bird has tested positive for WNV: Nova Scotia (1).

It is the first time since 2003 that WNV activity has been detected in birds from the Maritimes (New Brunswick, Nova Scotia, and Prince Edward Island).

###### Equine

To date, the [Canadian Food Inspection Agency](#) (CFIA) has reported 123 domestic horses with West Nile virus in the following five provinces: British Columbia (1), Alberta (72), Saskatchewan (32), Manitoba (5), Ontario (11), and Québec (2).

##### United States and U.S. territories

As of November 13, 2,323 human cases of WNV have been reported to the US [Centers for Disease Control and Prevention \(CDC\)](#). Of these, 1,428 (61%) were classified as neuroinvasive disease and 895 (39%) as non-neuroinvasive disease. One hundred and ten deaths have been reported. In addition, 330 presumptive viremic blood donors have been identified.

##### Europe and Neighboring Countries

As of November 15, 2,048 human cases of West Nile fever have been reported to the European Centre for Disease Prevention and Control. One hundred and seventy-one deaths have been reported. ([Weekly updates: 2018 West Nile fever transmission season](#))

##### Other Mosquito-borne Diseases in Canada

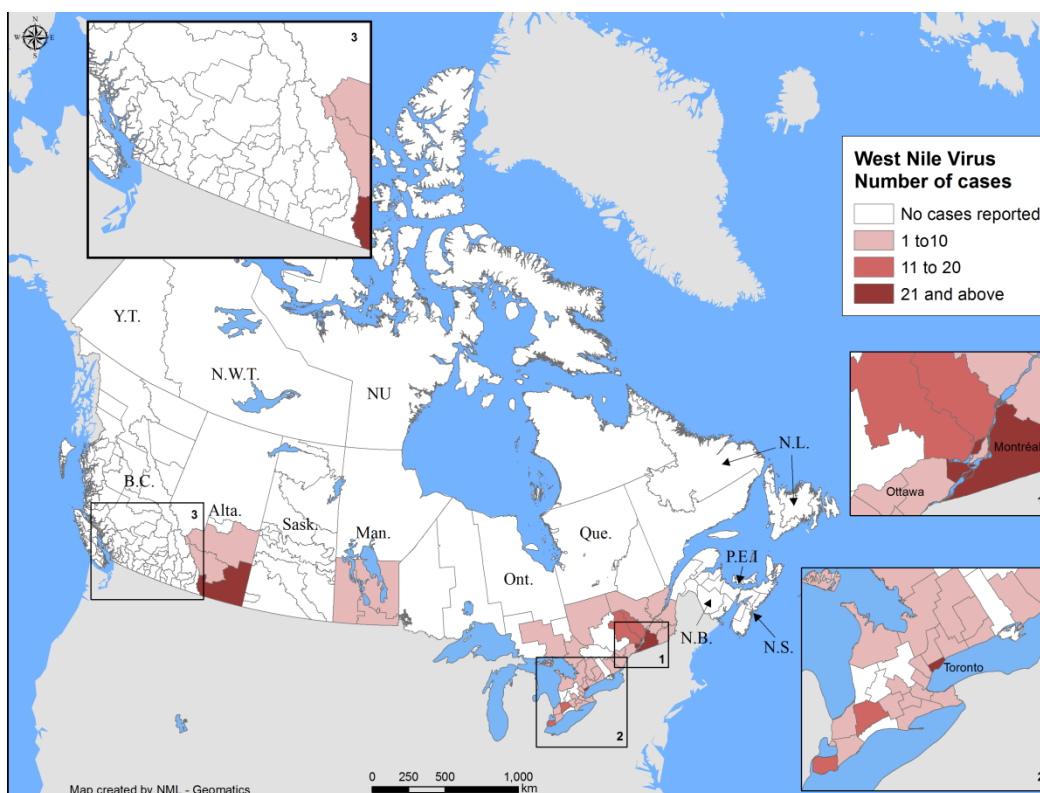
###### Eastern Equine Encephalitis virus

The CFIA has reported 13 horses testing positive for Eastern Equine Encephalitis virus (EEEV) in Ontario. No human cases of EEEV have been reported to PHAC during the 2018 season.

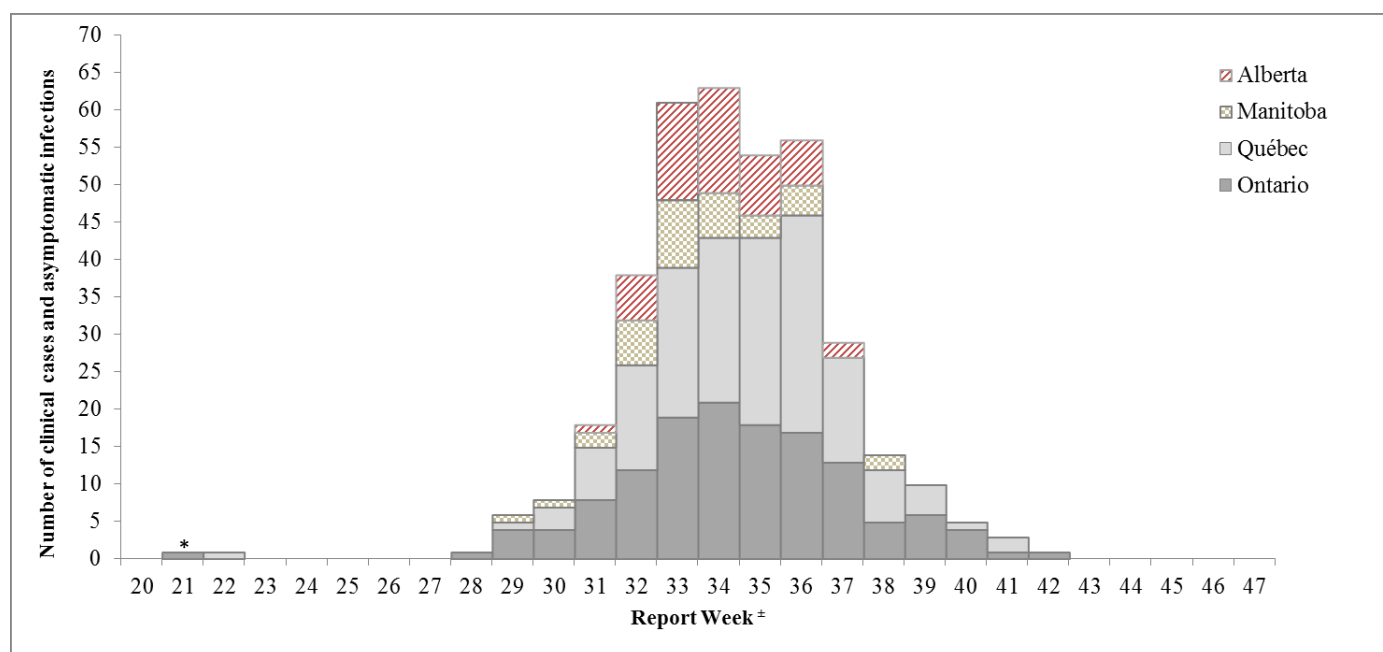
###### California Serogroup virus

Since May 1, 2018, 23 human cases/exposures of California serogroup virus have been reported by the [National Microbiology Laboratory](#) in the following seven provinces: Alberta (1), Saskatchewan (4), Manitoba (1), Ontario (5), Québec (5), New Brunswick (5), and Nova Scotia (2). Additional work to further type these as Jamestown Canyon virus or Snowshoe hare virus is on-going.

**FIGURE 1: Geographic distribution of WNV human clinical cases and asymptomatic infections in Canada, 2018**



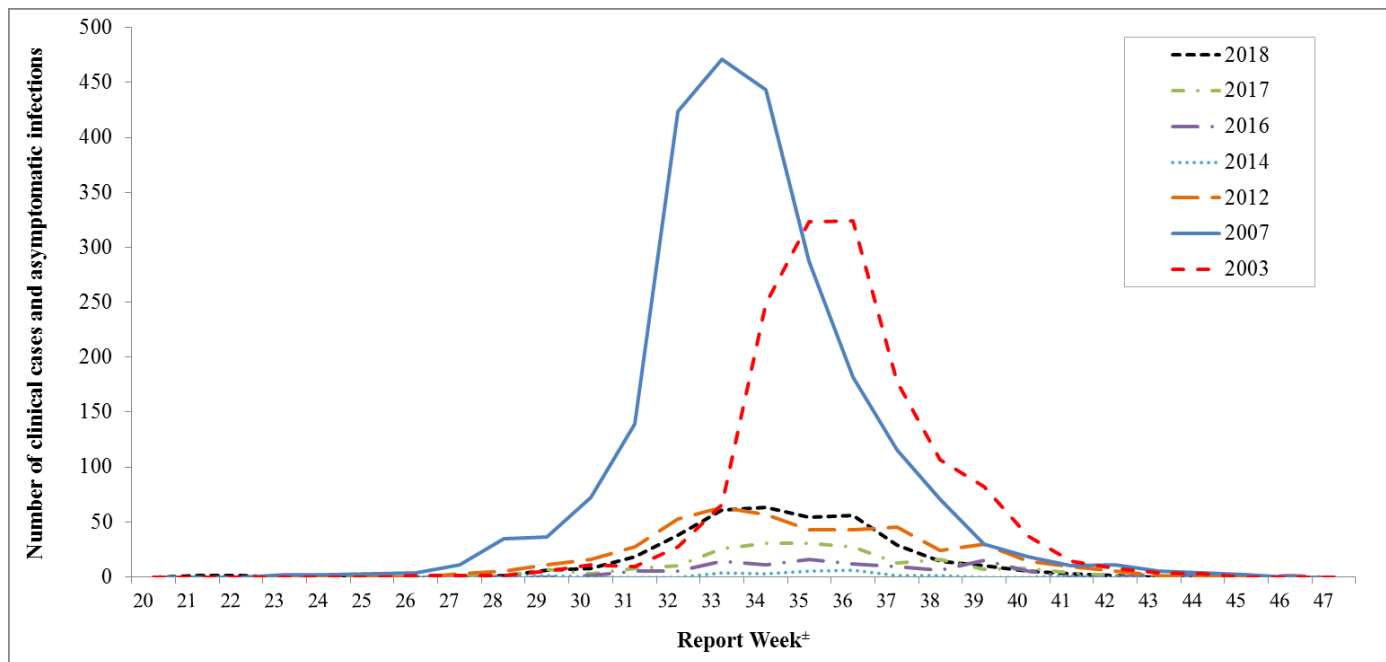
**FIGURE 2: WNV human clinical cases\* and asymptomatic infections in Canada by report week <sup>±</sup>, 2018**



<sup>±</sup> WNV clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

\* WNV likely acquired while travelling outside of Canada.

**FIGURE 3: WNV human clinical cases and asymptomatic infections for selected years by report week<sup>±</sup>, in Canada**



<sup>±</sup> WNV clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

**TABLE 1: WNV human clinical cases and asymptomatic infections in Canada by report week\* and year to date, 2018**

| Report week 45: November 4 to November 10, 2018 |                       |                           |                          |                                   |                                         |                                            |
|-------------------------------------------------|-----------------------|---------------------------|--------------------------|-----------------------------------|-----------------------------------------|--------------------------------------------|
| Province/Territory                              | Clinical Cases        |                           |                          |                                   | Total travel-related cases <sup>2</sup> | Total asymptomatic infections <sup>3</sup> |
|                                                 | Neurological syndrome | Non-neurological syndrome | Unclassified/Unspecified | Total clinical cases <sup>1</sup> |                                         |                                            |
| British Columbia                                | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Alberta                                         | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Saskatchewan <sup>4</sup>                       | 0                     | -                         | -                        | 0                                 | -                                       | -                                          |
| Manitoba                                        | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Ontario                                         | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Québec                                          | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Newfoundland and Labrador                       | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Prince Edward Island                            | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Nova Scotia                                     | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| New Brunswick                                   | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Yukon Territory                                 | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Northwest Territory                             | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Nunavut                                         | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| <b>Total</b>                                    | <b>0</b>              | <b>0</b>                  | <b>0</b>                 | <b>0</b>                          | <b>0</b>                                | <b>0</b>                                   |
| Year to date: January 1 to November 10, 2018    |                       |                           |                          |                                   |                                         |                                            |
| British Columbia                                | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Alberta                                         | 7                     | 38                        | 0                        | 45                                | 7                                       | 5                                          |
| Saskatchewan <sup>4</sup>                       | 0                     | -                         | -                        | 0                                 | -                                       | -                                          |
| Manitoba                                        | 9                     | 12                        | 11                       | 32                                | 0                                       | 2                                          |
| Ontario                                         | 56                    | 34                        | 36                       | 126                               | 2                                       | 9                                          |
| Québec                                          | 117                   | 25                        | 0                        | 142                               | 0                                       | 9                                          |
| Newfoundland and Labrador                       | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Prince Edward Island                            | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Nova Scotia                                     | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| New Brunswick                                   | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Yukon Territory                                 | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Northwest Territory                             | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| Nunavut                                         | 0                     | 0                         | 0                        | 0                                 | 0                                       | 0                                          |
| <b>Total</b>                                    | <b>189</b>            | <b>109</b>                | <b>47</b>                | <b>345</b>                        | <b>9</b>                                | <b>25</b>                                  |

\* WNV clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

<sup>1</sup> Total clinical cases are the sum of confirmed and probable: WNV neurological and non-neurological syndromes, along with any unclassified or unspecified cases.

<sup>2</sup> Likely related to travel outside the Province/Territory. These cases are included in either the total clinical cases or WNV asymptomatic infections.

<sup>3</sup> Satisfies WNV diagnostic test criteria in the absence of clinical criteria. This category could include asymptomatic blood donors whose blood is screened using a nucleic acid amplification test, by blood operators (i.e., Canadian Blood Services or Héma-Québec) and is subsequently brought to the attention of public health officials. Blood operators in Canada perform a supplementary WNV specific nucleic acid amplification test following any positive donor screen test result.

<sup>4</sup> Saskatchewan provides counts of WNV neurological syndrome cases only.

**TABLE 2: WNV mosquito surveillance\* in Canada, as of November 10, 2018**

| Province     | Number of positive mosquito pools | Number of mosquito pools tested | Percentage of positive mosquito pools (%) |
|--------------|-----------------------------------|---------------------------------|-------------------------------------------|
| Saskatchewan | 52                                | 773                             | 6.7                                       |
| Manitoba     | 168                               | 1,924                           | 8.7                                       |
| Ontario      | 305                               | 13, 099                         | 2.3                                       |
| Québec       | 46                                | 1,769                           | 2.6                                       |
| <b>Total</b> | <b>571</b>                        | <b>17,565</b>                   | <b>3.3</b>                                |

\*Mosquito surveillance data is reported by the following four provinces: Québec, Ontario, Manitoba, and Saskatchewan.

**TABLE 3: Total number of WNV mosquito pools tested by report week and by province/territory, 2018<sup>‡</sup>**

| Province                  | Report Week |            |            |            |              |              |              |              |              |              |              |              |              |              |              |            |            |            |           | Total         |
|---------------------------|-------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|-----------|---------------|
|                           | 22          | 23         | 24         | 25         | 26           | 27           | 28           | 29           | 30           | 31           | 32           | 33           | 34           | 35           | 36           | 37         | 38         | 39         | 40        |               |
| Saskatchewan <sup>1</sup> | 0           | 15         | 18         | 17         | 45           | 55           | 90           | 104          | 96           | 106          | 62           | 72           | 52           | 31           | 10           | 0          | 0          | 0          | 0         | <b>773</b>    |
| Manitoba <sup>2</sup>     | 15          | 39         | 89         | 107        | 124          | 122          | 241          | 240          | 247          | 169          | 172          | 163          | 113          | 39           | 29           | 15         | 0          | 0          | 0         | <b>1,924</b>  |
| Ontario <sup>3</sup>      | 0           | 0          | 0          | 0          | 842          | 955          | 1,024        | 963          | 1,073        | 1,059        | 1,156        | 1,124        | 1,133        | 998          | 920          | 667        | 667        | 433        | 85        | <b>13,099</b> |
| Québec <sup>4</sup>       | 0           | 69         | 77         | 105        | 105          | 113          | 109          | 109          | 110          | 99           | 123          | 122          | 102          | 103          | 122          | 124        | 85         | 92         | 0         | <b>1,769</b>  |
| <b>Total</b>              | <b>15</b>   | <b>123</b> | <b>184</b> | <b>229</b> | <b>1,116</b> | <b>1,245</b> | <b>1,464</b> | <b>1,416</b> | <b>1,526</b> | <b>1,433</b> | <b>1,513</b> | <b>1,481</b> | <b>1,400</b> | <b>1,171</b> | <b>1,081</b> | <b>806</b> | <b>752</b> | <b>525</b> | <b>85</b> | <b>17,565</b> |

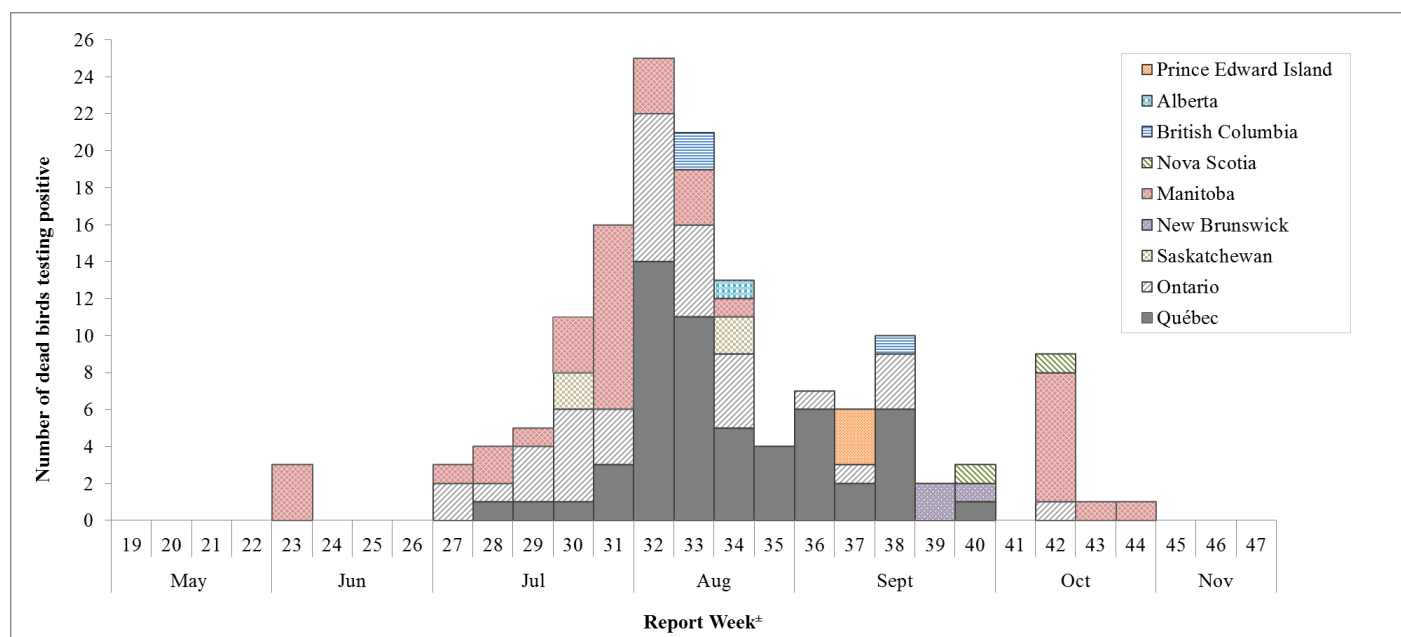
<sup>‡</sup> Detailed West Nile Virus mosquito surveillance data can be accessed through provincial/territorial websites.

<sup>1</sup> Mosquito surveillance ended at week 36.

<sup>2</sup> Mosquito surveillance ended at week 37.

<sup>3</sup> Mosquito surveillance ended at week 40.

<sup>4</sup> Mosquito surveillance ended at week 39.

**FIGURE 4: Number of WNV positive dead birds in Canada\* by report week<sup>±</sup>, 2018**

\* Not all provinces conduct dead wild bird surveillance as part of their respective WNV surveillance program. However, WNV positive dead wild birds may be identified through the National Wildlife Disease Surveillance Program, CWHC or by specific provinces.

<sup>±</sup> WNV positive birds are grouped by report week, based on best date available. Best date could include one of the following: date found, date of death, date submitted, or date received.