West Nile Virus and Other Mosquito-borne Disease Report

October 28 – November 3, 2018 (Report Week 44)

West Nile Virus

Canada

Human

During surveillance week 44, ending on November 3, 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 44, a total of 340 clinical cases of WNV have been reported by the following four provinces: Alberta (45), Manitoba (32), Ontario (126), and Québec (137). Of these, 186 (55%) have been classified as WNV neurological syndrome, 107 (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, 143 out of 293 (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 (2), 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

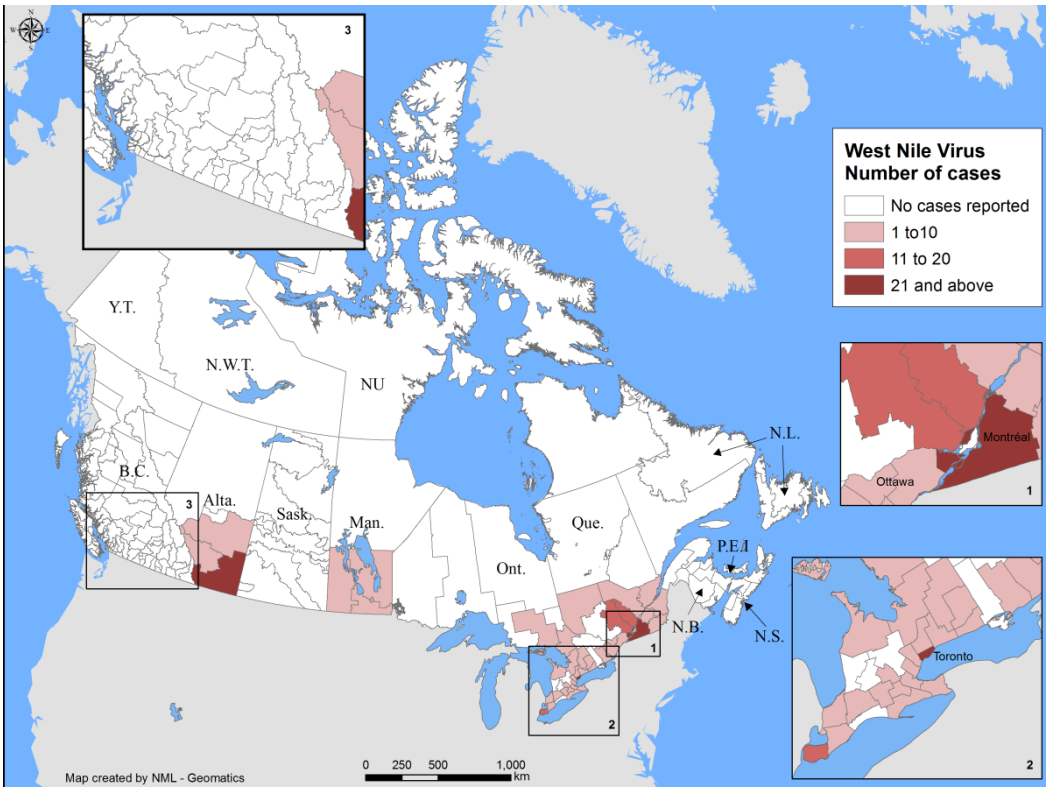
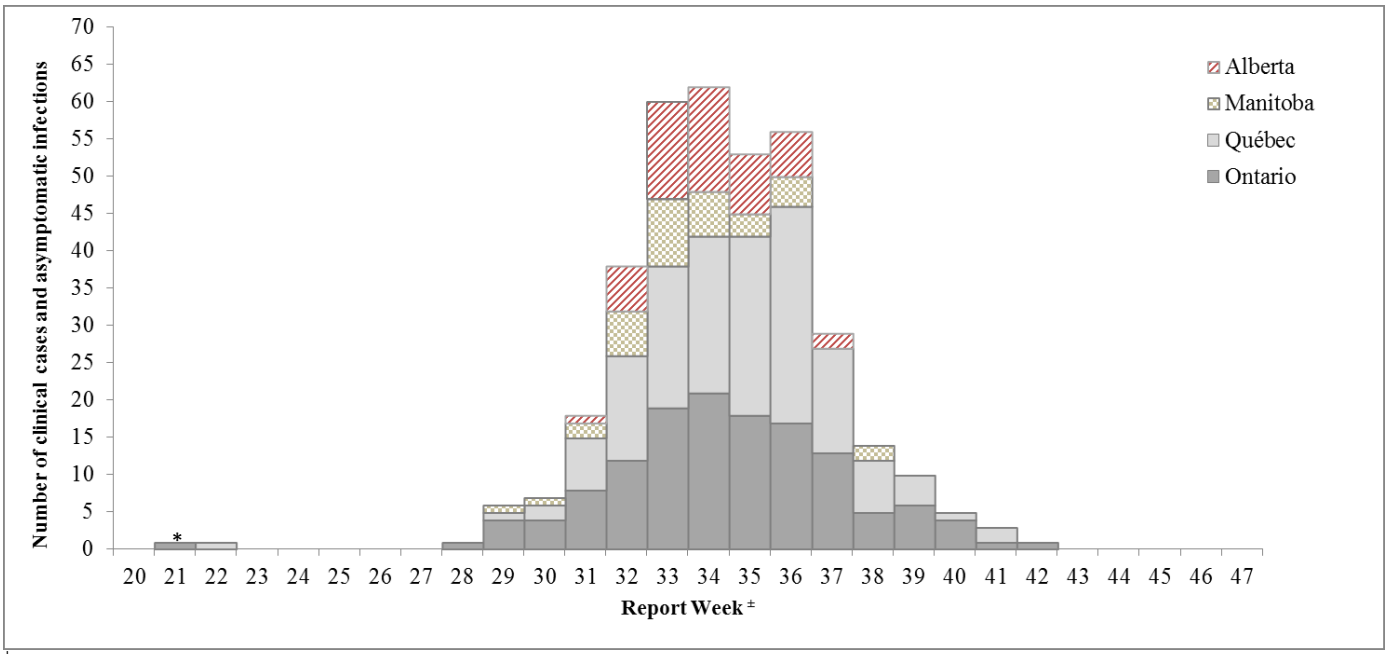


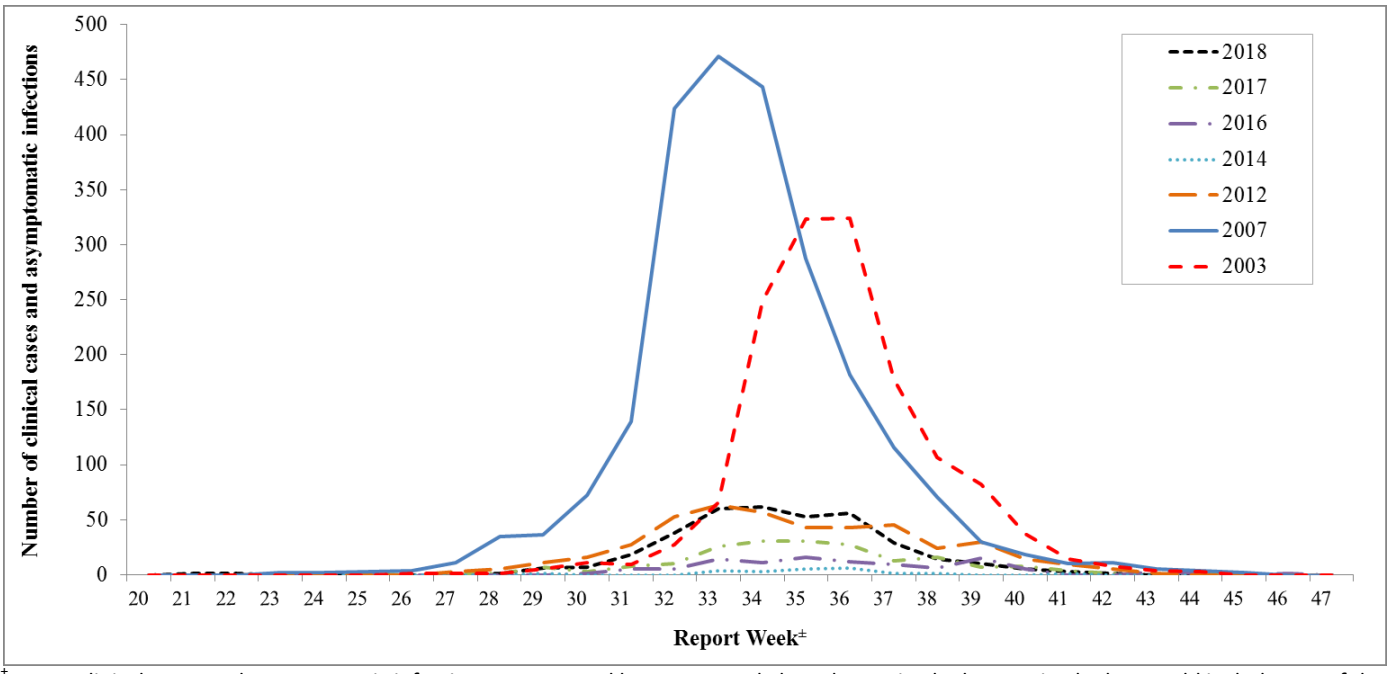
FIGURE 2: WNV human clinical cases* and asymptomatic infections in Canada by report week ±, 2018



± 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.

* WNV likely acquired while travelling outside of Canada.

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 travel-related cases[2]	Total asymptomatic infections[3]
	Neurological syndrome	Non-neurological syndrome	Unclassified/ Unspecified	Total clinical cases[1]		
Report week 44: October 28 to November 3, 2018						
British Columbia	0	0	0	**0**	0	0
Alberta	0	0	0	**0**	0	0
Saskatchewan[4]	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
Total	**0**	**0**	**0**	**0**	**0**	**0**
Year to date: January 1 to November 3, 2018						
British Columbia	0	0	0	**0**	0	0
Alberta	7	38	0	**45**	7	5
Saskatchewan[4]	0	-	-	**0**	-	-
Manitoba	9	12	11	**32**	0	2
Ontario	56	34	36	**126**	2	9
Québec	114	23	0	**137**	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
Total	**186**	**107**	**47**	**340**	**9**	**25**

* 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.

[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 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.

[4] Saskatchewan provides counts of WNV neurological syndrome cases only.

TABLE 2: WNV mosquito surveillance* in Canada, as of November 3, 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
Total	**571**	**17,565**	**3.3**

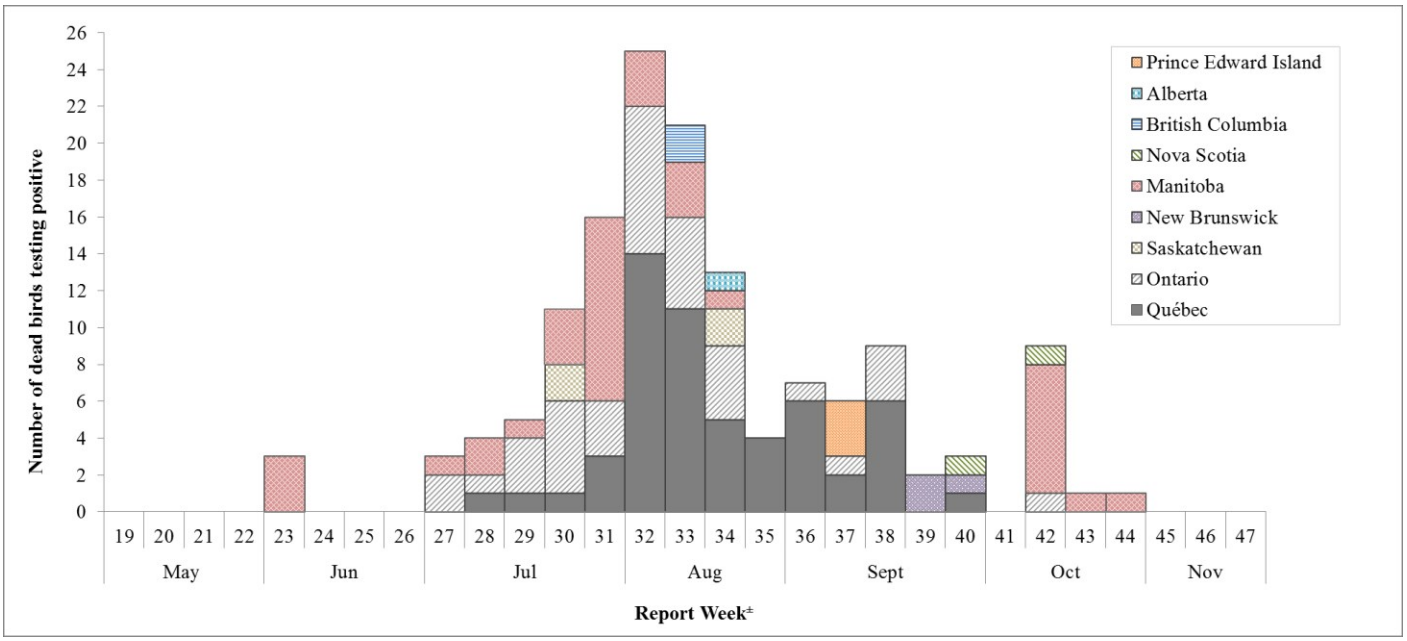
*Mosquito surveillance data is reported by the following four provinces: Québec, Ontario, Manitoba, and Saskatchewan.

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

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

‡ Detailed West Nile Virus mosquito surveillance data can be accessed through provincial/territorial websites.
[1] Mosquito surveillance ended at week 36.
[2] Mosquito surveillance ended at week 37.
[3] Mosquito surveillance ended at week 40.
[4] Mosquito surveillance ended at week 39.

FIGURE 4: Number of WNV positive dead 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 by specific provinces.

± 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.