



West Nile virus and Other Mosquito-borne Diseases National Surveillance Report November 26 to December 9, 2017 (Week 48 and 49)

West Nile Virus

Canada

Humans

In weeks 48 and 49, three human clinical cases were retrospectively reported to the Public Health Agency of Canada (PHAC). As of week 49, 190 clinical cases and seven asymptomatic infections have been reported by five provinces (Québec [25], Ontario [159], Manitoba [5], Alberta [7], and British Columbia [1]). Of the 190 clinical cases, seventy-seven (41%) were classified as WNV neurological syndrome, seventy-one (37%) as WNV Non-neurological syndrome, and forty-two (22%) as unclassified. A total of thirty-two travel-related cases were reported. As of December 9, eight deaths associated with West Nile virus have been reported to the Public Health Agency of Canada during the 2017 season.

Mosquitoes

As of initial surveillance, 17,374 mosquito pools have been tested for WNV in Canada: Québec (1,849), Ontario (14,076), Manitoba (1,028), and Saskatchewan (421).

A total of 544 positive pools of WNV have been found in the following four provinces: 409 in Ontario [Brant County (2), Chatham-Kent (3), Durham Region (10), Eastern Ontario (5), Halton Region (36), Hamilton (31), Haliburton-Kawartha-Pine Ridge District (1), Hastings and Prince Edward Counties (13), Huron County (2), Kingston-Frontenac and Lennox and Addington (5), Lambton (2), Leeds, Grenville and Lanark District Health Unit (1), Middlesex-London (7), Niagara Region (15), Northwestern (1), Ottawa (35), Oxford County (1), Peel (114), Perth District (6), Peterborough County-City (2), Renfrew County and District (2), Simcoe Muskoka District (2), Toronto (62), Waterloo (3), Wellington-Dufferin-Guelph (3), Windsor-Essex County (29), and York Regional (16)]; forty-one in Manitoba [Winnipeg (13), Southern (5), Interlake Eastern (7), and Prairie Mountain (16)]; eighty-four in Québec [Capitale-Nationale (9), Mauricie et du Centre-du-Québec (6), Montréal (10), Outaouais (3), Laval (5), Lanaudière (9), Laurentides (42)]; and ten in Saskatchewan.

Birds

As of week 47, the Canadian Wildlife Health Cooperative has tested 214 dead birds for WNV (Northwest Territories [1], Prince Edward Island [1], Quebec [114], Ontario [74], Saskatchewan [19], Manitoba [2], Alberta [1], and British Columbia [2]). Of these, 141 were positive: eighty-five in Quebec, two in Manitoba, forty-three in Ontario, and eleven in Saskatchewan.

Domestic Animals

The Canadian Food Inspection Agency has reported fifty-one horses with WNV infection in the following six provinces: Québec (7), Ontario (21), Manitoba (1), Saskatchewan (8), Alberta (10), and British Columbia (4).

United States and U.S. territories

As of December 5, 2017, 1,937 human cases of WNV have been reported by the Centers for Disease Control and Prevention. Of these, 1,293 (67%) were classified as neuroinvasive disease and 644 (33%) as non-neuroinvasive disease. One hundred and fifteen deaths have been reported during the season. In addition, 231 presumptive viremic blood donors have been identified.

<https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata2017/disease-cases-state.html>

Europe and Neighbouring Countries

As of November 23, 2017, the European Centre for Disease Prevention and Control reported a total of 287 (confirmed and probable) cases of West Nile fever (Austria [4], Bulgaria [1], Croatia [5], France [1], Greece [48], Hungary [21], Israel [28], Italy [57], Romania [66], Serbia [49], and Turkey [7]). Twenty-six deaths due to West Nile fever have been reported since the start of the season.

http://ecdc.europa.eu/en/healthtopics/west_nile_fever/West-Nile-fever-maps/pages/index.aspx

Other Mosquito-borne Diseases

Canada

Eastern Equine Encephalitis virus

No human cases of eastern equine encephalitis virus (EEEV) have been reported to the Public Health Agency of Canada in 2017. As of October 30, there have been two horses that tested positive for EEEV in Ontario.

California Serogroup virus

Since January 1, 2017, fifty-three human cases of laboratory-confirmed cases/exposures of California serogroup virus were diagnosed by the National Microbiology Laboratory in Canada: British Columbia (1), Alberta (3), Saskatchewan (7), Manitoba (1), Ontario (1), Quebec (35), New Brunswick (3), and Nova Scotia (2). Of these cases, thirty-five were further classified as Jamestown Canyon virus and five Snowshoe hare virus.

FIGURE 1: Geographic distribution of WNV human cases in Canada, as of December 9, 2017

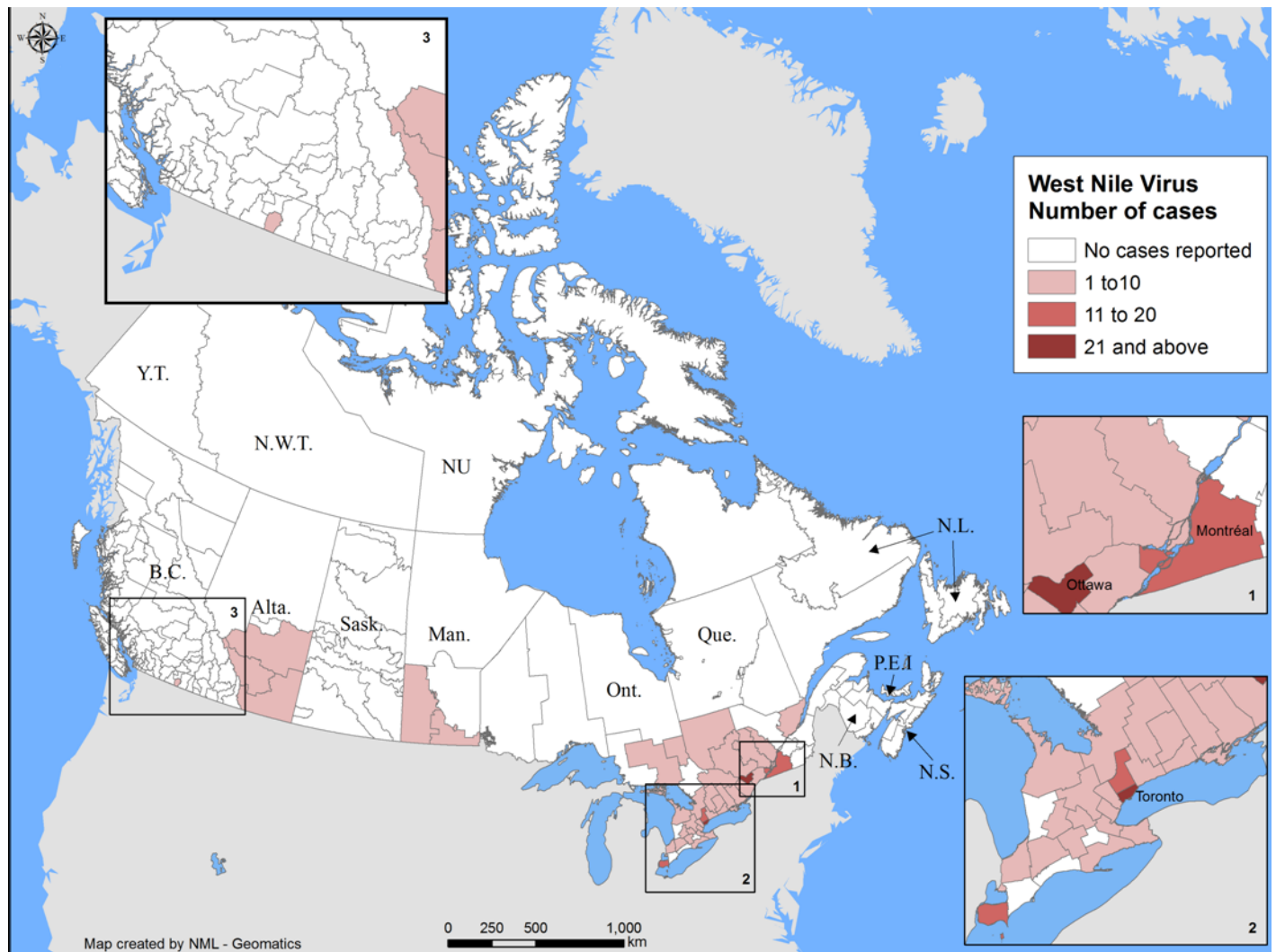
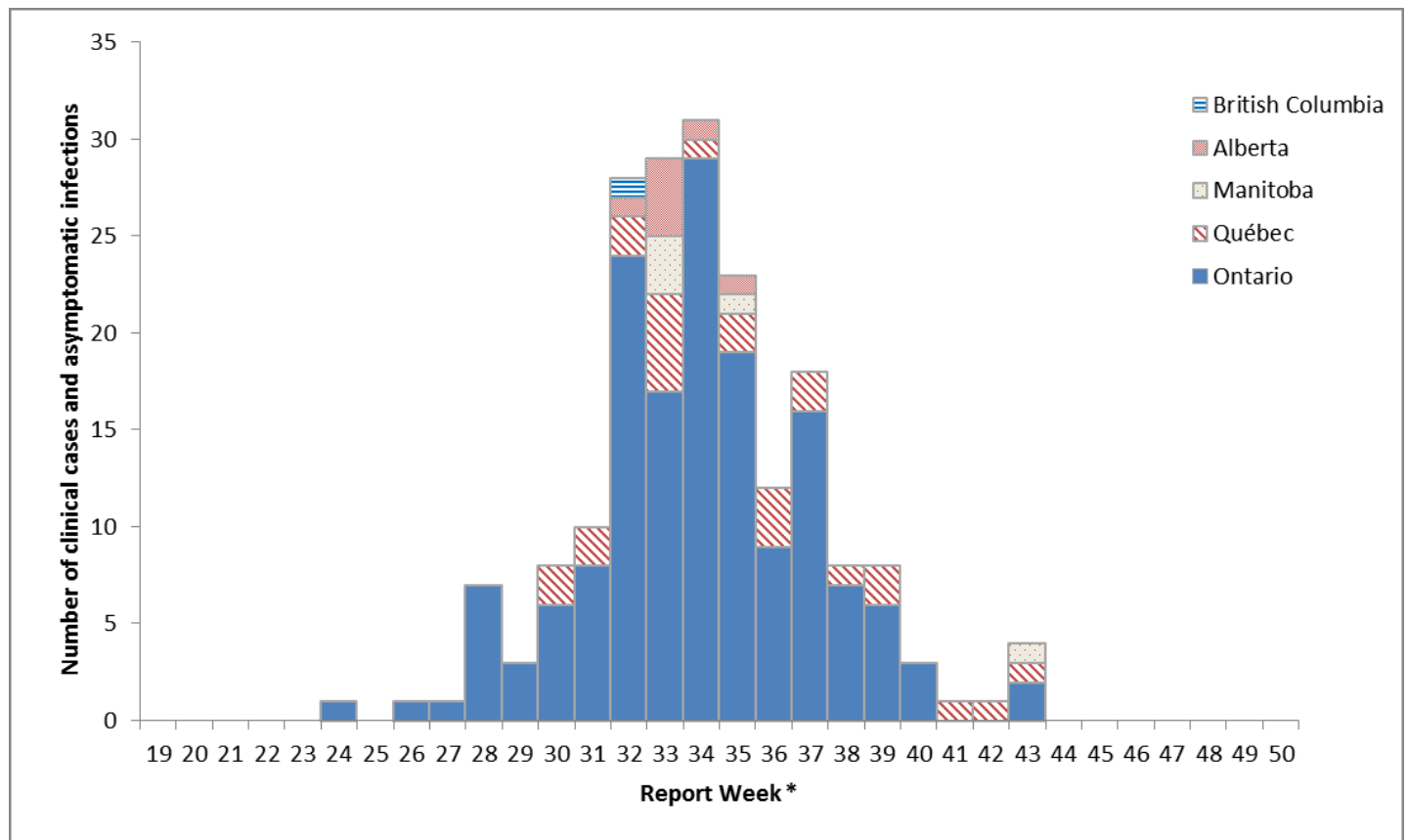
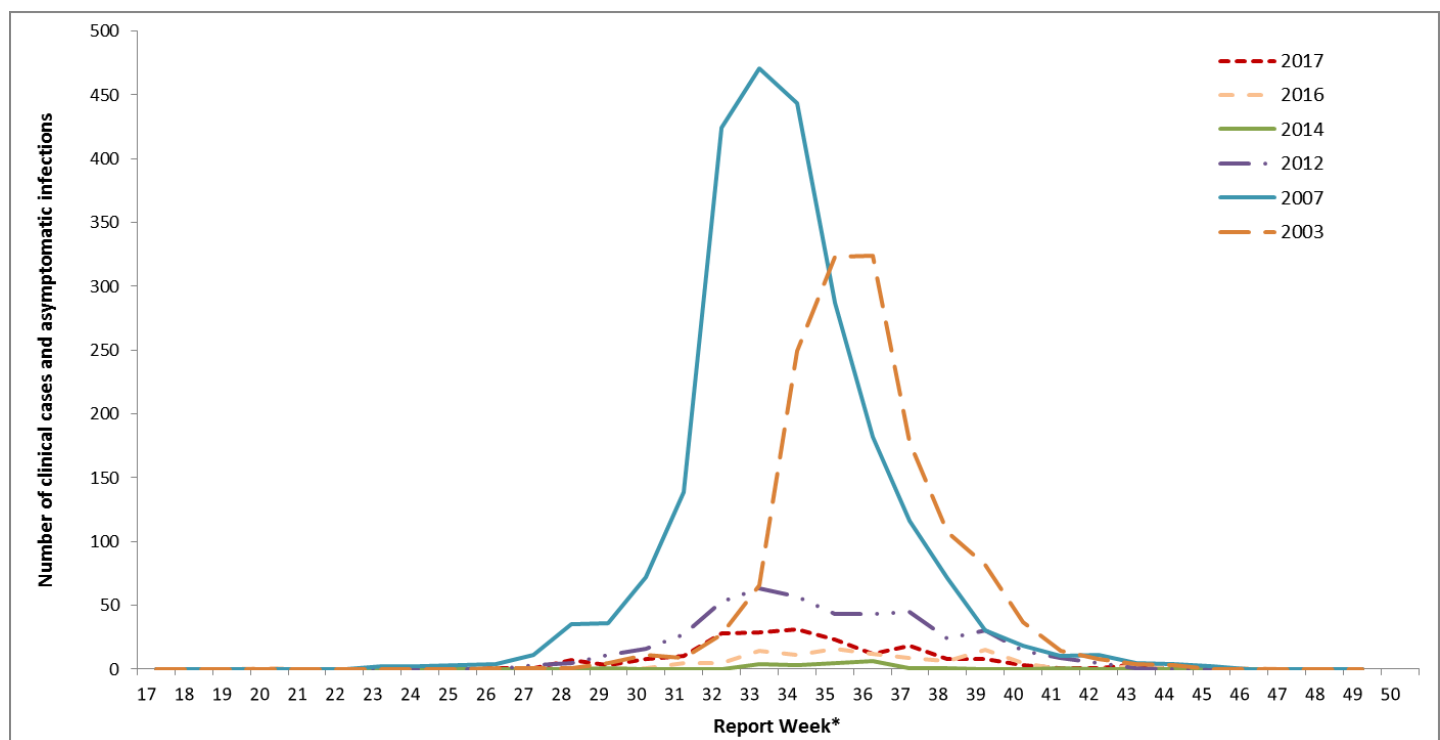


FIGURE 2: West Nile Virus human clinical cases and asymptomatic infections by province/territory as of December 9, 2017



*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.

FIGURE 3: West Nile Virus human clinical cases and asymptomatic infections for selected years, in Canada



*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: West Nile Virus human clinical cases and asymptomatic infections by province/territory for the current report week and year to date, 2017 season

| | Week 48 and 49: November 26 to December 9, 2017 | | | | | |
|---------------------------|---|---------------------------|---------------------------|-----------------------------------|---|---|
| Province/Territory | WNV clinical cases | | | Total clinical cases ¹ | Number of travel-related WNV cases ² | Number of asymptomatic WNV infection ³ |
| | Neurological syndrome | Non-neurological syndrome | Unclassified/ Unspecified | | | |
| 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 |
| Québec | 0 | 0 | 0 | 0 | 0 | 0 |
| Ontario | 0 | 0 | 0 | 0 | 0 | 0 |
| Manitoba | 0 | 0 | 0 | 0 | 0 | 0 |
| Saskatchewan ⁴ | 0 | - | - | - | - | - |
| Alberta | 0 | 0 | 0 | 0 | 0 | 0 |
| British Columbia | 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 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 |
| | Year to date: January 1 to December 9, 2017 | | | | | |
| 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 |
| Québec | 21 | 3 | 0 | 24 | 0 | 1 |
| Ontario | 52 | 61 | 42 | 155 | 30 | 4 |
| Manitoba | 2 | 2 | 0 | 4 | 0 | 1 |
| Saskatchewan | 0 | - | - | - | - | - |
| Alberta | 2 | 5 | 0 | 7 | 2 | 0 |
| British Columbia | 0 | 0 | 0 | 0 | 0 | 1 |
| Yukon Territory | 0 | 0 | 0 | 0 | 0 | 0 |
| Northwest Territory | 0 | 0 | 0 | 0 | 0 | 0 |
| Nunavut | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 77 | 71 | 42 | 190 | 32 | 7 |

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

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

³ 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 Hema-Quebec) 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.

⁴ Saskatchewan provides counts of WNV neurological syndrome cases only.

TABLE 2: Number of mosquito pools tested for WNV and number of positive mosquito pools by province/territory, 2017 season

| Province / Territory | Year to date: January 1 to December 9, 2017 | | |
|---------------------------|---|---------------------------------|---|
| | Number of positive mosquito pools | Number of mosquito pools tested | Percentage of positive mosquito pools (%) |
| Québec ¹ | 84 | 1,849 | 4.54 |
| Ontario ² | 409 | 14,076 | 2.91 |
| Manitoba ³ | 41 | 1,028 | 3.99 |
| Saskatchewan ⁴ | 10 | 421 | 2.38 |
| Alberta | - | - | - |
| British Columbia | - | - | - |
| Newfoundland and Labrador | - | - | - |
| Prince Edward Island | - | - | - |
| Nova Scotia | - | - | - |
| New Brunswick | - | - | - |
| Yukon Territory | - | - | - |
| Northwest Territories | - | - | - |
| Nunavut | - | - | - |
| Total | 544 | 17,374 | 3.13 |

TABLE 3: Total number of WNV mosquito pools tested by report week and by province/territory, 2017 season[‡]

| Province / Territory | Report Week | | | | | | | | | | | | | | | | | | | | | | | Total |
|---------------------------|-------------|----|----|----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|----|--------|-------|
| | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | | |
| Québec ¹ | - | - | - | - | - | - | - | - | 147 | 147 | 147 | 147 | 147 | 147 | 147 | 146 | 147 | 147 | 147 | 111 | 122 | - | 1,849 | |
| Ontario ² | 13 | 15 | 43 | 84 | 194 | 299 | 718 | 794 | 964 | 1,003 | 1,037 | 1,053 | 1,168 | 1,015 | 1,116 | 993 | 931 | 746 | 634 | 641 | 523 | 91 | 14,075 | |
| Manitoba ³ | - | - | - | - | 15 | 45 | 48 | 16 | 60 | 93 | 96 | 113 | 178 | 122 | 86 | 104 | 25 | 20 | 7 | - | - | - | 1,028 | |
| Saskatchewan ⁴ | - | - | - | - | 6 | 20 | 11 | 18 | 25 | 31 | 38 | 46 | 61 | 52 | 39 | 40 | 34 | - | - | - | - | - | 421 | |
| Alberta | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| British Columbia | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Newfoundland and Labrador | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Prince Edward Island | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Nova Scotia | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| New Brunswick | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Yukon Territory | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Northwest Territories | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Nunavut | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | |
| Total | 13 | 15 | 43 | 84 | 215 | 364 | 777 | 828 | 1,196 | 1,274 | 1,318 | 1,359 | 1,554 | 1,336 | 1,388 | 1,283 | 1,137 | 913 | 788 | 752 | 645 | 91 | 17,373 | |

[‡] For detailed West Nile Virus mosquito surveillance data, please visit provincial/territorial websites.

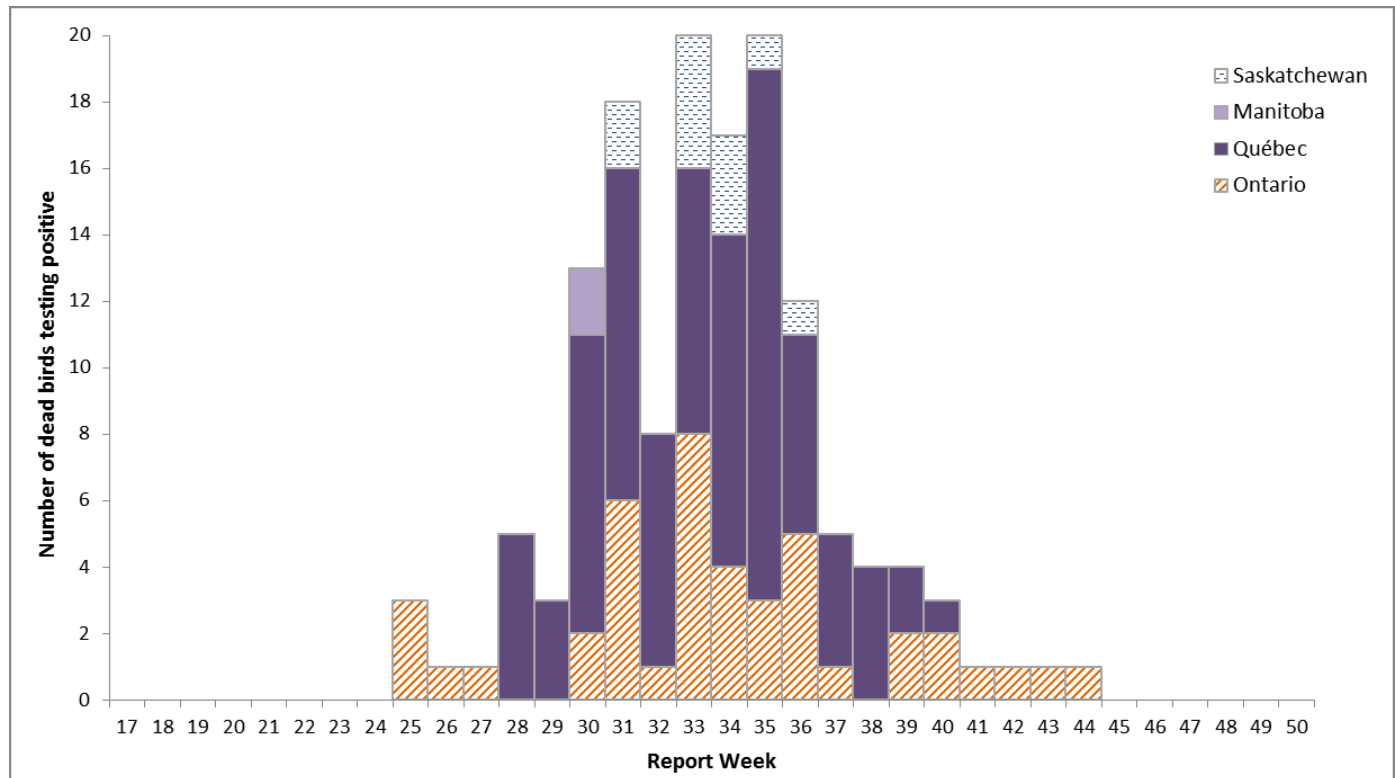
¹ Mosquito surveillance ended at week 39.

² Mosquito surveillance ended at week 40.

³ Mosquito surveillance ended at week 37.

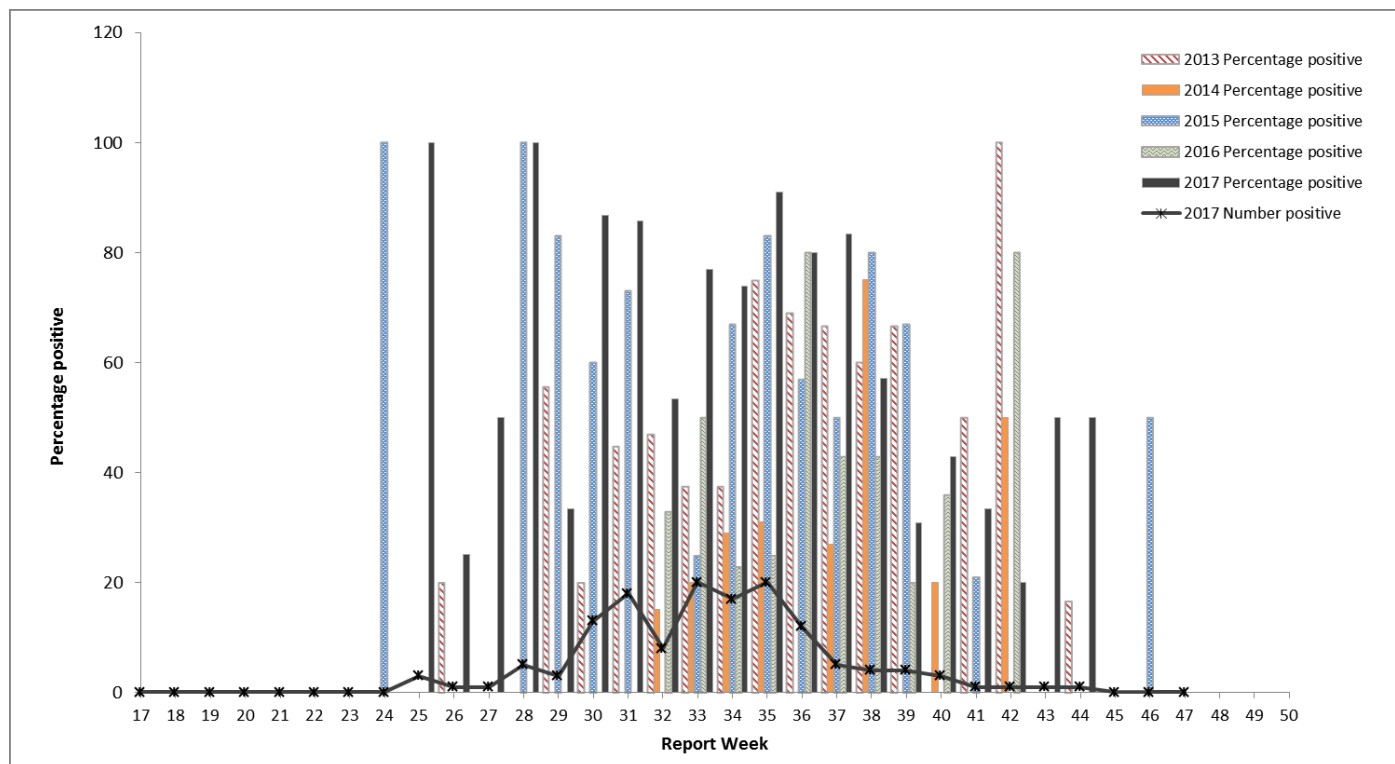
⁴ Mosquito surveillance ended at week 35.

FIGURE 4: Reported number of dead birds tested positive for WNV by province/territory and by report week, 2017 season in Canada[¶]



[¶] Not all provinces are conducting dead bird surveillance as part of their own WNV surveillance program. However, WNV positive dead birds may be identified through the National Wildlife Disease Surveillance Program of the Canadian Wildlife Health Cooperative.

FIGURE 5: Percentage of dead birds tested positive for WNV by report week in 2012, 2015, 2016, 2017 and number of dead birds tested positive, by report week, 2017, in Canada[¶]



[¶] Not all provinces are conducting dead bird surveillance as part of their own WNV surveillance program. However, WNV positive dead birds may be identified through the National Wildlife Disease Surveillance Program of the Canadian Wildlife Health Cooperative.