West Nile Virus and Other Mosquito-borne Disease Report

July 29 – August 4, 2018 (Report Week 31)

West Nile Virus

Canada

Human

As of August 4, 2018, the Public Health Agency of Canada has been informed of five clinical (confirmed or probable) cases of West Nile virus (WNV) and one asymptomatic infection (Ontario [5] and Manitoba [1]). Of the five clinical cases, three (60%) have been classified as WNV neurological syndrome and two cases (40%) are unspecified. No deaths have been reported.

Mosquito

To date (week 31), the PHAC has been notified of 8609 mosquito pools tested for WNV (Saskatchewan [508], Manitoba [1,393], Ontario [5,916] and Quebec [792]). Of these, a total of 195 (2.27%) have tested positive for WNV: twenty-six in Saskatchewan (Moist Mixed Grassland/Aspen Parkland [23] and Mixed Grassland [3]), 102 in Manitoba (Winnipeg [31], Interlake-Eastern [18], Prairie Mountain [23], and Southern [30]), sixty-five in Ontario (City of Ottawa [1], City of Hamilton [3], Lambton County [1], Niagara County [1], Oxford County [2], City of Toronto [11], Waterloo [2], Simcoe Muskoka District [1], Middlesex-London [1], Haldimand-Norfolk [1], Halton Region [4], Peel Region [10], Hastings and Prince Edward Counties [1],Windsor-Essex County [15], Chatham-Kent [3], Brant County [1], Perth District [1], Wellington-Dufferin-Guelph [1], and York Region [5]) and two in Quebec.

Wild Bird

As of week 31, a total of forty-four dead wild birds have been tested for WNV by the Canadian Wildlife Health Cooperative (CWHC) and Manitoba Agriculture: one in Alberta, seven in Saskatchewan, ten in Manitoba, nineteen in Ontario, six in Québec, and one in Nova Scotia. Of these, twenty-five dead wild birds were positive for WNV: ten in Manitoba (Winnipeg Regional Health [10]), three in Quebec (Estrie [3]), two in Saskatchewan (Saskatoon [2]) and ten in Ontario (Wellington-Dufferin-Guelph [1], Leeds, Grenville & Lanark [1], Lambton Public Health [1], Middlesex-London [2], City of Hamilton [2], Region of Waterloo [1]and Southwestern Public Health [1] and Kingston, Frontenac, Lennox & Addington [1]. In addition, four live birds have been tested positive for WNV (Quebec [4]) by the University of Montréal.

Equine

The Canadian Food Inspection Agency (CFIA) has received notification of the first confirmed case of WNV in a horse from Manitoba (Interlake-Eastern).

United States and U.S. territories

As of August 7, 106 human cases of WNV have been reported to the US Centers for Disease Control and Prevention (CDC). Of these, sixty-two (58%) were classified as neuroinvasive disease and forty-four (42%) as non-neuroinvasive disease. Four deaths have been reported. In addition, forty-four presumptive viremic blood donors have been identified.

Europe and Neighboring Countries

As of August 2, 181 human cases of West Nile fever have been reported to the European Centre for Disease Prevention and Control in the following countries: Serbia (70), Greece (43), Italy (51), Romania (7), and Hungary (10). Six deaths have been reported (Serbia [4] and Italy [2]). (Weekly updates: 2018 West Nile fever transmission season)

Other Mosquito-borne Diseases

Canada

Eastern Equine Encephalitis virus

No human cases of Eastern Equine Encephalitis virus (EEEV) have been reported to the PHAC, since the start of the 2018 season.

California Serogroup virus

In surveillance week 31, no human cases/exposures of California serogroup virus were diagnosed by the National Microbiology Laboratory in the PHAC.

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

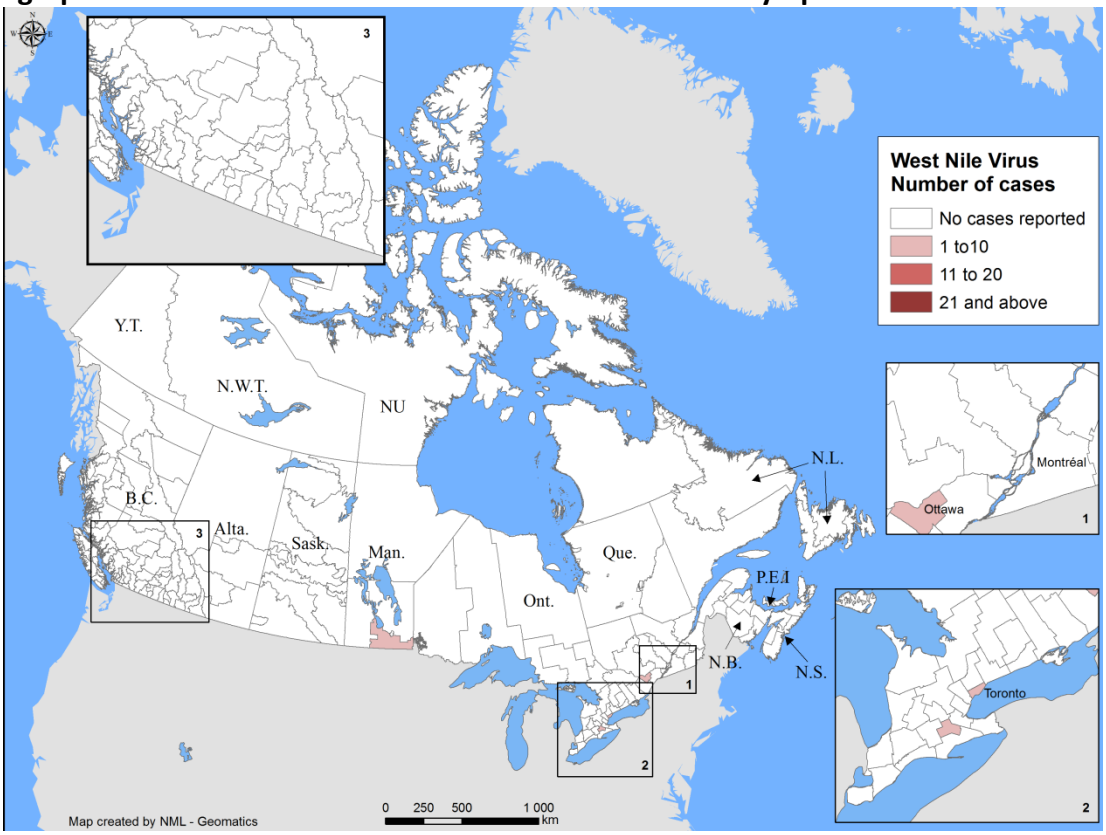
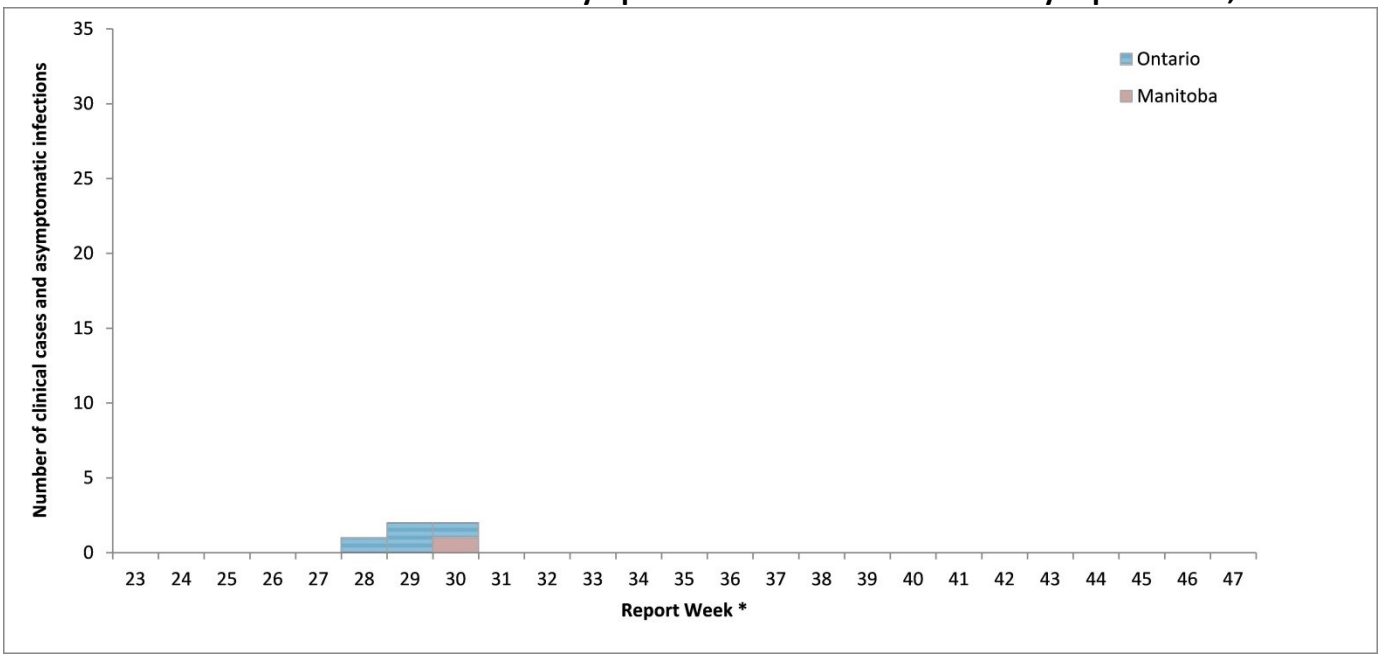
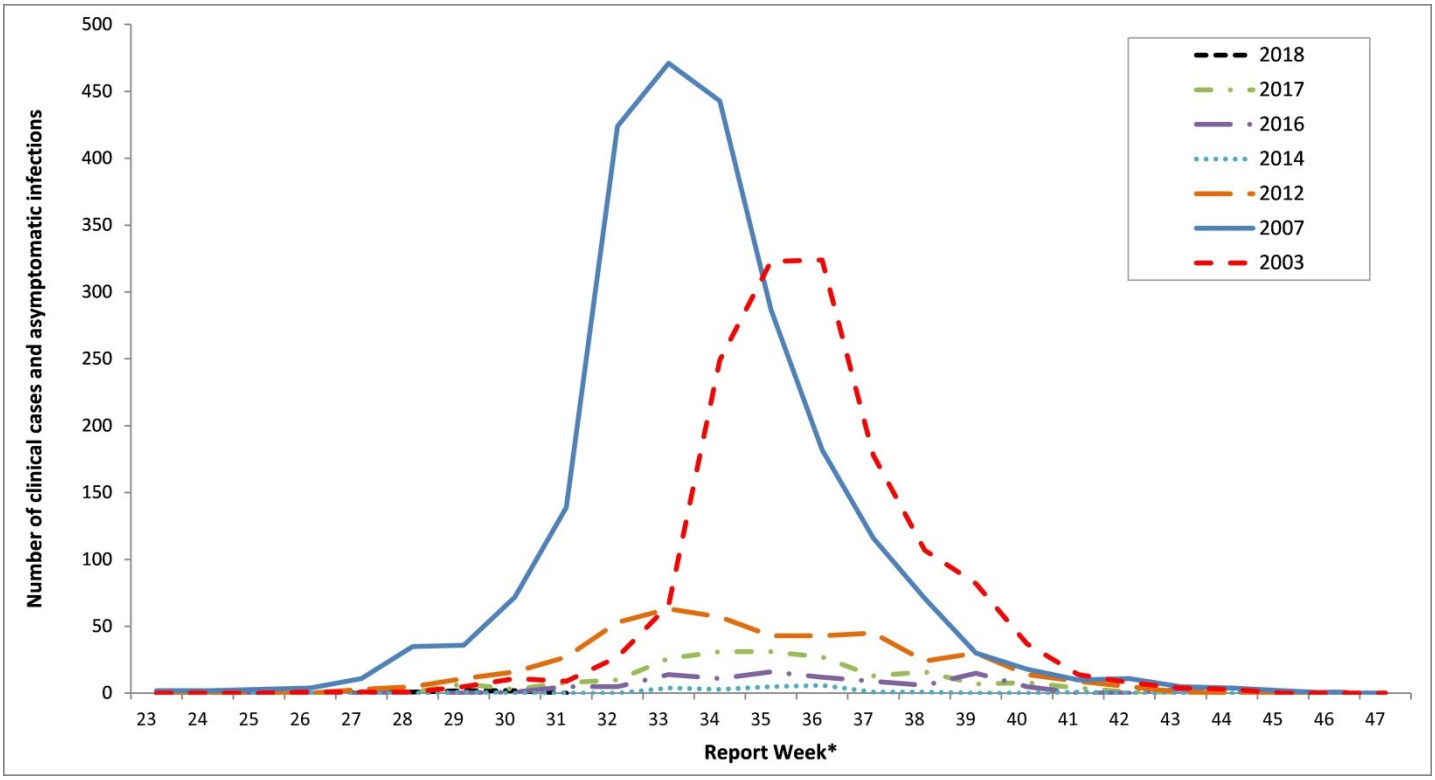


FIGURE 2: WNV human clinical cases and asymptomatic infections in Canada by report week, 2018



* 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: WNV human clinical cases and asymptomatic infections for selected years by report week, 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: WNV human clinical cases and asymptomatic infections in Canada by report week and year to date, 2018

Province/Territory	Clinical Cases			Total clinical cases[1]	Total travel-related cases[2]	Total asymptomatic infections[3]
	Neurological syndrome	Non-neurological syndrome	Unclassified/ Unspecified			
Week 31: July 29 to August 4, 2018						
British Columbia	0	0	0	0	0	0
Alberta	0	0	0	0	0	0
Saskatchewan[4]	0	0	0	0	0	0
Manitoba	0	0	0	0	0	0
Ontario	0	0	1	1	1	1
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
Total	**0**	**0**	**0**	**1**	**1**	**1**
Year to date: January 1 to August 4, 2018						
British Columbia	0	0	0	0	0	0
Alberta	0	0	0	0	0	0
Saskatchewan[4]	0	0	0	0	0	0
Manitoba	1	0	0	1	0	0
Ontario	2	0	2	4	2	1
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
Total	**3**	**0**	**2**	**5**	**2**	**1**

[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: WNV mosquito surveillance* in Canada, as of August 4, 2018

Province	Number of positive mosquito pools	Number of mosquito pools tested	Percentage of positive mosquito pools (%)
Saskatchewan	26	508	5.12
Manitoba	102	1,393	7.32
Ontario	65	5,916	1.10
Québec	2	792	0.25
Total	**195**	**8,609**	**2.27**

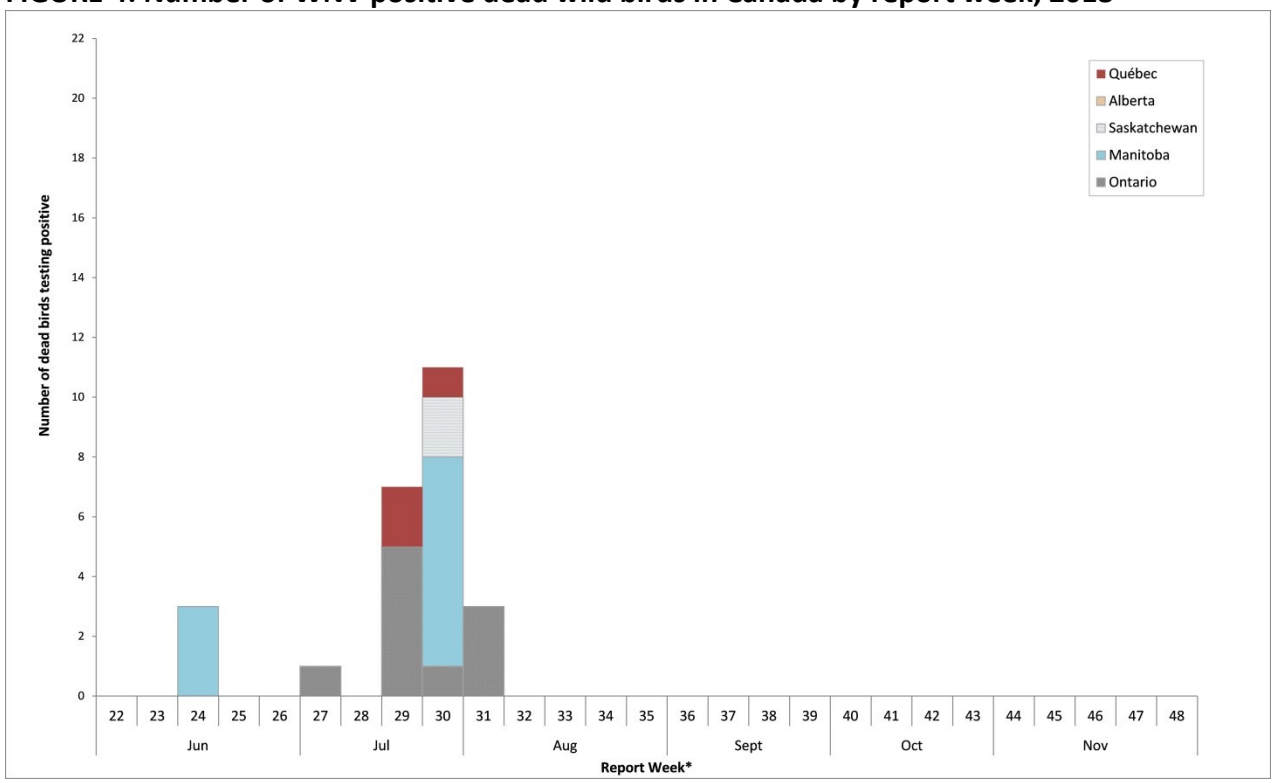
*Mosquito surveillance data is reported by the following four provinces: Quebec, Ontario, Manitoba, and Saskatchewan.

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

Province	Report Week										
	22	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**Total**
Saskatchewan	0	15	18	17	45	54	79	95	93	92	**508**
Manitoba	15	39	89	107	124	122	241	240	247	169	**1,393**
Ontario	0	0	0	0	842	955	1,024	963	1,073	1,059	**5,916**
Québec	0	69	77	105	105	108	109	109	110	-	**792**
Total	15	123	184	229	1,116	1,239	1,453	1,407	1,523	1,320	**8,609**

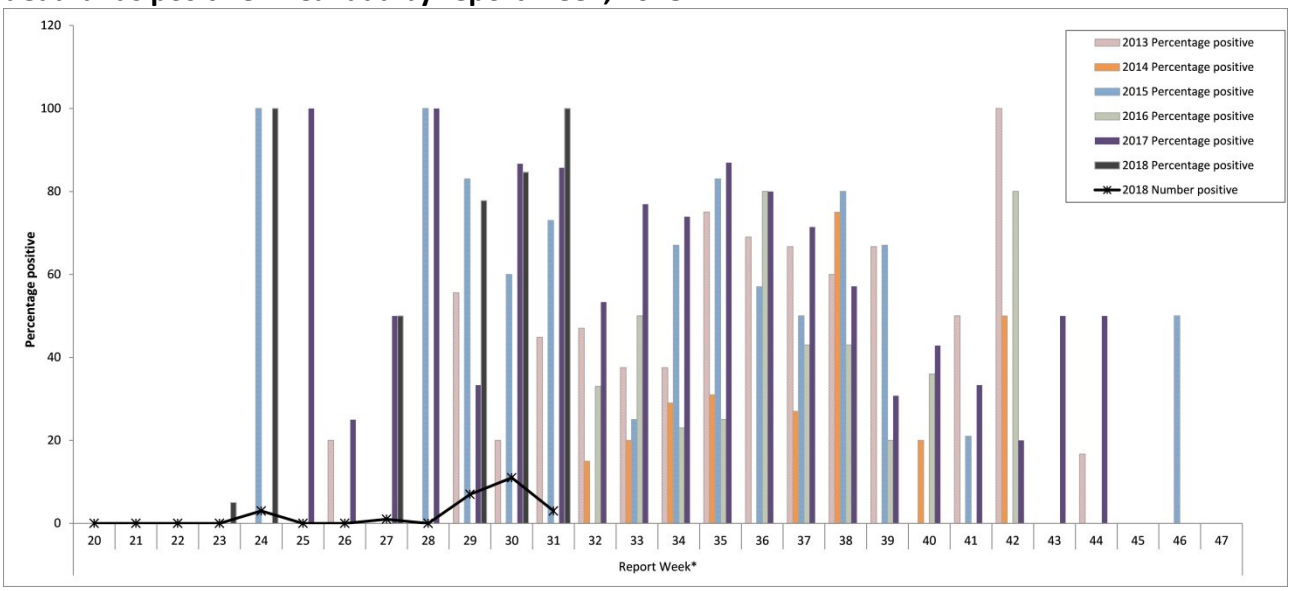
‡ Detailed West Nile Virus mosquito surveillance data can be accessed through provincial/territorial websites.

FIGURE 4: Number of WNV positive dead wild birds in Canada by report week, 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 some provinces.

FIGURE 5: Percentage of dead wild birds positive for WNV by report week in 2012-2018 and number of dead birds positive in Canada by report week, 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 some provinces.